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<h2 style="margin: 0;">UTILITY PATENT APPLICATION TRANSMITTAL</h2> <p style="font-size: small; margin: 5px 0;">(Only for new nonprovisional applications under 37 C.F.R. 1.53(b))</p>	Attorney Docket No.	FIN0008-DIV1
	First Inventor	David GRUZMAN, et al.
	Title	System and Method for Inspecting Dynamically Generated Executable code
	Express Mail Label No.	

<p style="text-align: center; margin: 0;"><b>APPLICATION ELEMENTS</b></p> <p style="font-size: x-small; margin: 0;">See MPEP chapter 600 concerning utility patent application contents.</p>	<p style="margin: 0;"><b>ADDRESS TO:</b> Commissioner for Patents P.O. Box 1450 Alexandria VA 22313-1450</p>
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1.  **Fee Transmittal Form (e.g., PTO/SB/17)**  
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See 37 CFR 1.27.
3.  **Specification** [Total Pages 37 ]  
Both the claims and abstract must start on a new page  
*(For information on the preferred arrangement, see MPEP 608.01(a))*
4.  **Drawing(s)** (35 U.S.C. 113) [Total Sheets 5 ]
5. **Oath or Declaration** [Total Sheets 6 ]
  - a.  Newly executed (original or copy)
  - b.  A copy from a prior application (37 CFR 1.63 (d))  
*(for a continuation/divisional with Box 18 completed)*
  - i.  **DELETION OF INVENTOR(S)**  
Signed statement attached deleting inventor(s)  
named in the prior application, see 37 CFR  
1.63(d)(2) and 1.33(b).
6.  **Application Data Sheet.** See 37 CFR 1.76
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**ACCOMPANYING APPLICATIONS PARTS**

9.  **Assignment Papers** (cover sheet & document(s))  
Name of Assignee Finjan, Inc.
10.  **37 C.F.R. 3.73(b) Statement**  **Power of Attorney**  
*(when there is an assignee)*
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## SYSTEM AND METHOD FOR INSPECTING DYNAMICALLY GENERATED EXECUTABLE CODE

### FIELD OF THE INVENTION

[0001] The present invention relates to computer security, and more particularly to protection against malicious code such as computer viruses.

### BACKGROUND OF THE INVENTION

[0002] Computer viruses have been rampant for over two decades now. Computer viruses generally come in the form of executable code that performs adverse operations, such as modifying a computer's operating system or file system, damaging a computer's hardware or hardware interfaces, or automatically transmitting data from one computer to another. Generally, computer viruses are generated by hackers willfully, in order to exploit computer vulnerabilities. However, viruses can also arise by accident due to bugs in software applications.

[0003] Originally computer viruses were transmitted as executable code inserted into files. As each new viruses was discovered, a signature of the virus was collected by anti-virus companies and used from then on to detect the virus and protect computers against it. Users began routinely scanning their file systems using anti-virus software, which regularly updated its signature database as each new virus was discovered.

[0004] Such anti-virus protection is referred to as "reactive", since it can only protect in reaction to viruses that have already been discovered.

[0005] With the advent of the Internet and the ability to run executable code such as scripts within Internet browsers, a new type of virus formed; namely, a virus that enters a computer over the Internet and not through the computer's file system. Such Internet viruses can be embedded within web pages and other web content, and begin executing within an Internet browser as soon as they enter a computer. Routine file scans are not able to detect such viruses, and as a result more sophisticated anti-virus tools had to be developed.

[0006] Two generic types of anti-virus applications that are currently available to protect against such Internet viruses are (i) gateway security applications, and (ii) desktop security applications. Gateway security applications shield web content before the content is delivered to its intended destination computer. Gateway security applications scan web content, and block the content from reaching the destination computer if the content is deemed by the security application to be potentially malicious. In distinction, desktop security applications shield against web content after the content reaches its intended destination computer.

[0007] Moreover, in addition to reactive anti-virus applications, that are based on databases of known virus signatures, recently "proactive" antivirus applications have been developed. Proactive anti-virus protection uses a methodology known as "behavioral analysis" to analyze computer content for the presence of viruses. Behavior analysis is used to automatically scan and parse executable content, in order to detect which computer operations the content may perform. As such, behavioral analysis can block viruses that have not been previously detected and which do not have a signature on record, hence the name "proactive".

[0008] Assignee's US Patent No. 6,092,194 entitled SYSTEM AND METHOD FOR PROTECTING A COMPUTER AND A NETWORK FROM HOSTILE DOWNLOADABLES, the contents of which are hereby incorporated by reference, describes gateway level behavioral analysis. Such behavioral analysis scans and parses content received at a gateway and generates a security profile for the content. A security profile is a general list or delineation of suspicious, or potentially malicious, operations that executable content may perform. The derived security profile is then compared with a security policy for the computer being protected, to determine whether or not the content's security profile violates the computer's security policy. A security policy is a general set of simple or complex rules, that may be applied logically in series or in parallel, which determine whether or not a specific operation is permitted or forbidden to be performed by the content on the computer being protected. Security policies are generally configurable, and set by an administrator of the computer that are being protected.

[0009] Assignee's US Patent No. 6,167,520 entitled SYSTEM AND METHOD FOR PROTECTING A CLIENT DURING RUNTIME FROM HOSTILE DOWNLOADABLES, the contents of which are hereby incorporated by reference, describes desktop level behavioral analysis. Desktop level behavioral analysis is generally implemented during runtime, while a computer's web browser is processing web content received over the Internet. As the content is being processed, desktop security applications monitor calls made to critical systems of the computer, such as the operating system, the file system and the network system. Desktop security applications use hooks to intercept calls made to operating system functions, and allow or block the calls as appropriate, based on the computer's security policy.

[00010] Each of the various anti-virus technologies, gateway vs. desktop, reactive vs. proactive, has its pros and cons. Reactive anti-virus protection is computationally simple and fast; proactive virus protection is computationally intensive and slower. Reactive anti-virus protection cannot protect against new "first-time" viruses, and cannot protect a user if his signature file is out of date; proactive anti-virus protection can protect against new "first-time" viruses and do not require regular downloading of updated signature files. Gateway level protection keeps computer viruses at a greater distance from a local network of computers; desktop level protection is more accurate. Desktop level protection is generally available in the consumer market for hackers to obtain, and is susceptible to reverse engineering; gateway level protection is not generally available to hackers.

[00011] Reference is now made to FIG. 1, which is a simplified block diagram of prior art systems for blocking malicious content, as described hereinabove. The topmost system shown in FIG. 1 illustrates a gateway level security application. The middle system shown in FIG. 1 illustrates a desktop level security application, and the bottom system shown in FIG. 1 illustrates a combined gateway + desktop level security application.

[00012] The topmost system shown in FIG. 1 includes a gateway computer 105 that receives content from the Internet, the content intended for delivery to a client computer 110. Gateway computer 105 receives the content over a communication channel 120, and gateway



computer communicates with client computer 110 over a communication channel 125. Gateway computer 105 includes a gateway receiver 135 and a gateway transmitter 140. Client computer 110 includes a client receiver 145. Client computer generally also has a client transmitter, which is not shown.

[00013] Client computer **110** includes a content processor **170**, such as a conventional web browser, which processes Internet content and renders it for interactive viewing on a display monitor. Such Internet content may be in the form of executable code, JavaScript, VBScript, Java applets, ActiveX controls, which are supported by web browsers.

[00014] Gateway computer **105** includes a content inspector **174** which may be reactive or proactive, or a combination of reactive and proactive. Incoming content is analyzed by content inspector **174** before being transmitted to client computer **110**. If incoming content is deemed to be malicious, then gateway computer **105** preferably prevents the content from reaching client computer **110**. Alternatively, gateway computer **105** may modify the content so as to render it harmless, and subsequently transmit the modified content to client computer **110**.

[00015] Content inspector **174** can be used to inspect incoming content, on its way to client computer **110** as its destination, and also to inspect outgoing content, being sent from client computer **110** as its origin.

[00016] The middle system shown in **FIG. 1** includes a gateway computer **105** and a client computer **110**, the client computer **110** including a content inspector **176**. Content inspector **176** may be a conventional Signature-based anti-virus application, or a run-time behavioral based application that monitors run-time calls invoked by content processor **170** to operating system, file system and network system functions.

[00017] The bottom system shown in **FIG. 1** includes both a content inspector **174** at gateway computer **105**, and a content inspector **176** at client computer **110**. Such a system can support conventional gateway level protection, desktop level protection, reactive anti-virus protection and proactive anti-virus protection.

[00018] As the hacker vs. anti-virus protection battle continues to wage, a newer type of virus has sprung forward; namely, dynamically generated viruses. These viruses are themselves generated only at run-time, thus thwarting conventional reactive analysis and conventional gateway level proactive behavioral analysis. These viruses take advantage of features of dynamic HTML generation, such as executable code or scripts that are embedded within HTML pages, to generate themselves on the fly at runtime.

[00019] For example, consider the following portion of a standard HTML page:

---

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.0 Transitional//EN">
<HTML>
<SCRIPT LANGUAGE="JavaScript">

document.write("<hl>text that is generated at run-time</hl>");

</SCRIPT>
<BODY>

</BODY>
</HTML>
```

---

The text within the `<SCRIPT>` tags is JavaScript, and includes a call to the standard function `document.write()`, which generates dynamic HTML. In the example above, the function `document.write()` is used to generate HTML header text, with a text string that is generated at run-time. If the text string generated at run-time is of the form

```
<SCRIPT>malicious JavaScript</SCRIPT>
```

then the `document.write()` function will insert malicious JavaScript into the HTML page that is currently being rendered by a web browser. In turn, when the web browser processes the inserted text, it will perform malicious operations to the client computer.

[0020] Such dynamically generated malicious code cannot be detected by conventional reactive content inspection and conventional gateway level behavioral analysis content inspection, since the malicious JavaScript is not present in the content prior to run-time. A content inspector will only detect the presence of a call to *Document.write()* with input text that is yet unknown. If such a content inspector were to block all calls to *Document.write()* indiscriminately, then many harmless scripts will be blocked, since most of the time calls to *Document.write()* are made for dynamic display purposes only.

[0021] US Patent Nos. 5,983,348 and 6,272,641, both to Ji, describe reactive client level content inspection, that modifies downloaded executable code within a desktop level anti-virus application. However, such inspection can only protect against static malicious content, and cannot protect against dynamically generated malicious content.

[0022] Desktop level run-time behavioral analysis has a chance of shielding a client computer against dynamically generated malicious code, since such code will ultimately make a call to an operating system function. However, desktop anti-virus protection has a disadvantage of being widely available to the hacker community, which is always eager to find vulnerabilities. In addition, desktop anti-virus protection has a disadvantage of requiring installation of client software.

[0023] As such, there is a need for a new form of behavioral analysis, which can shield computers from dynamically generated malicious code without running on the computer itself that is being shielded.

#### SUMMARY OF THE DESCRIPTION

[0024] The present invention concerns systems and methods for implementing new behavioral analysis technology. The new behavioral analysis technology affords protection against dynamically generated malicious code, in addition to conventional computer viruses that are statically generated.

[0025] The present invention operates through a security computer that is preferably remote from a client computer that is being shielded while processing network content.

During run-time, while processing the network content, but before the client computer invokes a function call that may potentially dynamically generate malicious code, the client computer passes the input to the function to the security computer for inspection, and suspends processing the network content pending a reply back from the security computer. Since the input to the function is being passed at run-time, it has already been dynamically generated and is thus readily inspected by a content inspector. Referring to the example above, were the input to be passed to the security computer prior to run-time, it would take the form of indeterminate text; whereas the input passed during run-time takes the determinate form

`<SCRIPT>malicious JavaScript</SCRIPT>`,

which can readily be inspected. Upon receipt of a reply from the security computer, the client computer resumes processing the network content, and knows whether to by-pass the function call invocation.

[0026] To enable the client computer to pass function inputs to the security computer and suspend processing of content pending replies from the security computer, the present invention operates by replacing original function calls with substitute function calls within the content, at a gateway computer, prior to the content being received at the client computer.

[0027] The present invention also provides protection against arbitrarily many recursive levels of dynamic generation of malicious code, whereby such code is generated via a series of successive function calls, one within the next.

[0028] By operating through the medium of a security computer, the present invention overcomes the disadvantages of desktop anti-virus applications, which are available to the hacker community for exploit. Security applications embodying the present invention are concealed securely within managed computers.

[0029] There is thus provided in accordance with a preferred embodiment of the present invention a method for protecting a client computer from dynamically generated malicious content, including receiving at a gateway computer content being sent to a client computer

for processing, the content including a call to an original function, and the call including an input, modifying the content at the gateway computer, including replacing the call to the original function with a corresponding call to a substitute function, the substitute function being operational to send the input to a security computer for inspection, transmitting the modified content from the gateway computer to the client computer, processing the modified content at the client computer, transmitting the input to the security computer for inspection when the substitute function is invoked, determining at the security computer whether it is safe for the client computer to invoke the original function with the input, transmitting an indicator of whether it is safe for the client computer to invoke the original function with the input, from the security computer to the client computer, and invoking the original function at the client computer with the input, only if the indicator received from the security computer indicates that such invocation is safe.

[0030] There is further provided in accordance with a preferred embodiment of the present invention a system for protecting a client computer from dynamically generated malicious content, including a gateway computer, including a gateway receiver for receiving content being sent to a client computer for processing, the content including a call to an original function, and the call including an input, a content modifier for modifying the received content by replacing the call to the original function with a corresponding call to a substitute function, the substitute function being operational to send the input to a security computer for inspection, and a gateway transmitter for transmitting the modified content from the gateway computer to the client computer, a security computer, including a security receiver for receiving the input from the client computer, an input inspector for determining whether it is safe for the client computer to invoke the original function with the input, and a security transmitter for transmitting an indicator of the determining to the client computer, and a client computer communicating with the gateway computer and with the security computer, including a client receiver for receiving the modified content from the gateway computer, and for receiving the indicator from the security computer, a content processor for processing the modified content, and for invoking the original function only if the indicator indicates

that such invocation is safe; and a client transmitter for transmitting the input to the security computer for inspection, when the substitute function is invoked.

[0031] There is yet further provided in accordance with a preferred embodiment of the present invention a computer-readable storage medium storing program code for causing at least one computing device to receive content including a call to an original function, and the call including an input, replace the call to the original function with a corresponding call to a substitute function, the substitute function being operational to send the input for inspection, thereby generating modified content, process the modified content, transmit the input for inspection, when the substitute function is invoked while processing the modified content, and suspend processing of the modified content, determine whether it is safe to invoke the original function with the input, transmit an indicator of whether it is safe for a computer to invoke the original function with the input, and resume processing of the modified content after receiving the indicator, and invoke the original function with the input only if the indicator indicates that such invocation is safe.

[0032] There is additionally provided in accordance with a preferred embodiment of the present invention a method for protecting a client computer from dynamically generated malicious content, including receiving content being sent to a client computer for processing, the content including a call to an original function, and the call including an input, modifying the content, including replacing the call to the original function with a corresponding call to a substitute function, the substitute function being operational to send the input to a security computer for inspection, and transmitting the modified content to the client computer for processing.

[0033] There is moreover provided in accordance with a preferred embodiment of the present invention a system for protecting a client computer from dynamically generated malicious content, including a receiver for receiving content being sent to a client computer for processing, the content including a call to an original function, and the call including an input, a content modifier for modifying the received content by replacing the call to the original function with a corresponding call to a substitute function, the substitute function

being operational to send the input to a security computer for inspection, and a transmitter for transmitting the modified content to the client computer.

[0034] There is further provided in accordance with a preferred embodiment of the present invention a computer-readable storage medium storing program code for causing a computing device to receive content including a call to an original function, and the call including an input, and replace the call to the original function with a corresponding call to a substitute function, the substitute function being operational to send the input for inspection.

[0035] There is yet further provided in accordance with a preferred embodiment of the present invention a method for protecting a client computer from dynamically generated malicious content, including receiving content being sent to a client computer for processing, the content including a call to an original function, and the call including an input, modifying the content, including replacing the call to the original function with a corresponding call to a substitute function, the substitute function being operational to send the input for inspection, transmitting the modified content to the client computer for processing, receiving the input from the client computer, determining whether it is safe for the client computer to invoke the original function with the input, and transmitting to the client computer an indicator of whether it is safe for the client computer to invoke the original function with the input.

[0036] There is additionally provided in accordance with a preferred embodiment of the present invention a system for protecting a client computer from dynamically generated malicious content, including a receiver (i) for receiving content being sent to a client computer for processing, the content including a call to an original function, and the call including an input, and (ii) for receiving the input from the client computer, a content modifier for modifying the received content by replacing the call to the original function with a corresponding call to a substitute function, the substitute function being operational to send the input for inspection, an input inspector for determining whether it is safe for the client computer to invoke the original function with the input, and a transmitter (i) for transmitting the modified content to the client computer, and (ii) for transmitting an indicator of the determining to the client computer.

[0037] There is moreover provided in accordance with a preferred embodiment of the present invention a computer-readable storage medium storing program code for causing a computing device to receive content including a call to an original function, and the call including an input, replace the call to the original function with a corresponding call to a substitute function, the substitute function being operational to send the input for inspection, and determine whether it is safe for a computer to invoke the original function with the input.

[0038] There is further provided in accordance with a preferred embodiment of the present invention a method for protecting a computer from dynamically generated malicious content, including processing content received over a network, the content including a call to a first function, and the call including an input, transmitting the input to a security computer for inspection, when the first function is invoked, receiving from the security computer an indicator of whether it is safe to invoke a second function with the input, and invoking the second function with the input, only if the indicator indicates that such invocation is safe.

[0039] There is yet further provided in accordance with a preferred embodiment of the present invention a system for protecting a computer from dynamically generated malicious content, including a content processor (i) for processing content received over a network, the content including a call to a first function, and the call including an input, and (ii) for invoking a second function with the input, only if a security computer indicates that such invocation is safe, a transmitter for transmitting the input to the security computer for inspection, when the first function is invoked, and a receiver for receiving an indicator from the security computer whether it is safe to invoke the second function with the input.

[0040] There is additionally provided in accordance with a preferred embodiment of the present invention a computer-readable storage medium storing program code for causing a computing device to process content received over a network, the content including a call to a first function, and the call including an input, transmit the input for inspection, when the first function is invoked, and suspend processing of the content, receive an indicator of whether it is safe to invoke a second function with the input, and resume processing of the



content after receiving the indicator, and invoke the second function with the input only if the indicator indicates that such invocation is safe.

[0041] There is moreover provided in accordance with a preferred embodiment of the present invention a method for protecting a client computer from dynamically generated malicious content, including receiving an input from a client computer, determining whether it is safe for the client computer to invoke a function with the input, and transmitting an indicator of the determining to the client computer.

[0042] There is further provided in accordance with a preferred embodiment of the present invention a system for protecting a client computer from dynamically generated malicious content, including a receiver for receiving an input from a client computer, an input inspector for determining whether it is safe for the client computer to invoke a function with the input, and a transmitter for transmitting an indicator of the determining to the client computer.

[0043] There is further provided in accordance with a preferred embodiment of the present invention a computer-readable storage medium storing program code for causing a computing device to receive an input from a computer, determine whether it is safe for the computer to invoke a function with the input, and transmit an indicator of the determination to the computer.

[0044] The following definitions are employed throughout the specification and claims.  
SECURITY POLICY - a set of one or more rules that determine whether or not a requested operation is permitted. A security policy may be explicitly configurable by a computer system administrator, or may be implicitly determined by application defaults.  
SECURITY PROFILE - information describing one or more suspicious operations performed by executable software.

#### BRIEF DESCRIPTION OF THE DRAWINGS

[0045] The present invention will be more fully understood and appreciated from the following detailed description, taken in conjunction with the drawings in which:

[0046] **FIG. 1** is a simplified block diagram of prior art systems for blocking malicious content;

[0047] **FIG. 2** is a simplified block diagram of a system for protecting a computer from dynamically generated malicious executable code, in accordance with a preferred embodiment of the present invention;

[0048] **FIG. 3** is a simplified flowchart of a method for protecting a computer from dynamically generated malicious executable code, in accordance with a preferred embodiment of the present invention;

[0049] **FIG. 4** is a simplified block diagram of a system for protecting a computer from dynamically generated malicious executable code, in which the gateway computer itself performs the code inspection, in accordance with a preferred embodiment of the present invention; and

[0050] **FIG. 5** is a simplified flowchart of a method for protecting a computer from dynamically generated malicious executable code, whereby the gateway computer itself performs the code inspection, in accordance with a preferred embodiment of the present invention.

## DETAILED DESCRIPTION

[0051] The present invention concerns systems and methods for protecting computers against dynamically generated malicious code.

[0052] Reference is now made to **FIG. 2**, which is a simplified block diagram of a system for protecting a computer from dynamically generated malicious executable code, in accordance with a preferred embodiment of the present invention. Three major components of the system are a gateway computer **205**, a client computer **210**, and a security computer **215**. Gateway computer **220** receives content from a network, such as the Internet, over a communication channel **220**. Such content may be in the form of HTML pages, XML documents, Java applets and other such web content that is generally rendered by a web

browser. Client computer **210** communicates with gateway computer **205** over a communication channel **225**, and communicates with security computer **215** over a communication channel **230**. Gateway computer **205** receives data at gateway receiver **235**, and transmits data at gateway transmitter **240**. Similarly, client computer **210** receives data at client receiver **245**, and transmits data at client transmitter **250**; and security computer **215** receives data at security receiver **260** and transmits data at security transmitter **265**.

[0053] It will be appreciated by those skilled in the art that the network topology of **FIG. 2** is shown as a simple topology, for purposes of clarity of exposition. However, the present invention applies to general architectures including a plurality of client computers **210** that are serviced by one or more gateway computers **205**, and by one or more security computers **215**. Similarly, communication channels **220**, **225** and **230** may each be multiple channels using standard communication protocols such as TCP/IP.

[0054] Moreover, the functionality of security computer **215** may be included within gateway computer **205**. Such a topology is illustrated in **FIG. 4**.

[0055] The computers shown in **FIG. 2** also include additional processing modules, each of which is described in detail hereinbelow. Gateway computer **205** includes a content modifier **265**, client computer **210** includes a content processor **270**, and security computer **215** includes an inspector **275**, a database of client security policies **280**, and an input modifier **285**.

[0056] Content modifier **265** preferably modifies original content received by gateway computer **205**, and produces modified content, which includes a layer of protection to combat dynamically generated malicious code. Specifically, content modifier **265** scans the original content and identifies function calls of the form

Function (input), (1)

Content modifier **265** further modifies selected ones of the function calls (1) to corresponding function calls

Substitute\_function (input, \*), (2)

whereby the call to *Function()* has been replaced with a call to *Substitute\_function()*. It is noted that the input intended for the original function is also passed to the substitute function, along with possible additional input denoted by "\*".

[0057] It will be appreciated by those skilled in the art that content modifier **265** may modify all detected function calls, or only a portion of the detected function calls. Functions that are known to be safe, regardless of their inputs, need not be modified by content modifier **265**. Similarly, functions that are not passed any inputs when invoked and are known to be safe, also need not be modified by content modifier **265**.

[0058] Preferably, when call **(2)** is made, the substitute function sends the input to security computer **215** for inspection. Preferably, content modifier **265** also inserts program code for the substitute function into the content, or a link to the substitute function. Such a substitute function may be of the following general form shown in **TABLE I**.

---

**TABLE I:** Generic substitute function

---

```
Function Substitute_function(input)
{
    inspection_result = Call_security_computer_to_inspect (
        input, ID_of_client_computer);
    if (inspection_result)
        Original_function(input)
    else
        //do nothing
}
```

---

Preferably, the above function *call\_security\_computer\_to\_inspect()* passes the input intended for the original function to security computer **215** for inspection by inspector **275**. In addition, an ID of client computer **210** is also passed to security computer **215**. When security computer services many such client computers **210** at once, it uses such IDs to determine where to return its results. For example, the ID may correspond to a network address of client computer **210**. When security computer **215** services many such client computers **210** at once, it uses the IDs to determine where to return each of its many results.

[0059] Optionally, the substitute function may pass additional parameters to security computer **215**, such as the name of the original function, or security policy information as described hereinbelow with reference to database **280**.

[0060] The function *call\_security\_computer\_to\_inspect()* preferably returns an indicator, *inspection\_result*, of whether it is safe for client computer **210** to invoke the original function call **(1)**. The indicator may be a Boolean variable, or a variable with more than two settings that can carry additional safety inspection information. In addition, as described hereinbelow with reference to input modifier **285**, the function *call\_security\_computer\_to\_inspect()* may modify the input, and return to client computer **210** modified input to be used when invoking the original function call **(1)**, instead of the original input. Use of input modifier **285** protects client computer **210** against recursively generated malicious code whereby the input itself to a first function generates a call to a second function.

[0061] For example, suppose a portion of the original content is of the form shown in TABLE II.

---

TABLE II: Example original content

---

```
<!DOCTYPE HTML PUBLIC "-//w3c//DTD HTML 4.0 Transitional//EN">
<HTML>
<SCRIPT LANGUAGE="JavaScript"
<!
Document.write("<hl>hello</hl>");

</SCRIPT>
<BODY>

</BODY>
</HTML>
```

---

Preferably, content modifier **265** alters the original content in TABLE II to the modified form shown in TABLE III. Specifically, content modifier **265** substitutes the call to the standard function *Document.write()*, with a call to the substitute function *Substitute\_document.write()*, and inserts the function definition for the substitute function into the content. The standard function *Document.write()* generally writes lines of HTML and inserts them into the HTML page currently being processed by a client web browser.

---

**Table III:** Example modified content
 

---

```

<!DOCTYPE HTML PUBLIC "-//w3c//DTD HTML 4.0 Transitional//EN"u>
<HTML>
<SCRIPT LANGUAGE="JavaScript"
<!--
Function Substitute_document.write(text)
{
    inspection_result = Call_security_computer_to_inspect(text);
    if inspection_result
        Document.write(text)
    Else
        //do nothing
}
Substitute_document.write("<hl>hello</hl>");
</SCRIPT>
<BODY>
</BODY>
</HTML>

```

---

[0062] Content processor **270** processes the modified content generated by content modifier **265**. Content processor may be a web browser running on client computer **210**. When content processor invokes the substitute function call **(2)**, the input is passed to security computer **215** for inspection. Processing of the modified content is then suspended until security computer **215** returns its inspection results to client computer **210**. Upon receiving the inspection results, client computer **210** resumes processing the modified content. If `inspection_result` is true, then client computer **210** invokes the original function call **(1)**; otherwise, the client computer **210** does not invoke the original function call **(1)**.

[0063] Security computer **215** may also modify the input that is passed to it by the substitute function. In such case, client computer **210** invokes the original function with such modified input, instead of the original input, after receiving the inspection results.

[0064] Input inspector **275** analyzes the input passed to security computer **215** by client computer **210**; specifically, the input passed when client computer **210** invokes the function call **(2)**. Generally, input inspector **275** scans the input to determine the potentially malicious operations that it may perform, referred to as the input's "security profile". Such potentially malicious operations can include inter alia operating system level commands, file system level commands, network level commands, application level commands, certain URLs with hyperlinks, and applets already known to be malicious. Security profiles are described in assignee's US Patent No. 6,092,194 entitled SYSTEM AND METHOD FOR PROTECTING A COMPUTER AND A NETWORK FROM HOSTILE DOWNLOADABLES, the contents of which are hereby incorporated by reference. Security profiles encompass access control lists, trusted/un-trusted certificates, trusted/un-trusted URLs, and trusted/un-trusted content.

[0065] After determining a security profile for the input, inspector **275** preferably retrieves information about permission settings for client computer **210**, referred to as client computer's "security policy". Such permission settings are generally set by an administrator of client computer **210**, and determine which commands are permitted to be performed by content processor **270** while processing content, and which commands are not permitted. Security policies are also described in assignee's US Patent No. 6,092,194. Security policies are flexible, and are generally set by an administrator of client computer **210**. Preferably, security computer **215** has accesses to a database **280** of security profile information for a plurality of client computers. Database **280** may reside on security computer **215**, or on a different computer.

[0066] By comparing the input's security policy to client computer **210**'s security profile, input inspector **275** determines whether it is safe for client computer **210** to make the function call **(1)**. Security computer **215** sends back to client computer **210** an indicator, *inspection\_result*, of the inspector's determination. Comparison of a security policy to a



security profile is also described in assignee's US Patent No. 6,092,194. Security policies may include simple or complex logical tests for making a determination of whether or not an input is safe.

[0067] For example, suppose the content is an HTML page, and the function call (1) is the following JavaScript:

```
Document.write("<hl><SCRIPT>Some JavaScript</SCRIPT></hl>") (3)
```

Such a function call serves to instruct content processor 270 to insert the text between the <h1> header tags into the HTML pages; namely the text <SCRIPT>JavaScript</SCRIPT> which itself invokes the JavaScript between the <SCRIPT> tags. It is noted that the function call (1) uses a function *Document.write()* that is normally considered to be safe. Indeed, the function *Document.write()* does not access client computer 210's operating system or file system and does not send or receive data outside of client computer 210. Moreover, the input in the call (3) to *Document.write()* may itself be dynamically generated, and not available for inspection prior to processing the HTML page. That is, the call may be of the form

```
Document.write("content that is dynamically generated at run-time"),
```

where input to *Document.write()* may be in the form of a text string that itself is dynamically generated at run-time. Generally, such a function call cannot be analyzed successfully by behavioral based anti-virus software prior to run-time.

[0068] However, when input inspector 275 receives the input from client computer during run-time, after client computer has invoked the substitute call (2), the input has already been dynamically generated by content processor 270 and can thus be readily analyzed. Referring to the example above, when client computer 210 invokes the substitute call (2), it passes the input string

```
"<hl><SCRIPT>JavaScript</SCRIPT></hl>" (4)
```

to security computer 215. This string is then analyzed by input inspector 275, which recognizes the JavaScript and scans the JavaScript to determine any potentially malicious operations it includes. If potentially malicious operations are detected, and if they violate client computer 210's security policy, then inspector 275 preferably sets `inspection_result` to false. Otherwise, inspector 275 preferably sets `inspection_result` to true.

[0069] It may thus be appreciated by those skilled in the art that input inspector 275 is able to detect malicious code that is generated at runtime.

[0070] Malicious code may be generated within further recursive levels of function calls. For example, instead of the function call (3), which invokes a single function to dynamically generate JavaScript, two levels of function calls may be used. Consider, for example, the recursive function

call

```
Document.write("<hl>Docurnent.write(
    "<hl><SCRIPT>Some JavaScript</SCRIPT></hl>") </hl>") (5)
```

Such a function call first calls *Document.write()* to generate the function call (3), and then calls *Document.write()* again to generate the JavaScript. If the inputs to each of the *Document.write()* invocations in (5) are themselves dynamically generated at run-time, then one pass through input inspector may not detect the JavaScript.

[0071] To this end, input inspector 275 preferably passes inputs it receives to input modifier 285, prior to scanning the input. Input modifier preferably operates similar to content modifier 265, and replaces function calls detected in the input with corresponding substitute function calls. Referring to the example above, when client computer 210 invokes the outer call to *Document.write()* in (5), the input ext string

```
"<hl>Document.write(
    "<hl><SCRIPT>Some JavaScript</SCRIPT></hl>")</hl>" (6)
```

is passed to security computer 215. Input modifier 285 detects the inner function call to *Document.write()* and replaces it with a corresponding substitute function call of the form (2). Input inspector 275 then inspects the modified input. At this stage, if the input to the inner call to *Document.write()* has not yet been dynamically generated, input inspector may not detect the presence of the JavaScript, and thus may not set *inspection\_result* to false if the JavaScript is malicious. However, security computer 215 returns the modified input to client computer 210. As such, when content processor 270 resumes processing, it adds the modified input into the HTML page. This guarantees that when content processor 270 begins to process the modified input, it will again invoke the substitute function for *Document.write()*, which in turn passes the input of the inner *Document.write()* call of (5) to security computer 215 for inspection. This time around input inspector 275 is able to detect the presence of the JavaScript, and can analyze it accordingly.

[0072] It may thus be appreciated by those skilled in the art that when input modifier 285 supplements input inspector 275, inspector 275 has sufficient logic to be able to detect malicious code that is generated recursively at run-time.

[0073] In addition to inspecting inputs, security computer 215 preferably maintains an event log of potential security breaches. When input inspector 275 determines that an input is riot safe, security computer 215 enters information about the input and client computer 210 into a log that is available for review by an administrator of client computer 210.

[0074] In accordance with a preferred embodiment of the present invention, it is anticipated that many client computers 210 use the same security computer 215 for protection. Each client computer may independently send inputs to security computer 215 for inspection. Security computer 215 may use cache memory to save results of inspection, so as to obviate the need to analyze the same input more than once. Use of cache memory when working with a plurality of security policies is described in assignee's US Patent No. 6,965,968 entitled POLICY-BASED CACHING.

[0075] Similarly, it is anticipated that gateway computer 205 services many client computers 210. Gateway computer may include its own content inspector, which is useful

for detecting malicious content that is not dynamically generated, as described in assignee's US Patent No. 6,092,194.

[0076] It may be appreciated that substitute functions as in TABLE I may also pass the name of the original function to the security computer. That is, the call to *Call\_security\_computer\_to\_inspect()* may also a variable, say *name\_of\_function*, so that input inspector **275** can determine whether it is safe to invoke the specific original function with the input. In this way, input inspector **275** can distinguish between different functions with the same input.

[0077] Reference is now made to **FIG. 3**, which is a simplified flowchart of a method for protecting a computer from dynamically generated malicious executable code, in accordance with a preferred embodiment of the present invention. The leftmost column of **FIG. 3** shows steps performed by a gateway computer, such as gateway computer **205**. The middle column of **FIG. 3** shows steps performed by a client computer, such as client computer **210**. The rightmost column of **FIG. 3** shows steps performed by a security computer, such as security computer **215**.

[0078] At step **304**, the gateway computer receives content from a network, the content on its way for delivery to the client computer. Such content may be in the form of an HTML web page, an XML document, a Java applet, an EXE file, JavaScript, VBScript, an ActiveX Control, or any such data container that can be rendered by a client web browser. At step **308**, the gateway computer scans the content it received, for the presence of function calls. At step **312**, the gateway computer branches, depending on whether or not function calls were detected at step **308**. If function calls were detected, then at step **318** the gateway computer replaces original function calls with substitute function calls within the content, thereby modifying the content. If function calls were not detected, then the gateway computer skips step **318**. At step **320**, the gateway computer sends the content, which may have been modified at step **318**, to the client computer.

[0079] At step **324** the client computer receives the content, as modified by the gateway computer. At step **328** the client computer begins to continuously process the modified

content; i.e., the client computer runs an application, such as a web browser or a Java virtual machine, that processes the modified content. At step **332**, which processing the modified content, the client computer encounters a call **(2)** to a substitute function, such as the substitute function listed in TABLE I. Client computer then transmits the input to the substitute function and an identity of the client computer, to the security computer for inspection, at step **336**. The identity of the client computer serves to inform the security computer where to return its inspection result. Since one security computer typically services many client computers, passing client computer identities is a way to direct the security computer where to send back its results. At this point, client computer suspends processing the modified content pending receipt of the inspection results from the security computer. As mentioned hereinabove, the client computer may also send the name of the original function to the security computer, for consideration in the inspection analysis.

[0080] At step **340** the security computer receives the input and client computer identifier. At step **344** the security computer scans the input for the presence of function calls. At step **348** the security computer branches, depending on whether or not function calls were detected at step **344**. If function calls were detected, then the security computer replaces original function calls with substitute function calls at step **352**, thereby modifying the input. The security computer may insert definitions of the substitute functions into the input, as indicated in TABLE III, or may insert links to such definitions. Otherwise, the security computer skips step **352**. Steps **344**, **348** and **352** are similar to respective steps **308**, **312** and **316** performed by the gateway computer.

[0081] At step **356** the security computer scans the input, which may have been modified at step **352**, for the presence of potentially malicious operations. Preferably, the security computer determines a security profile for the input, which corresponds to a list of the potentially malicious operations that are detected.

[0082] At step **360** the security computer retrieves a security policy that governs the client computer. The security policy may be retrieved from a database that stores a plurality of security policies, each policy configurable by an administrator of client computers. Security

policies may be set at a fine granularity of a policy for each client computer, or at a coarser granularity of a policy that applies to an entire department or workgroup.

[0083] At step **364** the security computer compares the security profile of the input under inspection with the security profile of the client computer, to determine if it is permissible for the client computer to invoke an original function with the input. Such determination may involve one or more simple or complex logical tests, structured in series or in parallel, or both, as described in assignee's US Patent No. 6,092,194.

[0084] At step **368** the security computer branches depending on the result of the comparison step **364**. If the comparison step determines that the input is safe; i.e., that the input's security profile does not violate the client computer's security policy, then at step **372** the security computer sets an indicator of inspection results to true. Otherwise, at step **376** the security computer sets the indicator to false. At step **380** the security computer returns the indicator to the client computer. In addition, if the security computer modified the input as step **352**, then it also returns the modified input to the client computer.

[0085] At step **384** the client computer receives the indicator and the modified input from the security computer and resumes processing the modified content, which had been suspended after step **336** as described hereinabove. At step **388** the client computer branches depending on the value of the indicator it received from the security computer. If the indicator is true, indicating that it is safe for the client computer to invoke the original function call **(1)**, then the client computer invokes the original function using the modified input it received from the security computer, at step **392**. Otherwise, the client computer does not invoke the original function, since the indicator indicates that such invocation may be malicious to the client computer. The client computer then loops back to step **328** to continue processing the modified content.

[0086] As described hereinabove, steps **344**, **348** and **352**, which modify the input, are useful in protecting against malicious code that is dynamically generated in a recursive manner, as in function call **(5)**. The security computer may require multiple passes to detect such malicious code, and steps **344**, **348** and **352** provide the mechanism for this to happen.

[0087] Reference is now made to **FIG. 4**, which is a simplified block diagram of a system for protecting a computer from dynamically generated malicious executable code, in which the gateway computer itself performs the code inspection, in accordance with a preferred embodiment of the present invention. The system illustrated in **FIG. 4** is similar to the system of **FIG. 2**, where the functionality of the security computer has been incorporated into the gateway computer. The elements in **FIG. 4** are thus similar in functionality to the elements in **FIG. 2**.

[0088] Two major components of the system, gateway computer **405** and client computer **410** communicate back and forth over communication channel **425**. Gateway computer **405** includes a gateway receiver **435** and a gateway transmitter **440**; and client computer **410** includes a client receiver **445** and a client transmitter **450**. Although **FIG. 4** includes only one client computer, this is solely for the purpose of clarity of exposition, and it is anticipated that gateway computer **405** serves many client computers **410**.

[0089] Gateway computer **405** receives content, such as web content, from a network, over communications channel **420**. Client computer **410** includes a content processor **470**, such as a web browser, which processes content received from the network.

[0090] In accordance with a preferred embodiment of the present invention, gateway computer **405** includes an input inspector **475**, and a content modifier **465** which also serves as an input modifier. That is, content modifier **465** incorporates the functionalities of content modifier **265** and input modifier **285** from **FIG. 2**. In addition, gateway computer **405** includes a database **480** of security policies, or else has access to such a database. The operations of input inspector **475** and content/input modifier **465** are similar to the operations of the corresponding elements in **FIG. 2**, as described hereinabove.

[0091] Incoming content received at gateway computer **405** passes through content modifier **465**, which replaces function calls of the form **(1)** with substitute function calls of the form **(2)**, and the modified content is transmitted to client computer **410**. Content processor **470** processes the modified content and, while processing the modified content, if it encounters a substitute function call it sends the function's input to inspector **475** for inspection, and suspends processing of the modified content. The input passes through input modifier **465**, and input inspector **475** analyzes the modified input for the presence of potentially malicious operations. Gateway computer **405** returns the input inspection results to client computer **410**. Gateway computer **405** may also return the modified input to client computer **410**. After receiving the inspection results, client computer **410** resumes processing the modified content and invokes or does not invoke the original function call, based on the inspection results.

Reference is now made to **FIG. 5**, which is a simplified flowchart of a method for protecting a computer from dynamically generated malicious executable code, whereby the gateway computer itself performs the code inspection, in accordance with a preferred embodiment of the present invention. The leftmost column indicates steps performed by a gateway computer, such as gateway computer **405**; and the rightmost column indicates steps performed by a client computer, such as client computer **410**.

[0092] The method illustrated in **FIG. 5** is similar to that of **FIG. 3**, where steps **340 - 380** performed by the security computer in **FIG. 3** are performed by the gateway computer in **FIG. 5**. At step **500** the gateway computer receives content from a network, the content intended for delivery to the client computer. At step **505** the gateway computer scans the content for the presence of function calls. At step **510** the gateway computer branches. If function calls within the content were detected at step **505**, then at step **515** the gateway computer modifies the content by replacing original function calls of the form **(1)** with corresponding substitute function calls of the form **(2)**. Otherwise, if function calls were not detected at step **505**, then the gateway computer skips step **515**. At step **520** the gateway computer transmits the content, which may have been modified at step **515**, to the client computer.



[0093] At step **525** the client computer receives the content from the gateway computer, and at step **530** the client computer begins processing the content. While processing the content, the client computer invokes a substitute function call of the form **(2)** at step **535**. The substitute function, being of the form listed on TABLE I, instructs the client computer to transmit the function input and a client computer identifier to the gateway computer for inspection. At step **540** the client computer transmits the input and the identifier to the gateway computer, and suspends processing of the content pending a reply from the gateway computer.

[0094] At step **545** the gateway computer receives the input and the client identifier from the client computer, and loops back to step **505** to scan the input for the presence of function calls. At step **510** the gateway computer branches. If function calls within the Input were detected at step **505**, then the gateway computer modifies the input at step **515**, by replacing function calls of the form **(1)** with corresponding function calls of the form **(2)**. Otherwise, if function calls were not detected at step **505**, then the gateway computer skips step **515**.

[0095] The gateway computer then proceeds to step **550**, and scans the input, which may have been modified at step **515**, to identify potentially malicious operations within the input. The potentially malicious operations identified form a security profile for the input.

[0096] At step **555** the gateway computer retrieves a security policy for the client computer from a database of security policies. At step **560** the gateway computer compares the input's security profile with the client computer's security policy to determine whether or not the security profile violates the security policy. At step **565** the gateway computer branches. If the results of step **560** indicate that the input security profile does not violate the client computer security policy, then it is safe for the client to invoke the original function call, and an indicator of the inspection results is set to true at step **570**. Otherwise, the indicator is set to false at step **575**. At step **580** the gateway computer returns the indicator to the client computer. The gateway computer may also return the modified input, as modified at step **515**, to the client computer.

[0097] At step **585** the client computer receives the reply back from the gateway computer and resumes processing of the content, which processing had been suspended after step **540**. At step **590** the client computer branches. If the indicator was set to true by the gateway computer at step **570**, then the client computer invokes the original function call **(1)**. If the gateway computer had modified the input at step **515**, then preferably the client computer uses the modified input instead of the original input when invoking the original function call. Otherwise, if the indicator was set to false by the gateway computer at step **575**, then the client computer skips step **595**. The client computer then loops back to step **530** to continue processing of the content.

[0098] Having read the above disclosure, it will be appreciated by those skilled in the art that the present invention can be used to provide protection to computers against both statically and dynamically generated malicious code. Moreover, such protection may be afforded by a security computer that is remote from the computers being protected, thus adding another layer of security to methods and systems that embody the present invention.

[0099] In reading the above description, persons skilled in the art will realize that there are many apparent variations that can be applied to the methods and systems described. Thus it may be appreciated that the present invention applies to a variety of computing devices, including mobile devices with wireless Internet connections such as laptops, PDAs and cell phones.

[00100] In the foregoing specification, the invention has been described with reference to specific exemplary embodiments thereof. It will, however, be evident that various modifications and changes may be made to the specific exemplary embodiments without departing from the broader spirit and scope of the invention as set forth in the appended claims. Accordingly, the specification and drawings are to be regarded in an illustrative rather than a restrictive sense.

**CLAIMS**

What is claimed is:

1. A system for protecting a computer from dynamically generated malicious content, comprising:

a content processor (i) for processing content received over a network, the content including a call to a first function, and the call including an input, and (ii) for invoking a second function with the input, only if a security computer indicates that such invocation is safe;

a transmitter for transmitting the input to the security computer for inspection, when the first function is invoked; and

a receiver for receiving an indicator from the security computer whether it is safe to invoke the second function with the input.

2. The system of claim 1 wherein said content processor (i) suspends processing of the content after said transmitter transmits the input to the security computer, and (ii) resumes processing of the modified content after said receiver receives the indicator from the security computer.

3. A computer-readable storage medium storing program code for causing a computing device to: process content received over a network, the content including a call to a first function, and the call including an input;

transmit the input for inspection, when the first function is invoked, and suspend processing of the content;

receive an indicator of whether it is safe to invoke a second function with the input; and

resume processing of the content after receiving the indicator, and invoke the second function with the input only if the indicator indicates that such invocation is safe.

## ABSTRACT OF THE DISCLOSURE

A method for protecting a client computer from dynamically generated malicious content, including receiving at a gateway computer content being sent to a client computer for processing, the content including a call to an original function, and the call including an input, modifying the content at the gateway computer, including replacing the call to the original function with a corresponding call to a substitute function, the substitute function being operational to send the input to a security computer for inspection, transmitting the modified content from the gateway computer to the client computer, processing the modified content at the client computer, transmitting the input to the security computer for inspection when the substitute function is invoked, determining at the security computer whether it is safe for the client computer to invoke the original function with the input, transmitting an indicator of whether it is safe for the client computer to invoke the original function with the input, from the security computer to the client computer, and invoking the original function at the client computer with the input, only if the indicator received from the security computer indicates that such invocation is safe. A system and a computer-readable storage medium are also described and claimed.

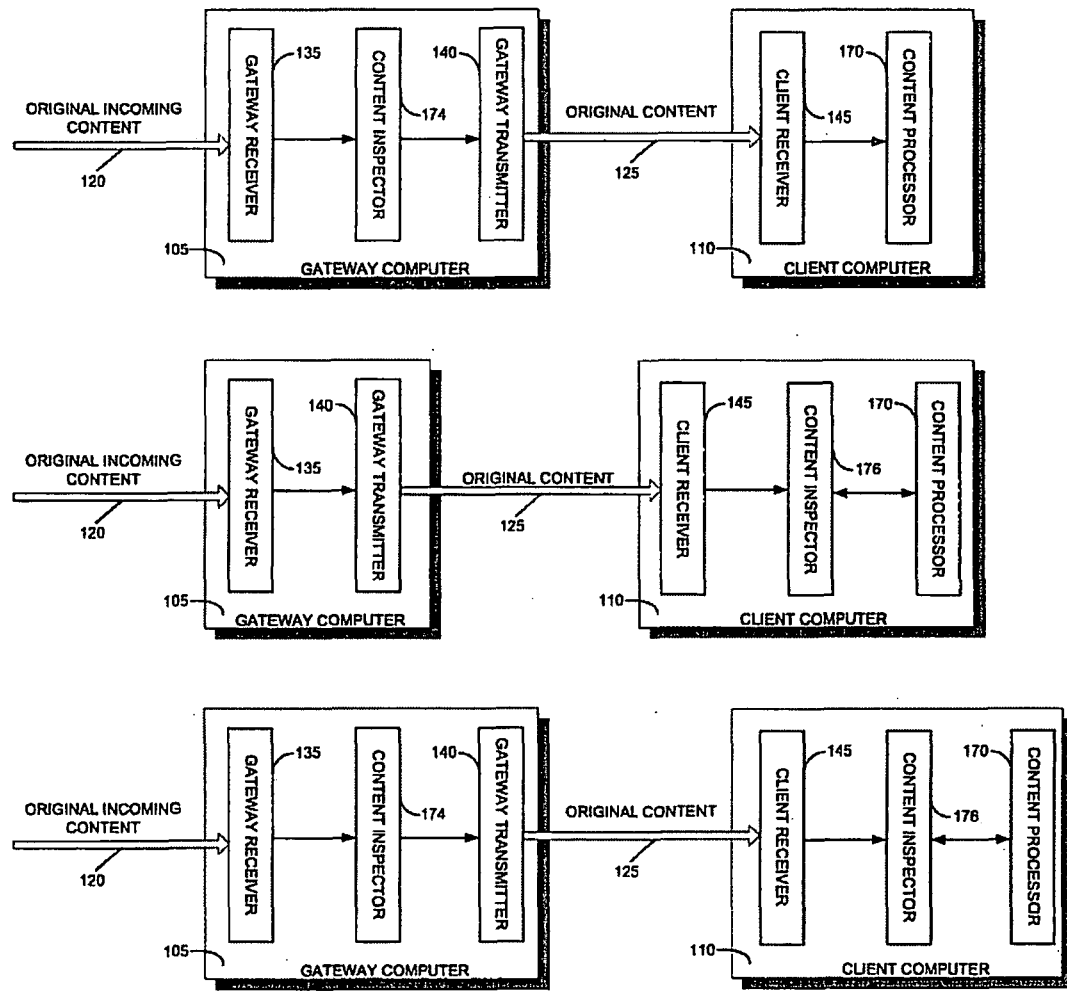


FIG. 1  
(PRIOR ART)

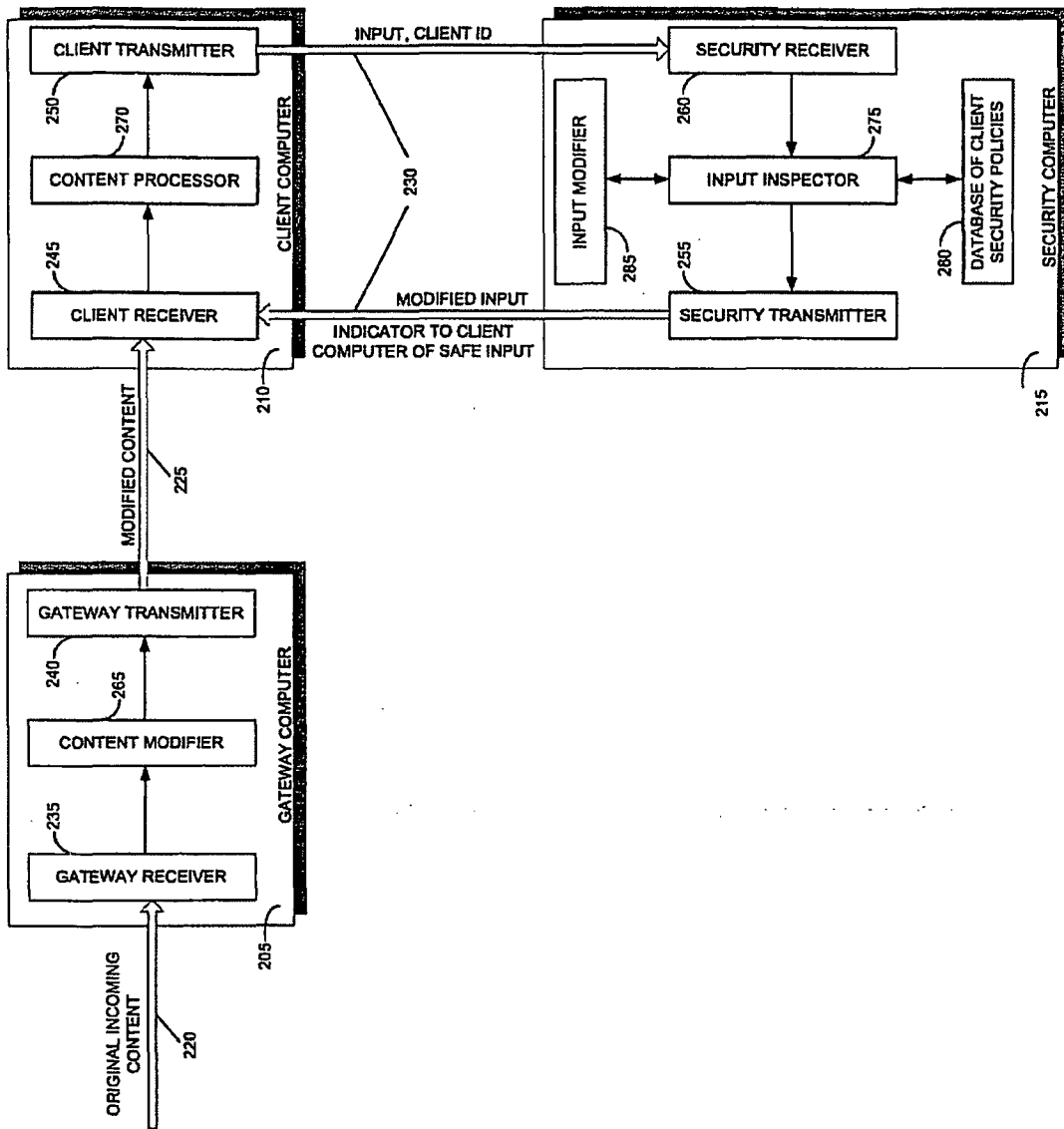


FIG. 2

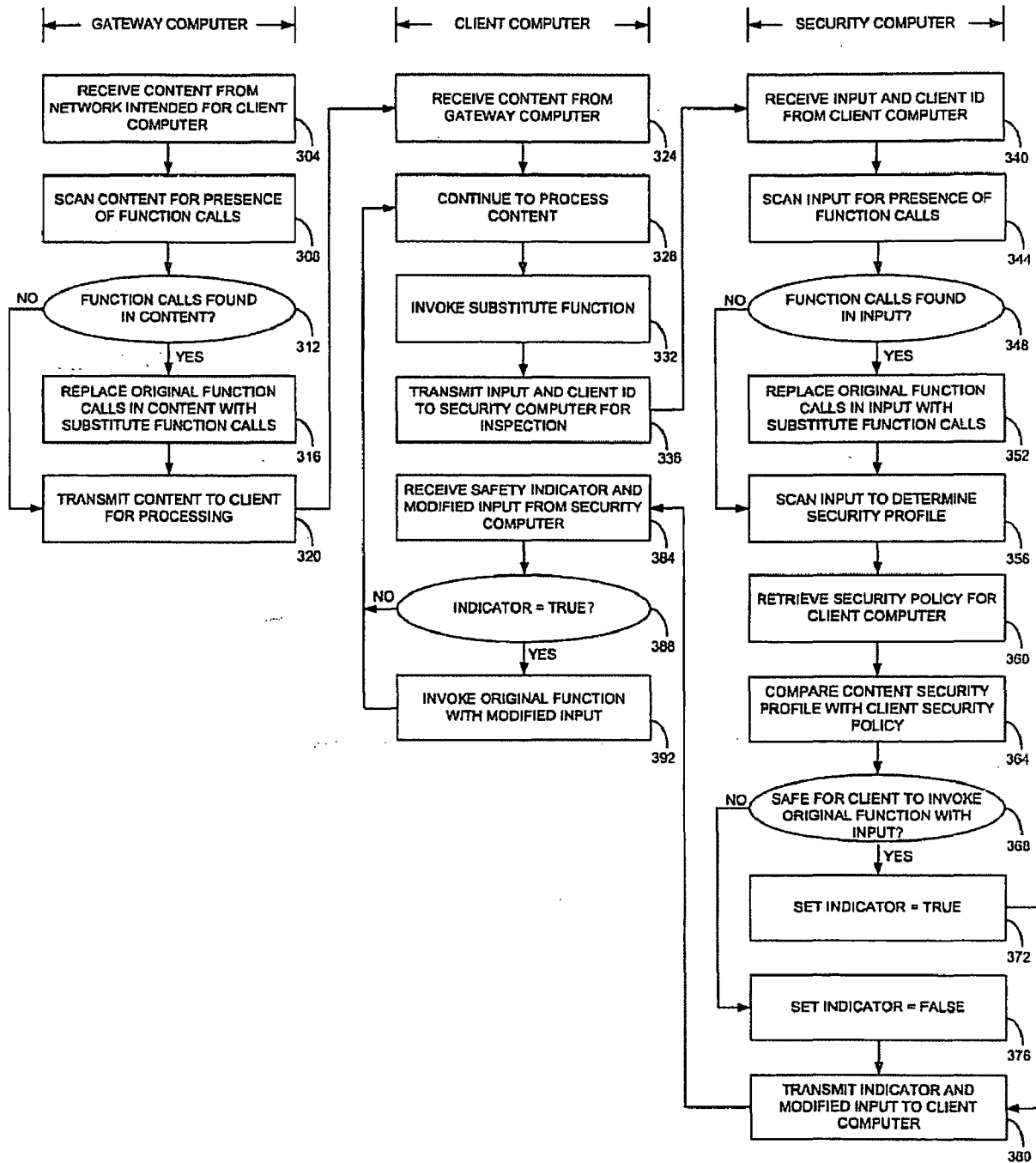


FIG. 3

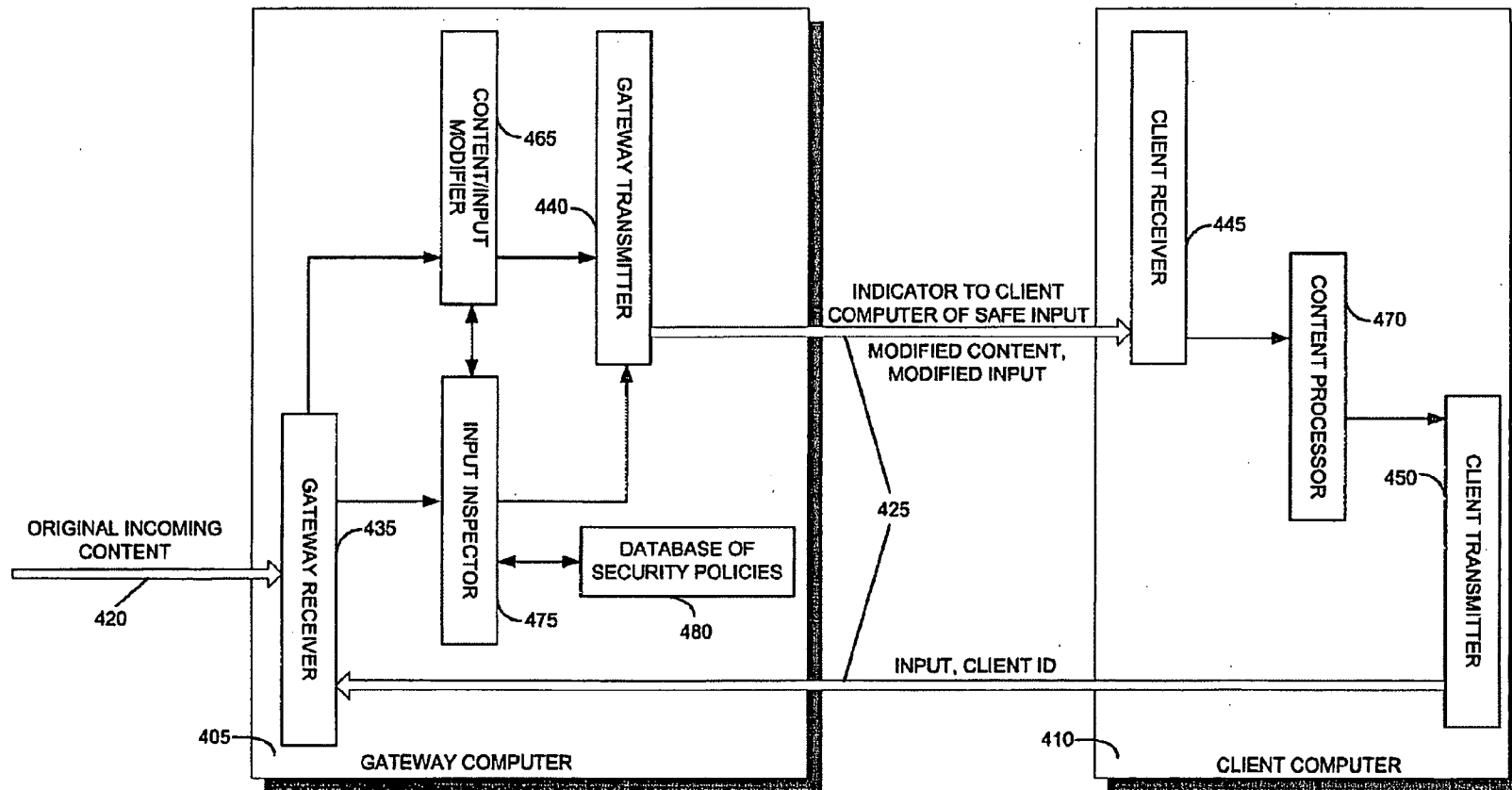


FIG. 4



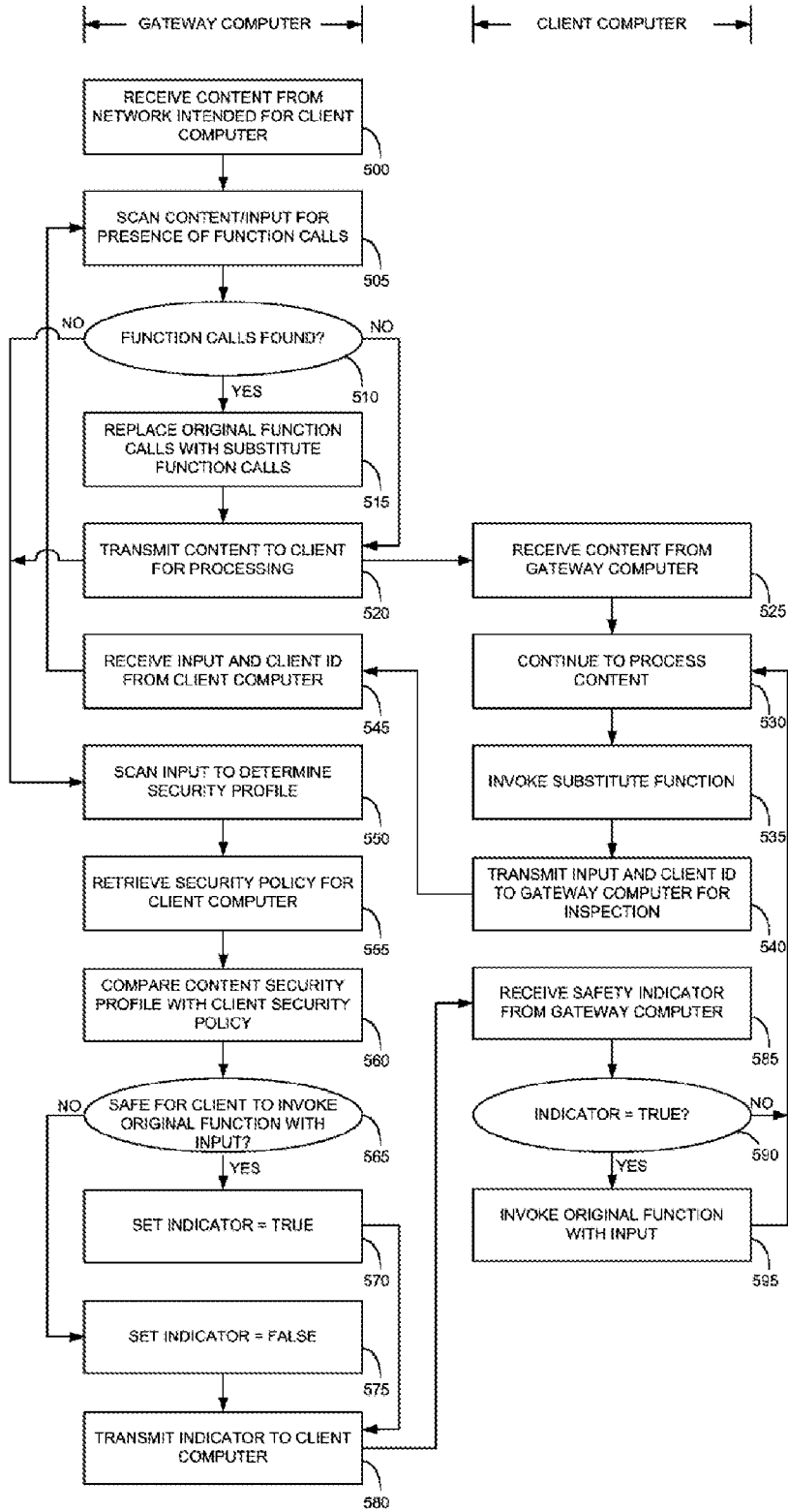


FIG. 5



**DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION**

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below under my name.

I believe that I am the original and first sole inventor or an original and first joint inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled:

**SYSTEM AND METHOD FOR INSPECTING DYNAMICALLY GENERATED EXECUTABLE CODE**

the Specification of which

- is attached hereto
- was filed on **December 12, 2005**  
as United States Application Number or PCT International Application No. **11/298,475**  
and was amended on \_\_\_\_\_ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified Specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, 1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any provisional application filed in the United States in accordance with 35 U.S.C. §1.119(e), or any application for patent that has been converted to a Provisional Application within one (1) year of its filing date, or any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed.

PRIOR FILED APPLICATION(S)

<u>APPLICATION NUMBER</u>	<u>COUNTRY</u>	<u>(DAY/MONTH/YEAR FILED)</u>	<u>PRIORITY CLAIMED</u>
---------------------------	----------------	-------------------------------	-------------------------

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application listed below, and, insofar as the subject matter of each of the claims of this application is not disclosed in any prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a), which

EPLC

Attorney Docket No.: P-9216-US

occurred between the filing date of the prior application and the national or PCT international filing date of this application:

APPLICATION NO.	FILING DATE (DAY/MONTH/YEAR)	STATUS - PATENTED, PENDING, ABANDONED
-----------------	------------------------------	---------------------------------------

I hereby appoint as my attorney(s) and agent(s) Vladimir Sherman (Attorney, Registration No. 43,116) said attorney(s) and agent(s) with full power of substitution and revocation to prosecute this application and transact all business in the Patent and Trademark Office connected therewith.

Please address all correspondence regarding this application to:

EITAN LAW GROUP  
C/O Landon IP Inc.  
1700 Diagonal Road  
Suite 450  
Alexandria, VA 22314

Direct all telephone calls to (703) 486-1150 and all facsimiles at (703) 892-4510.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

FULL NAME OF INVENTOR: GRUZMAN, David

FULL RESIDENCE ADDRESS: Zohar 7/5, Ramat Gan, Israel

COUNTRY OF CITIZENSHIP: Israeli

FULL POST OFFICE ADDRESS: same

SIGNATURE OF INVENTOR X [Signature]

DATE 07/03/2006  
(day / month / year)

FROM : Ravit Avidor, Adv.

FAX NO. : 972-3-5224524

Feb. 04 2006 12:25PM P2

Attorney Docket No.: P-0216-US

FULL NAME OF INVENTOR: BEN-ITZHAK, Yuval

FULL RESIDENCE ADDRESS: King David Boulevard 36/8, Tel Aviv, Israel

COUNTRY OF CITIZENSHIP: Israeli

FULL POST OFFICE ADDRESS: same

SIGNATURE OF INVENTOR



DATE 1 2 2006  
(day / month / year)

**POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO**

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(b).

I hereby appoint:

Practitioner associated with the Customer Number

74877

OR

Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

Name	Registration Number	Name	Registration Number

as attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned 222 to the undersigned according to the USPTO assignment records or assignment documents attached to this form in accordance with 37 CFR 3.73(b).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(b) to:

The address associated with Customer Number:

74877

OR

<input type="checkbox"/> Firm or Individual Name Address		
City	State	Zip
Country		
Telephone	E-mail	

Assignee Name and Address:

Finjan, Inc.  
 2025 Gateway Place, Suite 180  
 San Jose, CA 95110

A copy of this form, together with a statement under 37 CFR 3.73(b) (Form PTO/SB/96 or equivalent) is required to be filed in each application in which this form is used. The statement under 37 CFR 3.73(b) may be completed by one of the practitioners appointed in this form if the appointed practitioner is authorized to act on behalf of the assignee, and must identify the application in which this Power of Attorney is to be filed.

**SIGNATURE of Assignee of Record**

The signature whose signature and title is supplied below is authorized to act on behalf of the assignee.

Signature	Date	3/21/0
Name	Telephone	
Title	Chief Executive Officer, Finjan, Inc.	

This collection of information is required by 37 CFR 3.73(b) and 37 CFR 3.73(c). This information is required to obtain a record of power of attorney in the public subject file of the patent by the USPTO to prosecute an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is submitted to the public subject file 3 includes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. These will vary depending upon the individual case. Any comments on the amount of fees you require to complete this form and/or application for including this business, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1480, Alexandria, VA 22304-1480. 50 1037 9896. SEND OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1480, Alexandria, VA 22313-1480.

If you need assistance in completing the form, call 1-800-PTO-6769 and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

**STATEMENT UNDER 37 CFR 3.73(b)**Applicant/Patent Owner: Finjan, Inc.Application No./Patent No.: To Be Assigned Filed/Issue Date: HerewithEntitled: System and Method For Inspecting Dynamically Generated Executable CodeFinjan, Inc., a corporation

(Name of Assignee)

(Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that it is:

1.  the assignee of the entire right, title, and interest; or  
 2.  an assignee of less than the entire right, title, and interest

The extent (by percentage) of its ownership interest is \_\_\_\_\_ %  
 in the patent application/patent identified above by virtue of either:

- A.  An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel \_\_\_\_\_, Frame \_\_\_\_\_, or for which a copy thereof is attached.

**OR**

- B.  A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as shown below:

1. From: Yuval Ben-Itzhak To: Finjan Software, Ltd.  
 The document was recorded in the United States Patent and Trademark Office at  
 Reel \_\_\_\_\_, Frame \_\_\_\_\_, or for which a copy thereof is attached.
2. From: Finjan Software, Ltd. To: Finjan, Inc.  
 The document was recorded in the United States Patent and Trademark Office at  
 Reel \_\_\_\_\_, Frame \_\_\_\_\_, or for which a copy thereof is attached.
3. From: \_\_\_\_\_ To: \_\_\_\_\_  
 The document was recorded in the United States Patent and Trademark Office at  
 Reel \_\_\_\_\_, Frame \_\_\_\_\_, or for which a copy thereof is attached.

- Additional documents in the chain of title are listed on a supplemental sheet.

As required by 37 CFR 3.73(b)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

**[NOTE:** A separate copy (i.e., a true copy of the original document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, if the assignment is to be recorded in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/Dawn-Marie Bey/June 14, 2010

Signature

Date

Dawn-Marie Bey(202) 626-8978

Printed or Typed Name

Telephone Number

Partner, King & Spalding LLP

Title

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

ASSIGNMENT

WHEREAS, **David GRUZMAN and Yuval BEN-ITZHAK** (referred to as “ASSIGNOR”) has invented certain new and useful improvements in an invention entitled **SYSTEM AND METHOD FOR INSPECTING DYNAMICALLY GENERATED EXECUTABLE CODE,**

- for which a utility application for a United States Patent was filed with the United States Patent and Trademark Office on **December 12, 2005**, Serial Number **11/298,475**.
- for which an application for a United States Patent is being submitted to the United States Patent and Trademark Office herewith; and

WHEREAS, **Finjan Software, Ltd.**, having an office at **Hamachshev St. 1, New Industrial Area, Netanya, 42504, Israel** (hereinafter referred to as the “ASSIGNEE”), is desirous of acquiring the entire right, title and interest in and to said invention, and in and to said application and any Letters Patent that may issue thereon;


NOW, THEREFORE, for and in consideration of One Dollar (\$1.00), and other good and valuable consideration, the receipt of which is hereby acknowledged, ASSIGNOR hereby sells and transfers to said ASSIGNEE, and to ASSIGNEE’S successors and assigns, ASSIGNOR’S entire right, title and interest in and to said invention in the United States and its territorial possessions and in all foreign countries and to all Letters Patent or similar legal protection in the United States and its territorial possessions and in any and all foreign countries to be obtained for said invention by said application or any patent application claiming priority to the application, or any continuation, division, continuation-in-part, reexamination, renewal, substitute, extension or reissue thereof or any legal equivalent thereof in a foreign country for the full term of terms for which the same may be granted; and authorize and request the Commissioner of Patents of the United States and any official of any foreign country whose duty it is to issue patents or legal equivalents thereto, to issue same for this invention to ASSIGNEE, its lawful successors and assigns.

ASSIGNOR further covenants that ASSIGNEE will, upon its request, be provided promptly with all pertinent facts and documents relating to said application, said invention and said Letters Patent and legal equivalents in foreign countries as may be known and accessible to ASSIGNOR and will testify as to the same in any interference or litigation related thereto and will promptly execute and deliver to ASSIGNEE or its legal representative any and all papers, instruments or affidavits required to apply for, obtain, maintain, issue and enforce said application, said invention and said Letters Patent and said equivalents thereof in any foreign country which may be necessary or desirable to carry out the purposes thereof.

IN WITNESS WHEREOF, I/We have hereunto set hand and signed on the date indicated below:

## SIGNATURE(S)

The signature(s) must correspond with the name(s) of the inventor(s) above.

<u>INVENTOR(S)</u>	<u>DATE SIGNED</u>
1) _____ David GRUZMAN	_____
	
2) _____ Yuval BEN-ITZHAK	February 22, 2009



Employment Contract

Entered into and signed in Netanya this 22<sup>nd</sup> day of March, 2004

Between: Finjan Software Ltd.  
1 HaMachshev Street, Beit Shoham  
Industrial Zone, Netanya South  
(Hereinafter: "the Company" or "the Employer")

Party of the first part

And: David Grozman  
Identity No. 314052382  
7/5 Zohar Street, Ramat Gan  
(Hereinafter: "the Employee")

Party of the second part

Whereas: The Employee wishes to work for the Company in his areas of occupation, in accordance with that which has been set forth in this Contract;

And whereas: The Company wishes to employ the Employee in his areas of occupation, pursuant to the terms that have been set forth in this Contract;

And whereas: The Parties wish to govern their mutual rights and obligations within the framework of this Employment Contract;

[Initials]

It is accordingly declared, stipulated and agreed between the Parties as follows:

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

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[REDACTED]

[REDACTED]

**10. Proprietary right in inventions**

- 10.1 The property rights in anything related to or deriving from the work of the Employee, including any invention that the Employee shall discover, develop, upgrade or invent or to the invention of which he shall be a party, the discovery or development of which was made in his term of work or consequent on his work for the Employee, whether or not such rights are statutorily able to be registered, shall belong to the Employer, and the Employee shall not be entitled, in respect thereof, to any consideration or royalties whatsoever in respect of the invention or the use thereof.
- 10.2 If the Employer should decide to protect the invention by means of registration of a patent in Israel or abroad, that Employee must cooperate with the Employer, and all including the execution of any document and the delivery of any material or information as may be required for the submission of the application for making the registration.
- 10.3 Subsection 10.1 above shall also apply to an invention that the Employee discovers, develops or invents during the period of one year from the date the labor relations between him and the Employer reached a conclusion for any reason whatsoever, if the Employee uses and resorts to the information and/or material that reached him or came to his knowledge pursuant to his work [with the Company].

10.4 The Employee hereby confirms that he neither has nor shall have any rights, demands or claims in connection with inventions and/or developments as aforesaid, including rights to payments and/or royalties, and that All of the rights including the rights to payments for the inventions and/or the developments belong to the Employer.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

In witness whereof the Parties have set their hand at the place and time that have been set forth in the preface to this Contract:

[Signature]

Finjan Software Ltd.  
("the Employer")

[Signature]

("the Employee")

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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[REDACTED]

## SCHEDULE C2

### ASSIGNMENT OF PATENT RIGHTS

WHEREAS, Finjan Software, Ltd., an Israeli corporation (the "Company"), is either the sole and exclusive owner or has an ownership interest in the Patents/Applications in Exhibit A; and

WHEREAS, Finjan, Inc. ("Finjan"), doing business at 2025 Gateway Place, Suite 180, San Jose, California, 95110, is desirous of acquiring, and the Company is desirous of assigning to Finjan, all of the right, title, and interest of the Company into said Patents/Applications, and the inventions disclosed therein and covered thereby.

NOW THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Company and Finjan agree as follows:

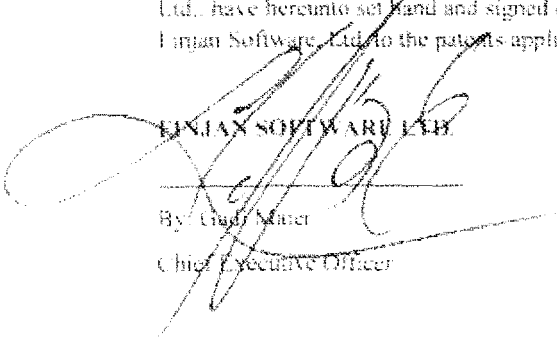
1. The Company is the sole and exclusive owner of all right, title, and interest in and to the Patents and does hereby sell, assign, transfer and set over to Finjan, all of the Company's right, title and interest to the Patents, and to any and all inventions described in the Patents/Applications, in the United States, its territorial possessions and all foreign countries, and in any and all continuations-in-part, continuations, divisions, substitutes, reissues, extensions thereof, and all other applications for letters patent relating thereto that have been or shall be filed in the United States, its territorial possessions and/or any foreign countries, and all rights, together with all priority rights, under any of the international conventions, unions, agreements, acts, and treaties, including all future conventions, unions, agreements, acts, and treaties, the same to be held and enjoyed by Finjan for its own use and enjoyment, and for the use and enjoyment of its successors, assigns or other legal representatives, to the end of the term or terms for which letters patent are or may be granted or reissued as fully and entirely to the same extent as the same would have been held and enjoyed by the Company, if this assignment and sale had not been made; together with all claims for damages or injunctive relief by reason of infringements of such letters patent resulting from the Patent, with the right to sue for past infringement, and collect the same for its own use and behalf and for the use and behalf of its successors, assigns or other legal representatives.
2. The Company hereby authorizes and requests the Commissioner of Patents and Trademarks to issue any and all letters patents of the United States on such inventions or resulting from the Patent, or any continuations-in-part, continuations, divisions, substitutes, reissues or extensions thereof, to Finjan, as assignee of the Company's entire interest, and hereby covenants that the Company has full right to convey the interests herein assigned, and that it has not executed, and will not execute, any agreement in conflict herewith.

The Company agrees that upon request by Finjan, or its successors, assigns or other legal representatives that the Company or its successors, assigns or other legal representatives shall do all other legal acts reasonably necessary to carry out the intent of this assignment at the assignee's expense and request as well as provide such other material, information, or assistance as assignee or its successors, assigns or other legal representatives may consider necessary.

*[Remainder of the page intentionally left blank]*

IN WITNESS WHEREOF, I, Gadi Maier, Chief Executive Officer of Finjan Software, Ltd., have hereunto set hand and signed on the 27<sup>th</sup> day of November, 2009, assigning the rights of Finjan Software, Ltd. to the patents applications listed in Schedule A to Finjan, Inc.

FINJAN SOFTWARE LTD.

By:   
Chief Executive Officer

ANNEX A

Country/ Pat./App. No.	Title
U.S. / 7,058,822	Malicious Mobile Code Runtime Monitoring System and Methods
U.S. / 12/471,942	Malicious Mobile Code Runtime Monitoring System and Methods
U.S. / 6,804,780	System and Method For Protecting a Computer and a Network From Hostile Downloadables
U.S. / 6,092,194	System and Method For Protecting a Computer and a Network From Hostile Downloadables
U.S. / 90/009,175	System and Method For Protecting a Computer and a Network From Hostile Downloadables
U.S. / 6,154,844	System and Method for Attaching a Downloadable Security Profile to a Downloadable
U.S. / 6,480,962	System and Method For Protecting a Client During Runtime From Hostile Downloadables
U.S. / 90/008,678	System and Method For Protecting a Client During Runtime From Hostile Downloadables
U.S. / 6,167,520	System and Method For Protecting a Client From Hostile Downloadables
U.S. / 90/008,684	System and Method For Protecting a Client During Runtime From Hostile Downloadables
U.S. / 6,298,446	Method and System For Copyright Protection of Digital Images Transmitted Over Networks
U.S. / 6,922,693	Method and System For Copy Protection of Images Displayed on a Computer Monitor
U.S. / 6,993,662	Method and System For Copy Protection of Displayed Data Content
U.S. / 6,353,892	Copy Protection of Digital Images Transmitted Over Networks
U.S. / 6,944,822	Method and Apparatus For Preventing Reuse of Text, Images, and Software Transmitted via Networks
U.S. / 6,209,103	Methods and Apparatus for Preventing Reuse of Text, Images and Software Transmitted Via Networks
U.S. / 6,965,968	Policy-Based Caching
U.S. / 10/680,962	Methods and Systems For Auto-Marking, Watermarking, Auditing,

Country/ Pat./App. No.	Title
	Reporting, Tracing and Policy Enforcement Via E-Mail and Networking Systems
U.S. / 11/606,663	System and Method For Appending Security Information to Search Engine Results CA / 2,275,771 System and Method For Protecting a Computer and a Network From Hostile Downloadables
U.S. / 11/159,455	Malicious Mobile Code Runtime Monitoring System and Methods
U.S. / 11/370,114	Method and System for Protecting a Computer and a Network From Hostile Downloadables
IL / 190518	Malicious Mobile Code Runtime Monitoring System and Methods
IL / 147712	Malicious Mobile Code Runtime Monitoring System and Methods
U.S. / 7,418,731	Method and System For Caching at Secure Gateways
EP / 05775457.4	Method and System For Adaptive Rule-Based Content Scanners
CA / 2578792	Method and System For Adaptive Rule-Based Content Scanners
U.S. / 11/009,437	Method and System For Adaptive Rule-Based Content Scanners For Desktop Computers
IL / 181611	Method and System For Adaptive Rule-Based Content Scanners
U.S. / 10/930,884	Method and System For Adaptive Rule-Based Content Scanners
DE / 0965094	System and Method For Protecting a Computer and a Network From Hostile Downloadables
EP / 0965094	System and Method For Protecting a Computer and a Network From Hostile Downloadables
FR / 0965094	System and Method For Protecting a Computer and a Network From Hostile Downloadables
IL / 129729	System and Method For Protecting a Computer and a Network From Hostile Downloadables
IT / 0965094	System and Method For Protecting a Computer and a Network From Hostile Downloadables
JP / 3952315	System and Method For Protecting a Computer and a Network From Hostile Downloadables
NL / 0965094	System and Method For Protecting a Computer and a Network From Hostile Downloadables

Country/ Pat./App. No.	Title
UK / 0965094	System and Method For Protecting a Computer and a Network From Hostile Downloadables
EP / 99122069.0	Method and System For Copyright Protection of Digital Images Transmitted Over Networks
U.S. / 7,076,469	Copyright Protection of Digital Images Transmitted Over Networks
U.S. / 7,155,743	Method and System For Controlling Use of a Dynamically Linked Software Library
U.S. / 7,155,744	Copyright Protection of Digital Images Transmitted Over Networks
U.S. / 7,281,272	Method and System For Copyright Protection of Digital Images
U.S. / 11/169,823	Method and System For Copy Protection of Displayed Data Content
U.S. / 10/141,308	Method and System For Real-Time Control of Document Printing
U.S. / 7,185,358	Method and Apparatus For Preventing Reuse of Text, Images, and Software Transmitted Via Networks
IL / 127093	Copy Protection
IL / 127869	Network File Copy Protection
U.S. / 10/768,920	Method and System For Embedding Messages Within HTTP
U.S. / 11/298,475	System and Method For Inspecting Dynamically Generated Executable Code
U.S. / 11/354,893	System and Method For Enforcing a Security Context on a Downloadable
U.S. / 12/174,592	Computer Security Method and System With Input Parameter Validation
U.S. / 11/606,707	System and Method For Appending Security Information to Search Engine Results
EP / 06821605.0	System and Method For Appending Security Information to Search Engine Results
U.S. / 11/797,539	Byte-Distribution Analysis of File Security
U.S. / 12/178,558	Splitting an SSL Connection Between Gateways



**Docket No. FIN0008-DIV1**

**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of

**David GRUZMAN, et al.**

Serial No.: **To Be Assigned**                      Group Art Unit: **To Be Assigned**

Filed: **Herewith**                                      Examiner: **To Be Assigned**

For: **SYSTEM AND METHOD FOR INSPECTING DYNAMICALLY  
GENERATED EXECUTABLE CODE**

**INFORMATION DISCLOSURE STATEMENT  
UNDER 37 C.F.R. §§ 1.97 AND 1.98**

U.S. Patent and Trademark Office  
Customer Window, Mail Stop Amendment  
Randolph Building  
401 Dulany Street  
Alexandria , VA 22314

Sir:

In accordance with the requirements of 37 C.F.R. §§ 1.56, 1.97-1.98 and MPEP § 609, the references noted on the attached Form PTO-1449 are hereby brought to the attention of the Examiner.

No fees are believed to be necessary since the references cited in this statement are being submitted before the First Office Action. However, the Commissioner is hereby authorized to charge any additional fees which may be required, or to credit any overpayment, to Deposit Account No. 50-4402.

The above information is presented so that the United States Patent and Trademark Office may, in the first instance, determine any materiality thereof to the claimed invention. See

37 C.F.R. §§ 1.104(a) conferring the PTO duty to consider and use any such information. It is respectfully requested that the information be expressly considered during the prosecution of this application, and that the references be made of record therein and appear among the “References Cited” on any patent to issue therefrom.

Respectfully submitted,

Date: June 9, 2010

By: /Dawn-Marie Bey - 44,442/  
Dawn-Marie Bey  
Registration No. 44,442

KING & SPALDING LLP  
1700 Pennsylvania Avenue, N.W.  
Suite 200  
Washington, DC 20006  
(202) 737-0500

15157/105014  
Doc. No. 1496663

Form PTO-1449 (Rev. 2-32)	U.S. Department of Commerce Patent & Trademark Office	Atty. Docket No. <b>FIN0008-DIV1</b>	Serial No. <b>To Be Assigned</b>
<b>INFORMATION DISCLOSURE STATEMENT</b> <i>(Use several sheets if necessary)</i>		Applicant <b>David GRUZMAN, et al.</b>	
		Filing Date <b>Herewith</b>	Group <b>To Be Assigned</b>

**U.S. PATENT DOCUMENTS**

Examiner Initial		Document Number	Date	Name	Class	Sub-Class	Filing Date (if appropriate)
	*	7,313,822	12/25/07	Ben-Itzhak	726	24	3/16/01
	*	7/287,279	10/23/07	Bertman, et al.	726	23	10/1/04
	*	7,203,934	4/10/07	Souloglou, et al.	717	146	6/6/02
	*	2007/0016948	1/18/07	Dubrovsky, et al.	726	22	7/15/05
	*	2006/0161981	7/20/06	Sheth, et al.	726	22	1/19/05
	*	2006/0015940	1/19/06	Zamir, et al.	726	22	7/14/04
	*	6,965,968	11/15/05	Touboul	711	118	2/27/03
	*	6,934,857	8/23/05	Bartleson, et al.	726	5	11/27/00
	*	2005/0108562	5/19/05	Khazan, et al.	726	23	6/18/03
	*	2004/0158729	8/12/04	Szor	713	190	2/6/03
	*	2004/0153644	8/5/04	McCorkendale, et al.	713	156	2/5/03
	*	2004/0133796	7/8/04	Cohen, et al.	726	24	1/3/03
	*	2002/0116635	8/22/02	Sheymov	726	24	2/14/02
	*	6,272,641	8/7/01	Ji	726	24	11/9/99
	*	6,167,520	12/26/00	Touboul	726	23	1/29/97
	*	6,092,194	7/18/00	Touboul	726	24	11/6/97

**EXAMINER**

**DATE CONSIDERED**

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication.

**U.S. PATENT DOCUMENTS CONT'D.**

\* Reference cited in parent (Application Serial No. 11/298,475), and not provided herewith.

**Serial No. To Be Assigned (Docket No. FIN0008-DIV1)  
Information Disclosure Statement**

	*	5,983,348	11/9/99	Ji	726	13	9/10/97
	*	5,974,549	10/26/99	Golan	726	23	3/27/97
	*	5,359,659	10/25/94	Rosenthal	726	24	6/19/92
<b>FOREIGN PATENT DOCUMENTS</b>							
<b>OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)</b>							
	*	International Search Report and Written Opinion for Application No. PCT/IL06/01430, dated July 17, 2008, 9 pp.					
	*	Web printout from <a href="http://www.finjan.com/Content.aspx?id=1456">http://www.finjan.com/Content.aspx?id=1456</a> , printed on 9/10/09, 6 pp.					
	*	Web printout from <a href="http://www.finjan.com/secure_web_gateway.aspx">http://www.finjan.com/secure_web_gateway.aspx</a> , printed on 9/10/09, 7 pp.					
	*	Mark LaDue, "Hostile Applets Home Page," 6 pp., printed 9/10/09					
	*	Mark LaDue, "The Rube Goldberg Approach to Java Security," 1998, 9 pp.					
	*	Mark LaDue, "Drowning in the Surf: A Review of Finjan Software's SurfinShield 2.0," 1997, 6 pp.					
	*	Mark LaDue, "With Trousers Down and Duke Exposed: How Finjan Software Handles Criticism," 1997, 5 pp.					
	*	Huang, et al., "Web Application Security Assessment by Fault Injection and Behavior Monitoring," ACM, 2003, 12 pp.					
	*	"Vital Security Web Appliicance," unknown author, unknown date, 7 pp.					
<b>EXAMINER</b>				<b>DATE CONSIDERED</b>			
EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication.							

15157/105014  
Doc. No. 1496653

\* Reference cited in parent (Application Serial No. 11/298,475), and not provided herewith.

## Electronic Patent Application Fee Transmittal

<b>Application Number:</b>				
<b>Filing Date:</b>				
<b>Title of Invention:</b>	SYSTEM AND METHOD FOR INSPECTING DYNAMICALLY GENERATED EXECUTABLE CODE			
<b>First Named Inventor/Applicant Name:</b>	David GRUZMAN, et al.			
<b>Filer:</b>	Dawn-Marie Bey./Terry Goad			
<b>Attorney Docket Number:</b>	FIN0008-DIV1			
Filed as Large Entity				
<b>Utility under 35 USC 111(a) Filing Fees</b>				
<b>Description</b>	<b>Fee Code</b>	<b>Quantity</b>	<b>Amount</b>	<b>Sub-Total in USD(\$)</b>
<b>Basic Filing:</b>				
Utility application filing	1011	1	330	330
Utility Search Fee	1111	1	540	540
Utility Examination Fee	1311	1	220	220
<b>Pages:</b>				
<b>Claims:</b>				
<b>Miscellaneous-Filing:</b>				
<b>Petition:</b>				
<b>Patent-Appeals-and-Interference:</b>				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
<b>Post-Allowance-and-Post-Issuance:</b>				
<b>Extension-of-Time:</b>				
<b>Miscellaneous:</b>				
<b>Total in USD (\$)</b>				<b>1090</b>

## Electronic Acknowledgement Receipt

<b>EFS ID:</b>	7803861
<b>Application Number:</b>	12814584
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	9667
<b>Title of Invention:</b>	SYSTEM AND METHOD FOR INSPECTING DYNAMICALLY GENERATED EXECUTABLE CODE
<b>First Named Inventor/Applicant Name:</b>	David GRUZMAN, et al.
<b>Customer Number:</b>	74877
<b>Filer:</b>	Dawn-Marie Bey./Terry Goad
<b>Filer Authorized By:</b>	Dawn-Marie Bey.
<b>Attorney Docket Number:</b>	FIN0008-DIV1
<b>Receipt Date:</b>	14-JUN-2010
<b>Filing Date:</b>	
<b>Time Stamp:</b>	11:52:43
<b>Application Type:</b>	Utility under 35 USC 111(a)

### Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	\$1090
RAM confirmation Number	8323
Deposit Account	504402
Authorized User	BEY,DAWNMARIE

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)

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Juniper v Finjan

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**File Listing:**

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal of New Application	FIN0008-DIV_UtilityTransmittal.pdf	63083 fbc2fd41800d79617888f3a0856dfa28ca8e15e	no	1
<b>Warnings:</b>					
<b>Information:</b>					
2		FIN0008-DIV_Spec.pdf	194846 b3c74725b089079f5b1f1ff0f4ea9cabf50572ab	yes	31
	<b>Multipart Description/PDF files in .zip description</b>				
	<b>Document Description</b>	<b>Start</b>	<b>End</b>		
	Specification	1	29		
	Claims	30	30		
	Abstract	31	31		
<b>Warnings:</b>					
<b>Information:</b>					
3	Drawings-only black and white line drawings	FIN0008-DIV_Figures.pdf	339183 3c474b14c1533f68d78ac21949bc4f7d26b94b98	no	5
<b>Warnings:</b>					
<b>Information:</b>					
4	Oath or Declaration filed	FIN0008-DIV_ExecutedDeclaration.pdf	2356509 67b071ccd292e9b60723101b77079b76c51cb0b2	no	3
<b>Warnings:</b>					
<b>Information:</b>					
5	Power of Attorney	FIN0008-DIV_POA.pdf	494208 7d54b62c89ed7c57d1f58d1073f1f6f525b6e8c	no	1
<b>Warnings:</b>					
<b>Information:</b>					
6	Assignee showing of ownership per 37 CFR 3.73(b).	FIN0008-DIV_373b_Assignment.pdf	1321258 e66cfa0c4b2c263820c7719fc1cf6b6c63cdfcb5	no	19
<b>Warnings:</b>					
<b>Information:</b>					



7	Transmittal Letter	FIN0008-DIV_IDStransmittal.pdf	102880 99e5c385e3a6908ad9d421e66ec17cf751b9ab7	no	2
<b>Warnings:</b>					
<b>Information:</b>					
8	Information Disclosure Statement (IDS) Filed (SB/08)	FIN0008-DIV_IDS1449.pdf	109342 70e477d1edd19086fb611d02bfeaa28bea10d15	no	2
<b>Warnings:</b>					
<b>Information:</b>					
This is not an USPTO supplied IDS fillable form					
9	Fee Worksheet (PTO-875)	fee-info.pdf	33275 005f53e219437c870c3a6dc0a4f8b22fcec32ae	no	2
<b>Warnings:</b>					
<b>Information:</b>					
<b>Total Files Size (in bytes):</b>			5014584		
<p><b>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</b></p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b>  <b>If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</b></p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b>  <b>If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</b></p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b>  <b>If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</b></p>					

Date: 06/14/10

PTO/SB/06 (12-04)

Approved for use through 7/31/2006. OMB 0651-0032  
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<b>PATENT APPLICATION FEE DETERMINATION RECORD</b> Substitute for Form PTO-875	Application or Docket Number <b>12/814,584</b>
---	---

APPLICATION AS FILED – PART I			SMALL ENTITY		OTHER THAN SMALL ENTITY	
(Column 1)		(Column 2)	RATE (\$)	FEE (\$)	RATE (\$)	FEE (\$)
FOR	NUMBER FILED	NUMBER EXTRA	N/A		N/A	<b>330</b>
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A		N/A	<b>540</b>
SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A		N/A	<b>220</b>
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	x\$26		x\$52	
TOTAL CLAIMS (37 CFR 1.16(i))	<b>3</b>	minus 20 =	x\$110		x\$220	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	<b>2</b>	minus 3 = *				
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$260 (\$130 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR		195		390	
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))			<b>TOTAL</b>		<b>TOTAL</b>	<b>1090</b>

\* If the difference in column 1 is less than zero, enter "0" in column 2.

APPLICATION AS AMENDED – PART II					SMALL ENTITY		OTHER THAN SMALL ENTITY	
(Column 1)		(Column 2)	(Column 3)		RATE (\$)	ADDITIONAL FEE (\$)	RATE (\$)	ADDITIONAL FEE (\$)
AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		X =		X =	
	Total (37 CFR 1.16(i))	Minus **	=		X =		X =	
	Independent (37 CFR 1.16(h))	Minus ***	=		N/A		N/A	
	Application Size Fee (37 CFR 1.16(s))				<b>TOTAL</b>		<b>TOTAL</b>	
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))				<b>ADD'T FEE</b>		<b>ADD'T FEE</b>		

(Column 1)		(Column 2)	(Column 3)		RATE (\$)	ADDITIONAL FEE (\$)	RATE (\$)	ADDITIONAL FEE (\$)
AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		X =		X =	
	Total (37 CFR 1.16(i))	Minus **	=		X =		X =	
	Independent (37 CFR 1.16(h))	Minus ***	=		N/A		N/A	
	Application Size Fee (37 CFR 1.16(s))				<b>TOTAL</b>		<b>TOTAL</b>	
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))				<b>ADD'T FEE</b>		<b>ADD'T FEE</b>		

\* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.  
 \*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".  
 \*\*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".  
 The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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Table with 6 columns: APPLICATION NUMBER, FILING or 371(c) DATE, GRP ART UNIT, FIL FEE REC'D, ATTY,DOCKET.NO, TOT CLAIMS, IND CLAIMS. Row 1: 12/814,584, 06/14/2010, 2431, 1090, FIN0008-DIV1, 3, 2

CONFIRMATION NO. 9667

FILING RECEIPT



74877
King and Spalding LLP
1700 Pennsylvania Ave, NW
Suite 200
Washington, DC 20006

Date Mailed: 06/24/2010

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections

Applicant(s)

David GRUZMAN, Ramat Gan, ISRAEL;
Yuval Ben-Itzhak, Tel Aviv, ISRAEL;

Assignment For Published Patent Application

Finjan, Inc.

Power of Attorney: The patent practitioners associated with Customer Number 74877

Domestic Priority data as claimed by applicant

This application is a DIV of 11/298,475 12/12/2005

Foreign Applications

If Required, Foreign Filing License Granted: 06/21/2010

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is US 12/814,584

Projected Publication Date: 09/30/2010

Non-Publication Request: No

Early Publication Request: No

**Title**

SYSTEM AND METHOD FOR INSPECTING DYNAMICALLY GENERATED EXECUTABLE CODE

**Preliminary Class**

726

**PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES**

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4158).

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/814,584	06/14/2010	David GRUZMAN	FIN0008-DIV1

**CONFIRMATION NO. 9667**

**IMPROPER CPOA LETTER**



74877  
King and Spalding LLP  
1700 Pennsylvania Ave, NW  
Suite 200  
Washington, DC 20006

Date Mailed: 06/24/2010

**NOTICE REGARDING POWER OF ATTORNEY**

This is in response to the Power of Attorney filed 06/14/2010. The Power of Attorney in this application is not accepted for the reason(s) listed below:

- The Power of Attorney is from an assignee and the Certificate required by 37 CFR 3.73(b) has not been received.

/d/king/

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Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

**STATEMENT UNDER 37 CFR 3.73(b)**Applicant/Patent Owner: Finjan, Inc.Application No./Patent No.: 12/814,584 Filed/Issue Date: June 14, 2010Entitled: System and Method For Inspecting Dynamically Generated Executable CodeFinjan, Inc., a corporation

(Name of Assignee)

(Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that it is:

1.  the assignee of the entire right, title, and interest; or
2.  an assignee of less than the entire right, title, and interest

The extent (by percentage) of its ownership interest is \_\_\_\_\_ %

in the patent application/patent identified above by virtue of either:

- A.  An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel \_\_\_\_\_, Frame \_\_\_\_\_, or for which a copy thereof is attached.

**OR**

- B.  A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as shown below:

1. From: Yuval Ben-ItzhakTo: Finjan Software, Ltd.The document was recorded in the United States Patent and Trademark Office at Reel 024585, Frame 0804, or for which a copy thereof is attached.2. From: David GruzmanTo: Finjan Software, Ltd. (employment contract)The document was recorded in the United States Patent and Trademark Office at Reel 024586, Frame 0466, or for which a copy thereof is attached.3. From: Finjan Software, Ltd.To: Finjan, Inc.The document was recorded in the United States Patent and Trademark Office at Reel 024586, Frame 0119, or for which a copy thereof is attached. Additional documents in the chain of title are listed on a supplemental sheet. As required by 37 CFR 3.73(b)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

**[NOTE:** A separate copy (i.e., a true copy of the original document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, if the assignment is to be recorded in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/Dawn-Marie Bey - Reg. #44,442/June 29, 2010

Signature

Date

Dawn-Marie Bey(202) 626-8978

Printed or Typed Name

Telephone Number

Partner, King & Spalding LLP

Title

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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## Electronic Acknowledgement Receipt

<b>EFS ID:</b>	7914583
<b>Application Number:</b>	12814584
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	9667
<b>Title of Invention:</b>	SYSTEM AND METHOD FOR INSPECTING DYNAMICALLY GENERATED EXECUTABLE CODE
<b>First Named Inventor/Applicant Name:</b>	David GRUZMAN
<b>Customer Number:</b>	74877
<b>Filer:</b>	Dawn-Marie Bey./Terry Goad
<b>Filer Authorized By:</b>	Dawn-Marie Bey.
<b>Attorney Docket Number:</b>	FIN0008-DIV1
<b>Receipt Date:</b>	29-JUN-2010
<b>Filing Date:</b>	14-JUN-2010
<b>Time Stamp:</b>	13:59:39
<b>Application Type:</b>	Utility under 35 USC 111(a)

### Payment information:

Submitted with Payment	no
------------------------	----

### File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Applicant Response to Pre-Exam Formalities Notice	FIN0008-DIV_Response-NoticeRePOA.pdf	74579 <small>d804580fbebfcfa14ceac91b5924b6f39e091b39</small>	no	1

### Warnings:

### Information:

2	Assignee showing of ownership per 37 CFR 3.73(b).	FIN0008-DIV_373b.pdf	104210	no	1
			2505869e5335adf98eea3284f581c9eac9199ae		

**Warnings:**

**Information:**

<b>Total Files Size (in bytes):</b>	178789
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**New Applications Under 35 U.S.C. 111**

**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**

**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**

**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**



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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/814,584	06/14/2010	David GRUZMAN	FIN0008-DIV1

**CONFIRMATION NO. 9667**

**POA ACCEPTANCE LETTER**



74877  
King and Spalding LLP  
1700 Pennsylvania Ave, NW  
Suite 200  
Washington, DC 20006

Date Mailed: 07/13/2010

**NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY**

This is in response to the Power of Attorney filed 06/29/2010.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

/snguyen/

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Table with 4 columns: APPLICATION NUMBER (12/814,584), FILING OR 371(C) DATE (06/14/2010), FIRST NAMED APPLICANT (David GRUZMAN), ATTY. DOCKET NO./TITLE (FIN0008-DIV1)

CONFIRMATION NO. 9667

PUBLICATION NOTICE



74877
King and Spalding LLP
1700 Pennsylvania Ave, NW
Suite 200
Washington, DC 20006

Title:SYSTEM AND METHOD FOR INSPECTING DYNAMICALLY GENERATED EXECUTABLE CODE

Publication No.US-2010-0251373-A1

Publication Date:09/30/2010

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently http://www.uspto.gov/patft/.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/814,584	06/14/2010	David GRUZMAN	FIN0008-DIV1	9667
74877	7590	06/28/2011	EXAMINER	
King and Spalding LLP 1700 Pennsylvania Ave, NW Suite 200 Washington, DC 20006			PICH, PONNOREAY	
			ART UNIT	PAPER NUMBER
			2435	
			NOTIFICATION DATE	DELIVERY MODE
			06/28/2011	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

dbey@KSLaw.com  
mblasik@kslaw.com  
jpaoella-bald@kslaw.com

<b>Office Action Summary</b>	<b>Application No.</b> 12/814,584	<b>Applicant(s)</b> GRUZMAN ET AL.	
	<b>Examiner</b> PONNOREAY PICH	<b>Art Unit</b> 2435	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1)  Responsive to communication(s) filed on 14 June 2010.
- 2a)  This action is **FINAL**.
- 2b)  This action is non-final.
- 3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4)  Claim(s) 1-3 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5)  Claim(s) \_\_\_\_\_ is/are allowed.
- 6)  Claim(s) 1-3 is/are rejected.
- 7)  Claim(s) \_\_\_\_\_ is/are objected to.
- 8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9)  The specification is objected to by the Examiner.
- 10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.
  - Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
  - Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a)  All    b)  Some \*    c)  None of:
    - 1.  Certified copies of the priority documents have been received.
    - 2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    - 3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>6/10</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

Claims 1-3 are pending.

### ***Information Disclosure Statement***

The references crossed out in the IDS submitted on 6/14/2010 were crossed out because a copy of the references were not provided to the Office, thus the examiner was unable to consider them. The all other references listed which were initialed were considered.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

1. "the modified content" in line 3 of claim 2 lacks antecedent basis.

### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 3 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Art Unit: 2435

Claim 3 is directed towards a “computer-readable storage medium”, which has not been defined in the specification as originally filed. As such, it is assumed that the term is meant to also encompass signals per se. As such, claim 3 is not statutory as signals per se are not statutory. This rejection may be overcome by instead reciting a “non-transitory computer-readable storage medium”, which would specifically exclude signals per se from the scope of what is being claimed.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Albrecht (US 2001/0005889).

#### **Claim 1:**

Albrecht discloses:

1. A content processor (i) for processing content received over a network (paragraph 43; *agent application running on protected system*), the content including a call to a first function, and the call including an input (paragraphs 43, 45, and 47-48; *agent intercepts data stream being transferred and pauses the operation(s) involving the data in the data stream until after the result of a virus scan is obtained*), and (ii) for invoking a second function with the input, only if a security computer indicates that such invocation is safe (paragraph 48).



Art Unit: 2435

2. A transmitter for transmitting the input to the security computer for inspection, when the first function is invoked (paragraphs 47-48).
3. A receiver for receiving an indicator from the security computer whether it is safe to invoke the second function with the input (paragraphs 48-49).

**Claim 2:**

As per claim 2, Albrecht further discloses wherein said processor (i) suspends processing of the content after said transmitter transmits the input to the security computer, and (ii) resumes processing of the modified content after said receiver receives the indicator from the security computer (paragraph 48).

**Claim 3:**

The rejection of claims 1 and 2 applies, *mutatis mutandis*, to claim 3.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PONNOREAY PICH whose telephone number is (571)272-7962. The examiner can normally be reached on 9:00am-4:30pm Mon-Thurs.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Vu can be reached on 571-272-3859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2435

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ponnoreay Pich/  
Primary Examiner, Art Unit 2435

<b>Notice of References Cited</b>	Application/Control No. 12/814,584	Applicant(s)/Patent Under Reexamination GRUZMAN ET AL.	
	Examiner PONNOREAY PICH	Art Unit 2435	Page 1 of 1

**U.S. PATENT DOCUMENTS**

*	Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A US-2001/0005889 A1	06-2001	Albrecht, Mikael	713/201
*	B US-2005/0149749 A1	07-2005	Van Brabant, Luc	713/200
*	C US-7,739,682 B1	06-2010	Badenell, Jon Edward	717/174
*	D US-7,836,504 B2	11-2010	Ray et al.	726/24
	E US-			
	F US-			
	G US-			
	H US-			
	I US-			
	J US-			
	K US-			
	L US-			
	M US-			


**FOREIGN PATENT DOCUMENTS**

*	Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N				
	O				
	P				
	Q				
	R				
	S				
	T				

**NON-PATENT DOCUMENTS**

*	Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)				
	U				
	V				
	W				
	X				

\*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)  
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

<b>Search Notes</b>  	<b>Application/Control No.</b>  12814584	<b>Applicant(s)/Patent Under Reexamination</b>  GRUZMAN ET AL.
	<b>Examiner</b>  PONNOREAY PICH	<b>Art Unit</b>  2435

<b>SEARCHED</b>			
<b>Class</b>	<b>Subclass</b>	<b>Date</b>	<b>Examiner</b>

<b>SEARCH NOTES</b>		
<b>Search Notes</b>	<b>Date</b>	<b>Examiner</b>
Double patenting search via inventor name on PALM	6/19/11	PP
Searched EAST, see notes	6/20/11	PP

<b>INTERFERENCE SEARCH</b>			
<b>Class</b>	<b>Subclass</b>	<b>Date</b>	<b>Examiner</b>

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BIB DATA SHEET

CONFIRMATION NO. 9667

<b>SERIAL NUMBER</b> 12/814,584	<b>FILING or 371(c) DATE</b> 06/14/2010 <b>RULE</b>	<b>CLASS</b> 726	<b>GROUP ART UNIT</b> 2435	<b>ATTORNEY DOCKET NO.</b> FIN0008-DIV1	
<b>APPLICANTS</b> David GRUZMAN, Ramat Gan, ISRAEL; Yuval Ben-Itzhak, Tel Aviv, ISRAEL; <b>** CONTINUING DATA *****</b> This application is a DIV of 11/298,475 12/12/2005 PAT 7,757,289 <b>** FOREIGN APPLICATIONS *****</b> <b>** IF REQUIRED, FOREIGN FILING LICENSE GRANTED **</b> 06/21/2010					
Foreign Priority claimed <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No 35 USC 119(a-d) conditions met <input type="checkbox"/> Yes <input type="checkbox"/> No Verified and Acknowledged <u>/PONNOREAY PICH/</u> Examiner's Signature	<input type="checkbox"/> Met after Allowance Initials	<b>STATE OR COUNTRY</b> ISRAEL	<b>SHEETS DRAWINGS</b> 5	<b>TOTAL CLAIMS</b> 3	<b>INDEPENDENT CLAIMS</b> 2
<b>ADDRESS</b> King and Spalding LLP 1700 Pennsylvania Ave, NW Suite 200 Washington, DC 20006 UNITED STATES					
<b>TITLE</b> SYSTEM AND METHOD FOR INSPECTING DYNAMICALLY GENERATED EXECUTABLE CODE					
<b>FILING FEE RECEIVED</b> 1090	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:		<input type="checkbox"/> All Fees <input type="checkbox"/> 1.16 Fees (Filing) <input type="checkbox"/> 1.17 Fees (Processing Ext. of time) <input type="checkbox"/> 1.18 Fees (Issue) <input type="checkbox"/> Other _____ <input type="checkbox"/> Credit		

## EAST Search History

## EAST Search History (Prior Art)

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S2	2	"7313822".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/06/19 15:35
S3	2	"7287279".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/06/19 15:51
S4	4	"7203934".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/06/19 16:01
S5	2	"20070016948".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/06/19 16:02
S6	2	"20060161981".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/06/19 16:16
S7	2	"20060015940".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/06/19 16:17

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S11	2	"20040158729".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/06/19 16:28
S12	2	"20040153644".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/06/19 16:29
S13	2	"20040133796".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/06/19 16:31
S14	2	"20020116635".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/06/19 18:08
S15	2	"6272641".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/06/19 18:24

S16	2	"6167520".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/06/19 18:38
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S18	2	"5983348".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/06/19 18:45
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S24	56	(detect\$3 or determin\$3) with (attack or virus or malware or malform) with script and @ad<"20051212"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/06/19 20:19
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S29	256	S28 and (scan\$4) with (malware or virus or script or trojan)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/06/19 22:22

### EAST Search History (I nterference)

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Form PTO-1449 (Rev. 2-32)		U.S. Department of Commerce Patent & Trademark Office		Atty. Docket No. <b>FIN0008-DIV1</b>		Serial No. <b>To Be Assigned</b>	
<b>INFORMATION DISCLOSURE STATEMENT</b> (Use several sheets if necessary)				Applicant <b>David GRUZMAN, et al.</b>			
				Filing Date <b>Herewith</b>		Group <b>To Be Assigned</b>	
<b>U.S. PATENT DOCUMENTS</b>							
Examiner Initial		Document Number	Date	Name	Class	Sub-Class	Filing Date (if appropriate)
/P.P./	*	7,313,822	12/25/07	Ben-Itzhak	726	24	3/16/01
/P.P./	*	7/287,279	10/23/07	Bertman, et al.	726	23	10/1/04
/P.P./	*	7,203,934	4/10/07	Souloglou, et al.	717	146	6/6/02
/P.P./	*	2007/0016948	1/18/07	Dubrovsky, et al.	726	22	7/15/05
/P.P./	*	2006/0161981	7/20/06	Sheth, et al.	726	22	1/19/05
/P.P./	*	2006/0015940	1/19/06	Zamir, et al.	726	22	7/14/04
/P.P./	*	6,965,968	11/15/05	Touboul	711	118	2/27/03
/P.P./	*	6,934,857	8/23/05	Bartleson, et al.	726	5	11/27/00
/P.P./	*	2005/0108562	5/19/05	Khazan, et al.	726	23	6/18/03
/P.P./	*	2004/0158729	8/12/04	Szor	713	190	2/6/03
/P.P./	*	2004/0153644	8/5/04	McCorkendale, et al.	713	156	2/5/03
/P.P./	*	2004/0133796	7/8/04	Cohen, et al.	726	24	1/3/03
/P.P./	*	2002/0116635	8/22/02	Sheymov	726	24	2/14/02
/P.P./	*	6,272,641	8/7/01	Ji	726	24	11/9/99
/P.P./	*	6,167,520	12/26/00	Touboul	726	23	1/29/97
/P.P./	*	6,092,194	7/18/00	Touboul	726	24	11/6/97
<b>EXAMINER</b> /Ponnoreay Pich/				<b>DATE CONSIDERED</b> 06/19/2011			
EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication.							
<b>U.S. PATENT DOCUMENTS CONT'D.</b>							

\* Reference cited in parent (Application Serial No. 11/298,475), and not provided herewith.

**Serial No. To Be Assigned (Docket No. FIN0008-DIV1)  
Information Disclosure Statement**

Page 2 of 2

/P.P./	*	5,983,348	11/9/99	Ji	726	13	9/10/97
/P.P./	*	5,974,549	10/26/99	Golan	726	23	3/27/97
/P.P./	*	5,359,659	10/25/94	Rosenthal	726	24	6/19/92
FOREIGN PATENT DOCUMENTS							
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)							
	*	International Search Report and Written Opinion for Application No. PCT/IL06/01430, dated July 17, 2008, 9 pp.					
		Web printout from <a href="http://www.finjan.com/Content.aspx?id=1456">http://www.finjan.com/Content.aspx?id=1456</a> , printed on 9/10/09, 6 pp.					
	*	Web printout from <a href="http://www.finjan.com/secure_web_gateway.aspx">http://www.finjan.com/secure_web_gateway.aspx</a> , printed on 9/10/09, 7 pp.					
	*	Mark LaDue, "Hostile Applets Home Page," 6 pp., printed 9/10/09					
	*	Mark LaDue, "The Rube Goldberg Approach to Java Security," 1998, 9 pp.					
	*	Mark LaDue, "Drowning in the Surf: A Review of Finjan Software's SurfinShield 2.0," 1997, 6 pp.					
	*	Mark LaDue, "With Trousers Down and Duke Exposed: How Finjan Software Handles Criticism," 1997, 5 pp.					
	*	Huang, et al., "Web Application Security Assessment by Fault Injection and Behavior Monitoring," ACM, 2003, 12 pp.					
	*	"Vital Security Web Appliance," unknown author, unknown date, 7 pp.					
EXAMINER				DATE CONSIDERED			
/Ponnoreay Pich/				06/19/2011			
EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication.							

15157/105014  
Doc. No. 1496653

\* Reference cited in parent (Application Serial No. 11/298,475), and not provided herewith.

Attorney's Docket No.: FIN0008-DIV1 PATENT

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In Re Patent Application of: )  
 ) Examiner: Ponnoreay Pich  
 David Gruzman )  
 Yuval Ben-Itzhak ) Art Unit: 2435  
 )  
 Application No: 12/814,584 )  
 )  
 Filed: June 14, 2010 )  
 )  
 For: SYSTEM AND METHOD FOR )  
 INSPECTING DYNAMICALLY )  
 GENERATED EXECUTABLE )  
 CODE )  
 )

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Mail Stop AMENDMENT  
Commissioner for Patents  
P. O. Box 1450  
Alexandria, VA 22313-1450

**AMENDMENT AND RESPONSE TO OFFICE ACTION**  
**UNDER 37 C.F.R. §1.111**

Sir:

In response to the Office Action dated June 28, 2011,  
applicants respectfully request that the above-identified application be  
amended as follows.

IN THE SPECIFICATION:

Please amend paragraph [0003] of the original specification as follows:

[0003] Originally computer viruses were transmitted as executable code inserted into files. As each new ~~viruses~~ virus was discovered, a signature of the virus was collected by anti-virus companies and used from then on to detect the virus and protect computers against it. Users began routinely scanning their file systems using anti-virus software, which regularly updated its signature database as each new virus was discovered.

Please amend paragraph [0008] of the original specification as follows:

[0008] Assignee's US Patent No. 6,092,194 entitled SYSTEM AND METHOD FOR PROTECTING A COMPUTER AND A NETWORK FROM HOSTILE DOWNLOADABLES, the contents of which are hereby incorporated by reference, describes gateway level behavioral analysis. Such behavioral analysis scans and parses content received at a gateway and generates a security profile for the content. A security profile is a general list or delineation of suspicious, or potentially malicious, operations that executable content may perform. The derived security profile is then compared with a security policy for the computer being protected, to determine whether or not the content's security profile violates the computer's security policy. A security policy is a general set of simple or complex rules, that may be applied logically in series or in parallel, which determine whether or not a specific operation is permitted

or forbidden to be performed by the content on the computer being protected. Security policies are generally configurable, and set by an administrator of the computer that ~~[[are]]~~ is being protected.

Please amend paragraph [0044] of the original specification as follows:

[0044] The following definitions are employed throughout the specification and claims.

~~SECURITY POLICY~~ POLICY – a set of one or more rules that determine whether or not a requested operation is permitted. A security policy may be explicitly configurable by a computer system administrator, or may be implicitly determined by application defaults.

SECURITY PROFILE – information describing one or more suspicious operations performed by executable software.

Please amend paragraph [0052] of the original specification as follows:

[0052] Reference is now made to **FIG. 2**, which is a simplified block diagram of a system for protecting a computer from dynamically generated malicious executable code, in accordance with a preferred embodiment of the present invention. Three major components of the system are a gateway computer **205**, a client computer **210**, and a security computer **215**. Gateway computer ~~[[220]]~~ **205** receives content from a network, such as the Internet, over a communication channel **220**. Such content may be in the form of HTML pages, XML documents, Java applets and other such web content that is generally rendered by a web browser. Client computer **210** communicates with gateway computer **205** over a communication channel **225**, and

communicates with security computer **215** over a communication channel **230**. Gateway computer **205** receives data at gateway receiver **235**, and transmits data at gateway transmitter **240**. Similarly, client computer **210** receives data at client receiver **245**, and transmits data at client transmitter **250**; and security computer **215** receives data at security receiver **260** and transmits data at security transmitter **265**.

Please amend paragraph [0053] of the original specification as follows:

[0053] It will be appreciated by those skilled in the art that the network topology of **FIG. 2** is shown as a simple topology, for purposes of clarity of exposition. However, the present invention applies to general architectures including a plurality of client computers **210** that are ~~services serviced~~ by one or more gateway computers **205**, and by one or more security computers **215**. Similarly, communication channels **220**, **225** and **230** may each be multiple channels using standard communication protocols such as TCP/IP.

Please amend paragraph [0058] of the original specification as follows:

[0058] Preferably, when call **(2)** is made, the substitute function sends the input to security computer **215** for inspection. Preferably, content modifier **265** also inserts program code for the substitute function into the content, or a link to the substitute function. Such a substitute function may be of the following general form shown in **TABLE I**.

---

**TABLE I:** Generic substitute function

---

```
Function Substitute_function(input)
{
```

---

---

```
inspection_result = Call_security_computer_to_inspect(
                                input, ID_of_client_computer);
if (inspection_result)
    Original_function(input)
else
    //do nothing
}
```

---

Preferably, the above function *call\_security\_computer\_to\_inspect()* passes the input intended for the original function to security computer **215** for inspection by inspector **275**. In addition, an [[1D]] ID of client computer **210** is also passed to security computer **215**. ~~When security computer services many such client computers **210** at once, it uses such IDs to determine where to return its results.~~ For example, the ID may correspond to a network address of client computer **210**. When security computer **215** services many such client computers **210** at once, it uses the IDs to determine where to return each of its many results.

Please amend paragraph [0062] of the original specification as follows:

[0062] Content processor **270** processes the modified content generated by content modifier **265**. Content processor may be a web browser running on client computer **210**. When content processor invokes the substitute function call **(2)**, the input is passed to security computer **215** for inspection. Processing of the modified content is then suspended until security computer **215** returns its inspection results to client computer **210**. Upon receiving the inspection results, client computer **210** resumes processing the modified content. If inspection\_result is true, then client computer **210** invokes the original function call **(1)**; otherwise, [[the]] client computer **210** does not invoke the original function call **(1)**.



Please amend paragraph [0065] of the original specification as follows:

[0065] After determining a security profile for the input, inspector **275** preferably retrieves information about permission settings for client computer **210**, referred to as client computer's "security policy". Such permission settings ~~are generally set by an administrator of client computer **210**, and~~ determine which commands are permitted to be performed by content processor **270** while processing content, and which commands are not permitted. Security policies are also described in assignee's US Patent No. 6,092,194. Security policies are flexible, and are generally set by an administrator of client computer **210**. Preferably, security computer **215** has accesses to a database **280** of security profile information for a plurality of client computers. Database **280** may reside on security computer **215**, or on a different computer.

Please amend paragraph [0066] of the original specification as follows:

[0066] By comparing the input's security ~~policy~~ profile to client computer **210**'s security ~~profile~~ policy, input inspector **275** determines whether it is safe for client computer **210** to make the function call **(1)**. Security computer **215** sends back to client computer **210** an indicator, *inspection\_result*, of the inspector's determination. Comparison of a security ~~policy~~ profile to a security ~~profile~~ policy is also described in assignee's US Patent No. 6,092,194. Security policies may include simple or complex logical tests for making a determination of whether or not an input is safe.

Please amend paragraph [0071] of the original specification as follows:

[0071] To this end, input inspector **275** preferably passes inputs it receives to input modifier **285**, prior to scanning the input. Input modifier preferably operates similar to content modifier **265**, and replaces function calls detected in the input with corresponding substitute function calls. Referring to the example above, when client computer **210** invokes the outer call to *Document.write()* in **(5)**, the input `[[ext]] text string`

```
"<h1>Document.write(  
    "<h1><SCRIPT>Some JavaScript</SCRIPT></h1>" )</h1>" (6)
```

is passed to security computer **215**. Input modifier **285** detects the inner function call to *Document.write()* and replaces it with a corresponding substitute function call of the form **(2)**. Input inspector **275** then inspects the modified input. At this stage, if the input to the inner call to *Document.write()* has not yet been dynamically generated, input inspector **275** may not detect the presence of the JavaScript, and thus may not set *inspection\_result* to false if the JavaScript is malicious. However, security computer **215** returns the modified input to client computer **210**. As such, when content processor **270** resumes processing, it adds the modified input into the HTML page. This guarantees that when content processor **270** begins to process the modified input, it will again invoke the substitute function for *Document.write()*, which in turn passes the input of the inner *Document.write()* call of **(5)** to security computer **215** for inspection. This time around input inspector **275** is able to detect the presence of the JavaScript, and can analyze it accordingly.

Please amend paragraph [0076] of the original specification as follows:

[0076] It may be appreciated that substitute functions as in **TABLE I** may also pass the name of the original function to the security computer. That is, the call to *Call\_security\_computer\_to\_inspect()* may also pass a variable, say *name\_of\_function*, so that input inspector **275** can determine whether it is safe to invoke the specific original function with the input. In this way, input inspector **275** can distinguish between different functions with the same input.

Please amend paragraph [0078] of the original specification as follows:

[0078] At step **304**, the gateway computer receives content from a network, the content on its way for delivery to the client computer. Such content may be in the form of an HTML web page, an XML document, a Java applet, an EXE file, JavaScript, VBScript, an ActiveX Control, or any such data container that can be rendered by a client web browser. At step **308**, the gateway computer scans the content it received, for the presence of function calls. At step **312**, the gateway computer branches, depending on whether or not function calls were detected at step **308**. If function calls were detected, then at step ~~[[318]]~~ **316** the gateway computer replaces original function calls with substitute function calls within the content, thereby modifying the content. If function calls were not detected, then the gateway computer skips step ~~[[318]]~~ **316**. At step **320**, the gateway computer sends the content, which may have been modified at step ~~[[318]]~~ **316**, to the client computer.

Please amend paragraph [0079] of the original specification as follows:

[0079] At step **324** the client computer receives the content, as modified by the gateway computer. At step **328** the client computer begins to continuously process the modified content; i.e., the client computer runs an application, such as a web browser or a Java virtual machine, that processes the modified content. At step **332**, ~~which~~ while processing the modified content, the client computer encounters a call **(2)** to a substitute function, such as the substitute function listed in **TABLE I**. Client computer then transmits the input to the substitute function and an identity of the client computer, to the security computer for inspection, at step **336**. The identity of the client computer serves to inform the security computer where to return its inspection result. Since one security computer typically services many client computers, passing client computer identities is a way to direct the security computer where to send back its results. At this point, client computer suspends processing the modified content pending receipt of the inspection results from the security computer. As mentioned hereinabove, the client computer may also send the name of the original function to the security computer, for consideration in the inspection analysis.

Please amend paragraph [0083] of the original specification as follows:

[0083] At step **364** the security computer compares the security profile of the input under inspection with the security ~~profile~~ policy of the client computer, to determine if it is permissible for the client computer to invoke an original function with the input. Such determination may involve one or more simple or complex logical tests, structured in series

or in parallel, or both, as described in assignee's US Patent No. 6,092,194.

Please amend paragraph [0084] of the original specification as follows:

[0084] At step **368** the security computer branches depending on the result of the comparison step **364**. If the comparison step determines that the input is safe; i.e., that the input's security profile does not violate the client computer's security policy, then at step **372** the security computer sets an indicator of inspection results to true. Otherwise, at step **376** the security computer sets the indicator to false. At step **380** the security computer returns the indicator to the client computer. In addition, if the security computer modified the input ~~[[as]]~~ at step **352**, then it also returns the modified input to the client computer.

Please amend paragraph [0088] of the original specification as follows:

[0088] Two major components of the system, gateway computer **405** and client computer **410** ~~communication~~ communicate back and forth over communication channel **425**. Gateway computer **405** includes a gateway receiver **435** and a gateway transmitter **440**; and client computer **410** includes a client receiver **445** and a client transmitter **450**. Although **FIG. 4** includes only one client computer, this is solely for the purpose of clarity of exposition, and it is anticipated that gateway computer **405** serves many client computers **410**.

Please amend paragraph [0089] of the original specification as follows:

[0089] Gateway computer **405** receives content, such as web content, from a network, over ~~communications~~ communication channel **420**. Client computer **410** includes a content processor **470**, such as a web browser, which processes content received from the network.

IN THE CLAIMS:

Please substitute the following claims for the pending claims with the same number:

**1.** (original) A system for protecting a computer from dynamically generated malicious content, comprising:

a content processor (i) for processing content received over a network, the content including a call to a first function, and the call including an input, and (ii) for invoking a second function with the input, only if a security computer indicates that such invocation is safe;

a transmitter for transmitting the input to the security computer for inspection, when the first function is invoked; and

a receiver for receiving an indicator from the security computer whether it is safe to invoke the second function with the input.

**2.** (currently amended) The system of claim **1** wherein said content processor (i) suspends processing of the content after said transmitter transmits the input to the security computer, and (ii) resumes processing of the ~~modified~~ content after said receiver receives the indicator from the security computer.

**3.** (currently amended) A non-transitory computer-readable storage medium storing program code for causing a computing device to:

process content received over a network, the content including a call to a first function, and the call including an input;

transmit the input for inspection, when the first function is invoked, and suspend processing of the content;

receive an indicator of whether it is safe to invoke a second function with the input; and

resume processing of the content after receiving the indicator, and invoke the second function with the input only if the indicator indicates that such invocation is safe.



Please add the following new claims.

- 4.** (new)                    The system of claim **1** wherein the input is dynamically generated by said content processor prior to being transmitted by said transmitter.
- 5.** (new)                    The storage medium of claim **3** wherein the program code causes the computer device to dynamically generate the input prior to transmitting the input for inspection.
- 6.** (new)                    A system for protecting a computer from dynamically generated malicious content, comprising:
- a content processor (i) for processing content received over a network, the content including a call to a first function, and the first function including an input variable, and (ii) for calling a second function with a modified input variable;
  - a transmitter for transmitting the input variable to a security computer for inspection, when the first function is called; and
  - a receiver for receiving the modified input variable from the security computer.
- 7.** (new)                    The system of claim **6** wherein said content processor (i) suspends processing of the content after said transmitter transmits the input variable to the security computer, and (ii) resumes processing of the content after said receiver receives the modified input variable from the security computer.

**8.** (new)                    The system of claim **6** wherein the input variable is dynamically generated by said content processor prior to being transmitted by said transmitter.

**9.** (new)                    The system of claim **6** wherein the input variable includes a call to an additional function, and wherein the modified input variable includes a call to a modified additional function instead of the call to the additional function.

**10.** (new)                    A non-transitory computer-readable storage medium storing program code for causing a computing device to:

                  process content received over a network, the content including a call to a first function, and the first function including an input variable;

                  transmit the input variable for inspection, when the first function is called, and suspend processing of the content;

                  receive a modified input variable; and

                  resume processing of the content after receiving the modified input variable, and calling a second function with the modified input variable.

**11.** (new)                    The storage medium of claim **10** wherein the program code causes the computer device to dynamically generate the input variable prior to transmitting the input variable for inspection.

**12.** (new)                    The storage medium of claim **10** wherein the input variable includes a call to an additional function, and wherein the

modified input variable includes a call to a modified additional function instead of the call to the additional function.

## REMARKS

Applicants' representative has carefully studied the outstanding Office Action. The present amendment is intended to place the application in condition for allowance and is believed to overcome all of the objections and rejections made by the Examiner. Favorable reconsideration and allowance of the application are respectfully requested.

Applicants have amended claims **2** and **3**, and have added new claims **4 - 12**. No new matter has been introduced, and support for the new and amended claims is provided below. Claims **1 - 12** are presented for examination. Additionally, amendments to the specification have been made to add reference numerals from the figures, correct typographical errors and remove repetitive statements. The undersigned does not believe that new matter has been introduced by these amendments.

### **Claim Rejections – 35 U.S.C. §112**

On page 2 of the Office Action, the Examiner has rejected claim **2** under 35 U.S.C. §112, second paragraph, as being indefinite. Applicants have amended this claim accordingly.

### **Claim Rejections – 35 U.S.C. §101**

On pages 2 and 3 of the Office Action, the Examiner has rejected claim **3** under 35 U.S.C. §101 as being directed to non-statutory matter. Applicants have amended this claim to recite a "*non-transitory computer-readable storage medium*".

## **Claim Rejections – 35 U.S. C. §102**

On pages 3 and 4 of the Office Action, the Examiner has rejected claims **1 - 3** under 35 U.S.C. §102(b) as being anticipated by Albrecht, U.S. Publication No. 2001/0005889 (“Albrecht”).

## **Brief Discussion of Prior Art**

Albrecht describes scanning of electronic files for computer viruses, whereby a first node that receives an electronic file conducts a dialogue with a second node that has a virus scanner. The second node identifies portions of the electronic file that the first node should transmit to the second node for scanning, and obviates the need for the first node to transmit the entire file. (Albrecht/ paragraphs [0005] – [0013]; Abstract; FIGS. 3 and 4)

## **Response to Examiner’s Arguments**

The rejections of claims **1 – 3** on pages 3 and 4 of the Office will now be dealt with specifically.

## **Claims 1, 2 and 4**

As to independent system claim **1**, Applicants respectfully submit that the features in claim **1** of

*“a content processor (i) for processing content received over a network, the content including **a call to a first function**, and **the call including an input**, and (ii) for invoking **a second function** with the input, only if a security computer indicates that such invocation is safe”,*

"a transmitter for transmitting **the input** to the security computer for inspection, **when the first function is invoked**", and

"a receiver for receiving an indicator from the security computer whether it is safe to invoke **the second function** with **the input**"

are neither shown nor suggested in Albrecht.

In rejecting claim **1** on page 3 of the Office Action, the Examiner has cited Albrecht, paragraphs [0047] – [0049] as disclosing all of the above features. Applicants respectfully submit that none of the emphasized features are shown or suggested in Albrecht, as evidenced by the following arguments. MPEP 2143.03 states that

"All words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CPA 1970).

**I. Albrecht does not show or suggest the claimed invocation of a first function.**

Indeed, invocation of the electronic files, as interpreted in the framework of Albrecht, is performed at clients 2 of FIG. 1, whereas paragraphs [0047] – [0049] of Albrecht relate to protected systems 4 and virus scanning server 7 of FIG. 1. Neither of these latter computers actually invokes the electronic files.

In distinction, the claimed content processor invokes the first function.

**II. Albrecht does not show or suggest the claimed transmitting an input of a first function to a security computer.**

The portions of the electronic file which are transmitted are described by Albrecht as *"a header portion of an electronic file or of a block of data pointed to by a jump instruction located in the header"* (Albrecht/ paragraphs [0012]).

In distinction, the claimed transmitter transmits the input in a call to a first function.

Because claims **2** and **4** depend from claim **1** and include additional features, Applicants respectfully submit that claims **2** and **4** are not anticipated or rendered obvious by Albrecht.

Accordingly claims **1**, **2** and **4** are deemed to be allowable.

### **Claims 3 and 5**

As to amended independent claim **3** for a computer-readable storage medium, Applicants respectfully submit that the feature in claim **3** of

*"storing program code for causing a computing device to: process content received over a network, the content including **a call to a first function**, and **the call including an input**; transmit **the input** for inspection, **when the first function is invoked**, and suspend processing of the content; receive an indicator of whether it is safe to invoke **a second function** with **the input ..."**,*  
is neither shown nor suggested in Albrecht.

Because claim **5** depends from claim **3** and includes additional features, Applicants respectfully submit that claim **5** is not anticipated or rendered obvious by Albrecht.

Accordingly claims **3** and **5** are deemed to be allowable.

## Claims 6 – 9

As to new independent system claim **6**, Applicants respectfully submit that the features in claim **6** of

*“a content processor (i) for processing content received over a network, the content including **a call to a first function**, and the first function including **an input variable**, and (ii) for calling **a second function** with a **modified input variable**”,*

*“a transmitter for transmitting **the input variable** to a security computer for inspection, **when the first function is called**”, and*

*“a receiver for receiving **the modified input variable** from the security computer”*

are neither shown nor suggested in Albrecht.

Because claims **7 - 9** depend from claim **6** and include additional features, Applicants respectfully submit that claims **7 - 9** are not anticipated or rendered obvious by Albrecht.

Accordingly claims **6 - 9** are deemed to be allowable.

## Claims 10 – 12

As to amended independent claim **10** for a computer-readable storage medium, Applicants respectfully submit that the feature in claim **10** of

*“program code for causing a computing device to: process content received over a network, the content including a call to **a first function**, and the first function including **an input variable**; transmit **the input variable** for inspection, **when the first function is called**, and suspend processing of the content; receive **a modified input variable**; and resume processing of the content after receiving the*



*modified input variable, and calling a second function with the modified input variable”*

Because claims **11** and **12** depend from claim **10** and include additional features, Applicants respectfully submit that claims **11** and **12** are not anticipated or rendered obvious by Albrecht.

Accordingly claims **10** - **12** are deemed to be allowable.

### **Support for New and Amended Claims in Original Specification**

New dependent claim **4** includes the feature that the input is dynamically generated by the content processor prior to being transmitted by the transmitter. This feature is supported in the original specification at least by paragraphs [0025], [0058], [0062] and [0091], and by FIGS. 2 and 4.

New dependent claim **5** includes the feature that the program code causes the computing device to dynamically generate the input prior to transmitting the input for inspection. This feature is supported in the original specification at least by paragraphs [0025], [0079] and [0093], and by FIGS. 3 and 5.

New independent claim **6** includes the feature that the content processor invokes a second function with a modified input variable, which is received by the receiver from the security computer. This feature is supported in the original specification at least by paragraphs [0060], [0063] and [0071], and by input modifier 285 of FIG. 2.

New dependent claim **7** includes the features that the content processor suspends processing of the content after the transmitter transmits the input variable to the security computer, and resumes processing of the content after the receiver receives the

modified input variable from the security computer. These features are supported in the original specification at least by paragraphs [0025], [0062], [0079], [0085], [0091], [0093] and [0097], and by original claim **2**.

New dependent claim **8** includes the feature that the input variable is dynamically generated by the content processor prior to being transmitted by the transmitter. This feature is supported in the original specification at least by paragraphs [0025], [0058], [0062] and [0091], and by FIGS. 2 and 4.

New dependent claim **9** includes the features that the input variable includes a call to an additional function, and the modified input variable includes a call to a modified additional function instead of the call to the additional function. These features are supported in the original specification at least by paragraphs [0070] and [0071], and by input modifier 275 of FIG. 2.

New independent claim **10** includes the features that the program code causes the computing device to receive a modified input variable, and to invoke a second function with the modified input variable. This feature is supported in the original specification at least by paragraphs [0080] and [0086], and by step 352 of FIG. 3.

New dependent claim **11** includes the feature that the program code causes the computing device to dynamically generate the input variable prior to transmitting the input variable for inspection. This feature is supported in the original specification at least by paragraphs [0025], [0079] and [0093], and by FIGS. 3 and 5.

New dependent claim **12** includes the features that the input variable includes a call to an additional function, and the modified input variable includes a call to a modified additional function instead of

the call to the additional function. These features are supported in the original specification at least by paragraphs [0080] and [0086], and by step 352 of FIG. 3.

For the foregoing reasons, Applicants respectfully submit that the applicable objections and rejections have been overcome and that the claims are in condition for allowance.

Respectfully submitted,

Date: October 5, 2011  
KING & SPALDING LLP  
1700 Pennsylvania Avenue, NW  
Washington, D.C. 20006-4706  
(202) 626-8978

By: /Dawn-Marie Bey - 44,442/  
Dawn-Marie Bey  
Registration No. 44,442

## Electronic Patent Application Fee Transmittal

<b>Application Number:</b>	12814584
<b>Filing Date:</b>	14-Jun-2010
<b>Title of Invention:</b>	SYSTEM AND METHOD FOR INSPECTING DYNAMICALLY GENERATED EXECUTABLE CODE
<b>First Named Inventor/Applicant Name:</b>	David GRUZMAN
<b>Filer:</b>	Dawn-Marie Bey./Jeanne Paolella-Bald
<b>Attorney Docket Number:</b>	FIN0008-DIV1

Filed as Large Entity

### Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
<b>Basic Filing:</b>				
<b>Pages:</b>				
<b>Claims:</b>				
<b>Miscellaneous-Filing:</b>				
<b>Petition:</b>				
<b>Patent-Appeals-and-Interference:</b>				
<b>Post-Allowance-and-Post-Issuance:</b>				
<b>Extension-of-Time:</b>				
Extension - 1 month with \$0 paid	1251	1	Juniper <sup>150</sup> Ex. 1002-p. 120 <sup>150</sup>	

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
<b>Miscellaneous:</b>				
<b>Total in USD (\$)</b>				<b>150</b>

## Electronic Acknowledgement Receipt

<b>EFS ID:</b>	11115473
<b>Application Number:</b>	12814584
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	9667
<b>Title of Invention:</b>	SYSTEM AND METHOD FOR INSPECTING DYNAMICALLY GENERATED EXECUTABLE CODE
<b>First Named Inventor/Applicant Name:</b>	David GRUZMAN
<b>Customer Number:</b>	74877
<b>Filer:</b>	Dawn-Marie Bey./Jeanne Paolella-Bald
<b>Filer Authorized By:</b>	Dawn-Marie Bey.
<b>Attorney Docket Number:</b>	FIN0008-DIV1
<b>Receipt Date:</b>	05-OCT-2011
<b>Filing Date:</b>	14-JUN-2010
<b>Time Stamp:</b>	13:56:45
<b>Application Type:</b>	Utility under 35 USC 111(a)

### Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	\$150
RAM confirmation Number	202
Deposit Account	
Authorized User	

### File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part: (if appl.)	Pages (if appl.)

1	Amendment/Req. Reconsideration-After Non-Final Reject	fin0008div1_resp.pdf	159934	no	24
			c0f71dc91fc3d64a625fae386caa13a957e457c0		

**Warnings:**

**Information:**

2	Fee Worksheet (SB06)	fee-info.pdf	30415	no	2
			02242672dc39cf6cca2a623e8c41a701eb2a20cd		

**Warnings:**

**Information:**

<b>Total Files Size (in bytes):</b>			190349		
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**This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.**

**New Applications Under 35 U.S.C. 111**

**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**

**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**

**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

<b>PATENT APPLICATION FEE DETERMINATION RECORD</b> Substitute for Form PTO-875	Application or Docket Number <b>12/814,584</b>	Filing Date <b>06/14/2010</b>	<input type="checkbox"/> To be Mailed
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APPLICATION AS FILED – PART I			OTHER THAN SMALL ENTITY				
	(Column 1)	(Column 2)	SMALL ENTITY <input type="checkbox"/>	OR			
FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)	OR	RATE (\$)	FEE (\$)
<input checked="" type="checkbox"/> BASIC FEE <small>(37 CFR 1.16(a), (b), or (c))</small>	N/A	N/A	N/A			N/A	<b>330</b>
<input type="checkbox"/> SEARCH FEE <small>(37 CFR 1.16(k), (j), or (m))</small>	N/A	N/A	N/A			N/A	
<input type="checkbox"/> EXAMINATION FEE <small>(37 CFR 1.16(o), (p), or (q))</small>	N/A	N/A	N/A			N/A	
TOTAL CLAIMS <small>(37 CFR 1.16(j))</small>	minus 20 =	*	X \$ =		OR	X \$ =	
INDEPENDENT CLAIMS <small>(37 CFR 1.16(h))</small>	minus 3 =	*	X \$ =			X \$ =	
<input type="checkbox"/> APPLICATION SIZE FEE <small>(37 CFR 1.16(s))</small>	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
<input type="checkbox"/> MULTIPLE DEPENDENT CLAIM PRESENT <small>(37 CFR 1.16(j))</small>							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	<b>330</b>

APPLICATION AS AMENDED – PART II					OTHER THAN SMALL ENTITY				
	(Column 1)	(Column 2)	(Column 3)		SMALL ENTITY	OR			
AMENDMENT	<b>10/05/2011</b>	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	OR	RATE (\$)	ADDITIONAL FEE (\$)
	Total <small>(37 CFR 1.16(i))</small>	* 12	Minus ** 20	= 0	X \$ =		OR	X \$60=	0
	Independent <small>(37 CFR 1.16(h))</small>	* 2	Minus ***3	= 0	X \$ =		OR	X \$250=	0
	<input type="checkbox"/> Application Size Fee <small>(37 CFR 1.16(s))</small>								
	<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <small>(37 CFR 1.16(j))</small>						OR		
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	<b>0</b>

	(Column 1)	(Column 2)	(Column 3)						
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	OR	RATE (\$)	ADDITIONAL FEE (\$)
	Total <small>(37 CFR 1.16(i))</small>	*	Minus **	=	X \$ =		OR	X \$ =	
	Independent <small>(37 CFR 1.16(h))</small>	*	Minus ***	=	X \$ =		OR	X \$ =	
	<input type="checkbox"/> Application Size Fee <small>(37 CFR 1.16(s))</small>								
	<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <small>(37 CFR 1.16(j))</small>						OR		
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

\* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.  
 \*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".  
 \*\*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".  
 The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:  
/TAMMY MCBETH BROWN/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.





NOTICE OF ALLOWANCE AND FEE(S) DUE

74877 7590 11/02/2011
King and Spalding LLP
1700 Pennsylvania Ave, NW
Suite 200
Washington, DC 20006

EXAMINER
PICH, PONNOREAY
ART UNIT PAPER NUMBER

2435

DATE MAILED: 11/02/2011

Table with 5 columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO.

12/814,584 06/14/2010 David GRUZMAN FIN0008-DIV1 9667

TITLE OF INVENTION: SYSTEM AND METHOD FOR INSPECTING DYNAMICALLY GENERATED EXECUTABLE CODE

Table with 7 columns: APPLN. TYPE, SMALL ENTITY, ISSUE FEE DUE, PUBLICATION FEE DUE, PREV. PAID ISSUE FEE, TOTAL FEE(S) DUE, DATE DUE

nonprovisional NO \$1740 \$300 \$0 \$2040 02/02/2012

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

**PART B - FEE(S) TRANSMITTAL**

**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE  
 Commissioner for Patents  
 P.O. Box 1450  
 Alexandria, Virginia 22313-1450  
 or Fax (571)-273-2885**

**INSTRUCTIONS:** This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

74877                      7590                      11/02/2011  
**King and Spalding LLP**  
 1700 Pennsylvania Ave, NW  
 Suite 200  
 Washington, DC 20006

**Certificate of Mailing or Transmission**

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/814,584	06/14/2010	David GRUZMAN	FIN0008-DIV1	9667

TITLE OF INVENTION: SYSTEM AND METHOD FOR INSPECTING DYNAMICALLY GENERATED EXECUTABLE CODE

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1740	\$300	\$0	\$2040	02/02/2012

EXAMINER	ART UNIT	CLASS-SUBCLASS
PICH, PONNOREAY	2435	726-022000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363). <input type="checkbox"/> Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached. <input type="checkbox"/> "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. <b>Use of a Customer Number is required.</b>	2. For printing on the patent front page, list (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____ (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 _____ 3 _____
--	--

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE \_\_\_\_\_ (B) RESIDENCE: (CITY and STATE OR COUNTRY) \_\_\_\_\_

Please check the appropriate assignee category or categories (will not be printed on the patent) :  Individual  Corporation or other private group entity  Government

4a. The following fee(s) are submitted: <input type="checkbox"/> Issue Fee <input type="checkbox"/> Publication Fee (No small entity discount permitted) <input type="checkbox"/> Advance Order - # of Copies _____	4b. Payment of Fee(s); (Please first reapply any previously paid issue fee shown above) <input type="checkbox"/> A check is enclosed. <input type="checkbox"/> Payment by credit card. Form PTO-2038 is attached. <input type="checkbox"/> The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).
--	---

5. Change in Entity Status (from status indicated above)

a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.       b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature \_\_\_\_\_ Date \_\_\_\_\_  
 Typed or printed name \_\_\_\_\_ Registration No. \_\_\_\_\_

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
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www.uspto.gov

Table with 5 columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO.
12/814,584 06/14/2010 David GRUZMAN FIN0008-DIV1 9667

74877 7590 11/02/2011
King and Spalding LLP
1700 Pennsylvania Ave, NW
Suite 200
Washington, DC 20006

EXAMINER

PICH, PONNOREAY

ART UNIT PAPER NUMBER

2435

DATE MAILED: 11/02/2011

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 0 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 0 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

## Privacy Act Statement

**The Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

**Notice of Allowability**

**Application No.**

12/814,584

**Examiner**

PONNOREAY PICH

**Applicant(s)**

GRUZMAN ET AL.

**Art Unit**

2435

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

- 1.  This communication is responsive to 10/5/11.
- 2.  An election was made by the applicant in response to a restriction requirement set forth during the interview on \_\_\_\_\_; the restriction requirement and election have been incorporated into this action.
- 3.  The allowed claim(s) is/are 1-12.
- 4.  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a)  All    b)  Some\*    c)  None    of the:
    - 1.  Certified copies of the priority documents have been received.
    - 2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_ .
    - 3.  Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
  - \* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

- 5.  A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  - 6.  CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a)  including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1)  hereto or 2)  to Paper No./Mail Date \_\_\_\_\_.
    - (b)  including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
- 7.  DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- 1.  Notice of References Cited (PTO-892)
- 2.  Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3.  Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
- 4.  Examiner's Comment Regarding Requirement for Deposit of Biological Material
- 5.  Notice of Informal Patent Application
- 6.  Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_ .
- 7.  Examiner's Amendment/Comment
- 8.  Examiner's Statement of Reasons for Allowance
- 9.  Other \_\_\_\_\_.

/Ponnoreay Pich/  
Primary Examiner, Art Unit 2435

### EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Dawn-Marie Bey (reg. no. 44,442) on 10/25/11. The amendments seen below are to overcome minor informalities and to avoid rejections over 35 USC 112, second paragraph and art rejections. As per MPEP 713.04, a separate interview summary form is not provided because the substance of the interview has been summarized herein.

The application has been amended as follows:

AMEND THE FOLLOWING CLAIMS AS FOLLOWS:

5. (currently amended) The non-transitory computer-readable storage medium of claim 3 wherein the program code causes the computer device to dynamically generate the input prior to transmitting the input for inspection.

6. (currently amended) A system for protecting a computer from dynamically generated malicious content, comprising:

a content processor (i) for processing content received over a network, the content including a call to a first function, and the first function including an input variable, and (ii) for calling a second function with a modified input variable;

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a transmitter for transmitting the input variable to a security computer for inspection, when the first function is called; and

a receiver for receiving the modified input variable from the security computer,  
wherein the modified input variable is obtained by modifying the input variable if the security computer determines that calling a function with the input variable may not be safe.

10. (currently amended) A non-transitory computer-readable storage medium storing program code for causing a computing device to:

process content received over a network, the content including a call to a first function, and the first function including an input variable;

transmit the input variable for inspection, when the first function is called, and suspend processing of the content;

receive a modified input variable; and

resume processing of the content after receiving the modified input variable, and calling a second function with the modified input variable,

wherein the modified input variable is obtained by modifying the input variable if the inspection of the input variable indicates that calling a function with the input variable may not be safe.

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11. (currently amended) The non-transitory computer-readable storage medium of claim 10 wherein the program code causes the computer device to dynamically generate the input variable prior to transmitting the input variable for inspection.

12. (currently amended) The non-transitory computer-readable storage medium of claim 10 wherein the input variable includes a call to an additional function, and wherein the modified input variable includes a call to a modified additional function instead of the call to the additional function.

The following is an examiner's statement of reasons for allowance: Claims 1 and 3 are allowed over the prior art because applicant's arguments submitted on 10/5/11 were persuasive. Claim 6 is allowed over the prior art because the prior art does not teach modification of the input variable after the security computer determines calling a function with the input variable may not be safe and the modified input variable being used to call a second function. In a typical prior art anti-virus system and method, if an input variable is determined to not be safe, the input variable is either deleted or quarantined rather than be used to call another function after some sort of modification to the input variable. Claim 10 is allowed for similar reasons as claim 6. The remaining claims are allowed over the prior art due to dependency.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably



Art Unit: 2435

accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PONNOREAY PICH whose telephone number is (571)272-7962. The examiner can normally be reached on 9:00am-4:30pm EST Mon-Thurs.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Vu can be reached on 571-272-3859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ponnoreay Pich/  
Primary Examiner, Art Unit 2435

## EAST Search History

## EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	2	"7757289" .pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/06/19 15:32
S2	2	"7313822" .pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/06/19 15:35
S3	2	"7287279" .pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/06/19 15:51
S4	4	"7203934" .pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/06/19 16:01
S5	2	"20070016948" .pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/06/19 16:02
S6	2	"20060161981" .pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/06/19 16:16
S7	2	"20060015940" .pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/06/19 16:17

S8	2	"6965968".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/06/19 16:22
S9	2	"6934857".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/06/19 16:23
S10	2	"20050108562".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/06/19 16:26
S11	2	"20040158729".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/06/19 16:28
S12	2	"20040153644".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/06/19 16:29
S13	2	"20040133796".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/06/19 16:31
S14	2	"20020116635".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/06/19 18:08
S15	2	"6272641".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/06/19 18:24

S16	2	"6167520".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/06/19 18:38
S17	2	"6092194".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/06/19 18:44
S18	2	"5983348".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/06/19 18:45
S19	2	"5974549".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/06/19 18:53
S20	2	"5359659".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/06/19 18:54
S21	2	"20070016948".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/06/19 19:04
S22	13993	(send\$3 or transmit\$4 or transmission) with (input or script or file or executable) with (scan\$4 or security) and @ad<"20051212"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/06/19 19:57
S23	1621	726/22.ccls. and @ad<"20051212"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/06/19 20:03

S24	56	(detect\$3 or determin\$3) with (attack or virus or malware or malform) with script and @ad<"20051212"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/06/19 20:19
S25	2377	(send\$3 or transmit\$4 or upload\$3) with (script or executable or input or file) with (security or scan\$4 or inspect\$3) with (gateway or computer) and @ad<"20051212"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/06/19 21:08
S26	2	"20010005889".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/06/19 21:12
S27	127	S25 and (paus\$3 or freez\$3 or suspend\$3) with (run or execution or process\$3 or script)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/06/19 21:41
S28	106136	(paus\$3 or freez\$3 or suspend\$3) with (run or execution or process\$3 or script) and @ad<"20051212"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/06/19 22:22
S29	256	S28 and (scan\$4) with (malware or virus or script or trojan)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/06/19 22:22
S30	2281	726/22,24.ccls. and @ad<"20051212"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/10/18 13:00
S31	7730	(713/150,153,164-167,188 or 726/22-25).ccls. and @ad<"20051212"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/10/18 13:07


S32	709	S31 and (scan\$4 with (input or parameter))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/10/18 13:07
S33	7730	(713/150,153,164-167,188 or 726/22-25).ccls. and @ad<"20051212"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/10/24 12:15
S34	278	S33 and ((replac\$3 or modify\$3) with (input or parameter))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/10/24 12:15
S35	2	"20070136811".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/10/24 14:44
S36	2	("2007/0136811").URPN.	USPAT	OR	OFF	2011/10/24 14:45

### EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S37	9	((((replac\$3 or modify\$3) with (input or parameter)) and (network or wan or lan) and (scan\$4 or determin\$3) and (virus or trojan or malicious or malware or harmful or security)).clm. and @ay="2005"	US-PGPUB; UPAD	OR	OFF	2011/10/24 14:41
S38	2	("2007/0136811").URPN.	USPAT	OR	OFF	2011/10/24 14:44

10/ 25/ 2011 10:49:22 AM


C:\Documents and Settings\ppich\My Documents\EAST\Workspaces\12814584.wsp

<b>Issue Classification</b> 	<b>Application/Control No.</b> 12814584	<b>Applicant(s)/Patent Under Reexamination</b> GRUZMAN ET AL.
	<b>Examiner</b> PONNOREAY PICH	<b>Art Unit</b> 2435

ORIGINAL				INTERNATIONAL CLASSIFICATION									
CLASS		SUBCLASS		CLAIMED				NON-CLAIMED					
726		22		G	0	6	F	11 / 00 (2006.01.01)					
<b>CROSS REFERENCE(S)</b>													
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)												
726	23	24											
713	188												

<input type="checkbox"/> Claims renumbered in the same order as presented by applicant																<input type="checkbox"/> CPA		<input type="checkbox"/> T.D.		<input type="checkbox"/> R.1.47	
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original						
1	1																				
2	2																				
4	3																				
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6	6																				
7	7																				
8	8																				
9	9																				
10	10																				
11	11																				
12	12																				

NONE		<b>Total Claims Allowed:</b>	
		12	
(Assistant Examiner)	(Date)		
/PONNOREAY PICH/ Primary Examiner.Art Unit 2435	10/25/2011	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	4

<b>Search Notes</b>  	<b>Application/Control No.</b>  12814584	<b>Applicant(s)/Patent Under Reexamination</b>  GRUZMAN ET AL.
	<b>Examiner</b>  PONNOREAY PICH	<b>Art Unit</b>  2435

<b>SEARCHED</b>			
<b>Class</b>	<b>Subclass</b>	<b>Date</b>	<b>Examiner</b>

<b>SEARCH NOTES</b>		
<b>Search Notes</b>	<b>Date</b>	<b>Examiner</b>
Double patenting search via inventor name on PALM	6/19/11	PP
Searched EAST, see notes	6/20/11	PP
*****		
Updated above searches	10/24/11	PP

<b>INTERFERENCE SEARCH</b>			
<b>Class</b>	<b>Subclass</b>	<b>Date</b>	<b>Examiner</b>
	Searched EAST, see notes	10/24/11	PP

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CORRECTED
NOTICE OF ALLOWANCE AND FEE(S) DUE

74877 7590 12/22/2011
King and Spalding LLP
1700 Pennsylvania Ave, NW
Suite 200
Washington, DC 20006

EXAMINER
PICH, PONNOREAY
ART UNIT PAPER NUMBER
2435

DATE MAILED: 12/22/2011

Table with 5 columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO.

12/814,584 06/14/2010 David GRUZMAN FIN0008-DIV1 9667
TITLE OF INVENTION: SYSTEM AND METHOD FOR INSPECTING DYNAMICALLY GENERATED EXECUTABLE CODE

Table with 7 columns: APPLN. TYPE, SMALL ENTITY, ISSUE FEE DUE, PUBLICATION FEE DUE, PREV. PAID ISSUE FEE, TOTAL FEE(S) DUE, DATE DUE

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.
If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:
A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.
B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:
A. Pay TOTAL FEE(S) DUE shown above, or
B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

**PART B - FEE(S) TRANSMITTAL**

**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE  
 Commissioner for Patents  
 P.O. Box 1450  
 Alexandria, Virginia 22313-1450  
 or Fax (571)-273-2885**

**INSTRUCTIONS:** This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

74877      7590      12/22/2011  
**King and Spalding LLP**  
 1700 Pennsylvania Ave, NW  
 Suite 200  
 Washington, DC 20006

**Certificate of Mailing or Transmission**

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/814,584	06/14/2010	David GRUZMAN	FIN0008-DIV I	9667

TITLE OF INVENTION: SYSTEM AND METHOD FOR INSPECTING DYNAMICALLY GENERATED EXECUTABLE CODE

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1740	\$300	\$0	\$2040	03/22/2012

EXAMINER	ART UNIT	CLASS-SUBCLASS
PICH, PONNOREAY	2435	726-022000

<p>1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).</p> <p><input type="checkbox"/> Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.</p> <p><input type="checkbox"/> "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. <b>Use of a Customer Number is required.</b></p>	<p>2. For printing on the patent front page, list</p> <p>(1) the names of up to 3 registered patent attorneys or agents OR, alternatively, _____ 1</p> <p>(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. _____ 2</p> <p>_____ 3</p>
---	---

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE \_\_\_\_\_ (B) RESIDENCE: (CITY and STATE OR COUNTRY) \_\_\_\_\_

Please check the appropriate assignee category or categories (will not be printed on the patent):  Individual  Corporation or other private group entity  Government

<p>4a. The following fee(s) are submitted:</p> <p><input type="checkbox"/> Issue Fee</p> <p><input type="checkbox"/> Publication Fee (No small entity discount permitted)</p> <p><input type="checkbox"/> Advance Order - # of Copies _____</p>	<p>4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)</p> <p><input type="checkbox"/> A check is enclosed.</p> <p><input type="checkbox"/> Payment by credit card. Form PTO-2038 is attached.</p> <p><input type="checkbox"/> The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).</p>
---	--

5. Change in Entity Status (from status indicated above)

a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.  b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature \_\_\_\_\_ Date \_\_\_\_\_

Typed or printed name \_\_\_\_\_ Registration No. \_\_\_\_\_

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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Table with 5 columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO.
12/814,584 06/14/2010 David GRUZMAN FIN0008-DIV1 9667

74877 7590 12/22/2011
King and Spalding LLP
1700 Pennsylvania Ave, NW
Suite 200
Washington, DC 20006

EXAMINER

PICH, PONNOREAY

ART UNIT PAPER NUMBER

2435

DATE MAILED: 12/22/2011

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 0 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 0 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

## Privacy Act Statement

**The Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	12/814,584	GRUZMAN ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	PONNOREAY PICH	2435	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1.  This communication is responsive to 10/5/11.
2.  An election was made by the applicant in response to a restriction requirement set forth during the interview on \_\_\_\_; the restriction requirement and election have been incorporated into this action.
3.  The allowed claim(s) is/are 1-12.
4.  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a)  All    b)  Some\*    c)  None    of the:
    1.  Certified copies of the priority documents have been received.
    2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_.
    3.  Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5.  A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6.  CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a)  including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1)  hereto or 2)  to Paper No./Mail Date \_\_\_\_\_.
  - (b)  including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

**Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
7.  DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |  |
|--|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)   | 5. <input type="checkbox"/> Notice of Informal Patent Application                      |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br>Paper No./Mail Date _____    | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment                    |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|  | 9. <input type="checkbox"/> Other _____.   |

/Ponnoreay Pich/  
Primary Examiner, Art Unit 2435

### EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Dawn-Marie Bey (reg. no. 44,442) on 10/25/11. The amendments seen below are to overcome minor informalities and to avoid rejections over 35 USC 112, second paragraph and art rejections. As per MPEP 713.04, a separate interview summary form is not provided because the substance of the interview has been summarized herein.

The application has been amended as follows:

AMEND THE FOLLOWING CLAIMS AS FOLLOWS:

5. (currently amended) The non-transitory computer-readable storage medium of claim 3 wherein the program code causes the computer device to dynamically generate the input prior to transmitting the input for inspection.

6. (currently amended) A system for protecting a computer from dynamically generated malicious content, comprising:

a content processor (i) for processing content received over a network, the content including a call to a first function, and the first function including an input variable, and (ii) for calling a second function with a modified input variable;

a transmitter for transmitting the input variable to a security computer for inspection, when the first function is called; and

a receiver for receiving the modified input variable from the security computer,

wherein the modified input variable is obtained by modifying the input variable if the security computer determines that calling a function with the input variable may not be safe.

10. (currently amended) A non-transitory computer-readable storage medium storing program code for causing a computing device to:

process content received over a network, the content including a call to a first function, and the first function including an input variable;

transmit the input variable for inspection, when the first function is called, and suspend processing of the content;

receive a modified input variable; and

resume processing of the content after receiving the modified input variable, and calling a second function with the modified input variable,

wherein the modified input variable is obtained by modifying the input variable if the inspection of the input variable indicates that calling a function with the input variable may not be safe.

11. (currently amended) The non-transitory computer-readable storage medium of claim 10 wherein the program code causes the computer device to dynamically generate the input variable prior to transmitting the input variable for inspection.

12. (currently amended) The non-transitory computer-readable storage medium of claim 10 wherein the input variable includes a call to an additional function, and wherein the modified input variable includes a call to a modified additional function instead of the call to the additional function.

The following is an examiner's statement of reasons for allowance: Claims 1 and 3 are allowed over the prior art because applicant's arguments submitted on 10/5/11 were persuasive. Claim 6 is allowed over the prior art because the prior art does not teach modification of the input variable after the security computer determines calling a function with the input variable may not be safe and the modified input variable being used to call a second function. In a typical prior art anti-virus system and method, if an input variable is determined to not be safe, the input variable is either deleted or quarantined rather than be used to call another function after some sort of modification to the input variable. Claim 10 is allowed for similar reasons as claim 6. The remaining claims are allowed over the prior art due to dependency.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably



accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PONNOREAY PICH whose telephone number is (571)272-7962. The examiner can normally be reached on 9:00am-4:30pm EST Mon-Thurs.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Vu can be reached on 571-272-3859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ponnoreay Pich/  
Primary Examiner, Art Unit 2435

**FIN0008-DIV1**

**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of:

David GRUZMAN, et al.

Group Art Unit: 2435

Serial No. : 12/814,584

Examiner: Ponnoreay Pich

Filed: June 14, 2010

For: SYSTEM AND METHOD FOR INSPECTING DYNAMICALLY  
GENERATED EXECUTABLE CODE

**SUBMISSION OF ISSUE FEE PAYMENT**

U.S. Patent and Trademark Office  
Customer Service Window, Mail Stop Issue Fee  
Randolph Building  
401 Dulany Street  
Alexandria, VA 22314

Sir:

Responsive to the Notice of Allowance and Issue Fee Due mailed December 22, 2011,  
the undersigned is submitting herewith the Issue Fee in the amount of \$2,040.00 in the above-  
identified application. A copy of Part B of the issue fee transmittal is submitted herewith.  
Please address all future correspondence in this application to the undersigned at the following  
address:

Dawn-Marie Bey  
KING & SPALDING LLP  
1700 Pennsylvania Avenue, N.W.  
Suite 200  
Washington, DC 20006  
(202) 737-0500

This application is assigned to Finjan, Inc., c/o Israel Seed Partners, Jerusalem  
Technology Park, P.O. Box 48183, Jerusalem, Israel, 91481.

The Commissioner is hereby authorized to charge any additional fees associated with this  
communication or credit any overpayment to Deposit Account No. 50-4402.

Entry of this submission and prompt notification thereof is respectfully requested.

Respectfully submitted,

Dated: February 3, 2012

By: /Dawn-Marie Bey - 44,442/

KING & SPALDING LLP  
1700 Pennsylvania Avenue, N.W.  
Suite 200  
Washington, DC 20006  
(202) 626-8978

Dawn-Marie Bey  
Registration No. 44,442

**PART B - FEE(S) TRANSMITTAL**

**Complete and send this form, together with applicable fee(s), to:** Mail **Mail Stop ISSUE FEE  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450**  
or Fax **(571)-273-2885**

**INSTRUCTIONS:** This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

74877      7590      12/22/2011  
**King and Spalding LLP**  
1700 Pennsylvania Ave, NW  
Suite 200  
Washington, DC 20006

**Certificate of Mailing or Transmission**

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/814,584	06/14/2010	David GRUZMAN	FIN0008-DIV1	9667

TITLE OF INVENTION: SYSTEM AND METHOD FOR INSPECTING DYNAMICALLY GENERATED EXECUTABLE CODE

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1740	\$300	\$0	\$2040	03/22/2012

EXAMINER	ART UNIT	CLASS-SUBCLASS
PICH, PONNOREAY	2435	726-022000

<p>1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).</p> <p><input type="checkbox"/> Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.</p> <p><input type="checkbox"/> "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. <b>Use of a Customer Number is required.</b></p>	<p>2. For printing on the patent front page, list</p> <p>(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,</p> <p>(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.</p> <p>1 <u>Dawn-Marie Bey</u></p> <p>2 <u>King &amp; Spalding LLP</u></p> <p>3 _____</p>
---	--

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE	(B) RESIDENCE: (CITY and STATE OR COUNTRY)
Finjan, Inc.	Israel

Please check the appropriate assignee category or categories (will not be printed on the patent):  Individual  Corporation or other private group entity  Government

<p>4a. The following fee(s) are submitted:</p> <p><input checked="" type="checkbox"/> Issue Fee</p> <p><input checked="" type="checkbox"/> Publication Fee (No small entity discount permitted)</p> <p><input type="checkbox"/> Advance Order - # of Copies _____</p>	<p>4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)</p> <p><input type="checkbox"/> A check is enclosed.</p> <p><input checked="" type="checkbox"/> Payment by credit card. Form PTO-2038 is attached.</p> <p><input checked="" type="checkbox"/> The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number <u>50-4402</u> (enclose an extra copy of this form).</p>
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5. Change in Entity Status (from status indicated above)

a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.       b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature /Dawn-Marie Bey/      Date February 3, 2012

Typed or printed name Dawn-Marie Bey      Registration No. 44,442

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

## Electronic Patent Application Fee Transmittal

<b>Application Number:</b>	12814584
<b>Filing Date:</b>	14-Jun-2010
<b>Title of Invention:</b>	SYSTEM AND METHOD FOR INSPECTING DYNAMICALLY GENERATED EXECUTABLE CODE
<b>First Named Inventor/Applicant Name:</b>	David GRUZMAN
<b>Filer:</b>	Dawn-Marie Bey./Jeanne Paolella-Bald
<b>Attorney Docket Number:</b>	FIN0008-DIV1

Filed as Large Entity

### Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
<b>Basic Filing:</b>				
<b>Pages:</b>				
<b>Claims:</b>				
<b>Miscellaneous-Filing:</b>				
<b>Petition:</b>				
<b>Patent-Appeals-and-Interference:</b>				
<b>Post-Allowance-and-Post-Issuance:</b>				
Utility Appl issue fee	1501	1	1740	1740
Publ. Fee- early, voluntary, or normal	1504	1	300	300

Juniper Ex 1002-p 153

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
<b>Extension-of-Time:</b>				
<b>Miscellaneous:</b>				
<b>Total in USD (\$)</b>				<b>2040</b>

## Electronic Acknowledgement Receipt

<b>EFS ID:</b>	12034377
<b>Application Number:</b>	12814584
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	9667
<b>Title of Invention:</b>	SYSTEM AND METHOD FOR INSPECTING DYNAMICALLY GENERATED EXECUTABLE CODE
<b>First Named Inventor/Applicant Name:</b>	David GRUZMAN
<b>Customer Number:</b>	74877
<b>Filer:</b>	Dawn-Marie Bey./Jeanne Paolella-Bald
<b>Filer Authorized By:</b>	Dawn-Marie Bey.
<b>Attorney Docket Number:</b>	FIN0008-DIV1
<b>Receipt Date:</b>	08-FEB-2012
<b>Filing Date:</b>	14-JUN-2010
<b>Time Stamp:</b>	23:45:28
<b>Application Type:</b>	Utility under 35 USC 111(a)

### Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	\$2040
RAM confirmation Number	7680
Deposit Account	
Authorized User	

### File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part: y/n	Pages (if appl.)
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1	Issue Fee Payment (PTO-85B)	fin008div1_issfeetrans.pdf	88443 file1fbf58d8f9dea16b2659ca7b619e0eb2f1c82	no	2
<b>Warnings:</b>					
<b>Information:</b>					
2	Issue Fee Payment (PTO-85B)	fin008div1_partb.pdf	125925 de21476232511bbeb5a6566626b98ced0903010	no	1
<b>Warnings:</b>					
<b>Information:</b>					
3	Fee Worksheet (SB06)	fee-info.pdf	32106 5bb3e0626cbec59708ce3f799b9e9ed779570827	no	2
<b>Warnings:</b>					
<b>Information:</b>					
<b>Total Files Size (in bytes):</b>				246474	

**This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.**

**New Applications Under 35 U.S.C. 111**

**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**

**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**

**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**





UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
 United States Patent and Trademark Office  
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 P.O. Box 1450  
 Alexandria, Virginia 22313-1450  
 www.uspto.gov



Bib Data Sheet

CONFIRMATION NO. 9667

<b>SERIAL NUMBER</b> 12/814,584	<b>FILING OR 371(c) DATE</b> 06/14/2010 <b>RULE</b>	<b>CLASS</b> 726	<b>GROUP ART UNIT</b> 2435	<b>ATTORNEY DOCKET NO.</b> FIN0008-DIV1
------------------------------------	---	---------------------	-------------------------------	--

**APPLICANTS**  
 David GRUZMAN, Ramat Gan, ISRAEL;  
 Yuval Ben-Itzhak, Tel Aviv, ISRAEL;

**\*\* CONTINUING DATA \*\*\*\*\***

**\*\* FOREIGN APPLICATIONS \*\*\*\*\***

**IF REQUIRED, FOREIGN FILING LICENSE GRANTED**  
**\*\* 06/21/2010**

Foreign Priority claimed <input type="checkbox"/> yes <input type="checkbox"/> no	<b>STATE OR COUNTRY</b> ISRAEL	<b>SHEETS DRAWING</b> 5	<b>TOTAL CLAIMS</b> 3	<b>INDEPENDENT CLAIMS</b> 2	
35 USC 119 (a-d) conditions met <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> Met after Allowance					
Verified and Acknowledged	Examiner's Signature _____	Initials _____			

**ADDRESS**  
74877

**TITLE**  
SYSTEM AND METHOD FOR INSPECTING DYNAMICALLY GENERATED EXECUTABLE CODE

<b>FILING FEE RECEIVED</b> 1090	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:	<input type="checkbox"/> All Fees
		<input type="checkbox"/> 1.16 Fees ( Filing )
		<input type="checkbox"/> 1.17 Fees ( Processing Ext. of time )
		<input type="checkbox"/> 1.18 Fees ( Issue )
		<input type="checkbox"/> Other _____
		<input type="checkbox"/> Credit



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www.uspto.gov

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/814,584	03/20/2012	8141154	FIN0008-DIV1	9667

74877 7590 02/29/2012  
King and Spalding LLP  
1700 Pennsylvania Ave, NW  
Suite 200  
Washington, DC 20006

**ISSUE NOTIFICATION**

The projected patent number and issue date are specified above.

**Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)**  
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site <http://pair.uspto.gov> for additional applicants):

David GRUZMAN, Ramat Gan, ISRAEL;  
Yuval Ben-Itzhak, Tel Aviv, ISRAEL;



**UNITED STATES PATENT AND TRADEMARK OFFICE**

UNITED STATES DEPARTMENT OF COMMERCE  
**United States Patent and Trademark Office**  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NUMBER	PATENT NUMBER	GROUP ART UNIT	FILE WRAPPER LOCATION
12/814,584	8141154	2435	9200



**Correspondence Address/Fee Address Change**

The following fields have been set to Customer Number 115222 on 05/20/2013

- Correspondence Address
- Maintenance Fee Address

The address of record for Customer Number 115222 is:

115222  
Bey & Cotropia PLLC  
213 Bayly Court  
Richmond, VA 23229

## UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

Page 1 of 1

PATENT NO. : 8,141,154

APPLICATION NO.: 12/814,584

ISSUE DATE : March 20, 2012

INVENTOR(S) : David Guzman and Yuval Ben-Itzhak

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Please add the following heading and priority information:

-- Related U.S. Application Data --

-- (63) Divisional of application no. 11/298,475, filed on Dec. 12, 2005, Now Pat. No. 7,757,289. --

MAILING ADDRESS OF SENDER (Please do not use customer number below):

Dawn-Marie Bey, Bey & Cotropia PLLC  
213 Bayly Court  
Richmond, VA 23229

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: **Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

*If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.*

Juniper Ex. 1002-p. 160  
Juniper v Finjan

## Electronic Acknowledgement Receipt

<b>EFS ID:</b>	16898059
<b>Application Number:</b>	12814584
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	9667
<b>Title of Invention:</b>	SYSTEM AND METHOD FOR INSPECTING DYNAMICALLY GENERATED EXECUTABLE CODE
<b>First Named Inventor/Applicant Name:</b>	David GRUZMAN
<b>Customer Number:</b>	115222
<b>Filer:</b>	Dawn-Marie Bey./Jeanne Paoella-Bald
<b>Filer Authorized By:</b>	Dawn-Marie Bey.
<b>Attorney Docket Number:</b>	FIN0008-DIV1
<b>Receipt Date:</b>	19-SEP-2013
<b>Filing Date:</b>	14-JUN-2010
<b>Time Stamp:</b>	12:19:27
<b>Application Type:</b>	Utility under 35 USC 111(a)

### Payment information:

Submitted with Payment	no
------------------------	----

### File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	fin0008div1_executedreqforcer tofcrr.pdf	3402633  <small>11a8045c76441e2f7591a16e6b3d72a63b6 ce7a9</small>	no	4

### Warnings:

### Information:

Juniper Ex. 1002-p. 161

Juniper v Finjan

2	Request for Certificate of Correction	fin0008div1_certofcorr.pdf	110528	no	1
			44ef895ac7f9a77a42363c87a9ea482533b031bb		

**Warnings:**

**Information:**

<b>Total Files Size (in bytes):</b>	3513161
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**This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.**

**New Applications Under 35 U.S.C. 111**

**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**

**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**

**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

David GRUZMAN, et al.

Confirmation No.: 9667

Application No.: 12/814,584

Group Art Unit: 2435

Patent No.: 8,141,154

Examiner: Ponnoreay Pich

Filed: June 14, 2010

Issued: March 20, 2012

Title: SYSTEM AND METHOD FOR INSPECTING DYNAMICALLY GENERATED  
EXECUTABLE CODE**REQUEST FOR ISSUANCE OF CERTIFICATE OF CORRECTION PURSUANT  
TO 35 U.S.C. § 254 AND 37 C.F.R. § 1.322**Certificate of Corrections Branch  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Upon review of U.S. Patent No. 8,141,154, Patentee notes an error on the face of the patent which should be corrected as shown on the enclosed Form PTO/SB/44. The heading, "U.S. Related Application Data" and its corresponding priority information is missing from the patent. A copy of the Filing Receipt, dated June 24, 2010, is attached showing the priority information.

The undersigned does not believe that a fee is required, as this was not an error caused by the Patentee.

Accordingly, Patentee respectfully solicits the issuance of the requested Certificate of Correction.

Respectfully submitted,

Date: Sept. 19, 2013  
**Bey & Cotropia PLLC**  
213 Bayly Court  
Richmond, VA 23229  
(804) 441-8530By: /Dawn-Marie Bey -44,442/  
Dawn-Marie Bey (Reg. No. 44,442)  
Attorney for Assignee  
Finjan, Inc.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
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Table with 7 columns: APPLICATION NUMBER, FILING or 371(c) DATE, GRP ART UNIT, FIL FEE REC'D, ATTY,DOCKET.NO, TOT CLAIMS, IND CLAIMS. Row 1: 12/814,584, 06/14/2010, 2431, 1090, FIN0008-DIV1, 3, 2

CONFIRMATION NO. 9667

FILING RECEIPT



74877
King and Spalding LLP
1700 Pennsylvania Ave, NW
Suite 200
Washington, DC 20006

Date Mailed: 06/24/2010

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections

Applicant(s)

David GRUZMAN, Ramat Gan, ISRAEL;
Yuval Ben-Itzhak, Tel Aviv, ISRAEL;

Assignment For Published Patent Application

Finjan, Inc.

Power of Attorney: The patent practitioners associated with Customer Number 74877

Domestic Priority data as claimed by applicant

This application is a DIV of 11/298,475 12/12/2005

Foreign Applications

If Required, Foreign Filing License Granted: 06/21/2010

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is US 12/814,584

Projected Publication Date: 09/30/2010

Non-Publication Request: No

Early Publication Request: No



**Title**

SYSTEM AND METHOD FOR INSPECTING DYNAMICALLY GENERATED EXECUTABLE CODE

**Preliminary Class**

726

**PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES**

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4158).

**LICENSE FOR FOREIGN FILING UNDER**

**Title 35, United States Code, Section 184**

**Title 37, Code of Federal Regulations, 5.11 & 5.15**

**GRANTED**

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as

set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign Assets Control, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

**NOT GRANTED**

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).



**UNITED STATES PATENT AND TRADEMARK OFFICE**

UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND  
DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE

Oct. 2, 2013

Dawn-Marie Bey, Bey  
& Cotropia PLLC  
213 Bayly Court  
Richmond, VA 23229

Patent No.: 8,141,154  
Inventor(s): David Gruzman et al.  
Issued: March 20, 2012  
For: SYSTEM AND METHOD FOR INSPECTING DYNAMICALLY  
GENERATED EXECUTABLE CODE  
Docket No.: 91922-65

Re: Request for Certificate of Correction


Consideration has been given your request for the issuance of a Certificate of Correction in the above-identified patent.

Concerning the alleged error in item [63] and column 1; the patent is printed in accordance with the records of this office. Related application data is printed in accordance with the first page of the specification and/or any amendment filed, therefore no correction is in order under 1.322.

In view of the foregoing, your request in this matter is hereby denied.

However, relief can be sought via filing reconsideration request for Certificate of Correction under the provisions of Rule 1.323, accompanied by the appropriate fee of \$100.00.

Future correspondence concerning this matter should be filed and directed to the Certificates of Correction Branch.

  
Angela Green  
LIE, Certificates of Correction  
Deliverable Inspection Division  
Office of Data Management  
(571) 272-9005

MLM/arg

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of

David GRUZMAN, et al.

Group Art Unit: 2435

Serial No.: 12/814,584

Examiner: Ponnoreay Pich

Filed: June 14, 2010

Patent No.: 8,141,154

Issued: March 20, 2012

For: SYSTEM AND METHOD FOR INSPECTING DYNAMICALLY GENERATED  
EXECUTABLE CODE**PETITION TO ACCEPT UNINTENTIONALLY DELAYED CLAIM OF  
PRIORITY UNDER 35 U.S.C. §120 FOR THE BENEFIT OF A  
PRIOR-FILED APPLICATION FILED UNDER 37 C.F.R. §1.78(a)(3)**

Mail Stop OFFICE OF PETITIONS

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Dear Sir:

Assignee respectfully submits this Petition for acceptance of an unintentionally delayed claim of priority under 35 U.S.C. §120 for the benefit of a prior-filed application in the above-referenced patent. In conjunction with this Petition, Assignee submits an Amendment to the Specification, and provides for payment of the required fees under 37 C.F.R. §1.17(t) (\$1,420). The Assignee is also submitting a Request for Reconsideration of Certificate of Correction, which was originally filed on September 19, 2013, requesting correction of the priority information on the front of the patent and also the correction of the specification to include the priority information, and provides for payment of the required fee under 37 C.F.R. §1.20(a) (\$100). The application as originally filed included the priority information on the Utility Patent Application Transmittal letter filed with the application on June 14, 2010. Further, the priority information is accurately reflected in the filing receipt mailed June 24, 2010.

Assignee understands that a petition for acceptance of a claim for late priority under 37 C.F.R. §1.78(a)(3) is only applicable to those applications filed on or after November 29, 2000 and after the expiration of the period specified in 37 C.F.R. §1.78(a)(2)(ii). Assignee understands that the petition under 37 C.F.R. §1.78(a)(3) must be accompanied by:

- (1) the reference required by 35 U.S.C. §120 and 37 C.F.R. §1.78(a)(2)(i) of the prior-filed application, unless previously submitted;
- (2) the surcharge set forth in 37 C.F.R. §1.17(t); and
- (3) a statement that the entire delay between the date the claim was due under 37 C.F.R. §1.78(a)(2)(ii) and the date the claim was filed was unintentional.

The correction of the priority claim of the present patent is made to complete the priority claim to include a specific reference to benefit of U.S. Application Serial No. 11/298,475, filed December 12, 2005, now U.S. Patent No. 7,757,289, issued July 13, 2010, which claim was cited in the transmittal letter and filing receipt of this application/patent. This request is made after the expiration of the period specific in 37 C.F.R. §1.78(a)(2)(ii).

In accordance with 35 U.S.C. §120 and 37 C.F.R. §1.78(a)(2)(i), the following amendment to the specification of the present application which adds a reference to the benefit of priority to U.S. Application Serial No. 11/298,475, filed December 12, 2005, now U.S. Patent No. 7,757,289, is submitted in conjunction with this Petition in a separate amendment filed herewith:

CROSS-REFERENCE TO RELATED APPLICATIONS

This application is a divisional of and claims priority to U.S. Patent Application Serial No. 11/298,475, filed December 12, 2005, entitled “System and Method For Inspecting Dynamically Generated Executable Code,” now U.S. Patent No. 7,757,289.

In accordance with 37 C.F.R. §1.78(a)(2)(i), the amendment identifies the prior filed application by application number and indicates the relationship of the application.

It is submitted that the entire delay between the date the priority claim was due and the date that this petition with priority claim added to the specification is filed was unintentional.

Payment of \$1,420 fee as required under 37 C.F.R. §1.17(t) and fee of \$100 as required under 37 C.F.R. §1.20(a) is provided electronically via EFS-Web with this Petition. The Commissioner is authorized to charge any additional fees due to Deposit Account No. 50-6099.

Assignee submits that this request, the amendment to the specification, and the Request for Reconsideration of Certificate of Correction are diligently made to correct the record of the present application and accurately reflect the priority information on the face of United States Patent No. 8,141,154. Granting of this Petition is respectfully requested.

Respectfully submitted,

Date: October 16, 2013

By: /Dawn-Marie Bey – 44,442/

**Bey & Cotropia PLLC**  
213 Bayly Court  
Richmond, VA 23229  
(804) 441-8530

Dawn-Marie Bey (Reg. No. 44,442)  
Attorney for Assignee  
Finjan, Inc.

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of

David GRUZMAN, et al.

Group Art Unit: 2435

Serial No.: 12/814,584

Examiner: Ponnoreay Pich

Filed: June 14, 2010

Patent No.: 8,141,154

Issued: March 20, 2012

For: SYSTEM AND METHOD FOR INSPECTION DYNAMICALLY GENERATED  
EXECUTABLE CODE

**AMENDMENT TO SPECIFICATION**

Commissioner for Patents  
Mail Stop: PETITIONS  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In conjunction with a Petition to Accept Unintentionally Delayed Claim of Priority Under 35 U.S.C. §120 For the Benefit of a Prior-Filed Application Filed Under 37 C.F.R. §1.78(a)(3), and the accompanying Request for Reconsideration of Certificate of Correction, entry of the amendments and consideration of the remarks submitted herein is respectfully requested.

**Amendments to the Specification** begin on page 2 of this paper.

**Remarks** begin on page 3 of this paper.

**Amendments to the Specification**

Please add the following heading and new paragraph after the title:

CROSS-REFERENCE TO RELATED APPLICATIONS

This application is a divisional of and claims priority to U.S. Patent Application Serial No. 11/298,475, filed December 12, 2005, entitled “System and Method For Inspecting Dynamically Generated Executable Code,” now U.S. Patent No. 7,757,289.



**REMARKS**

Assignee respectfully requests entry of the amendment to the specification of U.S. Patent Application Serial No. 12/814,584, now U.S. Patent No. 8,141,154, in conjunction with the Petition to Accept Unintentionally Delayed Claim of Priority Under 35 U.S.C. §120 for the Benefit of a Prior-Filed Application Filed Under 37 C.F.R. §1.78(a)(3) filed herewith. The amendment introduces no new matter and adds the priority claim of the application. Assignee notes that U.S. Patent Application Serial No. 11/298,475, now U.S. Patent No. 7,757,289, and U.S. Patent Application Serial No. 12/814,584, now U.S. Patent No. 8,141,154 share the same inventors, David Gruzman and Yuval Ben-Itzhak, and were co-pending at the time of filing of Application Serial No. 12/814,584.

This submission is filed with a Petition to Accept Unintentionally Delayed Claim of Priority Under 35 U.S.C. §120 for the Benefit of a Prior-Filed Application Filed Under 37 C.F.R. §1.78(a)(3) and Request for Reconsideration of Certificate of Correction, including the appropriate fees. However, in the event additional fees are due, the Commissioner is authorized to charge any underpayment of fees, or to credit any overpayment, to Deposit Account No. 50-6099.

Respectfully submitted,

Date: October 16, 2013

By: /Dawn-Marie Bey – 44,442/

Dawn-Marie Bey (Reg. No. 44,442)

Attorneys for the Assignee

Finjan, Inc.

**Bey & Cotropia PLLC**  
213 Bayly Court  
Richmond, VA 23229  
(804) 441-8530

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of

David GRUZMAN, et al.

Group Art Unit: 2435

Serial No.: 12/814,584

Examiner: Ponnoreay Pich

Filed: June 14, 2010

Patent No.: 8,141,154

Issued: March 20, 2012

For: SYSTEM AND METHOD FOR INSPECTION DYNAMICALLY GENERATED  
EXECUTABLE CODE**REQUEST FOR RECONSIDERATION OF CERTIFICATE OF CORRECTION  
PUSRUANT TO 35 U.S.C. §255 AND 37 C.F.R. §1.323**Commissioner for Patents  
Certificate of Correction Branch  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

On September 19, 2013, a Request for Certificate of Correction was filed requesting correction of the priority information on the above application/patent. On October 2, 2013, a communication was issued by the U.S. Patent and Trademark Office denying our request stating that “the patent is printed in accordance with the records of this Office. Related application data is printed in accordance with the first page of the specification and/or any amendment filed, therefore no correction is in order under 1.322.” The priority claim was included on the Transmittal Letter at the time of filing of this application and is reflected in the Filing Receipt mailed by the Office on June 24, 2013, but the priority claim was inintentionally left out of the specification. A Petition to Accept Unintentionally Delayed Claim of Priority Under 35 U.S.C. §120 For the Benefit of a Prior-Filed Application Filed Under 37 C.F.R. §1.78(a)(3), together with an Amendment to the Specification have been filed to correct the priority claim for this application/patent.

In view of the above filing, the Patentee respectfully requests reconsideration of the Certificate of Correction and asks that the face of the patent be corrected as shown on the enclosed Form PTO/SB/44. The heading, "U.S. Related Application Data" and its corresponding priority information is missing from the patent. A correction to the specification is also included to add the priority paragraph for this patent.

A fee of \$100 pursuant to 37 C.F.R. 1.20(a) is included with this filing. The Commissioner is authorized to charge any additional fees due to Deposit Account No. 50-6099.

Accordingly, Patentee respectfully requests the issuance of the requested Certificate of Correction.

Respectfully submitted,

Date: October 16, 2013

By: /Dawn-Marie Bey - 44,442/  
Dawn-Marie Bey (Reg. No. 44,442)  
Attorney for Assignee  
Finjan, Inc.

**Bey & Cotropia PLLC**  
213 Bayly Court  
Richmond, VA 23229  
(804) 441-8530

## UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

Page 1 of 1

PATENT NO. : 8,141,154

APPLICATION NO.: 12/814,584

ISSUE DATE : March 20, 2012

INVENTOR(S) : David Gruzman and Yuval Ben-Itzhak

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Please add the following heading and priority information:

-- Related U.S. Application Data --

-- (63) Divisional of application no. 11/298,475, filed on Dec. 12, 2005, Now Pat. No. 7,757,289. --

In Column 1, add the following heading and paragraph directly below the title of the invention:

-- CROSS-REFERENCE TO RELATED APPLICATIONS --

-- This application is a divisional of and claims priority to U.S. Patent Application Serial No. 11/298,475, filed December 12, 2005, entitled "System and Method For Inspecting Dynamically Generated Executable Code," now U.S. Patent No. 7,757,289. --

MAILING ADDRESS OF SENDER (Please do not use customer number below):

Dawn-Marie Bey, Bey & Cotropia PLLC  
213 Bayly Court  
Richmond, VA 23229

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

*If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.*

Juniper Ex. 1002-p. 176  
Juniper v Finjan

## Electronic Patent Application Fee Transmittal

<b>Application Number:</b>	12814584
<b>Filing Date:</b>	14-Jun-2010
<b>Title of Invention:</b>	SYSTEM AND METHOD FOR INSPECTING DYNAMICALLY GENERATED EXECUTABLE CODE
<b>First Named Inventor/Applicant Name:</b>	David GRUZMAN
<b>Filer:</b>	Dawn-Marie Bey./Jeanne Paolella-Bald
<b>Attorney Docket Number:</b>	FIN0008-DIV1

Filed as Large Entity

### Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
<b>Basic Filing:</b>				
<b>Pages:</b>				
<b>Claims:</b>				
<b>Miscellaneous-Filing:</b>				
<b>Petition:</b>				
Priority Accept. Unintent. Delayed Claim	1454	1	1420	1420
<b>Patent-Appeals-and-Interference:</b>				
<b>Post-Allowance-and-Post-Issuance:</b>				
Certificate of Correction	1811	1	100	100

Juniper Ex 1002-p 177

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
<b>Extension-of-Time:</b>				
<b>Miscellaneous:</b>				
<b>Total in USD (\$)</b>				<b>1520</b>

## Electronic Acknowledgement Receipt

<b>EFS ID:</b>	17138614
<b>Application Number:</b>	12814584
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	9667
<b>Title of Invention:</b>	SYSTEM AND METHOD FOR INSPECTING DYNAMICALLY GENERATED EXECUTABLE CODE
<b>First Named Inventor/Applicant Name:</b>	David GRUZMAN
<b>Customer Number:</b>	115222
<b>Filer:</b>	Dawn-Marie Bey./Jeanne Paolella-Bald
<b>Filer Authorized By:</b>	Dawn-Marie Bey.
<b>Attorney Docket Number:</b>	FIN0008-DIV1
<b>Receipt Date:</b>	16-OCT-2013
<b>Filing Date:</b>	14-JUN-2010
<b>Time Stamp:</b>	11:05:47
<b>Application Type:</b>	Utility under 35 USC 111(a)

### Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	\$1520
RAM confirmation Number	14229
Deposit Account	
Authorized User	

### File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi-Part (if appl.)	Pages (if appl.)

1	Petition for review by the Office of Petitions.	fin0008div1__executed_petitionforunintentionallydelayedclaimofpriority.pdf	149870 4b55a49fe7315da19a019f8d29c8f36a42dbd877	no	3
<b>Warnings:</b>					
<b>Information:</b>					
2	Amendment after Notice of Allowance (Rule 312)	fin0008div1__executed_amendmenttospec.pdf	136432 dc9163f7603bf3d18bca729ac22cfbae2dc114	no	3
<b>Warnings:</b>					
<b>Information:</b>					
3	Request for Certificate of Correction	fin0008div1__executed_requestforreconsiderationofcertificateofcorrection.pdf	133882 62c1452c0bbb36fc9a7bcd47c2e6bc17df9bcc9c	no	2
<b>Warnings:</b>					
<b>Information:</b>					
4	Request for Certificate of Correction	fin0008div1__certofcorrection.pdf	148160 3ba9236f87d62e8a5865b6e77d443150d78619a8	no	1
<b>Warnings:</b>					
<b>Information:</b>					
5	Fee Worksheet (SB06)	fee-info.pdf	31931 8ab7c2c04deef3fb73f89882c90a0bfe13ce6c3	no	2
<b>Warnings:</b>					
<b>Information:</b>					
<b>Total Files Size (in bytes):</b>			600275		

**This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.**

**New Applications Under 35 U.S.C. 111**

**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**

**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**

**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**





UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

Table with 7 columns: APPLICATION NUMBER, FILING or 371(c) DATE, GRP ART UNIT, FIL FEE REC'D, ATTY,DOCKET.NO, TOT CLAIMS, IND CLAIMS. Row 1: 12/814,584, 06/14/2010, 2435, 1390, FIN0008-DIV1, 3, 2

CONFIRMATION NO. 9667

CORRECTED FILING RECEIPT



115222
Bey & Cotropia PLLC (Finjan Inc.)
213 Bayly Court
Richmond, VA 23229

Date Mailed: 01/02/2014

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections

Inventor(s)

David GRUZMAN, Ramat Gan, ISRAEL;
Yuval Ben-Itzhak, Tel Aviv, ISRAEL;

Applicant(s)

David GRUZMAN, Ramat Gan, ISRAEL;
Yuval Ben-Itzhak, Tel Aviv, ISRAEL;

Assignment For Published Patent Application

Finjan, Inc.

Power of Attorney: The patent practitioners associated with Customer Number 74877

Domestic Priority data as claimed by applicant

This application is a DIV of 11/298,475 12/12/2005 PAT 7757289

Foreign Applications for which priority is claimed (You may be eligible to benefit from the Patent Prosecution Highway program at the USPTO. Please see http://www.uspto.gov for more information.) - None.

Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

If Required, Foreign Filing License Granted: 06/21/2010

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is US 12/814,584

Projected Publication Date: Not Applicable

Non-Publication Request: No

Early Publication Request: No

**Title**

SYSTEM AND METHOD FOR INSPECTING DYNAMICALLY GENERATED EXECUTABLE CODE

**Preliminary Class**

726

**Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications:**

**PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES**

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

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For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

**LICENSE FOR FOREIGN FILING UNDER**  
**Title 35, United States Code, Section 184**  
**Title 37, Code of Federal Regulations, 5.11 & 5.15**

**GRANTED**

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign Assets Control, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

**NOT GRANTED**

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

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***SelectUSA***

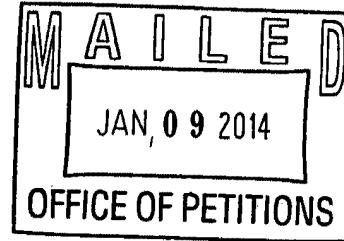
The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop technology, manufacture products, deliver services, and grow your business, visit <http://www.SelectUSA.gov> or call +1-202-482-6800.



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Alexandria, VA 22313-1450  
www.uspto.gov

Bey & Cotropia PLLC (Finjan Inc.)  
213 Bayly Court  
Richmond VA 23229



In re Patent No. 8,141,154 : DECISION GRANTING PETITION  
Issue Date: March 20, 2012 : UNDER 37 CFR 1.78(a)(3) AND  
Application No. 12/814,584 : REQUEST FOR CERTIFICATE OF  
Filed: June 14, 2010 : CORRECTION  
Atty Docket No. FIN0008-DIV1 :

This is in response to the PETITION TO ACCEPT UNINTENTIONALLY DELAYED CLAIM OF PRIORITY UNDER 35 U.S.C. § 120 FOR THE BENEFIT OF A PRIOR-FILED APPLICATION FILED UNDER 37 C.F.R. §1.78(a)(3), filed October 16, 2013, to add a late claim under 35 U.S.C. § 120 to prior-filed nonprovisional application No. 11/298,475 by way of a certificate of correction.

The petition under 37 CFR 1.78 is **GRANTED**.

The application was filed after November 29, 2000 and prior to September 16, 2012. The claim for priority set forth on petition was not submitted on filing in the first sentence of the specification or in an application data sheet. The four and sixteen-month periods specified in 37 CFR § 1.78(a)(2)(ii) expired without correction. Thus, the instant petition is appropriate. In addition, the petition includes the required statement of unintentional delay. Receipt of the required surcharge is acknowledged.

By decision mailed October 2, 2013, a prior request for certificate of correction filed September 19, 2013 was denied as the patent was printed with the priority information of record in the Office.

In this pre-AIA case, petitioner submitted an amendment containing the reference required by 35 U.S.C. § 120 and 37 CFR

1.78(a)(2)(i) for acceptance of an unintentionally delayed claim for the benefit of priority under 35 U.S.C. § 120 to the above-noted, prior-filed nonprovisional applications. The reference is in compliance with former 37 CFR 1.78(a)(2) (iii), with the relationship stated as a divisional.

All of the above requirements having been satisfied, the late claim for benefit of priority to the prior-filed application under 35 U.S.C. §120 is accepted as being unintentionally delayed.

A corrected Filing Receipt, which includes the priority claim to the above-noted, prior-filed nonprovisional application, accompanies this decision on petition.

**Petitioner is advised that the granting of this petition and the mailing of a corrected Filing Receipt should not be viewed as an indication that a determination has been made that this application is entitled to claim benefit of the prior-filed application. A determination that applicant is entitled to claim benefit of the prior-filed application will be made by the Examiner prior to the issuance of a certificate of correction.**

Receipt of the \$1420 surcharge fee and the \$100 certificate of correction fee are acknowledged.

This application is being referred to the Certificates of Correction Branch for processing the request for a certificate of correction in accordance with this decision (with examiner approval as noted above) on the petition under 37 CFR 1.78(a)(3).

Any questions concerning this decision may be directed to the undersigned at (571) 272-3219.

/Nancy Johnson/

Nancy Johnson  
Attorney Advisor  
Office of Petitions

ATTACHMENT: Corrected Filing Receipt



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
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Alexandria, Virginia 22313-1450
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Table with 7 columns: APPLICATION NUMBER, FILING or 371(e) DATE, GRP ART UNIT, FIL FEE REC'D, ATTY. DOCKET NO, TOT CLAIMS, IND CLAIMS. Row 1: 12/814,584, 06/14/2010, 2435, 1390, FIN0008-DIV1, 3, 2

CONFIRMATION NO. 9667

CORRECTED FILING RECEIPT



115222
Bey & Cotropia PLLC (Finjan Inc.)
213 Bayly Court
Richmond, VA 23229

Date Mailed: 01/02/2014

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections

Inventor(s)

David GRUZMAN, Ramat Gan, ISRAEL;
Yuval Ben-Itzhak, Tel Aviv, ISRAEL;

Applicant(s)

David GRUZMAN, Ramat Gan, ISRAEL;
Yuval Ben-Itzhak, Tel Aviv, ISRAEL;

Assignment For Published Patent Application

Finjan, Inc.

Power of Attorney: The patent practitioners associated with Customer Number 74877

Domestic Priority data as claimed by applicant

This application is a DIV of 11/298,475 12/12/2005 PAT 7757289

Foreign Applications for which priority is claimed (You may be eligible to benefit from the Patent Prosecution Highway program at the USPTO. Please see http://www.uspto.gov for more information.) - None.

Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

If Required, Foreign Filing License Granted: 06/21/2010

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is US 12/814,584

Projected Publication Date: Not Applicable

Non-Publication Request: No

Early Publication Request: No

**Title**

SYSTEM AND METHOD FOR INSPECTING DYNAMICALLY GENERATED EXECUTABLE CODE

**Preliminary Class**

726

**Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications:**

**PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES**

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

**LICENSE FOR FOREIGN FILING UNDER**  
**Title 35, United States Code, Section 184**  
**Title 37, Code of Federal Regulations, 5.11 & 5.15**

**GRANTED**

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

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**SelectUSA**

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop technology, manufacture products, deliver services, and grow your business, visit <http://www.SelectUSA.gov> or call +1-202-482-6800.



<b>TO: Mail Stop 8</b> <b>Director of the U.S. Patent &amp; Trademark Office</b> <b>P.O. Box 1450</b> <b>Alexandria, VA 22313-1450</b>	<b>REPORT ON THE</b> <b>FILING OR DETERMINATION OF AN</b> <b>ACTION REGARDING A PATENT OR</b> <b>TRADEMARK</b>
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In Compliance with 35 § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been  
 filed in the U.S. District Court \_\_\_\_\_ NDCA \_\_\_\_\_ on the following  Patents or  Trademarks:

DOCKET NO. CV 13-05808 DMR	DATE FILED 12/16/2013	U.S. DISTRICT COURT Oakland Division, 1301 Clay St., Suite 400S, Oakland, CA 94612
PLAINTIFF FINJAN INC		DEFENDANT PROOFPOINT INC ET AL
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 7, 058, 822		
2 7, 647, 633	SEE ATTACHED	
3 6, 154, 844		
4 7, 975, 305		
5 8, 225, 408		

In the above—entitled case, the following patent(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading		
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK	
1 8, 079, 086			
2 8, 141, 154			
3 7, 613, 918			
4			
5			

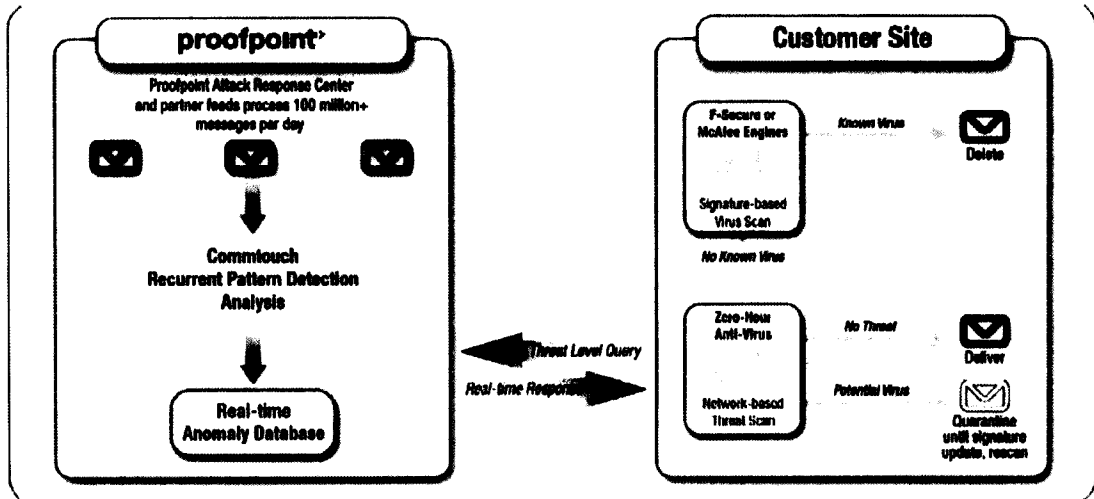
In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT
--------------------

CLERK Richard W. Wicking	(BY) DEPUTY CLERK Valerie Kyono	DATE December 17, 2013
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Copy 1—Upon initiation of action, mail this copy to Commissioner    Copy 3—Upon termination of action, mail this copy to Commissioner  
 Copy 2—Upon filing document adding patent(s), mail this copy to Commissioner    Copy 4—Case file copy

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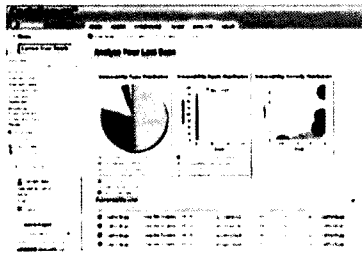


See WP-Proofpoint-Close-the-Zero-Hour-Gap (attached as Exhibit I).

38. Proofpoint’s Targeted Attack Protection and Malware Analysis Service (also known as Next Generation Detection) allow unknown malicious attacks that are missed by traditional signature based detection to be caught. Proofpoint’s Malware Analysis Service utilizes analytics to identify suspicious files and begins the process of analyzing the files in a sandbox for signs of a malware attack. DS-Proofpoint-Targeted-Attack-Protection (attached as Exhibit J).

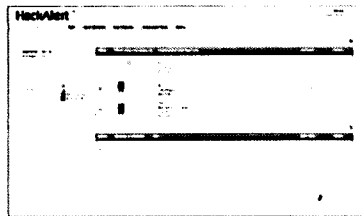
39. On September 5, 2013, a wholly-owned subsidiary of Proofpoint merged with and into Armorize Technologies, Inc. (“Armorize”), with Armorize surviving as a wholly-owned subsidiary of Proofpoint. Armorize develops and markets SaaS anti-malware products and real-time dynamic detection of next generation threats. Proofpoint Form 10-Q (attached as Exhibit K).

40. Proofpoint paid \$25,000,000 in cash for Armorize and has been utilizing Armorize technologies in Proofpoint’s products for nearly a year before the acquisition. See Proofpoint, Inc. to Acquire Armorize Technologies, Inc.pdf (attached as Exhibit L). Armorize products include HackAlert Anti-Malware, CodeSecure Automated Static Source Code Analysis and SmartWAF Web Application Firewall. Information concerning these products is shown below:



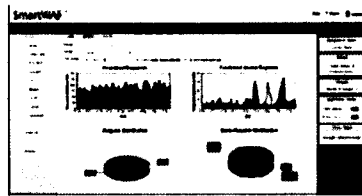
### CodeSecure™ Automated Static Source Code Analysis Platform

- Delivers formal static source code analysis and software verification on a plug-and-play appliance
- Identifies critical security vulnerabilities throughout development
- Facilitates proactive Web application vulnerability remediation
- Implements built-in compiler technology for increased accuracy and speed
- Deploys as browser-accessible appliance to ensure zero software installation overhead
- Exports results to SmartWAF™ for immediate vulnerable entry point protection
- Supports enterprise, consulting and SaaS deployments



### HackAlert™ Web Malware Monitoring and Alerting SaaS

- Monitors subscriber websites 24x7 for malicious code injection and malware Drive-by-Downloads
- Identifies malware download file type, source and destination on target PC
- Supports automated and on-demand website crawling as well as individual URL scans
- Generates console, SMS and Email alerts upon malware injection or defacement
- Represents a critical component of Web application Incident Response process
- Protects business and customers from Drive-by-Downloads



### SmartWAF™ Web Application Firewall

- Defends network perimeter at the Web application layer
- Protects against attacks that target vulnerable Web applications
- Protects website, corporate resources and end-users
- Supports all major Web servers and operating systems
- Implements cluster management through a centralized Web console
- Imports CodeSecure™ scan results for immediate vulnerable entry point protection

See Armorize Technologies End-to-End Web Application Security (attached as Exhibit M).

41. Armorize, now integrated into Proofpoint, uses, sells, offers for sale, and/or imports into the United States and this District products and services that utilize HackAlert Anti-Malware, CodeSecure Automated Static Source Code Analysis and SmartWAF Web Application Firewall, including but not limited to the following: HackAlert Suite, HackAlert Website Monitoring, HackAlert Safe Impressions, HackAlert SafeImpressions, HackAlert CodeSecure, HackAlert Vulnerability Assessment and SmartWAF.

1           42.     HackAlert is a service that analyzes, detects, prevents, and mitigates malware  
2 infections in online advertisements, documents and e-mails. HackAlert focuses on scanning for zero-  
3 day malware and exploits used in Advanced Persistent Threat (“APT”) attacks, which are  
4 undetectable by typical virus or malware scanners. HackAlert’s sandbox analyzes these zero-day  
5 exploits and APT, such as malicious binaries, document exploits (PDF, Word, Excel, PowerPoint,  
6 Flash), Java exploits, browser exploits, drive-by downloads and click-to downloads. *See* Take APT  
7 Malware By Storm (attached as Exhibit N).  
8

9           43.     CodeSecure is an automatic static code analysis platform that identifies security  
10 vulnerabilities and works with SmartWAF and HackAlert to provide vulnerability entry point  
11 protection. CodeSecure identifies vulnerabilities such as Cross Site Scripting, File Inclusion,  
12 Malicious File Execution, Information Leakage and SQL Injection. CodeSecure checks for  
13 vulnerabilities based on algorithms to determine behavior outcomes of input data. *See* CodeSecure  
14 (attached as Exhibit O).  
15

16           44.     SmartWAF is a web application firewall. It defends against web application attacks  
17 such as SQL Injection, Cross Site Scripting, Cross Site Request Forgery, Cookie Tampering,  
18 Directory Indexing, Information Leakage, Content Spoofing, Application Fingerprinting and Web  
19 Server Fingerprinting. SmartWAF may also integrate with CodeSecure by importing source code  
20 analysis findings and reconfiguring its rule set to block web application exploits targeted at  
21 vulnerabilities identified by CodeSecure.  
22

23           45.     Armorize deploys a developers’ API for HackAlert Scanning and Forensics Extraction  
24 for Malware. With the API, developers can detect malware not normally caught by normal anti-virus  
25 technologies, such as zero-day exploits or Advanced Persistent Threats; automatically induce  
26 malware behavior and collect forensics information; and scan individual URLs for Web malware,  
27  
28

1 such as drive-by downloads and click-to downloads, and generate trackbacks, exploitation steps,  
2 JavaScript execution and malware execution. *See* APT-malware-malvertising-scanning-api (attached  
3 as Exhibit P).

4 **DEFENDANT'S INFRINGEMENT OF FINJAN'S PATENTS**

5 46. Defendants have been and are now infringing the '822 Patent, the '633 Patent, the  
6 '844 Patent, the '305 Patent, the '408 Patent, the '086 Patent, the '154 Patent and the '918 Patent  
7 (collectively "the Patents-In-Suit") in this judicial District, and elsewhere in the United States by,  
8 among other things, making, using, importing, selling, and/or offering for sale the claimed systems  
9 and methods that utilize Proofpoint's Zero-Hour Threat Detection, Proofpoint's Malware Analysis  
10 Service, Proofpoint's Targeted Attack Protection, HackAlert, and CodeSecure, including without  
11 limitation on Proofpoint Enterprise Protection, Proofpoint's Targeted Attack Protection, Proofpoint  
12 Essentials, Proofpoint Protection Server, Proofpoint Messaging Security GatewayHackAlert Suite,  
13 HackAlert Website Monitoring, HackAlert Safe Impressions, HackAlert SafeImpressions, HackAlert  
14 CodeSecure, HackAlert Vulnerability Assessment and SmartWAF..

15  
16  
17 47. In addition to directly infringing the Patents-In-Suit pursuant to 35 U.S.C. § 271(a)  
18 either literally or under the doctrine of equivalents, Defendants indirectly infringe the '822 Patent, the  
19 '633 Patent, the '844 Patent, the '305 Patent, the '408 Patent, the '086 Patent and the '918 Patent  
20 pursuant to 35 U.S.C. § 271(b) by instructing, directing and/or requiring others, including its users  
21 and developers, to perform all or some of the steps of method claims of the Patents-In-Suit, either  
22 literally or under the doctrine of equivalents.  
23

24 **COUNT I**

25 **(Direct Infringement of the '822 Patent pursuant to 35 U.S.C. § 271(a))**

26 48. Finjan repeats, realleges, and incorporates by reference, as if fully set forth herein, the  
27 allegations of the preceding paragraphs, as set forth above.  
28

1 49. Defendants have infringed and continue to infringe one or more claims of the '822  
2 Patent in violation of 35 U.S.C. § 271(a).

3 50. Defendants' infringement is based upon literal infringement or, in the alternative,  
4 infringement under the doctrine of equivalents.

5 51. Defendants' acts of making, using, importing, selling, and/or offering for sale infringing  
6 products and services have been without the permission, consent, authorization or license of Finjan.

7 52. Defendants' infringement includes, but is not limited to, the manufacture, use, sale,  
8 importation and/or offer for sale of Defendants' products and services, including but not limited to  
9 HackAlert, Proofpoint Malware Analysis Service, and Proofpoint Targeted Attack Protection, which  
10 embody the patented invention of the '822 Patent.  
11

12 53. As a result of Defendants' unlawful activities, Finjan has suffered and will continue to  
13 suffer irreparable harm for which there is no adequate remedy at law. Accordingly, Finjan is entitled  
14 to preliminary and/or permanent injunctive relief.

15 54. Defendants' infringement of the '822 Patent has injured and continues to injure Finjan  
16 in an amount to be proven at trial.  
17

18 **COUNT II**

19 **(Indirect Infringement of the '822 Patent pursuant to 35 U.S.C. § 271(b))**

20 55. Finjan repeats, realleges, and incorporates by reference, as if fully set forth herein, the  
21 allegations of the preceding paragraphs, as set forth above.

22 56. Defendants have induced and continue to induce infringement of at least claims 1-3, 4-  
23 8, and 16-27 of the '822 Patent under 35 U.S.C. § 271(b).

24 57. In addition to directly infringing the '822 Patent, Defendants indirectly infringe the  
25 '822 Patent pursuant to 35 U.S.C. § 271(b) by instructing, directing and/or requiring others, including  
26 but not limited to its customers, users and developers, to perform all or some of the steps of the  
27  
28

1 method claims, either literally or under the doctrine of equivalents, of the '822 Patent, where all the  
2 steps of the method claims are performed by either Defendants or their customers, users or  
3 developers, or some combination thereof. Defendants have known or have been willfully blind to the  
4 fact that they are inducing others, including customers, users and developers, to infringe by  
5 practicing, either themselves or in conjunction with Defendants, one or more method claims of the  
6 '822 Patent.

7  
8 58. Defendants knowingly and actively aid and abet the direct infringement of the '822  
9 Patent by instructing and encouraging their customers, users and developers to use the HackAlert,  
10 Proofpoint Malware Analysis Service, and Proofpoint Targeted Attack Protection. Such instructions  
11 and encouragement include, but are not limited to, advising third parties to use the HackAlert,  
12 Proofpoint Malware Analysis Service, and Proofpoint Targeted Attack Protection in an infringing  
13 manner; providing a mechanism through which third parties may infringe the '822 Patent, specifically  
14 through the use of the HackAlert, Proofpoint Malware Analysis Service, and Proofpoint Targeted  
15 Attack Protection; advertising and promoting the use of the HackAlert, Proofpoint Malware Analysis  
16 Service, and Proofpoint Targeted Attack Protection in an infringing manner; and distributing  
17 guidelines and instructions to third parties on how to use the HackAlert, Proofpoint Malware Analysis  
18 Service, and Proofpoint Targeted Attack Protection in an infringing manner.

19  
20 59. Defendants provide detailed instructions to their customers and users regarding all  
21 aspects of the HackAlert, Proofpoint Malware Analysis Service, and Proofpoint Targeted Attack  
22 Protection, including HackAlert Suite, HackAlert Website Monitoring, HackAlert Safe Impressions,  
23 HackAlert SafeImpressions, HackAlert Vulnerability Assessment, Proofpoint Enterprise Protection,  
24 Proofpoint's Targeted Attack Protection, Proofpoint Essentials (including the packages of Beginner,  
25 Business, and Professional), Proofpoint Protection Server, and Proofpoint Messaging Security  
26  
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1 Gateway. Examples of these instructions can be found at the Armorize Resource Center (at  
2 [http://armorize.com/index.php?link\\_id=product](http://armorize.com/index.php?link_id=product)), Armorize Forums / Tutorials, FAQs (at  
3 <https://armorize.zendesk.com/categories/5972-Tutorials-FAQs-Resources>), and Proofpoint Resources  
4 (at <http://www.proofpoint.com/resources/index.php>).

5 60. Proofpoint itself and through its authorized partners regularly provides classroom style  
6 training, demonstrations, webinars, and certification programs to help users use Proofpoint Targeted  
7 Attack Protection and Malware Analysis Service, including without limitation the following:

- 9 • Webinars on Contextual Security Approach to Protection From Targeted Threats,  
10 Undetected Threats: Finding and protecting against hundreds of missed attacks,  
11 Combatting 2013's Most Dangerous Attacks, and Spearphishing: How  
12 to Reliably Defeat Targeted Attacks. *See*  
13 <http://www.proofpoint.com/resources/webinars.php> (attached as Exhibit Q).
- 14 • Demonstrations including Proofpoint Integrated Product Suite Demo and Proofpoint  
15 Enterprise Protection Live Demo. The demonstrations show how to use the  
16 Targeted Attack Protection to protect organizations. *See*  
17 <http://www.proofpoint.com/resources/demos.php> (attached as Exhibit R).
- 18 • Technical Briefs on Proofpoint Zero-Hour Anti-Virus and White Papers on Targeted  
19 Attack: The Best Defense, Defense against the Dark Arts: Finding and Stopping  
20 Advanced Threats, and Longline Phishing: A New Class of Advanced Phishing  
21 Attacks. *See* <http://www.proofpoint.com/resources/white-papers.php> (attached as  
22 Exhibit S).
- 23 • Proofpoint Education Portal which offers courses in Enterprise Protection  
24 Accredited Engineer, Enterprise Protection Suite, Enterprise Protection for the  
25 Administrator, Proofpoint Targeted Attack Protection for End Users, Staying Safe  
26 on Email, and Enterprise Protection Associate Level Training. *See*  
27 <http://www.training.proofpoint.com/courses-draft/> (attached as  
28 Exhibit T).
- Proofpoint Education Portal which offers On-Site Training where a group of up to 8  
people can be trained live by Proofpoint to use their Protection products. *See*  
<http://www.training.proofpoint.com/classroom-schedule/on-site/> (attached as  
Exhibit U).

61. Proofpoint offers Professional Services, which helps customers design and implement  
Proofpoint's products onto the customers' network. Professional Services also offers integration,  
customization, training and maintenance of Proofpoint's products.



1 62. Armorize posts tutorials, user guides, troubleshooting and explanations on its online  
2 forum on how to use Armorize technology. These include without limitation HackAlert Resources,  
3 HackAlert SafeImpression question documents, tutorials on what to do “when a drive-by-download  
4 knocks at your door,” tutorial on “How to add a website into HackAlert to be monitored,” and  
5 tutorial on “what to do when receiving an alert.” See [https://armorize.zendesk.com/categories/5972-](https://armorize.zendesk.com/categories/5972-Tutorials-FAQs-Resources)  
6 [Tutorials-FAQs-Resources](https://armorize.zendesk.com/categories/5972-Tutorials-FAQs-Resources) (attached as Exhibit V).

7  
8 63. Armorize provides the HackAlert V5 API, which encourages developers and  
9 customers to use HackAlert with step-by-step instructions on how to integrate into the HackAlert  
10 Software. See [Armorize Malware Scanning and Forensics Extraction API](#) (attached as Exhibit P).

11 64. Defendants actively and intentionally maintains and updates websites, including  
12 Proofpoint.com and Armorize.com, to promote and provide demonstration, instruction and technical  
13 assistance for the HackAlert, Proofpoint Malware Analysis Service, and Proofpoint Targeted Attack  
14 Protection products, and to encourage customers, users and developers to use the HackAlert,  
15 Proofpoint Malware Analysis Service, and Proofpoint Targeted Attack Protection products and  
16 practice the methods taught in the ‘822 Patent.

17  
18 65. Defendants have had knowledge of the ‘822 Patent at least as of the time they learned  
19 of this action for infringement, and by continuing their actions described above, Defendants have had  
20 the specific intent to or were willfully blind to the fact that their actions would induce infringement of  
21 the ‘822 Patent.

22  
23 **COUNT III**  
24 **(Direct Infringement of the ‘633 Patent pursuant to 35 U.S.C. § 271(a))**

25 66. Finjan repeats, realleges, and incorporates by reference, as if fully set forth herein, the  
26 allegations of the preceding paragraphs, as set forth above.

1 67. Defendants have infringed and continue to infringe one or more claims of the '633  
2 Patent in violation of 35 U.S.C. § 271(a).

3 68. Defendants' infringement is based upon literal infringement or, in the alternative,  
4 infringement under the doctrine of equivalents.

5 69. Defendants' acts of making, using, importing, selling, and/or offering for sale infringing  
6 products and services have been without the permission, consent, authorization or license of Finjan.

7 70. Defendants' infringement includes, but is not limited to, the manufacture, use, sale,  
8 importation and/or offer for sale of Defendants' products and services, including but not limited to  
9 the HackAlert, Proofpoint Malware Analysis Service, and Proofpoint Targeted Attack Protection,  
10 which embody the patented invention of the '633 Patent.  
11

12 71. As a result of Defendants' unlawful activities, Finjan has suffered and will continue to  
13 suffer irreparable harm for which there is no adequate remedy at law. Accordingly, Finjan is entitled  
14 to preliminary and/or permanent injunctive relief.  
15

16 72. Defendants' infringement of the '633 Patent has injured and continues to injure Finjan  
17 in an amount to be proven at trial.

18 **COUNT IV**

19 **(Indirect Infringement of the '633 Patent pursuant to 35 U.S.C. §§ 271(b))**

20 73. Finjan repeats, realleges, and incorporates by reference, as if fully set forth herein, the  
21 allegations of the preceding paragraphs, as set forth above.

22 74. Defendants have induced and continue to induce infringement of at least claims 1-7  
23 and 28-33 of the '633 Patent under 35 U.S.C. § 271(b).

24 75. In addition to directly infringing the '633 Patent, Defendants indirectly infringe the  
25 '633 Patent pursuant to 35 U.S.C. § 271(b) by instructing, directing and/or requiring others, including  
26 but not limited to its customers, users and developers, to perform all or some of the steps of the  
27  
28

1 method claims, either literally or under the doctrine of equivalents, of the '633 Patent, where all the  
2 steps of the method claims are performed by either Defendants or their customers, users or  
3 developers, or some combination thereof. Defendants have known or have been willfully blind to the  
4 fact that they are inducing others, including customers, users and developers, to infringe by  
5 practicing, either themselves or in conjunction with Defendants, one or more method claims of the  
6 '633 Patent.

7  
8 76. Defendants knowingly and actively aid and abet the direct infringement of the '633  
9 Patent by instructing and encouraging their customers, users and developers to use the HackAlert,  
10 Proofpoint Malware Analysis Service, and Proofpoint Targeted Attack Protection. Such instructions  
11 and encouragement include but are not limited to, advising third parties to use HackAlert, Proofpoint  
12 Malware Analysis Service, and Proofpoint Targeted Attack Protection in an infringing manner;  
13 providing a mechanism through which third parties may infringe the '633 Patent, specifically through  
14 the use of HackAlert, Proofpoint Malware Analysis Service, and Proofpoint Targeted Attack  
15 Protection; advertising and promoting the use of HackAlert, Proofpoint Malware Analysis Service,  
16 and Proofpoint Targeted Attack Protection in an infringing manner; and distributing guidelines and  
17 instructions to third parties on how to use HackAlert, Proofpoint Malware Analysis Service, and  
18 Proofpoint Targeted Attack Protection in an infringing manner.

19  
20 77. Defendants provide detailed instruction to its customers and users regarding all aspects  
21 of the HackAlert, Proofpoint Malware Analysis Service, and Proofpoint Targeted Attack Protection  
22 including, HackAlert Suite, HackAlert Website Monitoring, HackAlert Safe Impressions, HackAlert  
23 SafeImpressions, HackAlert Vulnerability Assessment, Proofpoint Enterprise Protection,  
24 Proofpoint's Targeted Attack Protection, Proofpoint Essentials (including the packages of Beginner,  
25 Business, and Professional), Proofpoint Protection Server, and Proofpoint Messaging Security  
26  
27  
28

1 PAUL J. ANDRE (State Bar No. 196585)  
pandre@kramerlevin.com  
2 LISA KOBIALKA (State Bar No. 191404)  
lkobialka@kramerlevin.com  
3 JAMES HANNAH (State Bar No. 237978)  
jhannah@kramerlevin.com  
4 KRAMER LEVIN NAFTALIS & FRANKEL LLP  
990 Marsh Road  
5 Menlo Park, CA 94025  
Telephone: (650) 752-1700  
6 Facsimile: (650) 752-1800

7 *Attorneys for Plaintiff*  
8 FINJAN, INC.

9  
10 **IN THE UNITED STATES DISTRICT COURT**  
11 **FOR THE NORTHERN DISTRICT OF CALIFORNIA**

13 FINJAN, INC.,

14 Plaintiff,

15 v.

16 PROOFPOINT, INC. AND ARMORIZE  
TECHNOLOGIES, INC.

17 Defendants.

Case No.:

**COMPLAINT FOR PATENT  
INFRINGEMENT**

**DEMAND FOR JURY TRIAL**

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1 Gateway. Examples of these instructions can be found at the Armorize Resource Center located at  
2 [http://armorize.com/index.php?link\\_id=product](http://armorize.com/index.php?link_id=product), Armorize Forums / Tutorials, FAQs (at  
3 <https://armorize.zendesk.com/categories/5972-Tutorials-FAQs-Resources>), and Proofpoint Resources  
4 (at <http://www.proofpoint.com/resources/index.php>).

5 78. Proofpoint itself and through its authorized partners regularly provides class-room  
6 style training, demonstrations, webinars, and certification programs to help users use Proofpoint  
7 Targeted Attack Protection and Malware Analysis Service, including without limitation the  
8 following:  
9

- 10 • Webinars on Contextual Security Approach to Protection From Targeted Threats,  
11 Undetected Threats: Finding and protecting against hundreds of missed attacks,  
12 Combatting 2013's Most Dangerous Attacks, and Spearphishing: How  
13 to Reliably Defeat Targeted Attacks. *See*  
14 <http://www.proofpoint.com/resources/webinars.php> (attached as Exhibit Q).
- 15 • Demonstrations including Proofpoint Integrated Product Suite Demo and Proofpoint  
16 Enterprise Protection Live Demo. The demonstrations show how to use the  
17 Targeted Attack Protection to protect organizations. *See*  
18 <http://www.proofpoint.com/resources/demos.php> (attached as Exhibit R).
- 19 • Technical Briefs on Proofpoint Zero-Hour Anti-Virus and White Papers on Targeted  
20 Attack: The Best Defense, Defense against the Dark Arts: Finding and Stopping  
21 Advanced Threats, and Longline Phishing: A New Class of Advanced Phishing  
22 Attacks. *See* <http://www.proofpoint.com/resources/white-papers.php> (attached as  
23 Exhibit S).
- 24 • Proofpoint Education Portal, which offers courses in Enterprise Protection  
25 Accredited Engineer, Enterprise Protection Suite, Enterprise Protection for the  
26 Administrator, Proofpoint Targeted Attack Protection for End Users, Staying Safe  
27 on E-mail, and Enterprise Protection Associate Level Training. *See*  
28 <http://www.training.proofpoint.com/courses-draft/> (attached as Exhibit T).
- Proofpoint Education Portal which offers On-Site Training where a group of up to 8  
people can be trained live by Proofpoint to use their Protection products. *See*  
<http://www.training.proofpoint.com/classroom-schedule/on-site/> (attached as  
Exhibit U).

1 79. Proofpoint offers Professional Services, which helps customers design and implement  
2 Proofpoint's products onto the customers' network. Professional Services also offers integration,  
3 customization, training and maintenance of Proofpoint's products.

4 80. Armorize posts tutorials, user guides, troubleshooting and explanations on its online  
5 forum on how to use Armorize technology. These include without limitation HackAlert Resources,  
6 HackAlert SafeImpression question documents, tutorials on what to do "when a drive-by-download  
7 knocks at your door," tutorial on "How to add a website into HackAlert to be monitored," and  
8 tutorial on "what to do when receiving an alert." See [https://armorize.zendesk.com/categories/5972-  
9 Tutorials-FAQs-Resources](https://armorize.zendesk.com/categories/5972-Tutorials-FAQs-Resources) (attached as Exhibit V).  
10

11 81. Armorize provides the HackAlert V5 API, which encourages developers and  
12 customers to use HackAlert with step-by-step instructions on how to integrate into the HackAlert  
13 Software. See Armorize Malware Scanning and Forensics Extraction API (attached as Exhibit P).  
14

15 82. Defendants actively and intentionally maintain and update their websites, including  
16 Proofpoint.com and Armorize.com, to promote and provide demonstration, instruction and technical  
17 assistance for the HackAlert, Proofpoint Malware Analysis Service, and Proofpoint Targeted Attack  
18 Protection products, and to encourage customers, users and developers to use the HackAlert,  
19 Proofpoint Malware Analysis Service, and Proofpoint Targeted Attack Protection products and  
20 practice the methods taught in the '633 Patent.  
21

22 83. Defendants have had knowledge of the '633 Patent at least as of the time they learned  
23 of this action for infringement, and by continuing the actions described above, Defendants have had  
24 the specific intent to or was willfully blind to the fact that their actions would induce infringement of  
25 the '633 Patent.  
26  
27  
28

**COUNT V**

**(Direct Infringement of the '844 Patent pursuant to 35 U.S.C. § 271(a))**

1  
2 84. Finjan repeats, realleges, and incorporates by reference, as if fully set forth herein, the  
3 allegations of the preceding paragraphs, as set forth above.

4  
5 85. Proofpoint has infringed and continues to infringe one or more claims of the '844  
6 Patent in violation of 35 U.S.C. § 271(a).

7 86. Proofpoint's infringement is based upon literal infringement or, in the alternative,  
8 infringement under the doctrine of equivalents.

9 87. Proofpoint's acts of making, using, importing, selling, and/or offering for sale infringing  
10 products and services have been without the permission, consent, authorization or license of Finjan.

11 88. Proofpoint's infringement includes, but is not limited to, the manufacture, use, sale,  
12 importation and/or offer for sale of Proofpoint's products and services, including but not limited to  
13 Proofpoint Malware Analysis Service and Proofpoint Targeted Attack Protection, which embodies  
14 the patented invention of the '844 Patent.

15  
16 89. As a result of Proofpoint's unlawful activities, Finjan has suffered and will continue to  
17 suffer irreparable harm for which there is no adequate remedy at law. Accordingly, Finjan is entitled  
18 to preliminary and/or permanent injunctive relief.

19 90. Proofpoint's infringement of the '844 Patent has injured and continues to injure Finjan  
20 in an amount to be proven at trial.

21  
22 **COUNT VI**

**(Indirect Infringement of the '844 Patent pursuant to 35 U.S.C. § 271(b))**

23 91. Finjan repeats, realleges, and incorporates by reference, as if fully set forth herein, the  
24 allegations of the preceding paragraphs, as set forth above.

25 92. Proofpoint has induced and continues to induce infringement of at least claims 1-14  
26 and 22-27 of the '844 Patent under 35 U.S.C. § 271(b).  
27  
28

1 93. In addition to directly infringing the '844 Patent, Proofpoint indirectly infringes the  
2 '844 Patent pursuant to 35 U.S.C. § 271(b) by instructing, directing and/or requiring others, including  
3 but not limited to its customers, users and developers, to perform all or some of the steps of the  
4 method claims, either literally or under the doctrine of equivalents, of the '844 Patent, where all the  
5 steps of the method claims are performed by either Proofpoint or its customers, users or developers,  
6 or some combination thereof. Proofpoint has known or has been willfully blind to the fact that it is  
7 inducing others, including customers, users and developers, to infringe by practicing, either  
8 themselves or in conjunction with Proofpoint, one or more method claims of the '844 Patent.  
9

10 94. Proofpoint knowingly and actively aids and abets the direct infringement of the '844  
11 Patent by instructing and encouraging its customers, users and developers to use the Proofpoint  
12 Malware Analysis Service and Proofpoint Targeted Attack Protection. Such instructions and  
13 encouragement include but are not limited to, advising third parties to use the Proofpoint Malware  
14 Analysis Service and Proofpoint Targeted Attack Protection in an infringing manner; providing a  
15 mechanism through which third parties may infringe the '844 Patent, specifically through the use of  
16 the Proofpoint Malware Analysis Service and Proofpoint Targeted Attack Protection; advertising and  
17 promoting the use of the Proofpoint Malware Analysis Service and Proofpoint Targeted Attack  
18 Protection in an infringing manner; and distributing guidelines and instructions to third parties on  
19 how to use the Proofpoint Malware Analysis Service and Proofpoint Targeted Attack Protection in an  
20 infringing manner.  
21

22 95. Proofpoint provides detailed instructions to its customers and users regarding all  
23 aspects of the Proofpoint Malware Analysis Service and Proofpoint Targeted Attack Protection  
24 including, Proofpoint Enterprise Protection, Proofpoint's Targeted Attack Protection, Proofpoint  
25 Essentials (including the packages of Beginner, Business, and Professional), Proofpoint Protection  
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1 Server, and Proofpoint Messaging Security Gateway. Examples of these instructions can be found at  
2 the Proofpoint Resources located at <http://www.proofpoint.com/resources/index.php>.

3 96. Proofpoint itself and through its authorized partners regularly provides class-room  
4 style training, demonstrations, webinars, and certification programs to help users use Proofpoint  
5 Targeted Attack Protection and Malware Analysis Service, including without limitation the  
6 following:

- 7  
8 • Webinars on Contextual Security Approach to Protection From Targeted Threats,  
9 Undetected Threats: Finding and protecting against hundreds of missed attacks,  
10 Combatting 2013's Most Dangerous Attacks, and Spearphishing: How  
11 to Reliably Defeat Targeted Attacks. *See*  
12 <http://www.proofpoint.com/resources/webinars.php> (attached as Exhibit Q).
- 13 • Demonstrations including Proofpoint Integrated Product Suite Demo and Proofpoint  
14 Enterprise Protection Live Demo. The demonstrations show how to use the  
15 Targeted Attack Protection to protect organizations. *See*  
16 <http://www.proofpoint.com/resources/demos.php> (attached as Exhibit R).
- 17 • Technical Briefs on Proofpoint Zero-Hour Anti-Virus and White Papers on Targeted  
18 Attack: The Best Defense, Defense against the Dark Arts: Finding and Stopping  
19 Advanced Threats, and Longline Phishing: A New Class of Advanced Phishing  
20 Attacks. *See* <http://www.proofpoint.com/resources/white-papers.php> (attached as  
21 Exhibit S).
- 22 • Proofpoint Education Portal, which offers courses in Enterprise Protection,  
23 Accredited Engineer, Enterprise Protection Suite, Enterprise Protection for the  
24 Administrator, Proofpoint Targeted Attack Protection for End Users, Staying Safe  
25 on E-mail, and Enterprise Protection Associate Level Training. *See*  
26 <http://www.training.proofpoint.com/courses-draft/> (attached as Exhibit T).
- 27 • Proofpoint Education Portal which offers On-Site Training where a group of up to 8  
28 people can be trained live by Proofpoint to use their Protection products. *See*  
<http://www.training.proofpoint.com/classroom-schedule/on-site/> (attached as  
Exhibit U).

97. Proofpoint offers Professional Services, which helps customers design and implement  
Proofpoint's products onto the customers' network. Professional Services also offers integration,  
customization, training and maintenance of Proofpoint's products.

1 98. Proofpoint actively and intentionally maintains and updates websites, including  
2 Proofpoint.com, to promote and provide demonstration, instruction and technical assistance for the  
3 Proofpoint Malware Analysis Service and Proofpoint Targeted Attack Protection, and to encourage  
4 customers, users and developers to use Proofpoint Malware Analysis Service and Proofpoint Targeted  
5 Attack Protection and practice the methods taught in the '844 Patent.

6 99. Proofpoint has had knowledge of the '844 Patent at least as of the time it learned of  
7 this action for infringement, and by continuing the actions described above, Proofpoint has had the  
8 specific intent to or was willfully blind to the fact that its actions would induce infringement of the  
9 '844 Patent.  
10

11 **COUNT VII**

12 **(Direct Infringement of the '305 Patent pursuant to 35 U.S.C. § 271(a))**

13 100. Finjan repeats, realleges, and incorporates by reference, as if fully set forth herein, the  
14 allegations of the preceding paragraphs, as set forth above.

15 101. Defendants have infringed and continue to infringe one or more claims of the '305  
16 Patent in violation of 35 U.S.C. § 271(a).

17 102. Defendants' infringement is based upon literal infringement or, in the alternative,  
18 infringement under the doctrine of equivalents.  
19

20 103. Defendants' acts of making, using, importing, selling, and/or offering for sale infringing  
21 products and services have been without the permission, consent, authorization or license of Finjan.

22 104. Defendants' infringement includes, but is not limited to, the manufacture, use, sale,  
23 importation and/or offer for sale of Defendants' products and services, including but not limited to,  
24 Proofpoint Zero-Hour and CodeSecure, which embody the patented invention of the '305 Patent.  
25  
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1 mechanism through which third parties may infringe the '305 Patent, specifically through the use of  
2 the Proofpoint Zero-Hour and CodeSecure; advertising and promoting the use of the Proofpoint Zero-  
3 Hour and CodeSecure in an infringing manner; and distributing guidelines and instructions to third  
4 parties on how to use the Proofpoint Zero-Hour and CodeSecure in an infringing manner.

5 111. Defendants provide detailed instruction to their customers and users regarding all  
6 aspects of the Proofpoint Zero-Hour and CodeSecure. Examples of these instructions can be found at  
7 the Armorize Resource Center located at [http://armorize.com/index.php?link\\_id=product](http://armorize.com/index.php?link_id=product), Armorize  
8 Forums / Tutorials, FAQs (at [https://armorize.zendesk.com/categories/5972-Tutorials-FAQs-](https://armorize.zendesk.com/categories/5972-Tutorials-FAQs-Resources)  
9 [Resources](https://armorize.zendesk.com/categories/5972-Tutorials-FAQs-Resources)), and Proofpoint Resources (at <http://www.proofpoint.com/resources/index.php>).

10 112. Proofpoint itself and through its authorized partners regularly provides class-room  
11 style training, demonstrations, webinars, and certification programs to help users use Proofpoint  
12 Targeted Attack Protection and Malware Analysis Service including without limitation the following:  
13

- 14 • Webinars on Contextual Security Approach to Protection From Targeted Threats,  
15 Undetected Threats: Finding and protecting against hundreds of missed attacks,  
16 Combatting 2013's Most Dangerous Attacks, and Spearheading the Spear Phishers: How  
17 to Reliably Defeat Targeted Attacks. *See*  
<http://www.proofpoint.com/resources/webinars.php> (attached as Exhibit Q).
- 18 • Demonstrations including Proofpoint Integrated Product Suite Demo and Proofpoint  
19 Enterprise Protection Live Demo. The demonstrations show how to use the  
20 Targeted Attack Protection to protect organizations. *See*  
<http://www.proofpoint.com/resources/demos.php> (attached as Exhibit R).
- 21 • Technical Briefs on Proofpoint Zero-Hour Anti-Virus and White Papers on Targeted  
22 Attack: The Best Defense, Defense against the Dark Arts: Finding and Stopping  
23 Advanced Threats, and Longline Phishing: A New Class of Advanced Phishing  
24 Attacks. *See* <http://www.proofpoint.com/resources/white-papers.php> (attached as  
25 Exhibit S).
- 26 • Proofpoint Education Portal, which offers courses in Enterprise Protection,  
27 Accredited Engineer, Enterprise Protection Suite, Enterprise Protection for the  
28 Administrator, Proofpoint Targeted Attack Protection for End Users, Staying Safe  
on E-mail, and Enterprise Protection Associate Level Training. *See*  
<http://www.training.proofpoint.com/courses-draft/> (attached as Exhibit T).

- Proofpoint Education Portal which offers On-Site Training where a group of up to 8 people can be trained live by Proofpoint to use their Protection products. See <http://www.training.proofpoint.com/classroom-schedule/on-site/> (attached as Exhibit U).

113. Proofpoint offers Professional Services, which helps customers design and implement Proofpoint's products onto the customers network. Professional Services also offers integration, customization, training and maintenance of Proofpoint's products.

114. Armorize posts tutorials, user guides, troubleshooting and explanations on its online forum on how to use Armorize technology. These include without limitation documents on Code Secure Quick Start Guides, How to upgrade CodeSecure, and LDAP integration tip with CodeSecure. See <https://armorize.zendesk.com/categories/5972-Tutorials-FAQs-Resources> (attached as Exhibit V).

115. Defendants actively and intentionally maintain and update websites, including Proofpoint.com and Armorize.com, to promote and provide demonstration, instruction and technical assistance for HackAlert Code Secure, Proofpoint Enterprise Protection, Proofpoint's Targeted Attack Protection, Proofpoint Essentials (including the packages of Beginner, Business, and Professional), Proofpoint Protection Server, and Proofpoint Messaging Security Gateway, and to encourage customers, users and developers to use HackAlert Code Secure, Proofpoint Enterprise Protection, Proofpoint's Targeted Attack Protection, Proofpoint Essentials (including the packages of Beginner, Business, and Professional), Proofpoint Protection Server, and Proofpoint Messaging Security Gateway and practice the methods taught in the '305 Patent.

116. Defendants have had knowledge of the '305 Patent at least as of the time they learned of this action for infringement, and by continuing the actions described above, Defendants have had the specific intent to or was willfully blind to the fact that their actions would induce infringement of the '305 Patent.

**COUNT IX**

**(Direct Infringement of the '408 Patent pursuant to 35 U.S.C. § 271(a))**

1  
2 117. Finjan repeats, realleges, and incorporates by reference, as if fully set forth herein, the  
3 allegations of the preceding paragraphs, as set forth above.

4  
5 118. Defendants have infringed and continues to infringe one or more claims of the '408  
6 Patent in violation of 35 U.S.C. § 271(a).

7 119. Defendants' infringement is based upon literal infringement or, in the alternative,  
8 infringement under the doctrine of equivalents.

9 120. Defendants' acts of making, using, importing, selling, and/or offering for sale infringing  
10 products and services have been without the permission, consent, authorization or license of Finjan.

11 121. Defendants' infringement includes, but is not limited to, the manufacture, use, sale,  
12 importation and/or offer for sale of Defendants' products and services, including but not limited to,  
13 Proofpoint Zero-Hour and CodeSecure, which embody the patented invention of the '408 Patent.

14  
15 122. As a result of Defendants' unlawful activities, Finjan has suffered and will continue to  
16 suffer irreparable harm for which there is no adequate remedy at law. Accordingly, Finjan is entitled  
17 to preliminary and/or permanent injunctive relief.

18 123. Defendants' infringement of the '408 Patent has injured and continues to injure Finjan  
19 in an amount to be proven at trial.

**COUNT X**

**(Indirect Infringement of the '408 Patent pursuant to 35 U.S.C. § 271(b))**

21  
22 124. Finjan repeats, realleges, and incorporates by reference, as if fully set forth herein, the  
23 allegations of the preceding paragraphs, as set forth above.

24  
25 125. Defendants have induced and continue to induce infringement of at least claims 1-8  
26 and 23-28, of the '408 Patent under 35 U.S.C. § 271(b).

1 126. In addition to directly infringing the '408 Patent, Defendants indirectly infringe the  
2 '408 Patent pursuant to 35 U.S.C. § 271(b) by instructing, directing and/or requiring others, including  
3 but not limited to its customers, users and developers, to perform all or some of the steps of the  
4 method claims, either literally or under the doctrine of equivalents, of the '408 Patent, where all the  
5 steps of the method claims are performed by either Defendants or their customers, users or  
6 developers, or some combination thereof. Defendants have known or have been willfully blind to the  
7 fact that they are inducing others, including customers, users and developers, to infringe by  
8 practicing, either themselves or in conjunction with Defendants, one or more method claims of the  
9 '408 Patent.  
10

11 127. Defendants knowingly and actively aid and abet the direct infringement of the '408  
12 Patent by instructing and encouraging their customers, users and developers to use Proofpoint Zero-  
13 Hour and CodeSecure. Such instructions and encouragement include, but are not limited to, advising  
14 third parties to use Proofpoint Zero-Hour and CodeSecure in an infringing manner; providing a  
15 mechanism through which third parties may infringe the '408 Patent, specifically through the use of  
16 the Proofpoint Zero-Hour and CodeSecure; advertising and promoting the use of the Proofpoint Zero-  
17 Hour and CodeSecure in an infringing manner; and distributing guidelines and instructions to third  
18 parties on how to use the Proofpoint Zero-Hour and CodeSecure in an infringing manner.  
19

20 128. Defendants provide detailed instructions to their customers and users regarding all  
21 aspects of the Proofpoint Zero-Hour and CodeSecure including HackAlert Code Secure, Proofpoint  
22 Enterprise Protection, Proofpoint's Targeted Attack Protection, Proofpoint Essentials (including the  
23 packages of Beginner, Business, and Professional), Proofpoint Protection Server, and Proofpoint  
24 Messaging Security Gateway. Examples of these instructions can be found at the Armorize Resource  
25 Center (at [http://armorize.com/index.php?link\\_id=product](http://armorize.com/index.php?link_id=product)), Armorize Forums / Tutorials, FAQs (at  
26  
27  
28

1 **COMPLAINT FOR PATENT INFRINGEMENT**

2 Plaintiff Finjan, Inc. (“Finjan”) files this Complaint for Patent Infringement and Jury Demand  
3 against Defendants Proofpoint, Inc. (“Proofpoint”) and Armorize Technologies, Inc. (“Armorize”),  
4 (collectively “Defendants”) and alleges as follows:

5 **THE PARTIES**

6 1. Finjan is a Delaware corporation, with its corporate headquarters at 1313 N. Market  
7 Street, Suite 5100, Wilmington, Delaware 19801. Finjan’s U.S. operating business was previously  
8 headquartered at 2025 Gateway Place, San Jose, California 95110.

9 2. Proofpoint is a Delaware corporation with its principal place of business at 892 Ross  
10 Drive, Sunnyvale, California 94089.

11 3. Armorize is a Delaware corporation with its principal place of business at 5201 Great  
12 America Parkway Suit 320, Santa Clara, CA 95054. Armorize is a wholly-owned subsidiary of  
13 Proofpoint.  
14

15 **JURISDICTION AND VENUE**

16 4. This action arises under the Patent Act, 35 U.S.C. § 101 *et seq.* This Court has  
17 original jurisdiction over this controversy pursuant to 28 U.S.C. §§ 1331 and 1338.

18 5. Venue is proper in this Court pursuant to 28 U.S.C. §§ 1391(b) and (c) and/or 1400(b).

19 6. This Court has personal jurisdiction over Defendants. Upon information and belief,  
20 Defendants do business in this District and has, and continue to, infringe and/or induce the  
21 infringement in this District. Defendants also market their products primarily in and from this  
22 District. In addition, the Court has personal jurisdiction over Defendants because they have  
23 established minimum contacts with the forum and the exercise of jurisdiction would not offend  
24 traditional notions of fair play and substantial justice.  
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1 <https://armorize.zendesk.com/categories/5972-Tutorials-FAQs-Resources>), and Proofpoint Resources  
2 (at <http://www.proofpoint.com/resources/index.php>).

3 129. Proofpoint itself and through its authorized partners regularly provide class-room style  
4 training, demonstrations, webinars, and certification programs to help users use Proofpoint Targeted  
5 Attack Protection and Malware Analysis Service including without limitation the following:

- 6 • Webinars on Contextual Security Approach to Protection From Targeted Threats, Undetected Threats: Finding and protecting against hundreds of missed attacks, Combatting 2013's Most Dangerous Attacks, and Spearphishing: How to Reliably Defeat Targeted Attacks. *See* <http://www.proofpoint.com/resources/webinars.php> (attached as Exhibit Q).
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10 • Demonstrations including Proofpoint Integrated Product Suite Demo and Proofpoint Enterprise Protection Live Demo. The demonstrations show how to use the Targeted Attack Protection to protect organizations. *See* <http://www.proofpoint.com/resources/demos.php> (attached as Exhibit R).
- 11  
12  
13 • Technical Briefs on Proofpoint Zero-Hour Anti-Virus and White Papers on Targeted Attack: The Best Defense, Defense against the Dark Arts: Finding and Stopping Advanced Threats, and Longline Phishing: A New Class of Advanced Phishing Attacks. *See* <http://www.proofpoint.com/resources/white-papers.php> (attached as Exhibit S).
- 14  
15  
16 • Proofpoint Education Portal, which offers courses in Enterprise Protection, Accredited Engineer, Enterprise Protection Suite, Enterprise Protection for the Administrator, Proofpoint Targeted Attack Protection for End Users, Staying Safe on E-mail, and Enterprise Protection Associate Level Training. *See* <http://www.training.proofpoint.com/courses-draft/> (attached as Exhibit T).
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19 • Proofpoint Education Portal which offers On-Site Training where a group of up to 8 people can be trained live by Proofpoint to use their Protection products. *See* <http://www.training.proofpoint.com/classroom-schedule/on-site/> (attached as Exhibit U).
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23 130. Proofpoint offers Professional Services, which helps customers design and implement  
24 Proofpoint's products onto the customers' network. Professional Services also offers integration,  
25 customization, training and maintenance of Proofpoint's products.

26 131. Armorize posts tutorials, user guides, troubleshooting and explanation on how to use  
27 Armorize technology on its online forum. These include without limitation documents on  
28



1 CodeSecure Quick Start Guides, How to upgrade CodeSecure, and LDAP integration tip with  
2 CodeSecure. See <https://armorize.zendesk.com/categories/5972-Tutorials-FAQs-Resources> (attached  
3 as Exhibit V).

4 132. Defendants actively and intentionally maintain and update websites, including  
5 Proofpoint.com and Armorize.com, to promote and provide demonstration, instruction and technical  
6 assistance for HackAlert Code Secure, Proofpoint Enterprise Protection, Proofpoint's Targeted  
7 Attack Protection, Proofpoint Essentials (including the packages of Beginner, Business, and  
8 Professional), Proofpoint Protection Server, and Proofpoint Messaging Security Gateway, and to  
9 encourage customers, users and developers to use HackAlert Code Secure, Proofpoint Enterprise  
10 Protection, Proofpoint's Targeted Attack Protection, Proofpoint Essentials (including the packages of  
11 Beginner, Business, and Professional), Proofpoint Protection Server, and Proofpoint Messaging  
12 Security Gateway products and practice the methods taught in the '408 Patent.  
13

14 133. Defendants have had knowledge of the '408 Patent at least as of the time they learned  
15 of this action for infringement, and by continuing the actions described above, Defendants have had  
16 the specific intent to or was willfully blind to the fact that their actions would induce infringement of  
17 the '408 Patent.  
18

19 **COUNT XI**

20 **(Direct Infringement of the '086 Patent pursuant to 35 U.S.C. § 271(a))**

21 134. Finjan repeats, realleges, and incorporates by reference, as if fully set forth herein, the  
22 allegations of the preceding paragraphs, as set forth above.

23 135. Armorize has infringed and continues to infringe one or more claims of the '086  
24 Patent in violation of 35 U.S.C. § 271(a).

25 136. Armorize's infringement is based upon literal infringement or, in the alternative,  
26 infringement under the doctrine of equivalents.  
27  
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1 137. Armorize's acts of making, using, importing, selling, and/or offering for sale infringing  
2 products and services have been without the permission, consent, authorization or license of Finjan.

3 138. Armorize's infringement includes, but is not limited to, the manufacture, use, sale,  
4 importation and/or offer for sale of Armorize's products and services, including but not limited to, the  
5 HackAlert and CodeSecure, which embody the patented invention of the '086 Patent.

6 139. As a result of Armorize's unlawful activities, Finjan has suffered and will continue to  
7 suffer irreparable harm for which there is no adequate remedy at law. Accordingly, Finjan is entitled  
8 to preliminary and/or permanent injunctive relief.

9 140. Armorize's infringement of the '086 Patent has injured and continues to injure Finjan  
10 in an amount to be proven at trial.

11  
12 **COUNT XII**  
13 **(Indirect Infringement of the '086 Patent pursuant to 35 U.S.C. § 271(b))**

14 141. Finjan repeats, realleges, and incorporates by reference, as if fully set forth herein, the  
15 allegations of the preceding paragraphs, as set forth above.

16 142. Armorize has induced and continues to induce infringement of at least claims 1-8, 17-  
17 23, 31, 32, 35, 36, 39, and 41 of the '086 Patent under 35 U.S.C. § 271(b).

18 143. In addition to directly infringing the '086 Patent, Armorize indirectly infringes the  
19 '086 Patent pursuant to 35 U.S.C. § 271(b) by instructing, directing and/or requiring others, including  
20 but not limited to its customers, users and developers, to perform all or some of the steps of the  
21 method claims, either literally or under the doctrine of equivalents, of the '086 Patent, where all the  
22 steps of the method claims are performed by either Armorize or its customers, users or developers, or  
23 some combination thereof. Armorize has known or has been willfully blind to the fact that it is  
24 inducing others, including customers, users and developers, to infringe by practicing, either  
25 themselves or in conjunction with Armorize, one or more method claims of the '086 Patent.  
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1 144. Armorize knowingly and actively aided and abetted the direct infringement of the '086  
2 Patent by instructing and encouraging its customers, users and developers to use HackAlert and  
3 CodeSecure. Such instructions and encouragement include but are not limited to, advising third  
4 parties to use HackAlert and CodeSecure in an infringing manner; providing a mechanism through  
5 which third parties may infringe the '086 Patent, specifically through the use of HackAlert and  
6 CodeSecure; advertising and promoting the use of HackAlert and CodeSecure in an infringing  
7 manner; and distributing guidelines and instructions to third parties on how to use HackAlert and  
8 CodeSecure in an infringing manner.  
9

10 145. Armorize provides detailed instruction to its customers and users regarding all aspects  
11 of HackAlert and CodeSecure including, HackAlert, HackAlert Suite, HackAlert Website  
12 Monitoring, HackAlert Safe Impressions, HackAlert SafeImpressions, and HackAlert Vulnerability  
13 Assessment, SmartWAF, and HackAlert CodeSecure. Examples of these instructions can be found at  
14 the Armorize Resource Center (at [http://armorize.com/index.php?link\\_id=product](http://armorize.com/index.php?link_id=product)), Armorize Forums  
15 / Tutorials, FAQs (at <https://armorize.zendesk.com/categories/5972-Tutorials-FAQs-Resources>), and  
16 Proofpoint Resources (at <http://www.proofpoint.com/resources/index.php>).  
17

18 146. Armorize posts tutorials, user guides, troubleshooting and explanation on how to use  
19 Armorize technology, including CodeSecure and HackAlert, on its online forum. These include  
20 without limitation documents on CodeSecure Quick Start Guides, How to upgrade CodeSecure, and  
21 LDAP integration tip with CodeSecure. See [https://armorize.zendesk.com/categories/5972-Tutorials-](https://armorize.zendesk.com/categories/5972-Tutorials-FAQs-Resources)  
22 [FAQs-Resources](https://armorize.zendesk.com/categories/5972-Tutorials-FAQs-Resources) (attached as Exhibit V).  
23

24 147. Armorize also posts tutorials, user guides, troubleshooting and explanation on how to  
25 use HackAlert on its online forum. These include HackAlert Resources, HackAlert SafeImpression  
26 question documents, tutorials on what to do "when a drive-by-download knocks at your door,"  
27  
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1 tutorial on “How to add a website into HackAlert to be monitored,” and tutorial on “what to do when  
2 receiving an alert.” See <https://armorize.zendesk.com/categories/5972-Tutorials-FAQs-Resources>  
3 (attached as Exhibit V).

4 148. Armorize Provides the HackAlert V5 API, which encourages developers and  
5 customers to use HackAlert with step-by-step instructions on how to integrate into the HackAlert  
6 Software. See Armorize Malware Scanning and Forensics Extraction API (attached as Exhibit P).

7 149. Armorize actively and intentionally maintains and updates websites, including  
8 Armorize.com, to promote and provide demonstration, instruction and technical assistance for  
9 HackAlert and CodeSecure, and to encourage customers, users and developers to use HackAlert and  
10 CodeSecure products and practice the methods taught in the ‘086 Patent.

11 150. Armorize has had knowledge of the ‘086 Patent at least as of the time it learned of this  
12 action for infringement, and by continuing the actions described above, Armorize has had the specific  
13 intent to or was willfully blind to the fact that its actions would induce infringement of the ‘086  
14 Patent.  
15

16  
17 **COUNT XIII**  
18 **(Direct Infringement of the ‘154 Patent pursuant to 35 U.S.C. § 271(a))**

19 151. Finjan repeats, realleges, and incorporates by reference, as if fully set forth herein, the  
20 allegations of the preceding paragraphs, as set forth above.

21 152. Armorize has infringed and continues to infringe one or more claims of the ‘154  
22 Patent in violation of 35 U.S.C. § 271(a).

23 153. Armorize’s infringement is based upon literal infringement or, in the alternative,  
24 infringement under the doctrine of equivalents.

25 154. Armorize’s acts of making, using, importing, selling, and/or offering for sale infringing  
26 products and services have been without the permission, consent, authorization or license of Finjan.  
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1 155. Armorize's infringement includes, but is not limited to, the manufacture, use, sale,  
2 importation and/or offer for sale of Armorize's products and services, including but not limited to, the  
3 HackAlert and CodeSecure, which embody the patented invention of the '154 Patent.

4 156. As a result of Armorize's unlawful activities, Finjan has suffered and will continue to  
5 suffer irreparable harm for which there is no adequate remedy at law. Accordingly, Finjan is entitled  
6 to preliminary and/or permanent injunctive relief.

7 157. Armorize's infringement of the '154 Patent has injured and continues to injure Finjan  
8 in an amount to be proven at trial.  
9

10 **COUNT XIV**  
11 **(Direct Infringement of the '918 Patent pursuant to 35 U.S.C. § 271(a))**

12 158. Finjan repeats, realleges, and incorporates by reference, as if fully set forth herein, the  
13 allegations of the preceding paragraphs, as set forth above.

14 159. Armorize has infringed and continues to infringe one or more claims of the '918  
15 Patent in violation of 35 U.S.C. § 271(a).

16 160. Armorize's infringement is based upon literal infringement or, in the alternative,  
17 infringement under the doctrine of equivalents.

18 161. Armorize's acts of making, using, importing, selling, and/or offering for sale infringing  
19 products and services have been without the permission, consent, authorization or license of Finjan.  
20

21 162. Armorize's infringement includes, but is not limited to, the manufacture, use, sale,  
22 importation and/or offer for sale of Armorize's products and services, including but not limited to,  
23 HackAlert and CodeSecure, which embody the patented invention of the '918 Patent.

24 163. As a result of Armorize's unlawful activities, Finjan has suffered and will continue to  
25 suffer irreparable harm for which there is no adequate remedy at law. Accordingly, Finjan is entitled  
26 to preliminary and/or permanent injunctive relief.  
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1 164. Defendant's infringement of the '918 Patent has injured and continues to injure Finjan  
2 in an amount to be proven at trial.

3 **COUNT XV**  
4 **(Indirect Infringement of the '918 Patent pursuant to 35 U.S.C. § 271(b))**

5 165. Finjan repeats, realleges, and incorporates by reference, as if fully set forth herein, the  
6 allegations of the preceding paragraphs, as set forth above.

7 166. Armorize has induced and continues to induce infringement of at least claims 1-11,  
8 22-28, and 34 of the '918 Patent under 35 U.S.C. § 271(b).

9 167. In addition to directly infringing the '918 Patent, Armorize indirectly infringes the  
10 '918 Patent pursuant to 35 U.S.C. § 271(b) by instructing, directing and/or requiring others, including  
11 but not limited to its customers, users and developers, to perform all or some of the steps of the  
12 method claims, either literally or under the doctrine of equivalents, of the '918 Patent, where all the  
13 steps of the method claims are performed by either Armorize or its customers, users or developers, or  
14 some combination thereof. Armorize has known or has been willfully blind to the fact that it is  
15 inducing others, including customers, users and developers, to infringe by practicing, either  
16 themselves or in conjunction with Armorize, one or more method claims of the '918 Patent.  
17

18 168. Armorize knowingly and actively aids and abets the direct infringement of the '918  
19 Patent by instructing and encouraging its customers, users and developers to use HackAlert and  
20 CodeSecure. Such instructions and encouragement include but are not limited to, advising third  
21 parties to use HackAlert and CodeSecure in an infringing manner; providing a mechanism through  
22 which third parties may infringe the '918 Patent, specifically through the use of HackAlert and  
23 CodeSecure; advertising and promoting the use of HackAlert and CodeSecure in an infringing  
24 manner; and distributing guidelines and instructions to third parties on how to use HackAlert and  
25 CodeSecure in an infringing manner.  
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1 169. Armorize provides detailed instruction to its customers and users regarding all aspects  
2 of HackAlert and CodeSecure including, HackAlert Suite, HackAlert Website Monitoring, HackAlert  
3 Safe Impressions, HackAlert SafeImpressions, and HackAlert Vulnerability Assessment, SmartWAF,  
4 and HackAlert CodeSecure. Examples of these instructions can be found at the Armorize Resource  
5 Center (at [http://armorize.com/index.php?link\\_id=product](http://armorize.com/index.php?link_id=product)), and Armorize Forums / Tutorials, FAQs  
6 (at <https://armorize.zendesk.com/categories/5972-Tutorials-FAQs-Resources>).

7  
8 170. Armorize posts tutorials, user guides, troubleshooting and explanation on how to use  
9 Armorize technology, including CodeSecure, on its online forum. These include documents on  
10 CodeSecure Quick Start Guides, How to upgrade CodeSecure, and LDAP integration tip with  
11 CodeSecure. See <https://armorize.zendesk.com/categories/5972-Tutorials-FAQs-Resources> (attached  
12 as Exhibit V).

13  
14 171. Armorize also posts tutorials, user guides, troubleshooting and explanation on how to  
15 use HackAlert on its online forum. These include HackAlert Resources, HackAlert SafeImpression  
16 question documents, tutorials on what to do “when a drive-by-download knocks at your door,”  
17 tutorial on “How to add a website into HackAlert to be monitored,” and tutorial on “what to do when  
18 receiving an alert.” See <https://armorize.zendesk.com/categories/5972-Tutorials-FAQs-Resources>  
19 (attached as Exhibit V).

20  
21 172. Armorize provides the HackAlert V5 API, which encourages developers and  
22 customers to use HackAlert with step-by-step instructions on how to integrate into the HackAlert  
23 Software. See Armorize Malware Scanning and Forensics Extraction API (attached as Exhibit P).

24  
25 173. Armorize actively and intentionally maintains and updates websites, including  
26 Armorize.com, to promote and provide demonstration, instruction and technical assistance for  
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1 HackAler and CodeSecure, and to encourage customers, users and developers to use HackAlert and  
2 CodeSecure products and practice the methods taught in the '918 Patent.

3 174. Armorize has had knowledge of the '918 Patent at least as of the time it learned of this  
4 action for infringement, and by continuing the actions described above, Armorize has had the specific  
5 intent to or was willfully blind to the fact that its actions would induce infringement of the '918  
6 Patent.

7  
8 **PRAYER FOR RELIEF**

9 WHEREFORE, Finjan prays for judgment and relief as follows:

10 A. An entry of judgment holding that Defendants have infringed and are infringing the  
11 '822 Patent, the '633 Patent, the '844 Patent, the '305 Patent, the '408 Patent, the '086 Patent, the  
12 '154 Patent and the '918 Patent; and that Defendants have induced and are inducing infringement of  
13 the '822 Patent, the '633 Patent, the '844 Patent, the '305 Patent, the '408 Patent, the '086 Patent and  
14 the '918 Patent;

15 B. A preliminary and permanent injunction against Defendants and their officers,  
16 employees, agents, servants, attorneys, instrumentalities, and/or those in privity with them, from  
17 infringing, or inducing the infringement of, the '822 Patent, the '633 Patent, the '844 Patent, the '305  
18 Patent, the '408 Patent, the '086 Patent, the '154 Patent and the '918 Patent and for all further and  
19 proper injunctive relief pursuant to 35 U.S.C. § 283;

20 C. An award to Finjan of such damages as it shall prove at trial against Defendants that is  
21 adequate to fully compensate Finjan for Defendants' infringement of the '822 Patent, the '633 Patent,  
22 the '844 Patent, the '305 Patent, the '408 Patent, the '086 Patent, the '154 Patent and the '918 Patent,  
23 said damages to be no less than a reasonable royalty;  
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1 D. A finding that this case is “exceptional” and an award to Finjan of its costs and  
2 reasonable attorney’s fees, as provided by 35 U.S.C. § 285;

3 E. An accounting of all infringing sales and revenues, together with postjudgment interest  
4 and prejudgment interest from the first date of infringement of the ‘822 Patent, the ‘633 Patent, the  
5 ‘844 Patent, the ‘305 Patent, the ‘408 Patent, the ‘086 Patent, the ‘154 Patent and the ‘918 Patent; and

6 F. Such further and other relief as the Court may deem proper and just.  
7

8 Respectfully submitted,

9 Dated: December 16, 2013

10 By: /s/ Paul J. Andre  
11 Paul J. Andre  
12 Lisa Kobialka  
13 James Hannah  
14 KRAMER LEVIN NAFTALIS  
15 & FRANKEL LLP  
16 990 Marsh Road  
17 Menlo Park, CA 94025  
18 Telephone: (650) 752-1700  
19 Facsimile: (650) 752-1800  
20 [pandre@kramerlevin.com](mailto:pandre@kramerlevin.com)  
21 [lkobialka@kramerlevin.com](mailto:lkobialka@kramerlevin.com)  
22 [jhannah@kramerlevin.com](mailto:jhannah@kramerlevin.com)

23 *Attorneys for Plaintiff*  
24 FINJAN, INC.  
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**INTRADISTRICT ASSIGNMENT**

1  
2 7. Pursuant to Local Rule 3-2(c), Intellectual Property Actions are assigned on a district-  
3 wide basis.

**FINJAN'S INNOVATIONS**

4  
5 8. Finjan was founded in 1997 as a wholly-owned subsidiary of Finjan Software Ltd., an  
6 Israeli corporation. Finjan was a pioneer in the developing proactive security technologies capable of  
7 detecting previously unknown and emerging online security threats recognized today under the  
8 umbrella of "malware." These technologies protect networks and endpoints by identifying suspicious  
9 patterns and behaviors of content delivered over the Internet. Finjan has been awarded, and continues  
10 to prosecute, numerous patents in the United States and around the world resulting directly from  
11 Finjan's more than decade-long research and development efforts, supported by a dozen inventors.

12  
13 9. Finjan built and sold software, including APIs, and appliances for network security  
14 using these patented technologies. These products and customers continue to be supported by  
15 Finjan's licensing partners. At its height, Finjan employed nearly 150 employees around the world  
16 building and selling security products and operating the Malicious Code Research Center through  
17 which it frequently published research regarding network security and current threats on the Internet.  
18 Finjan's pioneering approach to online security drew equity investments from two major software and  
19 technology companies, the first in 2005, followed by the second in 2006. Through 2009, Finjan has  
20 generated millions of dollars in product sales and related services and support revenues.

21  
22 10. Finjan's founder and original investors are still involved with and invested in the  
23 company today, as are a number of other key executives and advisors. Currently, Finjan is a  
24 technology company applying its research, development, knowledge and experience with security  
25 technologies to working with inventors, investing in and/or acquiring other technology companies,  
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**DEMAND FOR JURY TRIAL**

Finjan demands a jury trial on all issues so triable.

Respectfully submitted,

Dated: December 16, 2013

By: /s/ Paul J. Andre  
Paul J. Andre  
Lisa Kobialka  
James Hannah  
KRAMER LEVIN NAFTALIS  
& FRANKEL LLP  
990 Marsh Road  
Menlo Park, CA 94025  
Telephone: (650) 752-1700  
Facsimile: (650) 752-1800  
pandre@kramerlevin.com  
lkobialka@kramerlevin.com  
jhannah@kramerlevin.com

*Attorneys for Plaintiff*  
FINJAN, INC.

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1 investing in a variety of research organizations, and evaluating strategic partnerships with large  
2 companies.

3 11. On June 6, 2006, U.S. Patent No. 7,058,822 (“the ‘822 Patent”), entitled MALICIOUS  
4 MOBILE CODE RUNTIME MONITORING SYSTEM AND METHODS, was issued to Yigal  
5 Mordechai Edery, Nimrod Itzhak Vered, David R. Kroll and Shlomo Touboul. A true and correct  
6 copy of the ‘822 Patent is attached to this Complaint as Exhibit A and is incorporated by reference  
7 herein.  
8

9 12. All rights, title, and interest in the ‘822 Patent have been assigned to Finjan, who is the  
10 sole owner of the ‘822 Patent. Finjan has been the sole owner of the ‘822 Patent since its issuance.

11 13. The ‘822 Patent is generally directed towards computer networks and more  
12 particularly provides a system that protects devices connected to the Internet from undesirable  
13 operations from web-based content. One of the ways this is accomplished is by determining whether  
14 any part of such web-based content can be executed and then trapping such content and neutralizing  
15 possible harmful effects using mobile protection code. Additionally, the system provides a way to  
16 analyze such web-content to determine whether it can be executed.  
17

18 14. On January 12, 2010, U.S. Patent No. 7,647,633 (“the ‘633 Patent”), entitled  
19 MALICIOUS MOBILE CODE RUNTIME MONITORING SYSTEM AND METHODS, was issued  
20 to Yigal Mordechai Edery, Nimrod Itzhak Vered, David R. Kroll and Shlomo Touboul. A true and  
21 correct copy of the ‘633 Patent is attached to this Complaint as Exhibit B and is incorporated by  
22 reference herein.  
23

24 15. All rights, title, and interest in the ‘633 Patent have been assigned to Finjan, who is the  
25 sole owner of the ‘633 Patent. Finjan has been the sole owner of the ‘633 Patent since its issuance.  
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1 16. The '633 Patent is generally directed towards computer networks, and more  
2 particularly, provides a system that protects devices connected to the Internet from undesirable  
3 operations from web-based content. One of the ways this is accomplished is by determining whether  
4 any part of such web-based content can be executed and then trapping such content and neutralizing  
5 possible harmful effects using mobile protection code.

6 17. On November 28, 2000, U.S. Patent No. 6,154,844 ("the '844 Patent"), entitled  
7 SYSTEM AND METHOD FOR ATTACHING A DOWNLOADABLE SECURITY PROFILE TO  
8 A DOWNLOADABLE, was issued to Shlomo Touboul and Nachshon Gal. A true and correct copy  
9 of the '844 Patent is attached to this Complaint as Exhibit C and is incorporated by reference herein.  
10

11 18. All rights, title, and interest in the '844 Patent have been assigned to Finjan, who is the  
12 sole owner of the '844 Patent. Finjan has been the sole owner of the '844 Patent since its issuance.

13 19. The '844 Patent is generally directed towards computer networks, and more  
14 particularly, provides a system that protects devices connected to the Internet from undesirable  
15 operations from web-based content. One of the ways this is accomplished is by linking a security  
16 profile to such web-based content to facilitate the protection of computers and networks from  
17 malicious web-based content.  
18

19 20. On July 5, 2011, U.S. Patent No. 7,975,305 ("the '305 Patent"), entitled METHOD  
20 AND SYSTEM FOR ADAPTIVE RULE-BASED CONTENT SCANNERS FOR DESKTOP  
21 COMPUTERS, was issued to Moshe Rubin, Moshe Matitya, Artem Melnick, Shlomo Touboul,  
22 Alexander Yermakov and Amit Shaked. A true and correct copy of the '305 Patent is attached to this  
23 Complaint as Exhibit D and is incorporated by reference herein.  
24

25 21. All rights, title, and interest in the '305 Patent have been assigned to Finjan, who is the  
26 sole owner of the '305 Patent. Finjan has been the sole owner of the '305 Patent since its issuance.  
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1           22.     The '305 Patent is generally directed towards network security and, in particular, rule-  
2 based scanning of web-based content for exploits. One of the ways this is accomplished is by using  
3 parser and analyzer rules to describe computer exploits as patterns of types of tokens. Additionally,  
4 the system provides a way to keep these rules updated.

5           23.     On July 17, 2012, U.S. Patent No. 8,225,408 ("the '408 Patent"), entitled METHOD  
6 AND SYSTEM FOR ADAPTIVE RULE-BASED CONTENT SCANNERS, was issued to Moshe  
7 Rubin, Moshe Matitya, Artem Melnick, Shlomo Touboul, Alexander Yermakov and Amit Shaked. A  
8 true and correct copy of the '408 Patent is attached to this Complaint as Exhibit E and is incorporated  
9 by reference herein.  
10

11           24.     All rights, title, and interest in the '408 Patent have been assigned to Finjan, who is the  
12 sole owner of the '408 Patent. Finjan has been the sole owner of the '408 Patent since its issuance.

13           25.     The '408 Patent is generally directed towards network security and, in particular, rule-  
14 based scanning of web-based content for a variety of exploits written in different programming  
15 languages. One of the ways this is accomplished is by expressing the exploits as patterns of tokens.  
16 Additionally, the system provides a way to analyze these exploits by using a parse tree.  
17

18           26.     On December 13, 2011, U.S. Patent No. 8,079,086 ("the '086 Patent"), entitled  
19 MALICIOUS MOBILE CODE RUNETIME MONITORING SYSTEM AND METHODS, was  
20 issued to Yigal Mordechai Edery, Nimrod Itzhak Vered, David R Kroll and Shlomo Touboul. A true  
21 and correct copy of the '086 Patent is attached to this Complaint as Exhibit F and is incorporated  
22 herein.  
23

24           27.     All rights, title, and interest in the '086 Patent have been assigned to Finjan, who is the  
25 sole owner of the '086 Patent. Finjan has been the sole owner of the '086 Patent since its issuance.  
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28

1           28.    The '086 Patent is generally directed towards computer networks and, more  
2 particularly, provides a system that protects devices connected to the Internet from undesirable  
3 operations from web-based content. One of the ways this is accomplished is by creating a profile of  
4 the web-based content and sending these profiles and corresponding web-content to another computer  
5 for appropriate action.

6           29.    On March 20, 2012, U.S. Patent No. 8,141,154 ("the '154 Patent"), entitled SYSTEM  
7 AND METHOD FOR INSPECTING DYNAMICALLY GENERATED EXECUTABLE CODE, was  
8 issued to David Gruzman and Yuval Ben-Itzhak. A true and correct copy of the '154 Patent is  
9 attached to this Complaint as Exhibit G and is incorporated by reference herein.

11           30.    All rights, title, and interest in the '154 Patent have been assigned to Finjan, who is the  
12 sole owner of the '154 Patent. Finjan has been the sole owner of the '154 Patent since its issuance.

13           31.    The '154 Patent is generally directed towards a gateway computer protecting a client  
14 computer from dynamically generated malicious content. One way this is accomplished is to use a  
15 content processor to process a first function and invoke a second function if a security computer  
16 indicates that it is safe to invoke the second function.

17           32.    On November 3, 2009, U.S. Patent No. 7,613,918 ("the '918 Patent"), entitled  
18 SYSTEM AND METHOD FOR ENFORCING A SECURITY CONTEXT ON A  
19 DOWNLOADABLE, was issued to Yuval Ben-Itzhak. A true and correct copy of the '918 Patent is  
20 attached to this Complaint as Exhibit H and is incorporated by reference herein.

21           33.    All rights, title, and interest in the '918 Patent have been assigned to Finjan, who is the  
22 sole owner of the '918 Patent. Finjan has been the sole owner of the '918 Patent since its issuance.

23           34.    The '918 Patent is generally directed to a system and method for enforcing a security  
24 context on a Downloadable. One way this is accomplished is by making use of security contexts that  
25  
26  
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28

1 are associated within certain user/group computer accounts when deriving a profile for code received  
2 from the Internet.

3 **PROOFPOINT AND ARMORIZE**

4 35. Proofpoint is a security as a service (“SaaS”) vendor that delivers data protection  
5 solutions to help organizations protect data from attacks and enable clients to meet regulatory  
6 compliance and data governance mandates.

7  
8 36. Proofpoint uses, sells, offers for sale, and/or imports into the United States and this  
9 District products and services that utilize Proofpoint’s Zero-Hour Threat Detection, Malware  
10 Analysis Service and Targeted Attack Protection, including but not limited to the following:  
11 Proofpoint Enterprise Protection, Proofpoint’s Targeted Attack Protection, Proofpoint Essentials  
12 (including the packages of Beginner, Business, and Professional), Proofpoint Protection Server, and  
13 Proofpoint Messaging Security Gateway.

14 37. Proofpoint’s Zero-Hour Threat Detection works with other Proofpoint defense  
15 products. First, messages are scanned for policy violations and then scanned by traditional anti-virus  
16 defenses. After traditional anti-virus declares a message clean, it is then sent to the Zero-Hour  
17 module, which analyzes incoming messages for similarities with suspected virus messages.  
18 Messages and attachments that exhibit recurrent pattern characteristics of the emerging virus are  
19 automatically quarantined. The Zero-Hour module determines whether a message has a medium or  
20 high possibility of being infected by a virus. These messages are delayed in quarantine for a period  
21 of time. This process is shown below:  
22  
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UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 8,141,154 B2  
APPLICATION NO. : 12/814584  
DATED : March 20, 2012  
INVENTOR(S) : David Gruzman et al.

Page 1 of 1

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

On the Title Page, insert Item (63):

-- Related U.S. Application Data --

-- (63) Divisional of application no. 11/298,475, filed on Dec. 12, 2005, Now Pat. No. 7,757,289. --

In the Specification

In Column 1, add the following heading and paragraph directly below the title of the invention:

-- CROSS-REFERENCE TO RELATED APPLICATIONS --

-- This application is a divisional of and claims priority to U.S. Patent Application Serial No. 11/298,475, filed December 12, 2005, entitled "System and Method For Inspecting Dynamically Generated Executable Code," now U.S. Patent No. 7,757,289. --

Signed and Sealed this  
Twenty-fifth Day of February, 2014



Michelle K. Lee  
*Deputy Director of the United States Patent and Trademark Office*

AO 120 (Rev. 2/99)

TO: <b>Mail Stop 8</b> <b>Director of the U.S. Patent &amp; Trademark Office</b> P.O. Box 1450 Alexandria, VA 22313-1450	<b>REPORT ON THE                  FILING OR DETERMINATION OF AN                  ACTION REGARDING A PATENT OR                  TRADEMARK</b>
---	--

In Compliance with 35 § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Northern District California on the  Patents or  Trademarks:

DOCKET NO. CV 14-01197 JCS	DATE FILED 3/14/14	U.S. DISTRICT COURT 450 Golden Gate Avenue, 16 <sup>th</sup> Floor, San Francisco CA 94102
PLAINTIFF FINJAN INC		DEFENDANT SOPHOS INC
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 6,804,780		***see Attach Complaint***
2 8,141,154		
3 7,613,918		
4 7,757,289		
5		

In the above—entitled case, the following patent(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading		
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK	
1 7,613,926			
2 6,154,844			
3			
4			
5			

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT
--------------------

CLERK Richard W. Wicking	(BY) DEPUTY CLERK Gina Augustine	DATE March 15, 2014
-----------------------------	-------------------------------------	------------------------

1 also conduct cloud-based selective sandboxing to analyze suspicious content with both web  
2 protection and intrusion prevention. The following shows the cloud based sandboxing features:

3  
4 **Advanced Threat Protection Options**

5  Send suspicious content to SophosLabs for analysis

SophosLabs features a cloud-based sandbox where the behavior of suspected malware can be automatically observed and analysed. This helps ensure speedy delivery of protection updates directly to your UTM. Disabling this functionality may increase defense response time.

All submissions are sent over a secure channel and are handled according to the [SophosLabs Information Security Policy](#).

8  **Apply**

9 Cloud-based selective sandboxing allows SophosLabs to analyze suspicious content.

10  
11 See [http://blogs.sophos.com/2014/02/26/whats-coming-in-sophos-utm-accelerated-9-2-5-advanced-](http://blogs.sophos.com/2014/02/26/whats-coming-in-sophos-utm-accelerated-9-2-5-advanced-threat-protection-atp/)  
12 [threat-protection-atp/](http://blogs.sophos.com/2014/02/26/whats-coming-in-sophos-utm-accelerated-9-2-5-advanced-threat-protection-atp/), a true and correct copy of which is attached hereto as Exhibit H.

13 32. Sophos WebLENS technology blocks threats using content reassembly with JavaScript  
14 emulation and behavioral analysis. Its purpose is to stop malicious code at the network layer before it  
15 is passed to the browser.  
16

17 **SOPHOS' INFRINGEMENT OF FINJAN'S PATENTS**

18 33. Defendant has been and is now infringing the '780 Patent, the '154 Patent, the '918  
19 Patent, the '289 Patent, the '926 Patent, and the '844 Patent (collectively "the Patents-In-Suit") in this  
20 judicial District, and elsewhere in the United States by, among other things, making, using,  
21 importing, selling, and/or offering for sale the claimed system and methods that utilize Sophos Live  
22 Protection, Advanced Threat Protection, and WebLENS, including without limitation on Enduser  
23 Protection Suites, Endpoint Antivirus, Endpoint Antivirus Cloud, Sophos Cloud, Unified Threat  
24 Management, Next-Gen Firewall, Secure Web Gateway, Secure Email Gateway, and Server Security.  
25  
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1 34. In addition to directly infringing the Patents-In-Suit pursuant to 35 U.S.C. § 271(a)  
2 either literally or under the doctrine of equivalents, Defendant indirectly infringes the '780 Patent, the  
3 '918 Patent, the '289 Patent, the '926 Patent, and the '844 Patent pursuant to 35 U.S.C. § 271(b) by  
4 instructing, directing and/or requiring others, including its users and developers, to perform all or  
5 some of the steps of the method claims of these patents, either literally or under the doctrine of  
6 equivalents.

7  
8 **COUNT I**

9 **(Direct Infringement of the '780 Patent pursuant to 35 U.S.C. § 271(a))**

10 35. Finjan repeats, realleges, and incorporates by reference, as if fully set forth herein, the  
11 allegations of the preceding paragraphs, as set forth above.

12 36. Defendant has infringed and continues to infringe one or more claims of the '780  
13 Patent in violation of 35 U.S.C. § 271(a).

14 37. Defendant's infringement is based upon literal infringement or, in the alternative,  
15 infringement under the doctrine of equivalents.

16 38. Defendant's acts of making, using, importing, selling, and/or offering for sale infringing  
17 products and services have been without the permission, consent, authorization or license of Finjan.

18 39. Defendant's infringement includes, but is not limited to, the manufacture, use, sale,  
19 importation and/or offer for sale of Defendant's products and services, including but not limited to  
20 Sophos Live Protection, which embodies the patented invention of the '780 Patent.

21  
22 40. As a result of Defendant's unlawful activities, Finjan has suffered and will continue to  
23 suffer irreparable harm for which there is no adequate remedy at law. Accordingly, Finjan is entitled  
24 to preliminary and/or permanent injunctive relief.

25 41. Defendant's infringement of the '780 Patent has injured and continues to injure Finjan  
26 in an amount to be proven at trial.  
27  
28

**COUNT II**

**(Indirect Infringement of the '780 Patent pursuant to 35 U.S.C. § 271(b))**

1  
2 42. Finjan repeats, realleges, and incorporates by reference, as if fully set forth herein, the  
3 allegations of the preceding paragraphs, as set forth above.

4  
5 43. Defendant has induced and continues to induce infringement of at least claims 1-8 of  
6 the '780 Patent under 35 U.S.C. § 271(b).

7 44. In addition to directly infringing the '780 Patent, Defendant indirectly infringes the  
8 '780 Patent pursuant to 35 U.S.C. § 271(b) by instructing, directing and/or requiring others, including  
9 but not limited to its customers, users and developers, to perform some of the steps of the method  
10 claims, either literally or under the doctrine of equivalents, of the '780 Patent, where all the steps of  
11 the method claims are performed by either Sophos or its customers, users or developers, or some  
12 combination thereof. Defendant knew or was willfully blind to the fact that it was inducing others,  
13 including customers, users and developers, to infringe by practicing, either themselves or in  
14 conjunction with Defendant, one or more method claims of the '780 Patent.

15  
16 45. Defendant knowingly and actively aided and abetted the direct infringement of the  
17 '780 Patent by instructing and encouraging its customers, users and developers to use the Sophos  
18 Live Protection. Such instructions and encouragement include but are not limited to, advising third  
19 parties to use the Sophos Live Protection in an infringing manner, providing a mechanism through  
20 which third parties may infringe the '780 Patent, specifically through the use of the Sophos Live  
21 Protection, advertising and promoting the use of the Sophos Live Protection in an infringing manner,  
22 and distributing guidelines and instructions to third parties on how to use the Sophos Live Protection  
23 in an infringing manner.  
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1 46. Sophos regularly updates and maintains the Sophos Support/Labs to provide  
2 demonstration, instructions, and technical assistance to users to help them use the Sophos Live  
3 Protection, including:

- 4 • Providing an overview of how Live Protections works. See <http://www.sophos.com/en-us/support/knowledgebase/111334.aspx>, a true and correct copy of which is attached hereto as Exhibit I;
- 6 • Giving step-by-step instructions on how to turn Live Protection on and off, combined with a video demonstration of the functionalities of Live Protection. See <http://www.sophos.com/en-us/support/knowledgebase/116371.aspx>, a true and correct copy of which is attached hereto as Exhibit J;
- 9 • Maintaining a list of behavior profiles such as SUS/ZelXor-A, created by Sophos' labs and posted on Sophos' website for download. See <http://www.sophos.com/en-us/threat-center/threat-analyses/suspicious-behavior-and-files/Sus~ZelXor-A.aspx>, a true and correct copy of which is attached hereto as Exhibit K;
- 12 • Maintaining a list of Live Protection errors and suggesting ways of resolving them. See <http://www.sophos.com/en-us/support/knowledgebase/111244.aspx>, a true and correct copy of which is attached hereto as Exhibit L.

14 47. Sophos provides quick start guides, administration guides, user guides, and operating  
15 instructions which cover in depth aspects of operating Sophos offerings. See  
16 <https://www.sophos.com/en-us/support/documentation.aspx>, a true and correct copy of which is  
17 attached hereto as Exhibit M.

19 48. Sophos maintains and updates a YouTube channel where training and informational  
20 videos are posted in order to promote the use of Sophos products. See  
21 <http://www.youtube.com/user/SophosGlobalSupport?feature=watch>, a true and correct copy of which  
22 is attached hereto as Exhibit N.

23 49. Sophos maintains and promotes the Sophos Partner Program to encourage and expand  
24 use of the Sophos Live Protection by offering up-to-date training and certification enabled by a full  
25 curriculum of courses in order to increase skills and competency. See [http://www.sophos.com/en-](http://www.sophos.com/en-us/partners.aspx)  
26 [us/partners.aspx](http://www.sophos.com/en-us/partners.aspx), a true and correct copy of which is attached hereto as Exhibit O; *see also*  
27

1 <http://www.sophos.com/en-us/medialibrary/PDFs/partners/sophos-partnership-with-sophos-na.pdf>, a  
2 true and correct copy of which is attached hereto as Exhibit P.

3 50. Sophos maintains and promotes the Sophos Managed Service Provider program in  
4 which Sophos trains IT personnel to support Sophos products. See [http://www.sophos.com/en-](http://www.sophos.com/en-us/medialibrary/PDFs/partners/sophos_complete_security_msps_dsna.pdf)  
5 [us/medialibrary/PDFs/partners/sophos\\_complete\\_security\\_msps\\_dsna.pdf](http://www.sophos.com/en-us/medialibrary/PDFs/partners/sophos_complete_security_msps_dsna.pdf), a true and correct copy of  
6 which is attached hereto as Exhibit Q.

7  
8 51. Sophos provides Global System Integrators who provide advisory, solution and deliver  
9 services to its customers across all market sections. These services include consulting, systems  
10 integration, managed services and full facilities outsourcing. See [http://www.sophos.com/en-](http://www.sophos.com/en-us/partners/global-system-integrators.aspx)  
11 [us/partners/global-system-integrators.aspx](http://www.sophos.com/en-us/partners/global-system-integrators.aspx), a true and correct copy of which is attached hereto as  
12 Exhibit R.

13 52. Sophos maintains and offers Sophos Professional Services. Sophos Professional  
14 Services plans the requirements of a client security needs, builds the endpoint and network solutions  
15 for the clients, and then manages the Sophos implemented solutions. See [http://www.sophos.com/en-](http://www.sophos.com/en-us/medialibrary/PDFs/professionalservices/sophosprofessionalservicesbrna.pdf)  
16 [us/medialibrary/PDFs/professionalservices/sophosprofessionalservicesbrna.pdf](http://www.sophos.com/en-us/medialibrary/PDFs/professionalservices/sophosprofessionalservicesbrna.pdf), a true and correct  
17 copy of which is attached hereto as Exhibit S.

18  
19 53. Defendant has had knowledge of the '780 Patent at least as of the time it learned of  
20 this action for infringement and by continuing the actions described above, has had the specific intent  
21 to or was willfully blind to the fact that its actions would induce infringement of the '780 Patent.

22  
23 54. Sophos actively and intentionally maintains websites, including Sophos' Support, to  
24 promote the Sophos Live Protection and to encourage potential customers, users and developers to  
25 use the Sophos Live Protection in the manner described by Finjan.

1 55. Sophos actively updates websites, including Sophos' Support, to promote the Sophos  
2 Live Protection and Advanced Threat Protection, including the Sophos Unified Threat Management,  
3 Next Generation Firewall, Secure Web Gateway, Secure E-mail Gateway, Sophos Cloud, Endpoint  
4 Antivirus Cloud, Endpoint Antivirus, Enduser Protection Suites, and Server Security, to encourage  
5 users and developers to practice the methods taught in the '780 Patent.

6  
7 **COUNT III**  
8 **(Direct Infringement of the '154 Patent pursuant to 35 U.S.C. § 271(a))**

9 56. Finjan repeats, realleges, and incorporates by reference, as if fully set forth herein, the  
10 allegations of the preceding paragraphs, as set forth above.

11 57. Defendant has infringed and continues to infringe one or more claims of the '154  
12 Patent in violation of 35 U.S.C. § 271(a).

13 58. Defendant's infringement is based upon literal infringement or, in the alternative,  
14 infringement under the doctrine of equivalents.

15 59. Defendant's acts of making, using, importing, selling, and/or offering for sale infringing  
16 products and services have been without the permission, consent, authorization or license of Finjan.

17 60. Defendant's infringement includes, but is not limited to, the manufacture, use, sale,  
18 importation and/or offer for sale of Defendant's products and services, including but not limited to  
19 Sophos Live Protection and Sophos Advanced Threat Protection, which embody the patented  
20 invention of the '154 Patent.

21  
22 61. As a result of Defendant's unlawful activities, Finjan has suffered and will continue to  
23 suffer irreparable harm for which there is no adequate remedy at law. Accordingly, Finjan is entitled  
24 to preliminary and/or permanent injunctive relief.

25 62. Defendant's infringement of the '154 Patent has injured and continues to injure Finjan  
26 in an amount to be proven at trial.  
27  
28



**COUNT IV**

**(Direct Infringement of the '918 Patent pursuant to 35 U.S.C. § 271(a))**

1  
2 63. Finjan repeats, realleges, and incorporates by reference, as if fully set forth herein, the  
3 allegations of the preceding paragraphs, as set forth above.

4  
5 64. Defendant has infringed and continues to infringe one or more claims of the '918  
6 Patent in violation of 35 U.S.C. § 271(a).

7 65. Defendant's infringement is based upon literal infringement or, in the alternative,  
8 infringement under the doctrine of equivalents.

9 66. Defendant's acts of making, using, importing, selling, and/or offering for sale infringing  
10 products and services have been without the permission, consent, authorization or license of Finjan.

11 67. Defendant's infringement includes, but is not limited to, the manufacture, use, sale,  
12 importation and/or offer for sale of Defendant's products and services, including but not limited to  
13 Sophos Live Protection and Sophos Advanced Threat Protection, which embodies the patented  
14 invention of the '918 Patent.

15  
16 68. As a result of Defendant's unlawful activities, Finjan has suffered and will continue to  
17 suffer irreparable harm for which there is no adequate remedy at law. Accordingly, Finjan is entitled  
18 to preliminary and/or permanent injunctive relief.

19 69. Defendant's infringement of the '918 Patent has injured and continues to injure Finjan  
20 in an amount to be proven at trial.

21  
22 **COUNT V**

**(Indirect Infringement of the '918 Patent pursuant to 35 U.S.C. § 271(b))**

23 70. Finjan repeats, realleges, and incorporates by reference, as if fully set forth herein, the  
24 allegations of the preceding paragraphs, as set forth above.

25  
26 71. Defendant has induced and continues to induce infringement of at least claims 1-11,  
27 22-27, and 34 of the '918 Patent under 35 U.S.C. § 271(b).

1           72.     In addition to directly infringing the '918 Patent, Defendant indirectly infringes the  
2 '918 Patent pursuant to 35 U.S.C. § 271(b) by instructing, directing and/or requiring others, including  
3 but not limited to its customers, users and developers, to perform some of the steps of the method  
4 claims, either literally or under the doctrine of equivalents, of the '918 Patent, where all the steps of  
5 the method claims are performed by either Sophos or its customers, users or developers, or some  
6 combination thereof. Defendant knew or was willfully blind to the fact that it was inducing others,  
7 including customers, users and developers, to infringe by practicing, either themselves or in  
8 conjunction with Defendant, one or more method claims of the '918 Patent.  
9

10           73.     Defendant knowingly and actively aided and abetted the direct infringement of the  
11 '918 Patent by instructing and encouraging its customers, users and developers to use Sophos Live  
12 Protection and Sophos Advanced Threat Protection. Such instructions and encouragement include  
13 but are not limited to, advising third parties to use the Sophos Live Protection and Sophos Advanced  
14 Threat Protection in an infringing manner, providing a mechanism through which third parties may  
15 infringe the '918 Patent, specifically through the use of the Sophos Live Protection and Sophos  
16 Advanced Threat Protection, advertising and promoting the use of the Sophos Live Protection and  
17 Sophos Advanced Threat Protection in an infringing manner, and distributing guidelines and  
18 instructions to third parties on how to use the Sophos Live Protection and Sophos Advanced Threat  
19 Protection in an infringing manner.  
20

21           74.     Sophos regularly updates and maintains the Sophos Support/Labs to provide  
22 demonstration, instructions, and technical assistance to users to help them use the Sophos Live  
23 Protection and Advanced Threat Protection, including:  
24

- 25       • Providing an overview of how Live Protections works. *See* <http://www.sophos.com/en-us/support/knowledgebase/111334.aspx>, a true and correct copy of which is attached hereto as  
26 Exhibit I;  
27  
28

- 1 • Giving step-by-step instructions on how to turn Live Protection on and off, combined with a  
2 video demonstration of the functionalities of Live Protection. See <http://www.sophos.com/en-us/support/knowledgebase/116371.aspx>, a true and correct copy of which is attached hereto as Exhibit J;
- 3
- 4 • Maintaining a list of behavior profiles such as SUS/ZelXor-A, created by Sophos' labs and  
5 posted on Sophos' website for download. See <http://www.sophos.com/en-us/threat-center/threat-analyses/suspicious-behavior-and-files/Sus~ZelXor-A.aspx>, a true and correct  
6 copy of which is attached hereto as Exhibit T;
- 7 • Maintaining a list of Live Protection errors and suggesting ways of resolving them. See  
8 <http://www.sophos.com/en-us/support/knowledgebase/111244.aspx>, a true and correct copy of  
9 which is attached hereto as Exhibit L;
- 10 • Describing what Advanced Threat Protection is used for and how to adjust its settings. See  
11 <http://blogs.sophos.com/2014/02/26/whats-coming-in-sophos-utm-accelerated-9-2-5-advanced-threat-protection-atp/>, a true and correct copy of which is attached hereto as Exhibit H.
- 12 • Providing a YouTube video on the new feature of Advanced Threat Protection. Available at  
13 <http://www.youtube.com/watch?v=qcGV-R1z6io> (last visited March 13, 2014);
- 14 • Providing a written "how to" configure the Advanced Threat Protection. See  
15 <http://www.sophos.com/en-us/support/knowledgebase/120330.aspx>, a true and correct copy of  
16 which is attached hereto as Exhibit U.

17 75. Sophos provides quick start guides, administration guides, user guides, and operating  
18 instructions which cover in depth aspects of operating Sophos offerings. See  
19 <https://www.sophos.com/en-us/support/documentation.aspx>, a true and correct copy of which is  
20 attached hereto as Exhibit M.

21 76. Sophos maintains and updates a YouTube channel where training and informational  
22 videos are posted in order to promote the use of Sophos products. See  
23 <http://www.youtube.com/user/SophosGlobalSupport?feature=watch>, a true and correct copy of which  
24 is attached hereto as Exhibit N.

25 77. Sophos maintains and promotes the Sophos Partner Program to encourage and expand  
26 use of the Sophos Live Protection by offering up-to-date training and certification enabled by a full  
27 curriculum of courses in order to increase skills and competency. See <http://www.sophos.com/en->  
28

1 [us/partners.aspx](#), a true and correct copy of which is attached hereto as Exhibit O; *see also*  
2 <http://www.sophos.com/en-us/medialibrary/PDFs/partners/sophos-partnership-with-sophos-na.pdf>, a  
3 true and correct copy of which is attached hereto as Exhibit P.

4 78. Sophos maintains and promotes the Sophos Managed Service Provider program in  
5 which Sophos trains IT personnel to support Sophos products. *See* <http://www.sophos.com/en->  
6 [us/medialibrary/PDFs/partners/sophos\\_complete\\_security\\_msps\\_dsna.pdf](http://www.sophos.com/en-us/medialibrary/PDFs/partners/sophos_complete_security_msps_dsna.pdf), a true and correct copy of  
7 which is attached hereto as Exhibit Q.

8  
9 79. Sophos provides Global System Integrators who provide advisory, solution and deliver  
10 services to its customers across all market sections. These services include consulting, systems  
11 integration, managed services and full facilities outsourcing. *See* <http://www.sophos.com/en->  
12 [us/partners/global-system-integrators.aspx](http://www.sophos.com/en-us/partners/global-system-integrators.aspx), a true and correct copy of which is attached hereto as  
13 Exhibit R.

14  
15 80. Sophos maintains and offers Sophos Professional Services. Sophos Professional  
16 Services plans the requirements of a client security needs, builds the endpoint and network solutions  
17 for the clients, and then manages the Sophos implemented solutions. *See* <http://www.sophos.com/en->  
18 [us/medialibrary/PDFs/professionalservices/sophosprofessionalservicesbrna.pdf](http://www.sophos.com/en-us/medialibrary/PDFs/professionalservices/sophosprofessionalservicesbrna.pdf), a true and correct  
19 copy of which is attached hereto as Exhibit S.

20 81. Defendant has had knowledge of the '918 Patent at least as of the time it learned of  
21 this action for infringement and by continuing the actions described above has had the specific intent  
22 to or was willfully blind to the fact that its actions would induce infringement of the '918 Patent.

23  
24 82. Sophos actively and intentionally maintains websites, including Sophos' Support, to  
25 promote the Sophos Live Protection and Advanced Threat Protection and to encourage potential users  
26  
27  
28

1 PAUL J. ANDRE (State Bar No. 196585)  
pandre@kramerlevin.com  
2 LISA KOBIALKA (State Bar No. 191404)  
lkobialka@kramerlevin.com  
3 JAMES HANNAH (State Bar No. 237978)  
jhannah@kramerlevin.com  
4 KRAMER LEVIN NAFTALIS & FRANKEL LLP  
990 Marsh Road  
5 Menlo Park, CA 94025  
Telephone: (650) 752-1700  
6 Facsimile: (650) 752-1800

7 *Attorneys for Plaintiff*  
8 FINJAN, INC.

**ECF DOCUMENT**  
I hereby attest and certify this is a printed copy of a  
document which was electronically filed with the United States  
District Court for the Northern District of California.  
Date Filed: 3/14/14  
RICHARD W. WIEKING, Clerk  
By: GINA AGUSTINE, Deputy Clerk

9  
10 **IN THE UNITED STATES DISTRICT COURT**  
11 **FOR THE NORTHERN DISTRICT OF CALIFORNIA**

12  
13 FINJAN, INC., a Delaware Corporation,  
14 Plaintiff,  
15 v.  
16 SOPHOS, INC., a Massachusetts Corporation,  
17 Defendant.

Case No.: C14-1197JCS  
**COMPLAINT FOR PATENT  
INFRINGEMENT**  
**DEMAND FOR JURY TRIAL**

1 and developers to use the Sophos Live Protection and Advanced Threat Protection in the manner  
2 described by Finjan.

3 83. Sophos actively updates websites, including Sophos' Support, to promote the Sophos  
4 Live Protection and Advanced Threat Protection, including the Sophos Unified Threat Management,  
5 Next Generation Firewall, Secure Web Gateway, Secure E-mail Gateway, Sophos Cloud, Endpoint  
6 Antivirus Cloud, Endpoint Antivirus, Enduser Protection Suites, and Server Security, to encourage  
7 users and developers to practice the methods taught in the '918 Patent.  
8

9 **COUNT VI**  
**(Direct Infringement of the '289 Patent pursuant to 35 U.S.C. § 271(a))**

10 84. Finjan repeats, realleges, and incorporates by reference, as if fully set forth herein, the  
11 allegations of the preceding paragraphs, as set forth above.  
12

13 85. Defendant has infringed and continues to infringe one or more claims of the '289  
14 Patent in violation of 35 U.S.C. § 271(a).

15 86. Defendant's infringement is based upon literal infringement or, in the alternative,  
16 infringement under the doctrine of equivalents.

17 87. Defendant's acts of making, using, importing, selling, and/or offering for sale infringing  
18 products and services have been without the permission, consent, authorization or license of Finjan.  
19

20 88. Defendant's infringement includes, but is not limited to, the manufacture, use, sale,  
21 importation and/or offer for sale of Defendant's products and services, including but not limited to  
22 Sophos WebLENS and Sophos Advanced Threat Protection, which embody the patented invention of  
23 the '289 Patent.

24 89. As a result of Defendant's unlawful activities, Finjan has suffered and will continue to  
25 suffer irreparable harm for which there is no adequate remedy at law. Accordingly, Finjan is entitled  
26 to preliminary and/or permanent injunctive relief.  
27  
28

1 90. Defendant's infringement of the '289 Patent has injured and continues to injure Finjan  
2 in an amount to be proven at trial.

3 **COUNT VII**  
4 **(Indirect Infringement of the '289 Patent pursuant to 35 U.S.C. § 271(b))**

5 91. Finjan repeats, realleges, and incorporates by reference, as if fully set forth herein, the  
6 allegations of the preceding paragraphs, as set forth above.

7 92. Defendant has induced and continues to induce infringement of at least claims 1-9, 19-  
8 21, 25-29, and 35-40 of the '289 Patent under 35 U.S.C. § 271(b).

9 93. In addition to directly infringing the '289 Patent, Defendant indirectly infringes the  
10 '289 Patent pursuant to 35 U.S.C. § 271(b) by instructing, directing and/or requiring others, including  
11 but not limited to its customers, users and developers, to perform some of the steps of the method  
12 claims, either literally or under the doctrine of equivalents, of the '289 Patent, where all the steps of  
13 the method claims are performed by either Sophos or its customers, users or developers, or some  
14 combination thereof. Defendant knew or was willfully blind to the fact that it was inducing others,  
15 including customers, users and developers, to infringe by practicing, either themselves or in  
16 conjunction with Defendant, one or more method claims of the '289 Patent.  
17

18 94. Defendant knowingly and actively aided and abetted the direct infringement of the  
19 '289 Patent by instructing and encouraging its customers, users and developers to use Sophos  
20 WebLENS and Sophos Advanced Threat Protection. Such instructions and encouragement include  
21 but are not limited to, advising third parties to use the Sophos WebLENS and Sophos Advanced  
22 Threat Protection in an infringing manner, providing a mechanism through which third parties may  
23 infringe the '289 Patent, specifically through the use of the Sophos WebLENS and Sophos Advanced  
24 Threat Protection, advertising and promoting the use of the Sophos WebLENS and Sophos Advanced  
25 Threat Protection in an infringing manner, and distributing guidelines and instructions to third parties  
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1 on how to use the Sophos WebLENS and Sophos Advanced Threat Protection in an infringing  
2 manner.

3 95. Sophos regularly updates and maintains the Sophos Support/Labs to provide  
4 demonstration, instructions, and technical assistance to users to help them use the Advanced Threat  
5 Protection, including:

- 6 • Describing what Advanced Threat Protection is used for and how to adjust its settings. *See*  
7 [http://blogs.sophos.com/2014/02/26/whats-coming-in-sophos-utm-accelerated-9-2-5-advanced-](http://blogs.sophos.com/2014/02/26/whats-coming-in-sophos-utm-accelerated-9-2-5-advanced-threat-protection-atp/)  
8 [threat-protection-atp/](http://blogs.sophos.com/2014/02/26/whats-coming-in-sophos-utm-accelerated-9-2-5-advanced-threat-protection-atp/), a true and correct copy of which is attached hereto as Exhibit H;
- 9 • Providing a YouTube video on the new feature of Advanced Threat Protection. *Available at*  
10 <http://www.youtube.com/watch?v=qcGV-R1z6io> (last visited March 13, 2014);
- 11 • Providing a written “how to” configure the Advanced Threat Protection. *See*  
12 <http://www.sophos.com/en-us/support/knowledgebase/120330.aspx>, a true and correct copy of  
13 which is attached hereto as Exhibit U.

14 96. Sophos Provides quick start guides, administration guides, user guides, and operating  
15 instructions which cover in depth aspects of operating Sophos offerings. *See*  
16 <https://www.sophos.com/en-us/support/documentation.aspx>, a true and correct copy of which is  
17 attached hereto as Exhibit M.

18 97. Sophos maintains and updates a YouTube channel where training and informational  
19 videos are posted in order to promote the use of Sophos products. *See*  
20 <http://www.youtube.com/user/SophosGlobalSupport?feature=watch>, a true and correct copy of which  
21 is attached hereto as Exhibit N.

22 98. Sophos maintains and promotes the Sophos Partner Program to encourage and expand  
23 use of the Sophos Live Protection by offering up-to-date training and certification enabled by a full  
24 curriculum of courses in order to increase skills and competency. *See* [http://www.sophos.com/en-](http://www.sophos.com/en-us/partners.aspx)  
25 [us/partners.aspx](http://www.sophos.com/en-us/partners.aspx), a true and correct copy of which is attached hereto as Exhibit O; *see also*  
26



1 <http://www.sophos.com/en-us/medialibrary/PDFs/partners/sophos-partnership-with-sophos-na.pdf>, a

2 true and correct copy of which is attached hereto as Exhibit P.

3 99. Sophos maintains and promotes the Sophos Managed Service Provider program in  
4 which Sophos trains IT personnel to support Sophos products. See [http://www.sophos.com/en-](http://www.sophos.com/en-us/medialibrary/PDFs/partners/sophos_complete_security_msps_dsna.pdf)  
5 [us/medialibrary/PDFs/partners/sophos\\_complete\\_security\\_msps\\_dsna.pdf](http://www.sophos.com/en-us/medialibrary/PDFs/partners/sophos_complete_security_msps_dsna.pdf), a true and correct copy of  
6 which is attached hereto as Exhibit Q.

7  
8 100. Sophos provides Global System Integrators who provide advisory, solution and deliver  
9 services to its customers across all market sections. These services include consulting, systems  
10 integration, managed services and full facilities outsourcing. See [http://www.sophos.com/en-](http://www.sophos.com/en-us/partners/global-system-integrators.aspx)  
11 [us/partners/global-system-integrators.aspx](http://www.sophos.com/en-us/partners/global-system-integrators.aspx), a true and correct copy of which is attached hereto as  
12 Exhibit R.

13 101. Sophos maintains and offers Sophos Professional Services. Sophos Professional  
14 Services plans the requirements of a client security needs, builds the endpoint and network solutions  
15 for the clients, and then manages the Sophos implemented solutions. See [http://www.sophos.com/en-](http://www.sophos.com/en-us/medialibrary/PDFs/professionalservices/sophosprofessionalservicesbrna.pdf)  
16 [us/medialibrary/PDFs/professionalservices/sophosprofessionalservicesbrna.pdf](http://www.sophos.com/en-us/medialibrary/PDFs/professionalservices/sophosprofessionalservicesbrna.pdf), a true and correct  
17 copy of which is attached hereto as Exhibit S.

18  
19 102. Defendant has had knowledge of the '289 Patent at least as of the time it learned of  
20 this action for infringement and by continuing the actions described above has had the specific intent  
21 to or was willfully blind to the fact that its actions would induce infringement of the '289 Patent.

22  
23 103. Sophos actively and intentionally maintains websites, including Sophos' Support, to  
24 promote the Sophos WebLENS and Sophos Advanced Threat Protection and to encourage potential  
25 users and developers to use the Sophos WebLENS and Sophos Advanced Threat Protection in the  
26 manner described by Finjan.

1 104. Sophos actively updates websites, including Sophos' Support, to promote the Sophos  
2 WebLENS and Sophos Advanced Threat Protection, including the Sophos Unified Threat  
3 Management, Virtual Web Appliance Next Generation Firewall, Secure Web Gateway, and Enduser  
4 Protection Suites, to encourage users and developers to practice the methods taught in the '289  
5 Patent.

6  
7 **COUNT VIII**  
8 **(Direct Infringement of the '926 Patent pursuant to 35 U.S.C. § 271(a))**

9 105. Finjan repeats, realleges, and incorporates by reference, as if fully set forth herein, the  
10 allegations of the preceding paragraphs, as set forth above.

11 106. Defendant has infringed and continues to infringe one or more claims of the '926  
12 Patent in violation of 35 U.S.C. § 271(a).

13 107. Defendant's infringement is based upon literal infringement or, in the alternative,  
14 infringement under the doctrine of equivalents.

15 108. Defendant's acts of making, using, importing, selling, and/or offering for sale infringing  
16 products and services have been without the permission, consent, authorization or license of Finjan.

17 109. Defendant's infringement includes, but is not limited to, the manufacture, use, sale,  
18 importation and/or offer for sale of Defendant's products and services, including but not limited to  
19 Sophos Live Protection, which embodies the patented invention of the '926 Patent.

20 110. As a result of Defendant's unlawful activities, Finjan has suffered and will continue to  
21 suffer irreparable harm for which there is no adequate remedy at law. Accordingly, Finjan is entitled  
22 to preliminary and/or permanent injunctive relief.

23 111. Defendant's infringement of the '926 Patent has injured and continues to injure Finjan  
24 in an amount to be proven at trial.  
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**COUNT IX**

**(Indirect Infringement of the '926 Patent pursuant to 35 U.S.C. § 271(b))**

1  
2 112. Finjan repeats, realleges, and incorporates by reference, as if fully set forth herein, the  
3 allegations of the preceding paragraphs, as set forth above.

4  
5 113. Defendant has induced and continues to induce infringement of at least claims 1-7 and  
6 15-21 of the '926 Patent under 35 U.S.C. § 271(b).

7 114. In addition to directly infringing the '926 Patent, Defendant indirectly infringes the  
8 '926 Patent pursuant to 35 U.S.C. § 271(b) by instructing, directing and/or requiring others, including  
9 but not limited to its customers, users and developers, to perform some of the steps of the method  
10 claims, either literally or under the doctrine of equivalents, of the '926 Patent, where all the steps of  
11 the method claims are performed by either Sophos or its customers, users or developers, or some  
12 combination thereof. Defendant knew or was willfully blind to the fact that it was inducing others,  
13 including customers, users and developers, to infringe by practicing, either themselves or in  
14 conjunction with Defendant, one or more method claims of the '926 Patent.

15  
16 115. Defendant knowingly and actively aided and abetted the direct infringement of the  
17 '926 Patent by instructing and encouraging its customers, users and developers to use the Sophos  
18 Live Protection. Such instructions and encouragement include but are not limited to, advising third  
19 parties to use the Sophos Live Protection in an infringing manner, providing a mechanism through  
20 which third parties may infringe the '926 Patent, specifically through the use of the Sophos Live  
21 Protection, advertising and promoting the use of the Sophos Live Protection in an infringing manner,  
22 and distributing guidelines and instructions to third parties on how to use the Sophos Live Protection  
23 in an infringing manner.  
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1 116. Sophos regularly updates and maintains the Sophos Support/Labs to provide  
2 demonstration, instructions, and technical assistance to users to help them use the Sophos Live  
3 Protection, including:

- 4 • Providing an overview of how Live Protections works. See <http://www.sophos.com/en-us/support/knowledgebase/111334.aspx>, a true and correct copy of which is attached hereto as Exhibit I;
- 6 • Giving step-by-step instructions on how to turn Live Protection on and off, combined with a video demonstration of the functionalities of Live Protection. See <http://www.sophos.com/en-us/support/knowledgebase/116371.aspx>, a true and correct copy of which is attached hereto as Exhibit J;
- 9 • Maintaining a list of behavior profiles such as SUS/ZelXor-A, created by Sophos' labs and posted on Sophos' website for download. See <http://www.sophos.com/en-us/threat-center/threat-analyses/suspicious-behavior-and-files/Sus~ZelXor-A.aspx>, a true and correct copy of which is attached hereto as Exhibit V;
- 12 • Maintaining a list of Live Protection errors and suggesting ways of resolving them. See <http://www.sophos.com/en-us/support/knowledgebase/111244.aspx>, a true and correct copy of which is attached hereto as Exhibit L.

14 117. Sophos Provides quick start guides, administration guides, user guides, and operating  
15 instructions which cover in depth aspects of operating Sophos offerings. See  
16 <https://www.sophos.com/en-us/support/documentation.aspx>, a true and correct copy of which is  
17 attached hereto as Exhibit M.

19 118. Sophos maintains and updates a YouTube channel where training and informational  
20 videos are posted in order to promote the use of Sophos products. See  
21 <http://www.youtube.com/user/SophosGlobalSupport?feature=watch>, a true and correct copy of which  
22 is attached hereto as Exhibit N.

24 119. Sophos maintains and promotes the Sophos Partner Program to encourage and expand  
25 use of the Sophos Live Protection by offering up-to-date training and certification enabled by a full  
26 curriculum of courses in order to increase skills and competency. See <http://www.sophos.com/en-us/partners.aspx>, a true and correct copy of which is attached hereto as Exhibit O; *see also*

1 <http://www.sophos.com/en-us/medialibrary/PDFs/partners/sophos-partnership-with-sophos-na.pdf>, a

2 true and correct copy of which is attached hereto as Exhibit P.

3 120. Sophos maintains and promotes the Sophos Managed Service Provider program in  
4 which Sophos trains IT personnel to support Sophos products. See [http://www.sophos.com/en-](http://www.sophos.com/en-us/medialibrary/PDFs/partners/sophos_complete_security_msps_dsna.pdf)  
5 [us/medialibrary/PDFs/partners/sophos\\_complete\\_security\\_msps\\_dsna.pdf](http://www.sophos.com/en-us/medialibrary/PDFs/partners/sophos_complete_security_msps_dsna.pdf), a true and correct copy of  
6 which is attached hereto as Exhibit Q.

7  
8 121. Sophos provides Global System Integrators who provide advisory, solution and deliver  
9 services to its customers across all market sections. These services include consulting, systems  
10 integration, managed services and full facilities outsourcing. See [http://www.sophos.com/en-](http://www.sophos.com/en-us/partners/global-system-integrators.aspx)  
11 [us/partners/global-system-integrators.aspx](http://www.sophos.com/en-us/partners/global-system-integrators.aspx), a true and correct copy of which is attached hereto as  
12 Exhibit R.

13 122. Sophos maintains and offers Sophos Professional Services. Sophos Professional  
14 Services plans the requirements of a client security needs, builds the endpoint and network solutions  
15 for the clients, and then manages the Sophos implemented solutions. See [http://www.sophos.com/en-](http://www.sophos.com/en-us/medialibrary/PDFs/professionalservices/sophosprofessionalservicesbrna.pdf)  
16 [us/medialibrary/PDFs/professionalservices/sophosprofessionalservicesbrna.pdf](http://www.sophos.com/en-us/medialibrary/PDFs/professionalservices/sophosprofessionalservicesbrna.pdf), a true and correct  
17 copy of which is attached hereto as Exhibit S.

18  
19 123. Defendant has had knowledge of the '926 Patent at least as of the time it learned of  
20 this action for infringement and by continuing the actions described above has had the specific intent  
21 to or was willfully blind to the fact that its actions would induce infringement of the '926 Patent.

22  
23 124. Sophos actively and intentionally maintains websites, including Sophos' Support, to  
24 promote the Sophos Live Protection and to encourage potential users and developers to use the  
25 Sophos Live Protection in the manner described by Finjan.

1 125. Sophos actively updates websites, including Sophos' Support, to promote the Sophos  
2 Live Protection, including the Sophos Unified Threat Management, Next Generation Firewall, Secure  
3 Web Gateway, Secure E-mail Gateway, Sophos Cloud, Endpoint Antivirus Cloud, Endpoint  
4 Antivirus, Enduser Protection Suites, and Server Security, to encourage users and developers to  
5 practice the methods taught in the '926 Patent.

6 **COUNT X**

7 **(Direct Infringement of the '844 Patent pursuant to 35 U.S.C. § 271(a))**

8 126. Finjan repeats, realleges, and incorporates by reference, as if fully set forth herein, the  
9 allegations of the preceding paragraphs, as set forth above.

10 127. Defendant has infringed and continues to infringe one or more claims of the '844  
11 Patent in violation of 35 U.S.C. § 271(a).

12 128. Defendant's infringement is based upon literal infringement or, in the alternative,  
13 infringement under the doctrine of equivalents.

14 129. Defendant's acts of making, using, importing, selling, and/or offering for sale  
15 infringing products and services have been without the permission, consent, authorization or license  
16 of Finjan.

17 130. Defendant's infringement includes, but is not limited to, the manufacture, use, sale,  
18 importation and/or offer for sale of Defendant's products and services, including but not limited to  
19 the Sophos Live Protection and Advanced Threat Protection, which embody the patented invention of  
20 the '844 Patent.

21 131. As a result of Defendant's unlawful activities, Finjan has suffered and will continue to  
22 suffer irreparable harm for which there is no adequate remedy at law. Accordingly, Finjan is entitled  
23 to preliminary and/or permanent injunctive relief.  
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1 132. Defendant's infringement of the '844 Patent has injured and continues to injure Finjan  
2 in an amount to be proven at trial.

3 **COUNT XI**  
4 **(Indirect Infringement of the '844 Patent pursuant to 35 U.S.C. § 271(b))**

5 133. Finjan repeats, realleges, and incorporates by reference, as if fully set forth herein, the  
6 allegations of the preceding paragraphs, as set forth above.

7 134. Defendant has induced and continues to induce infringement of at least claims 1-14  
8 and 22-31 of the '844 Patent under 35 U.S.C. § 271(b).

9 135. In addition to directly infringing the '844 Patent, Defendant indirectly infringes the  
10 '844 Patent pursuant to 35 U.S.C. § 271(b) by instructing, directing and/or requiring others, including  
11 but not limited to its users and developers, to perform some of the steps of the method claims, either  
12 literally or under the doctrine of equivalents, of the '844 Patent, where all the steps of the method  
13 claims are performed by either Sophos or its customers, users or developers, or some combination  
14 thereof. Defendant knew or was willfully blind to the fact that it was inducing others, including  
15 customers, users and developers, to infringe by practicing, either themselves or in conjunction with  
16 Defendant, one or more method claims of the '844 Patent.  
17

18 136. Defendant knowingly and actively aided and abetted the direct infringement of the  
19 '844 Patent by instructing and encouraging its users and developers to use the Sophos Live Protection  
20 and Advanced Threat Protection. Such instructions and encouragement include but are not limited to,  
21 advising third parties to use the Sophos Live Protection and Advanced Threat Protection in an  
22 infringing manner, providing a mechanism through which third parties may infringe the '844 Patent,  
23 specifically through the use of the Sophos Live Protection and Advanced Threat Protection,  
24 advertising and promoting the use of the Sophos Live Protection and Advanced Threat Protection in  
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**COMPLAINT FOR PATENT INFRINGEMENT**

1  
2 Plaintiff Finjan, Inc. (“Finjan”) files this First Amended Complaint for Patent Infringement  
3 and Jury Demand against Defendant Sophos, Inc. (“Defendant” or “Sophos”) and alleges as follows:

4 **THE PARTIES**

5 1. Finjan is a Delaware corporation, with its corporate headquarters at 1313 N. Market  
6 Street, Suite 5100, Wilmington, Delaware 19801. Finjan’s U.S. operating business was previously  
7 headquartered at 2025 Gateway Place, San Jose, California 95110.

8  
9 2. Sophos is a Massachusetts corporation with its principal place of business in the  
10 United States at 3 Van de Graaff Drive, Second Floor, Burlington, Massachusetts 01803.

11 **JURISDICTION AND VENUE**

12 3. This action arises under the Patent Act, 35 U.S.C. § 101 *et seq.* This Court has  
13 original jurisdiction over this controversy pursuant to 28 U.S.C. §§ 1331 and 1338.

14 4. Venue is proper in this Court pursuant to 28 U.S.C. §§ 1391(b) and (c) and/or 1400(b).

15  
16 5. This Court has personal jurisdiction over Defendant. Upon information and belief,  
17 Defendant does business in this District and has, and continues to, infringe and/or induce the  
18 infringement in this District. Sophos operates and maintains an office in this District located at 3945  
19 Freedom Circle, Suite 1100, Santa Clara, California 95054. Currently, Sophos is availing itself of the  
20 jurisdiction of Northern California in the *Fortinet, Inc. v. Sophos, Inc.*, 5:13-cv-05831, case. In  
21 addition, the Court has personal jurisdiction over Defendant because it has established minimum  
22 contacts with the forum and the exercise of jurisdiction would not offend traditional notions of fair  
23 play and substantial justice.  
24



1 an infringing manner, and distributing guidelines and instructions to third parties on how to use the  
2 Sophos Live Protection and Advanced Threat Protection in an infringing manner.

3 137. Sophos regularly updates and maintains the Sophos Support/Labs to provide  
4 demonstration, instructions, and technical assistance to users to help them use the Sophos Live  
5 Protection and Advanced Threat Protection, including:

- 6 • Providing an overview of how Live Protections works. *See* <http://www.sophos.com/en-us/support/knowledgebase/111334.aspx>, a true and correct copy of which is attached hereto as  
7 Exhibit I;
- 8 • Giving step-by-step instructions on how to turn Live Protection on and off, combined with a  
9 video demonstration of the functionalities of Live Protection. *See* <http://www.sophos.com/en-us/support/knowledgebase/116371.aspx>, a true and correct copy of which is attached hereto as  
10 Exhibit J;
- 11 • Maintaining a list of behavior profiles such as SUS/ZelXor-A, created by Sophos' labs and  
12 posted on Sophos' website for download. *See* <http://www.sophos.com/en-us/threat-center/threat-analyses/suspicious-behavior-and-files/Sus~ZelXor-A.aspx>, a true and correct  
13 copy of which is attached hereto as Exhibit W;
- 14 • Maintaining a list of Live Protection errors and suggesting ways of resolving them. *See*  
15 <http://www.sophos.com/en-us/support/knowledgebase/111244.aspx>, a true and correct copy of  
16 which is attached hereto as Exhibit L;
- 17 • Describing what Advanced Threat Protection is used for and how to adjust its settings. *See*  
18 <http://blogs.sophos.com/2014/02/26/whats-coming-in-sophos-utm-accelerated-9-2-5-advanced-threat-protection-atp/>, a true and correct copy of which is attached hereto as Exhibit H;
- 19 • Providing a YouTube video on the new feature of Advanced Threat Protection. *Available at*  
20 <http://www.youtube.com/watch?v=qcGV-R1z6io> (last visited March 13, 2014);
- 21 • Providing a written "how to" configure the Advanced Threat Protection. *See*  
22 <http://www.sophos.com/en-us/support/knowledgebase/120330.aspx>, a true and correct copy of  
23 which is attached hereto as Exhibit U.

24 138. Sophos Provides quick start guides, administration guides, user guides, and operating  
25 instructions which cover in depth aspects of operating Sophos offerings. *See*  
26 <https://www.sophos.com/en-us/support/documentation.aspx>, a true and correct copy of which is  
27 attached hereto as Exhibit M.  
28

1 139. Sophos maintains and updates a YouTube channel where training and informational  
2 videos are posted in order to promote the use of Sophos products. *See*  
3 <http://www.youtube.com/user/SophosGlobalSupport?feature=watch>, a true and correct copy of which  
4 is attached hereto as Exhibit N.

5 140. Sophos maintains and promotes the Sophos Partner Program to encourage and expand  
6 use of the Sophos Live Protection by offering up-to-date training and certification enabled by a full  
7 curriculum of courses in order to increase skills and competency. *See* [http://www.sophos.com/en-](http://www.sophos.com/en-us/partners.aspx)  
8 [us/partners.aspx](http://www.sophos.com/en-us/partners.aspx), a true and correct copy of which is attached hereto as Exhibit O; *see also*  
9 <http://www.sophos.com/en-us/medialibrary/PDFs/partners/sophos-partnership-with-sophos-na.pdf>, a  
10 true and correct copy of which is attached hereto as Exhibit P.

11 141. Sophos maintains and promotes the Sophos Managed Service Provider program in  
12 which Sophos trains IT personnel to support Sophos products. *See* [http://www.sophos.com/en-](http://www.sophos.com/en-us/medialibrary/PDFs/partners/sophos_complete_security_msps_dsna.pdf)  
13 [us/medialibrary/PDFs/partners/sophos\\_complete\\_security\\_msps\\_dsna.pdf](http://www.sophos.com/en-us/medialibrary/PDFs/partners/sophos_complete_security_msps_dsna.pdf), a true and correct copy of  
14 which is attached hereto as Exhibit Q.

15 142. Sophos provides Global System Integrators who provide advisory, solution and deliver  
16 services to its customers across all market sections. These services include consulting, systems  
17 integration, managed services and full facilities outsourcing. *See* [http://www.sophos.com/en-](http://www.sophos.com/en-us/partners/global-system-integrators.aspx)  
18 [us/partners/global-system-integrators.aspx](http://www.sophos.com/en-us/partners/global-system-integrators.aspx), a true and correct copy of which is attached hereto as  
19 Exhibit R.

20 143. Sophos maintains and offers Sophos Professional Services. Sophos Professional  
21 Services plans the requirements of a client security needs, builds the endpoint and network solutions  
22 for the clients, and then manages the Sophos implemented solutions. *See* <http://www.sophos.com/en->  
23 [us/](http://www.sophos.com/en-)

1 [us/medialibrary/PDFs/professionalservices/sophosprofessionalservicesbrna.pdf](http://us/medialibrary/PDFs/professionalservices/sophosprofessionalservicesbrna.pdf), a true and correct  
2 copy of which is attached hereto as Exhibit S.

3 144. Defendant has had knowledge of the '844 Patent at least as of the time it learned of  
4 this action for infringement and by continuing the actions described above has had the specific intent  
5 to or was willfully blind to the fact that its actions would induce infringement of the '844 Patent.

6 145. Sophos actively and intentionally maintains websites, including Sophos' Support, to  
7 promote the Sophos Live Protection and Advanced Threat Protection and to encourage potential users  
8 and developers to use the Sophos Live Protection and Advanced Threat Protection in the manner  
9 described by Finjan.  
10

11 146. Sophos actively updates websites, including Sophos' Support, to promote the Sophos  
12 Live Protection and Advanced Threat Protection, including the Sophos Unified Threat Management,  
13 Next Generation Firewall, Secure Web Gateway, Secure E-mail Gateway, Sophos Cloud, Endpoint  
14 Antivirus Cloud, Endpoint Antivirus, Enduser Protection Suites, and Server Security, to encourage  
15 users and developers to practice the methods taught in the '844 Patent.  
16

17 **PRAYER FOR RELIEF**

18 WHEREFORE, Finjan prays for judgment and relief as follows:

19 A. An entry of judgment holding Defendant has infringed and is infringing the '780  
20 Patent, the '154 Patent, the '918 Patent, the '289 Patent, the '926 Patent, and the '844 Patent; and  
21 Defendant has induced and is inducing infringement of the '780 Patent, the '918 Patent, the '289  
22 Patent, the '926 Patent, and the '844 Patent;  
23

24 B. A preliminary and permanent injunction against Defendant and its officers, employees,  
25 agents, servants, attorneys, instrumentalities, and/or those in privity with them, from infringing, or  
26 inducing the infringement of the '780 Patent, the '154 Patent, the '918 Patent, the '289 Patent, the  
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1 926 Patent, and the '844 Patent, and for all further and proper injunctive relief pursuant to 35 U.S.C.  
2 § 283;

3 C. An award to Finjan of such damages as it shall prove at trial against Defendant that is  
4 adequate to fully compensate Finjan for Defendant's infringement the '780 Patent, the '154 Patent,  
5 the '918 Patent, the '289 Patent, the 926 Patent, and the '844 Patent, said damages to be no less than a  
6 reasonable royalty;

7 D. A finding that this case is "exceptional" and an award to Finjan of its costs and  
8 reasonable attorney's fees, as provided by 35 U.S.C. § 285;

9 E. An accounting of all infringing sales and revenues, together with post judgment  
10 interest and prejudgment interest from the first date of infringement of the '780 Patent, the '154  
11 Patent, the '918 Patent, the '289 Patent, the '926 Patent, and the '844 Patent; and  
12

13 F. Such further and other relief as the Court may deem proper and just.  
14

15 Respectfully submitted,

16 Dated: March 14, 2014

17 By: /s/ Paul J. Andre

18 Paul J. Andre  
19 Lisa Kobialka  
20 James Hannah  
21 KRAMER LEVIN NAFTALIS  
22 & FRANKEL LLP  
23 990 Marsh Road  
24 Menlo Park, CA 94025  
25 Telephone: (650) 752-1700  
26 Facsimile: (650) 752-1800  
27 pandre@kramerlevin.com  
28 lkobialka@kramerlevin.com  
jhannah@kramerlevin.com

*Attorneys for Plaintiff*  
FINJAN, INC.

**DEMAND FOR JURY TRIAL**

1  
2 Finjan demands a jury trial on all issues so triable.

3 Respectfully submitted,

4  
5 Dated: March 14, 2014

By: /s/ Paul J. Andre

6 Paul J. Andre  
7 Lisa Kobialka  
8 James Hannah  
9 KRAMER LEVIN NAFTALIS  
10 & FRANKEL LLP  
11 990 Marsh Road  
12 Menlo Park, CA 94025  
13 Telephone: (650) 752-1700  
14 Facsimile: (650) 752-1800  
15 [pandre@kramerlevin.com](mailto:pandre@kramerlevin.com)  
16 [lkobialka@kramerlevin.com](mailto:lkobialka@kramerlevin.com)  
17 [jhannah@kramerlevin.com](mailto:jhannah@kramerlevin.com)

18 *Attorneys for Plaintiff*  
19 FINJAN, INC.  
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**INTRADISTRICT ASSIGNMENT**

1  
2 6. Pursuant to Local Rule 3-2(c), Intellectual Property actions are assigned on a district-  
3 wide basis.

4 **FINJAN'S INNOVATIONS**

5 7. Finjan was founded in 1997 as a wholly-owned subsidiary of Finjan Software Ltd., an  
6 Israeli corporation. Finjan was a pioneer in developing proactive security technologies capable of  
7 detecting previously unknown and emerging online security threats recognized today under the  
8 umbrella of "malware." These technologies protect networks and endpoints by identifying suspicious  
9 patterns and behaviors of content delivered over the Internet. Finjan has been awarded, and continues  
10 to prosecute, numerous patents in the United States and around the world resulting directly from  
11 Finjan's more than decade-long research and development efforts, supported by a dozen inventors.

12 8. Finjan built and sold software, including APIs, and appliances for network security  
13 using these patented technologies. These products and customers continue to be supported by  
14 Finjan's licensing partners. At its height, Finjan employed nearly 150 employees around the world  
15 building and selling security products and operating the Malicious Code Research Center through  
16 which it frequently published research regarding network security and current threats on the Internet.  
17 Finjan's pioneering approach to online security drew equity investments from two major software and  
18 technology companies, the first in 2005, followed by the second in 2006. Through 2009, Finjan has  
19 generated millions of dollars in product sales and related services and support revenues.

20 9. Finjan's founder and original investors are still involved with and invested in the  
21 company today, as are a number of other key executives and advisors. Currently, Finjan is a  
22 technology company applying its research, development, knowledge and experience with security  
23 technologies to working with inventors, investing in and/or acquiring other technology companies,  
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1 investing in a variety of research organizations, and evaluating strategic partnerships with large  
2 companies.

3 10. On October 12, 2004, U.S. Patent No. 6,804,780 (“the ‘780 Patent”), entitled  
4 SYSTEM AND METHOD FOR PROTECTING A COMPUTER AND A NETWORK FROM  
5 HOSTILE DOWNLOADABLES, was issued to Shlomo Touboul. A true and correct copy of the  
6 ‘780 Patent is attached to this Complaint as Exhibit A and is incorporated by reference herein.

7  
8 11. All rights, title, and interest in the ‘780 Patent have been assigned to Finjan, which is  
9 the sole owner of the ‘780 Patent. Finjan has been the sole owner of the ‘780 Patent since its  
10 issuance.

11 12. The ‘780 Patent is generally directed towards methods and systems for generating a  
12 Downloadable ID. By generating an identification for each examined Downloadable, the system  
13 may allow for the Downloadable to be recognized without reevaluation. Such recognition increases  
14 efficiency while also saving valuable resources, such as memory and computing power.

15  
16 13. On March 20, 2012, U.S. Patent No. 8,141,154 (“the ‘154 Patent”), entitled SYSTEM  
17 AND METHOD FOR INSPECTING DYNAMICALLY GENERATED EXECUTABLE CODE, was  
18 issued to David Gruzman and Yuval Ben-Itzhak. A true and correct copy of the ‘154 Patent is  
19 attached to this Complaint as Exhibit B and is incorporated by reference herein.

20 14. All rights, title, and interest in the ‘154 Patent have been assigned to Finjan, who is the  
21 sole owner of the ‘154 Patent. Finjan has been the sole owner of the ‘154 Patent since its issuance.

22  
23 15. The ‘154 Patent is generally directed towards a gateway computer for protecting a  
24 client computer from dynamically generated malicious content. One way this is accomplished is to  
25 use a content processor to process a first function and invoke a second function if a security computer  
26 indicates that it is safe to invoke the second function.

1           16.     On November 3, 2009, U.S. Patent No. 7,613,918 (“the ‘918 Patent”), entitled  
2 SYSTEM AND METHOD FOR ENFORCING A SECURITY CONTEXT ON A  
3 DOWNLOADABLE, was issued to Yuval Ben-Itzhak. A true and correct copy of the ‘918 Patent is  
4 attached to this Complaint as Exhibit C and is incorporated by reference herein.

5           17.     All rights, title, and interest in the ‘918 Patent have been assigned to Finjan, who is the  
6 sole owner of the ‘918 Patent. Finjan has been the sole owner of the ‘918 Patent since its issuance.

7           18.     The ‘918 Patent is generally directed to a system and method for enforcing a security  
8 context on a Downloadable. One way this is accomplished is by making use of security contexts that  
9 are associated within certain user/group computer accounts when deriving a profile for code received  
10 from the Internet.  
11

12           19.     On July 13, 2010, U.S. Patent No. 7,757,289 (“the ‘289 Patent”), entitled SYSTEM  
13 AND METHOD FOR INSPECTING DYNAMICALLY GENERATED EXECUTABLE CODE, was  
14 issued to David Gruzman and Yuval Ben-Itzhak. A true and correct copy of the ‘289 Patent is  
15 attached to this Complaint as Exhibit D and is incorporated by reference herein.  
16

17           20.     All rights, title, and interest in the ‘289 Patent have been assigned to Finjan, which is  
18 the sole owner of the ‘289 Patent. Finjan has been the sole owner of the ‘289 Patent since its  
19 issuance.

20           21.     The ‘289 Patent generally covers a system and method for inspecting dynamically  
21 generated executable code. The claims generally cover receiving content with an original call  
22 function and replacing the original call function with a substitute call function, and then determining  
23 whether it is safe to invoke the original call function.  
24

25           22.     On November 3, 2009, U.S. Patent No. 7,613,926 (“the ‘926 Patent”), entitled  
26 METHOD AND SYSTEM FOR PROTECTING A COMPUTER AND A NETWORK FROM  
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1 HOSTILE DOWNLOADABLES, was issued to Yigal Mordechai Edery, Nimrod Itzhak Vered,  
2 David R. Kroll and Shlomo Touboul. A true and correct copy of the '926 Patent is attached to this  
3 Complaint as Exhibit E and is incorporated by reference herein.

4 23. All rights, title, and interest in the '926 Patent have been assigned to Finjan, which is  
5 the sole owner of the '926 Patent. Finjan has been the sole owner of the '926 Patent since its  
6 issuance.

7  
8 24. The '926 Patent generally covers a method and system for protecting a computer and a  
9 network from hostile downloadables. The claims generally cover performing hashing on a  
10 downloadable in order to generate a downloadable ID, retrieving security profile data, and  
11 transmitting an appended downloadable.

12 25. On November 28, 2000, U.S. Patent No. 6,154,844 ("the '844 Patent"), entitled  
13 SYSTEM AND METHOD FOR ATTACHING A DOWNLOADABLE SECURITY PROFILE TO  
14 A DOWNLOADABLE, was issued to Shlomo Touboul and Nachshon Gal. A true and correct copy  
15 of the '844 Patent is attached to this Complaint as Exhibit F and is incorporated by reference herein.

16  
17 26. All rights, title, and interest in the '844 Patent have been assigned to Finjan, who is the  
18 sole owner of the '844 Patent. Finjan has been the sole owner of the '844 Patent since its issuance.

19 27. The '844 Patent is generally directed towards computer networks, and more  
20 particularly, provides a system that protects devices connected to the Internet from undesirable  
21 operations from web-based content. One of the ways this is accomplished is by linking a security  
22 profile to such web-based content to facilitate the protection of computers and networks from  
23 malicious web-based content.  
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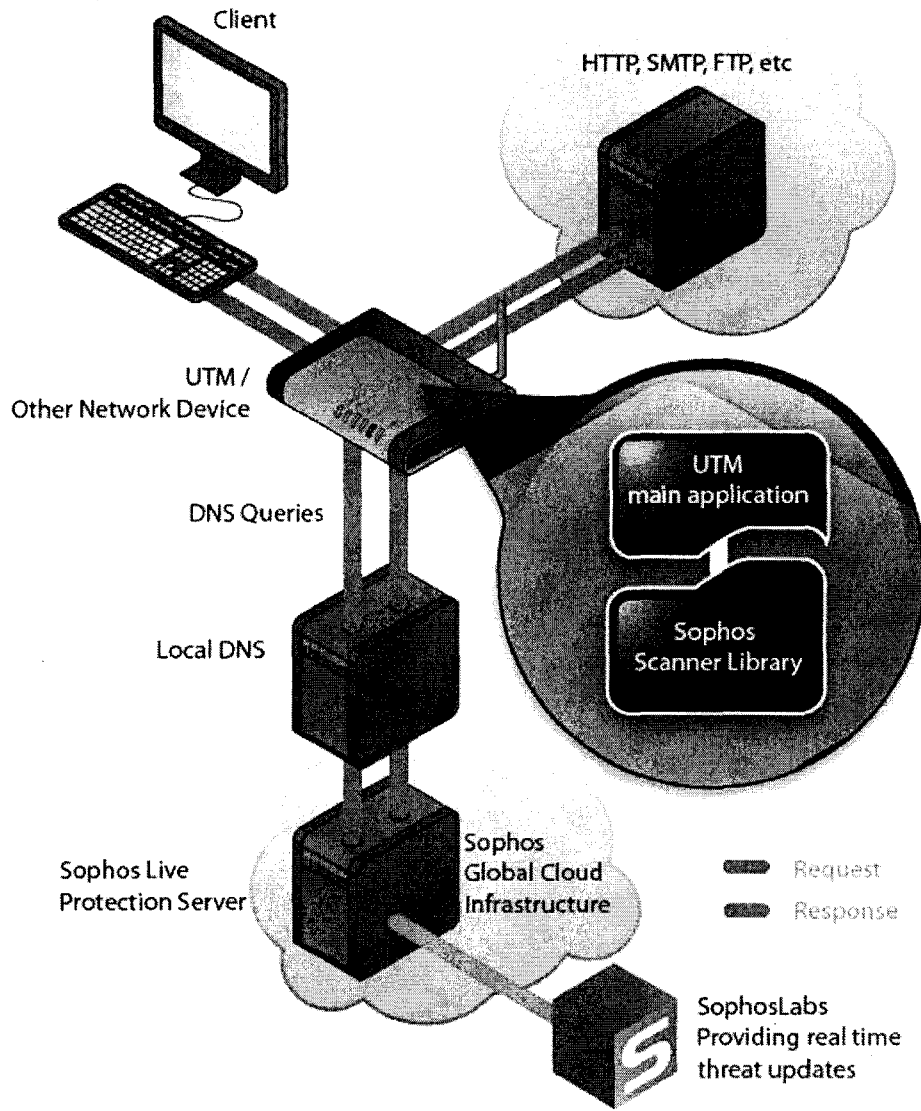
SOPHOS

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2 28. Sophos makes, uses, sells, offers for sale, and/or imports into the United States and  
3 this District products and services that utilize the Sophos Live Protection, Advanced Threat  
4 Protection, and WebLENS, including without limitation on Enduser Protection Suites, Endpoint  
5 Antivirus, Endpoint Antivirus Cloud, Sophos Cloud, Unified Threat Management, Next-Gen  
6 Firewall, Secure Web Gateway, Secure Email Gateway, and Server Security.

7  
8 29. Sophos products are broken down into three broad categories. The first category is  
9 Network Security products which are used to protect a network of computer and mobile devices both  
10 remotely and locally. The Network Security products generally sit at the gateway between a client  
11 device and the Internet. These Network Security products can include firewalls, UTMs, Wi-Fi, VPN,  
12 web and e-mail protection. The second category is EndUser Protection which generally resides as  
13 software on client devices such as personal computers, smart phones, tablets, and laptops. The third  
14 category is Server Protection, which generally provides antivirus protection for servers.

15  
16 30. Sophos Live Protection is offered with Sophos Network Protection products, EndUser  
17 Protection products, and Server Protection products. Live Protection will perform instant lookup of  
18 suspicious files in the cloud and compare them to the Sophos Labs database. This happens when a  
19 file has been identified as suspicious, but locally the determination cannot be made whether it is a  
20 safe. If the file is identified as clean or malicious by Sophos Live Protection, the decision is sent back  
21 to the endpoint or network device. Live Protection may also be used for cloud lookups of URIs and  
22 automatically and dynamically categorize any URIs that have not been visited by a user. Finally,  
23 Live Protection will use live cloud lookups for checksum detections in order to stop malware through  
24 email attachments, IM and other protocols. The following diagram depicts generally how Live  
25 Protection functions:  
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See <http://www.sophos.com/en-us/medialibrary/PDFs/partners/sophosliveprotectiondsna.ashx>, a true and correct copy of which is attached hereto as Exhibit G.

31. Recently, Sophos Advanced Threat Protection was introduced and can be found in Sophos Network Protection products. Sophos Advanced Threat Protection is supported with data from the Sophos network of labs and leverages data from the intrusion prevention system and web protection in order to combat Advanced Persistent Threats. Sophos Advanced Threat Protection may

<b>TO: Mail Stop 8</b> <b>Director of the U.S. Patent &amp; Trademark Office</b> <b>P.O. Box 1450</b> <b>Alexandria, VA 22313-1450</b>	<b>REPORT ON THE</b> <b>FILING OR DETERMINATION OF AN</b> <b>ACTION REGARDING A PATENT OR</b> <b>TRADEMARK</b>
---	---

In Compliance with 35 § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Northern District of California on the following  Patents or  Trademarks:

DOCKET NO. CV 14-02998 JSC	DATE FILED 6/30/2014	U.S. DISTRICT COURT 450 Golden Gate Avenue, Box 36060, San Francisco, CA 94102
PLAINTIFF FINJAN INC		DEFENDANT SYMANTEC CORP
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	see Complaint	
2	7,756,996	
3	7,757,289	
4	7,930,299	
5	8,015,182	

In the above—entitled case, the following patent(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading		
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK	
1	8,141,154		
2			
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT
--------------------

CLERK Richard W. Wiekling	(BY) DEPUTY CLERK Sheila Rash	DATE July 1, 2014
------------------------------	----------------------------------	----------------------

AO 120 (Rev. 2/99)

TO: <b>Mail Stop 8</b> <b>Director of the U.S. Patent &amp; Trademark Office</b> P.O. Box 1450 Alexandria, VA 22313-1450	<b>REPORT ON THE                  FILING OR DETERMINATION OF AN                  ACTION REGARDING A PATENT OR                  TRADEMARK</b>
---	--

In Compliance with 35 § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Northern District California on the  Patents or  Trademarks:

DOCKET NO. CV 14-02998 RS	DATE FILED June 30, 2014	U.S. DISTRICT COURT 450 Golden Gate Avenue, 16 <sup>th</sup> Floor, San Francisco CA 94102
PLAINTIFF FINJAN INC		DEFENDANT SYMANTEC CORP
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 6,154,844		
2 7,613,926		
3 7,756,996		
4 7,757,289		
5 7,930,299		

In the above—entitled case, the following patent(s) have been included:

DATE INCLUDED	INCLUDED BY <input checked="" type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading		
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK	
1 8,015,182		***see Attach First Amended Complaint***	
2 8,141,154			
3 8,677,494			
4			
5			

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT
--------------------

CLERK Richard W. Wicking	(BY) DEPUTY CLERK Gina Agustine	DATE September 18, 2014
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<b>TO: Mail Stop 8</b> <b>Director of the U.S. Patent &amp; Trademark Office</b> <b>P.O. Box 1450</b> <b>Alexandria, VA 22313-1450</b>	<b>REPORT ON THE</b> <b>FILING OR DETERMINATION OF AN</b> <b>ACTION REGARDING A PATENT OR</b> <b>TRADEMARK</b>
---	---

In Compliance with 35 § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Northern District of California on the following  Patents or  Trademarks:

DOCKET NO. CV 14-04908 JSC	DATE FILED 11/4/2014	U.S. DISTRICT COURT 450 Golden Gate Avenue, P.O. Box 36060, San Francisco, CA 94102
PLAINTIFF FINJAN INC		DEFENDANT PALO ALTO NETWORKS INC
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 see Complaint		
2 6,804,780		
3 6,965,968		
4 7,058,822		
5 7,418,731		

In the above—entitled case, the following patent(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading		
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK	
1 7,613,918			
2 7,613,926			
3 7,647,633			
4 8,141,154			
5 8,225,408			
8,677,494			

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT
--------------------

CLERK Richard W. Wicking	(BY) DEPUTY CLERK Sheila Rash	DATE November 5, 2014
-----------------------------	----------------------------------	--------------------------



Bey & Cotropia PLLC  
213 Bayly Court  
Richmond, Virginia 23229

Dawn-Marie Bey, Partner  
Direct Dial: 804-441-8530  
Mobile: 804-399-7257  
Dawnmarie@beycotropia.com

April 20, 2015

**PRIVILEGED & CONFIDENTIAL  
ATTORNEY/CLIENT COMMUNICATION**

Re: Change of Assignee's Address

Dear Sir/Madam,

This letter is being filed by the undersigned on all patents listed on Attachment A hereto to make it part of the record for each matter. The Assignee's address has changed, and the new address is as follows. This does **NOT** change the correspondence address for these matters.

Finjan, Inc.  
2000 University Avenue  
Suite 600  
East Palo Alto, CA 94025

If you have any questions regarding the above, please do not hesitate to contact me.

Best regards,

/Dawn-Marie Bey/

Dawn-Marie Bey

Encl.

**ATTACHMENT A**

**CHANGE OF ASSIGNEE ADDRESS FOR FINJAN, INC.**

<b>Serial No./Patent No.</b>	<b>Docket No.</b>	<b>Title</b>
08/964,388 Filed November 6, 1997 6,092,194 Issued July 18, 2000	FIN0001	System and Method For Protecting a Computer and a Network From Hostile Downloadables
09/539,667 Filed March 30, 2000 6,804,780 Issued October 12, 2004	FIN0001-CON1	System and Method For Protecting a Computer and a Network From Hostile Downloadables
09/861,229 Filed May 17, 2001 7,058,822 Issued June 6, 2006	FIN0001-CON1-CIP1	Malicious Mobile Code Runtime Monitoring System and Methods
11/159,455 Filed June 22, 2005 7,647,633 Issued January 12, 2010	FIN0001-CON1-CIP1-CON1	Malicious Mobile Code Runtime Monitoring System and Methods
11/370,114 Filed March 7, 2006 7,613,926 Issued November 3, 2009	FIN0001-CON1-CIP1-CON2	Method and System For Protecting a Computer and a Network From Hostile Downloadables
12/471,942 Filed May 26, 2009 8,079,086 Issued December 13, 2011	FIN0001-CON1-CIP1-CON3	Malicious Mobile Code Runtime Monitoring System and Methods
13/290,708 Filed November 7, 2011 8,677,494 Issued March 18, 2014	FIN0001-CON1-CIP1-CON4	Malicious Mobile Code Runtime Monitoring System and Methods
10/930,884 Filed August 30, 2004 8,225,408 Issued July 17, 2012	FIN0001-CON1-CIP3	Method and System For Adaptive Rule-Based Content Scanners
11/009,437 Filed December 9, 2004 7,975,305 Issued July 5, 2011	FIN0001-CON1-CIP3-CIP1	Method and System For Adaptive Rule-Based Content Scanners For Desktop



**ATTACHMENT A**  
**CHANGE OF ASSIGNEE ADDRESS FOR FINJAN, INC.**

<b>Serial No./Patent No.</b>	<b>Docket No.</b>	<b>Title</b>
08/995,648 Filed December 22, 1997 6,154,844 Issued November 28, 2000	FIN0002	System and Method For Attaching a Downloadable Security Profile to a Downloadable
08/790,097 Filed January 29, 1997 6,167,520 Issued December 26, 2000	FIN0003	System and Method For Protecting a Client From Hostile Downloadables
09/551,302 Filed April 18, 2000 6,480,962 Issued November 12, 2002	FIN0003-CON1	System and Method For Protecting a Client During Runtime From Hostile Downloadables
10/838,889 Filed May 3, 2004 7,418,731 Issued 8/26/08	FIN0003-CON1-CIP2	Method and System For Caching at Secure Gateways
10/376,215 Filed February 27, 2003 6,965,968 Issued November 15, 2005	FIN0005	Policy-Based Caching
10/768,920 Filed January 30, 2004 7,756,996 Issued July 13, 2010	FIN0007	Embedding Management Data Within HTTP Messages
11/298,475 December 12, 2005 7,757,289 July 13, 2010	FIN0008	System and Method For Inspecting Dynamically Generated Executable Code
12/814,584 Filed June 14, 2010 8,141,154 Issued March 20, 2012	FIN0008-DIV1	System and Method For Inspecting Dynamically Generated Executable Code
11/354,893 Filed February 16, 2006 7,613,918 November 3, 2009	FIN0009	System and Method For Enforcing a Security Context on a Downloadable
11/606,707 Filed November 29, 2006 8,015,182 Issued September 6, 2011	FIN0011	System and Method for Appending Security Information to Search Engine Results
11/606,663 Filed November 29, 2006 7,930,299 Issued April 19, 2011	FIN0012	System and Method For Appending Security Information to Search Engine Results

**ATTACHMENT A**  
**CHANGE OF ASSIGNEE ADDRESS FOR FINJAN, INC.**

<b>Serial No./Patent No.</b>	<b>Docket No.</b>	<b>Title</b>
11/797,539 Filed May 4, 2007 8,087,079 Issued December 27, 2011	FIN0013	Byte-Distribution Analysis of File Security
12/178,558 Filed July 23, 2008 8,566,580 Issued October 22, 2013	FIN0015	Splitting an SSL Connection Between Gateways

## Electronic Acknowledgement Receipt

<b>EFS ID:</b>	22122989
<b>Application Number:</b>	12814584
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	9667
<b>Title of Invention:</b>	SYSTEM AND METHOD FOR INSPECTING DYNAMICALLY GENERATED EXECUTABLE CODE
<b>First Named Inventor/Applicant Name:</b>	David GRUZMAN
<b>Customer Number:</b>	115222
<b>Filer:</b>	Dawn-Marie Bey./Jeanne Paolella-Bald
<b>Filer Authorized By:</b>	Dawn-Marie Bey.
<b>Attorney Docket Number:</b>	FIN0008-DIV1
<b>Receipt Date:</b>	21-APR-2015
<b>Filing Date:</b>	14-JUN-2010
<b>Time Stamp:</b>	14:38:01
<b>Application Type:</b>	Utility under 35 USC 111(a)

### Payment information:

Submitted with Payment	no
------------------------	----

### File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Miscellaneous Incoming Letter	finjan_executed_itrrepatentownerschangeofaddressforallissuedpatents.pdf	224888 fb7f999c8de00d31b1f122d7e1b2c29a2ec632b6	no	4

### Warnings:

### Information:

Juniper Ex. 1002-p. 271

Juniper v Finjan

**This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.**

**New Applications Under 35 U.S.C. 111**

**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**

**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**

**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**



Bey & Cotropia PLLC  
213 Bayly Court  
Richmond, Virginia 23229

Dawn-Marie Bey, Partner  
Direct Dial: 804-441-8530  
Mobile: 804-399-7257  
Dawnmarie@beycotropia.com

May 19, 2015

**PRIVILEGED & CONFIDENTIAL  
ATTORNEY/CLIENT COMMUNICATION**

Re: Change of Assignee's Address

Dear Sir/Madam,

This letter is being filed by the undersigned on all patents listed on Attachment A hereto to make it part of the record for each matter. The Assignee's address has changed, and the new address is as follows. This does **NOT** change the correspondence address for these matters.

Finjan, Inc.  
2000 University Avenue  
Suite 600  
East Palo Alto, CA 94303

If you have any questions regarding the above, please do not hesitate to contact me.

Best regards,

/Dawn-Marie Bey/

Dawn-Marie Bey

Encl.

**ATTACHMENT A**

**CHANGE OF ASSIGNEE ADDRESS FOR FINJAN, INC.**

<b>Serial No./Patent No.</b>	<b>Docket No.</b>	<b>Title</b>
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09/861,229 Filed May 17, 2001 7,058,822 Issued June 6, 2006	FIN0001-CON1-CIP1	Malicious Mobile Code Runtime Monitoring System and Methods
11/159,455 Filed June 22, 2005 7,647,633 Issued January 12, 2010	FIN0001-CON1-CIP1-CON1	Malicious Mobile Code Runtime Monitoring System and Methods
11/370,114 Filed March 7, 2006 7,613,926 Issued November 3, 2009	FIN0001-CON1-CIP1-CON2	Method and System For Protecting a Computer and a Network From Hostile Downloadables
12/471,942 Filed May 26, 2009 8,079,086 Issued December 13, 2011	FIN0001-CON1-CIP1-CON3	Malicious Mobile Code Runtime Monitoring System and Methods
13/290,708 Filed November 7, 2011 8,677,494 Issued March 18, 2014	FIN0001-CON1-CIP1-CON4	Malicious Mobile Code Runtime Monitoring System and Methods
10/930,884 Filed August 30, 2004 8,225,408 Issued July 17, 2012	FIN0001-CON1-CIP3	Method and System For Adaptive Rule-Based Content Scanners
11/009,437 Filed December 9, 2004 7,975,305 Issued July 5, 2011	FIN0001-CON1-CIP3-CIP1	Method and System For Adaptive Rule-Based Content Scanners For Desktop

**ATTACHMENT A**  
**CHANGE OF ASSIGNEE ADDRESS FOR FINJAN, INC.**

<b>Serial No./Patent No.</b>	<b>Docket No.</b>	<b>Title</b>
08/995,648 Filed December 22, 1997 6,154,844 Issued November 28, 2000	FIN0002	System and Method For Attaching a Downloadable Security Profile to a Downloadable
08/790,097 Filed January 29, 1997 6,167,520 Issued December 26, 2000	FIN0003	System and Method For Protecting a Client From Hostile Downloadables
09/551,302 Filed April 18, 2000 6,480,962 Issued November 12, 2002	FIN0003-CON1	System and Method For Protecting a Client During Runtime From Hostile Downloadables
10/838,889 Filed May 3, 2004 7,418,731 Issued 8/26/08	FIN0003-CON1-CIP2	Method and System For Caching at Secure Gateways
10/376,215 Filed February 27, 2003 6,965,968 Issued November 15, 2005	FIN0005	Policy-Based Caching
10/768,920 Filed January 30, 2004 7,756,996 Issued July 13, 2010	FIN0007	Embedding Management Data Within HTTP Messages
11/298,475 December 12, 2005 7,757,289 July 13, 2010	FIN0008	System and Method For Inspecting Dynamically Generated Executable Code
12/814,584 Filed June 14, 2010 8,141,154 Issued March 20, 2012	FIN0008-DIV1	System and Method For Inspecting Dynamically Generated Executable Code
11/354,893 Filed February 16, 2006 7,613,918 November 3, 2009	FIN0009	System and Method For Enforcing a Security Context on a Downloadable
11/606,707 Filed November 29, 2006 8,015,182 Issued September 6, 2011	FIN0011	System and Method for Appending Security Information to Search Engine Results
11/606,663 Filed November 29, 2006 7,930,299 Issued April 19, 2011	FIN0012	System and Method For Appending Security Information to Search Engine Results

**ATTACHMENT A**  
**CHANGE OF ASSIGNEE ADDRESS FOR FINJAN, INC.**

<b>Serial No./Patent No.</b>	<b>Docket No.</b>	<b>Title</b>
11/797,539 Filed May 4, 2007 8,087,079 Issued December 27, 2011	FIN0013	Byte-Distribution Analysis of File Security
12/178,558 Filed July 23, 2008 8,566,580 Issued October 22, 2013	FIN0015	Splitting an SSL Connection Between Gateways



## Electronic Acknowledgement Receipt

<b>EFS ID:</b>	22383108
<b>Application Number:</b>	12814584
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	9667
<b>Title of Invention:</b>	SYSTEM AND METHOD FOR INSPECTING DYNAMICALLY GENERATED EXECUTABLE CODE
<b>First Named Inventor/Applicant Name:</b>	David GRUZMAN
<b>Customer Number:</b>	115222
<b>Filer:</b>	Dawn-Marie Bey./Jeanne Paoella-Bald
<b>Filer Authorized By:</b>	Dawn-Marie Bey.
<b>Attorney Docket Number:</b>	FIN0008-DIV1
<b>Receipt Date:</b>	19-MAY-2015
<b>Filing Date:</b>	14-JUN-2010
<b>Time Stamp:</b>	10:07:23
<b>Application Type:</b>	Utility under 35 USC 111(a)

### Payment information:

Submitted with Payment	no
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### File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Miscellaneous Incoming Letter	finjan_executed_itrrepatentowerschangeofaddressforallissu dpatents_forfiling5_19_15.pdf	179252 <small>7e0761637d832045aea3762c90fe9107d7a b6e45</small>	no	4

### Warnings:

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**New Applications Under 35 U.S.C. 111**

**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**

**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**

**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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SYMANTEC CORP.,  
Petitioner,

v.

FINJAN, INC.,  
Patent Owner.

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Case IPR2015-01547  
Patent 8,141,154 B2

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Before THOMAS L. GIANNETTI, RICHARD E. RICE, and  
MIRIAM L. QUINN *Administrative Patent Judges.*

QUINN, *Administrative Patent Judge.*

DECISION  
Denying Institution of *Inter Partes* Review  
37 C.F.R. § 42.108

Symantec Corp. (“Petitioner”) filed a Petition to institute *inter partes* review of claims 1–12 of U.S. Patent No. 8,141,154 B2 (“the ’154 patent”) pursuant to 35 U.S.C. § 311–319. Paper 1 (“Pet.”). Finjan, Inc. (“Patent Owner”) timely filed a Preliminary Response. Paper 8 (“Prelim. Resp.”). We have jurisdiction under 35 U.S.C. § 314.

For the reasons that follow, we deny the Petition.

## I. BACKGROUND

### A. RELATED MATTERS

Petitioner identifies that the patent-at-issue is the subject matter of a district court case filed in the U.S. District Court for the Northern District of California (Case No. 3:14-cv-02998-RS). Pet. 1. Petitioner also states that petitions for *inter partes* review have been filed regarding patents at issue in the foregoing litigation. *Id.*

### B. ASSERTED GROUNDS

Petitioner contends that claims 1–12 (“the challenged claims”) are unpatentable under 35 U.S.C. § 102 and § 103 based on the following specific grounds:

Reference[s]	Basis	Claims challenged
Ross <sup>1</sup>	§ 102	1–5
Ross	§ 103	2, 4–8, 10, and 11

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<sup>1</sup> Patent Application Pub. No. US 2007/0113282 (Exhibit 1002) (“Ross”).

Reference[s]	Basis	Claims challenged
Ross and Calder <sup>2</sup>	§ 103	9 and 12
Calder and Sirer <sup>3</sup>	§ 103	1–12

C. THE '154 PATENT (EX. 1001)

The '154 patent relates to computer security, and, more particularly, to systems and methods for protecting computers against malicious code such as computer viruses. Ex. 1001, 1:7–9; 8:38–40. The '154 patent identifies the components of one embodiment of the system as follows: a gateway computer, a client computer, and a security computer. *Id.* at 8:45–47. The gateway computer receives content from a network, such as the Internet, over a communication channel. *Id.* at 8:47–48. “Such content may be in the form of HTML pages, XML documents, Java applets and other such web content that is generally rendered by a web browser.” *Id.* at 8:48–51. A content modifier modifies original content received by the gateway computer and produces modified content that includes a layer of protection to combat dynamically generated malicious code. *Id.* at 9:13–16.

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<sup>2</sup> Patent Application Pub. No. US 2002/0066022 A1 (Exhibit 1003) (“Calder”).

<sup>3</sup> Sirer et al., *Design and Implementation of a Distributed Virtual machine for Networked Computers*, (1999) (Exhibit 1004) (“Sirer”).

#### D. ILLUSTRATIVE CLAIM

Challenged claims 1, 4, 6, and 10 are independent, and illustrative claim 1 is reproduced below.

1. A system for protecting a computer from dynamically generated malicious content, comprising:

a content processor (i) for processing content received over a network, the content including a call to a first function, and the call including an input, and (ii) for invoking a second function with the input, only if a security computer indicates that such invocation is safe;

a transmitter for transmitting the input to the security computer for inspection, when the first function is invoked; and

a receiver for receiving an indicator from the security computer whether it is safe to invoke the second function with the input.

## II. ANALYSIS

### A. CLAIM INTERPRETATION

The Board interprets claims using the “broadest reasonable construction in light of the specification of the patent in which [they] appear[.]” 37 C.F.R. § 42.100(b). We presume that claim terms have their ordinary and customary meaning. *See In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007) (“The ordinary and customary meaning is the meaning that the term would have to a person of ordinary skill in the art in question.”).

Petitioner proposed a construction for one term: “dynamically generate[d]”. *See* Pet. 14–15. Patent Owner submitted that the term has a plain and ordinary meaning understood to a person of ordinary skill in the art and that no construction is needed. Prelim. Resp. 7–9. We do not need to construe a proposed term if the construction is not helpful in our

determination of whether to institute trial. Because the construction of the term “dynamically generate[d]” is not germane to our determination whether to institute trial, we will not consider either of the parties’ arguments. No term will be construed.

B. GROUNDS BASED ON ROSS, AND ROSS IN COMBINATION WITH  
CALDER

Petitioner asserts three grounds predicated on, at a minimum, Ross disclosing the limitation identified in the Petition as limitation “[A].” Pet. 12 (identifying overlapping limitations in the four independent claims), 18–20 (describing Petitioner’s contention regarding Ross’s disclosure of limitation 1[A] and 4[A]); 27–28 (stating Petitioner’s contention that for claims 6 and 10, limitations are “substantially similar” with the exception of limitations [B2], [E2], and [G]). Limitation [A] in claim 1 recites “a content processor (i) for processing content received over a network, the content including a call to a first function, and the call including an input . . .” Ex. 1001, 17:34–36. We do not agree with Petitioner that Ross discloses this limitation for, at least, the reasons discussed below and outlined by Patent Owner in the Preliminary Response. *See* Prelim. Resp. 12–15.

*1. Overview of Ross (Exhibit 1002)*

Ross describes one embodiment where a device receives and processes “data content having at least one original function call [and it] includes a hook script generator and a script processing engine.” Ex. 1002 ¶ 10. One such device is depicted in Figure 2, reproduced below.

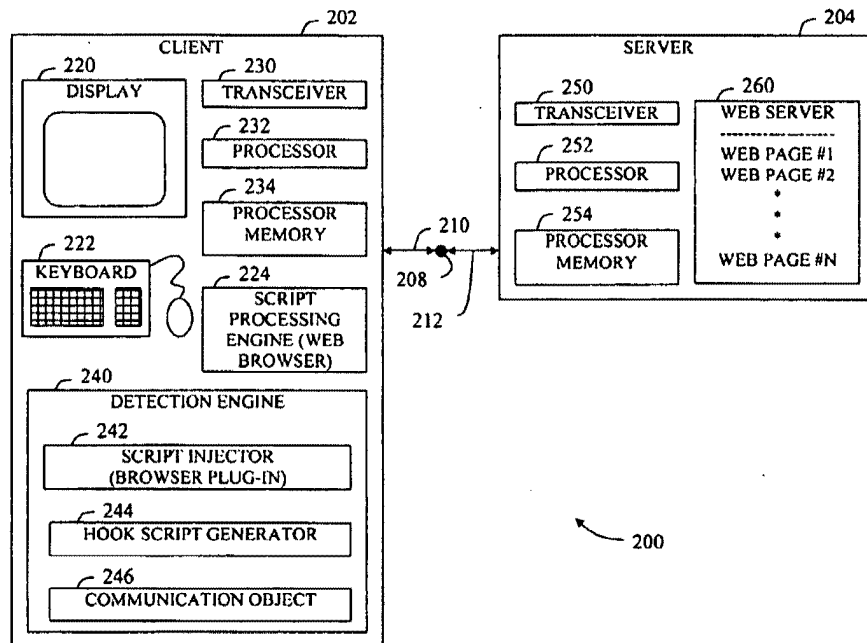


FIG 2

Figure 2 shows a client network device (client 202) and a server network device (server 204) communicating with each other over communication network 208 to exchange information including web content. *Id.* at ¶¶ 16, 23. Figure 2 depicts web browser 224 and detection engine 240 at the client, but in other embodiments detection engine 240 may be physically located away from client 202. *Id.* at ¶ 26. Detection engine 240 includes script injector 242 to intercept incoming data content and introduce the incoming data to script-processing engine 224. *Id.* “Hook script generator 244 creates new functions, including constructor functions, which replace the standard JavaScript functions.” *Id.*

## 2. Discussion

Petitioner contends that Ross’s script-processing engine is the recited content processor that receives content over a network. Pet. 18–19 (citing



Ex. 1002 ¶¶ 23, 26, 34, Figs. 2, 4–6). Petitioner also contends that the “content processed by the script processing engine includes a hook script having one or more hook functions,” thereby disclosing the recited “first function.” *Id.* at 19 (citing Ex. 1002 ¶¶ 38, 31, 33, 34; and the Davidson Declaration Ex. 1010 ¶79). That is, the Petition states that the script processing engine receives content over a network and also receives a hook script. The claims require, however, that the content received by the content processor include a “call to a first function.” And according to Patent Owner, with which we agree in this regard, Ross does not disclose that the hook function (or “first function”) is in content received over a network. Prelim. Resp. 12.

We are persuaded by Patent Owner’s argument that, in the embodiments identified in the Petition, the hook script generator generates the hook function, which is loaded *separate from* data content 602 that is received over the network. Prelim. Resp. 14 (pointing out Ross’s disclosure of the hook generator embodiments disclosed in Figures 2 and 6). In particular, Patent Owner addresses Ross’s disclosure of the method where the hook function is loaded into the script processing engine, then data content 602 is loaded into the script processing engine, and, finally, executing a hook function when the corresponding original function is called in data content 602. *Id.* at 14–15 (relying on Ex. 1002 ¶ 38). Neither the Petition (see Pet. 18–20) nor the Declaration of Mr. Davidson, at the cited paragraph 79, explain how Ross’s data content received over a network also includes the hook functions alleged to be the recited “first function,” which must be included in the content received over a network.

Accordingly, and for at least the above-identified reason, we are not persuaded that Petitioner has demonstrated a reasonable likelihood of prevailing in its contention that independent claims 1, 4, 6, and 10 are unpatentable over Ross, either as anticipated (claims 1 and 4) or obvious (claims 6 and 10). Petitioner relies on Calder in combination with Ross to challenge as unpatentable dependent claims 9 and 12, but does not assert that Calder remedies any of the Ross deficiencies noted above. Consequently, we also are not persuaded that Petitioner has demonstrated a reasonable likelihood of prevailing in its contention that any of the challenged dependent claims are unpatentable over either Ross or the combination of Ross and Calder.

#### C. GROUND BASED CALDER AND SIRER

Petitioner asserts one ground predicated on, at least, Calder.

##### 1. *Overview of Calder (Ex. 1003)*

Calder describes a distributed computing system, which includes a pre-processing module that prepares a software package for execution on any number of client computers. Ex. 1003 ¶ 77; Fig. 1. Application package 115 is a modified software application that is adapted to each client computer 140. *Id.* Calder further describes that application package 115 is sent to server 120 after being processed by the pre-processor module. *Id.* at ¶ 85. “Application package 115 is electronically transferred from a server 120, which can be an independently networked computer, across the network 130, and into any number of client computers 140.” *Id.* at ¶ 77. Figure 4, reproduced below, depicts a virtualized execution environment.

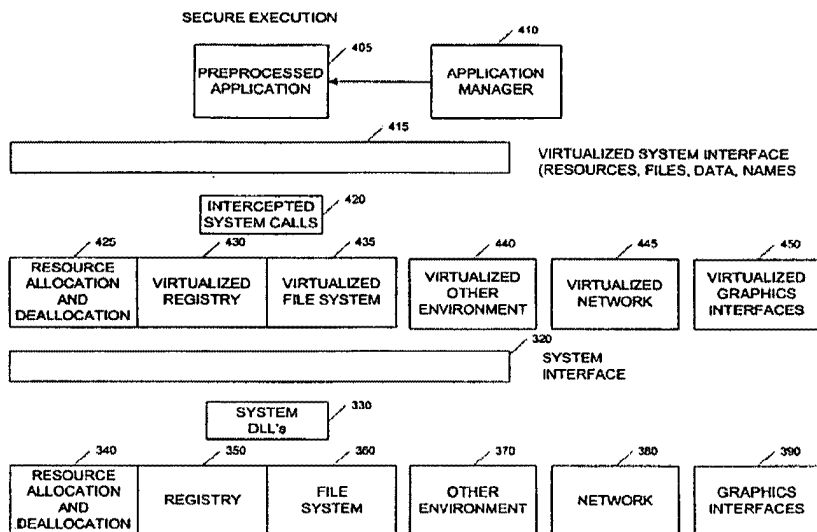


Figure 4 shows that system resources are controlled by using virtual layer 415 to intercept application programming interface (API) routines that utilize these resources. *Id.* at ¶ 86. System calls made by application 405 are intercepted by an interception module, which is part of virtual layer 415. *Id.* at ¶ 87.

To create application package 115, binaries are rewritten to remove improper sequences. *Id.* at ¶ 93. Improper functions or sequences are defined by a predefined list. *Id.* at ¶ 95. If no improper sequences are identified, the import table of binaries is rewritten to reference the interception module. *Id.* at ¶ 97. An import table lists all of the dynamically linked libraries (DLLs) that are used by application 405. *Id.* at ¶ 98. The process of initializing and patching the DLLs involves loading and running the DLL for the intercept module, which patches and intercepts all the DLL calls before any of the application package's code is executed. *Id.* ¶¶ 98, 104.

In addition to intercepting DLL calls, the interception module virtualizes a suite of network request routines in response to application 405 invoking the routines. *Id.* at ¶ 122. The interception module also intercepts all of the file system requests by application 405. *Id.* at ¶ 125. In particular, Calder describes that in response to an invocation of a routine to open a file, the system determines whether the file is an approved file, and, if it is, the process proceeds without modifying the call. *Id.* at ¶ 134. If the file in question does not exist or does not contain executable code, the process returns to execute the original system request, with the unmodified and modified parameter and the handle. *Id.* at ¶ 135.

## 2. Discussion

Petitioner contends that Calder teaches or suggests the limitations of the challenged claims, except for the “remotely located ‘security computer’ for performing the inspection and evaluation of the hooked functions and inputs,” for which Petitioner relies on Sierer. Pet. 39. Patent Owner challenges Petitioner’s contentions based on multiple bases. Prelim. Resp. 29–34. In particular, Patent Owner argues that Petitioner has not shown that Calder’s system calls are “function calls,” that the system calls identified as “first function calls” do not meet the claim language, and that Petitioner has not shown that Calder teaches the “second function” limitations. *Id.* at 31–32. We agree with Patent Owner that Petitioner has not met its burden based on the issues identified above.

In particular, Petitioner identifies as “function calls” Calder’s system calls or certain interrupt calls. Pet. 44. The original calls in the application package are replaced, according to Petitioner, with “calls to a virtual layer

through ‘modified routines’ (i.e., a call to a first function).” *Id.* Further to this point, Petitioner also identifies the original calls as first function calls. *Id.* These are two different embodiments of “calls” alleged to be a “first function call.” More importantly, however, there is little credible explanation that system calls are “function calls.” The assertion, by Petitioner’s declarant, that “intercepting a system call is conceptually equivalent to intercepting a function call” is conclusory. *See* Prelim. Resp. 29 (referring to the Declaration of Davidson, Ex. 1010 ¶ 125). The Petition fails to explain how Calder’s system calls, and all other identified calls, teach or suggest “function calls.” The interception of system calls and function calls may be “conceptually equivalent,” but this statement says nothing about whether “system calls” and “function calls” are also equivalent, conceptually or otherwise.

Further, the Petition is deficient in showing how all the various Calder embodiments alleged to teach or suggest function calls equate to the recited first and second function calls, and their corresponding inputs, for each claim. For example, for claims 1, 4, 6, and 10, the Petition identifies as first functions (1) a call to a virtual layer and (2) an original call, such as “the invocation of an open/create routine.” Pet. 44. The Petition subsequently identifies “the underlying intercepted system call” as the “second function” recited in claims 1 and 4, referring to the embodiment of intercepting network access requests and determining whether a socket is on the list of allowable sockets. Pet. 50. Claims 1 and 4 require, however, the same input for the first function and the second function, as the claims recite “the content including a call to a first function, and the call including *an input*,”

and “a second function with *the input*.” We discern no attempt in the Petition to identify the recited functions with the appropriate inputs recited in these claims. Furthermore, we agree with Patent Owner that Petitioner fails to explain how Calder *invokes* “the second function” because it has alleged only that the intercepted system call is not performed. Prelim. Resp. 31.

For claims 6 and 10, a similar problem emerges. The Petition alleges that the invoked second function with a modified input variable is the “original system call” with “modified parameters.” Pet. 52 (relying on file request routines and Figure 14). There is insufficient indication that the second function call, i.e., Calder’s “original system call,” is any different than the first function call, which was alleged to be also an original call, such as the invocation of an open/create routine. Likewise, there is no distinction between the “input variable” for the first function, and the “modified input variable” for the second function. The Petition either does not address the particulars or provides convoluted references to Calder’s various embodiments so that Petitioner’s contentions on this matter are rendered intractable. In this last regard, given the complexity and breadth of the asserted prior art references, we find that the Petition lacks a cogent presentation and adequate explanations of how the numerous, cited Calder embodiments, presented in piecemeal fashion, tie to the claims. *See* 37 C.F.R. §§ 42.22(a)(2) 42.104 (b)(4),(5).

Accordingly, we are not persuaded that Petitioner has shown sufficiently a reasonable likelihood of prevailing in its contention that claims 1, 4, 6, and 10 are unpatentable as obvious over Calder and Sirer. Petitioner

does not assert Siner as making up for the deficiencies noted above. Therefore, we determine that Petitioner has not shown a reasonable likelihood of prevailing in its contention that claims 2, 3, 5, 7–9, 11, and 12 are unpatentable over the Calder-based grounds.

### III. CONCLUSION

For the foregoing reasons, we do not institute *inter partes* review of the '154 patent.

### IV. ORDER

After due consideration of the record before us, it is

ORDERED that the Petition is *denied* and no trial is instituted.

IPR2015-01547  
Patent 8,141,154 B2

PETITIONER:

Joseph J. Richetti (Lead Counsel)  
Daniel A. Crowe (Back-up Counsel)  
BRYAN CAVE LLP  
[joe.richetti@bryancave.com](mailto:joe.richetti@bryancave.com)  
[dacrowe@bryancave.com](mailto:dacrowe@bryancave.com)

PATENT OWNER:

James Hannah (Lead Counsel)  
Jeffrey H. Price (Back-up Counsel)  
KRAMER LEVIN NAFTALIS & FRANKEL LLP  
[jhannah@kramerlevin.com](mailto:jhannah@kramerlevin.com)  
[jprice@kramerlevin.com](mailto:jprice@kramerlevin.com)

Michael Kim (Back-up Counsel)  
FINJAN INC.  
[mkim@finjan.com](mailto:mkim@finjan.com)



UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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PALO ALTO NETWORKS, INC.,  
Petitioner,

v.

FINJAN, INC.,  
Patent Owner.

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Case IPR2015-01979  
Patent 8,141,154 B2

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Before, THOMAS L. GIANNETTI, RICHARD E. RICE, and  
MIRIAM L. QUINN, *Administrative Patent Judges*.

QUINN, *Administrative Patent Judge*.

DECISION  
Institution of *Inter Partes* Review  
37 C.F.R. § 42.108

Palo Alto Networks, Inc. (“Petitioner”) filed a Petition to institute *inter partes* review of claims 1–8, 10, and 11 of U.S. Patent No. 8,141,154 B2 (“the ’154 patent”) pursuant to 35 U.S.C. § 311–319. Paper 2 (“Pet.”). Finjan, Inc. (“Patent Owner”) timely filed a Preliminary Response. Paper 6 (“Prelim. Resp.”). We have jurisdiction under 35 U.S.C. § 314.

For the reasons that follow, we *grant* the Petition.

## I. BACKGROUND

### A. RELATED MATTERS

Petitioner identifies that the patent-at-issue is the subject matter of various district court cases filed in the U.S. District Court for the Northern District of California (Case Nos. 3:14-cv-04908, 5:14-cv-02998, 5:15-cv-01353, 5:14-cv-04398, 3:14-cv-01197, and 3:13-cv-05808). Pet. 3. Petitioner also states that petitions for *inter partes* review have been filed regarding other patents at issue in the foregoing district court cases. *Id.*

### B. ASSERTED GROUNDS

Petitioner contends that claims 1–8, 10, and 11 (“the challenged claims”) are unpatentable under 35 U.S.C. § 103 based on the following specific grounds:

Reference[s]	Basis	Claims challenged
Khazan <sup>1</sup> and Sirer <sup>2</sup>	§ 103	1–5
Khazan, Sirer, and Ben-Natan <sup>3</sup>	§ 103	2, 4–8, 10, and 11

C. THE '154 PATENT (EX. 1001)

The '154 patent relates to computer security, and, more particularly, to systems and methods for protecting computers against malicious code such as computer viruses. Ex. 1001, 1:7–9, 8:38–40. The '154 patent identifies the components of one embodiment of the system as follows: a gateway computer, a client computer, and a security computer. *Id.* at 8:45–47. The gateway computer receives content from a network, such as the Internet, over a communication channel. *Id.* at 8:47–48. “Such content may be in the form of HTML pages, XML documents, Java applets and other such web content that is generally rendered by a web browser.” *Id.* at 8:48–51. A content modifier modifies original content received by the gateway computer and produces modified content that includes a layer of protection to combat dynamically generated malicious code. *Id.* at 9:13–16.

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<sup>1</sup> Patent Application Pub. No. US 2005/0108562 A1 (Exhibit 1003) (“Khazan”).

<sup>2</sup> Sirer et al., *Design and Implementation of a Distributed Virtual machine for Networked Computers* (1999) (Exhibit 1004) (“Sirer”).

<sup>3</sup> U.S. Patent No. 7,437,362 B1 (Exhibit 1005) (“Ben-Natan”).

#### D. ILLUSTRATIVE CLAIMS

Challenged claims 1, 4, 6, and 10 are independent, and illustrative claim 1 is reproduced below.

1. A system for protecting a computer from dynamically generated malicious content, comprising:

a content processor (i) for processing content received over a network, the content including a call to a first function, and the call including an input, and (ii) for invoking a second function with the input, only if a security computer indicates that such invocation is safe;

a transmitter for transmitting the input to the security computer for inspection, when the first function is invoked; and

a receiver for receiving an indicator from the security computer whether it is safe to invoke the second function with the input.

#### II. ANALYSIS

##### A. CLAIM INTERPRETATION

The Board interprets claims using the “broadest reasonable construction in light of the specification of the patent in which [they] appear[.]” 37 C.F.R. § 42.100(b). We presume that claim terms have their ordinary and customary meaning. *See In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007) (“The ordinary and customary meaning is the meaning that the term would have to a person of ordinary skill in the art in question.”) (citation omitted).

Petitioner proposed constructions for four terms: “first function,” “second function,” “transmitter,” “receiver.” *See* Pet. 9–13. The proposed constructions are as follows:

<b>Term</b>	<b>Petitioner's Proposed Construction</b>
first function	Substitute function (Pet. 9–10)
second function	Original function (Pet. 10–11)
transmitter	A circuit or electronic device designed to send electrically encoded data to another location (Pet. 11–12)
receiver	A circuit or electronic device designed to accept data from an external communication system (Pet. 12–13).

Petitioner generally supports its proposed constructions with citations to the specification of the '154 patent and opinion testimony of its witness, Dr. Aviel Rubin (Rubin Decl. or Ex. 1002). *Id.*

Patent Owner submits that each of the terms has a plain and ordinary meaning understood to a person of ordinary and that no construction is needed. Prelim. Resp. 6–12. Upon review of the arguments and evidence presented in the Petition and the Preliminary Response, we conclude that none of these terms are at the heart of the parties' arguments, and, therefore, construction of these terms is not helpful in our determination of whether to institute *inter partes* review. *See Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (only claim terms in controversy need to be construed, and only to the extent necessary to resolve the controversy). Accordingly, we do not construe any claim terms at this time.

#### B. OBVIOUSNESS GROUND BASED ON KHAZAN AND SIRER

Petitioner asserts that Khazan discloses “every element of the Petitioned Claims except a modified input variable and details of performing

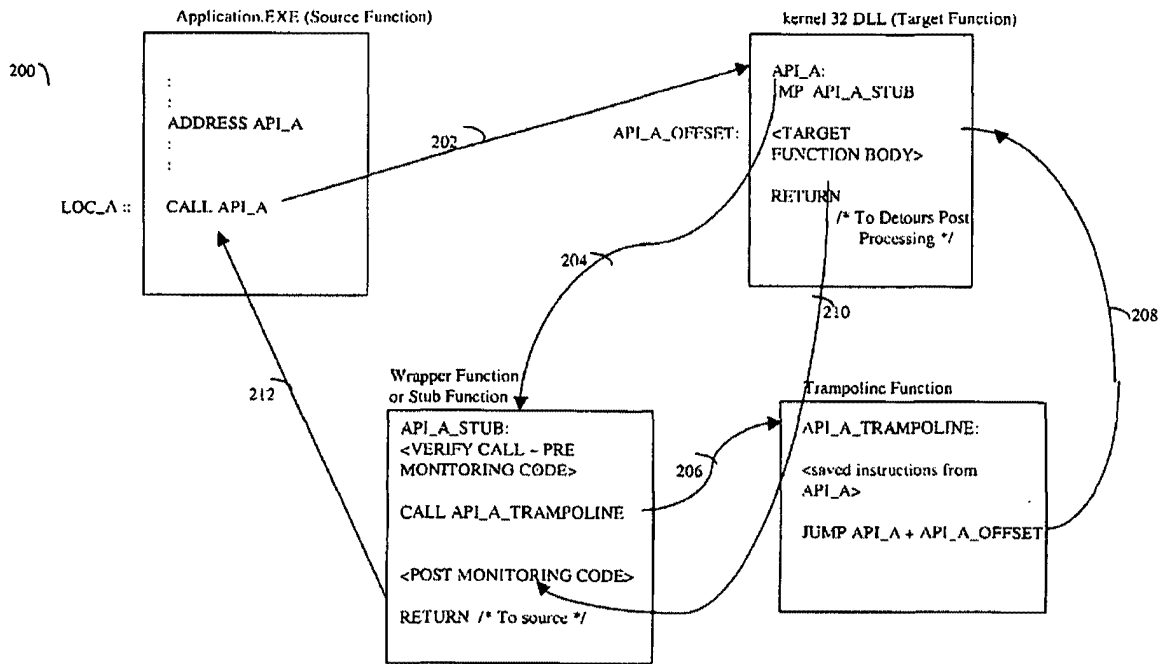
dynamic analysis on a remote computer.” Pet. 16. Patent Owner challenges Petitioner’s assertions that Khazan discloses several limitations and asserts that Sirer’s disclosure of dynamic service components does not meet the claims under Petitioner’s theory of unpatentability. Prelim. Resp. 14–24.

*1. Overview of Khazan (Exhibit 1003)*

Khazan is titled “Technique for detecting executable malicious code using a combination of static and dynamic analyses.” The Abstract of Khazan states that:

Described are techniques used for automatic detection of malicious code by verifying that an application executes in accordance with a model defined using calls to a predetermined set of targets, such as external routines. A model is constructed using a static analysis of a binary form of the application, and is comprised of a list of calls to targets, their invocation and target locations, and possibly other call-related information. When the application is executed, dynamic analysis is used to intercept calls to targets and verify them against the model.

Ex. 1003, Abstract. Figure 7, reproduced below, shows in more detail the flow of control between functions at run time to intercept calls to the predetermined functions or routines being monitored as part of dynamic analysis. *Id.* ¶ 25.



The flow in Figure 7 depicts the control flow when a WIN32 API function is invoked at run time from the application using a call instruction. *Id.* ¶ 82. A call is made to the target function `API_A`. *Id.* ¶ 83. Control transfers (Fig. 7, arrow 202) to the target function `API_A` within the `kernel132 DLL`. *Id.* The target function `API_A` includes a transfer or jump instruction to a wrapper function. *Id.* Control, therefore, transfers (Fig. 7, arrow 204) to the wrapper function (`API_A_STUB`). *Id.* The intercepted call is verified. *Id.* ¶ 84. This verification includes using static analysis information, including parameter information. *Id.* ¶ 87. After verification, a trampoline function is invoked (Fig. 7, arrow 206) to execute previously saved instructions of `API_A`, which are the first instructions of the routine `API_A` that were replaced with a jump instruction to the wrapper function. *Id.* ¶ 88. Control transfers back to the target function to continue execution of the target function body as indicated by arrow 208. *Id.*

## 2. Overview of Simer (Ex. 1004)

Simer is titled “Design and implementation of a distributed virtual machine for networked computers.” Ex. 1004, 1. Simer describes centralizing service functionality in a distributed virtual machine by portioning static and dynamic components. *Id.* at 2. Figure 1, reproduced below, illustrates the organization of those components.

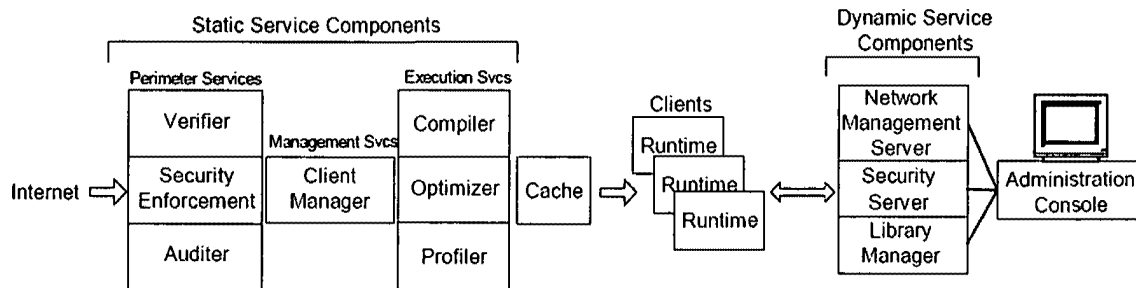


Figure 1. The organization of static and dynamic service components in a distributed virtual machine.

Figure 1 shows static service components, such as security enforcement, running at a network trust boundary. *Id.* at 3. Dynamic service components provide service functionality to clients during run-time as necessary. *Id.* “The code for the dynamic service components resides on the central proxy and is distributed to clients on demand.” *Id.* at 4. The security service “forces applications to comply with an organization’s security policy by inserting appropriate checks through binary rewriting.” *Id.* at 5. “During execution of the rewritten application, the enforcement manager executes the inserted access checks, querying the security service based on the security identifiers and permissions it maintains.” *Id.*

## 3. Discussion

Petitioner contends that Khazan teaches “content received over a network” through Khazan’s instrumented “application executable.” *See* Pet. 19; *see also* Ex. 1003 ¶ 73 (“At step 128, the instrumented application and



associated libraries are executed.”). Petitioner points to Khazan’s claim 35 as support for the contention that the “instrumented executable” is obtained from another host, and, therefore, it is received over a network. Pet. 20. Petitioner contends that Khazan in combination with Simer discloses the content “including a call to a first function.” Pet. 20–21.

Patent Owner challenges Petitioner’s contention by arguing that Khazan’s executable, e.g., Application. EXE shown in Figure 7, does not include a “first function.” Prelim. Resp. 15–17. Patent Owner further contends that Simer makes calls to a “dynamic service component,” which Patent Owner contends is a separate computer, and there is no evidence that a computer is equivalent to a function. Prelim. Resp. 17–18. We are not persuaded at this time by Patent Owner’s arguments.

We understand the Petition as equating the claimed “content” to the *instrumented* application executable, not the original or source application executable. Further, although we agree with Patent Owner that there is a distinction between an “instrumented application executable” (which involves wrapper functions included in an application) and an “instrumented executable” (which involves wrapper functions included in a library), Petitioner has asserted that Khazan teaches instrumentation of both when it refers to “instrumented application and libraries.” See Prelim. Resp. 12–13 (Patent Owner arguing that wrapper functions are never included in Khazan’s application, only in a library); *but see* Ex. 1003, Fig 4B (Step 128: “Execute the instrumented application and associated libraries”), ¶ 79 (“Any []of a wide variety of different techniques may be used in connection with instrumenting the application 102 and any necessary libraries.”), and ¶ 118 (“[A]lthough the foregoing description instruments libraries, such as DLLs,

other bodies of code . . . even the application, may also be instrumented and used in connection with the techniques described herein.”).

With regard to Sirer, Patent Owner argues that Sirer does not teach “functions.” Prelim. Resp. 17–19. Patent Owner further characterizes as unsupported attorney argument Petitioner’s assertions that dynamic service components are calls to functions, and argues that cites to Petitioner’s Declarant, Dr. Rubin, “impermissibly attempt to circumvent the page limits.” *Id.* These arguments are not persuasive for two reasons. First, Sirer states that the code for the dynamic service components is downloaded if needed. Ex. 1004, 4. Therefore, Sirer’s service components do not appear to be “computers,” as Patent Owner argues, and instead, Sirer tends to support Petitioner’s assertions. Second, we understand the Petition to rely on Sirer as teaching instrumentation techniques performed at a proxy, whereas Khazan’s preferred embodiment teaches instrumentation at the host during dynamic analysis. Pet. 24–25. We do not see Petitioner as relying solely on Sirer as teaching the “first function.” *See* Pet. 20 (“As received, the [Khazan] content includes the substitute first function (added by Khazan’s instrumentation).”). Therefore, Patent Owner’s argument regarding deficiencies of Sirer’s teachings in isolation does not address sufficiently the asserted combination of Khazan and Sirer.

Petitioner contends that Khazan teaches “the call including an input” because the wrapper function includes a parameter (i.e., input), which is verified during the pre-monitoring stage of the wrapper function execution. Pet. 27–28. In support of this argument, Petitioner proffers evidence that describes the operation of the Microsoft Detours package, referenced in Khazan, to explain that “original function parameters [are] passed to the

wrapper function.” *Id.* at 28 (citing Ex. 1002 ¶¶ 101–02, Ex. 1012, 5 (Detours Article)). Patent Owner counters that the function the Petition alludes to includes an input, whereas the claims require that “the call to the function[] includes an input.” Prelim. Resp. 20. We are not persuaded at this time by this argument because it fails to explain sufficiently the alleged deficiency. Furthermore, Petitioner has proffered a further assertion that including a call to the function would have been obvious because “[w]ithout providing the parameters from the wrapped function to the wrapper function, the wrapper function could not verify the parameter information,” and that the Detours package operation suggests passing the parameter to the function. Pet. 28. Patent Owner’s arguments do not address these assertions.

Concerning dependent claim 2, Petitioner asserts that Khazan teaches “suspend[ing] processing of the content after said transmitter transmits the input to the security computer.” Pet. 39. In particular, Petitioner alleges that Khazan “discloses suspending processing in the form of transferring control from the application executable to the wrapper function when it intercepts the call.” *Id.* According to Petitioner, the execution of the content is “suspended for security verification.” *Id.* at 40. This suspension, according to Patent Owner occurs *before*, not after the alleged transmission of the input to the security computer. Prelim. Resp. 21–22. This argument is not persuasive at this time. Notwithstanding Patent Owner’s argument, Petitioner has presented sufficient information to show a reasonable likelihood of prevailing on the asserted challenge of claim 2.

Finally, with regard to claims 3 and 5, Patent Owner asserts that the Petition is deficient in showing that Khazan teaches “the input is

dynamically generated by said content processor prior to being transmitted by said transmitter.” Prelim. Resp. 23–24. Petitioner points to Khazan creating and transmitting, during execution, the wrapper function parameter. Pet. 41. According to Petitioner, invocation at runtime dynamically generates the parameter. *Id.* (relying on Dr. Rubin Decl., Ex. 1002, ¶¶ 115–18). Patent Owner does not allege that Khazan works differently or not as asserted, but rather, that Petitioner’s assertions are conclusory and that the statements in the declaration should be ignored. Prelim. Resp. 23. These arguments are not persuasive. The evidence and arguments presented, at this time, show a reasonable likelihood of prevailing with respect to the challenge of unpatentability of claims 3 and 5.

We have reviewed further Petitioner’s assertions and support provided regarding the limitations recited in the challenged claims, but not addressed above. We determine that, at this juncture, Petitioner has shown a reasonable likelihood of prevailing in its contention that claims 1–5 would have been obvious over the combination of Khazan and Sirer.

#### C. GROUND BASED ON KHAZAN, SIRER, AND BEN-NATAN

Petitioner contends that the “modified input variable” recited in claims 6 and 10 is taught by Ben-Natan. *See, e.g.*, Pet. 48 (“Ben-Natan discloses ‘a modified input variable’ in the form of a ‘result data access statement.’”). Patent Owner challenges the combination with Ben-Natan on the basis that Ben-Natan is not analogous art and does not disclose the limitation. Prelim. Resp. 24–30.

*1. Overview of Ben-Natan (Ex. 1005)*

Ben-Natan is titled “System and methods for nonintrusive database security.” Ben-Natan describes “configurations of the invention [that] provide a nonintrusive data level security mechanism for intercepting database access streams.” Ex. 1005, 6:32–34. “Such an implementation deploys a security filter between the application and database, and observes, or ‘sniffs’ the stream of transactions between the application and the database.” *Id.* at 6:38–41. “If the ‘sniffed’ transactions indicate restricted data items, the security filter modifies the transaction to eliminate only the restricted data items, and otherwise allows the transaction to pass with the benign data items.” *Id.* at 6:50–54.

*2. Discussion*

Petitioner asserts that Khazan teaches an intercepted function (i.e., second function) but does not teach “a modified input variable.” Pet. 48. Petitioner relies on Ben-Natan teaching a limiter that modifies a data access statement if the statement provided by the user does not meet the security profile for the user. *Id.* (citing Ex. 1005, 13:43–67, 14:1–24). According to Petitioner, a person of ordinary skill in the art would “recognize that a data access statement as disclosed in Ben-Natan is merely a type of function with input parameters used in, for example, the SQL query language.” *Id.*

Patent Owner argues that Ben-Natan is non-analogous art. Prelim. Resp. 24–28. In particular, Patent Owner contends that “modifying SQL statements[] is not ‘reasonably pertinent’ to the problems faced by the inventors of the ’154 patent.” *Id.* at 26. Further, the problem and solution identified by Ben-Natan, according to Patent Owner, is to “overcome [] deficiencies . . . with respect to data level security in data management and

retrieval environments.” *Id.* In contrast, Patent Owner argues that the ’154 patent is concerned with protecting computers from dynamically generated viruses. *Id.*

Whether a reference is analogous art is an issue of fact that we resolve after an inquiry into the similarities of the problems and the closeness of the subject matter as viewed by a person of ordinary skill in the art. *Scientific Plastic Prods., Inc. v. Biotage AB*, 766 F.3d 1355, 1360 (Fed. Cir. 2014). At this time, the evidence of the viewpoint of a person of ordinary skill in the art with respect to the issue of analogous art is incomplete.<sup>4</sup> Although Patent Owner, in the Preliminary Response, has attempted to draw out distinctions between Ben-Natan and the ’154 patent, Petitioner has proffered evidence that Khazan and Ben-Natan have similarities and complementary techniques. *See* Ex. 1002 ¶ 122. Therefore, at this juncture, notwithstanding Patent Owner’s arguments on this issue, Petitioner has established a “reasonable likelihood” of prevailing.

Patent Owner also contends that Ben-Natan “never refers to a database query as a function.” Prelim. Resp. 28. Patent Owner further argues that Petitioner’s assertions are conclusory and that the statements in the declaration should be ignored. *Id.* at 29. These arguments are not persuasive. Petitioner has supported its assertion that Ben-Natan’s SQL command is a function because “[i]t instructs (commands) the database to perform some kind of operation and often includes inputs (parameters) and

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<sup>4</sup> We recognize that Patent Owner has not had an opportunity to cross-examine Petitioner’s declarant and introduce contrary evidence on the issue.

outputs.” Ex. 1002 ¶ 121 (cited in the Petition at 48). The current record does not show any contrary evidence.

We have reviewed the evidence and arguments presented in the Petition concerning the contention that claims 6–8, 10, and 11 would have been obvious over the combination of Khazan, Sirer, and Ben-Natan. We also have reviewed the information presented in the Preliminary Response. Arguments by Patent Owner against institution have been considered and deemed unpersuasive at this time. We determine that, on the current record, Petitioner has shown a reasonable likelihood of prevailing in the contention that claims 6–8, 10, and 11 would have been obvious as asserted in the Petition.

### III. CONCLUSION

For the foregoing reasons, we institute *inter partes* review of the '154 patent on all the asserted grounds and challenged claims, as follows:

<b>Reference[s]</b>	<b>Basis</b>	<b>Claims challenged</b>
Khazan and Sirer	§ 103	1–5
Khazan, Sirer, and Ben-Natan	§ 103	6–8, 10, and 11

The Board has not made a final determination on the patentability of any challenged claim.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that the Petition is *granted* as to claims 1–8, 10, and 11 of the '154 patent on the grounds stated in the Conclusion; and

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(a), *inter partes* review of the '154 patent is hereby instituted with trial commencing on the entry date of this decision, and pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of trial.



IPR2015-01979  
Patent 8,141,154 B2

PETITIONER:

Orion Armon (Lead Counsel)  
Christopher Max Colice (Back-up Counsel)  
Jennifer Volk (Back-up Counsel)  
Brian Eutermoser (Back-up Counsel)  
[oarmon@cooley.com](mailto:oarmon@cooley.com)  
[mcolice@cooley.com](mailto:mcolice@cooley.com)  
[jvolkfortier@cooley.com](mailto:jvolkfortier@cooley.com)  
[beutermoser@cooley.com](mailto:beutermoser@cooley.com)  
[zPaloAltoNetworksIPR@cooley.com](mailto:zPaloAltoNetworksIPR@cooley.com)

PATENT OWNER:

James Hannah (Lead Counsel)  
Jeffrey H. Price (Back-up Counsel)  
Michael Kim (Back-up Counsel)  
[jhannah@kramerlevin.com](mailto:jhannah@kramerlevin.com)  
[jprice@kramerlevin.com](mailto:jprice@kramerlevin.com)  
[mkim@finjan.com](mailto:mkim@finjan.com)

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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PALO ALTO NETWORKS, INC.,  
Petitioner,

v.

FINJAN, INC.,  
Patent Owner.

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Case IPR2016-00151  
Patent 8,141,154 B2

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Before THOMAS L. GIANNETTI, MIRIAM L. QUINN, and  
PATRICK M. BOUCHER, *Administrative Patent Judges*.

QUINN, *Administrative Patent Judge*.

DECISION

Partial Institution of *Inter Partes* Review; Motion for Joinder  
*37 C.F.R. § 42.108; 35 U.S.C. § 315(c)*

Palo Alto Networks, Inc. (“Petitioner”) filed a Petition to institute *inter partes* review of claims 1–12 of U.S. Patent No. 8,141,154 B2 (“the ’154 patent”) pursuant to 35 U.S.C. §§ 311–319. Paper 2 (“Pet.”). Petitioner also filed a Motion for Joinder (Paper 3, “Mot.”). Finjan, Inc. (“Patent Owner”) timely filed a Preliminary Response. Paper 8 (“Prelim. Resp.”). In its Preliminary Response, Patent Owner addresses Petitioner’s Motion for Joinder. *Id.* at 1. We have jurisdiction under 35 U.S.C. § 314.

For the reasons that follow, we *grant* the Petition as to claims 1–8, 10, and 11, and *deny* Petitioner’s Motion for Joinder.

## I. BACKGROUND

### A. RELATED MATTERS

Petitioner states that Patent Owner “has filed a patent infringement lawsuit against Petitioner, and similar actions against other Defendants.” Pet. 42. Those district court cases are identified as Case Nos.: 1-08-cv-00300-GMS (D. Del. May 21, 2008); 5:13-cv-03999-BLF (N.D. Cal. Aug. 28, 2013); 3-14-cv-04908-JSC (N.D. Cal. Nov. 4, 2014); 5-15-cv-03295-BLF (N.D. Cal. July 15, 2015). *Id.* Petitioner also states that petitions for *inter partes* review have been filed regarding other patents assigned to Patent Owner. *Id.*

### B. ASSERTED GROUNDS

Petitioner contends that claims 1–12 (“the challenged claims”) are unpatentable under 35 U.S.C. § 103 based on the following specific grounds:

Reference[s]	Basis	Claims challenged
Ross <sup>1</sup>	§ 103	1–8, 10, and 11
Ross and Calder <sup>2</sup>	§ 103	9 and 12

C. THE '154 PATENT (EX. 1001)

The '154 patent relates to computer security, and, more particularly, to systems and methods for protecting computers against malicious code such as computer viruses. Ex. 1001, 1:7–9, 8:38–40. The '154 patent identifies the components of one embodiment of the system as follows: a gateway computer, a client computer, and a security computer. *Id.* at 8:45–47. The gateway computer receives content from a network, such as the Internet, over a communication channel. *Id.* at 8:47–48. “Such content may be in the form of HTML pages, XML documents, Java applets and other such web content that is generally rendered by a web browser.” *Id.* at 8:48–51. A content modifier modifies original content received by the gateway computer and produces modified content that includes a layer of protection to combat dynamically generated malicious code. *Id.* at 9:13–16.

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<sup>1</sup> Patent Application Pub. No. US 2007/0113282 A1 (Exhibit 1003) (“Ross”).

<sup>2</sup> Patent Application Pub. No. US 2002/0066022 A1 (Exhibit 1004) (“Calder”).

#### D. ILLUSTRATIVE CLAIMS

Challenged claims 1, 4, 6, and 10 are independent, and illustrative claim 1 is reproduced below.

1. A system for protecting a computer from dynamically generated malicious content, comprising:

a content processor (i) for processing content received over a network, the content including a call to a first function, and the call including an input, and (ii) for invoking a second function with the input, only if a security computer indicates that such invocation is safe;

a transmitter for transmitting the input to the security computer for inspection, when the first function is invoked; and

a receiver for receiving an indicator from the security computer whether it is safe to invoke the second function with the input.

#### II. ANALYSIS

##### A. CLAIM INTERPRETATION

The Board interprets claims using the “broadest reasonable construction in light of the specification of the patent in which [they] appear[.]” 37 C.F.R. § 42.100(b). We presume that claim terms have their ordinary and customary meaning. *See In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007) (“The ordinary and customary meaning ‘is the meaning that the term would have to a person of ordinary skill in the art in question.’” (quoting *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed Cir. 2005) (en banc))).

Petitioner proposed a construction for one term: “dynamically generate[d].” *See* Pet. 8–9. Patent Owner responded that the term has a plain and ordinary meaning understood to a person of ordinary skill in the art, and that it needs no construction. Prelim. Resp. 8–10. We do not need

to construe a proposed term if the construction is not helpful in our determination of whether to institute trial. *See Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (only claim terms in controversy need to be construed, and only to the extent necessary to resolve the controversy). Because the construction of the term “dynamically generate[d]” is not germane to our determination whether to institute trial, we do not consider either of the parties’ arguments. Accordingly, we do not construe any claim terms at this time.

#### B. SECTION 325(D) AND MOTION FOR JOINDER

The instant Petition was filed with a Motion for Joinder, alleging similarities with the petition filed previously, by Symantec, in IPR2015-01547 (“the 1547 IPR”). Mot. 2. The Motion states that the grounds alleged in both petitions “use the same art and substantially the same arguments to invalidate the claims of the . . . ’154 patent.” *Id.* Patent Owner urges the Board to decline institution of *inter partes* review under 35 U.S.C. § 325(d), given the above-mentioned statement in Petitioner’s Motion. Prelim. Resp. 10–11. We do not agree with Patent Owner, and we decline to exercise our discretion and deny the Petition under § 325(d) for three reasons.

First, we find material differences in the arguments presented in the 1547 IPR and the Petition here. For example, we determined in the 1547 IPR that the petition there focused on web content being the “content received over a network,” whereas here, we consider a different contention—that web content *and* hook scripts are the recited “content.” Furthermore, the 1547 IPR petition proposed different grounds of challenge. Although Ross also was the centerpiece of the 1547 IPR, the Petitioner there contended Ross anticipated independent claims 1 and 4, with the same

evidence presented for independent claims 6 and 10. Here, the Petition asserts obviousness grounds for all the claims, with the accompanying analysis explaining Petitioner's reliance on multiple Ross embodiments. This analysis was not provided in the 1547 IPR.

Second, we denied the 1547 IPR Petition based on the failure to present and explain the information adequately, not on the failure of the prior art as a whole. For instance, we determined that the Petition failed to point out that Ross's web content received the recited "content received over a network": "Neither the Petition nor the Declaration of Mr. Davidson, at the cited paragraph 79, explains how Ross's data content received over a network also includes the hook functions alleged to be the recited 'first function,' which must be included in the content received over a network." Ex. 2005, 7 (citation omitted). We explained this further in our denial of the Request for Rehearing in the 1547 IPR. *See* 1547 IPR, Paper 11, 4 ("[W]e are not persuaded that we overlooked that Ross discloses 'processing content received over a network, the content including a call to a first function,' as alleged by [the 1547 IPR] Petitioner now on rehearing, because Petitioner's allegations were not presented adequately in the Petition."). Therefore, although Ross is asserted prior art in both petitions, the instant Petition provides analysis and contentions not presented adequately (or at all) in the 1547 IPR.

Third, the timing of filing the instant Petition weighs in favor of not exercising our discretion because Petitioner here filed its Petition before we issued the decision denying trial in the 1547 IPR.

Accordingly, although Petitioner has admitted to an overlap between the instant Petition and the 1547 IPR petition, we decline to exercise our discretion to deny institution under 35 U.S.C. § 325(d).

Furthermore, because we have denied the 1547 IPR, the Motion for Joinder is moot, and, therefore, is denied.

### C. GROUNDS BASED ON OBVIOUSNESS OVER ROSS

Petitioner asserts that Ross teaches or suggests all the limitations of claims 1–8, 10, and 11. Pet. 14–37. Petitioner further provides a Declaration of Dr. Aviel D. Rubin as support of its unpatentability contentions. Ex. 1002. Having reviewed the arguments and evidence provided by Petitioner and the information presented in the Preliminary Response, we determine that Petitioner has shown a reasonable likelihood of prevailing on its contentions.

#### *1. Overview of Ross (Exhibit 1003)*

Ross describes one embodiment where a device receives and processes “data content having at least one original function call [and it] includes a hook script generator and a script processing engine.” Ex. 1003 ¶ 10. One such device is depicted in Figure 2 of Ross, reproduced below.



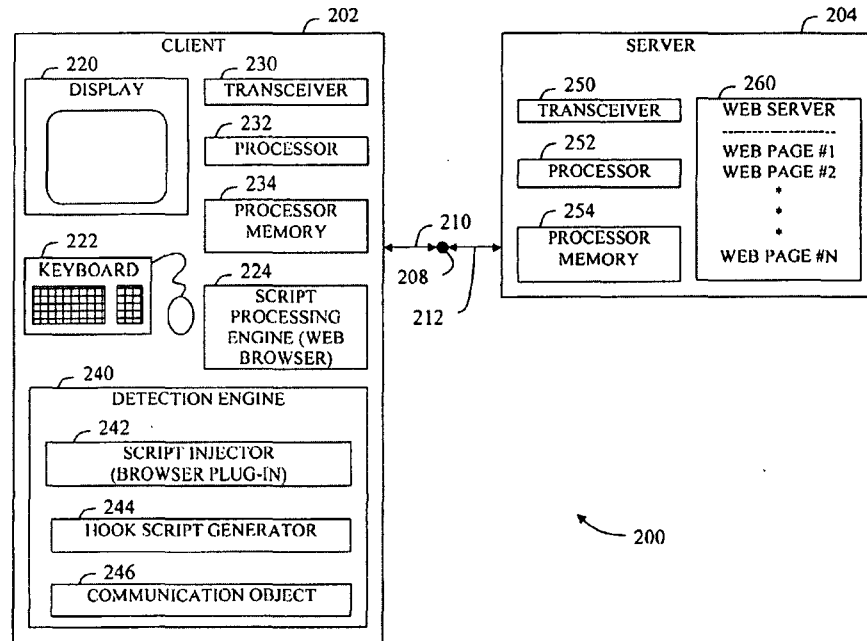


FIG 2

Figure 2 shows a client network device (client 202) and a server network device (server 204) communicating with each other over communication network 208 to exchange information, including web content. *Id.* ¶¶ 16, 23. Figure 2 depicts web browser 224 and detection engine 240 at the client, but in other embodiments, detection engine 240 may be physically located away from client 202. *Id.* ¶ 26. Detection engine 240 includes script injector 242 to intercept incoming data content and introduce the incoming data to script-processing engine 224. *Id.* “Hook script generator 244 creates new functions, including constructor functions, which replace the standard JavaScript functions.” *Id.*

## 2. Discussion

With regard to illustrative independent claim 1, Petitioner proffers evidence that Ross’s script processing engine 618 teaches the recited “content processor.” Pet. 15–16. Petitioner specifically contends that

Ross's script processing engine receives over a network *both* the web content and the hook script from the hook script generator. *Id.* The hook script includes hook functions that, according to Petitioner, include "a call to a first function," Ross thereby teaching that the content (hook script) includes the recited "call to a first function." *Id.* at 16–18. For the limitations regarding the security computer, Petitioner points to Ross's communication object relay 622 that communicates with decision service 624, which may be a "type of security computer." *Id.* at 18.

Patent Owner primarily challenges Petitioner's contentions with the argument that Ross's hook script is not the recited "content received over a network." Prelim. Resp. 15–19. We are not persuaded by this argument. We understand the Petition to allege that Ross's hook script is the recited "content" that is received over a network because Ross contemplates implementing some or all of detection engine 240 in an auxiliary device or a "network device." Pet. 16. Petitioner argues that "[i]t would have been obvious to a POSITA that if a script generator was situated on a device that is separate from a client device, the two devices could be connected by a network." *Id.* (citing Rubin Decl., Ex. 1002 ¶ 105). We understand Petitioner's contention to be predicated, therefore, on a teaching or suggestion of a networked script generator in Ross's alternative embodiment. Patent Owner's argument, however, does not address this specific networked script generator contention. *See, e.g.,* Prelim. Resp. 16 (arguing that "the client device" must include the script injector and hook script generator in order to gain protection). Accordingly, we find unpersuasive the argument that Ross limits its teachings to the hook script being at the client device, and, thus, not received from a network.

Patent Owner proffers additional arguments directed to the limitation of “content received over a network,” all of which we have considered and also found unpersuasive. Particularly, Patent Owner points out that Figures 2 and 6 of Ross illustrate that the hook script generator “generates a hook script while content . . . is received over the network.” *Id.* at 17 (emphasis omitted). Even if we were to interpret Ross’s Figures to disclose the timing of generating the hook script, as Patent Owner alleges, this argument would fail. That is because the claims are silent regarding the timing for creating the “call to a first function.” Therefore, Patent Owner’s arguments are not commensurate with the scope of the claim. Nor are we persuaded that Figures 2 and 6 of Ross illustrate that the hook script received by the script processing engine is not “content received over a network.”

Finally, we are not persuaded by Patent Owner’s argument that the Board has already decided, in the 1547 IPR, the issue of whether Ross teaches the limitation (*id.* at 17–18). As stated above in Section II.B, we denied institution in the 1547 IPR based on the failure of the petition to show how Ross’s *web content* discloses the disputed limitation. We did not address whether Ross’s hook script teaches or suggests the claim limitation, “content received over a network,” especially as we found that the 1547 IPR Petition did not make that contention adequately clear.

With regard to its challenges to independent claims 6 and 10, Petitioner identifies the same support as discussed for independent claim 1, and further that Ross’s filtered script behavior 634 teaches the recited “modified input variable” (Pet. 30–31, 35–36). In particular, the Petition states that “[t]he ‘filtered script behavior’ can include allowing the original function to be executed, disabling original functions that are determined to

be malicious, or modifying original functions.” *Id.* at 30 (citing Rubin Decl., Ex. 1002 ¶ 138). Patent Owner challenges this showing because Ross allegedly “only discloses modification of an original function, not modification of an input value.” Prelim. Resp. 19–20. We are not persuaded by this argument.

Patent Owner’s argument relies on a narrow view of Ross’s disclosure. Although Patent Owner points out Ross’s disclosure that “some portion of the original function may be preserved, while another portion may be modified,” Patent Owner does not explain how this passage forecloses a modification of the original function’s input. *Id.* at 20 (emphasis omitted). Petitioner has proffered testimony from Dr. Rubin that the one embodiment of Ross, describing modification of the location in a directory to write an output, teaches a person of ordinary skill in the art that one way to change the location is to modify the input to the original write function. *See* Pet. 31 (citing Ex. 1002 ¶ 139). Patent Owner’s argument characterizing as conclusory the statement in the Rubin Declaration is unpersuasive. *See* Prelim. Resp. 20–21. Ross’s description of modifying the write function appears to support the proffered testimony. *See* Ex. 1002 ¶ 139 (citing Ex. 1003, ¶ 38).

With regard to dependent claims 3, 5, 8, and 11, Petitioner asserts that Ross teaches “the input is dynamically generated” because it describes that Ross uses JavaScript at the script processing engine and that the engine receives as an input the HTTP data content. Pet. 23–24. Patent Owner takes issue with Petitioner’s argument because Ross is “completely silent regarding dynamically generated malicious content, including dynamically generated inputs.” Prelim. Resp. 21. Patent Owner also argues that neither

the JavaScript disclosure nor the statements in the Rubin Declaration show that Ross meets the “dynamically generated” limitation. We are not persuaded by either of Patent Owner’s arguments.

First, we are not persuaded by Patent Owner’s characterization of the JavaScript “late binding” as “only mean[ing] that the functions and arguments are identified by their names at run-time, not that a function input is dynamically generated at run-time.” Prelim. Resp. 22. The passage in Ross describing JavaScript’s “late binding” refers to it as “linking or calling of a process, routine, or object at runtime based on current conditions.” Ex. 1003 ¶ 25. This passage, thus, is not limited only to identifying functions and arguments, as Patent Owner alleges, but also refers to calling an object at runtime, based on current conditions. The passage further describes late binding for the possibility of replacing and modifying argument functions, and introduces JavaScript technology in describing that actual script method calls are detected, in an effort to detect potentially malicious script code. *Id.* Accordingly, we find Patent Owner’s arguments regarding Ross’s disclosure to be too narrow a characterization of its teachings. And because the Declaration of Dr. Rubin relies on the above-quoted passage (and others) of Ross, we do not find Dr. Rubin’s statements conclusory.

In summary, having reviewed the arguments and evidence of record, we are persuaded that Petitioner has shown a reasonable likelihood of prevailing in its contention that claims 1–8, 10, and 11 are unpatentable as obvious over Ross.

#### D. GROUND BASED ON ROSS AND CALDER

With regard to claims 9 and 12, Petitioner asserts that a recited limitation—“input variable includes a call to an additional function”—is not

expressly taught by Ross. Pet. 37. This limitation, Petitioner argues, is taught impliedly by the discussion in Ross of JavaScript or taught by Calder “through its discussion of executable memory pages.” *Id.* (citing Ex. 1002 ¶ 158).

*1. Overview of Calder (Ex. 1003)*

The distributed computing system described by Calder includes a pre-processing module that prepares a software package for execution on any number of client computers. Ex. 1004 ¶ 77, Fig. 1. Application package 115 is a modified software application adapted to each client computer 140. *Id.* Calder further describes that application package 115 is sent to server 120 after being processed by the pre-processor module 110. *Id.* ¶ 85. “The application package 115 is electronically transferred from a server 120, which can be an independently networked computer, across the network 130, and into any number of client computers 140.” *Id.* ¶ 78. Figure 4, reproduced below, depicts a virtualized execution environment.

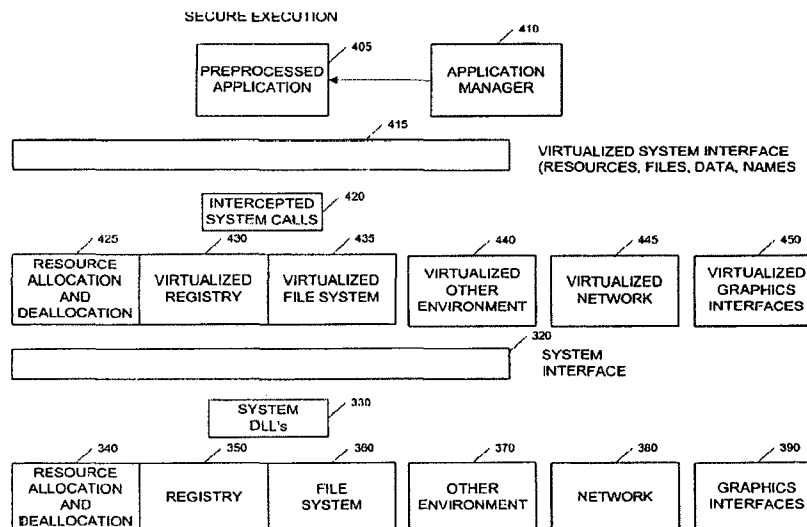


Figure 4 shows that system resources are controlled by using virtual layer 415 to intercept application programming interface (API) routines that utilize these resources. *Id.* ¶ 86. System calls made by application 405 are intercepted by an interception module, which is part of virtual layer 415. *Id.* ¶ 87.

To create application package 115, binaries are rewritten to remove improper sequences. *Id.* ¶ 93. Improper functions or sequences are defined by a predefined list. *Id.* ¶ 95. If no improper sequences are identified, the import table of binaries is rewritten to reference the interception module. *Id.* ¶ 97. An import table lists all of the dynamically linked libraries (DLLs) used by application 405. *Id.* ¶ 98. The process of initializing and patching the DLLs involves loading and running the DLL for the intercept module, which patches and intercepts all the DLL calls before any of the application package's code is executed. *Id.* ¶¶ 98, 104.

In addition to intercepting DLL calls, the interception module virtualizes a suite of network request routines in response to application 405 invoking the routines. *Id.* ¶ 122. The interception module also intercepts page modification routines. *Id.* ¶ 125. In particular, Calder describes that, in response to an invocation of a routine to modify certain page permissions, after the application identifies the pages, the interception module refuses to make code pages readable and writable. *Id.* ¶ 199. Then the interception module determines whether the application is requesting to make the pages executable. *Id.* If that is the case, the pages are checked for improper sequences and the improper sequences are rewritten to be intercepted. *Id.* ¶ 200.

## 2. Discussion

Patent Owner challenges Petitioner's assertions regarding claims 9 and 12 based on multiple arguments. Prelim. Resp. 23–27. Specifically, Patent Owner argues that Calder has not been shown to teach an input that itself includes a call to an additional function as in the '154 patent. *Id.* at 24. Patent Owner also argues that the Calder ground is not developed sufficiently to permit understanding of Petitioner's contention. *Id.* at 25–26. Finally, Patent Owner characterizes Dr. Rubin's testimony as conclusory. *Id.* at 27.

We are persuaded that Petitioner has not shown sufficiently that Ross impliedly teaches the limitation or that the combination of Ross and Calder teaches or suggests the limitation in claims 9 and 12. With regard to Ross's disclosure, we find insufficient Petitioner's assertion that the mere disclosure of JavaScript is sufficient to teach the limitation.

Further, as Patent Owner points out, the '154 patent discloses that a function call with an input variable that includes a call to another function is, in one example, provided by the following:

```
Document.write("<h1>Document.write  
("<h1><SCRIPT>Some JavaScript</SCRIPT>  
</h1>")</h1>")
```

Such a function call first calls `Document.write()` to generate the function call (3), and then calls `Document.write()` again to generate the JavaScript. If the inputs to each of the `Document.write()` invocations in (5) are themselves dynamically generated at run-time, then one pass through input inspector may not detect the JavaScript.

Ex. 1001, 12:28–42. Guided by this disclosure and the claim language, we understand claims 9 and 12 to require that the input variable of the first



function call, which is included in the content received from the network, must be, itself, a call to another function.

Calder describes that the improper page sequences are rewritten. *See* Ex. 1004 ¶ 200. Petitioner has not shown, however, that this rewriting of Calder involves an input variable of the permission modification request so that it includes a call to another function. That is, Calder is silent on, and Petitioner does not explain sufficiently, which and how the input variable in Calder's alleged memory page request is a call to another function.

Furthermore, having reviewed the Abstract, and paragraphs 5, 19, and 200, cited by Petitioner as support, we are not persuaded that these passages teach or suggest what Dr. Rubin concludes, that the input variable of the replacement call includes a call to a second function. *See* Pet. 40 (citing Ex. 1002 ¶ 162). Also, to the extent the binary code is rewritten as alleged by Petitioner in Calder's page permission embodiment, that rewriting has not been shown to occur during pre-processing. *See* Pet. 39 ("scanning the dynamically generated code . . . for code sequences that cause the computer to trap . . . and means for modifying the coded sequences such that the computer does not trap to the operating system"). Therefore, we find insufficient the proffered rationale of "incorporat[ing] the ability to handle inputs that call additional functions as disclosed in Calder to the system of Ross" (Pet. 37). Petitioner has failed to lay the foundation for this rationale. For example, Petitioner identifies Ross's hook script as the content that includes the first function call with the input, which is the result of Ross's hook script generator. We do not see adequate explanation in the record regarding what modification of Ross's hook script generator (or injector) would be needed to dynamically generate the input and rewrite the binary

(as done in Calder) in order to achieve the recursive function alleged to be the result of Calder.

As for the further limitation that the “modified input variable includes a call to a modified additional function instead of a call to the additional function,” the Petition is less clear how this is met by Calder and Ross. Petitioner relies on “rewriting DLLs loaded during program execution,” as teaching this limitation. Pet. 40. Again, there is insufficient explanation regarding Petitioner’s contention of how Calder’s interception of DLLs meets the limitation of the modified input variable including a call to a modified additional function. We find the Petition’s presentation of this challenge insufficient to meet Petitioner’s burden. *See* 37 C.F.R. §§ 42.22(a)(2), 42.104 (b)(4),(5).

Accordingly, we are not persuaded that Petitioner has shown sufficiently a reasonable likelihood of prevailing in its contention that claims 9 and 12 are unpatentable as obvious over Ross and Calder.

### III. CONCLUSION

For the foregoing reasons, we institute *inter partes* review of claims 1–8, 10, and 11 of the ’154 patent on the ground of obviousness over Ross under 35 U.S.C. § 103. We do not institute *inter partes* review of claims 9 and 12 of the ’154 patent on the ground of obviousness over Ross and Calder.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that the Petition is *granted* as to claims 1–8, 10, and 11 of the '154 patent on the ground stated in the Conclusion;

FURTHER ORDERED that Petitioner's Motion for Joinder is *denied*;  
and

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(a), *inter partes* review of the '154 patent is hereby instituted with trial commencing on the entry date of this decision, and pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of trial.

IPR2016-00151  
Patent 8,141,154 B2

PETITIONER:

Matthew I. Kreeger  
Jonathan Bockman  
Shouvik Biswas  
MORRISON & FOERSTER LLP  
MKreeger@mofocom  
FinjanPANMofocom  
FinjanPANMofocom

PATENT OWNER:

James Hannah  
Jeffrey H. Price  
Michael Kim  
KRAMER LEVIN NAFTALIS & FRANKEL LLP  
jhannah@kramerlevin.com  
jprice@kramerlevin.com  
mkim@finjan.com

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

---

PROOFPOINT, INC., and AMORIZE TECHNOLOGIES, INC.,  
Petitioner,

v.

FINJAN, INC.,  
Patent Owner.

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Case IPR2016-00937 (Patent 8,141,154 B2)  
Case IPR2016-00966 (Patent 7,647,633 B2)  
Case IPR2016-00967 (Patent 8,225,408 B2)  
Case IPR2016-00970 (Patent 8,225,408 B2)

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Before THOMAS L GIANNETTI, MIRIAM L. QUINN, and  
PATRICK M. BOUCHER, *Administrative Patent Judges*.

QUINN, *Administrative Patent Judge*.

JUDGMENT  
Termination of Proceeding  
37 C.F.R. § 42.72

IPR2016-00937 (Patent 8,141,154 B2)  
IPR2016-00966 (Patent 7,647,633 B2)  
IPR2016-00967 (Patent 8,225,408 B2)  
IPR2016-00970 (Patent 8,225,408 B2)

On June 16, 2016, the parties filed a joint motion to terminate each of the instant proceedings pursuant to a settlement agreement. Paper 8.<sup>1</sup> The parties also filed a true copy of their written settlement agreement, made in connection with the termination of the instant proceedings, in accordance with 35 U.S.C. § 317(b) and 37 C.F.R. § 42.74(b). Exhibit 1041. Additionally, the parties submitted a joint request to have their settlement agreement treated as confidential business information under 35 U.S.C. § 317(b) and 37 C.F.R. § 42.74(c). Paper 9.

The instant proceedings are in the preliminary stage. The Board has not decided whether trial will be instituted or whether the pending motions for joinder will be granted. Further, the deadline to file a patent owner response is almost a month away. The parties submit that termination is appropriate because the parties have settled their dispute, and the Board has not reached the merits of the proceedings. Paper 8, 2 and n.2.

Upon consideration of the requests before us, we determine that terminating the instant proceedings with respect to both Petitioner and Patent Owner, at this early juncture, promotes efficiency, conserves Board resources, and minimizes unnecessary costs. Based on the present facts and circumstances, it is appropriate to enter judgment.<sup>2</sup> See 35 U.S.C. § 317(a); 37 C.F.R. § 42.72.

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<sup>1</sup> We refer throughout this order to the papers filed in IPR2016-00937, as the filings are identical in all of the captioned proceedings.

<sup>2</sup> A *judgment* means a final written decision by the Board, or a *termination of a proceeding*. 37 C.F.R. § 42.2.

IPR2016-00937 (Patent 8,141,154 B2)  
IPR2016-00966 (Patent 7,647,633 B2)  
IPR2016-00967 (Patent 8,225,408 B2)  
IPR2016-00970 (Patent 8,225,408 B2)

Accordingly, it is:

ORDERED that the joint motions to terminate IPR2016-00937, IPR2016-00966, IPR2016-00967, and IPR2016-00970 are *granted*;

FURTHER ORDERED that the instant proceedings are hereby *terminated* as to all parties, including Petitioner and Patent Owner; and

FURTHER ORDERED that the parties' joint request that the settlement agreement be treated as business confidential information, kept separate from the patent file, and made available only to Federal Government agencies on written request, or to any person on a showing of good cause, pursuant to 35 U.S.C. § 317(b) and 37 C.F.R. § 42.74(c), is *granted*.

IPR2016-00937 (Patent 8,141,154 B2)  
IPR2016-00966 (Patent 7,647,633 B2)  
IPR2016-00967 (Patent 8,225,408 B2)  
IPR2016-00970 (Patent 8,225,408 B2)

PETITIONER:

Joseph J. Richetti

Kevin Paganini

[Joe.richetti@bryancave.com](mailto:Joe.richetti@bryancave.com)

[IPR2016-00966@bryancave.com](mailto:IPR2016-00966@bryancave.com)

[IPR2016-00967@bryancave.com](mailto:IPR2016-00967@bryancave.com)

[IPR2016-00970@bryancave.com](mailto:IPR2016-00970@bryancave.com)

[Kevin.paganini@bryancave.com](mailto:Kevin.paganini@bryancave.com)

[PTAB-NY@bryancave.com](mailto:PTAB-NY@bryancave.com)

PATENT OWNER:

James Hannah

Michael Lee

Jeffrey H. Price

Shannon Hedvat

[jhannah@kramerlevin.com](mailto:jhannah@kramerlevin.com)

[mhlee@kramerlevin.com](mailto:mhlee@kramerlevin.com)

[jprice@kramerlevin.com](mailto:jprice@kramerlevin.com)

[shedvat@kramerlevin.com](mailto:shedvat@kramerlevin.com)

Michael Kim

[mkim@finjan.com](mailto:mkim@finjan.com)



UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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SYMANTEC CORP.,  
Petitioner,

v.

FINJAN, INC.,  
Patent Owner.

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Case IPR2016-00919  
Patent 8,141,154 B2

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Before THOMAS L. GIANNETTI, MIRIAM L. QUINN, and  
PATRICK M. BOUCHER *Administrative Patent Judges*.

QUINN, *Administrative Patent Judge*.

DECISION

Institution of *Inter Partes* Review and Grant of Motion for Joinder  
*37 C.F.R. § 42.108*  
*37 C.F.R. § 42.122(b)*

## I. INTRODUCTION

Symantec Corp. (“Petitioner” or “Symantec”) filed a Petition (Paper 3, “Pet.”) requesting an *inter partes* review of claims 1–8, 10, and 11 (“the challenged claims”) of U.S. Patent No. 8,141,154 B2 (Ex. 1001, “the ’154 patent”), and concurrently filed a Motion for Joinder (Paper 2, “Mot.”). The Motion for Joinder seeks to join this proceeding with *Palo Alto Networks, Inc. v. Finjan, Inc.*, Case IPR2015-01979 (“the PAN IPR”). Mot. 1. Patent Owner filed a waiver of the Preliminary Response, and does not oppose the Motion for Joinder. Paper 8. For the reasons described below, we institute an *inter partes* review of claims 1–8, 10, and 11 of the ’154 patent, and grant Petitioner’s Motion for Joinder.

## II. INSTITUTION OF *INTER PARTES* REVIEW

On March 21, 2016, we instituted a trial in IPR2015-01979 on the following alleged grounds of unpatentability based on obviousness:

- 1) Claims 1–5 over Khazan<sup>1</sup> and Sirer<sup>2</sup>; and
- 2) Claims 6–8, 10, and 11 over Khazan, Sirer, and Ben-Natan.<sup>3</sup>

PAN IPR, slip. op. at 15 (PTAB March 29, 2016) (Paper 8). Upon review of the Petition here, we note that the Petition is substantially identical to the Petition in the PAN IPR. The Petition in this proceeding asserts the same grounds as those on which we instituted review in the PAN IPR. Pet. 1, 4–5. Petitioner further relies on the same declaration of Dr. Aviel Rubin, and

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<sup>1</sup> Patent Application Pub. No. US 2005/0108562 A1 (“Khazan”).

<sup>2</sup> Sirer et al., *Design and Implementation of a Distributed Virtual machine for Networked Computers* (1999) (“Sirer”).

<sup>3</sup> U.S. Patent No. 7,437,362 B1 (“Ben-Natan”).

same arguments and supporting evidence presented in the PAN IPR. Pet. 4;  
Mot. 3.

In view of the identity of the challenge in the instant Petition and in the petition in the PAN IPR, and in light of Patent Owner's waiver of its Preliminary Response, we institute *inter partes* review in this proceeding on the same grounds, and for the same reasons, regarding claims 1–8, 10, and 11, on which we instituted *inter partes* review in the PAN IPR.

### III. GRANT OF MOTION FOR JOINDER

Joinder in *inter partes* review is subject to the provisions of 35 U.S.C. § 315(c):

(c) JOINDER.—If the Director institutes an *inter partes* review, the Director, in his or her discretion, may join as a party to that *inter partes* review any person who properly files a petition under section 311 that the Director, after receiving a preliminary response under section 313 or the expiration of the time for filing such a response, determines warrants the institution of an *inter partes* review under section 314.

As the moving party, Petitioner bears the burden of proving that it is entitled to the requested relief. 37 C.F.R. § 42.20(c). A motion for joinder should: (1) set forth the reasons joinder is appropriate; (2) identify any new grounds of unpatentability asserted in the petition; and (3) explain what impact (if any) joinder would have on the trial schedule for the existing review. See Frequently Asked Question H5, <https://www.uspto.gov/patents-application-process/patent-trial-and-appeal-board/ptab-e2e-frequently-asked-questions>.

Petitioner asserts it has grounds for standing because, in accordance with 35 U.S.C. § 315(c), Petitioner filed a motion for joinder concurrently with the Petition and not later than one month after institution of the PAN

IPR2016-00919  
Patent No. 8,141,154 B2

IPR. Mot. 1. Patent Owner does not oppose Petitioner's motion for joinder. Paper 8. We find that the Motion is timely.

We also find that Petitioner has met its burden of showing that joinder is appropriate. The Petition here is substantially identical to the Petition in the PAN IPR. Mot. 3–4. The evidence also is identical, including the reliance on the same declaration of Dr. Aviel Rubin. *Id.*

Petitioner further has shown that the trial schedule will not be affected by joinder. Mot. 4–5. No changes in the schedule are anticipated or necessary, and the limited participation, if at all, of Petitioner will not impact the timeline of the ongoing trial. We limit Petitioner's participation in the joined proceeding such that Petitioner shall require prior authorization from the Board before filing *any* further paper. This arrangement promotes the just and efficient administration of the ongoing trial and the interests of Petitioner and Patent Owner.

#### IV. ORDER

In view of the foregoing, it is

ORDERED that IPR2016-00919 is hereby instituted as to claims 1–8, 10, and 11 on the following grounds:

- (1) claims 1–5 as unpatentable under 35 U.S.C. § 103(a) over Khazan and Sirer; and
- (2) claims 6–8, 10, and 11 as unpatentable under 35 U.S.C. § 103(a) over Khazan, Sirer, and Ben-Natan;

IPR2016-00919  
Patent No. 8,141,154 B2

FURTHER ORDERED that Petitioner's Motion for Joinder with IPR2015-01979 is *granted*;

FURTHER ORDERED that the grounds on which trial in IPR2015-01979 was instituted are unchanged and no other grounds are included in the joined proceeding;

FURTHER ORDERED that the Scheduling Order entered in IPR2015-01979 (Paper 9) and schedule changes agreed-to by the parties in IPR2015-01979 (pursuant to the Scheduling Order) shall govern the schedule of the joined proceeding;

FURTHER ORDERED that, throughout the joined proceeding, all filings in IPR2015-01979 will be consolidated and no filing by Petitioner Symantec alone will be allowed without prior authorization by the Board;

FURTHER ORDERED that a copy of this Decision will be entered into the record of IPR2015-01979;

FURTHER ORDERED that IPR2016-00919 is terminated under 37 C.F.R. § 42.72 and all further filings in the joined proceeding are to be made in IPR2015-01979; and

FURTHER ORDERED that the case caption in IPR2015-01979 shall be changed to reflect joinder with this proceeding in accordance with the attached example.

IPR2016-00919  
Patent No. 8,141,154 B2

PETITIONER:

Nathaniel A. Hamstra (Lead Counsel)  
[nathanhamstra@quinnemanuel.com](mailto:nathanhamstra@quinnemanuel.com)

PETITIONER in PAN IPR:

Orion Armon (Lead Counsel)  
Max Colice (Back-up Counsel)  
Jennifer Volk (Back-up Counsel)  
Brian Eutermoser (Back-up Counsel)  
[oarmon@cooley.com](mailto:oarmon@cooley.com)  
[mcolice@cooley.com](mailto:mcolice@cooley.com)  
[jvolkfortier@cooley.com](mailto:jvolkfortier@cooley.com)  
[beutermoser@cooley.com](mailto:beutermoser@cooley.com)

PATENT OWNER:

James Hannah (Lead Counsel)  
Jeffrey H. Price (Back-up Counsel)  
Michael Lee (Back Up Counsel)  
Shannon Hedvat (Back Up Counsel)  
Michael Kim (Back-up Counsel)  
[jhannah@kramerlevin.com](mailto:jhannah@kramerlevin.com)  
[jprice@kramerlevin.com](mailto:jprice@kramerlevin.com)  
[mhlee@kramerlevin.com](mailto:mhlee@kramerlevin.com)  
[shedvat@kramerlevin.com](mailto:shedvat@kramerlevin.com)  
[mkim@finjan.com](mailto:mkim@finjan.com)

*Example Case Caption for Joined Proceeding*

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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PALO ALTO NETWORKS, INC.,  
Petitioner,

v.

FINJAN, INC.,  
Patent Owner.

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Case IPR2015-01979<sup>1</sup>  
Patent 8,141,154 B2

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<sup>1</sup> Case IPR2016-00919 has been joined with this proceeding.

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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SYMANTEC CORP.,  
Petitioner,

v.

FINJAN, INC.,  
Patent Owner.

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Case IPR2016-01071  
Patent 8,141,154 B2

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Before THOMAS L. GIANNETTI, MIRIAM L. QUINN, and  
PATRICK M. BOUCHER *Administrative Patent Judges.*

QUINN, *Administrative Patent Judge.*

DECISION

Institution of *Inter Partes* Review and Grant of Motion for Joinder  
*37 C.F.R. § 42.108*  
*37 C.F.R. § 42.122(b)*



## I. INTRODUCTION

Symantec Corp. (“Petitioner” or “Symantec”) filed a Petition (Paper 1, “Pet.”) requesting an *inter partes* review of claims 1–8, 10, and 11 (“the challenged claims”) of U.S. Patent No. 8,141,154 B2 (Ex. 1001, “the ’154 patent”), and concurrently filed a Motion for Joinder (Paper 3, “Mot.”). The Motion for Joinder seeks to join this proceeding with *Palo Alto Networks, Inc. v. Finjan, Inc.*, Case IPR2016-00151 (“the PAN IPR”). Mot. 1. Patent Owner filed a waiver of the Preliminary Response, and does not oppose the Motion for Joinder. Paper 10. For the reasons described below, we institute an *inter partes* review of claims 1–8, 10, and 11 of the ’154 patent, and grant Petitioner’s Motion for Joinder.

## II. INSTITUTION OF *INTER PARTES* REVIEW

On April 20, 2016, we instituted a trial in IPR2016-00151 for claims 1–8, 10, and 11 of the ’154 patent based on one ground of obviousness over Ross.<sup>1</sup> PAN IPR, slip. op. at 17–18 (PTAB April 20, 2016) (Paper 10). Upon review of the Petition here, we note that the Petition is substantially identical to the Petition in the PAN IPR. The Petition in this proceeding asserts the same grounds as those on which we instituted review in the PAN IPR. Pet. 1–2; Mot. 2. Petitioner further relies on the same declaration of Dr. Aviel Rubin, and same arguments and supporting evidence presented in the PAN IPR. Pet. 14–37; Mot. 4.

In view of the identity of the challenge in the instant Petition and in the petition in the PAN IPR, and in light of Patent Owner’s waiver of its

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<sup>1</sup> Patent Application Pub. No. US 2007/0113282 (“Ross”).

Preliminary Response, we institute *inter partes* review in this proceeding on the same grounds, and for the same reasons, regarding claims 1–8, 10, and 11, on which we instituted *inter partes* review in the PAN IPR.

### III. GRANT OF MOTION FOR JOINDER

Joinder in *inter partes* review is subject to the provisions of 35 U.S.C. § 315(c):

(c) JOINDER.—If the Director institutes an *inter partes* review, the Director, in his or her discretion, may join as a party to that *inter partes* review any person who properly files a petition under section 311 that the Director, after receiving a preliminary response under section 313 or the expiration of the time for filing such a response, determines warrants the institution of an *inter partes* review under section 314.

As the moving party, Petitioner bears the burden of proving that it is entitled to the requested relief. 37 C.F.R. § 42.20(c). A motion for joinder should: (1) set forth the reasons joinder is appropriate; (2) identify any new grounds of unpatentability asserted in the petition; and (3) explain what impact (if any) joinder would have on the trial schedule for the existing review. See Frequently Asked Question H5, <https://www.uspto.gov/patents-application-process/patent-trial-and-appeal-board/ptab-e2e-frequently-asked-questions>.

Petitioner asserts it has grounds for standing because, in accordance with 35 U.S.C. § 315(c), Petitioner filed a motion for joinder concurrently with the Petition and not later than one month after institution of the PAN IPR. Mot. 1. Patent Owner does not oppose Petitioner's motion for joinder. Paper 8. We find that the Motion is timely.

We also find that Petitioner has met its burden of showing that joinder is appropriate. The Petition here is substantially identical to the Petition in

IPR2016-01071  
Patent No. 8,141,154 B2

the PAN IPR. Mot. 3–4. The evidence also is identical, including the reliance on the same declaration of Dr. Aviel Rubin. *Id.*

Petitioner further has shown that the trial schedule will not be affected by joinder. Mot. 5. No changes in the schedule are anticipated or necessary, and the limited participation, if at all, of Petitioner will not impact the timeline of the ongoing trial. We limit Petitioner’s participation in the joined proceeding such that Petitioner shall require prior authorization from the Board before filing *any* further paper. This arrangement promotes the just and efficient administration of the ongoing trial and the interests of Petitioner and Patent Owner.

#### IV. ORDER

In view of the foregoing, it is

ORDERED that IPR2016-01071 is hereby instituted as to claims 1–8, 10, and 11 as unpatentable under 35 U.S.C. § 103(a) over *Ross*;

FURTHER ORDERED that Petitioner’s Motion for Joinder with IPR2016-00151 is *granted*;

FURTHER ORDERED that the ground on which trial in IPR2016-00151 was instituted is unchanged and no other grounds are included in the joined proceeding;

FURTHER ORDERED that the Scheduling Order entered in IPR2016-00151 (Paper 11) and schedule changes agreed-to by the parties in IPR2016-00151 (pursuant to the Scheduling Order) shall govern the schedule of the joined proceeding;

FURTHER ORDERED that, throughout the joined proceeding, all filings in IPR2016-00151 will be consolidated and no filing by Petitioner Symantec alone will be allowed without prior authorization by the Board;

IPR2016-01071  
Patent No. 8,141,154 B2

FURTHER ORDERED that a copy of this Decision will be entered into the record of IPR2016-00151;

FURTHER ORDERED that IPR2016-01071 is terminated under 37 C.F.R. § 42.72 and all further filings in the joined proceeding are to be made in IPR2016-00151; and

FURTHER ORDERED that the case caption in IPR2016-00151 shall be changed to reflect joinder with this proceeding in accordance with the attached example.

IPR2016-01071  
Patent No. 8,141,154 B2

PETITIONER:

Nathaniel A. Hamstra (Lead Counsel)  
[nathanhamstra@quinnemanuel.com](mailto:nathanhamstra@quinnemanuel.com)

PETITIONER in PAN IPR:

Matthew I. Kreeger (Lead Counsel)  
Jonathan Bockman (Back-up Counsel)  
Shouvik Biswas (Back-up Counsel)  
[mkreeger@mofocom](mailto:mkreeger@mofocom)  
[JBockman@mofocom](mailto:JBockman@mofocom)  
[SBiswas@mofocom](mailto:SBiswas@mofocom)  
[FinjanPANMofoteam@mofocom](mailto:FinjanPANMofoteam@mofocom)

PATENT OWNER:

James Hannah (Lead Counsel)  
Jeffrey H. Price (Back-up Counsel)  
Michael Lee (Back Up Counsel)  
Shannon Hedvat (Back Up Counsel)  
Michael Kim (Back-up Counsel)  
[jhannah@kramerlevin.com](mailto:jhannah@kramerlevin.com)  
[jprice@kramerlevin.com](mailto:jprice@kramerlevin.com)  
[mhlee@kramerlevin.com](mailto:mhlee@kramerlevin.com)  
[shedvat@kramerlevin.com](mailto:shedvat@kramerlevin.com)  
[mkim@finjan.com](mailto:mkim@finjan.com)

*Example Case Caption for Joined Proceeding*

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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PALO ALTO NETWORKS, INC.,  
Petitioner,

v.

FINJAN, INC.,  
Patent Owner.

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Case IPR2016-00151<sup>1</sup>  
Patent 8,141,154 B2

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<sup>1</sup> Case IPR2016-01071 has been joined with this proceeding.

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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PALO ALTO NETWORKS, INC. and SYMANTEC CORP.,  
Petitioner,

v.

FINJAN, INC.,  
Patent Owner.

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Case IPR2016-00151<sup>1</sup>  
Patent 8,141,154 B2

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Before, THOMAS L. GIANNETTI, MIRIAM L. QUINN, and  
PATRICK M. BOUCHER, *Administrative Patent Judges*.

QUINN, *Administrative Patent Judge*.

FINAL WRITTEN DECISION  
*35 U.S.C. § 318(a) and 37 C.F.R. § 42.73*

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<sup>1</sup> This case is joined with IPR2016-01071. Paper 21 (“Decision on Institution of *Inter Partes* Review and Grant of Motion for Joinder,” filed by Symantec Corp.).

Palo Alto Networks, Inc. and Symantec Corp. (collectively “Petitioner”) each have filed petitions to institute *inter partes* review of claims 1–12 of U.S. Patent No. 8,141,154 B2 (“the ’154 patent”) pursuant to 35 U.S.C. § 311–319. Paper 2 (“Pet.”); IPR2016-01071, Paper 1. In response to the petition filed by Palo Alto Networks, Inc. (Paper 2), Finjan, Inc. (“Patent Owner”) filed a Preliminary Response. Paper 8 (“Prelim. Resp.”). Upon consideration of the Petition and the Preliminary Response, we instituted trial as to challenged claims, 1–8, 10 and 11. Paper 10 (“Dec.”).

Subsequently, we reviewed and granted Symantec Corp.’s petition, which sought review of the same claims of the ’154 patent. IPR2016-01071, Paper 1. With its petition, Symantec Corp. filed a motion requesting to join IPR2016-01071 with this proceeding, and we granted the motion. Paper 21. Upon granting the motion, we terminated Case IPR2016-01071, and ordered consolidation of all Petitioner filings in this proceeding. *Id.* at 4–5.

During trial, Patent Owner filed a Patent Owner Response (Paper 19, “PO Resp.”); and Petitioner filed a Reply (Paper 32, “Reply”). Patent Owner also filed a Motion for Observations of the December 20, 2016, cross-examination of Petitioner’s declarant, Dr. Aviel Rubin. Paper 40. Petitioner responded to Patent Owner’s Motion for Observations. Paper 43. Both parties also filed Motions to Exclude. Paper 38 (“Pet. Mot. to Exclude”); Paper 39 (“PO Mot. to Exclude”). Both parties filed Oppositions and Replies concerning the Motions to Exclude. Papers 42, 44, 45, 46. An oral hearing was held on January 24, 2017.<sup>2</sup>

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<sup>2</sup> A transcript of the oral hearing is entered in the record as Paper 49 (“Tr.”).



We have jurisdiction under 35 U.S.C. § 6(c). This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a). For the reasons discussed herein, and in view of the record in this trial, we determine that Petitioner has not shown by a preponderance of the evidence that claims 1–8, 10, and 11 of the '154 patent are unpatentable.

## I. BACKGROUND

### A. RELATED MATTERS

Petitioner identifies the '154 patent as the subject of various district court cases filed in the U.S. District Court for the Northern District of California and District of Delaware. Pet. 42. Petitioner also states that petitions for *inter partes* review have been filed regarding other related patents. *Id.* The '154 patent is also the subject of another *inter partes* review: IPR2015-01979 (and IPR2016-00919, joined therewith). In IPR2015-01979, we issue a Final Written Decision, under 35 U.S.C. § 318 (a), concurrently with the instant Final Written Decision.

### B. FINAL WRITTEN DECISION IN IPR2015-01979

The parties have briefed whether estoppel under 35 U.S.C. § 315 (e)(1) affects our ability to render a Final Written Decision in this proceeding. *See* Papers 30, 31. As stated above, IPR2015-01979 is also directed to the '154 patent, and considers the same claims challenged in the instant proceeding. Because we issue final written decisions in both proceedings concurrently, we need not decide what effect, if any, the estoppel provisions of § 315 (e)(1) have on our ability to render this decision.

### C. INSTITUTED GROUNDS

We instituted *inter partes* review of claims 1–8, 10, and 11 (“the challenged claims”) based on Petitioner’s challenge of those claims as unpatentable under 35 U.S.C. § 103(a) over Ross.<sup>3</sup> Petitioner supports its contentions of unpatentability with a declaration from Dr. Aviel Rubin. Ex. 1002 (“Rubin Declaration”). Patent Owner proffers a declaration from Dr. Nenad Medvidovic as evidence in support for its contentions. Ex. 2035 (“Medvidovic Declaration”). The cross-examinations of Dr. Rubin and Dr. Medvidovic are in the record as Exhibits 2012 and 1011, respectively.

### D. THE ’154 PATENT (EX. 1001)

The ’154 patent relates to computer security and, more particularly, to systems and methods for protecting computers against malicious code such as computer viruses. Ex. 1001, 1:7–9, 8:38–40. The ’154 patent identifies the components of one embodiment of the system as follows: a gateway computer, a client computer, and a security computer. *Id.* at 8:45–47. The gateway computer receives content from a network, such as the Internet, over a communication channel. *Id.* at 8:47–48. “Such content may be in the form of HTML pages, XML documents, Java applets and other such web content that is generally rendered by a web browser.” *Id.* at 8:48–51. A content modifier modifies original content received by the gateway computer and produces modified content that includes a layer of protection to combat dynamically generated malicious code. *Id.* at 9:13–16.

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<sup>3</sup> Patent Application Pub. No. US 2007/0113282 A1 (Exhibit 1003) (“Ross”).

### E. ILLUSTRATIVE CLAIM

Challenged claims 1, 4, 6, and 10 are independent, and illustrative claim 1 is reproduced below.

1. A system for protecting a computer from dynamically generated malicious content, comprising:

a content processor (i) for processing content received over a network, the content including a call to a first function, and the call including an input, and (ii) for invoking a second function with the input, only if a security computer indicates that such invocation is safe;

a transmitter for transmitting the input to the security computer for inspection, when the first function is invoked; and

a receiver for receiving an indicator from the security computer whether it is safe to invoke the second function with the input.

## II. ANALYSIS

### A. CLAIM INTERPRETATION

In an *inter partes* review, claim terms in an unexpired patent are interpreted according to their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2142–46 (2016). Consistent with that standard, claim terms also are given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *See In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). There are, however, two exceptions to that rule: “1) when a patentee sets out a definition and acts as his own lexicographer,” and “2) when the patentee disavows the full scope of a claim

term either in the specification or during prosecution.” *See Thorner v. Sony Computer Entm’t Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012).

If an inventor acts as his or her own lexicographer, the definition must be set forth in the specification with reasonable clarity, deliberateness, and precision. *Renishaw PLC v. Marposs Societa’ per Azioni*, 158 F.3d 1243, 1249 (Fed. Cir. 1998). Although it is improper to read a limitation from the specification into the claims, *In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993), claims still must be read in view of the specification of which they are a part. *Microsoft Corp. v. Multi-Tech Sys., Inc.*, 357 F.3d 1340, 1347 (Fed. Cir. 2004).

In our Decision on Institution, we did not construe expressly any claim terms. Dec. 4–5. In its papers, Patent Owner argues distinctions from the prior art that hinge on whether the term “call to a first function” is different from “invoking” the first function. PO Resp. 22–23 (“Ross teaches a technique in which received content does not include a call to a first function. In contrast, Ross’ technique involves *invoking* a hook function . . . without the content including a call to the hook function.” (emphasis in original)).

*“call to a first function”*

The term “call to a first function” is recited in all challenged claims. The arguments presented regarding this limitation turn on the scope of the word “call.” Specifically, Patent Owner argues that Ross may invoke the “first function,” but Petitioner has not identified that Ross’s content includes a “call to a first function,” as required by the claims. *Id.* at 20–21. At issue is to what extent the recited “call” refers to execution of the function. Dr. Medvidovic, Patent Owner’s expert, proffers opinions on the issue by

relying on a definition of “function call” derived from the Microsoft Press Computer Dictionary. Ex. 2035 ¶ 57 (citing Ex. 2013). That Dictionary provides that a “function call” is “[a] program’s request for the services of a particular function.” *Id.*; Ex. 2013. It also explains that “[a] function call is coded as the name of the function along with any parameters needed for the function to perform its task.” *Id.*

The Specification of the ’154 patent does not define the term “call to a first function.” But the Specification uses the phrase “function call” in stating that “before the client computer invokes a function call that may potentially dynamically generate malicious code, the client computer passes the input to the function to the security computer for inspection.” Ex. 1001, 4:38–42. The Specification also states that “the present invention operates by replacing original function calls with substitute function calls within the content, at a gateway computer, prior to the content being received at the client computer.” *Id.* at 4:57–60. From such examples, we understand the Specification to use the phrase “function call” in the same sense that the claims recite in the phrase “call to a [] function.” That is, a “call” is part of the recited “content,” as a statement or instruction containing the function that, when executed, causes the function to provide a service. Thus, we find the dictionary definition of the term “function call” applicable here and indicative of the meaning of the term to a person of ordinary skill in the art.

Furthermore, the dictionary definition is consistent with the embodiments described in the Specification. For example, one embodiment of the ’154 patent provides for modifying an original function call with “corresponding function calls `Substitute_function(input,*)`.” *Id.* at 9:21–24. That is, the specification describes that the services of the function

Substitute\_function are being requested by the modified content. Furthermore, the format of the function in this particular embodiment identifies the name of the function and the parameters “input” and “\*”. *See also id.* at 9:26–28 (explaining that the “input intended for the original function is also passed to the substitute function, along with possible additional input denoted by “\*”). From this description we determine that the “call” is a statement or instruction in the content, the execution of which causes the function to provide a service.

We note that this construction of “call to a first function” need not define the format of the instruction or statement, or further detail regarding its parameters. We reach this determination because the claim language itself requires that either the call or the function include an input. For example, claim 1 recites the “call including an input,” while claim 6 recites “the first function including an input variable.”

Petitioner argues that a call to a function and invoking a function are equivalent. Tr. 26:2–12. Dr. Rubin further testifies that a call is “when a function is invoked.” Ex. 2038, 74:9–11; *see also* 74:18–75:4 (testifying also that invoking the function name, transferring execution to the code in that function is a call). We do not agree with Petitioner in this regard. The claims recite “including a call” and “invoking” distinctly from each other. For example, claims 1 and 4 recite “the content including a call to a first function” and “when the first function is invoked.” These limitations have different connotations. In the first instance, the “call” (noun) is included in the content, and therefore points to a programmatic statement or instruction in the content. The second instance, “first function is invoked,” however, refers to the effect of the call to the function being executed, i.e., invoked.

The same analysis applies regarding the language of claims 6 and 10, which do not recite the word “invoke.” Claims 6 and 10, for example, recite “the content including a call to a first function” and “when the first function is called.” Again, the “call” (noun) refers to a programmatic statement included in the content. However, “calling” is the effect of the call to the function being executed. Accordingly, based on the foregoing and under the broadest reasonable interpretation, we determine that a “call to a first function” means a statement or instruction in a program requesting the services of a particular (i.e., first) function.

#### B. PRINCIPLES OF LAW

A claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) objective evidence of nonobviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

#### C. THE LEVEL OF SKILL IN THE ART

In determining the level of ordinary skill in the art at the time of the invention, we note that various factors may be considered, including “type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology;

and educational level of active workers in the field.” *In re GPAC, Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (citing *Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc.*, 807 F.2d 955, 962 (Fed. Cir. 1986)).

Petitioner asserts, through its expert Dr. Aviel Rubin, that the “relevant technology field for the ’154 patent is security programs, including content scanners for program code.” Ex. 1002 ¶ 25. Further, Dr. Rubin opines that a person of ordinary skill in the art would “hold a bachelor’s degree or the equivalent in computer science (or related academic fields) and three to four years of additional experience in the field of computer security, or equivalent work experience.” *Id.*

Patent Owner, through its expert Dr. Nenad Medvidovic, offers a level of ordinary skill that is different from Petitioner’s. Ex. 2035 ¶ 35. In Particular, Dr. Medvidovic opines that a person of ordinary skill in the art would have a “bachelor’s degree in computer science or related field, and either (1) two or more years of industry experience and/or (2) an advanced degree in computer science or related field.” *Id.* In comparison, it appears that the minimum experience under Patent Owner’s proffered level of skill is one year less than Petitioner’s. Also, Patent Owner proffers an alternative to work experience, namely an advanced degree. There is no specific articulation regarding how the difference of one year’s experience or the proposed alternative of an advanced degree in lieu of experience tangibly affects our obviousness inquiry. Further, there is no evidence in this record that the differences noted above impact in any meaningful way the level of expertise of a person of ordinary skill in the art. Indeed, we note that Dr. Medvidovic’s opinions would not change if he had considered instead the level or ordinary skill in the art proffered by Dr. Rubin. *Id.* ¶ 39.



Accordingly, we determine that in this case no express articulation of the level of ordinary skill in the art is necessary and that the level of ordinary skill in the art is reflected by the prior art of record. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001); *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995); *In re Oelrich*, 579 F.2d 86, 91 (CCPA 1978).

#### D. OBVIOUSNESS GROUND BASED ON ROSS

The Petition relies on Ross as teaching or suggesting all the limitations of claims 1–8, 10, and 11. Pet. 14–37. Having reviewed the arguments and evidence provided by Petitioner and the arguments and evidence presented by Patent Owner, we determine that Petitioner has failed to show by a preponderance of the evidence that Ross teaches or suggests all the limitations of the challenged claims, and more particularly, “the content including a call to a first function.”

##### *1. Overview of Ross (Exhibit 1003)*

Ross describes one embodiment where a device receives and processes “data content having at least one original function call [and it] includes a hook script generator and a script processing engine.” Ex. 1003 ¶ 10. One such device is depicted in Figure 2 of Ross, reproduced below.

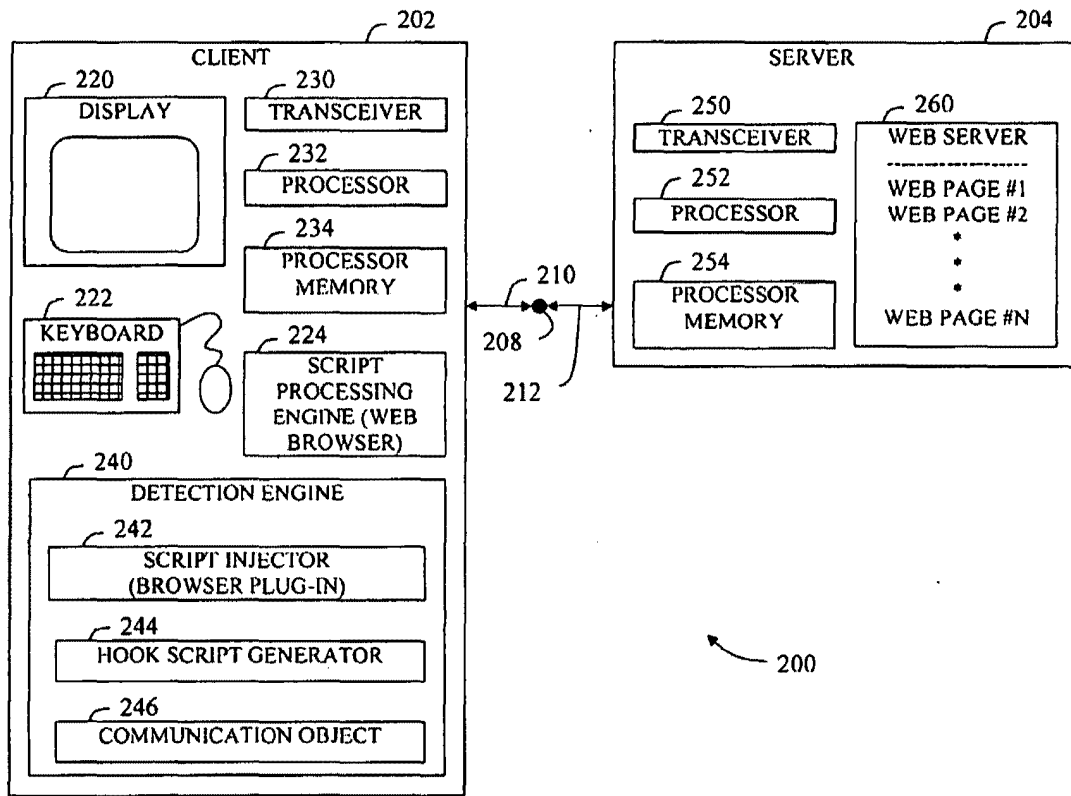


FIG 2

Figure 2 shows a client network device (client 202) and a server network device (server 204) communicating with each other over communication network 208 to exchange information, including web content. *Id.* ¶¶ 16, 23. Figure 2 depicts web browser 224 and detection engine 240 at the client, but in other embodiments, detection engine 240 may be physically located away from client 202. *Id.* ¶ 26. Detection engine 240 includes script injector 242 to intercept incoming data content and introduce the incoming data to script-processing engine 224. *Id.* “Hook script generator 244 creates new functions, including constructor functions, which replace the standard JavaScript functions.” *Id.*

## 2. *Discussion of Independent Claims*

Independent claim 1 is directed to a system, while claim 4 is directed to stored program code including functions performed by a computer device, where those functions track the functions recited in claim 1. Independent claim 6 is also directed to a system, albeit with some limitations different from the system of claim 1. And independent claim 10 is directed to stored program code including functions performed by a computer device, where those functions track the functions recited in claim 6. Notwithstanding their differences, all the independent claims recite “the content including a call to a first function.” We find that Ross does not disclose this limitation.

### Content Includes a Call to a First Function

Petitioner asserts that the recited “content” is met by a combination of Ross’s web content (HTTP data) and hook functions in the hook script. Pet. 16 (“script processing engine processes content from both the web (HTTP data content) and from the hook script generator (hook functions)”). The Petition points out that Ross’s “hook scripts and their associated inputs teach or suggest ‘the content including a call to a first function, and the call including an input,’ as recited in claim 1.” *Id.* Specifically, the Petition states that each hook script has “at least one hook function[,] where each hook function is configured to supersede a corresponding original function.” *Id.* at 17 (citing Ex. 1003 ¶ 38). With regard to the “call” limitation, Petitioner asserts that a person of ordinary skill in the art would have understood that the hook scripts “include a call to a first function call (i.e., hook functions within a hook script).” *Id.* at 18 (citing Ex. 1002 ¶ 109). Based on these assertions, we understand Petitioner’s contention to be that

Ross's description of hook functions in the hook script teaches or suggests the "call to a first function."

Patent Owner challenges these assertions by arguing that merely pointing to hook functions within a hook script is insufficient. PO Resp. 20–22. According to Patent Owner, Ross's hook script includes a function, i.e., the hook function, but not the "call" to that function. *Id.* (citing Ex. 2035 ¶¶56–59). Ross, according to Patent Owner, teaches a technique different from the claims. *Id.* at 22–23. Ross first calls the original function, which Petitioner identifies as the recited "second function," in order to invoke the hook function ("first function"). *Id.* at 23 (citing Ex. 1003 ¶¶ 12–13). In contrast, the claims require that the content include a call to a first function, in order to invoke the first function first. *See, e.g.*, claim 1 ("transmitting the input to the security computer . . . when the first function is invoked" and "invoking a second function with the input only if a security computer indicates that such invocation is safe"); claim 6 ("transmitting the input variable to a security computer . . . when the first function is called" "modifying the input variable if the security computer determines that [it is not] safe" and "calling a second function with a modified input variable").

In support of Patent Owner's argument, Dr. Medvidovic explains that Ross describes the combined hook script and the original script as using an "assignment," not a "call" for invoking the first function. PO Resp. 23–24 (citing Ex. 2035 ¶61). We credit this testimony. Ross illustrates in Figure 4, reproduced below, a combined script, which shows more detail regarding how Ross formulates the hook script and the included hook function. *See* Ex. 1003, Fig. 4.

```
// Generated Hook Script (Highly simplified example)
<SCRIPT language="JavaScript">
realAXO = ActiveXObject;
function myXMLObject(realconstructor) {
    // Generated code (create Microsoft.XMLHTTP wrapper object and return it)
}
function HookedActiveXObject(objname) {
    // Security checks go here
    if (objname == "Microsoft.XMLHTTP") {
        return new myXMLObject(realAXO);
    } else {
        return realAXO(objname); // if no more security checks are needed
    }
}
ActiveXObject = HookedActiveXObject;
</SCRIPT>
// Original Script
<SCRIPT language="JavaScript">
var Req;
Req = new ActiveXObject("Microsoft.XMLHTTP");
// Open the request object with MKCOL and specify that it will be sent asynchronously.
Req.Open("MKCOL", folderURL, false);
</SCRIPT>
```

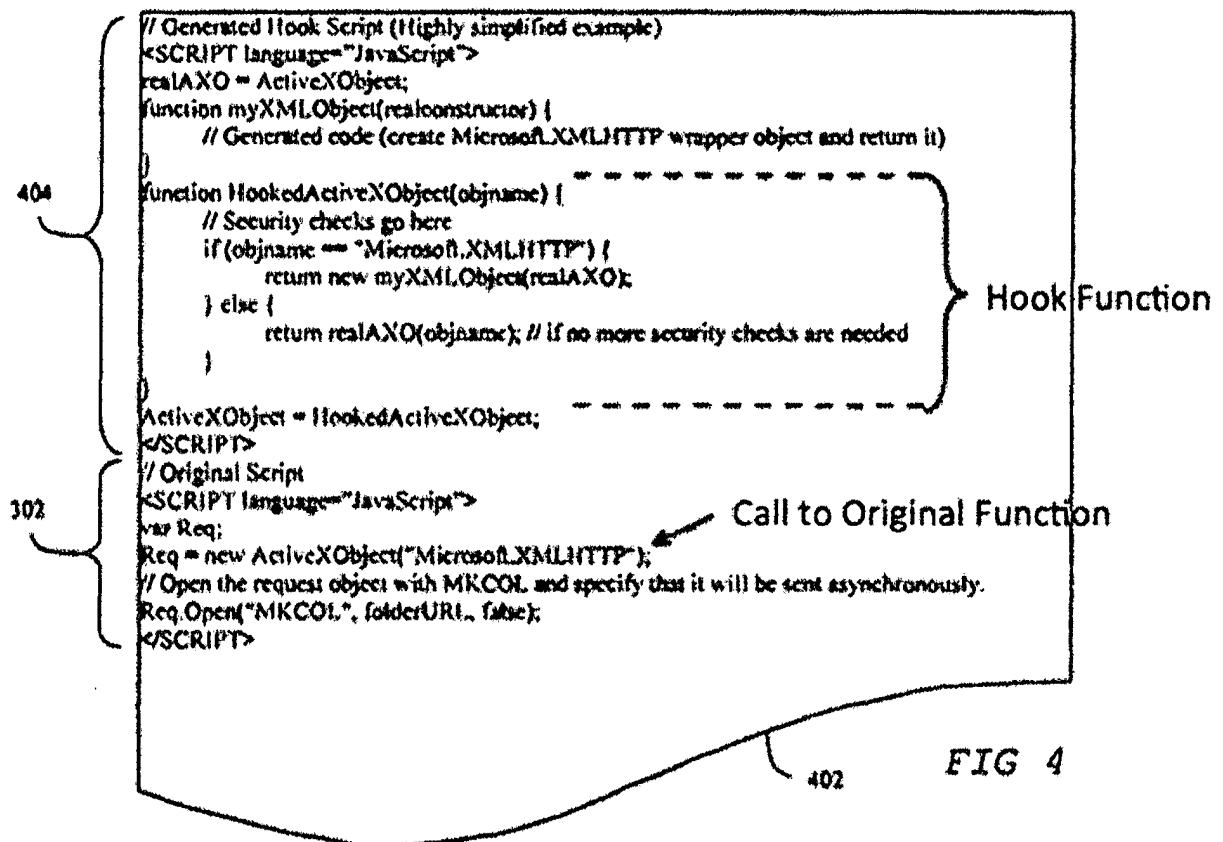
404

302

402

FIG 4

Figure 4 illustrates combined script 402 including hook script 404 and original script 302. *Id.* Dr. Medvidovic identifies the hook function in hook script 404 as “function HookedActiveXObject(objname).” Ex. 2035 ¶ 61. The combined script does not include a call to the function “HookedActiveXObject.” Instead, as Dr. Medvidovic explains, Ross’s hook script includes a call to the *original function*, not the hook function, as shown below in Patent Owner’s annotated Figure 4.



The annotated Figure 4 of Ross, above, annotates Ross's script by pointing out: (1) in brackets, that a group of instructions comprise the function "Hooked ActiveXObject(objname);" and (2) that the body of the function is the "Hook Function." See PO Resp. 23. The annotations also show that the instruction "Req=new ActiveXObject("Microsoft.XMLHTTP")" is the "Call to Original Function." *Id.* Dr. Medvidovic explains that the call to "new ActiveXObject("Microsoft.XMLHTTP")" indirectly invokes "function HookedActiveXObject," using Ross's assignment technique. See Ex. 2035 ¶ 61. Ross's description of the hook functions confirms this technique. For example, Ross states that "[t]he hook function corresponding to the data content original function is executed *when the original function is called.*"

Ex. 1003, Abstract; *see also* ¶ 13 (“executing a hook function when a corresponding original function is called in the data content”). Ross further states that the “hook function is configured to supersede a corresponding original function.” *Id.* ¶¶ 10–12.

Although we have explained that the first invocation in Ross is not of the first function, the issue is not simply whether Ross executes or processes the first function first, before the second function. The issue is whether the content in Ross includes a “call to a first function,” as claimed. We find that Ross does not.

Patent Owner’s explanation of Ross is consistent with Ross’s description of how the hook script is generated and processed. Ross’s hook script generator creates new functions to replace the original functions, such as the JavaScript function embedded in a web page. *Id.* ¶ 26. When the web page is received, the script filter injects “the JavaScript that hooks the critical functions and methods before any other HTML in a loading page.” *Id.* ¶ 29. To implement these “hooks,” Ross states that it replaces the original function with a new replacement function or that it substitutes an original function with a filtered function by instantiating a “hooked” process. *Id.* ¶¶ 33, 34. These statements of “replacement” and “substitution,” however, refer to how the hook functions are implemented when the script executes. Neither of these statements explains whether a “call” to a hook function is included in the script. That is, the replacement or substitution may result in invoking the hook function, without the content actually including a call. And this *indirect* invocation—not using a call—of the hooked function is what Ross tends to show. For instance, Ross describes the method of processing the content as follows: (1) generating a hook

script with a hook function; (2) loading the hook script; (3) loading the data content having the original function; and (4) executing a hook function *when a corresponding original function is called in the data content*. *Id.* ¶ 38.

Thus, the hook function is loaded before anything else is loaded in order to define the hook function and to effectuate the replacement. The replacement, or the method of superseding, is accomplished by the assignment that results from the use of the instruction `ActiveXObject=HookedActiveXObject`. As Dr. Medvidovic explains, by way of assignment of `ActiveXObject` (original function) to `HookedActiveXObject` (substitute or first function), a call to the original function indirectly invokes the substitute or first function. *See Ex. 1011, 10:20–13:21*. This understanding is further confirmed by Ross’s description of the hook functions, as stated above, and when it refers to them as “new objects that will be used as replacements *when the appropriate constructor is invoked*.” *Ex. 1003 ¶ 35* (emphasis added).

In sum, Ross’s content does not include a “call to a first function” because the hook function is not directly called. There is no instruction or statement in the hook script that requests the service of the hook function. *See also Ex. 2043 at 88:11–16* (Dr. Rubin, Petitioner’s expert, testifying that “in the pseudocode in figure 4 [of Ross] there’s no explicit call to a hooked function.”). The hook function is invoked only when *the call to the original function* in the data content, which has been assigned via the hook script to a hook function, is executed. *See id.* (“These hooks are installed before any other script on the web page loads, ensuring that any script provided as a part of the data content 602, such as a web page, will call the new hooked functions.”).



Petitioner unpersuasively argues in the Reply that the combined script shown in Figure 4 would “readily teach or suggest to a [person of ordinary skill in the art] that the act of having a hook function supersede a call to an original function can be achieved via a call to a hook function within the hook script.” Reply 10–11 (citing the reply Declaration of Dr. Aviel Rubin, Ex. 1005 ¶ 3). We are not persuaded by this testimony. The testimony relies on an interpretation of Ross that we find erroneous. For instance, Dr. Rubin opines that paragraph 31 of Ross supports the contention that one way to ensure the hook script function is processed first would be to include a call to the hook function within the hook script. Ex. 1005 ¶¶ 4–6. As explained above, we find that Ross’s description of *processing the hook script* in paragraph 31 does not teach including a call to the hook function. Disclosing that the hook script and original script codes may be *injected* into the script processing engine by any means, Ross refers to the order of processing the *hook function*, not whether the script may include other instructions, such as a call to the hook function. As stated above, Ross teaches assigning the original function to the hooked function. In that manner, Ross invokes indirectly the hook function without any need to include a call to that hook function.

#### Additional Arguments in Petitioner’s Reply

Expanding on the issue of whether Ross includes a call to a first function, Petitioner argues that it would have been obvious for a person of ordinary skill in the art to include in the hook script a call to the hook function to ensure that the hook function is processed first. Reply 11. Petitioner proffers additional argument that the script shown in Figure 4 of Ross suggests including a call to a first function where the code states

“Security checks go here.” Reply 11–13. In particular, Petitioner now argues that it would have been obvious to implement the security checks by calling a separate hook function within the hook script. *Id.* at 13. That is, instead of calling the hook function “HookedActiveXObject,” Petitioner contends that it would have been obvious to include *another* hook function within the function “HookedActiveXObject.” *Id.* In support, of this contention, Petitioner asserts that there is no dispute on this issue, citing to a second declaration of Dr. Rubin filed with the Reply and to testimony of Dr. Medvidovic alleged to be in agreement. *Id.* Dr. Rubin also provides additional declaration testimony purporting to show how to edit the pseudocode shown in Figure 4 of Ross to include a call to the hooked function. *See* Ex. 1005 ¶¶ 7–10.

Patent Owner argued at the hearing that Petitioner’s argument and the supporting testimony from Dr. Rubin is outside the scope of a proper reply. Tr. 66:19–13. Therefore, the issue before us is whether the additional arguments Petitioner presents in the Reply exceed the appropriate scope of a reply. *See* 37 C.F.R. § 42.23 (b) (“A reply may only respond to arguments raised in the corresponding opposition or patent owner response.”). In particular, we focus on whether it is appropriate to consider the argument that it would have been obvious to include a call to a first function within either the “Security checks go here” portion or the hooked script/hook function.

To determine whether we should consider the argument, our Trial Practice Guide points out that,

[w]hile replies can help crystalize issues for decision, a reply that raises a new issue or belatedly presents evidence will not be considered and may be returned.

The Board will not attempt to sort proper from improper portions of the reply. Examples of indications that a new issue has been raised in a reply include new evidence necessary to make out a prima facie case for the patentability or unpatentability of an original or proposed substitute claim, and new evidence that could have been presented in a prior filing.

Trial Practice Guide, 77 Fed. Reg. at 48767; *see also Belden Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1080 (Fed. Cir., 2015) (discussing that a patent owner “is undoubtedly entitled to notice of and fair opportunity to meet the grounds of rejection.”). With these guidelines in mind, we are persuaded that the above-identified argument in the Reply should not be considered in deciding this matter.

As stated above, the Petition relies on Ross’s “hook functions within a hook script” as teaching or suggesting the “call to a first function.” Pet. 17–18. Although the Petition relies on the understanding of a person of ordinary skill in the art when explaining Ross’s handling of the hook function, Petitioner does not assert in any meaningful way that Ross’s use of hook functions in the hook script would be *modified* to include calls to *additional* hook functions that Ross does not describe. Nor does Petitioner explain in the Petition that Ross would be modified to replace the assignment instruction with a call to the hook function. The arguments in the Reply are not explanations of how Ross’s hook functions, as taught by Ross, may be understood to include the recited “call to a first function,” as asserted in the Petition. Rather, the argument that a “call” may be added to either the security check or the hook script is an alteration of Ross, necessitated because Patent Owner correctly argues that Ross fails to teach or suggest the limitation. The contention that Ross’s embodiments would be

modified, altered, or imbued with details not present in Ross is a *new* contention, necessary to make a case for the unpatentability of the claims, and should have been presented in the Petition. To consider the argument would unfairly prejudice Patent Owner who, after having argued there is a significant gap in Petitioner's case, would be left without an opportunity to respond substantively to the new arguments and support its rebuttal with additional evidence, if necessary. Accordingly, we do not consider the improper arguments identified above.

### 3. Conclusion

Having considered the arguments and evidence presented by both parties, we determine that Petitioner has not shown by a preponderance of the evidence that the challenged claims would have been obvious over Ross. Because we find that Ross does not teach or suggest "content including a call to a first function," we need not consider whether Patent Owner succeeded in its attempt to prove the prior invention of the '154 patent or whether a conclusion of nonobviousness is warranted because of evidence of secondary considerations of nonobviousness.

### E. MOTIONS TO EXCLUDE

Both parties request that certain exhibits be excluded. First, Petitioner moves to exclude pages 3 through 20 of Exhibit 2007 on the basis of failure to authenticate the document. Paper 38, 2–6 ("Pet. Motion to Exclude"). Petitioner's Motion to Exclude is denied as moot, because the evidence objected to is not relied upon in reaching our determination that Petitioner has not met its burden of showing that claims 1–8, 10, and 11 are unpatentable.

Second, Patent Owner moves to exclude various exhibits in the record:

- a) Exhibits 1005 and 1012 as evidence and arguments outside the proper scope of a reply. Paper 39, 1–3 (“PO Motion to Exclude”).
- b) Exhibits 1002 and 1005, Declarations of Dr. Aviel Rubin, on the basis that opinions are conclusory and unreliable. *Id.* at 3–7.
- c) Portions of the cross-examination testimony of Patent Owner’s witnesses, Mr. Ben-Itzhak and Dr. Marc Berger, as irrelevant and prejudicial. *Id.* at 7–9.

Patent Owner’s motion is denied. First, we have stated repeatedly that a motion to exclude is not a vehicle for arguing that Petitioner’s arguments and supporting evidence are outside the proper scope of a reply.<sup>4</sup> A motion to exclude evidence filed for the purpose of striking or excluding an opponent’s brief and/or evidence that a party believes goes beyond what is permitted under 37 CFR § 42.23 is improper. An allegation that evidence does not comply with 37 CFR § 42.23 is not a sufficient reason under the Federal Rules of Evidence for making an objection and requesting exclusion of such evidence. Accordingly, these arguments are not considered as part of the Motion to Exclude, and the request to exclude Exhibits 1005 and 1012, as being outside the proper scope of a reply, is denied.

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<sup>4</sup> See *Valeo v. Magna Elecs., Inc.*, Case IPR2014-00227, Paper 44 (PTAB Jan 14, 2015); *Carl Zeiss SMT GmbH v. Nikon Corp.*, Case IPR2013-00362, Paper 23 (PTAB June 5, 2014); *Ultratec, Inc. v. Sorenson Commc’ns, Inc.*, Case IPR2013-00288, Paper 38 at 2 (PTAB May 23, 2014); *Primera Tech., Inc. v. Automatic Mfg. Sys., Inc.*, Case IPR2013-00196, Paper 33 (PTAB Feb. 10, 2014); *ZTE Corp. v. Contentguard Holdings Inc.*, Case IPR2013-00133, Paper 42 (PTAB Jan. 21, 2014).

Next are exhibits 1002 and 1005, which constitute the declarations of Dr. Aviel Rubin submitted in support of the Petition and the Reply. We are not persuaded by Patent Owner's argument that they should be excluded from the record. An argument regarding whether the expert's opinions have been shown to be reliable or supported by underlying facts go to the weight of the evidence, not its admissibility. *See Liquid Dynamics Corp. v. Vaughan Co.*, 449 F.3d 1209, 1221 (Fed. Cir. 2006) ("Vaughan's challenge goes to the weight of the evidence rather than the admissibility of Lueptow's testimony and analysis.") (citing *Quiet Tech. DC-8, Inc. v. Hurel-Dubois UK Ltd.*, 326 F.3d 1333, 1344-45 (11th Cir. 2003)); *Wilmington v. J.I. Case Co.*, 793 F.2d 909, 920 (8th Cir.1986) ("Virtually all the inadequacies in the expert's testimony urged here by [defendant] were brought out forcefully at trial. . . . These matters go to the weight of the expert's testimony rather than to its admissibility."). To the extent the testimony has been shown to be inadequately supported, contradictory, or irrelevant, we have taken notice and weighed it accordingly. Therefore, Patent Owner's request to exclude exhibits 1002 and 1005 is denied.

Finally, Patent Owner requests that we exclude portions of the cross-examination testimony of two of its witnesses, the named inventor Mr. Ben-Itzhak, and prosecuting attorney, Dr. Marc Berger. *Id.* at 7-9. Patent Owner argues that Petitioner uses the objected-to testimony to challenge the assertion of diligence in filing the application resulting in the '154 patent. *Id.* The argument, again, goes to the weight of the evidence, not on whether the testimony is relevant. For instance, the question of whether the witness recollects details specific enough to support Patent Owner's contention goes to whether, under the rule of reason, that testimony is credible. *See*

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*Price v. Symsek*, 988 F.2d 1187, 1195 (Fed. Cir. 1993) (explaining that under a rule of reason analysis, “[a]n evaluation of *all* pertinent evidence must be made so that a sound determination of the credibility of the inventor’s story may be reached”). Therefore, Patent Owner’s motion is denied.

### III. CONCLUSION

For the foregoing reasons, we conclude that Petitioner *has not shown* by a preponderance of the evidence that claims 1–8, 10, and 11 of the ’154 patent are unpatentable. Petitioner’s Motion to Exclude is denied as moot. Patent Owner’s Motion is denied.

### IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claims 1–8, 10, and 11 of the ’154 patent have not been shown to be unpatentable;

FURTHER ORDERED that Petitioner’s Motion to Exclude is denied as moot;

FURTHER ORDERED that Patent Owner’s Motion to Exclude is denied; and

FURTHER ORDERED that, because this is a Final Written Decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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PETITIONER:

Matthew I. Kreeger  
Jonathan Bockman  
Shouvik Biswas  
Nathaniel Hamstra  
MORRISON & FOERSTER LLP  
[MKreeger@mofo.com](mailto:MKreeger@mofo.com)  
[FinjanPANMofoTeam@mofo.com](mailto:FinjanPANMofoTeam@mofo.com)  
[FinjanPANMofoTeam@mofo.com](mailto:FinjanPANMofoTeam@mofo.com)  
[nathanhamstra@quinnemanuel.com](mailto:nathanhamstra@quinnemanuel.com)

PATENT OWNER:

James Hannah  
Jeffrey H. Price  
KRAMER LEVIN NAFTALIS & FRANKEL LLP  
[jhannah@kramerlevin.com](mailto:jhannah@kramerlevin.com)  
[jprice@kramerlevin.com](mailto:jprice@kramerlevin.com)

Michael Kim  
FINJAN INC.  
[mkim@finjan.com](mailto:mkim@finjan.com)



UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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PALO ALTO NETWORKS, INC. and SYMANTEC CORP.,  
Petitioner,

v.

FINJAN, INC.,  
Patent Owner.

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Case IPR2015-01979<sup>1</sup>  
Patent 8,141,154 B2

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Before, THOMAS L. GIANNETTI, RICHARD E. RICE, and  
MIRIAM L. QUINN, *Administrative Patent Judges*.

QUINN, *Administrative Patent Judge*.

FINAL WRITTEN DECISION  
*35 U.S.C. § 318(a) and 37 C.F.R. § 42.73*

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<sup>1</sup> This case is joined with IPR2016-00919. Paper 28 (“Decision on Institution of *Inter Partes* Review and Grant of Motion for Joinder,” filed by Symantec Corp.).

IPR2015-01979  
Patent 8,141,154 B2

Palo Alto Networks, Inc. and Symantec Corp. (collectively, “Petitioner”) have each filed petitions to institute *inter partes* review of claims 1–8, 10, and 11 of U.S. Patent No. 8,141,154 B2 (“the ’154 patent”) pursuant to 35 U.S.C. § 311–319. In response to the first petition, filed by Palo Alto Networks, Inc.,<sup>2</sup> Finjan, Inc. (“Patent Owner”) filed a Preliminary Response. Paper 6 (“Prelim. Resp.”). Upon consideration of the Petition and the Preliminary Response filed by Finjan, we instituted trial as to all the challenged claims. Paper 8 (“Dec.”).

Subsequently, Symantec filed a petition seeking review of the same claims of the ’154 patent. IPR2016-00919, Paper 3. With this second petition, Symantec filed a motion to join IPR2016-00919 with this proceeding. We granted Symantec’s motion, joined the cases, terminated IPR2016-00919, and ordered consolidation of all Petitioner filings in this proceeding. Paper 10, at 5.

During trial, Patent Owner filed a Patent Owner Response;<sup>3</sup> and Petitioner filed a Reply.<sup>4</sup> Patent Owner also filed Motions for Observations of the November 14, 2016 cross- examination of Petitioner’s declarant, Dr. Aviel Rubin. Paper 47 (“Mot. for Obs.”). Petitioner responded to Patent Owner’s Motion for Observations. Paper 49 (“Resp. Obs.”). Both parties also filed Motions to Exclude. Paper 46 (“Pet. Mot. to Exclude”); Paper 48 (“PO Mot. to Exclude”). Both parties filed Oppositions and Replies concerning the Motions to Exclude. Papers 50, 51, 53, 55.

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<sup>2</sup> Paper 2 (“Petition” or “Pet.”).

<sup>3</sup> Paper 22 (“PO Resp.”).

<sup>4</sup> Paper 35 (“Reply”).

An oral hearing was held on December 15, 2016.<sup>5</sup>

We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a). For the reasons discussed herein, and in view of the record in this trial, we determine that Petitioner has not shown by a preponderance of the evidence that claims 1–8, 10, and 11 of the '154 patent are unpatentable.

## I. BACKGROUND

### A. RELATED MATTERS

Petitioner identifies that the '154 patent as the subject of various district court cases filed in the U.S. District Court for the Northern District of California (Case Nos. 3:14-cv-04908, 3:14-cv-02998, 5:15-cv-01353, 5:14-cv-04398, 3:14-cv-01197, and 3:13-cv-05808). Pet. 3. Petitioner also states that petitions for *inter partes* review have been filed regarding other related patents. *Id.* The '154 patent is also the subject of another *inter partes* review: IPR2016-00151 (and IPR2016-01071, joined therewith). In IPR2016-0151, we have issued a Final Written Decision, under 35 U.S.C. § 318(a), concurrently with the instant Final Written Decision.

### B. INSTITUTED GROUNDS

We instituted *inter partes* review of claim 1–8, 10, and 11 (“the challenged claims”) based on the following specific grounds:

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<sup>5</sup> A transcript of the oral hearing is entered in the record as Paper 60 (“Tr.”).

Reference[s]	Basis	Claims challenged
Khazan <sup>6</sup> and Sirer <sup>7</sup>	35 U.S.C. § 103	1–5
Khazan, Sirer, and Ben-Natan <sup>8</sup>	35 U.S.C. § 103	6–8, 10, and 11

Petitioner supports its contentions of unpatentability with declarations from Dr. Aviel Rubin. Ex. 1002 (“Aviel Declaration”); Ex. 1045 (“Supp. Aviel Declaration”). Patent Owner supports its contentions with a declaration from Dr. Nenad Medvidovic. Ex. 2002 (“Medvidovic Declaration”). The cross-examinations of Dr. Rubin and Dr. Medvidovic are entered in the record as Exhibits 2005 and 1038, respectively.

#### C. THE '154 PATENT (EX. 1001)

The '154 patent relates to computer security and, more particularly, to systems and methods for protecting computers against malicious code such as computer viruses. Ex. 1001, 1:7–9, 8:38–40. The '154 patent identifies the components of one embodiment of the system as follows: a gateway computer, a client computer, and a security computer. *Id.* at 8:45–47. The gateway computer receives content from a network, such as the Internet, over a communication channel. *Id.* at 8:47–48. “Such content may be in the form of HTML pages, XML documents, Java applets and other such web content that is generally rendered by a web browser.” *Id.* at 8:48–51. A content modifier modifies original content received by the gateway

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<sup>6</sup> Patent Application Pub. No. US 2005/0108562 A1 (Exhibit 1003) (“Khazan”).

<sup>7</sup> Sirer et al., *Design and Implementation of a Distributed Virtual machine for Networked Computers* (1999) (Exhibit 1004) (“Sirer”).

<sup>8</sup> U.S. Patent No. 7,437,362 B1 (Exhibit 1005) (“Ben-Natan”).

computer and produces modified content that includes a layer of protection to combat dynamically generated malicious code. *Id.* at 9:13–16.

#### D. ILLUSTRATIVE CLAIM

Challenged claims 1, 4, 6, and 10 are independent, and illustrative claim 1 is reproduced below.

1. A system for protecting a computer from dynamically generated malicious content, comprising:

a content processor (i) for processing content received over a network, the content including a call to a first function, and the call including an input, and (ii) for invoking a second function with the input, only if a security computer indicates that such invocation is safe;

a transmitter for transmitting the input to the security computer for inspection, when the first function is invoked; and

a receiver for receiving an indicator from the security computer whether it is safe to invoke the second function with the input.

## II. ANALYSIS

### A. CLAIM INTERPRETATION

In an *inter partes* review, claim terms in an unexpired patent are interpreted according to their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2142–46 (2016). Consistent with that standard, claim terms also are given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *See In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). There are, however, two exceptions to that rule: “1) when a patentee sets out a definition and acts as his own

lexicographer,” and “2) when the patentee disavows the full scope of a claim term either in the specification or during prosecution.” *See Thorner v. Sony Computer Entm’t Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012).

If an inventor acts as his or her own lexicographer, the definition must be set forth in the specification with reasonable clarity, deliberateness, and precision. *Renishaw PLC v. Marposs Societa’ per Azioni*, 158 F.3d 1243, 1249 (Fed. Cir. 1998) (citing *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994)). Although it is improper to read a limitation from the specification into the claims, *In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993), claims still must be read in view of the specification of which they are a part. *Microsoft Corp. v. Multi-Tech Sys., Inc.*, 357 F.3d 1340, 1347 (Fed. Cir. 2004).

“content”

In our Decision on Institution, we did not construe expressly any claim terms. Dec. 5. During trial, however, Patent Owner proposed a construction of the term “content” as “a data container that can be rendered by a client web browser.” PO Resp. 5. Petitioner challenges this construction as unduly narrow in view of the Specification. Reply 6. In particular, Petitioner argues that the Specification does not define the term and provides no “clear disavowal” of claim scope. *Id.* 6–7. According to Petitioner, the Specification and extrinsic evidence support a broader construction of “content” to mean “code.” *Id.* at 7–8 (citing Ex. 1001, 12:49–52; Ex. 2005, 80:11–23).

Because they are not consistent with the broadest reasonable interpretation in light of the specification, and as discussed further below, we

do not adopt either of the parties' proposed constructions. Our reasoning follows.

The '154 patent is titled "System and Method for Inspecting Dynamically Generated Executable Code." Ex. 1001, [54]. Although the title refers to "executable code," the term "content" is used elsewhere in the patent when describing the invention. The Abstract further clarifies that a "method for protecting a client computer from dynamically generated malicious *content*, includ[es] receiving at a gateway computer *content* being sent to a client computer for processing, the *content* including a call to an original function[.]" *Id.* Abstract (emphasis added). The gateway computer modifies the "content," which is then transmitted to the client computer for processing there. *Id.*

By way of background, the '154 patent explains that the "ability to run executable code such as scripts within Internet browsers" has caused a new form of viruses "embedded within web pages and other web content, and[, which] begin executing within an Internet browser as soon as they enter a computer." *Id.* at 1:34–40. In particular, the '154 patent describes these new "dynamically generated viruses" as "taking advantage of features of dynamic HTML generation, such as executable code or scripts that are embedded within HTML pages, to generate themselves on the fly at runtime." *Id.* at 3:31–39. Therefore, according to the '154 patent "dynamically generated malicious code cannot be detected by conventional reactive content inspection and conventional gateway level behavioral analysis content inspection, since the malicious JavaScript is not present in the content prior to run-time." *Id.* at 3:65–4:2. The invention, therefore, seeks to protect against "dynamically generated malicious code, in addition

to conventional computer viruses that are statically generated.” *Id.* at 4:30–34.

To accomplish this objective, the ’154 patent describes the gateway computer receiving “content from a network, such as the Internet, over a communication channel.” *Id.* at 8:47–48. The “content may be in the form of HTML pages, XML documents, Java applets and other such web content that is generally rendered by a web browser.” *Id.* at 8:48–51; *see also id.* at 13:49–52 (“Such content may be in the form of an HTML web page, an XML document, a Java applet, an EXE file, JavaScript, VBScript, an Active X Control, or any such data container that can be rendered by a client web browser.”); 13:49–52. A “content modifier 265” at the gateway modifies “original content received” by the gateway computer and produces modified “content, which includes a layer of protection to combat dynamically generated malicious code.” *Id.* at 9:13–16. It does this by scanning the “original content” and identifying certain function calls. *Id.* at 9:16–20. Selected function calls are then replaced with a corresponding substitute function call. *Id.* at 9:21–26.

One example of a function call in the original content is identified as “Document.write (‘content that is dynamically generated at run-time’).” *Id.* at 11:55–12:2. The original content is modified by replacing the original function call Document.write() with a substitute function call Substitute\_document.write(). *Id.* at 10:31–36. The client computer then receives the “content, as modified by the gateway computer.” *Id.* at 11:63–64. And it is this modified content that the client computer processes,



by invoking the substitute function call and transmitting the input of that substitute function for inspection. *Id.* at 16:22–29.

From the above descriptions, we understand the ‘154 patent Specification to refer to three categories of content. First, there is the “original content” that is scanned and modified at the gateway computer. Second, there is the “modified content” transmitted to, and received by, the client computer. Third is the “dynamically generated malicious content” that is generated at runtime and, thus, is undetected by the gateway computer in the “original content.”

We also understand that the purpose of the ‘154 patent is to protect the client computer from this “dynamically generated malicious content,” which is sometimes also referred to in the Specification as “dynamically generated malicious code.” *See, e.g.*, Ex. 1001, 4:31–33 (“new behavioral analysis technology affords protection against dynamically generated malicious code”); 4:38–40 (“before the client computer invokes a function call that may potentially dynamically generate malicious code”); 8:17–20 (“FIG. 2 is a simplified block diagram of a system for protecting a computer from dynamically generated malicious executable code, in accordance with a preferred embodiment of the present invention”); 8:38–40 (“The present invention concerns systems and methods for protecting computers against dynamically generated malicious code.”).

Notwithstanding the variety of content described in the Specification, the term “content” is recited broadly in all challenged claims as “content including a call to a first function.” For example, claim 1 recites a content processor for “processing content received over a network, the content

including a call to a first function, and the call including an input.” *Id.* at 17:34–36.

The claim language also requires that the processed “content” be received over a network. Because the recited “first function” is the substituted function whose input is verified, the *claimed* “content,” in the context of the surrounding claim language, must refer to the modified content received at the client computer. *See id.* at 17:39–40 (“transmitting the input [of the first function call] to the security computer for inspection, when the first function is invoked”). The claimed content cannot refer to the “original content” that is received by the gateway computer and over the Internet because that content, according to the Specification, would be capable of generating the undetected dynamically generated malicious content from which the client computer is to be protected.

Based on this understanding, we do not agree with Patent Owner that the recited “content” is “a data container that can be rendered by a client web browser.” *See* PO Resp. 6. Although the Specification states that “content *may be* in the form of an HTML web page, an XML document, a Java applet, an EXE file, JavaScript, VBScript, an ActiveX Control, or any such data container that can be rendered by a client web browser,” that passage describes the “original content,” not the “modified content.” *See* Ex. 1001, 13:49–52. Furthermore, even if that description were applicable to the “modified content,” the Specification uses the permissive words “may” and “can,” which suggests that the description of the form of the content in the Specification was not intended to set forth a definition for the term “content.” *See i4i Ltd. P’ship v. Microsoft Corp.*, 598 F.3d 831, 844

(Fed. Cir. 2010) (declining to limit claim term where the specification used permissive language).

Furthermore, although the Specification addresses embodiments concerning web pages received over the Internet, the Specification does not limit the “content” to web content only, or to content that can be rendered by a web browser. For example, in describing a content processor, the Specification states that it “*may* be a web browser running on client computer 210.” Ex. 1001, 10:60–62. This description again uses permissive language that suggests the intent not to limit the content to a data container that can be rendered by a client web browser. We also find it informative that in discussing the communication channels over which the client computer receives the “modified content,” the Specification states that “communication channels 220, 225 and 230 [of Figure 2] may each be multiple channels using standard communication protocols such as TCP/IP.” Ex. 1001, 8:67–9:2.<sup>9</sup> That is, the network over which the content is received may be any network that delivers data using a standard communication protocol, not just the Internet.

Accordingly, we are not persuaded that the Specification supports a construction of “content” that is limited to the specific embodiment of a data container that can be rendered by a client web browser, as Patent Owner argues. *In re Van Geuns*, 988 F.2d 1181, 1184, (Fed. Cir. 1993) (“Moreover, limitations are not to be read into the claims from the specification.”) (internal citations omitted).

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<sup>9</sup> TCP/IP is an abbreviation for Transmission Control Protocol over Internet Protocol, and it is the most widely used communication protocol for delivery of data over networks, including the Internet. *TCP/IP*, WILEY ELECTRICAL AND ELECTRONICS ENGINEERING DICTIONARY, 774 (2004) (Ex. 3001).

We are not persuaded, in addition, that Petitioner has made a sufficient showing that a person of ordinary skill in the art would understand the plain meaning of “content” as “code.” To support its proposed construction, Petitioner relies on the cross-examination testimony of its own expert, Dr. Aviel Rubin. Ex. 2005, 80:11–23. His testimony, however, is not persuasive because he proffers no reasoning for the conclusion that “content” is “code” under the broadest reasonable interpretation:

Q What is your understanding of what “content” means?

A In the context of the ’154 patent, content would be code.

Q What do you mean by code?

A Code, like an HTML page that has JavaScript in it.

Q When you say code, do you mean any type of code?

A Well, if you just say content, we are going to take the broadest reasonable interpretation of that. It would be any type of code, yes.

*Id.*<sup>10</sup>

Although it seems reasonable to say that the content includes “code,” no persuasive evidence limits the claimed content to only code. As we noted above, the Specification refers to code, sometimes interchangeably with content, but only in the context of dynamically generated code. The dynamically generated code, however, is not generated until runtime and, therefore, is not contained in the “modified content” that the client receives. *See* Ex. 1001, 3:65–4:2 (“dynamically generated code cannot be detected by conventional reactive content inspection and conventional gateway level

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<sup>10</sup> We do not give weight to the testimony proffered by Dr. Medvidovic with regard to claim construction of this term given the contradictory positions asserted in this regard. *See* Reply 8.

behavioral analysis content inspection, since the malicious JavaScript is not present in the content prior to run-time.”). Furthermore, the Specification describes various *forms* in which the content occurs, such as an HTML web page and Java applets (*id.* at 13:49–52), but does not address sufficiently what is the “content” itself. *But see, id.* at 11:50–51 (“suppose the content is an HTML page”).

Given the broad disclosure of a network, as discussed above, the reference to a “data container” (*id.* at 13:51–52) and “network content” (*id.* at 4:37–37), the concern over scripts embedded in web pages or “other web content” (*id.* at 1:37–39), we conclude that the Specification of the ’154 patent uses the claimed “content” to refer broadly to the data or information, modified for processing, that the client receives from the network, where, in the case of the Internet, it may refer to a web page and its elements. This interpretation is consistent also with the meaning of the term in the art, as evidenced by dictionaries concerning computing and engineering. *See content*, Microsoft Computer Dictionary, 125 (5<sup>th</sup> ed. 2002) (Ex. 3002) (defining “content” as (1) “the data that appears between the starting and ending tags of an element in an SGML, XML, or HTML document. The content of an element may consist of plain text or other elements,” (2) “The message body of a newsgroup article or e-mail message;” and (3) “The ‘meat’ of a document, as opposed to its format or appearance.”); *see also content*, WILEY ELECTRICAL AND ELECTRONICS ENGINEERING DICTIONARY, 142 (2004) (Ex. 3001) (“Information, especially that which is available online, which may be any combination of text, audio, video, files, or the like.”).

Accordingly, under the broadest reasonable interpretation in the context of the Specification and the surrounding claim language, we conclude that “content” is data or information, which has been modified and is received over a network.

*“call to a first function”*

The term “call to a first function” is recited in all challenged claims. The arguments presented regarding this limitation turn on the scope of the word “call.” Specifically, Patent Owner attempts to distinguish the claims over Khazan by arguing that a “jump” instruction is not the recited “call” to a function. PO Resp. 25–27. Dr. Medvidovic, Patent Owner’s expert, proffers opinions on the issue by relying on a definition of “function call” derived from the Microsoft Press Computer Dictionary. Ex. 2002 ¶ 110 (citing Ex. 2014). That Dictionary provides that a “function call” is “[a] program’s request for the services of a particular function.” *Id.*; Ex. 2014. It also explains that “[a] function call is coded as the name of the function along with any parameters needed for the function to perform its task.” *Id.*

The Specification of the ’154 patent does not define the term “call to a first function.” The Specification, however, does use the phrase “function call” to state that “before the client computer invokes a *function call* that may potentially dynamically generate malicious code, the client computer passes the input to the function to the security computer for inspection.” Ex. 1001, 4:37–43 (emphasis added). The Specification also states that “the present invention operates by replacing original function calls with substitute function calls within the content, at a gateway computer, prior to the content being received at the client computer.” *Id.* at 4:57–60. Therefore, we understand the Specification to use the phrase “function call” in the same

sense as the phrase “call to a [] function.” That is, a program instruction specifies the function name and its parameters, where execution of the instruction results in the function providing a service. Thus, we find the dictionary definition of the term “function call” applicable here and indicative of the meaning of the term to a person of ordinary skill in the art.

Furthermore, the dictionary definition is consistent with the embodiments described in the Specification. For example, one embodiment of the ’154 patent provides for modifying an original function call with “corresponding function calls Substitute\_function(input,\*).” *Id.* at 9:21–24. That is, the specification describes that the services of the function Substitute\_function are being requested by the modified content. Furthermore, the format of the function in this particular embodiment, identifies the name of the function and the parameters “input” and “\*”. *See also id.* at 9:26–28 (explaining that the “input intended for the original function is also passed to the substitute function, along with possible additional input denoted by “\*”). We note that the “first function” is the substitute function included in the modified content, as discussed above in connection with our analysis of the term “content.”

We recognize that the definition of “call to a first function” need not define the particular format of the instruction or further detail regarding its parameters. We reach this determination because the claim language itself requires that either the “call” or the “function” include an input. For example, claim 1 recites the “call including an input,” while claim 6 recites “the first function including an input variable.”

Accordingly, we determine that a “call to a first function” means an a statement or instruction in the content, the execution of which causes the function to provide a service.

#### B. PRINCIPLES OF LAW

A claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) objective evidence of nonobviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

#### C. THE LEVEL OF SKILL IN THE ART

In determining the level of ordinary skill in the art at the time of the invention, we note that various factors may be considered, including “type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field.” *In re GPAC, Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (citing *Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc.*, 807 F.2d 955, 962 (Fed. Cir. 1986)).

Petitioner asserts, through its expert, Dr. Aviel Rubin, that the “relevant technology field for the ’154 patent is security programs, including content scanners for program code.” Ex. 1002 ¶ 21. Further, Dr. Rubin



opines that a person of ordinary skill in the art would “hold a bachelor’s degree or the equivalent in computer science (or related academic fields) and three to four years of additional experience in the field of computer security, or equivalent work experience.” *Id.*

Patent Owner, through its expert, Dr. Nenad Medvidovic, offers a level of ordinary skill that is different from Petitioner’s. Ex. 2002 ¶ 35. In Particular, Dr. Medvidovic opines that a person of ordinary skill in the art would have a “bachelor’s degree in computer science or related field, and either (1) two or more years of industry experience and/or (2) an advanced degree in computer science or related field.” *Id.* In comparison, it appears that the minimum experience under Patent Owner’s proffered level of skill is one year less than Petitioner’s. Also, Patent Owner proffers an alternative to work experience, namely an advanced degree. There is no specific articulation regarding how the difference of one year experience or the proposed alternative of an advanced degree in lieu of experience tangibly affects our obviousness inquiry. Further, there is no evidence in this record that the differences noted above impact in any meaningful way the level of expertise of a person of ordinary skill in the art. Indeed, we note that Dr. Medvidovic’s opinions would not change if he had considered instead the level or ordinary skill in the art proffered by Dr. Rubin. *Id.* ¶ 38.

Accordingly, we determine that in this case no express definition of the level of ordinary skill in the art is necessary and that the level of ordinary skill in the art is reflected by the prior art of record. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001); *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995); *In re Oelrich*, 579 F.2d 86, 91 (CCPA 1978).

D. OBVIOUSNESS GROUND BASED ON KHAZAN AND SIRER

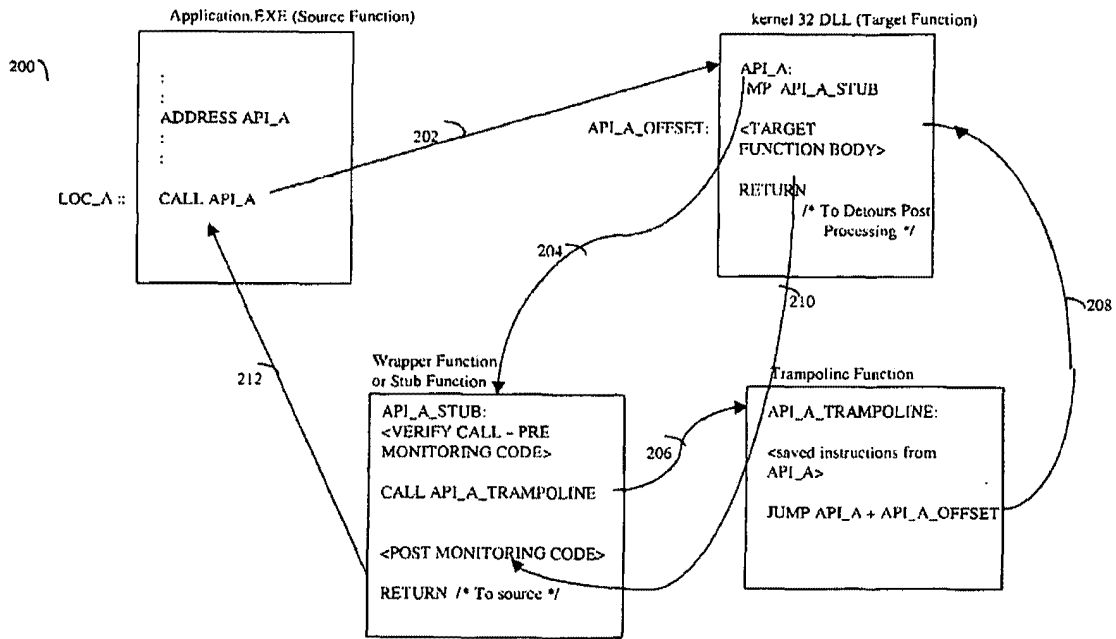
Petitioner asserts that Khazan discloses “every element of the Petitioned Claims except a modified input variable and details of performing dynamic analysis on a remote computer.” Pet. 16. In particular, Petitioner relies on a combination of Khazan and Sirer as teaching the “content including a call to a first function,” “only if a security computer indicates that such invocation is safe,” “transmitter,” and “receiver” limitations. Pet. 20–39. Petitioner relies on Khazan alone as disclosing the remaining limitations of independent claims 1 and 4. *Id.* at 19–20.

1. *Overview of Khazan (Exhibit 1003)*

Khazan is titled “Technique for detecting executable malicious code using a combination of static and dynamic analyses.” The Abstract of Khazan states that:

Described are techniques used for automatic detection of malicious code by verifying that an application executes in accordance with a model defined using calls to a predetermined set of targets, such as external routines. A model is constructed using a static analysis of a binary form of the application, and is comprised of a list of calls to targets, their invocation and target locations, and possibly other call-related information. When the application is executed, dynamic analysis is used to intercept calls to targets and verify them against the model.

Ex. 1003, Abstract. Figure 7, reproduced below, shows in more detail the flow of control between functions at run time to intercept calls to the predetermined functions or routines being monitored as part of dynamic analysis. *Id.* ¶ 25.



The flow in Figure 7 depicts the control flow when a WIN32 API function is invoked at run time from an application using a call instruction. *Id.* ¶ 82. A call is made to the target function `API_A`. *Id.* ¶ 83. Control transfers (arrow 202) to the target function `API_A` within the `kernel32 DLL`. *Id.* The target function `API_A` includes a transfer or jump instruction to a wrapper function. *Id.* Control, therefore, transfers (arrow 204) to the wrapper function (`API_A_STUB`). *Id.* The intercepted call is verified. *Id.* ¶ 84. This verification includes using static analysis information, including parameter information. *Id.* ¶ 87. After verification, a trampoline function is invoked (arrow 206) to execute previously saved instructions of `API_A`, which are the first instructions of the routine `API_A` that were replaced with a jump instruction to the wrapper function. *Id.* ¶ 88. Control transfers back to the target function to continue execution of the target function body as indicated by arrow 208. *Id.*

## 2. Overview of Siner (Ex. 1004)

Siner is a technical paper from an ACM symposium titled “Design and implementation of a distributed virtual machine for networked computers.” Ex. 1004, 1. Siner describes centralizing service functionality in a distributed virtual machine by portioning static and dynamic components. *Id.* at 2. Figure 1, reproduced below, illustrates the organization of those components.

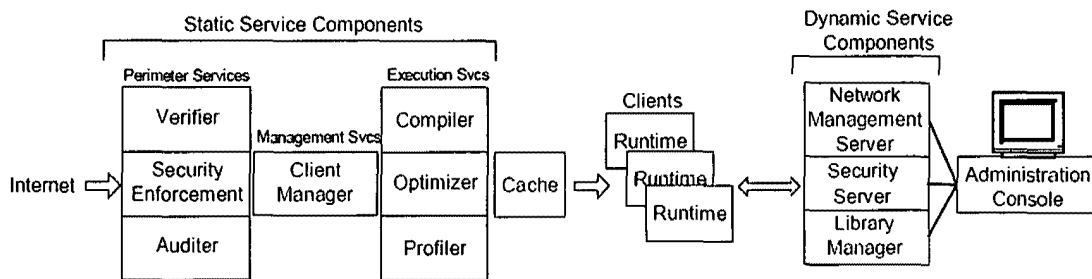


Figure 1. The organization of static and dynamic service components in a distributed virtual machine.

Figure 1 shows static service components, such as security enforcement, running at a network trust boundary. *Id.* at 3. Dynamic service components provide service functionality to clients during run-time as necessary. *Id.* “The code for the dynamic service components resides on the central proxy and is distributed to clients on demand.” *Id.* at 4. The security service “forces applications to comply with an organization’s security policy by inserting appropriate checks through binary rewriting.” *Id.* at 5. “During execution of the rewritten application, the enforcement manager executes the inserted access checks, querying the security service based on the security identifiers and permissions it maintains.” *Id.*

## 3. Whether Siner is a Printed Publication

Patent Owner contends that Siner is not prior art under 35 U.S.C. § 102(b) because Petitioner, according to Patent Owner, has failed to

demonstrate that Simer was publicly accessible. PO Resp. 7–11. In particular, Patent Owner argues that Simer was not indexed properly and that the location and manner of display of the journal containing it was insufficient to render Simer publicly accessible. *Id.*

By way of background, Petitioner submitted Simer as Exhibit 1004, which shows on its face that the reference was included in the Operating Systems Review of the Association of Computing Machinery (“ACM”). *See* Ex. 1004 at 1. For instance, in the upper right corner of the article, a header states that the 17<sup>th</sup> ACM Symposium on Operating Principles is “[p]ublished” as Operating Systems Review 34(5):202–216, December 1999. *Id.* The bottom footer provides a copyright notice dated 1999 by ACM and a statement providing limited rights to copy and to *republish* for a fee or specific permission. *Id.* Petitioner alleges in the Petition that Simer’s publication date is December 1999. Pet. 5.<sup>11</sup> In response to Patent Owner’s objections that Simer’s publication date of December 1999 is hearsay and inadmissible evidence of its public accessibility (Paper 10, 2), Petitioner provided supplemental evidence in the form a declaration from a librarian and a library copy of Simer from an actual Operating Systems Review periodical (Ex. 1036, 3).

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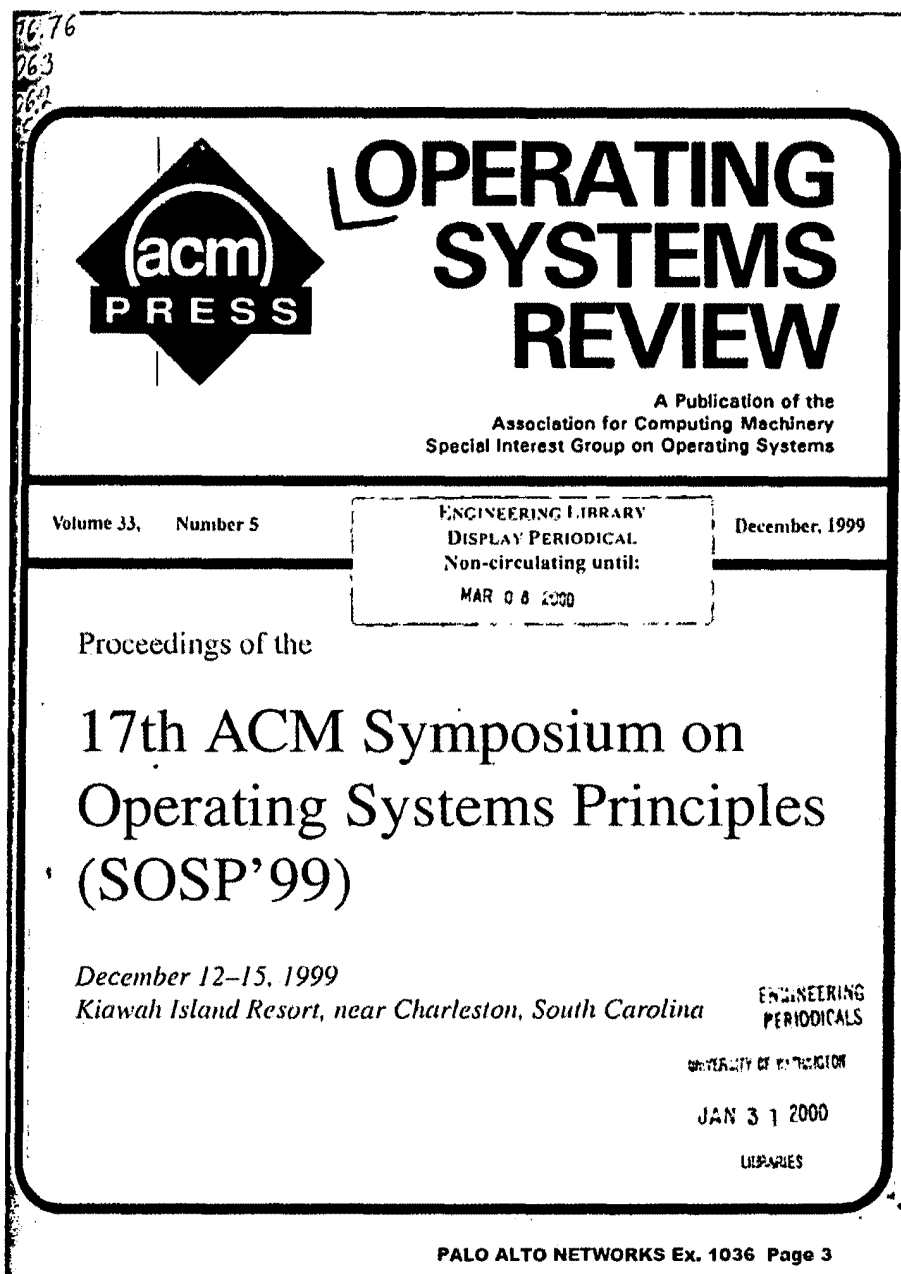
<sup>11</sup> The Petition provides as support Mr. Simer’s declaration (Ex. 1008) and a U.S. Patent issued in 2001, which cites Simer (Ex. 1024). We give no weight to the Simer Declaration filed as Exhibit 1008. Petitioner failed to produce Mr. Simer for cross-examination, as our procedures require. *See* PO Mot. to Exclude, (Paper 49) 5–7. As for considering another patent’s citation of Simer, we find that it does not support the assertion that Simer was published on December 1999. At best, a citation to Simer in another patent may offer some indicia that the article was available, but the mere citation is not proof of publication or accessibility.

The determination of whether a particular reference qualifies as a prior art printed publication “involves a case-by-case inquiry into the facts and circumstances surrounding the reference’s disclosure to members of the public.” *In re Klopfenstein*, 380 F.3d 1345, 1350 (Fed. Cir. 2004). The key inquiry is whether the reference was made “sufficiently accessible to the public interested in the art” before the critical date. *In re Cronyn*, 890 F.2d 1158, 1160 (Fed. Cir. 1989). “A reference will be considered publicly accessible if it was ‘disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter or art exercising reasonable diligence, can locate it.’” *Blue Calypso, LLC v. Groupon, Inc.*, 815 F.3d 1331, 1348 (Fed. Cir. 2016) (quoting *Kyocera Wireless Corp. v. Int’l Trade Comm’n*, 545 F.3d 1340, 1350 (Fed. Cir. 2008)).

Having reviewed the parties’ arguments and supporting evidence, we determine that Petitioner has demonstrated sufficiently that Sierer is a printed publication based on the following reasons and factual findings. First, we find that Sierer was published in Volume 33, issue number 5 of the Operating System Review published by ACM. We base our findings on the testimony of Mel DeSart, head librarian of the University of Washington Engineering Library, and the printed material attached as Exhibit A to the declaration of Mel DeSart, filed as Exhibit 1036. We also support our findings based on the totality of the indicia of publication found on Sierer, Exhibit 1004. As noted above, the indicia on the face of Exhibit 1004 in its totality assures us that Sierer is a printed publication. Notwithstanding the copyright date, the first page of the article conveys that the article is published in a volume of the Operating Systems Review, an ACM publication. *See Ex. 1004, 1.* That

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indicia is consistent with the printed material provided as Exhibit 1036 and authenticated by Mr. DeSart. *See* Ex. 1036. For example, on page 3 of Exhibit 1036, reproduced below, the cover of the periodical states that Operating Systems Review is “a publication of the Association for Computing Machinery Special Interest Group on Operating Systems.” *Id.* at 3.



The cover page reproduced above identifies Volume 33, Number 5, and date December 1999 as containing the “Proceedings of the 17<sup>th</sup> ACM Symposium on Operating Systems Principles (SOSP’99).” *Id.* This cover page also contains indicia of circulation to the public, such as by its receipt and cataloging at the Engineering Library of the University of Washington.



*Id.* (displaying a stamp labeled “Engineering Periodicals, University of Washington, Jan 31, 2000”). Additionally, the cover page includes a label stating “Engineering Library Display Periodical Non–circulating until: Mar 08 2000.” *Id.* The stamps and labels are described by Mr. Melvin (“Mel”) DeSart, Head of the University of Washington Engineering Library, as evidence that the Library’s process was to stamp a received periodical and to affix a label when the periodical was chosen for display at the Engineering Library Display Periodicals area. Ex. 1036 ¶ 2. According to DeSart, the stamp and label convey that the article was received (and, therefore, stamped) at the University of Washington Libraries, on January 31, 2000, and was redirected to the Engineering Library, where it was added to the display and made “publicly available” from February 8, 2000 until March 8, 2000. *Id.* ¶ 3.

We credit DeSart’s testimony regarding the normal business practices of the Library at which he is employed since March 2000. *Id.* ¶ 1. His opinion is based on personal knowledge of these business practices and his familiarity with the Library’s business records. *Id.*; Ex. 2006, 14:5–15:20. The copy of the article, with the first page we discuss above, is a copy of the periodical maintained by the Library in its ordinary course of business, and is authenticated as such. *Id.* ¶ 3.

Further indicia of publication supports our determination that Siner is a printed publication. The copyright page of the Library copy provides for limited rights to copy and “republish” with permission and/or a fee by contacting the publications department of ACM. *Id.*, 5. That page also includes an ACM ISBN number (1-58113-140-2) and instructions on how to order additional copies, information which is also included in the footer of

Exhibit 1004, indicating that copies of the periodical were available from ACM without restriction. *Id.* Therefore, based on the foregoing, we conclude that Siner is a printed publication. Moreover, considering the dates on the face of the article, the circumstances surrounding the receipt of the periodical at the library, and the business practice of circulating periodicals at the Engineering Library, we determine that Siner's date of publication is evident as of February 8, 2000, when the Library would have displayed the periodical, and as early as January 2000, when a subscriber to the periodical, such as the Library of Washington, would have received the periodical.<sup>12</sup> *See* Ex. 2006, 17:6–15 (DeSart testifying that journals published by ACM were received directly from the publisher under a subscription); 21:22–22:8.

We also find that skilled artisans exercising reasonable diligence would have been able to locate Siner. In addition to the accessibility of the article on the library display area and on shelves, DeSart testified that the periodical containing the Siner, "Operating Systems Review," was catalogued in the library's electronic catalog. Ex. 2006, 10:13–11:23. The periodical could be searched by the title of the periodical and its keywords. *Id.*; 30:14–31:9.

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<sup>12</sup> We also note that the periodical appears to be a compendium of articles presented in a symposium during December 12–15, according to the information presented in the cover page. Therefore, December 1999 may not represent accurately the date the article became a printed publication, but merely the date on which the subject matter of the articles may have been presented. Accordingly, the dates corroborated by Mr. DeSart concerning receipt of the periodical at the library and circulation within the library system reasonably confirm that the printed article was *published* after the symposium dates, but no later than the date on which a periodical would have been disseminated to the libraries and its patrons.

Furthermore, Mr. DeSart testified that in 2000 there were a number of science, technology and engineering computer science databases that index content by subject areas. *Id.* at 12:2–18. From this testimony we understand that the article itself would have been indexed by subject matter, for example in a database called “Inspec,” which indexes computer science materials and ACM publications, such as the one at issue here. *Id.* That is, a person of ordinary skill in the art with interests in computer operating systems and virtual machines, exercising reasonable diligence, would have been able to locate the Operating Systems Review journal and the Siner article using a library catalogue or a database.

We note that notwithstanding the evidence of indexing discussed above, the issue of indexing the reference and in what manner is not entirely dispositive because it is not a “necessary condition for a reference to be publicly accessible.” *In re Lister*, 583 F.3d 1307, 1312 (Fed. Cir. 2009). In this case, the testimony and the evidence presented support the determination that the periodical containing the Siner article was sufficiently catalogued at the Engineering Library of the University of Washington to provide meaningful assurance that one of ordinary skill in the art, exercising reasonable diligence, would have been able to locate this particular periodical and the Siner article itself.

Furthermore, we are persuaded that this case involves an article in a periodical that is unquestionably published and accessible not only directly from the publisher, as discussed above, but via a library. This case is distinguishable from other cases addressing concerns about dissertations, theses, or other research papers housed in a library. *See Cronyn*, 890 F.2d at 1160 (concluding three undergraduate theses housed in a library were not

publicly accessible because the references lacked a subject index); *In re Bayer*, 568 F.2d 1357 (CCPA 1978) (concluding a thesis housed, but not shelved nor catalogued, within a university library was not publicly accessible); *cf. In re Hall*, 781 F.2d 897, 899 (Fed. Cir. 1986) (concluding a dissertation shelved and indexed in a card catalog at a German university was publicly accessible). Rather, the Sierer article, published in a journal or periodical produced by ACM and distributed to subscribers is more akin to the publication addressed in *Voter Verified, Inc. v. Premier Election Solutions, Inc.*, 698 F.3d 1374, 1380 (Fed. Cir. 2012). In *Voter Verified*, a particular article available only through an on-line publication was deemed publicly accessible because the publication was well known to the community interested in the subject matter of the reference, submissions were treated as public disclosures, users could freely and easily copy the content of the on-line publication, and the on-line publication was accessible by a keyword-based search tool. As stated above, the periodical is an ACM publication, directed to computing technology topics, and was available to subscribers, including libraries. In this particular case, the Engineering Library received and circulated the volume containing the Sierer article by displaying it in a periodicals area and making it publicly available from February 8, 2000 to March 8, 2000.

Given the above-described evidence showing accessibility, we are not persuaded by Patent Owner's argument that the lack of evidence of anyone actually accessing Sierer weighs against a finding of public accessibility. PO Resp. 10. Once accessibility is proved, as the evidence shows, "there is no requirement to show that particular members of the public actually received the information." *See Constant v. Adv. Micro-Devices, Inc.*, 848 F.2d 1560,

1569; *see also SRI Int'l, Inc. v. Internet Security Sys., Inc.*, 511 F.3d 1186, 1197 (“[A]ctual retrieval of a publication is not a requirement for public accessibility. . .”).

Accordingly, based on the facts and circumstances of this case, we conclude that the Siner article was a printed publication that was publicly accessible before the invention date of the '154 patent (i.e., December 12, 2005), and is, therefore, prior art to the challenged claims.

#### 4. *Discussion of Claims 1–5*

Independent claim 1 is directed to a system, while claim 4 is directed to stored program code including functions performed by a computer device, where those functions track the functions recited in claim 1. Similar limitations are analyzed together where appropriate.

##### a. Content Processor

Claim 1 recites a “content processor.” Petitioner points out that Khazan discloses each host having one or more processors that execute the application executable. Pet 19 (citing Ex. 1003 ¶ 40), 47. We agree that Khazan discloses the recited content processor. As Khazan explains, the components that may reside and be executed at the host include application executable 102, one or more libraries, a malicious code detection system, list of target and invocation locations, list of target functions to be identified by static analysis, and a list of target functions whose invocations are to be monitored by dynamic analysis. Ex. 1003 ¶ 40. The processor of the host executes the instructions of the application executable. *Id.* Consistent with this broad disclosure of a processor, Khazan further describes that with embodiments of executable code or programs, the processor is a program

processor, which may be a virtual machine, a script processor or command processor, depending on the type of program. *Id.* ¶ 114.

With regard to claim 4, the claim is directed to program code for causing a computer device to “process content.” Pet. 42. Petitioner contends that Khazan discloses hosts that each have a memory (for storing program code) and that the disclosures offered as support for “content processor” are equally applicable to claim 4. *Id.* We agree and determine that based on the disclosures of Khazan discussed above, Khazan discloses a memory storing program code for processing content.

b. Content Received Over a Network

Claims 1 and 4 recite “content received over a network.” We find that Khazan teaches or suggests processing “content received over a network” based on the reasons stated below. First, by way of background, Khazan performs two types of analysis, static and dynamic. The static analysis, also referred to in Khazan as part of pre-processing, scans an application or program to identify functions that may be of interest as potentially malicious code. The static analysis produces a list of functions for dynamic analysis, which is performed at run time. In this manner, a function that from static analysis is expected to perform in a certain manner (access certain address space, for example) will be deemed malicious code if at run time, i.e., during dynamic analysis, the function deviates from the expected behavior (accesses a different address space, for example). Ex. 1003 ¶ 115. During pre-processing, or either before or after static analysis, instrumentation (or wrapping the target function) is performed to monitor the operation of that function at run time. *Id.* ¶ 75. The question of where in Khazan this

instrumented code is received and processed is of particular interest because that code must be *received* over a network.

The Petition points out that Khazan’s “application executable” is the recited content. *See* Pet. 15 (“static analyzer reviews the downloaded content (called an application executable”); 19 (“Khazan discloses ‘content such as an instrumented ‘application executable’”); *see also* Ex. 1003 ¶ 73 (“At step 128, the instrumented application and associated libraries are executed.”). The Petition, however, also points out that an associated library is obtained over a network. Pet. 20. In particular, Petitioner identifies Khazan’s claim 35 as supporting its contention that Khazan discloses content received over a network. *Id.* Claim 35 refers to an instrumented binary form of a library. *See* Ex. 1003, p. 14 (“[W]herein said instrumented version of said binary form [of a library] obtained from at least one of: a data storage system and a host other than a host on which said application is executed, and said instrumented version is stored on a storage device.”). The Petition also states that Khazan expressly teaches performing instrumentation or wrapping on a separate host and that a person of ordinary skill “would recognize that there is no functional difference between wrapping a function prior to delivery to the client computer and performing the wrapping process at the client computer.” Pet. 15 (citing Ex. 1001 at 4:55–60; Ex. 1002 ¶ 71; Ex. 1003 ¶ 75, claims 31–33, 35, 68–70, 72).

In our Decision on Institution, we noted that we understood the Petition to allege that the “content” is disclosed in Khazan via its description of instrumented applications *and* libraries. Dec. 9 (“Petitioner has asserted that Khazan teaches instrumentation of both when it refers to ‘instrumented application and libraries.’”); *see also* Dec. Req. for Reh’g (Paper 12) 3 (“we

do not agree with Patent Owner that we overlooked any ‘agreement’ or misapprehended that the evidence and argument presented regarding the ‘content’ limitation is limited by the Petition to Khazan’s instrumented application executable.”).

Patent Owner argues that Petitioner has failed to show that Khazan teaches “content received over a network” based on three contentions. First, Patent Owner contends that Khazan does not disclose an instrumented application executable or instrumented executable. PO Resp. 15–19. Second, Patent Owner contends that Khazan’s application executable is not received over a network. *Id.* at 19–21. Finally, Patent Owner argues that Khazan’s instrumented library is not “content received over a network.” *Id.* at 21–23. We find these arguments unpersuasive in light of our analysis below.

#### *Instrumented Applications*

First, we address Patent Owner’s argument that Khazan does not disclose instrumented applications. As stated above, Khazan expressly discloses instrumentation (and therefore modifying) of applications and libraries. For instance, Khazan describes that “the instrumentation technique . . . modifies the memory loaded copy of the application and associated libraries to execute additional monitoring code.” Ex. 1003 ¶ 75 (cited in Pet. 15); *see also* Ex. 1003, Fig. 4B (“Execute the instrumented application and associated libraries.”); ¶ 79 (“Any one of a wide variety of different techniques may be used in connection with instrumenting the application 102 and any necessary libraries.”). With regard to applications, Khazan expressly claims performing static analysis and instrumenting an application by reciting, for example, “performing static analysis of an *application*,”



“determining an invocation location *within said application*,” and “*instrumenting one of: a processor of said application and said application.*” *Id.* at p. 13-14 (claims 1, 4, and 28) (emphasis added). With regard to libraries, it is undisputed that Khazan discloses analysis and instrumentation of libraries, and receiving those over a network. *Id.* ¶ 90 (referring to Fig. 8 “the steps described herein may be used in connection with instrumenting the binary form of the libraries that may be used by the application 102, all operating system libraries or DLLs, or any other set of libraries”); PO Resp. 20–21 (“At most, however, Khazan discusses instrumented *libraries* being sent from one host to another.”) (emphasis in original); Reply 9 (“Finjan does not dispute that Khazan’s instrumented libraries can be received over a network.”).

It may be the case that the embodiments illustrated in Khazan’s figures specifically address instrumentation of libraries and the run time analysis of those libraries. PO Resp. 15 (“Khazan includes numerous figures and description of how to instrument libraries, but does not include any description of how to instrument an application.”). Those embodiments, however, do not negate the descriptions, identified above, of applications and programs (bytecode) analyzed and instrumented using the same techniques as disclosed with respect to the libraries. Reply 10. For example, Khazan describes applying the same instrumentation techniques described with respect to dynamic link libraries or “DLLs” to “binary and machine-executable programs, as well as script programs, command program[s], and the like.” Ex. 1003 ¶ 114. In particular, Khazan states that the “foregoing techniques may be used and applied in connection with detecting and analyzing calls to target functions or services made by

[malicious code] from programs in which control is transferred from one point to another.” *Id.* Furthermore, we understand Khazan to provide reference to analysis tools, such as Detours and IDA Pro Disassembler, that are applicable to binary code and not limited to instrumentation of libraries. *See* Ex. 1003 ¶ 79 (“the Detours package as provided by Microsoft Research may be used in connection with instrumenting *Win32 functions* for use on Intelx86 machines.”) (emphasis added); ¶ 45 (“One embodiment uses the IDA Pro Disassembler by DataRescue (<http://www.datarescue.com/idabase/>) and Perl scripts in performing the static analysis of the application executable 102”); Reply 10. Accordingly, we find that Khazan discloses *instrumented* applications.

*Received Over a Network*

The remainder of Patent Owner’s arguments are directed to whether Khazan discloses either instrumented applications or libraries “received over a network.” PO Resp. 19–21. In particular, Patent Owner contends that Khazan addresses applications resident or already running in client computers when they become infected. *Id.* at 20. From this contention we understand Patent Owner to allege that Khazan would have no need for sending and receiving an instrumented application at a client because that application is being analyzed at the client computer. With regard to the instrumented libraries, although Patent Owner agrees that such libraries are sent from one host to another, those libraries are also already resident before the library can be executed. *Id.* 22.

We find that Khazan teaches or suggests that both applications and libraries are received over a network. In particular, we note that Khazan

addresses a computer system connected to a multitude of hosts via a network, as shown in Figure 1, reproduced below. Ex. 1003, Fig. 1.

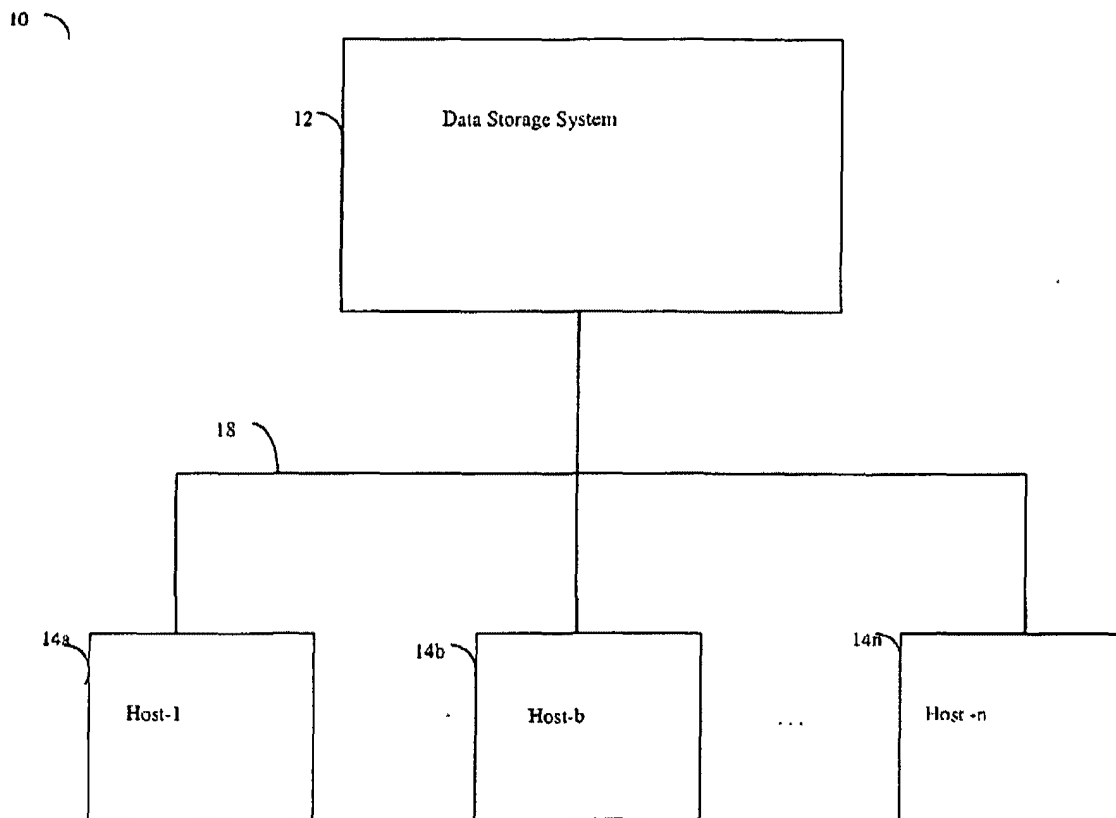


FIGURE 1

Figure 1 illustrates host system 14a (Host -1), 14b (Host-b), and 14n (Host-n) coupled to communication medium 18, which “may be the Internet, an intranet, network or other connection(s) by which host systems 14a–14n may access and communicate with the data storage system 12, and may also communicate with others included in the computer system 10.” *Id.* ¶ 29.

The Petition presents the contention that the broad disclosure of Khazan hosts and the various components communicating over a network warrants a

finding that Khazan teaches that its techniques may be performed on a single host or distributed among several hosts. Pet. 14 (citing Ex. 1002 ¶ 71). We agree with this contention. As explained by Dr. Rubin this conclusion “is also evident from [Khazan’s] descriptions of embodiments in which the instrumentation is performed in a pre-processing step in which the resulting instrumented code is stored on, e.g., disk for use later.” Ex. 1002 ¶ 71. In particular, we find persuasive that Khazan discloses that the instrumentation (or wrapping of a function) occurs on a host that is different from the host that executes the wrapped function. *Id.* (relying on Ex. 1003, claims 31–33, 35). Dr. Rubin further opines that “the end result of the wrapping . . . is the same regardless of where the system performs the wrapping.” *Id.* (cited in the Petition at 15).

Patent Owner’s expert Dr. Medvidovic disagrees with Dr. Rubin’s opinion that instrumentation can occur in many hosts. Ex. 2002 ¶ 71. His testimony is unconvincing, however. Dr. Medvidovic does not address Dr. Rubin’s assessment that Khazan teaches instrumentation on a host that is different from the host that executes the wrapped function. Instead, Dr. Medvidovic asserts that Khazan does not disclose applications received through a network. *Id.* Further, Dr. Medvidovic opines that Khazan addresses viruses that infect applications resident within a computer’s file rather than in content received over a network. *Id.* We find that Dr. Medvidovic’s statements do not address Petitioner’s contention and ignore relevant teachings of Khazan. For instance, Khazan teaches that each host accesses information stored in data storage devices using a network (communication medium). Ex. 1003 ¶ 33. And any of Khazan’s components—e.g., static analyzer, dynamic analyzer, libraries, application

executable, etc.—may be stored in the data storage system. *See id.* ¶ 72 (describing Figure 4A, which also lists the various lists 106, 111, 112). Therefore, we do not agree with Patent Owner’s narrow assessment of Khazan, which would limit application of Khazan’s techniques exclusively to a file resident in the host, rather than on content received over a network. Indeed, Khazan expressly discloses an embodiment in which instrumentation is performed “before invocation of the application” allowing for the instrumented library (or application) to be stored on a storage device. Ex. 1003 ¶ 75. That storage device, as discussed above, is accessed via a network. Accordingly, it is reasonable to conclude, and we find that, Khazan teaches or suggests that any host may receive over the network (communication medium 18) instrumented applications or libraries for processing at the host.

As to Dr. Medvidovic’s assertion that Khazan concerns viruses at the client device and not in content received over a network, we find the assertion unsupported. Khazan broadly discloses malicious code as “a computer virus, a work, a Trojan application, and the like,” and defines it as “machine instructions which, when executed, perform an unauthorized function or task that may be destructive, disruptive, or otherwise cause problems within the computer system upon which it is executed.” Ex. 1003 ¶ 5. The concern for malicious code in Khazan does not exclude viruses that may be received in applications received outside of the host. Rather, we find that Khazan’s disclosure of Internet, as the network that gives a host’s access to data storage and other hosts, reasonably teaches that in the embodiment in which libraries, such as security DLLs, are instrumented and stored at one host during pre-processing static analysis, an instrumented library is

*received over a network* for dynamic analysis at *another host*. See ¶ 75, and claim 31 (static analysis is performed on a first host and static analysis results are made available to a second host on which said application is executed). The same disclosure is applicable to instrumented applications that are *distributed* to the executing host for dynamic analysis. See, e.g., Ex. 1003, claim 33 (“the results of said static analysis are distributed together with the said application”).

Finally, we address Patent Owner’s argument regarding the libraries not being “directly executable,” like the “application executable,” and therefore not “content,” as identified by Petitioner. PO Resp. 22. As stated above, we understand the Petition to assert that both instrumented applications and libraries are the recited “content.” Furthermore, under our claim construction, *see supra* section II.A, “content received over a network” means data or information which has been modified and is received over a network. Instrumented applications and libraries both fall under the scope of the term, as both are data or information that has been modified. And, as stated above, we find that Khazan teaches or suggests instrumented applications and libraries received over a network.

c. The Content Including a Call to a First Function

Claims 1 and 4 recite the “content including a call to a first function.” Petitioner contends that both Khazan and Siner disclose this limitation. With regard to Khazan, Petitioner contends that the function added by instrumentation is the first function included in the content. Pet. 20 (citing, for example, Ex. 1007, Fig. 7). Petitioner further contends that Siner discloses “instrumented content” in more detail than Khazan. *Id.* Petitioner also argues that Siner discloses remote dynamic analysis such that

substituting Sirer's instrumentation and dynamic analysis for Khazan's would make it more clear that it would have been obvious for instrumented content (including a function call) to be instrumented remotely from a client computer. *Id.* at 20–21. In particular, Petitioner explains that Sirer's distributed architecture with a centralized network security service parses and rewrites incoming applications to insert calls to the enforcement manager in accordance with a network security policy. Pet. 21 (citing Ex. 1004, 6). Petitioner's argument, in summary, is that Sirer, much like Khazan, uses "static" analysis to parse an application and insert a call that implements a "dynamic" analysis in order to check the security of the application. *Id.* (citing Ex. 1004, 3–6).

Petitioner offers three separate rationales for the motivation to combine the teachings of Khazan and Sirer. Pet. 21–27. For instance, Petitioner argues that a person of ordinary skill in the art would recognize the advantages of instrumenting an application at a proxy server (as done in Sirer) before the client receives it in order to use "the powerful network processor rather than the weaker client processor." *Id.* at 23 (citing Ex. 1004, Abs. 5; Ex. 1002 ¶ 89). For another rationale, Petitioner asserts that Sirer's instrumentation at the centralized proxy server was a known method and an obvious substitution for instrumentation performed at the client (such as disclosed with respect to some embodiments in Khazan), yielding a predictable result. *Id.* at 25–26 (citing Ex. 1002 ¶ 96 and discussing factors supporting the predictable substitution). Finally, Petitioner asserts that there were a limited number of locations in which to perform instrumentation: the client executing the application and a remote system. *Id.* at 27 (citing Ex. 1002 ¶ 97). And even without Sirer's teachings of instrumenting at a proxy

server, Petitioner argues that it would have been obvious to try instrumentation at the remote system. *Id.*

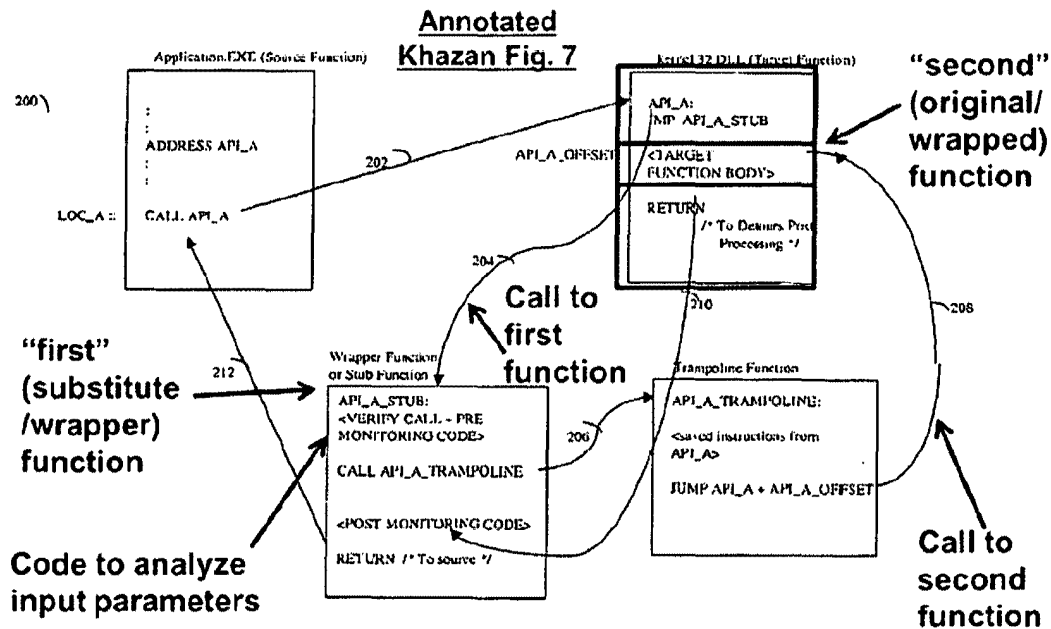
*Discussion of Khazan's Teachings*

Khazan, according to Patent Owner, does not disclose a “call to a first function” because Khazan implements a “jump” instruction, not a “call” to a function. PO Resp. 25–27. A “jump” is a “low-level computer instruction rather than the type of high-level ‘function call’ that would be found in the type of content described in the ’154 patent.” *Id.* at 26 (citing Ex. 2002 ¶¶ 108–109). Dr. Medvidovic, Patent Owner’s expert, opines that a person of ordinary skill in the art would not understand a jump (“JMP”) instruction and a function call to be same for three reasons. Ex. 2002 ¶¶ 108–111. By way of summary, these reasons focus on the different manner in which a jump instruction transfers control and data in a program in comparison with a “function call,” differences which, for a jump instruction, may require additional instructions in order to handle transfer of control back to the calling function and various transfers of data. *Id.* Dr. Rubin, Petitioner’s expert, also testifies to the similarities and differences between a “jump” and a “call,” stating they can be the same “when you call a function that involves jumping to the location in memory where that function code is, but you can also just jump in the code without calling a function.” Ex. 2005, 83:6–20 (also testifying that “in order to execute a call you have to have a Jump”).

Having considered the arguments and evidence presented by both parties, we find that Khazan discloses the “content including a call to a first function.” We credit the testimony of Dr. Rubin that the flow of control shown in Khazan’s Figure 7 illustrates that Khazan includes a call to a first function in the instrumented content. Pet. 24 (citing Ex. 1002 ¶ 91). In



particular, we find that the annotated Figure 7, reproduced below as proffered by Petitioner, conveys that Khazan’s instrumentation causes an instrumented library to be rewritten to execute a JMP instruction that transfers control to the wrapper function (the first function).



In particular, the annotated Figure 7, above, illustrates that Petitioner identifies the transfer of control 204 to a wrapper function API\_A\_STUB, as a “call to first function.” *Id.* at 24–25. For example, Khazan explains that the call to the function API\_A (call to the original function) is intercepted using the instrumentation. Ex. 1003 ¶ 82. In other words, by intercepting the original function, the program does not execute the body of that original function, but, instead, executes another function altogether, i.e., the wrapper function.

Although Figure 7 does not illustrate the instrumentation of the application itself, we do not agree that the example in the embodiment is inapplicable to instrumenting applications. As stated above, we find that

Khazan expressly discloses that the instrumentation techniques are applicable to both applications and libraries. *See, e.g., id.* ¶ 114.

Furthermore, the Figure 7 embodiment's use of a JMP instruction, rather than a CALL instruction, does not persuade us that Khazan's teaching with respect to transfer of control is limited to a JMP instruction. Although Figure 7 implements a JMP instruction together with a Trampoline function to transfer control to and from a wrapper function (first function), we find that Khazan recognized that the transfer of control technique would be effected with either a JMP or CALL instruction. For example, we find instructive Khazan's explanation that monitoring for call instructions includes also jump instructions, or "other types of instructions transferring control from the application as may be the case for various routines being monitored." Ex. 1003 ¶ 46. We recognize that this statement in Khazan addresses the instructions monitored before instrumentation occurs. Nevertheless, the discussion regarding how a "jump" and a "call" are both instructions that transfer control from one function to another supports the finding that Khazan suggests its teachings are not limited to the use of a jump instruction when discussing transfer of control in executing code. *See* Ex. 1003 ¶ 90 ("the first instructions or instructions just saved from the current target are replaced by instructions which transfer control to the stub or wrapper for the current call").

The discussion of transfer of control is important, as we further find that Khazan teaches that the instrumented content requests the service of the first function, i.e., includes a call to a first function. In particular, as noted above, the transfer of control results in execution of the stub or wrapper function. *See id.* ¶ 83 ("The first instruction of the target function API\_A

includes a transfer or jump instruction to the wrapper or stub function as described elsewhere herein. This transfer is indicated by arrow 204.”). That transfer of control, in essence, involves the execution of an instruction requesting that the wrapper function verify the intercepted call. *See id.* ¶ 84 (“Within the pre-monitoring portion of the wrapper function, the intercepted call is verified. As used herein, the pre-monitoring code portion refers to that portion of code included in the wrapper or stub function executed prior to the execution of the body of the intercepted routine or function.”). We also note that Khazan broadly teaches using any instruction that transfers control to the wrapper function. *Id.* ¶ 88 (describing instrumentation as dynamically modifying libraries “in which the instruction or instructions of the API of the target function are replaced with a jump instruction *or other transfer instruction* transferring control to the wrapper function.”) (emphasis added). Accordingly, we find that Khazan’s transfer of control to the stub or wrapper function to execute that function, as illustrated in Figure 7 by the arrow 204, teaches or suggests “a call to a first function” as we have construed the term.

#### *Discussion of Siner’s Teachings*

Patent Owner challenges Petitioner’s assertion that Siner also teaches content including “a call to a first function.” PO Resp. 32–33. In particular, Patent Owner argues that Siner’s dynamic service component is not a “function,” but rather, it is a component that “provide[s] service functionality during the execution of applications.” *Id.* at 33 (citing Ex. 1004, 3). We find Patent Owner’s argument unpersuasive.

As discussed above, a “call to a first function” is a statement or instruction in the content, the execution of which causes the function to provide a service. We find that Siner describes its dynamic service

components in alignment with the definition of the term. For example, Sierer describes the dynamic service components as providing “service functionality” during execution of applications. Ex. 1004, 3 (also stating that “[d]ynamic service components provide service functionality to clients during run-time as necessary”). These dynamic service components are code that is delivered to the client from the central proxy server on demand. *Id.* at 4 (“[t]he code for the dynamic service components resides on the central proxy and is distributed to clients on demand.”). Sierer performs a dynamic service by inserting a call to the corresponding dynamic service component. *Id.* at 3; *see also id.* at 5 (“[T]he verification service modifies the code to perform the corresponding checks at runtime by invoking a simple service component (Figure 3).”). The call insertion is performed by Sierer’s static service components at a proxy server. *Id.* at 4 (“[t]he proxy transparently intercepts code requests from clients, parses JVM bytecodes and generates the instrumented program in the appropriate binary format”). In particular, Sierer teaches rewriting application code during static service when “encounter[ing] data-dependent operations that cannot be performed statically.” *Id.* at 3. One example of data-dependent operations checked dynamically is verifying program safety. *Id.* Another example is a security check for checking user-supplied arguments to system calls. *Id.*

Based on the foregoing, we find that Sierer teaches that content in need of a security check is instrumented at a proxy server where a call to dynamic service components is inserted. We find that this call to dynamic service components is a call to a first function because Sierer teaches that the call requests a particular service provided by the code comprising the dynamic service components. With respect to the example of performing a security

check, for example, we understand Sirer to teach that the call to the dynamic service component will be inserted into the application to check whether the user-supplied arguments are secure. *See, e.g., id.* at 5 (disclosing that, as shown in Figure 3, the verification service modifies the code to perform the corresponding checks at runtime by invoking a simple service component). One such particular example is provided in Figure 3 of Sirer, reproduced below.

```
class Hello {
    static boolean __mainChecked = false; // Inserted by the verifier
    public static void main() {
        if(__mainChecked == false) { // Begin automatically generated code
            RTVerifier.CheckField("java.lang.System", "out",
                "java.io.OutputStream");
            RTVerifier.CheckMethod("java.io.OutputStream", "println",
                "(Ljava/lang/String)V");
            __mainChecked = true;
        } // End automatically generated code
        System.out.println("hello world");
    }
}
```

Figure 3 provides the “hello world example” after it has been processed by the distributed verification service. The security checks deferred to execution time are shown in italics. *Id.* at 5. This example supports Petitioner’s contention and our finding that Sirer’s content includes a call to a first function. In particular, the italicized code, which is the instrumented portion of the program, shows that the program invokes a verifier function *RTVerifier.CheckMethod*, for example, that requests verification that class *OutputStream* implements a method “println” to print a string. *Id.*

Accordingly, we agree with Petitioner’s contention that Sirer teaches a call to a first function. Patent Owner’s arguments to the contrary are not persuasive.

*Combination of Khazan and Sirer*

In connection with the limitation “the content including a call to a first function,” Petitioner asserts that it would have been obvious to combine Sirer’s teachings of a proxy server’s instrumentation of applications (for including calls to the dynamic service components) with Khazan’s teachings. Pet. 21–25. We have already summarized Petitioner’s various contentions in this regard. These contentions appear applicable insofar as Khazan discloses instrumenting the application on a “host.” Pet. 22. We determined above, however, that Khazan teaches “content received over a network” and the “content including a call to a first function.” It is, therefore, unnecessary to determine if a person of ordinary skill in the art would have been motivated to combine the teachings of Sirer’s instrumentation at a proxy server with the teachings of Khazan resulting in the “content including a call to a first function.”

d. The Call Including an Input

Claims 1 and 4 require that the call to a first function include an input. Petitioner offers four contentions as to how the prior art teaches the limitation. First, Petitioner argues that Khazan’s “parameters” included in the wrapper function satisfy the limitation. Pet. 27–28. Second, Petitioner relies on Khazan’s description of the Microsoft Detours package, which “requires the original function parameter to be passed to the wrapper function.” *Id.* at 28 (citing Ex. 1002 ¶¶ 101–02; Ex. 1012 at 5). Third, alluding to instrumentation occurring at a proxy server, such as in Sirer, Petitioner asserts that a person of ordinary skill in the art would have passed the parameters for checking and verification to the substitute (wrapper) function. *Id.* (citing Ex. 1002 ¶¶ 101, 81–82). Finally, Petitioner argues that

it would have been obvious to a person of ordinary skill in the art for the wrapper function to include the parameters from the wrapped function because otherwise, the wrapper function could not verify the parameter information. *Id.* at 28–29 (citing Ex. 1002 ¶ 101).

In addition to the disclosure of Detours, the relevant Khazan disclosures Petitioner points to describe that the pre-monitoring code, which is part of the stub or wrapper function, performs verification of parameter information, “including type and value of some parameters.” Ex. 1003 ¶ 87. As an example, Khazan states that the parameters associated with the target call would have been also the subject of static analysis. *Id.* Dr. Rubin proffers that a function “input” is often called a function “parameter.” Ex. 1002 ¶ 100. Therefore, it appears reasonable to conclude that Khazan, when referring to the parameter verification in the wrapper function, refers to verifying “inputs” to the function.

Patent Owner argues that because Khazan discloses a jump instruction, and jumps do not include an input, Khazan does not disclose a “call including an input.” PO Resp. 28–29. Further, Patent Owner argues that Detours also uses jumps rather than function calls. *Id.* at 29–31. As we discussed above, we are not persuaded that the teachings of Khazan are limited to the use of only jump instructions. But, rather, Khazan discloses broadly the use of any instructions that transfer control to a wrapper function. Indeed, we credit Dr. Rubin’s explanation that parameters (or inputs) would be passed from the wrapped function to the wrapper function in order to verify the parameter information, as taught by Khazan. Ex. 1002 ¶¶ 100–02. Dr. Rubin also explains that the Detours package passes “the identical parameters from the calling code to the detoured function and then

into the original ‘target’ function.” *Id.* ¶ 101. From this testimony, we understand Khazan’s transfer of control to the wrapper function (call to a first function) to include the parameters (input) that will be verified during pre-monitoring. This understanding extends not only to the operation of Detours (which checks API calls), but also for the verification of parameters in instrumented scripted programs. *See id.*

As to Patent Owner’s further arguments that Khazan verifies parameters without using a call including an input, we are not persuaded. *See* PO Resp. 31 (Patent Owner arguing that “it may be appreciated that Khazan is able to ‘[verify] the parameter information’ despite not utilizing a call to the first function or a call including an input.”). Patent Owner’s argument focuses narrowly on the specific embodiments of Khazan. As stated above, Khazan broadly teaches using any instruction that transfers control to the wrapper function. Ex. 1003 ¶ 88 (describing instrumentation as dynamically modifying libraries “in which the instruction or instructions of the API of the target function are replaced with a jump instruction *or other transfer instruction* transferring control to the wrapper function.”) (emphasis added).

We do not see such a broad disclosure as limiting Khazan’s technique to jump instructions or to using the Detours package. To the contrary, as we have determined above, Khazan’s disclosure as a whole teaches or suggests that calls would be used, just as jump instructions, to transfer control. From Khazan’s verification of parameters, description of transfers of control, and Dr. Rubin’s testimony on this issue, we find that when using a call to effectuate the transfer of control, Khazan teaches or suggests that the call includes inputs in order to pass parameters to the wrapper function.



e. Invoking a Second Function With the Input

Claim 1 recites that the content processor invokes “a second function with the input, only if a security computer indicates that such invocation is safe.” Claim 4 similarly recites “invoking a second function with the input only if the indicator indicates that such invocation is safe.”

*Khazan’s Disclosures*

Petitioner argues that Khazan teaches that the “second function,” i.e., the original or target function, is invoked after verification. Pet. 29–30. In particular, Petitioner proffers an annotated Figure 9 from Khazan, reproduced below, showing the recited invocation. *Id.*

Petition Figure 2

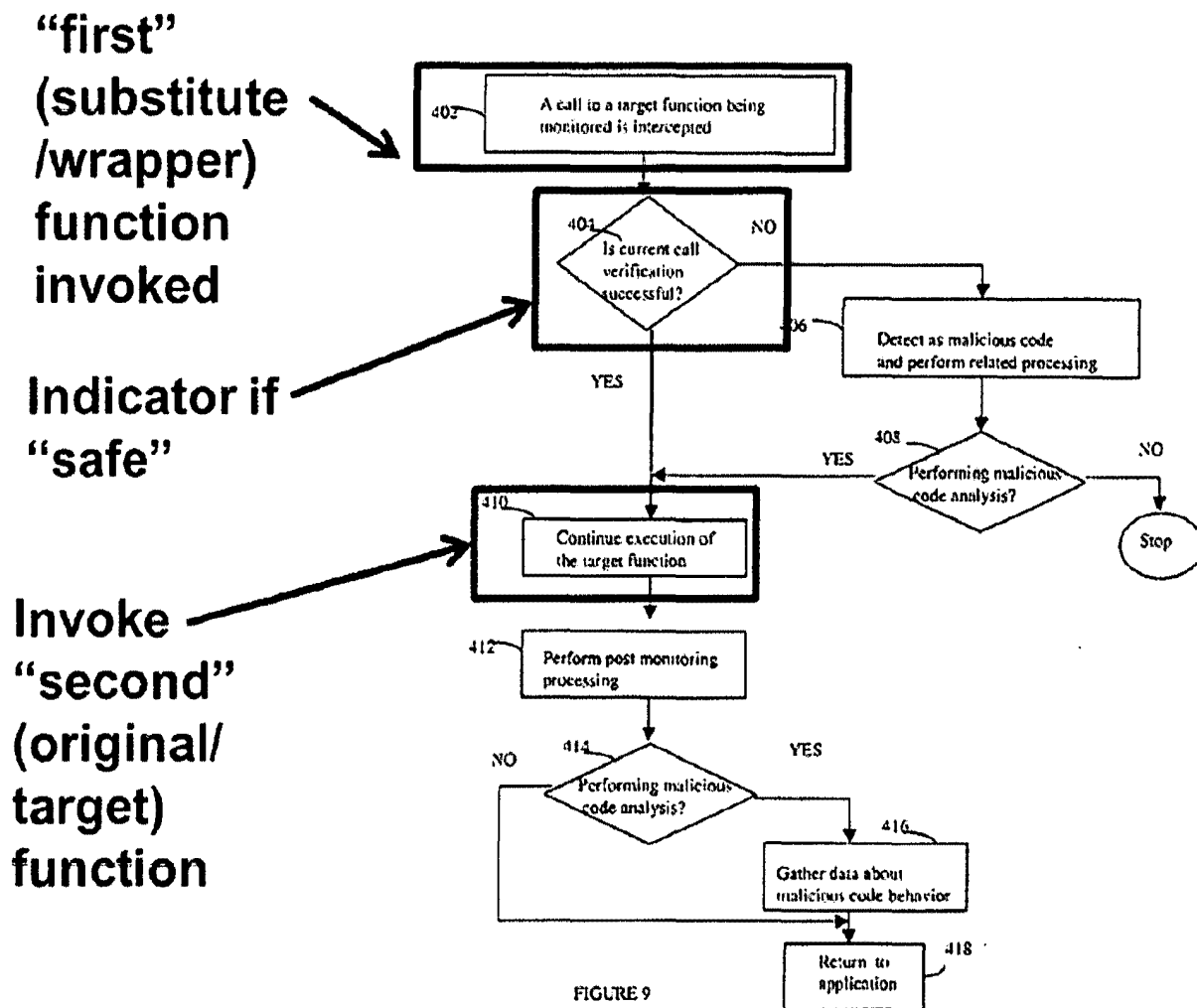


Figure 9 of Khazan is a flowchart of method steps summarizing the run-time processing performed by the dynamic analyzer. Ex. 1003 ¶ 27. According to the annotated figure, Petitioner asserts that Khazan invokes two functions: (1) step 402 is evidence of the invocation of the “first function”;<sup>13</sup> and (2) step 410 is evidence of the invocation of the “second

<sup>13</sup> We note that the claims require a call to a first function, but are silent regarding “invocation” of the first function. The distinction, however, is not

function.” *Id.* Step 402 of Figure 9, however, does not refer to invocation of a function, but instead refers to intercepting a call to a target function being monitored. *Id.* at Fig. 9 (“a call to a target function being monitored is intercepted”). As discussed above, Khazan intercepts the call to the target function by executing the jump instruction that transfers control to the stub or wrapper function, i.e. the first function. Thus, we understand that the act of intercepting the call is what Petitioner points to as invoking the “first” or wrapper function. The problem here is that, as we explain further below, for Khazan to transfer control or jump to the wrapper function, Khazan must call first the target function, which Petitioner maps to the “second function.” Petitioner’s pointing to the “second function” invoked at step 410 does not solve the problem, because the claims require invocation of the second function *only if* a security computer or the indicator indicates that the invocation is safe.

Patent Owner’s arguments correctly point out this problem in Petitioner’s contentions. Patent Owner argues that the description of Khazan’s dynamic analyzer shown in Figure 9 does not disclose the limitation. PO Resp. 35–36. Specifically, Khazan, according to Patent Owner, *always* invokes the second function. *Id.* (arguing that the CALL API\_A in Application.EXE is always invoked). We are persuaded by this argument. Khazan explains that “[b]eginning with the source function of the application’s binary, a call is made to the target function API\_A from the invocation address LOC\_A.” Ex. 1003 ¶ 83. Khazan further explains that

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relevant to our discussion of Khazan’s invocation of the target function, i.e., second function.

the “first instruction of the target function API\_A includes a transfer or jump instruction to the wrapper or stub function.” *Id.* That is, in order for the stub or wrapper function to be executed, the target function must be invoked first. Indeed, Khazan’s instrumentation rewrites the target function to include therein the transfer of control to the stub or wrapper function, indicating, therefore, that the target function (recited “second function”) must be invoked. The claims require, however, that the second function be invoked *only if* it is safe.

Petitioner, in reply, explains that the invocation of the target function (API\_A) in the trampoline routine is the invocation of the second function. Reply 15–16. We find this explanation insufficient to rebut Patent Owner’s argument and contrary to the facts of Khazan. First, Khazan describes the execution of the second function after the verification check as “continuing” execution. Ex. 1003, Fig. 9 (step 410: “*Continue* execution of the target function”) (emphasis added); ¶ 94 (“control proceeds to step 410 to *continue* execution of the target routine”) (emphasis added). Second, as described above, the target function must be invoked in order for control to transfer to the wrapper function. We find that this would be the case even if dealing with an instrumented application invoking internal target functions. When Khazan describes intercepting the target function, it refers to *invoking* the target function first, in order for the code inserted in the instrumented content to transfer control to the wrapper function. *See* Ex. 1003 ¶82 (“Referring now to FIG. 7, shown is the logical flow of control in one embodiment when an external *target function*, such as a Win32 API function, *is invoked at run time* from the application using a call instruction. The external call is intercepted using the instrumentation techniques

described herein.”) (emphasis added); ¶ 90 (“the first instruction or instructions just saved from the current target are replaced by instructions which transfer control to the stub or wrapper for the current call”); ¶ 92 (“the code of the target function is modified in memory rather than on a storage device”); ¶ 93 (“Every invocation of a Win32 API may be intercepted in the foregoing instrumentation technique. When one of the Win32 API calls is intercepted, this particular instance or *invocation* is checked against the list.”) (emphasis added); ¶ 94 (“a call to a target routine being monitored is intercepted”). Third, although we agree with Petitioner that the target function is verified during pre-monitoring and execution is suspended, the verification only occurs after invocation of the target function. Petitioner has failed to point out any teaching in Khazan where the target function is not invoked first. Accordingly, we find that Khazan does not teach or suggest the limitation “invoking a second function with the input only if” a security computer or the indicator indicates that such invocation is safe.

#### *Sirer's Disclosures*

Patent Owner argues that the Petition maps to Khazan only the limitation of “invoking a second function with the input.” PO Resp. 39–40; Tr. 71:24–72:23. We agree that the Petition addresses only Khazan in connection with the limitation “invoking a second function with the input.” Pet. 29–30. We note, however, that Petitioner relies on Sirer for the portion of the limitation requiring invocation of the second function “only if a security computer indicates that such invocation is safe.” *Id.* at 30–34. According to Petitioner, Khazan “discloses *locally* invoking the intercepted function only if the pre-monitoring code verifies the function and its parameters (e.g., input) for safety.” *Id.* at 30 (emphasis in original). The

Petition then addresses Sirer's teachings on "remote verification" given Khazan's failure to disclose a remote computer for performing the verification. *Id.* Petitioner, therefore, does not rely on any of Sirer's teachings to disclose that invocation of the second function occurs *only if* it is safe to do so. Accordingly, there is no need to address Sirer's disclosures or the asserted combination of Sirer with Khazan, because, as stated above, we find that Khazan does not disclose, teach or suggest that the second function is invoked *only if* it is safe to do so.

f. Transmitting the Input . . . , When the First Function is Invoked

Petitioner argues that Sirer teaches transmitting the function input by disclosing that the "security service may check user-supplied arguments to system calls." Pet. 35. Sirer, according to Patent Owner, does not disclose any timing for the transmission of the user-supplied arguments. PO Resp. 41. Patent Owner argues that Khazan also is silent regarding when the alleged input to the first function is transmitted. *Id.*

Patent Owner's arguments are not persuasive. Instead, we agree with Petitioner's contention that Sirer teaches verification when the function is executed. Reply 16–17 (citing Ex. 1004 at 3–5, Figs. 1–4; Ex. 1002 ¶¶ 107–109). For example, Sirer describes that in order to perform a runtime verification, the "verification service modifies the code to perform the corresponding checks at runtime by invoking a simple service component." Ex. 1004 at 5. Sirer also describes that a security service, which is a dynamic service component, checks user-supplied arguments to system calls. *Id.* at 3. Dr. Rubin opines that the "system call" is the intercepted call and the wrapper function (we read here the modified code) contains the

access checks that query the security service. Ex. 1002 ¶¶107–109. From this discussion, we find that in order to perform the security service checks, the modified code or wrapper function (as identified by Dr. Rubin) would be invoked in order to execute the call to the applicable dynamic service component. Accordingly, any transmission of inputs in Simer would occur “when the first function is invoked.” We also find persuasive Petitioner’s argument and evidence that Khazan’s verifications take place when the pre-monitoring code is executed, which timing also meets the claim language of transmitting an input, when the first function is invoked. Pet. 36 (citing Ex. 1003 ¶ 84).

g. Receiving an Indicator . . . Whether it is Safe to Invoke the Second Function With the Input

Petitioner points to Simer as receiving information from querying the security service during execution of the application. Pet. 37–38 (citing Ex. 1002 ¶¶ 110–11). Petitioner also points out that Simer checks the user-supplied arguments to system calls, ensuring that the arguments do not violate the security policy. *Id.* at 38 (citing Ex. 1004 at 4–5). Petitioner asserts that it would have been obvious to combine Simer and Khazan to gain the benefits of performing a run-time analysis on a network server (as in Simer) to receive the information about that analysis. *Id.* at 38–39 (citing Ex. 1002 ¶ 111). Patent Owner challenges Petitioner’s assertions in this regard. PO Resp. 42–43. We are not persuaded by Petitioner’s argument.

According to the mapping provided by Petitioner, Simer’s client computer, which executes the application with the modified code, calls the security server to verify the security identifiers and permissions it maintains. Pet. 37–38 (citing Ex. 1004 at 6, Fig. 4). The verification Simer performs

results in a query of the security service which is a lookup performed by the security service. Reply 17; Ex. 1004 at 6. The client caches the results of the lookup. *Id.* That is, Sirer teaches receiving the lookup results and providing access (e.g., allowing or disallowing access to a requested file). We find, therefore, that Sirer's client receives an indicator from a security computer whether it is safe to invoke the second function (the operation that is being checked) with the input (e.g., user-supplied arguments).

Nevertheless, Petitioner relies on the combination of Khazan and Sirer as teaching this limitation. The Petition explains that a person of ordinary skill in the art would have been motivated to obtain the benefits of analyzing the input at a remote computer, as taught by Sirer. Pet. 38. The premise is based on Khazan's teaching that the pre-monitoring code performs the verification of its parameters locally (not at a security computer, as required by the claims). *See* Pet. 30.

As discussed above, however, we are not persuaded that Khazan teaches the limitation of invoking the second function only if the invocation is safe. Khazan *continues* the operation of the second function, depending on the verification check performed by the pre-monitoring code. Ex. 1003, Fig. 9 (step 410: "*Continue* execution of the target function") (emphasis added); ¶ 94 ("control proceeds to step 410 to *continue* execution of the target routine") (emphasis added). It follows, therefore, that any combination of teachings of Khazan with Sirer would result in the second function being invoked, as taught by Khazan, upon execution of the instrumented content, but not "only if" the invocation is safe, after receiving the indicator. Accordingly, we are not persuaded that Petitioner has shown that the combination of Khazan and Sirer teaches or suggests this limitation.



h. Motivation to Combine Teachings of Khazan and Sirer

Patent Owner challenges the proffered rationale for the asserted combinations of Khazan and Sirer. PO Resp. 47–50. In particular, Patent Owner argues that the combination alters the principles of operation of Khazan. *Id.* And further, Patent Owner asserts that the combination of Khazan and Sirer would be inoperable. *Id.* at 50. In light of our determination that Khazan fails to disclose, teach, or suggest invoking a second function, as recited, we need not address Patent Owner’s additional arguments regarding the rationale for the asserted combination of teachings.

i. Conclusion Regarding Claims 1–5

Independent claims 1 and 4 recite the “invoking a second function” limitations addressed above. Having found that Khazan does not disclose, teach, or suggest the limitation, we determine that Petitioner has failed to establish by a preponderance of the evidence that claims 1 and 4, and claims 2, 3, and 5, dependent therefrom, are unpatentable over the combination of Khazan and Sirer. In light of our determination, we, therefore, do not address additional arguments and evidence proffered by Patent Owner regarding claims 2 and 3, and secondary considerations of nonobviousness.

E. GROUND BASED ON KHAZAN, SIRER, AND BEN-NATAN

This ground addresses claims 6–8, 10, and 11. Claims 6 and 10 are independent claims. Petitioner contends that the “modified input variable” recited in claims 6 and 10 is taught by Ben-Natan. *See, e.g.,* Pet. 48 (“Ben-Natan discloses ‘a modified input variable’ in the form of a ‘result data access statement.’”). For the remaining limitations of these claims,

Petitioner relies on Khazan and Sirer. Pet. 46–54. For example, claim 6 recites that a content processor calls “a second function with a modified input variable,” which Petitioner maps to Khazan’s execution, post-verification, of the target function combined with the teachings of Ben-Natan’s modification of a data access statement, in an SQL query. *Id.* at 48. Patent Owner challenges the combination with Ben-Natan on the basis that Ben-Natan is not analogous art and does not disclose the limitation. PO Resp. 51–53, 56–58. Patent Owner argues also that there is no motivation to combine Ben-Natan with Khazan and Sirer and that the combination would be inoperable. *Id.* at 54–56, 58.

*1. Overview of Ben-Natan (Ex. 1005)*

Ben-Natan is titled “System and methods for nonintrusive database security.” Ben-Natan describes “configurations of the invention [that] provide a nonintrusive data level security mechanism for intercepting database access streams.” Ex. 1005, 6:32–34. “Such an implementation deploys a security filter between the application and database, and observes, or ‘sniffs’ the stream of transactions between the application and the database.” *Id.* at 6:38–41. “If the ‘sniffed’ transactions indicate restricted data items, the security filter modifies the transaction to eliminate only the restricted data items, and otherwise allows the transaction to pass with the benign data items.” *Id.* at 6:50–54.

*2. Discussion*

Petitioner asserts that Khazan discloses identifying potentially malicious function parameters. Pet. 50, 53. According to Petitioner, Khazan performs two actions when identifying the existence of malicious code: (1) stop execution and return an error code; and (2) continue to run the

application to monitor the behavior of the malicious code. *Id.* at 50. Thus, Petitioner contends, Ben-Natan's limiter operation, which modifies the input of an SQL query, would allow for a program in Khazan to execute without harming the client computer, instead of stopping. *Id.* (citing Ex. 1002 ¶¶ 127–28). Petitioner further argues that given the limited number of known techniques for handling potentially malicious function inputs, it would have been obvious to try modifying Khazan's input as taught by Ben-Natan, to allow safe execution. *Id.* at 51. Finally, Petitioner asserts that the addition of Ben-Natan to the teachings of Khazan and Sirer is "a natural progression," resulting in a "system in which the security service of Sirer not only checks the function inputs, but modifies them if they are potentially malicious, to allow the downloaded application to execute safely (i.e., without violating the security policy)." *Id.* at 53.

Patent Owner challenges Petitioner's proffered rationale, arguing that a person of ordinary skill in the art would not be motivated to modify Khazan to make the inputs or parameters safe because Khazan would not perform the disclosed behavior analysis of detected malicious code. PO Resp. 54–55. We agree with Patent Owner's argument, and find that the alleged combination of teachings would so alter Khazan's operation that a person of ordinary skill in the art would not be motivated to combine the teachings as Petitioner alleges.

First, in order to combine the teachings of Khazan, Sirer, and Ben-Natan to achieve the claimed requirements of a modified input variable, a number of modifications appear necessary, and not all are identified or explained by Petitioner. Khazan's pre-monitoring code would need to be rewritten to transmit the input variable of the target function to a network

server or proxy that performs analysis of the input variable (as Petitioner alleges in Sirer). Additionally, Sirer's dynamic analysis components would need modification to include the limiting technique taught in Ben-Natan in order to modify the input variable. Further, and unexplained by Petitioner, Sirer would need to modify its server communication stream with the client devices to transmit the modified input variable, instead of sending the results of the lookups. Further still, and also unexplained by Petitioner, Khazan would need to be modified to receive the modified input variable, and replace the parameters of the target function with the modified ones.

We find that Petitioner has not explained sufficiently how the reference's teachings would be combined in order to achieve the claimed limitations. For instance, Petitioner's assertion that the combination is predictable because the references continue to do what they did prior to the combination (Ex. 1002 ¶ 125) is conclusory and unreasonable in light of the various and necessary, yet unexplained modifications of Khazan's teachings for combinability with those of Sirer and Ben-Natan.

Particularly noteworthy, Petitioner relies, for this ground, on the combinations of Sirer and Khazan made with respect to the previous ground. *See* Pet. 49 ("As discussed above, it would have been obvious to the POSA to combine the teachings of Sirer with Khazan. (§§X.A.1.d.1, X.A.1.g.)"). But the previous ground addresses claims (1–5) that do not recite any modifications to the input or input variables. The rationale for the combination of Khazan and Sirer for those claims, therefore, does not address any rationale for obviousness concerning either Sirer or Khazan handling modified input variables. Indeed, at most, Sirer is alleged in the previous ground to produce an indicator indicating whether it is safe to

invoke the second function with the input. *See* Pet. 33 (“The POSA would be familiar with developing the software for performing the security analysis on a remote computer and would expect the predictable result of returning a security indicator from the remote computer regarding whether the input is safe to execute in the original function.”).

The instant ground, however, addresses claims that recite receiving the “modified input variable,” for which Sirer is relied on as teaching the centralized or remote verification. *See id.* at 52 (discussing the “receiver” limitation of claim 6); 53 (discussing the limitation regarding how the modified input variable is obtained and relying on Sirer as disclosing “the security computer in the form of a security service.”); 58 (discussing the “receive” limitation of claim 10, which does not require a security computer, but nevertheless relying on Sirer providing a security service). As stated above, to meet the claims it would be necessary for Sirer’s security service to send a modified input variable, not just an indicator that invocation with the input is safe. Further, it would be necessary for Khazan to substitute the modified input variable into the target function during runtime. Neither of these particulars are addressed in the reasoning provided for combining Khazan and Sirer in the ground concerning claims 1–5. The reasoning provided, as discussed above, focuses generally on Sirer providing a centralized or remote security service processing. No changes in either Khazan’s or Sirer’s operation or features were alleged with regard to the modified input variable, and no motivation has been asserted sufficiently to combine the teachings in a manner that achieves claims 6–8, 10, and 11. Therefore, we find that Petitioner’s reliance on the rationales asserted for the ground concerning claims 1–5 are insufficient articulated reasoning with a

rational underpinning for the asserted combinations regarding claims 6–8, 10, and 11.

Furthermore, we find insufficient the reasoning Petitioner provides to combine Ben-Natan’s teachings with those of Sierer and Khan. Petitioner’s expert, Dr. Rubin, opines that, in addition to the alleged similarities of the prior art systems, “Ben-Natan’s proposal to actually modify the inputs is a small and natural extension of the same operating principles that Khazan and Sierer use.” Ex. 1002 ¶ 122. With regard to utilizing Sierer’s security processing at a server, Dr. Rubin similarly opines that it is a “natural extension.” *Id.* ¶ 124. Finally, Dr. Rubin asserts that Ben-Natan’s contribution is “also a straight-forward and unsurprising addition.” *Id.*

We find these explanations insufficient to show an articulated reason with a rational underpinning for why a person of ordinary skill in the art would be motivated to combine the references as asserted by Petitioner. Such statements of “straight-forward,” “small,” “natural,” and “unsurprising” applications are generic, and fail to provide necessary factual support—they are akin to stating in a conclusory fashion that the combination “would have been obvious.” *In re Van Os.*, 844 F.3d 1359, 1361 (Fed. Cir. Jan. 3, 2017) (“Absent some articulated rationale, a finding that a combination of prior art would have been ‘common sense’ or ‘intuitive’ is no different than merely stating the combination ‘would have been obvious.’ Such a conclusory assertion with no explanation is inadequate to support a finding that there would have been a motivation to combine.”).

As for stating that it would have been “obvious to try,” the rationale also lacks factual support. It is not enough to assert that the prior art

provides two options and that it would have been predictable to implement either. An obviousness rationale generally requires some identification of “a design need or market pressure to solve a problem” before looking at the “finite number of identified, predictable solutions.” *See KSR*, 550 U.S. at 421. Accordingly, an obvious to try rationale requires that the design need or market pressure is what drives a person of ordinary skill in the art to consider the identified, predictable solutions. We find neither an assertion nor evidence proffered by the Petitioner concerning this need. The Petition states, with regard to the “obvious to try” rationale, that a person of ordinary skill in the art would expect “simply that the input would be modified to execute safely.” Pet. 51. This alleged result identifies a solution, but does not address either a design need or market pressure.

Moreover, the result of Petitioner’s asserted combinations would result in an alteration to Khazan that renders the disclosure inoperable for the analysis mode. *See PO Resp.* 54. In particular, we find persuasive Patent Owner’s argument and evidence that if a parameter of a target function is modified to be “safe,” Khazan would not operate in the analysis mode where the behavior of the malicious code is analyzed. *See Ex.* 1003 ¶ 99. In other words, after detecting malicious code, the technique of Khazan to conduct behavior analysis would not be possible, given that the malicious code, in the asserted combination, is excised by modifying the input variable. We also find persuasive Patent Owner’s argument that Petitioner has not supported its assertion that Ben-Natan “discloses a known method for modifying [a] function input to allow for safe execution of the downloaded application” because Ben-Natan is not concerned with downloaded applications or safe execution of those applications. *PO Resp.*

55 (addressing Petitioner’s Rationale “B” making the disputed assertion). Ben-Natan’s alleged known method is limiting a database query to narrow the scope of the database search, but does not discuss any downloaded applications or implementation of the limiting query to an execution of applications. Ex. 1005, 13:27–14:24. Petitioner fails to explain how the Ben-Natan disclosure constitutes a “known method for modifying an input to allow for safe execution of the downloaded application,” as asserted in the Petition.

Finally, we find unavailing Petitioner’s assertion that the “combination [of the references] is nothing more than combining known techniques in a different way to produce predictable results.” Pet. 54 (citing Ex. 1002 ¶¶ 122–129). The statement alone is not sufficient for Petitioner to carry its burden. The Federal Circuit has made clear that a petitioner in an *inter partes* review proceeding cannot “satisfy its burden of proving obviousness” by “employ[ing] mere conclusory statements” and “must instead articulate specific reasoning, based on evidence of record” to support an obviousness determination. *In re Magnum Oil Tools Int’l*, 829 F.3d 1364, 1380–81 (Fed. Cir. 2016). The “factual inquiry” into the reasons for “combin[ing] references must be thorough and searching, and the need for specificity pervades . . . .” *In re Nuvasive, Inc.*, 842 F.3d 1376, 1381–82 (Fed. Cir. 2016) (internal quotations and citations omitted). A determination of obviousness cannot be reached where the record lacks “explanation as to *how* or *why* the references would be combined to produce the claimed invention.” *Trivascular, Inc. v. Samuels*, 812 F.3d 1056, 1066 (Fed. Cir. 2016); *see Nuvasive*, 842 F.3d at 1382–85; *Magnum Oil*, 829 F.3d at 1380–81. The Petition’s statement that combining known techniques yields



predictable results relies exclusively on the paragraphs of Dr. Rubin's declaration discussed above, which we find conclusory and therefore unpersuasive. Furthermore, to the extent the statement is an attempt to invoke a rationale for finding obviousness asserted in *KSR*, that attempt fails, for *KSR* requires the known elements to be combined "according to known methods"—not "in a different way," as alleged by Petitioner. *See KSR*, 550 at 416.

### 3. Conclusion Regarding Claims 6–8, 10, and 11

Having considered the arguments and evidence presented by both parties, we determine that Petitioner has not shown by a preponderance of the evidence that claims 6–8, 10, and 11 would have been obvious over the combination of Khazan, Sirer, and Ben-Natan. As stated above, the proffered rationales to combine the references lack factual support or rational underpinning supporting the reasoning. Given our findings above, which address the assertions made with regard to independent claims 6 and 10, we find that the challenged claims dependent therefrom also have not been shown to be unpatentable.

## F. MOTIONS TO EXCLUDE

Petitioner moves to exclude Exhibits 2009 and 2011–2013 based on various objections as to relevance and hearsay. Paper 46 ("Pet. Motion to Exclude"). Petitioner's Motion to Exclude is denied as moot, because the evidence objected to is not relied upon in reaching our determination that Petitioner has not met its burden of showing that claims 1–8, 10, and 11 are unpatentable.

In turn, Patent Owner moves to exclude various exhibits in the record:

- a) Exhibits 1036, 1039–1042, 1044–1045 as outside the scope of Petitioner’s Reply. Paper 48 (“PO Motion to Exclude”).
- b) Exhibit 1008, the Simer Declaration, as hearsay and for lack of foundation. *Id.* at 5–8.
- c) Exhibit 1036, Declaration of Mr. Mel DeSart, for lack of foundation and because opinions are conclusory and unreliable. *Id.* at 8–9.
- d) Exhibits 1004 and 1024, Simer reference, as hearsay, irrelevant, and lack of authentication. *Id.* at 10–14.
- e) Exhibit 1012 and Annotated Figure 1–4 in the Petition, as prejudicial. *Id.* at 14–15.

Patent Owner’s motion is denied. From the outset, we have stated repeatedly that a motion to exclude is not a vehicle for arguing that Petitioner’s arguments and supporting evidence are outside the proper scope of a reply.<sup>14</sup> A motion to exclude evidence filed for the purpose of striking or excluding an opponent’s brief and/or evidence that a party believes goes beyond what is permitted under 37 CFR § 42.23 is improper. An allegation that evidence does not comply with 37 CFR § 42.23 is not a sufficient reason under the Federal Rules of Evidence for making an objection and requesting exclusion of such evidence. Accordingly, these arguments in Patent

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<sup>14</sup> See *Valeo v. Magna Elecs., Inc.*, Case IPR2014-00227, Paper 44 (PTAB Jan 14, 2015); *Carl Zeiss SMT GmbH v. Nikon Corp.*, Case IPR2013-00362, Paper 23 (PTAB June 5, 2014); *Ultratec, Inc. v. Sorenson Commc’ns, Inc.*, Case IPR2013-00288, Paper 38 at 2 (PTAB May 23, 2014); *Primera Tech., Inc. v. Automatic Mfg. Sys., Inc.*, Case IPR2013-00196, Paper 33 (PTAB Feb. 10, 2014); *ZTE Corp. v. Contentguard Holdings Inc.*, Case IPR2013-00133, Paper 42 (PTAB Jan. 21, 2014).

Owners' Motion to Exclude are not considered, and the request to exclude Exhibits 1036, 1039–1042, 1044–1045 as being outside the scope of a proper reply is denied.

With regard to Exhibit 1008, the Simer Declaration, we agree that Patent Owner was unable to cross-examine Mr. Simer. We stated above, *see supra* footnote 11, that we give no weight and do not rely on the Simer Declaration. In that same footnote we discuss Exhibit 1024, to which Patent Owner objects. We do not rely on either Exhibit 1008 or 1024 in rendering our findings regarding whether Simer is a printed publication. Accordingly, the request to exclude Exhibits 1008 and 1024 is denied as moot.

We deny on the merits Patent Owner's request to exclude the Declaration of Mr. Mel DeSart, Ex. 1036, and the Simer reference, Ex. 1004. First, as to Exhibit 1036, the Board granted the request to submit the DeSart Declaration as supplemental information under 37 C.F.R. ¶ 123(b). *See* Ex. 1037 at 24:5–19. Second, Patent Owner conducted the cross-examination of Mr. DeSart and points to no persuasive evidence that Mr. DeSart's testimony is unreliable or lacks foundation. We agree with Petitioner that Mr. DeSart's testimony is based on personal knowledge of the business practices of the University of Washington Engineering Library. Paper 50, at 8–9. We overrule Patent Owner's objections to Exhibit 1036 and deny Patent Owner's request to exclude it.

As to the Simer reference, Exhibits 1004 has not been shown to be either irrelevant or hearsay. Nor is there a lack of authentication of the Simer reference. The Simer reference is self-authenticating because it contains indicia sufficient to show that it is an ACM article as discussed *supra* at Section II.D.3 ("Whether Simer is a Printed Publication"). *See* Paper 50 at

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12–13 (Petitioner asserting the periodical and inscription information that show Sirer is self-authenticating). Further, the Sirer article is not hearsay, as it is being considered only for what it describes and not for truth. *See* Fed. R. Evid. 807(c); *Joy Techs., Inc. v. Manbeck*, 751 F.Supp. 225, 233 n.2 (D.D.C. 1990), *aff'd*, 959 F.2d 226 (Fed. Cir. 1992). Accordingly, Patent Owner’s objections to Exhibit 1004 is overruled, and the requests to exclude it are denied.

With regard to Exhibit 1012 and annotated figures in the Petition, we adopt the reasons provided by Petitioner in its opposition to the Patent Owner motion to exclude. Paper 50 at 13–15. The objections to Exhibit 1012 are overruled, and the motion to exclude the exhibits and annotated figures is denied.

### III. CONCLUSION

For the foregoing reasons, we conclude that Petitioner *has not shown* by a preponderance of the evidence that claims 1–8, 10, and 11 of the ’154 patent are unpatentable. Petitioner’s Motion to Exclude is denied as moot. Patent Owner’s Motion to Exclude is denied.

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Patent 8,141,154 B2

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claims 1–8, 10, and 11 of the '154 patent have not been shown to be unpatentable;

FURTHER ORDERED that Petitioner's Motion to Exclude is denied as moot;

FURTHER ORDERED that Patent Owner's Motion to Exclude is denied; and

FURTHER ORDERED that, because this is a Final Written Decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

IPR2015-01979  
Patent 8,141,154 B2

PETITIONER:

Orion Armon  
Christopher Max Colice  
Jennifer Volk  
Brian Eutermoser  
COOLEY LLP  
[oarmon@cooley.com](mailto:oarmon@cooley.com)  
[mcolice@cooley.com](mailto:mcolice@cooley.com)  
[jvolkfortier@cooley.com](mailto:jvolkfortier@cooley.com)  
[beutermoser@cooley.com](mailto:beutermoser@cooley.com)

Nathaniel Hamstra  
QUINN EMANUEL URQUHART & SULLIVAN, LLP  
[nathanhamstra@quinnemanuel.com](mailto:nathanhamstra@quinnemanuel.com)

PATENT OWNER:

James Hannah  
Jeffrey H. Price  
Michael Kim  
KRAMER LEVIN NAFTALIS & FRANKEL LLP  
[jhannah@kramerlevin.com](mailto:jhannah@kramerlevin.com)  
[jprice@kramerlevin.com](mailto:jprice@kramerlevin.com)  
[mkim@finjan.com](mailto:mkim@finjan.com)

AO 120 (Rev. 2/99)

<b>TO: Mail Stop 8</b> <b>Director of the U.S. Patent &amp; Trademark Office</b> <b>P.O. Box 1450</b> <b>Alexandria, VA 22313-1450</b>	<b>REPORT ON THE</b> <b>FILING OR DETERMINATION OF AN</b> <b>ACTION REGARDING A PATENT OR</b> <b>TRADEMARK</b>
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In Compliance with 35 § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Northern District California on the  Patents or  Trademarks:

DOCKET NO. CV 16-06955 JCS	DATE FILED 12/2/2016	U.S. DISTRICT COURT 450 Golden Gate Avenue, 16 <sup>th</sup> Floor, San Francisco CA 94102
PLAINTIFF FINJAN		DEFENDANT F5 NETWORKS
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 6965968		
2 7975305		
3 8141154		
4 8677494		
5		

In the above—entitled case, the following patent(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading		
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK	
1			
2			
3			
4			
5			

In the above—entitled case, the following decision has been rendered or judgement issued:

<b>DECISION/JUDGEMENT</b> <b>Notice of Voluntary Dismissal</b>
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CLERK SUSAN Y. SOONG	(BY) DEPUTY CLERK GINA AGUSTINE	DATE JANUARY 2, 2017
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Copy 1—Upon initiation of action, mail this copy to Commissioner Copy 3—Upon termination of action, mail this copy to Commissioner  
 Copy 2—Upon filing document adding patent(s), mail this copy to Commissioner Copy 4—Case file copy

<b>TO: Mail Stop 8</b> <b>Director of the U.S. Patent &amp; Trademark Office</b> <b>P.O. Box 1450</b> <b>Alexandria, VA 22313-1450</b>	<b>REPORT ON THE</b> <b>FILING OR DETERMINATION OF AN</b> <b>ACTION REGARDING A PATENT OR</b> <b>TRADEMARK</b>
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In Compliance with 35 § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Northern District of California on the following:

(X) Patents or ( ) Trademarks

DOCKET NO:  
16-cv-06955-JCS

DATE FILED:  
 December 2, 2016

UNITED STATES DISTRICT COURT  
 Phillip Burton Federal Building  
 450 Golden Gate Avenue, 16th Floor  
 San Francisco, CA 94102

PLAINTIFF:  
 FINJAN, INC.

DEFENDANT:  
 F5 NETWORKS, INC.

PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1. <u>6965968</u>		***see attach Complaint***
2. <u>7975305</u>		
3. <u>8141154</u>		
4. <u>8677494</u>		
5.		

In the above-entitled case, the following patent(s) have been included.

DATE INCLUDED INCLUDED BY:  
 ( ) Amendment ( ) Answer ( ) Cross Bill ( ) Other Pleading

PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1.		
2.		
3.		
4.		
5.		

In the above-entitled case, the following decision has been rendered or judgment issued:

DECISION/JUDGEMENT:
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Susan Y. Soong  
 Susan Y. Soong, Clerk

Gina Augustine  
 (by) Deputy Clerk, Gina Augustine

- Copy 1 – Upon initiation of action, mail this copy to Commissioner
- Copy 2 – Upon filing document adding patent(s) mail this copy to Commissioner
- Copy 3 – Upon termination of action, mail this copy to the Commissioner
- Copy 4 – Case file copy



<b>TO: Mail Stop 8</b> <b>Director of the U.S. Patent &amp; Trademark Office</b> <b>P.O. Box 1450</b> <b>Alexandria, VA 22313-1450</b>	<b>REPORT ON THE</b> <b>FILING OR DETERMINATION OF AN</b> <b>ACTION REGARDING A PATENT OR</b> <b>TRADEMARK</b>
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In Compliance with 35 § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Northern District of California on the following:

Patents      or       Trademarks

DOCKET NO:  
13-cv-05808-HSG

DATE FILED:  


UNITED STATES DISTRICT COURT  
 Phillip Burton Federal Building  
 450 Golden Gate Avenue  
 San Francisco, CA 94102

PLAINTIFF:  
Finjan, Inc.

DEFENDANT:  
Proofpoint, Inc.

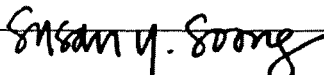
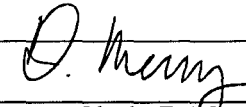
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1. 7058822		
2. 7647633		
3. 6154844		
4. 7975305		
5. 8225408		

In the above-entitled case, the following patent(s) have been included.

DATE INCLUDED      INCLUDED BY:  
 Amendment       Answer       Cross Bill       Other Pleading

PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1. 8079086		
2. 8141154		
3. 7613918		
4.		
5.		

In the above-entitled case, the following decision has been rendered or judgment issued:

<b>DECISION/JUDGEMENT:</b>  CASE DISMISSED 6/7/2016   
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Susan Y. Soong, Clerk

(by) Deputy Clerk, D Merry

- Copy 1 – Upon initiation of action, mail this copy to Commissioner
- Copy 2 – Upon filing document adding patent(s) mail this copy to Commissioner
- Copy 3 – Upon termination of action, mail this copy to the Commissioner
- Copy 4 – Case file copy

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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PALO ALTO NETWORKS, INC.  
Petitioner

v.

FINJAN, INC.  
Patent Owner

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*Inter Partes* Review No. IPR2016-00151<sup>1</sup>  
U.S. Patent No. 8,141,154

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**PETITIONERS' NOTICE OF APPEAL**

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<sup>1</sup> Case IPR2016-01071 has been joined with this proceeding.

Petitioners' Notice of Appeal  
IPR2016-00151 (U.S. Patent No. 8,141,154)

Pursuant to 37 C.F.R. § 90.2(a) and 35 U.S.C. §§ 141(c), 142, and 319, Palo Alto Networks, Inc. and Symantec Corp. ("Petitioners") respectfully give notice that they appeal to the United States Court of Appeals for the Federal Circuit from the Patent Trial and Appeal Board's Final Written Decision entered on March 15, 2017 (Paper 51), the Board's Decision Denying Rehearing entered on May 19, 2017 (Paper 53), and from other related orders, decisions, rulings, and opinions underlying the Board's decisions.<sup>2</sup>

For the limited purpose of providing the Director of the United States Patent and Trademark Office with the information specified in 37 C.F.R. § 90.2(a)(3)(ii), the issues on appeal include the Board's determination that Petitioners did not establish that claims 1-8, 10, and 11 of the '154 patent are unpatentable under 35 U.S.C. § 103 in view of the grounds of unpatentability on which trial was instituted (Paper 10). The issues on appeal also include any finding or determination supporting or related to these issues, as well as all other issues decided adversely to Petitioners in any order, decision, ruling, or opinion.

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<sup>2</sup> Symantec Corp. was petitioner in IPR2016-01071, which was consolidated and joined with IPR2016-00151. (Paper 21.) Citations are to the IPR2016-00151 docket.

Petitioners' Notice of Appeal  
IPR2016-00151 (U.S. Patent No. 8,141,154)

Simultaneous with this filing and in accordance with 37 C.F.R. § 90.2(a)(1), this Notice of Appeal is being filed with the Director and served on Patent Owner in accordance with 37 C.F.R. § 42.6(e). This Notice of Appeal, along with the required fees, is also being filed with the Clerk's Office for the United States Court of Appeals for the Federal Circuit in accordance with Fed. Cir. R. 15(a)(1).

Dated: July 17, 2017

Respectfully submitted,

Counsel for Palo Alto Networks, Inc.  
Morrison & Foerster LLP  
1650 Tysons Boulevard, Suite 400  
McLean, VA 22102  
Tel: (703) 760-7774  
Fax: (703) 890-2632  
SBiswas@mofo.com

By:           / Shouvik Biswas /            
Shouvik Biswas  
Registration No.: 68,439

Respectfully submitted,

Counsel for Symantec Corp.  
Quinn Emanuel Urquhart & Sullivan  
500 West Madison St.  
Suite 2450  
Chicago, IL 60661  
Tel: (312) 705-7400  
Fax: (312) 705-7401  
nathanhamstra@quinnemanuel.com

By:           / Nathan Hamstra /            
Nathan Hamstra

**CERTIFICATE OF SERVICE**

I hereby certify that, in addition to being filed electronically through the Patent Trial and Appeal Board's End to End system, the foregoing Notice of Appeal was filed by Express Mail on July 17, 2017, with the Director of the United States Patent and Trademark Office, at the following address:

Office of the General Counsel  
Patent and Trademark Office  
Madison East  
10B20 600 Dulany Street  
Alexandria, Virginia 22314

\*\*\*

I hereby certify that a true and correct copy of the foregoing Notice of Appeal was filed electronically by CM/ECF on July 17, 2017, with the Clerk's Office of the United States Court of Appeals for the Federal Circuit.

Pursuant to 37 C.F.R. §§ 90.2(a) and Federal Circuit Rule 15(a)(1), I certify that on July 17, 2017, the requisite fee for appeal of the foregoing Petitioners' Notice of Appeal was filed by CM/ECF in the United States Court of Appeals for the Federal Circuit.

\*\*\*

Pursuant to 37 C.F.R. § 42.6(e), I certify that I caused to be served a true and correct copy of the foregoing Petitioners' Notice of Appeal on the Patent Owner at

Petitioners' Notice of Appeal  
IPR2016-00151 (U.S. Patent No. 8,141,154)

the correspondence address of the Patent Owner as follows:

James Hannah  
KRAMER LEVIN NAFTALIS &  
FRANKEL LLP  
990 Marsh Road  
Menlo Park, CA 94025  
Phone: (650) 752-1712  
Fax: (650) 752-1812  
jhannah@kramerlevin.com

Jeffrey H. Price  
KRAMER LEVIN NAFTALIS &  
FRANKEL LLP  
1177 Avenue of the Americas  
New York, NY 10036  
Phone: (212) 715-7502  
Fax: (212) 715-8302  
jprice@kramerlevin.com

Michael Kim  
Finjan, Inc.  
2000 University Ave., Ste. 600  
E. Palo Alto, CA 94303  
Phone: 650.397.9567  
mkim@finjan.com  
USPTO Reg. No. 40,450

Nathaniel A. Hamstra  
David Nelson  
Kenneth K. Suh  
QUINN EMANUEL  
500 W. Madison St., Suite 2450  
Chicago, IL 60661  
nathanhamstra@quinnemanuel.com  
davenelson@quinnemanuel.com  
kennethsuh@quinnemanuel.com

By:           / Kim Helenius /            
Kim Helenius

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

---

PALO ALTO NETWORKS, INC. and SYMANTEC CORP.,  
Petitioner,

v.

FINJAN, INC.,  
Patent Owner.

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Case IPR2016-00151<sup>1</sup>  
Patent 8,141,154 B2

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Before, THOMAS L. GIANNETTI, MIRIAM L. QUINN, and  
PATRICK M. BOUCHER, *Administrative Patent Judges*.

QUINN, *Administrative Patent Judge*.

FINAL WRITTEN DECISION  
*35 U.S.C. § 318(a) and 37 C.F.R. § 42.73*

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<sup>1</sup> This case is joined with IPR2016-01071. Paper 21 (“Decision on Institution of *Inter Partes* Review and Grant of Motion for Joinder,” filed by Symantec Corp.).

Palo Alto Networks, Inc. and Symantec Corp. (collectively “Petitioner”) each have filed petitions to institute *inter partes* review of claims 1–12 of U.S. Patent No. 8,141,154 B2 (“the ’154 patent”) pursuant to 35 U.S.C. § 311–319. Paper 2 (“Pet.”); IPR2016-01071, Paper 1. In response to the petition filed by Palo Alto Networks, Inc. (Paper 2), Finjan, Inc. (“Patent Owner”) filed a Preliminary Response. Paper 8 (“Prelim. Resp.”). Upon consideration of the Petition and the Preliminary Response, we instituted trial as to challenged claims, 1–8, 10 and 11. Paper 10 (“Dec.”).

Subsequently, we reviewed and granted Symantec Corp.’s petition, which sought review of the same claims of the ’154 patent. IPR2016-01071, Paper 1. With its petition, Symantec Corp. filed a motion requesting to join IPR2016-01071 with this proceeding, and we granted the motion. Paper 21. Upon granting the motion, we terminated Case IPR2016-01071, and ordered consolidation of all Petitioner filings in this proceeding. *Id.* at 4–5.

During trial, Patent Owner filed a Patent Owner Response (Paper 19, “PO Resp.”); and Petitioner filed a Reply (Paper 32, “Reply”). Patent Owner also filed a Motion for Observations of the December 20, 2016, cross-examination of Petitioner’s declarant, Dr. Aviel Rubin. Paper 40. Petitioner responded to Patent Owner’s Motion for Observations. Paper 43. Both parties also filed Motions to Exclude. Paper 38 (“Pet. Mot. to Exclude”); Paper 39 (“PO Mot. to Exclude”). Both parties filed Oppositions and Replies concerning the Motions to Exclude. Papers 42, 44, 45, 46. An oral hearing was held on January 24, 2017.<sup>2</sup>

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<sup>2</sup> A transcript of the oral hearing is entered in the record as Paper 49 (“Tr.”).



We have jurisdiction under 35 U.S.C. § 6(c). This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a). For the reasons discussed herein, and in view of the record in this trial, we determine that Petitioner has not shown by a preponderance of the evidence that claims 1–8, 10, and 11 of the '154 patent are unpatentable.

## I. BACKGROUND

### A. RELATED MATTERS

Petitioner identifies the '154 patent as the subject of various district court cases filed in the U.S. District Court for the Northern District of California and District of Delaware. Pet. 42. Petitioner also states that petitions for *inter partes* review have been filed regarding other related patents. *Id.* The '154 patent is also the subject of another *inter partes* review: IPR2015-01979 (and IPR2016-00919, joined therewith). In IPR2015-01979, we issue a Final Written Decision, under 35 U.S.C. § 318 (a), concurrently with the instant Final Written Decision.

### B. FINAL WRITTEN DECISION IN IPR2015-01979

The parties have briefed whether estoppel under 35 U.S.C. § 315 (e)(1) affects our ability to render a Final Written Decision in this proceeding. *See* Papers 30, 31. As stated above, IPR2015-01979 is also directed to the '154 patent, and considers the same claims challenged in the instant proceeding. Because we issue final written decisions in both proceedings concurrently, we need not decide what effect, if any, the estoppel provisions of § 315 (e)(1) have on our ability to render this decision.

### C. INSTITUTED GROUNDS

We instituted *inter partes* review of claims 1–8, 10, and 11 (“the challenged claims”) based on Petitioner’s challenge of those claims as unpatentable under 35 U.S.C. § 103(a) over Ross.<sup>3</sup> Petitioner supports its contentions of unpatentability with a declaration from Dr. Aviel Rubin. Ex. 1002 (“Rubin Declaration”). Patent Owner proffers a declaration from Dr. Nenad Medvidovic as evidence in support for its contentions. Ex. 2035 (“Medvidovic Declaration”). The cross-examinations of Dr. Rubin and Dr. Medvidovic are in the record as Exhibits 2012 and 1011, respectively.

### D. THE ’154 PATENT (EX. 1001)

The ’154 patent relates to computer security and, more particularly, to systems and methods for protecting computers against malicious code such as computer viruses. Ex. 1001, 1:7–9, 8:38–40. The ’154 patent identifies the components of one embodiment of the system as follows: a gateway computer, a client computer, and a security computer. *Id.* at 8:45–47. The gateway computer receives content from a network, such as the Internet, over a communication channel. *Id.* at 8:47–48. “Such content may be in the form of HTML pages, XML documents, Java applets and other such web content that is generally rendered by a web browser.” *Id.* at 8:48–51. A content modifier modifies original content received by the gateway computer and produces modified content that includes a layer of protection to combat dynamically generated malicious code. *Id.* at 9:13–16.

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<sup>3</sup> Patent Application Pub. No. US 2007/0113282 A1 (Exhibit 1003) (“Ross”).

## E. ILLUSTRATIVE CLAIM

Challenged claims 1, 4, 6, and 10 are independent, and illustrative claim 1 is reproduced below.

1. A system for protecting a computer from dynamically generated malicious content, comprising:

a content processor (i) for processing content received over a network, the content including a call to a first function, and the call including an input, and (ii) for invoking a second function with the input, only if a security computer indicates that such invocation is safe;

a transmitter for transmitting the input to the security computer for inspection, when the first function is invoked; and

a receiver for receiving an indicator from the security computer whether it is safe to invoke the second function with the input.

## II. ANALYSIS

### A. CLAIM INTERPRETATION

In an *inter partes* review, claim terms in an unexpired patent are interpreted according to their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2142–46 (2016). Consistent with that standard, claim terms also are given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *See In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). There are, however, two exceptions to that rule: “1) when a patentee sets out a definition and acts as his own lexicographer,” and “2) when the patentee disavows the full scope of a claim

term either in the specification or during prosecution.” *See Thorner v. Sony Computer Entm’t Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012).

If an inventor acts as his or her own lexicographer, the definition must be set forth in the specification with reasonable clarity, deliberateness, and precision. *Renishaw PLC v. Marposs Societa’ per Azioni*, 158 F.3d 1243, 1249 (Fed. Cir. 1998). Although it is improper to read a limitation from the specification into the claims, *In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993), claims still must be read in view of the specification of which they are a part. *Microsoft Corp. v. Multi-Tech Sys., Inc.*, 357 F.3d 1340, 1347 (Fed. Cir. 2004).

In our Decision on Institution, we did not construe expressly any claim terms. Dec. 4–5. In its papers, Patent Owner argues distinctions from the prior art that hinge on whether the term “call to a first function” is different from “invoking” the first function. PO Resp. 22–23 (“Ross teaches a technique in which received content does not include a call to a first function. In contrast, Ross’ technique involves *invoking* a hook function . . . without the content including a call to the hook function.” (emphasis in original)).

*“call to a first function”*

The term “call to a first function” is recited in all challenged claims. The arguments presented regarding this limitation turn on the scope of the word “call.” Specifically, Patent Owner argues that Ross may invoke the “first function,” but Petitioner has not identified that Ross’s content includes a “call to a first function,” as required by the claims. *Id.* at 20–21. At issue is to what extent the recited “call” refers to execution of the function. Dr. Medvidovic, Patent Owner’s expert, proffers opinions on the issue by

relying on a definition of “function call” derived from the Microsoft Press Computer Dictionary. Ex. 2035 ¶ 57 (citing Ex. 2013). That Dictionary provides that a “function call” is “[a] program’s request for the services of a particular function.” *Id.*; Ex. 2013. It also explains that “[a] function call is coded as the name of the function along with any parameters needed for the function to perform its task.” *Id.*

The Specification of the ’154 patent does not define the term “call to a first function.” But the Specification uses the phrase “function call” in stating that “before the client computer invokes a function call that may potentially dynamically generate malicious code, the client computer passes the input to the function to the security computer for inspection.” Ex. 1001, 4:38–42. The Specification also states that “the present invention operates by replacing original function calls with substitute function calls within the content, at a gateway computer, prior to the content being received at the client computer.” *Id.* at 4:57–60. From such examples, we understand the Specification to use the phrase “function call” in the same sense that the claims recite in the phrase “call to a [] function.” That is, a “call” is part of the recited “content,” as a statement or instruction containing the function that, when executed, causes the function to provide a service. Thus, we find the dictionary definition of the term “function call” applicable here and indicative of the meaning of the term to a person of ordinary skill in the art.

Furthermore, the dictionary definition is consistent with the embodiments described in the Specification. For example, one embodiment of the ’154 patent provides for modifying an original function call with “corresponding function calls `Substitute_function(input,*)`.” *Id.* at 9:21–24. That is, the specification describes that the services of the function

Substitute\_function are being requested by the modified content. Furthermore, the format of the function in this particular embodiment identifies the name of the function and the parameters “input” and “\*”. *See also id.* at 9:26–28 (explaining that the “input intended for the original function is also passed to the substitute function, along with possible additional input denoted by “\*”). From this description we determine that the “call” is a statement or instruction in the content, the execution of which causes the function to provide a service.

We note that this construction of “call to a first function” need not define the format of the instruction or statement, or further detail regarding its parameters. We reach this determination because the claim language itself requires that either the call or the function include an input. For example, claim 1 recites the “call including an input,” while claim 6 recites “the first function including an input variable.”

Petitioner argues that a call to a function and invoking a function are equivalent. Tr. 26:2–12. Dr. Rubin further testifies that a call is “when a function is invoked.” Ex. 2038, 74:9–11; *see also* 74:18–75:4 (testifying also that invoking the function name, transferring execution to the code in that function is a call). We do not agree with Petitioner in this regard. The claims recite “including a call” and “invoking” distinctly from each other. For example, claims 1 and 4 recite “the content including a call to a first function” and “when the first function is invoked.” These limitations have different connotations. In the first instance, the “call” (noun) is included in the content, and therefore points to a programmatic statement or instruction in the content. The second instance, “first function is invoked,” however, refers to the effect of the call to the function being executed, i.e., invoked.

The same analysis applies regarding the language of claims 6 and 10, which do not recite the word “invoke.” Claims 6 and 10, for example, recite “the content including a call to a first function” and “when the first function is called.” Again, the “call” (noun) refers to a programmatic statement included in the content. However, “calling” is the effect of the call to the function being executed. Accordingly, based on the foregoing and under the broadest reasonable interpretation, we determine that a “call to a first function” means a statement or instruction in a program requesting the services of a particular (i.e., first) function.

#### B. PRINCIPLES OF LAW

A claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) objective evidence of nonobviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

#### C. THE LEVEL OF SKILL IN THE ART

In determining the level of ordinary skill in the art at the time of the invention, we note that various factors may be considered, including “type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology;

and educational level of active workers in the field.” *In re GPAC, Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (citing *Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc.*, 807 F.2d 955, 962 (Fed. Cir. 1986)).

Petitioner asserts, through its expert Dr. Aviel Rubin, that the “relevant technology field for the ’154 patent is security programs, including content scanners for program code.” Ex. 1002 ¶ 25. Further, Dr. Rubin opines that a person of ordinary skill in the art would “hold a bachelor’s degree or the equivalent in computer science (or related academic fields) and three to four years of additional experience in the field of computer security, or equivalent work experience.” *Id.*

Patent Owner, through its expert Dr. Nenad Medvidovic, offers a level of ordinary skill that is different from Petitioner’s. Ex. 2035 ¶ 35. In Particular, Dr. Medvidovic opines that a person of ordinary skill in the art would have a “bachelor’s degree in computer science or related field, and either (1) two or more years of industry experience and/or (2) an advanced degree in computer science or related field.” *Id.* In comparison, it appears that the minimum experience under Patent Owner’s proffered level of skill is one year less than Petitioner’s. Also, Patent Owner proffers an alternative to work experience, namely an advanced degree. There is no specific articulation regarding how the difference of one year’s experience or the proposed alternative of an advanced degree in lieu of experience tangibly affects our obviousness inquiry. Further, there is no evidence in this record that the differences noted above impact in any meaningful way the level of expertise of a person of ordinary skill in the art. Indeed, we note that Dr. Medvidovic’s opinions would not change if he had considered instead the level or ordinary skill in the art proffered by Dr. Rubin. *Id.* ¶ 39.



Accordingly, we determine that in this case no express articulation of the level of ordinary skill in the art is necessary and that the level of ordinary skill in the art is reflected by the prior art of record. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001); *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995); *In re Oelrich*, 579 F.2d 86, 91 (CCPA 1978).

#### D. OBVIOUSNESS GROUND BASED ON ROSS

The Petition relies on Ross as teaching or suggesting all the limitations of claims 1–8, 10, and 11. Pet. 14–37. Having reviewed the arguments and evidence provided by Petitioner and the arguments and evidence presented by Patent Owner, we determine that Petitioner has failed to show by a preponderance of the evidence that Ross teaches or suggests all the limitations of the challenged claims, and more particularly, “the content including a call to a first function.”

##### *1. Overview of Ross (Exhibit 1003)*

Ross describes one embodiment where a device receives and processes “data content having at least one original function call [and it] includes a hook script generator and a script processing engine.” Ex. 1003 ¶ 10. One such device is depicted in Figure 2 of Ross, reproduced below.

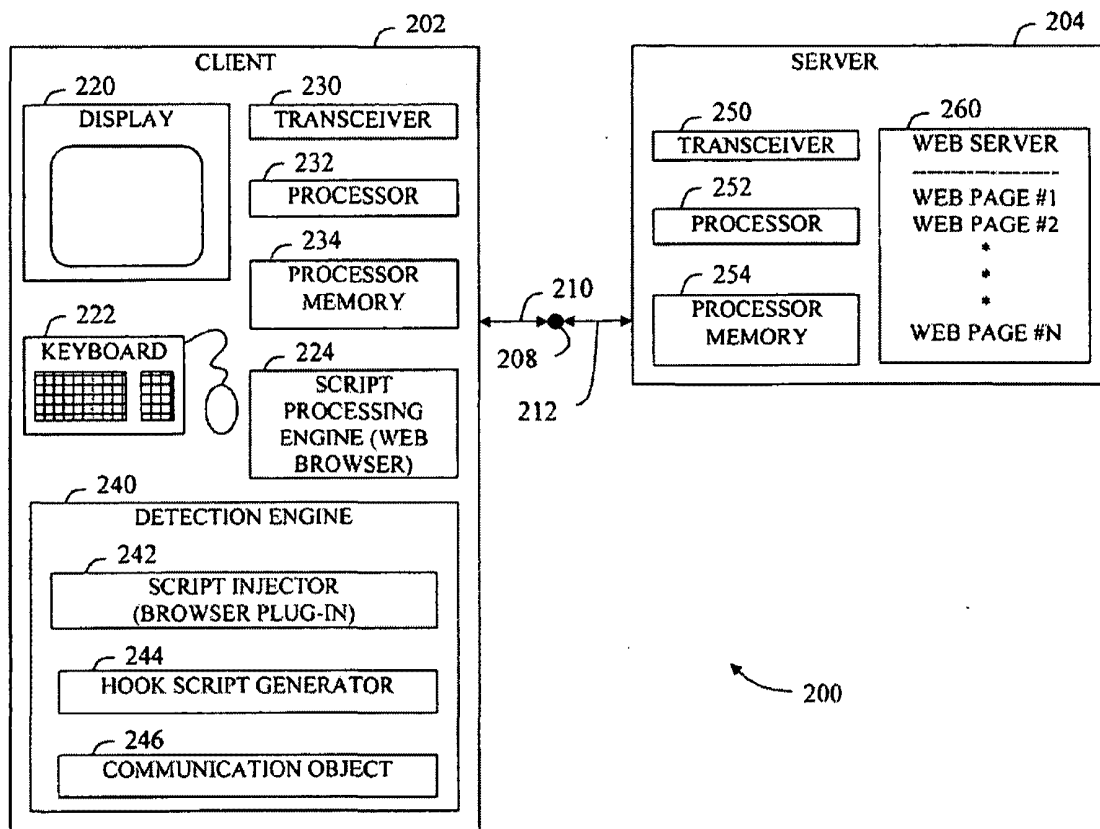


FIG 2

Figure 2 shows a client network device (client 202) and a server network device (server 204) communicating with each other over communication network 208 to exchange information, including web content. *Id.* ¶¶ 16, 23. Figure 2 depicts web browser 224 and detection engine 240 at the client, but in other embodiments, detection engine 240 may be physically located away from client 202. *Id.* ¶ 26. Detection engine 240 includes script injector 242 to intercept incoming data content and introduce the incoming data to script-processing engine 224. *Id.* “Hook script generator 244 creates new functions, including constructor functions, which replace the standard JavaScript functions.” *Id.*

## 2. Discussion of Independent Claims

Independent claim 1 is directed to a system, while claim 4 is directed to stored program code including functions performed by a computer device, where those functions track the functions recited in claim 1. Independent claim 6 is also directed to a system, albeit with some limitations different from the system of claim 1. And independent claim 10 is directed to stored program code including functions performed by a computer device, where those functions track the functions recited in claim 6. Notwithstanding their differences, all the independent claims recite “the content including a call to a first function.” We find that Ross does not disclose this limitation.

### Content Includes a Call to a First Function

Petitioner asserts that the recited “content” is met by a combination of Ross’s web content (HTTP data) and hook functions in the hook script. Pet. 16 (“script processing engine processes content from both the web (HTTP data content) and from the hook script generator (hook functions)”). The Petition points out that Ross’s “hook scripts and their associated inputs teach or suggest ‘the content including a call to a first function, and the call including an input,’ as recited in claim 1.” *Id.* Specifically, the Petition states that each hook script has “at least one hook function[,] where each hook function is configured to supersede a corresponding original function.” *Id.* at 17 (citing Ex. 1003 ¶ 38). With regard to the “call” limitation, Petitioner asserts that a person of ordinary skill in the art would have understood that the hook scripts “include a call to a first function call (i.e., hook functions within a hook script).” *Id.* at 18 (citing Ex. 1002 ¶ 109). Based on these assertions, we understand Petitioner’s contention to be that

Ross's description of hook functions in the hook script teaches or suggests the "call to a first function."

Patent Owner challenges these assertions by arguing that merely pointing to hook functions within a hook script is insufficient. PO Resp. 20–22. According to Patent Owner, Ross's hook script includes a function, i.e., the hook function, but not the "call" to that function. *Id.* (citing Ex. 2035 ¶¶56–59). Ross, according to Patent Owner, teaches a technique different from the claims. *Id.* at 22–23. Ross first calls the original function, which Petitioner identifies as the recited "second function," in order to invoke the hook function ("first function"). *Id.* at 23 (citing Ex. 1003 ¶¶ 12–13). In contrast, the claims require that the content include a call to a first function, in order to invoke the first function first. *See, e.g.*, claim 1 ("transmitting the input to the security computer . . . when the first function is invoked" and "invoking a second function with the input only if a security computer indicates that such invocation is safe"); claim 6 ("transmitting the input variable to a security computer . . . when the first function is called" "modifying the input variable if the security computer determines that [it is not] safe" and "calling a second function with a modified input variable").

In support of Patent Owner's argument, Dr. Medvidovic explains that Ross describes the combined hook script and the original script as using an "assignment," not a "call" for invoking the first function. PO Resp. 23–24 (citing Ex. 2035 ¶61). We credit this testimony. Ross illustrates in Figure 4, reproduced below, a combined script, which shows more detail regarding how Ross formulates the hook script and the included hook function. *See* Ex. 1003, Fig. 4.

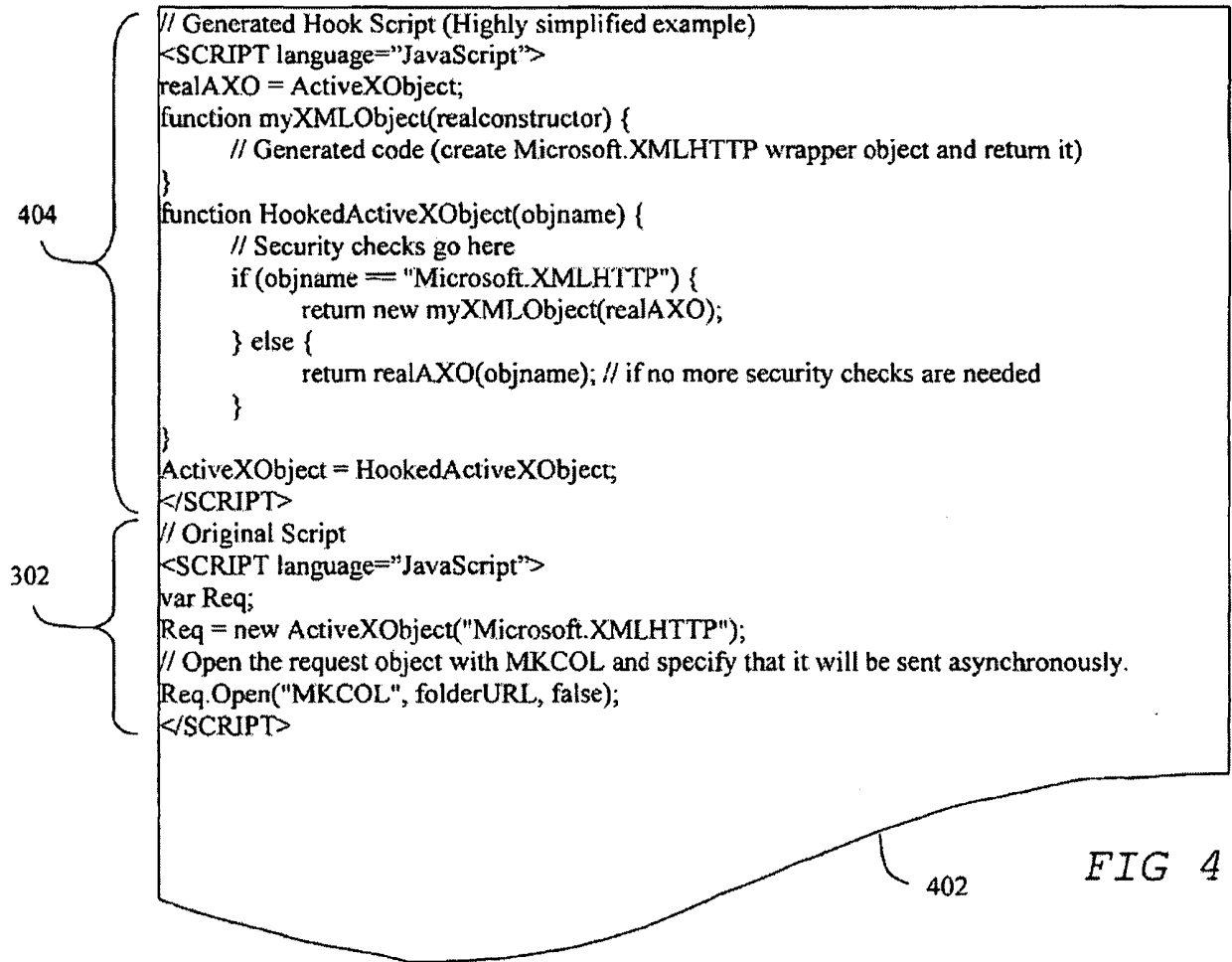
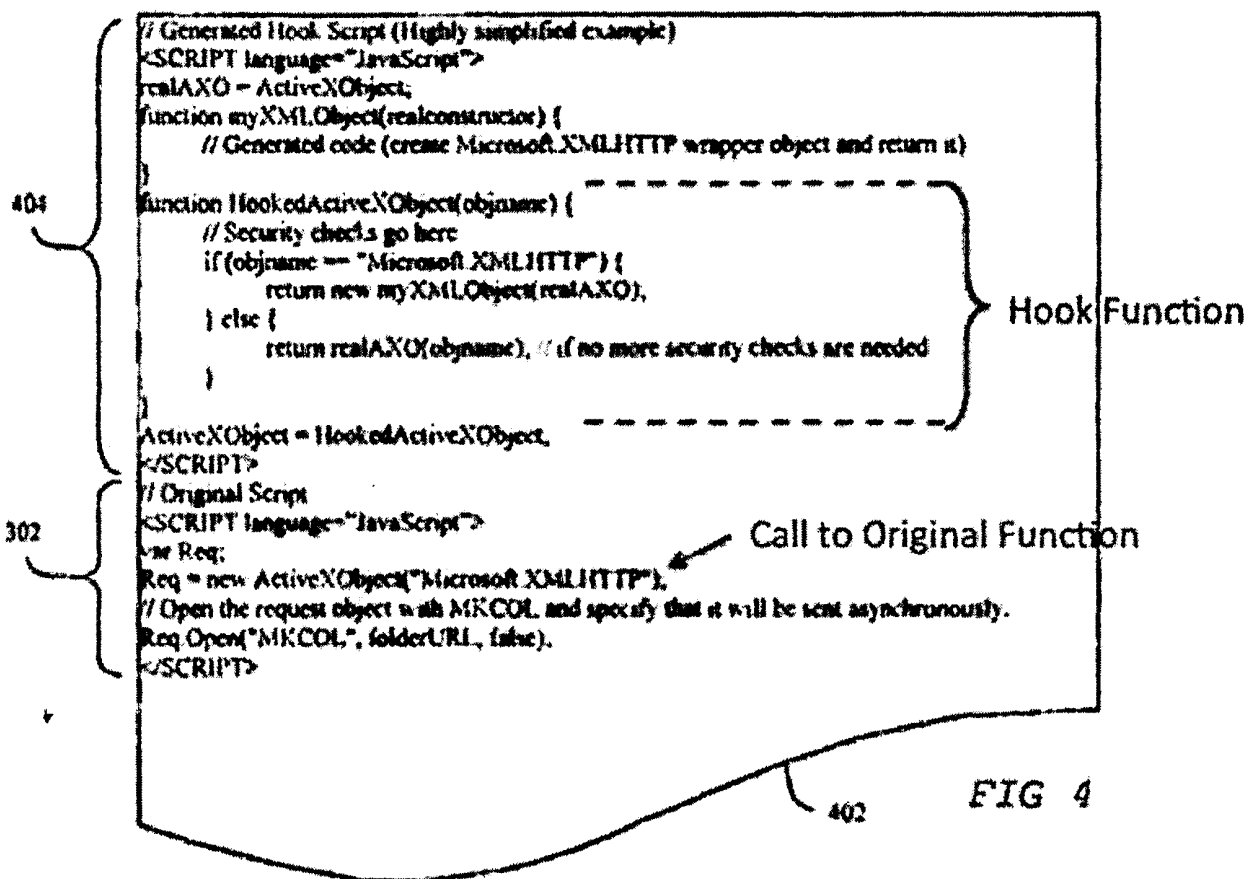


Figure 4 illustrates combined script 402 including hook script 404 and original script 302. *Id.* Dr. Medvidovic identifies the hook function in hook script 404 as “function HookedActiveXObject(objname).” Ex. 2035 ¶ 61. The combined script does not include a call to the function “HookedActiveXObject.” Instead, as Dr. Medvidovic explains, Ross’s hook script includes a call to the *original function*, not the hook function, as shown below in Patent Owner’s annotated Figure 4.



The annotated Figure 4 of Ross, above, annotates Ross’s script by pointing out: (1) in brackets, that a group of instructions comprise the function “Hooked ActiveXObject(objname);” and (2) that the body of the function is the “Hook Function.” See PO Resp. 23. The annotations also show that the instruction “Req=new ActiveXObject(“Microsoft.XMLHTTP”)” is the “Call to Original Function.” *Id.* Dr. Medvidovic explains that the call to “new ActiveXObject(“Microsoft.XMLHTTP”)” indirectly invokes “function HookedActiveXObject,” using Ross’s assignment technique. See Ex. 2035 ¶ 61. Ross’s description of the hook functions confirms this technique. For example, Ross states that “[t]he hook function corresponding to the data content original function is executed *when the original function is called.*”

Ex. 1003, Abstract; *see also* ¶ 13 (“executing a hook function when a corresponding original function is called in the data content”). Ross further states that the “hook function is configured to supersede a corresponding original function.” *Id.* ¶¶ 10–12.

Although we have explained that the first invocation in Ross is not of the first function, the issue is not simply whether Ross executes or processes the first function first, before the second function. The issue is whether the content in Ross includes a “call to a first function,” as claimed. We find that Ross does not.

Patent Owner’s explanation of Ross is consistent with Ross’s description of how the hook script is generated and processed. Ross’s hook script generator creates new functions to replace the original functions, such as the JavaScript function embedded in a web page. *Id.* ¶ 26. When the web page is received, the script filter injects “the JavaScript that hooks the critical functions and methods before any other HTML in a loading page.” *Id.* ¶ 29. To implement these “hooks,” Ross states that it replaces the original function with a new replacement function or that it substitutes an original function with a filtered function by instantiating a “hooked” process. *Id.* ¶¶ 33, 34. These statements of “replacement” and “substitution,” however, refer to how the hook functions are implemented when the script executes. Neither of these statements explains whether a “call” to a hook function is included in the script. That is, the replacement or substitution may result in invoking the hook function, without the content actually including a call. And this *indirect* invocation—not using a call—of the hooked function is what Ross tends to show. For instance, Ross describes the method of processing the content as follows: (1) generating a hook

script with a hook function; (2) loading the hook script; (3) loading the data content having the original function; and (4) executing a hook function *when a corresponding original function is called in the data content*. *Id.* ¶ 38.

Thus, the hook function is loaded before anything else is loaded in order to define the hook function and to effectuate the replacement. The replacement, or the method of superseding, is accomplished by the assignment that results from the use of the instruction `ActiveXObject=HookedActiveXObject`. As Dr. Medvidovic explains, by way of assignment of `ActiveXObject` (original function) to `HookedActiveXObject` (substitute or first function), a call to the original function indirectly invokes the substitute or first function. *See* Ex. 1011, 10:20–13:21. This understanding is further confirmed by Ross’s description of the hook functions, as stated above, and when it refers to them as “new objects that will be used as replacements *when the appropriate constructor is invoked*.” Ex. 1003 ¶ 35 (emphasis added).

In sum, Ross’s content does not include a “call to a first function” because the hook function is not directly called. There is no instruction or statement in the hook script that requests the service of the hook function. *See also* Ex. 2043 at 88:11–16 (Dr. Rubin, Petitioner’s expert, testifying that “in the pseudocode in figure 4 [of Ross] there’s no explicit call to a hooked function.”). The hook function is invoked only when *the call to the original function* in the data content, which has been assigned via the hook script to a hook function, is executed. *See id.* (“These hooks are installed before any other script on the web page loads, ensuring that any script provided as a part of the data content 602, such as a web page, will call the new hooked functions.”).



Petitioner unpersuasively argues in the Reply that the combined script shown in Figure 4 would “readily teach or suggest to a [person of ordinary skill in the art] that the act of having a hook function supersede a call to an original function can be achieved via a call to a hook function within the hook script.” Reply 10–11 (citing the reply Declaration of Dr. Aviel Rubin, Ex. 1005 ¶ 3). We are not persuaded by this testimony. The testimony relies on an interpretation of Ross that we find erroneous. For instance, Dr. Rubin opines that paragraph 31 of Ross supports the contention that one way to ensure the hook script function is processed first would be to include a call to the hook function within the hook script. Ex. 1005 ¶¶ 4–6. As explained above, we find that Ross’s description of *processing the hook script* in paragraph 31 does not teach including a call to the hook function. Disclosing that the hook script and original script codes may be *injected* into the script processing engine by any means, Ross refers to the order of processing the *hook function*, not whether the script may include other instructions, such as a call to the hook function. As stated above, Ross teaches assigning the original function to the hooked function. In that manner, Ross invokes indirectly the hook function without any need to include a call to that hook function.

#### Additional Arguments in Petitioner’s Reply

Expanding on the issue of whether Ross includes a call to a first function, Petitioner argues that it would have been obvious for a person of ordinary skill in the art to include in the hook script a call to the hook function to ensure that the hook function is processed first. Reply 11. Petitioner proffers additional argument that the script shown in Figure 4 of Ross suggests including a call to a first function where the code states

“Security checks go here.” Reply 11–13. In particular, Petitioner now argues that it would have been obvious to implement the security checks by calling a separate hook function within the hook script. *Id.* at 13. That is, instead of calling the hook function “HookedActiveXObject,” Petitioner contends that it would have been obvious to include *another* hook function within the function “HookedActiveXObject.” *Id.* In support, of this contention, Petitioner asserts that there is no dispute on this issue, citing to a second declaration of Dr. Rubin filed with the Reply and to testimony of Dr. Medvidovic alleged to be in agreement. *Id.* Dr. Rubin also provides additional declaration testimony purporting to show how to edit the pseudocode shown in Figure 4 of Ross to include a call to the hooked function. *See* Ex. 1005 ¶¶ 7–10.

Patent Owner argued at the hearing that Petitioner’s argument and the supporting testimony from Dr. Rubin is outside the scope of a proper reply. Tr. 66:19–13. Therefore, the issue before us is whether the additional arguments Petitioner presents in the Reply exceed the appropriate scope of a reply. *See* 37 C.F.R. § 42.23 (b) (“A reply may only respond to arguments raised in the corresponding opposition or patent owner response.”). In particular, we focus on whether it is appropriate to consider the argument that it would have been obvious to include a call to a first function within either the “Security checks go here” portion or the hooked script/hook function.

To determine whether we should consider the argument, our Trial Practice Guide points out that,

[w]hile replies can help crystalize issues for decision, a reply that raises a new issue or belatedly presents evidence will not be considered and may be returned.

The Board will not attempt to sort proper from improper portions of the reply. Examples of indications that a new issue has been raised in a reply include new evidence necessary to make out a prima facie case for the patentability or unpatentability of an original or proposed substitute claim, and new evidence that could have been presented in a prior filing.

Trial Practice Guide, 77 Fed. Reg. at 48767; *see also Belden Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1080 (Fed. Cir., 2015) (discussing that a patent owner “is undoubtedly entitled to notice of and fair opportunity to meet the grounds of rejection.”). With these guidelines in mind, we are persuaded that the above-identified argument in the Reply should not be considered in deciding this matter.

As stated above, the Petition relies on Ross’s “hook functions within a hook script” as teaching or suggesting the “call to a first function.” Pet. 17–18. Although the Petition relies on the understanding of a person of ordinary skill in the art when explaining Ross’s handling of the hook function, Petitioner does not assert in any meaningful way that Ross’s use of hook functions in the hook script would be *modified* to include calls to *additional* hook functions that Ross does not describe. Nor does Petitioner explain in the Petition that Ross would be modified to replace the assignment instruction with a call to the hook function. The arguments in the Reply are not explanations of how Ross’s hook functions, as taught by Ross, may be understood to include the recited “call to a first function,” as asserted in the Petition. Rather, the argument that a “call” may be added to either the security check or the hook script is an alteration of Ross, necessitated because Patent Owner correctly argues that Ross fails to teach or suggest the limitation. The contention that Ross’s embodiments would be

modified, altered, or imbued with details not present in Ross is a *new* contention, necessary to make a case for the unpatentability of the claims, and should have been presented in the Petition. To consider the argument would unfairly prejudice Patent Owner who, after having argued there is a significant gap in Petitioner's case, would be left without an opportunity to respond substantively to the new arguments and support its rebuttal with additional evidence, if necessary. Accordingly, we do not consider the improper arguments identified above.

### 3. Conclusion

Having considered the arguments and evidence presented by both parties, we determine that Petitioner has not shown by a preponderance of the evidence that the challenged claims would have been obvious over Ross. Because we find that Ross does not teach or suggest "content including a call to a first function," we need not consider whether Patent Owner succeeded in its attempt to prove the prior invention of the '154 patent or whether a conclusion of nonobviousness is warranted because of evidence of secondary considerations of nonobviousness.

### E. MOTIONS TO EXCLUDE

Both parties request that certain exhibits be excluded. First, Petitioner moves to exclude pages 3 through 20 of Exhibit 2007 on the basis of failure to authenticate the document. Paper 38, 2–6 ("Pet. Motion to Exclude"). Petitioner's Motion to Exclude is denied as moot, because the evidence objected to is not relied upon in reaching our determination that Petitioner has not met its burden of showing that claims 1–8, 10, and 11 are unpatentable.

Second, Patent Owner moves to exclude various exhibits in the record:

- a) Exhibits 1005 and 1012 as evidence and arguments outside the proper scope of a reply. Paper 39, 1–3 (“PO Motion to Exclude”).
- b) Exhibits 1002 and 1005, Declarations of Dr. Aviel Rubin, on the basis that opinions are conclusory and unreliable. *Id.* at 3–7.
- c) Portions of the cross-examination testimony of Patent Owner’s witnesses, Mr. Ben-Itzhak and Dr. Marc Berger, as irrelevant and prejudicial. *Id.* at 7–9.

Patent Owner’s motion is denied. First, we have stated repeatedly that a motion to exclude is not a vehicle for arguing that Petitioner’s arguments and supporting evidence are outside the proper scope of a reply.<sup>4</sup> A motion to exclude evidence filed for the purpose of striking or excluding an opponent’s brief and/or evidence that a party believes goes beyond what is permitted under 37 CFR § 42.23 is improper. An allegation that evidence does not comply with 37 CFR § 42.23 is not a sufficient reason under the Federal Rules of Evidence for making an objection and requesting exclusion of such evidence. Accordingly, these arguments are not considered as part of the Motion to Exclude, and the request to exclude Exhibits 1005 and 1012, as being outside the proper scope of a reply, is denied.

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<sup>4</sup> See *Valeo v. Magna Elecs., Inc.*, Case IPR2014-00227, Paper 44 (PTAB Jan 14, 2015); *Carl Zeiss SMT GmbH v. Nikon Corp.*, Case IPR2013-00362, Paper 23 (PTAB June 5, 2014); *Ultratec, Inc. v. Sorenson Commc’ns, Inc.*, Case IPR2013-00288, Paper 38 at 2 (PTAB May 23, 2014); *Primera Tech., Inc. v. Automatic Mfg. Sys., Inc.*, Case IPR2013-00196, Paper 33 (PTAB Feb. 10, 2014); *ZTE Corp. v. Contentguard Holdings Inc.*, Case IPR2013-00133, Paper 42 (PTAB Jan. 21, 2014).

Next are exhibits 1002 and 1005, which constitute the declarations of Dr. Aviel Rubin submitted in support of the Petition and the Reply. We are not persuaded by Patent Owner's argument that they should be excluded from the record. An argument regarding whether the expert's opinions have been shown to be reliable or supported by underlying facts go to the weight of the evidence, not its admissibility. *See Liquid Dynamics Corp. v. Vaughan Co.*, 449 F.3d 1209, 1221 (Fed. Cir. 2006) ("Vaughan's challenge goes to the weight of the evidence rather than the admissibility of Lueptow's testimony and analysis.") (citing *Quiet Tech. DC-8, Inc. v. Hurel-Dubois UK Ltd.*, 326 F.3d 1333, 1344-45 (11th Cir. 2003)); *Wilmington v. J.I. Case Co.*, 793 F.2d 909, 920 (8th Cir.1986) ("Virtually all the inadequacies in the expert's testimony urged here by [defendant] were brought out forcefully at trial. . . . These matters go to the weight of the expert's testimony rather than to its admissibility."). To the extent the testimony has been shown to be inadequately supported, contradictory, or irrelevant, we have taken notice and weighed it accordingly. Therefore, Patent Owner's request to exclude exhibits 1002 and 1005 is denied.

Finally, Patent Owner requests that we exclude portions of the cross-examination testimony of two of its witnesses, the named inventor Mr. Ben-Itzhak, and prosecuting attorney, Dr. Marc Berger. *Id.* at 7-9. Patent Owner argues that Petitioner uses the objected-to testimony to challenge the assertion of diligence in filing the application resulting in the '154 patent. *Id.* The argument, again, goes to the weight of the evidence, not on whether the testimony is relevant. For instance, the question of whether the witness recollects details specific enough to support Patent Owner's contention goes to whether, under the rule of reason, that testimony is credible. *See*

*Price v. Symsek*, 988 F.2d 1187, 1195 (Fed. Cir. 1993) (explaining that under a rule of reason analysis, “[a]n evaluation of *all* pertinent evidence must be made so that a sound determination of the credibility of the inventor’s story may be reached”). Therefore, Patent Owner’s motion is denied.

### III. CONCLUSION

For the foregoing reasons, we conclude that Petitioner *has not shown* by a preponderance of the evidence that claims 1–8, 10, and 11 of the ’154 patent are unpatentable. Petitioner’s Motion to Exclude is denied as moot. Patent Owner’s Motion is denied.

### IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claims 1–8, 10, and 11 of the ’154 patent have not been shown to be unpatentable;

FURTHER ORDERED that Petitioner’s Motion to Exclude is denied as moot;

FURTHER ORDERED that Patent Owner’s Motion to Exclude is denied; and

FURTHER ORDERED that, because this is a Final Written Decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

IPR2016-00151  
Patent 8,141,154 B2

PETITIONER:

Matthew I. Kreeger  
Jonathan Bockman  
Shouvik Biswas  
Nathaniel Hamstra  
MORRISON & FOERSTER LLP  
[MKreeger@mofocom](mailto:MKreeger@mofocom)  
[FinjanPANMofocom](mailto:FinjanPANMofocom)  
[FinjanPANMofocom](mailto:FinjanPANMofocom)  
[nathanhamstra@quinnemanuel.com](mailto:nathanhamstra@quinnemanuel.com)

PATENT OWNER:

James Hannah  
Jeffrey H. Price  
KRAMER LEVIN NAFTALIS & FRANKEL LLP  
[jhannah@kramerlevin.com](mailto:jhannah@kramerlevin.com)  
[jprice@kramerlevin.com](mailto:jprice@kramerlevin.com)

Michael Kim  
FINJAN INC.  
[mkim@finjan.com](mailto:mkim@finjan.com)



UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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PALO ALTO NETWORKS, INC.,  
Petitioner,

v.

FINJAN, INC.,  
Patent Owner.

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Case IPR2016-00151<sup>1</sup>  
Patent 8,141,154 B2

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Before, THOMAS L. GIANNETTI, MIRIAM L. QUINN,  
PATRICK M. BOUCHER, *Administrative Patent Judges.*

QUINN, *Administrative Patent Judge.*

DECISION  
ON PETITIONER'S REQUEST FOR REHEARING  
37 C.F.R. § 42.71(d)

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<sup>1</sup> Case IPR2016-01071 has been joined with this proceeding.

On March 15, 2017, the Board issued a Final Written Decision in this proceeding. Paper 51 (“Final Dec.”). On April 14, 2017, Palo Alto Networks, Inc. (“Petitioner”) filed a Request for Rehearing. Paper 52 (Req. Reh’g.). Petitioner’s Request urges the Board to review the construction of “a call to a first function” for consistency with the construction given to the same term in our Final Written Decision in IPR2015-01979.<sup>2</sup> We agree with Petitioner that the construction of “a call to a first function” must be consistent with our determination in IPR2015-01979.

Accordingly, we hereby modify our Final Written Decision in this proceeding to reflect that the construction for the term “a call to a first function” means “a statement or instruction in the content, the execution of which causes the function to provide a service.” That construction remains, however, consistent with our analysis and determinations made in our Final Written Decision, and therefore requires no modification of our conclusions. For example, at page 8 of that Decision we stated that “we determine that the ‘call’ is a statement or instruction in the content, the execution of which causes the function to provide a service.” Final Dec. 8. Accordingly, the last sentence of the first paragraph in page 9 of the Final Written Decision is modified to repeat what we stated earlier in page 8 of the Decision: “we determine that a ‘call to a first function’ means a statement or instruction in the content, the execution of which causes the function to provide a service.”

Notwithstanding the modification to the sentence in page 9, we clarify that we do not agree with Petitioner’s argument that this construction expands the scope of the term to include “invocations” of a function when

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<sup>2</sup> *Palo Alto Networks, Inc., v. Finjan, Inc.*, IPR2015-01979, Paper 62 (PTAB Mar. 15, 2017) (“1979 Final Dec.”).

the “call” is to another function. For example, we understand Petitioner’s argument on rehearing to be that as long as the “call” results in *invoking* the first function, the call’s statement or instruction need not expressly include or identify the first function. In support of this argument, Petitioner points to portions of the ’154 patent Specification where the words “call” and “invoke” allegedly are used interchangeably. Req. Reh’g 7.

We are not persuaded by Petitioner’s argument. In our Final Written Decision, we considered Petitioner’s “interchangeability” argument and rejected it. Final Dec. 8. Also, the Specification portions cited in the Request do not warrant reading the claims in the manner Petitioner requests. For example, the Specification states that the “call to Function() has been replaced with a call to Substitute[f]unction()” Ex. 1001, 9:25. This passage describes what the content modifier does to modify the incoming content. The call included in the content received at the client computer is a “call to a Substitutefunction(),” and “Substitutefunction()” is the function that is invoked when the client processes the call in the modified content. There is no indication in this, or any other, cited portion of the Specification, that the ’154 patent describes embodiments in which the “call” included in the modified content identifies a function different from the function that is invoked during processing.

Further, we do not agree that we “overlooked” an instance where the Specification states that content modifier inserts program code or a link to the substitute function. Req. Reh’g 7 (citing Ex. 1001, 9:37–40). That passage, again, describes the content modifier’s insertion of *program code* into the content. And more particularly, the passage alludes to the function program code or a link to the function program code being included in the

content *in addition to* the call to that function. *See* Ex. 1001, 9:37–41; Table I (describing that the content modifier *also* inserts program code for the substitute function into the content, or a link to the substitute function, shown in Table I—which lists the function code, but does not show any inclusion of a link *in the call to the function*).

More important, the plain language of the claims forbids the reading Petitioner advocates. The word “call” is recited in claim 1 as a noun, and is the statement or instruction included in the content that causes the *first function* to provide a service. Final Dec. 7; Ex. 1001, 17:34–36. The word “invoking” appears elsewhere in the claim in connection with the transmission of the call’s input, which occurs “when the first function is invoked.” Ex. 1001, 17:39–40. The claim language is straightforward: the received content includes a call to a first function, and when that same first function is invoked, the function’s input is transmitted to the security computer.

In summary, Petitioner’s request urges us to view the claim construction as allowing the call included in the received content to request the services of a function different from the function in the call statement or instruction. To illustrate, if the content states “call function X” but instead, during runtime, function Y is invoked, Petitioner asserts that this scenario would be a “call” to function Y, and therefore meet the claim. As stated above, however, the claim language does not support this reading. The *call to the first function* must be included in the content, and it is the same *first function* that is invoked later in the claim. Our claim construction does not change the plain reading of the claim language. Therefore, the execution of the statement or instruction included in the content must cause *the function*

*identified in the statement or instruction* to provide a service. To illustrate, if the content states “call function X,” during runtime, function X must be invoked. Ross,<sup>3</sup> as we discuss in our Final Written Decision, does not do this. *See* Final Dec. 17–19 (concluding that Ross invokes indirectly the hook function without any need to include a call to that hook function).

#### CONCLUSION

We have modified a sentence in the claim construction section of the Final Written Decision to clarify that a “call to a first function” means a statement or instruction in the content, the execution of which causes the function to provide a service. This modification, however, does not change our determination that Petitioner failed to show unpatentability of claims 1–8, 10, and 11 of the ’154 patent for obviousness over Ross.

#### ORDER

In consideration of the foregoing, it is hereby

ORDERED that our Final Written Decision is modified only as to the clarification of the claim construction of a “call to a first function” to reflect the exact wording of the claim construction provided for the same term in IPR2015-01979: a “call to a first function” means a statement or instruction in the content, the execution of which causes the function to provide a service. No further modification of the Final Written Decision is warranted.

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<sup>3</sup> Patent Application Pub. No. US 2007/0113282 A1 (Exhibit 1003) (“Ross”).

IPR2016-00151  
Patent 8,141,154 B2

PETITIONER:

Matthew I. Kreeger (Lead Counsel)  
Jonathan Bockman (Back-up Counsel)  
Shouvik Biswas (Back-up Counsel)  
[MKreeger@mofocom](mailto:MKreeger@mofocom)  
[JBockman@mofocom](mailto:JBockman@mofocom)  
[SBiswas@mofocom](mailto:SBiswas@mofocom)

Nathaniel Hamstra (Back-up Counsel)  
[nathanhamstra@quinnemanuel.com](mailto:nathanhamstra@quinnemanuel.com)

PATENT OWNER:

James Hannah (Lead Counsel)  
Jeffrey H. Price (Back-up Counsel)  
Michael Kim (Back-up Counsel)  
[jhannah@kramerlevin.com](mailto:jhannah@kramerlevin.com)  
[jprice@kramerlevin.com](mailto:jprice@kramerlevin.com)  
[mkim@finjan.com](mailto:mkim@finjan.com)

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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PALO ALTO NETWORKS, INC.  
Petitioner

v.

FINJAN, INC.  
Patent Owner

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*Inter Partes* Review No. 2015-01979<sup>1</sup>  
U.S. Patent No. 8,141,154

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**PETITIONERS' NOTICE OF APPEAL**

2017 JUL 18 AM 9:19  
U.S. PATENT  
AND TRADEMARK OFFICE

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<sup>1</sup> Case IPR2016-00919 has been joined with this proceeding.

Petitioners' Notice of Appeal  
IPR2015-01979 (U.S. Patent No. 8,141,154)

Pursuant to 37 C.F.R. § 90.2(a) and 35 U.S.C. §§ 141(c), 142, and 319, Palo Alto Networks, Inc. and Symantec Corp. ("Petitioners") respectfully give notice that they appeal to the United States Court of Appeals for the Federal Circuit from the Patent Trial and Appeal Board's Final Written Decision entered on March 15, 2017 (Paper 62), the Board's Decision Denying Rehearing entered on May 19, 2017 (Paper 64), and from other related orders, decisions, rulings, and opinions underlying the Board's decisions.<sup>2</sup>

For the limited purpose of providing the Director of the United States Patent and Trademark Office with the information specified in 37 C.F.R. § 90.2(a)(3)(ii), the issues on appeal include the Board's determination that Petitioners did not establish that claims 1-8, 10, and 11 of the '154 patent are unpatentable under 35 U.S.C. § 103 in view of the grounds of unpatentability on which trial was instituted (Paper 8). The issues on appeal also include any finding or determination supporting or related to these issues, as well as all other issues decided adversely to Petitioners in any order, decision, ruling, or opinion.

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<sup>2</sup> Symantec Corp. was petitioner in IPR2016-00919, which was consolidated and joined with IPR2015-01979. (Paper 28.) Citations are to the IPR2015-01979 docket.



Petitioners' Notice of Appeal  
IPR2015-01979 (U.S. Patent No. 8,141,154)

Simultaneous with this filing and in accordance with 37 C.F.R. § 90.2(a)(1), this Notice of Appeal is being filed with the Director and served on Patent Owner in accordance with 37 C.F.R. § 42.6(e). This Notice of Appeal, along with the required fees, is also being filed with the Clerk's Office for the United States Court of Appeals for the Federal Circuit in accordance with Fed. Cir. R. 15(a)(1).

Dated: July 17, 2017

Counsel for Palo Alto Networks, Inc.  
COOLEY LLP  
ATTN: Patent Group  
1299 Pennsylvania Ave., NW, Suite 700  
Washington, DC 20004  
Tel: (703) 456-8000  
Fax: (202) 842-7899

Respectfully submitted,  
**COOLEY LLP**

By: /Orion Armon/  
Orion Armon  
Reg. No. 65,421

Counsel for Symantec Corp.  
Quinn Emanuel Urquhart & Sullivan  
500 West Madison St.  
Suite 2450  
Chicago, IL 60661  
Tel: (312) 705-7400  
Fax: (312) 705-7401  
nathanhamstra@quinnemanuel.com

Respectfully submitted,  
**QUINN EMANUEL URQUHART  
& SULLIVAN**

By: /Nathan Hamstra/  
Nathan Hamstra

**CERTIFICATE OF SERVICE**

I hereby certify that, in addition to being filed electronically through the Patent Trial and Appeal Board's End to End system, the foregoing Notice of Appeal was sent by overnight Federal Express on July 17, 2017, to the Director of the United States Patent and Trademark Office, at the following address:

Office of the General Counsel  
Patent and Trademark Office  
Madison East  
10B20 600 Dulany Street  
Alexandria, Virginia 22314

\*\*\*

I hereby certify that a true and correct copy of the foregoing Notice of Appeal was filed electronically by CM/ECF on July 17, 2017, with the Clerk's Office of the United States Court of Appeals for the Federal Circuit.

Pursuant to 37 C.F.R. §§ 90.2(a) and Federal Circuit Rule 15(a)(1), I certify that on July 17, 2017, the requisite \$500.00 fee for appeal of the foregoing Petitioners' Notice of Appeal was paid through Pay.gov to the United States Court of Appeals for the Federal Circuit.

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Petitioners' Notice of Appeal  
IPR2015-01979 (U.S. Patent No. 8,141,154)

Pursuant to 37 C.F.R. § 42.6(e), I certify that I caused to be served a true and correct copy of the foregoing Petitioners' Notice of Appeal on the Patent Owner at the e-mail addresses of the Patent Owner as follows:

James Hannah  
KRAMER LEVIN NAFTALIS &  
FRANKEL LLP  
990 Marsh Road  
Menlo Park, CA 94025  
Phone: (650) 752-1712  
Fax: (650) 752-1812  
jhannah@kramerlevin.com

Jeffrey H. Price  
KRAMER LEVIN NAFTALIS &  
FRANKEL LLP  
1177 Avenue of the Americas  
New York, NY 10036  
Phone: (212) 715-7502  
Fax: (212) 715-8302  
jprice@kramerlevin.com

Michael Kim  
Finjan, Inc.  
2000 University Ave., Ste. 600  
E. Palo Alto, CA 94303  
Phone: 650.397.9567  
mkim@finjan.com  
USPTO Reg. No. 40,450

By: /Orion Armon/  
Orion Armon  
Reg. No. 65,421

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

---

PALO ALTO NETWORKS, INC. and SYMANTEC CORP.,  
Petitioner,

v.

FINJAN, INC.,  
Patent Owner.

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Case IPR2015-01979<sup>1</sup>  
Patent 8,141,154 B2

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Before, THOMAS L. GIANNETTI, RICHARD E. RICE, and  
MIRIAM L. QUINN, *Administrative Patent Judges*.

QUINN, *Administrative Patent Judge*.

FINAL WRITTEN DECISION  
*35 U.S.C. § 318(a) and 37 C.F.R. § 42.73*

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<sup>1</sup> This case is joined with IPR2016-00919. Paper 28 (“Decision on Institution of *Inter Partes* Review and Grant of Motion for Joinder,” filed by Symantec Corp.).

Palo Alto Networks, Inc. and Symantec Corp. (collectively, “Petitioner”) have each filed petitions to institute *inter partes* review of claims 1–8, 10, and 11 of U.S. Patent No. 8,141,154 B2 (“the ’154 patent”) pursuant to 35 U.S.C. § 311–319. In response to the first petition, filed by Palo Alto Networks, Inc.,<sup>2</sup> Finjan, Inc. (“Patent Owner”) filed a Preliminary Response. Paper 6 (“Prelim. Resp.”). Upon consideration of the Petition and the Preliminary Response filed by Finjan, we instituted trial as to all the challenged claims. Paper 8 (“Dec.”).

Subsequently, Symantec filed a petition seeking review of the same claims of the ’154 patent. IPR2016-00919, Paper 3. With this second petition, Symantec filed a motion to join IPR2016-00919 with this proceeding. We granted Symantec’s motion, joined the cases, terminated IPR2016-00919, and ordered consolidation of all Petitioner filings in this proceeding. Paper 10, at 5.

During trial, Patent Owner filed a Patent Owner Response;<sup>3</sup> and Petitioner filed a Reply.<sup>4</sup> Patent Owner also filed Motions for Observations of the November 14, 2016 cross- examination of Petitioner’s declarant, Dr. Aviel Rubin. Paper 47 (“Mot. for Obs.”). Petitioner responded to Patent Owner’s Motion for Observations. Paper 49 (“Resp. Obs.”). Both parties also filed Motions to Exclude. Paper 46 (“Pet. Mot. to Exclude”); Paper 48 (“PO Mot. to Exclude”). Both parties filed Oppositions and Replies concerning the Motions to Exclude. Papers 50, 51, 53, 55.

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<sup>2</sup> Paper 2 (“Petition” or “Pet.”).

<sup>3</sup> Paper 22 (“PO Resp.”).

<sup>4</sup> Paper 35 (“Reply”).

An oral hearing was held on December 15, 2016.<sup>5</sup>

We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a). For the reasons discussed herein, and in view of the record in this trial, we determine that Petitioner has not shown by a preponderance of the evidence that claims 1–8, 10, and 11 of the '154 patent are unpatentable.

## I. BACKGROUND

### A. RELATED MATTERS

Petitioner identifies that the '154 patent as the subject of various district court cases filed in the U.S. District Court for the Northern District of California (Case Nos. 3:14-cv-04908, 3:14-cv-02998, 5:15-cv-01353, 5:14-cv-04398, 3:14-cv-01197, and 3:13-cv-05808). Pet. 3. Petitioner also states that petitions for *inter partes* review have been filed regarding other related patents. *Id.* The '154 patent is also the subject of another *inter partes* review: IPR2016-00151 (and IPR2016-01071, joined therewith). In IPR2016-0151, we have issued a Final Written Decision, under 35 U.S.C. § 318(a), concurrently with the instant Final Written Decision.

### B. INSTITUTED GROUNDS

We instituted *inter partes* review of claim 1–8, 10, and 11 (“the challenged claims”) based on the following specific grounds:

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<sup>5</sup> A transcript of the oral hearing is entered in the record as Paper 60 (“Tr.”).

Reference[s]	Basis	Claims challenged
Khazan <sup>6</sup> and Sirer <sup>7</sup>	35 U.S.C. § 103	1–5
Khazan, Sirer, and Ben-Natan <sup>8</sup>	35 U.S.C. § 103	6–8, 10, and 11

Petitioner supports its contentions of unpatentability with declarations from Dr. Aviel Rubin. Ex. 1002 (“Aviel Declaration”); Ex. 1045 (“Supp. Aviel Declaration”). Patent Owner supports its contentions with a declaration from Dr. Nenad Medvidovic. Ex. 2002 (“Medvidovic Declaration”). The cross-examinations of Dr. Rubin and Dr. Medvidovic are entered in the record as Exhibits 2005 and 1038, respectively.

#### C. THE ’154 PATENT (EX. 1001)

The ’154 patent relates to computer security and, more particularly, to systems and methods for protecting computers against malicious code such as computer viruses. Ex. 1001, 1:7–9, 8:38–40. The ’154 patent identifies the components of one embodiment of the system as follows: a gateway computer, a client computer, and a security computer. *Id.* at 8:45–47. The gateway computer receives content from a network, such as the Internet, over a communication channel. *Id.* at 8:47–48. “Such content may be in the form of HTML pages, XML documents, Java applets and other such web content that is generally rendered by a web browser.” *Id.* at 8:48–51. A content modifier modifies original content received by the gateway

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<sup>6</sup> Patent Application Pub. No. US 2005/0108562 A1 (Exhibit 1003) (“Khazan”).

<sup>7</sup> Sirer et al., *Design and Implementation of a Distributed Virtual machine for Networked Computers* (1999) (Exhibit 1004) (“Sirer”).

<sup>8</sup> U.S. Patent No. 7,437,362 B1 (Exhibit 1005) (“Ben-Natan”).

computer and produces modified content that includes a layer of protection to combat dynamically generated malicious code. *Id.* at 9:13–16.

#### D. ILLUSTRATIVE CLAIM

Challenged claims 1, 4, 6, and 10 are independent, and illustrative claim 1 is reproduced below.

1. A system for protecting a computer from dynamically generated malicious content, comprising:

a content processor (i) for processing content received over a network, the content including a call to a first function, and the call including an input, and (ii) for invoking a second function with the input, only if a security computer indicates that such invocation is safe;

a transmitter for transmitting the input to the security computer for inspection, when the first function is invoked; and

a receiver for receiving an indicator from the security computer whether it is safe to invoke the second function with the input.

## II. ANALYSIS

### A. CLAIM INTERPRETATION

In an *inter partes* review, claim terms in an unexpired patent are interpreted according to their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2142–46 (2016). Consistent with that standard, claim terms also are given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *See In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). There are, however, two exceptions to that rule: “1) when a patentee sets out a definition and acts as his own



lexicographer,” and “2) when the patentee disavows the full scope of a claim term either in the specification or during prosecution.” *See Thorner v. Sony Computer Entm’t Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012).

If an inventor acts as his or her own lexicographer, the definition must be set forth in the specification with reasonable clarity, deliberateness, and precision. *Renishaw PLC v. Marposs Societa’ per Azioni*, 158 F.3d 1243, 1249 (Fed. Cir. 1998) (citing *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994)). Although it is improper to read a limitation from the specification into the claims, *In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993), claims still must be read in view of the specification of which they are a part. *Microsoft Corp. v. Multi-Tech Sys., Inc.*, 357 F.3d 1340, 1347 (Fed. Cir. 2004).

“content”

In our Decision on Institution, we did not construe expressly any claim terms. Dec. 5. During trial, however, Patent Owner proposed a construction of the term “content” as “a data container that can be rendered by a client web browser.” PO Resp. 5. Petitioner challenges this construction as unduly narrow in view of the Specification. Reply 6. In particular, Petitioner argues that the Specification does not define the term and provides no “clear disavowal” of claim scope. *Id.* 6–7. According to Petitioner, the Specification and extrinsic evidence support a broader construction of “content” to mean “code.” *Id.* at 7–8 (citing Ex. 1001, 12:49–52; Ex. 2005, 80:11–23).

Because they are not consistent with the broadest reasonable interpretation in light of the specification, and as discussed further below, we

do not adopt either of the parties' proposed constructions. Our reasoning follows.

The '154 patent is titled "System and Method for Inspecting Dynamically Generated Executable Code." Ex. 1001, [54]. Although the title refers to "executable code," the term "content" is used elsewhere in the patent when describing the invention. The Abstract further clarifies that a "method for protecting a client computer from dynamically generated malicious *content*, includ[es] receiving at a gateway computer *content* being sent to a client computer for processing, the *content* including a call to an original function[.]" *Id.* Abstract (emphasis added). The gateway computer modifies the "content," which is then transmitted to the client computer for processing there. *Id.*

By way of background, the '154 patent explains that the "ability to run executable code such as scripts within Internet browsers" has caused a new form of viruses "embedded within web pages and other web content, and[, which] begin executing within an Internet browser as soon as they enter a computer." *Id.* at 1:34–40. In particular, the '154 patent describes these new "dynamically generated viruses" as "taking advantage of features of dynamic HTML generation, such as executable code or scripts that are embedded within HTML pages, to generate themselves on the fly at runtime." *Id.* at 3:31–39. Therefore, according to the '154 patent "dynamically generated malicious code cannot be detected by conventional reactive content inspection and conventional gateway level behavioral analysis content inspection, since the malicious JavaScript is not present in the content prior to run-time." *Id.* at 3:65–4:2. The invention, therefore, seeks to protect against "dynamically generated malicious code, in addition

to conventional computer viruses that are statically generated.” *Id.* at 4:30–34.

To accomplish this objective, the ’154 patent describes the gateway computer receiving “content from a network, such as the Internet, over a communication channel.” *Id.* at 8:47–48. The “content may be in the form of HTML pages, XML documents, Java applets and other such web content that is generally rendered by a web browser.” *Id.* at 8:48–51; *see also id.* at 13:49–52 (“Such content may be in the form of an HTML web page, an XML document, a Java applet, an EXE file, JavaScript, VBScript, an Active X Control, or any such data container that can be rendered by a client web browser.”); 13:49–52. A “content modifier 265” at the gateway modifies “original content received” by the gateway computer and produces modified “content, which includes a layer of protection to combat dynamically generated malicious code.” *Id.* at 9:13–16. It does this by scanning the “original content” and identifying certain function calls. *Id.* at 9:16–20. Selected function calls are then replaced with a corresponding substitute function call. *Id.* at 9:21–26.

One example of a function call in the original content is identified as “Document.write (‘content that is dynamically generated at run-time’).” *Id.* at 11:55–12:2. The original content is modified by replacing the original function call Document.write() with a substitute function call Substitute\_document.write(). *Id.* at 10:31–36. The client computer then receives the “content, as modified by the gateway computer.” *Id.* at 11:63–64. And it is this modified content that the client computer processes,

by invoking the substitute function call and transmitting the input of that substitute function for inspection. *Id.* at 16:22–29.

From the above descriptions, we understand the ‘154 patent Specification to refer to three categories of content. First, there is the “original content” that is scanned and modified at the gateway computer. Second, there is the “modified content” transmitted to, and received by, the client computer. Third is the “dynamically generated malicious content” that is generated at runtime and, thus, is undetected by the gateway computer in the “original content.”

We also understand that the purpose of the ‘154 patent is to protect the client computer from this “dynamically generated malicious content,” which is sometimes also referred to in the Specification as “dynamically generated malicious code.” *See, e.g.*, Ex. 1001, 4:31–33 (“new behavioral analysis technology affords protection against dynamically generated malicious code”); 4:38–40 (“before the client computer invokes a function call that may potentially dynamically generate malicious code”); 8:17–20 (“FIG. 2 is a simplified block diagram of a system for protecting a computer from dynamically generated malicious executable code, in accordance with a preferred embodiment of the present invention”); 8:38–40 (“The present invention concerns systems and methods for protecting computers against dynamically generated malicious code.”).

Notwithstanding the variety of content described in the Specification, the term “content” is recited broadly in all challenged claims as “content including a call to a first function.” For example, claim 1 recites a content processor for “processing content received over a network, the content

including a call to a first function, and the call including an input.” *Id.* at 17:34–36.

The claim language also requires that the processed “content” be received over a network. Because the recited “first function” is the substituted function whose input is verified, the *claimed* “content,” in the context of the surrounding claim language, must refer to the modified content received at the client computer. *See id.* at 17:39–40 (“transmitting the input [of the first function call] to the security computer for inspection, when the first function is invoked”). The claimed content cannot refer to the “original content” that is received by the gateway computer and over the Internet because that content, according to the Specification, would be capable of generating the undetected dynamically generated malicious content from which the client computer is to be protected.

Based on this understanding, we do not agree with Patent Owner that the recited “content” is “a data container that can be rendered by a client web browser.” *See* PO Resp. 6. Although the Specification states that “content *may be* in the form of an HTML web page, an XML document, a Java applet, an EXE file, JavaScript, VBScript, an ActiveX Control, or any such data container that can be rendered by a client web browser,” that passage describes the “original content,” not the “modified content.” *See* Ex. 1001, 13:49–52. Furthermore, even if that description were applicable to the “modified content,” the Specification uses the permissive words “may” and “can,” which suggests that the description of the form of the content in the Specification was not intended to set forth a definition for the term “content.” *See i4i Ltd. P’ship v. Microsoft Corp.*, 598 F.3d 831, 844

(Fed. Cir. 2010) (declining to limit claim term where the specification used permissive language).

Furthermore, although the Specification addresses embodiments concerning web pages received over the Internet, the Specification does not limit the “content” to web content only, or to content that can be rendered by a web browser. For example, in describing a content processor, the Specification states that it “*may* be a web browser running on client computer 210.” Ex. 1001, 10:60–62. This description again uses permissive language that suggests the intent not to limit the content to a data container that can be rendered by a client web browser. We also find it informative that in discussing the communication channels over which the client computer receives the “modified content,” the Specification states that “communication channels 220, 225 and 230 [of Figure 2] may each be multiple channels using standard communication protocols such as TCP/IP.” Ex. 1001, 8:67–9:2.<sup>9</sup> That is, the network over which the content is received may be any network that delivers data using a standard communication protocol, not just the Internet.

Accordingly, we are not persuaded that the Specification supports a construction of “content” that is limited to the specific embodiment of a data container that can be rendered by a client web browser, as Patent Owner argues. *In re Van Geuns*, 988 F.2d 1181, 1184, (Fed. Cir. 1993) (“Moreover, limitations are not to be read into the claims from the specification.”) (internal citations omitted).

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<sup>9</sup> TCP/IP is an abbreviation for Transmission Control Protocol over Internet Protocol, and it is the most widely used communication protocol for delivery of data over networks, including the Internet. *TCP/IP*, WILEY ELECTRICAL AND ELECTRONICS ENGINEERING DICTIONARY, 774 (2004) (Ex. 3001).

We are not persuaded, in addition, that Petitioner has made a sufficient showing that a person of ordinary skill in the art would understand the plain meaning of “content” as “code.” To support its proposed construction, Petitioner relies on the cross-examination testimony of its own expert, Dr. Aviel Rubin. Ex. 2005, 80:11–23. His testimony, however, is not persuasive because he proffers no reasoning for the conclusion that “content” is “code” under the broadest reasonable interpretation:

Q What is your understanding of what “content” means?

A In the context of the ’154 patent, content would be code.

Q What do you mean by code?

A Code, like an HTML page that has JavaScript in it.

Q When you say code, do you mean any type of code?

A Well, if you just say content, we are going to take the broadest reasonable interpretation of that. It would be any type of code, yes.

*Id.*<sup>10</sup>

Although it seems reasonable to say that the content includes “code,” no persuasive evidence limits the claimed content to only code. As we noted above, the Specification refers to code, sometimes interchangeably with content, but only in the context of dynamically generated code. The dynamically generated code, however, is not generated until runtime and, therefore, is not contained in the “modified content” that the client receives. *See* Ex. 1001, 3:65–4:2 (“dynamically generated code cannot be detected by conventional reactive content inspection and conventional gateway level

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<sup>10</sup> We do not give weight to the testimony proffered by Dr. Medvidovic with regard to claim construction of this term given the contradictory positions asserted in this regard. *See* Reply 8.

behavioral analysis content inspection, since the malicious JavaScript is not present in the content prior to run-time.”). Furthermore, the Specification describes various *forms* in which the content occurs, such as an HTML web page and Java applets (*id.* at 13:49–52), but does not address sufficiently what is the “content” itself. *But see, id.* at 11:50–51 (“suppose the content is an HTML page”).

Given the broad disclosure of a network, as discussed above, the reference to a “data container” (*id.* at 13:51–52) and “network content” (*id.* at 4:37–37), the concern over scripts embedded in web pages or “other web content” (*id.* at 1:37–39), we conclude that the Specification of the ’154 patent uses the claimed “content” to refer broadly to the data or information, modified for processing, that the client receives from the network, where, in the case of the Internet, it may refer to a web page and its elements. This interpretation is consistent also with the meaning of the term in the art, as evidenced by dictionaries concerning computing and engineering. *See content*, Microsoft Computer Dictionary, 125 (5<sup>th</sup> ed. 2002) (Ex. 3002) (defining “content” as (1) “the data that appears between the starting and ending tags of an element in an SGML, XML, or HTML document. The content of an element may consist of plain text or other elements,” (2) “The message body of a newsgroup article or e-mail message;” and (3) “The ‘meat’ of a document, as opposed to its format or appearance.”); *see also content*, WILEY ELECTRICAL AND ELECTRONICS ENGINEERING DICTIONARY, 142 (2004) (Ex. 3001) (“Information, especially that which is available online, which may be any combination of text, audio, video, files, or the like.”).



Accordingly, under the broadest reasonable interpretation in the context of the Specification and the surrounding claim language, we conclude that “content” is data or information, which has been modified and is received over a network.

*“call to a first function”*

The term “call to a first function” is recited in all challenged claims. The arguments presented regarding this limitation turn on the scope of the word “call.” Specifically, Patent Owner attempts to distinguish the claims over Khazan by arguing that a “jump” instruction is not the recited “call” to a function. PO Resp. 25–27. Dr. Medvidovic, Patent Owner’s expert, proffers opinions on the issue by relying on a definition of “function call” derived from the Microsoft Press Computer Dictionary. Ex. 2002 ¶ 110 (citing Ex. 2014). That Dictionary provides that a “function call” is “[a] program’s request for the services of a particular function.” *Id.*; Ex. 2014. It also explains that “[a] function call is coded as the name of the function along with any parameters needed for the function to perform its task.” *Id.*

The Specification of the ’154 patent does not define the term “call to a first function.” The Specification, however, does use the phrase “function call” to state that “before the client computer invokes a *function call* that may potentially dynamically generate malicious code, the client computer passes the input to the function to the security computer for inspection.” Ex. 1001, 4:37–43 (emphasis added). The Specification also states that “the present invention operates by replacing original function calls with substitute function calls within the content, at a gateway computer, prior to the content being received at the client computer.” *Id.* at 4:57–60. Therefore, we understand the Specification to use the phrase “function call” in the same

sense as the phrase “call to a [] function.” That is, a program instruction specifies the function name and its parameters, where execution of the instruction results in the function providing a service. Thus, we find the dictionary definition of the term “function call” applicable here and indicative of the meaning of the term to a person of ordinary skill in the art.

Furthermore, the dictionary definition is consistent with the embodiments described in the Specification. For example, one embodiment of the '154 patent provides for modifying an original function call with “corresponding function calls `Substitute_function(input,*)`.” *Id.* at 9:21–24. That is, the specification describes that the services of the function `Substitute_function` are being requested by the modified content. Furthermore, the format of the function in this particular embodiment, identifies the name of the function and the parameters “input” and “\*”. *See also id.* at 9:26–28 (explaining that the “input intended for the original function is also passed to the substitute function, along with possible additional input denoted by ‘\*’”). We note that the “first function” is the substitute function included in the modified content, as discussed above in connection with our analysis of the term “content.”

We recognize that the definition of “call to a first function” need not define the particular format of the instruction or further detail regarding its parameters. We reach this determination because the claim language itself requires that either the “call” or the “function” include an input. For example, claim 1 recites the “call including an input,” while claim 6 recites “the first function including an input variable.”

Accordingly, we determine that a “call to a first function” means an a statement or instruction in the content, the execution of which causes the function to provide a service.

#### B. PRINCIPLES OF LAW

A claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) objective evidence of nonobviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

#### C. THE LEVEL OF SKILL IN THE ART

In determining the level of ordinary skill in the art at the time of the invention, we note that various factors may be considered, including “type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field.” *In re GPAC, Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (citing *Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc.*, 807 F.2d 955, 962 (Fed. Cir. 1986)).

Petitioner asserts, through its expert, Dr. Aviel Rubin, that the “relevant technology field for the ’154 patent is security programs, including content scanners for program code.” Ex. 1002 ¶ 21. Further, Dr. Rubin

opines that a person of ordinary skill in the art would “hold a bachelor’s degree or the equivalent in computer science (or related academic fields) and three to four years of additional experience in the field of computer security, or equivalent work experience.” *Id.*

Patent Owner, through its expert, Dr. Nenad Medvidovic, offers a level of ordinary skill that is different from Petitioner’s. Ex. 2002 ¶ 35. In Particular, Dr. Medvidovic opines that a person of ordinary skill in the art would have a “bachelor’s degree in computer science or related field, and either (1) two or more years of industry experience and/or (2) an advanced degree in computer science or related field.” *Id.* In comparison, it appears that the minimum experience under Patent Owner’s proffered level of skill is one year less than Petitioner’s. Also, Patent Owner proffers an alternative to work experience, namely an advanced degree. There is no specific articulation regarding how the difference of one year experience or the proposed alternative of an advanced degree in lieu of experience tangibly affects our obviousness inquiry. Further, there is no evidence in this record that the differences noted above impact in any meaningful way the level of expertise of a person of ordinary skill in the art. Indeed, we note that Dr. Medvidovic’s opinions would not change if he had considered instead the level or ordinary skill in the art proffered by Dr. Rubin. *Id.* ¶ 38.

Accordingly, we determine that in this case no express definition of the level of ordinary skill in the art is necessary and that the level of ordinary skill in the art is reflected by the prior art of record. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001); *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995); *In re Oelrich*, 579 F.2d 86, 91 (CCPA 1978).

D. OBVIOUSNESS GROUND BASED ON KHAZAN AND SIRER

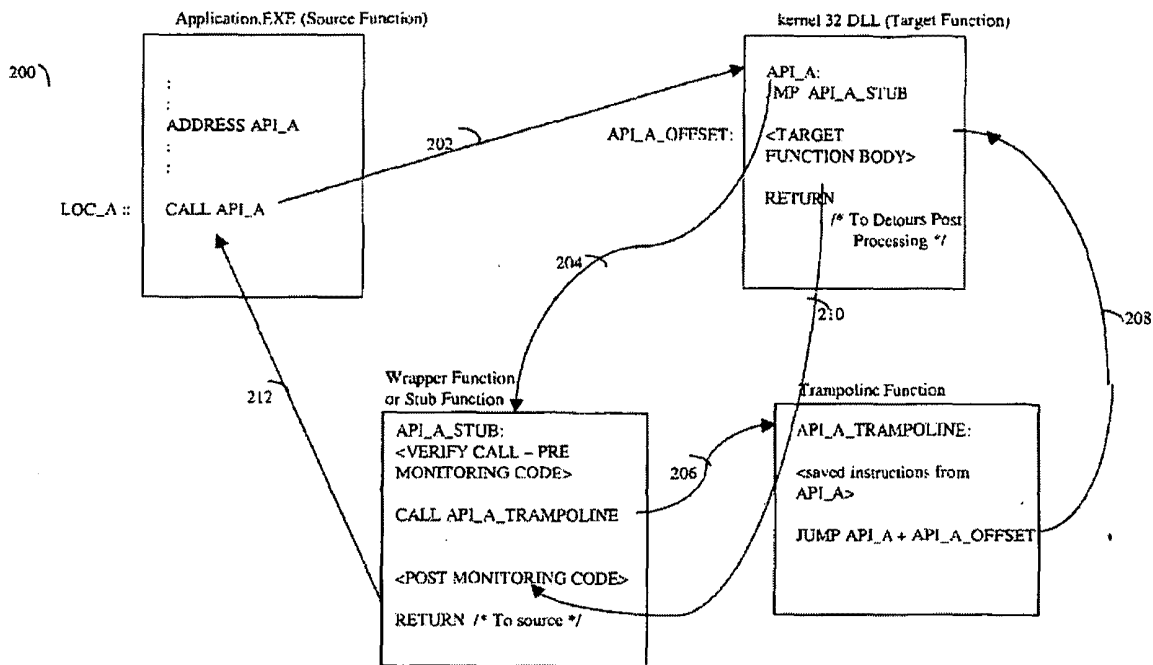
Petitioner asserts that Khazan discloses “every element of the Petitioned Claims except a modified input variable and details of performing dynamic analysis on a remote computer.” Pet. 16. In particular, Petitioner relies on a combination of Khazan and Sirer as teaching the “content including a call to a first function,” “only if a security computer indicates that such invocation is safe,” “transmitter,” and “receiver” limitations. Pet. 20–39. Petitioner relies on Khazan alone as disclosing the remaining limitations of independent claims 1 and 4. *Id.* at 19–20.

1. *Overview of Khazan (Exhibit 1003)*

Khazan is titled “Technique for detecting executable malicious code using a combination of static and dynamic analyses.” The Abstract of Khazan states that:

Described are techniques used for automatic detection of malicious code by verifying that an application executes in accordance with a model defined using calls to a predetermined set of targets, such as external routines. A model is constructed using a static analysis of a binary form of the application, and is comprised of a list of calls to targets, their invocation and target locations, and possibly other call-related information. When the application is executed, dynamic analysis is used to intercept calls to targets and verify them against the model.

Ex. 1003, Abstract. Figure 7, reproduced below, shows in more detail the flow of control between functions at run time to intercept calls to the predetermined functions or routines being monitored as part of dynamic analysis. *Id.* ¶ 25.



The flow in Figure 7 depicts the control flow when a WIN32 API function is invoked at run time from an application using a call instruction. *Id.* ¶ 82. A call is made to the target function `API_A`. *Id.* ¶ 83. Control transfers (arrow 202) to the target function `API_A` within the kernel32 DLL. *Id.* The target function `API_A` includes a transfer or jump instruction to a wrapper function. *Id.* Control, therefore, transfers (arrow 204) to the wrapper function (`API_A_STUB`). *Id.* The intercepted call is verified. *Id.* ¶ 84. This verification includes using static analysis information, including parameter information. *Id.* ¶ 87. After verification, a trampoline function is invoked (arrow 206) to execute previously saved instructions of `API_A`, which are the first instructions of the routine `API_A` that were replaced with a jump instruction to the wrapper function. *Id.* ¶ 88. Control transfers back to the target function to continue execution of the target function body as indicated by arrow 208. *Id.*

## 2. Overview of Sिरer (Ex. 1004)

Sिरer is a technical paper from an ACM symposium titled “Design and implementation of a distributed virtual machine for networked computers.”

Ex. 1004, 1. Sिरer describes centralizing service functionality in a distributed virtual machine by portioning static and dynamic components. *Id.* at 2. Figure 1, reproduced below, illustrates the organization of those components.

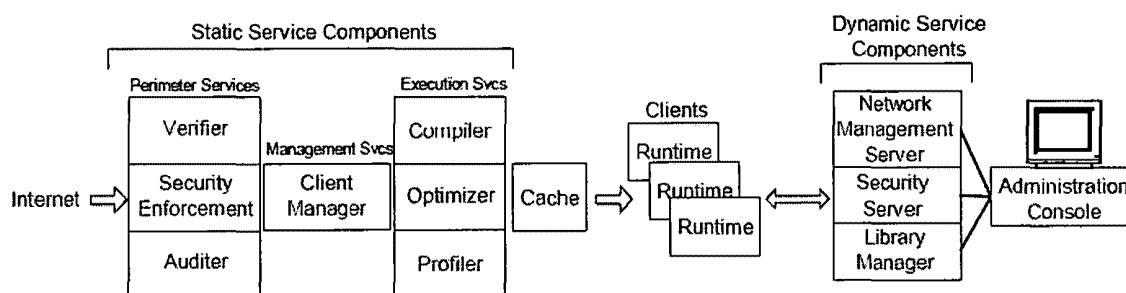


Figure 1. The organization of static and dynamic service components in a distributed virtual machine.

Figure 1 shows static service components, such as security enforcement, running at a network trust boundary. *Id.* at 3. Dynamic service components provide service functionality to clients during run-time as necessary. *Id.* “The code for the dynamic service components resides on the central proxy and is distributed to clients on demand.” *Id.* at 4. The security service “forces applications to comply with an organization’s security policy by inserting appropriate checks through binary rewriting.” *Id.* at 5. “During execution of the rewritten application, the enforcement manager executes the inserted access checks, querying the security service based on the security identifiers and permissions it maintains.” *Id.*

## 3. Whether Sिरer is a Printed Publication

Patent Owner contends that Sिरer is not prior art under 35 U.S.C. § 102(b) because Petitioner, according to Patent Owner, has failed to

demonstrate that Sirer was publicly accessible. PO Resp. 7–11. In particular, Patent Owner argues that Sirer was not indexed properly and that the location and manner of display of the journal containing it was insufficient to render Sirer publicly accessible. *Id.*

By way of background, Petitioner submitted Sirer as Exhibit 1004, which shows on its face that the reference was included in the Operating Systems Review of the Association of Computing Machinery (“ACM”). *See* Ex. 1004 at 1. For instance, in the upper right corner of the article, a header states that the 17<sup>th</sup> ACM Symposium on Operating Principles is “[p]ublished” as Operating Systems Review 34(5):202–216, December 1999. *Id.* The bottom footer provides a copyright notice dated 1999 by ACM and a statement providing limited rights to copy and to *republish* for a fee or specific permission. *Id.* Petitioner alleges in the Petition that Sirer’s publication date is December 1999. Pet. 5.<sup>11</sup> In response to Patent Owner’s objections that Sirer’s publication date of December 1999 is hearsay and inadmissible evidence of its public accessibility (Paper 10, 2), Petitioner provided supplemental evidence in the form a declaration from a librarian and a library copy of Sirer from an actual Operating Systems Review periodical (Ex. 1036, 3).

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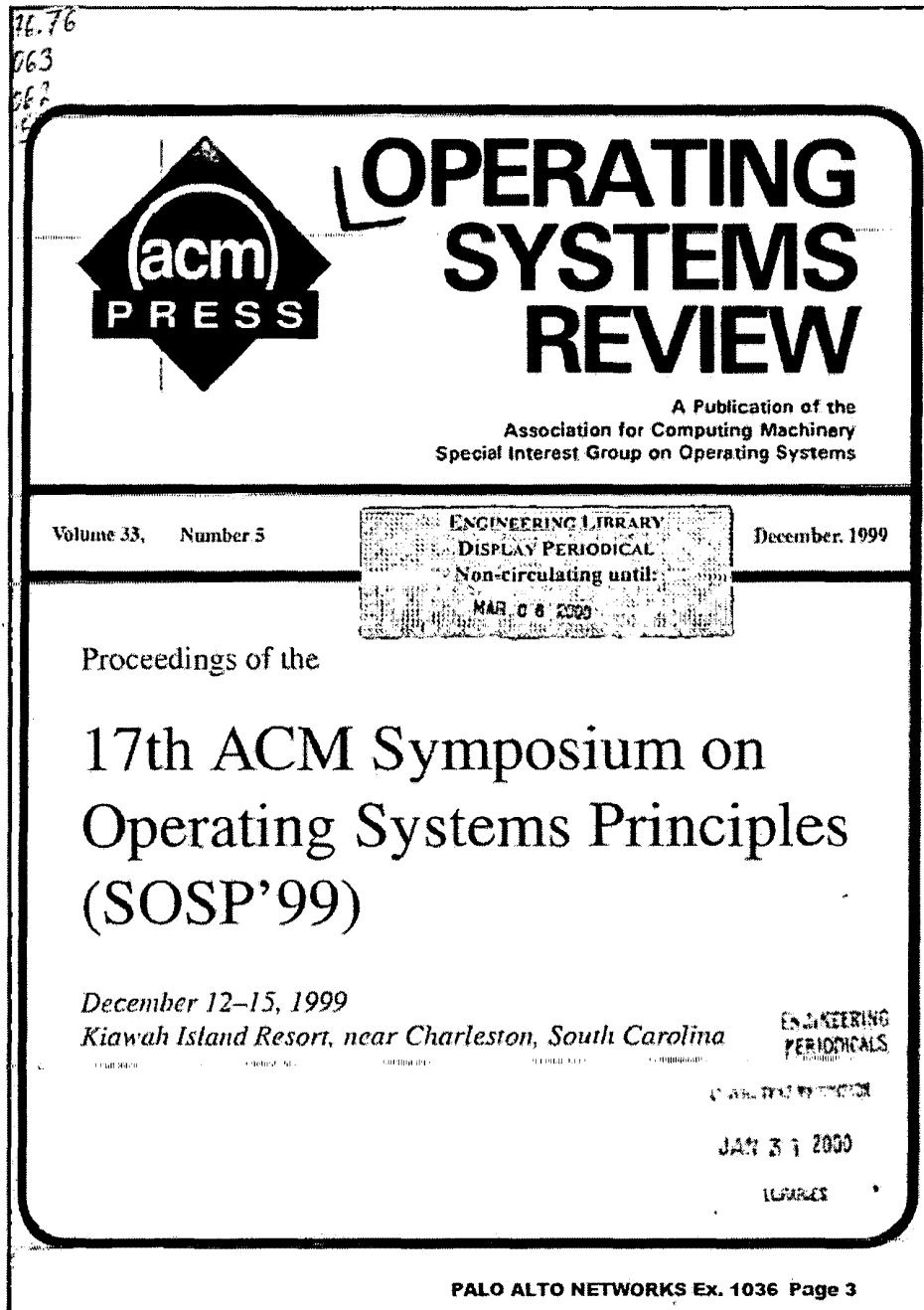
<sup>11</sup> The Petition provides as support Mr. Sirer’s declaration (Ex. 1008) and a U.S. Patent issued in 2001, which cites Sirer (Ex. 1024). We give no weight to the Sirer Declaration filed as Exhibit 1008. Petitioner failed to produce Mr. Sirer for cross-examination, as our procedures require. *See* PO Mot. to Exclude, (Paper 49) 5–7. As for considering another patent’s citation of Sirer, we find that it does not support the assertion that Sirer was published on December 1999. At best, a citation to Sirer in another patent may offer some indicia that the article was available, but the mere citation is not proof of publication or accessibility.



The determination of whether a particular reference qualifies as a prior art printed publication “involves a case-by-case inquiry into the facts and circumstances surrounding the reference’s disclosure to members of the public.” *In re Klopfenstein*, 380 F.3d 1345, 1350 (Fed. Cir. 2004). The key inquiry is whether the reference was made “sufficiently accessible to the public interested in the art” before the critical date. *In re Cronyn*, 890 F.2d 1158, 1160 (Fed. Cir. 1989). “A reference will be considered publicly accessible if it was ‘disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter or art exercising reasonable diligence, can locate it.’” *Blue Calypso, LLC v. Groupon, Inc.*, 815 F.3d 1331, 1348 (Fed. Cir. 2016) (quoting *Kyocera Wireless Corp. v. Int’l Trade Comm’n*, 545 F.3d 1340, 1350 (Fed. Cir. 2008)).

Having reviewed the parties’ arguments and supporting evidence, we determine that Petitioner has demonstrated sufficiently that Siler is a printed publication based on the following reasons and factual findings. First, we find that Siler was published in Volume 33, issue number 5 of the Operating System Review published by ACM. We base our findings on the testimony of Mel DeSart, head librarian of the University of Washington Engineering Library, and the printed material attached as Exhibit A to the declaration of Mel DeSart, filed as Exhibit 1036. We also support our findings based on the totality of the indicia of publication found on Siler, Exhibit 1004. As noted above, the indicia on the face of Exhibit 1004 in its totality assures us that Siler is a printed publication. Notwithstanding the copyright date, the first page of the article conveys that the article is published in a volume of the Operating Systems Review, an ACM publication. *See* Ex. 1004, 1. That

indicia is consistent with the printed material provided as Exhibit 1036 and authenticated by Mr. DeSart. *See* Ex. 1036. For example, on page 3 of Exhibit 1036, reproduced below, the cover of the periodical states that Operating Systems Review is “a publication of the Association for Computing Machinery Special Interest Group on Operating Systems.” *Id.* at 3.



The cover page reproduced above identifies Volume 33, Number 5, and date December 1999 as containing the “Proceedings of the 17<sup>th</sup> ACM Symposium on Operating Systems Principles (SOSP’99).” *Id.* This cover page also contains indicia of circulation to the public, such as by its receipt and cataloging at the Engineering Library of the University of Washington.

*Id.* (displaying a stamp labeled “Engineering Periodicals, University of Washington, Jan 31, 2000”). Additionally, the cover page includes a label stating “Engineering Library Display Periodical Non–circulating until: Mar 08 2000.” *Id.* The stamps and labels are described by Mr. Melvin (“Mel”) DeSart, Head of the University of Washington Engineering Library, as evidence that the Library’s process was to stamp a received periodical and to affix a label when the periodical was chosen for display at the Engineering Library Display Periodicals area. Ex. 1036 ¶ 2. According to DeSart, the stamp and label convey that the article was received (and, therefore, stamped) at the University of Washington Libraries, on January 31, 2000, and was redirected to the Engineering Library, where it was added to the display and made “publicly available” from February 8, 2000 until March 8, 2000. *Id.* ¶ 3.

We credit DeSart’s testimony regarding the normal business practices of the Library at which he is employed since March 2000. *Id.* ¶ 1. His opinion is based on personal knowledge of these business practices and his familiarity with the Library’s business records. *Id.*; Ex. 2006, 14:5–15:20. The copy of the article, with the first page we discuss above, is a copy of the periodical maintained by the Library in its ordinary course of business, and is authenticated as such. *Id.* ¶ 3.

Further indicia of publication supports our determination that Siner is a printed publication. The copyright page of the Library copy provides for limited rights to copy and “republish” with permission and/or a fee by contacting the publications department of ACM. *Id.*, 5. That page also includes an ACM ISBN number (1-58113-140-2) and instructions on how to order additional copies, information which is also included in the footer of

Exhibit 1004, indicating that copies of the periodical were available from ACM without restriction. *Id.* Therefore, based on the foregoing, we conclude that Simer is a printed publication. Moreover, considering the dates on the face of the article, the circumstances surrounding the receipt of the periodical at the library, and the business practice of circulating periodicals at the Engineering Library, we determine that Simer's date of publication is evident as of February 8, 2000, when the Library would have displayed the periodical, and as early as January 2000, when a subscriber to the periodical, such as the Library of Washington, would have received the periodical.<sup>12</sup> *See* Ex. 2006, 17:6–15 (DeSart testifying that journals published by ACM were received directly from the publisher under a subscription); 21:22–22:8.

We also find that skilled artisans exercising reasonable diligence would have been able to locate Simer. In addition to the accessibility of the article on the library display area and on shelves, DeSart testified that the periodical containing the Simer, "Operating Systems Review," was catalogued in the library's electronic catalog. Ex. 2006, 10:13–11:23. The periodical could be searched by the title of the periodical and its keywords. *Id.*; 30:14–31:9.

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<sup>12</sup> We also note that the periodical appears to be a compendium of articles presented in a symposium during December 12–15, according to the information presented in the cover page. Therefore, December 1999 may not represent accurately the date the article became a printed publication, but merely the date on which the subject matter of the articles may have been presented. Accordingly, the dates corroborated by Mr. DeSart concerning receipt of the periodical at the library and circulation within the library system reasonably confirm that the printed article was *published* after the symposium dates, but no later than the date on which a periodical would have been disseminated to the libraries and its patrons.

Furthermore, Mr. DeSart testified that in 2000 there were a number of science, technology and engineering computer science databases that index content by subject areas. *Id.* at 12:2–18. From this testimony we understand that the article itself would have been indexed by subject matter, for example in a database called “Inspec,” which indexes computer science materials and ACM publications, such as the one at issue here. *Id.* That is, a person of ordinary skill in the art with interests in computer operating systems and virtual machines, exercising reasonable diligence, would have been able to locate the Operating Systems Review journal and the Siner article using a library catalogue or a database.

We note that notwithstanding the evidence of indexing discussed above, the issue of indexing the reference and in what manner is not entirely dispositive because it is not a “necessary condition for a reference to be publicly accessible.” *In re Lister*, 583 F.3d 1307, 1312 (Fed. Cir. 2009). In this case, the testimony and the evidence presented support the determination that the periodical containing the Siner article was sufficiently catalogued at the Engineering Library of the University of Washington to provide meaningful assurance that one of ordinary skill in the art, exercising reasonable diligence, would have been able to locate this particular periodical and the Siner article itself.

Furthermore, we are persuaded that this case involves an article in a periodical that is unquestionably published and accessible not only directly from the publisher, as discussed above, but via a library. This case is distinguishable from other cases addressing concerns about dissertations, theses, or other research papers housed in a library. *See Cronyn*, 890 F.2d at 1160 (concluding three undergraduate theses housed in a library were not

publicly accessible because the references lacked a subject index); *In re Bayer*, 568 F.2d 1357 (CCPA 1978) (concluding a thesis housed, but not shelved nor catalogued, within a university library was not publicly accessible); *cf. In re Hall*, 781 F.2d 897, 899 (Fed. Cir. 1986) (concluding a dissertation shelved and indexed in a card catalog at a German university was publicly accessible). Rather, the Sirer article, published in a journal or periodical produced by ACM and distributed to subscribers is more akin to the publication addressed in *Voter Verified, Inc. v. Premier Election Solutions, Inc.*, 698 F.3d 1374, 1380 (Fed. Cir. 2012). In *Voter Verified*, a particular article available only through an on-line publication was deemed publicly accessible because the publication was well known to the community interested in the subject matter of the reference, submissions were treated as public disclosures, users could freely and easily copy the content of the on-line publication, and the on-line publication was accessible by a keyword-based search tool. As stated above, the periodical is an ACM publication, directed to computing technology topics, and was available to subscribers, including libraries. In this particular case, the Engineering Library received and circulated the volume containing the Sirer article by displaying it in a periodicals area and making it publicly available from February 8, 2000 to March 8, 2000.

Given the above-described evidence showing accessibility, we are not persuaded by Patent Owner's argument that the lack of evidence of anyone actually accessing Sirer weighs against a finding of public accessibility. PO Resp. 10. Once accessibility is proved, as the evidence shows, "there is no requirement to show that particular members of the public actually received the information." *See Constant v. Adv. Micro-Devices, Inc.*, 848 F.2d 1560,

1569; *see also SRI Int'l, Inc. v. Internet Security Sys., Inc.*, 511 F.3d 1186, 1197 (“[A]ctual retrieval of a publication is not a requirement for public accessibility. . . .”).

Accordingly, based on the facts and circumstances of this case, we conclude that the Simer article was a printed publication that was publicly accessible before the invention date of the '154 patent (i.e., December 12, 2005), and is, therefore, prior art to the challenged claims.

#### 4. *Discussion of Claims 1–5*

Independent claim 1 is directed to a system, while claim 4 is directed to stored program code including functions performed by a computer device, where those functions track the functions recited in claim 1. Similar limitations are analyzed together where appropriate.

##### a. Content Processor

Claim 1 recites a “content processor.” Petitioner points out that Khazan discloses each host having one or more processors that execute the application executable. Pet 19 (citing Ex. 1003 ¶ 40), 47. We agree that Khazan discloses the recited content processor. As Khazan explains, the components that may reside and be executed at the host include application executable 102, one or more libraries, a malicious code detection system, list of target and invocation locations, list of target functions to be identified by static analysis, and a list of target functions whose invocations are to be monitored by dynamic analysis. Ex. 1003 ¶ 40. The processor of the host executes the instructions of the application executable. *Id.* Consistent with this broad disclosure of a processor, Khazan further describes that with embodiments of executable code or programs, the processor is a program



processor, which may be a virtual machine, a script processor or command processor, depending on the type of program. *Id.* ¶ 114.

With regard to claim 4, the claim is directed to program code for causing a computer device to “process content.” Pet. 42. Petitioner contends that Khazan discloses hosts that each have a memory (for storing program code) and that the disclosures offered as support for “content processor” are equally applicable to claim 4. *Id.* We agree and determine that based on the disclosures of Khazan discussed above, Khazan discloses a memory storing program code for processing content.

b. Content Received Over a Network

Claims 1 and 4 recite “content received over a network.” We find that Khazan teaches or suggests processing “content received over a network” based on the reasons stated below. First, by way of background, Khazan performs two types of analysis, static and dynamic. The static analysis, also referred to in Khazan as part of pre-processing, scans an application or program to identify functions that may be of interest as potentially malicious code. The static analysis produces a list of functions for dynamic analysis, which is performed at run time. In this manner, a function that from static analysis is expected to perform in a certain manner (access certain address space, for example) will be deemed malicious code if at run time, i.e., during dynamic analysis, the function deviates from the expected behavior (accesses a different address space, for example). Ex. 1003 ¶ 115. During pre-processing, or either before or after static analysis, instrumentation (or wrapping the target function) is performed to monitor the operation of that function at run time. *Id.* ¶ 75. The question of where in Khazan this

instrumented code is received and processed is of particular interest because that code must be *received* over a network.

The Petition points out that Khazan’s “application executable” is the recited content. *See* Pet. 15 (“static analyzer reviews the downloaded content (called an application executable”); 19 (“Khazan discloses ‘content such as an instrumented ‘application executable’”); *see also* Ex. 1003 ¶ 73 (“At step 128, the instrumented application and associated libraries are executed.”). The Petition, however, also points out that an associated library is obtained over a network. Pet. 20. In particular, Petitioner identifies Khazan’s claim 35 as supporting its contention that Khazan discloses content received over a network. *Id.* Claim 35 refers to an instrumented binary form of a library. *See* Ex. 1003, p. 14 (“[W]herein said instrumented version of said binary form [of a library] obtained from at least one of: a data storage system and a host other than a host on which said application is executed, and said instrumented version is stored on a storage device.”). The Petition also states that Khazan expressly teaches performing instrumentation or wrapping on a separate host and that a person of ordinary skill “would recognize that there is no functional difference between wrapping a function prior to delivery to the client computer and performing the wrapping process at the client computer.” Pet. 15 (citing Ex. 1001 at 4:55–60; Ex. 1002 ¶ 71; Ex. 1003 ¶ 75, claims 31–33, 35, 68–70, 72).

In our Decision on Institution, we noted that we understood the Petition to allege that the “content” is disclosed in Khazan via its description of instrumented applications *and* libraries. Dec. 9 (“Petitioner has asserted that Khazan teaches instrumentation of both when it refers to ‘instrumented application and libraries.’”); *see also* Dec. Req. for Reh’g (Paper 12) 3 (“we

do not agree with Patent Owner that we overlooked any ‘agreement’ or misapprehended that the evidence and argument presented regarding the ‘content’ limitation is limited by the Petition to Khazan’s instrumented application executable.”).

Patent Owner argues that Petitioner has failed to show that Khazan teaches “content received over a network” based on three contentions. First, Patent Owner contends that Khazan does not disclose an instrumented application executable or instrumented executable. PO Resp. 15–19. Second, Patent Owner contends that Khazan’s application executable is not received over a network. *Id.* at 19–21. Finally, Patent Owner argues that Khazan’s instrumented library is not “content received over a network.” *Id.* at 21–23. We find these arguments unpersuasive in light of our analysis below.

#### *Instrumented Applications*

First, we address Patent Owner’s argument that Khazan does not disclose instrumented applications. As stated above, Khazan expressly discloses instrumentation (and therefore modifying) of applications and libraries. For instance, Khazan describes that “the instrumentation technique . . . modifies the memory loaded copy of the application and associated libraries to execute additional monitoring code.” Ex. 1003 ¶ 75 (cited in Pet. 15); *see also* Ex. 1003, Fig. 4B (“Execute the instrumented application and associated libraries.”); ¶ 79 (“Any one of a wide variety of different techniques may be used in connection with instrumenting the application 102 and any necessary libraries.”). With regard to applications, Khazan expressly claims performing static analysis and instrumenting an application by reciting, for example, “performing static analysis of an *application*,”

“determining an invocation location *within said application*,” and “*instrumenting* one of: a processor of said application and *said application*.” *Id.* at p. 13-14 (claims 1, 4, and 28) (emphasis added). With regard to libraries, it is undisputed that Khazan discloses analysis and instrumentation of libraries, and receiving those over a network. *Id.* ¶ 90 (referring to Fig. 8 “the steps described herein may be used in connection with instrumenting the binary form of the libraries that may be used by the application 102, all operating system libraries or DLLs, or any other set of libraries”); PO Resp. 20–21 (“At most, however, Khazan discusses instrumented *libraries* being sent from one host to another.”) (emphasis in original); Reply 9 (“Finjan does not dispute that Khazan’s instrumented libraries can be received over a network.”).

It may be the case that the embodiments illustrated in Khazan’s figures specifically address instrumentation of libraries and the run time analysis of those libraries. PO Resp. 15 (“Khazan includes numerous figures and description of how to instrument libraries, but does not include any description of how to instrument an application.”). Those embodiments, however, do not negate the descriptions, identified above; of applications and programs (bytecode) analyzed and instrumented using the same techniques as disclosed with respect to the libraries. Reply 10. For example, Khazan describes applying the same instrumentation techniques described with respect to dynamic link libraries or “DLLs” to “binary and machine-executable programs, as well as script programs, command program[s], and the like.” Ex. 1003 ¶ 114. In particular, Khazan states that the “foregoing techniques may be used and applied in connection with detecting and analyzing calls to target functions or services made by

[malicious code] from programs in which control is transferred from one point to another.” *Id.* Furthermore, we understand Khazan to provide reference to analysis tools, such as Detours and IDA Pro Disassembler, that are applicable to binary code and not limited to instrumentation of libraries. *See Ex. 1003 ¶ 79* (“the Detours package as provided by Microsoft Research may be used in connection with instrumenting *Win32 functions* for use on Intelx86 machines.”) (emphasis added); ¶ 45 (“One embodiment uses the IDA Pro Disassembler by DataRescue (<http://www.datarescue.com/idabase/>) and Perl scripts in performing the static analysis of the application executable 102”); Reply 10. Accordingly, we find that Khazan discloses *instrumented* applications.

*Received Over a Network*

The remainder of Patent Owner’s arguments are directed to whether Khazan discloses either instrumented applications or libraries “received over a network.” PO Resp. 19–21. In particular, Patent Owner contends that Khazan addresses applications resident or already running in client computers when they become infected. *Id.* at 20. From this contention we understand Patent Owner to allege that Khazan would have no need for sending and receiving an instrumented application at a client because that application is being analyzed at the client computer. With regard to the instrumented libraries, although Patent Owner agrees that such libraries are sent from one host to another, those libraries are also already resident before the library can be executed. *Id.* 22.

We find that Khazan teaches or suggests that both applications and libraries are received over a network. In particular, we note that Khazan

addresses a computer system connected to a multitude of hosts via a network, as shown in Figure 1, reproduced below. Ex. 1003, Fig. 1.

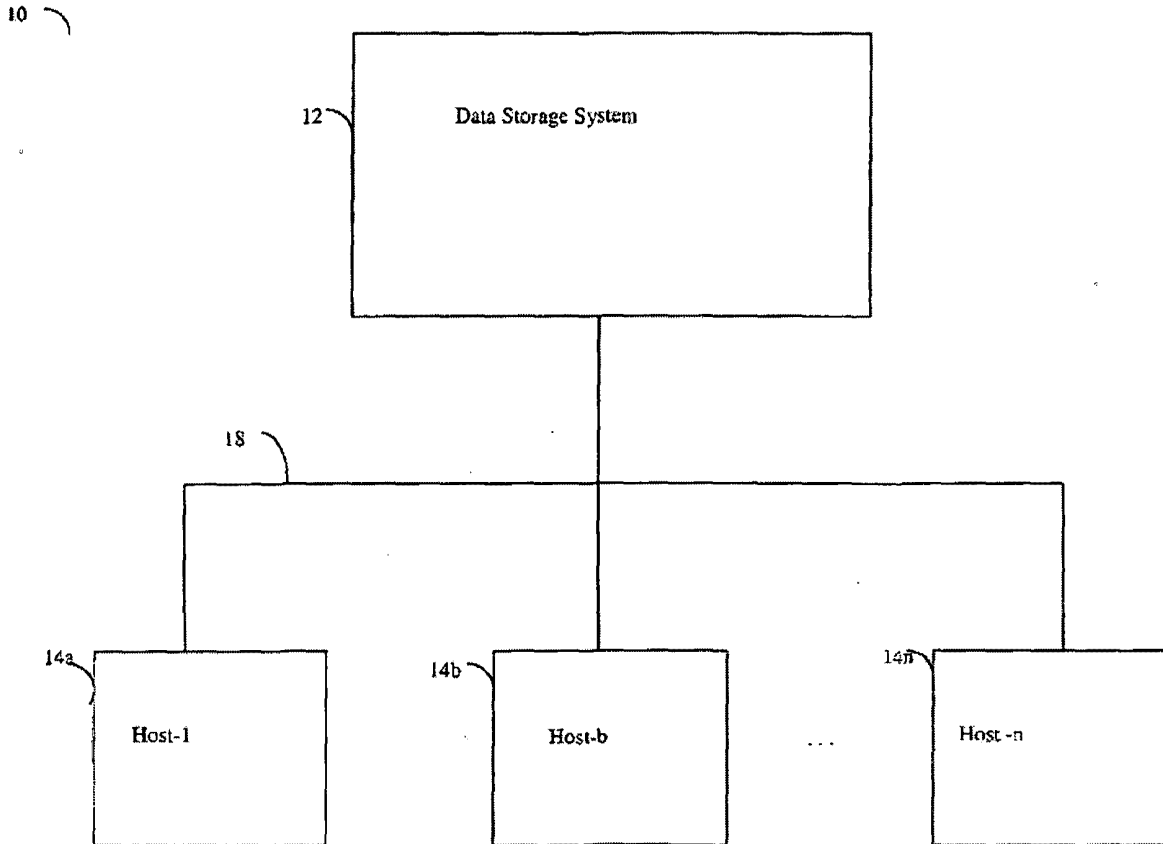


FIGURE 1

Figure 1 illustrates host system 14a (Host -1), 14b (Host-b), and 14n (Host-n) coupled to communication medium 18, which “may be the Internet, an intranet, network or other connection(s) by which host systems 14a–14n may access and communicate with the data storage system 12, and may also communicate with others included in the computer system 10.” *Id.* ¶ 29.

The Petition presents the contention that the broad disclosure of Khazan hosts and the various components communicating over a network warrants a

finding that Khazan teaches that its techniques may be performed on a single host or distributed among several hosts. Pet. 14 (citing Ex. 1002 ¶ 71). We agree with this contention. As explained by Dr. Rubin this conclusion “is also evident from [Khazan’s] descriptions of embodiments in which the instrumentation is performed in a pre-processing step in which the resulting instrumented code is stored on, e.g., disk for use later.” Ex. 1002 ¶ 71. In particular, we find persuasive that Khazan discloses that the instrumentation (or wrapping of a function) occurs on a host that is different from the host that executes the wrapped function. *Id.* (relying on Ex. 1003, claims 31–33, 35). Dr. Rubin further opines that “the end result of the wrapping . . . is the same regardless of where the system performs the wrapping.” *Id.* (cited in the Petition at 15).

Patent Owner’s expert Dr. Medvidovic disagrees with Dr. Rubin’s opinion that instrumentation can occur in many hosts. Ex. 2002 ¶ 71. His testimony is unconvincing, however. Dr. Medvidovic does not address Dr. Rubin’s assessment that Khazan teaches instrumentation on a host that is different from the host that executes the wrapped function. Instead, Dr. Medvidovic asserts that Khazan does not disclose applications received through a network. *Id.* Further, Dr. Medvidovic opines that Khazan addresses viruses that infect applications resident within a computer’s file rather than in content received over a network. *Id.* We find that Dr. Medvidovic’s statements do not address Petitioner’s contention and ignore relevant teachings of Khazan. For instance, Khazan teaches that each host accesses information stored in data storage devices using a network (communication medium). Ex. 1003 ¶ 33. And any of Khazan’s components—e.g., static analyzer, dynamic analyzer, libraries, application

executable, etc.—may be stored in the data storage system. *See id.* ¶ 72 (describing Figure 4A, which also lists the various lists 106, 111, 112). Therefore, we do not agree with Patent Owner’s narrow assessment of Khazan, which would limit application of Khazan’s techniques exclusively to a file resident in the host, rather than on content received over a network. Indeed, Khazan expressly discloses an embodiment in which instrumentation is performed “before invocation of the application” allowing for the instrumented library (or application) to be stored on a storage device. Ex. 1003 ¶ 75. That storage device, as discussed above, is accessed via a network. Accordingly, it is reasonable to conclude, and we find that, Khazan teaches or suggests that any host may receive over the network (communication medium 18) instrumented applications or libraries for processing at the host.

As to Dr. Medvidovic’s assertion that Khazan concerns viruses at the client device and not in content received over a network, we find the assertion unsupported. Khazan broadly discloses malicious code as “a computer virus, a worm, a Trojan application, and the like,” and defines it as “machine instructions which, when executed, perform an unauthorized function or task that may be destructive, disruptive, or otherwise cause problems within the computer system upon which it is executed.” Ex. 1003 ¶ 5. The concern for malicious code in Khazan does not exclude viruses that may be received in applications received outside of the host. Rather, we find that Khazan’s disclosure of Internet, as the network that gives a host’s access to data storage and other hosts, reasonably teaches that in the embodiment in which libraries, such as security DLLs, are instrumented and stored at one host during pre-processing static analysis, an instrumented library is



*received over a network* for dynamic analysis at *another host*. See ¶ 75, and claim 31 (static analysis is performed on a first host and static analysis results are made available to a second host on which said application is executed). The same disclosure is applicable to instrumented applications that are *distributed* to the executing host for dynamic analysis. See, e.g., Ex. 1003, claim 33 (“the results of said static analysis are distributed together with the said application”).

Finally, we address Patent Owner’s argument regarding the libraries not being “directly executable,” like the “application executable,” and therefore not “content,” as identified by Petitioner. PO Resp. 22. As stated above, we understand the Petition to assert that both instrumented applications and libraries are the recited “content.” Furthermore, under our claim construction, *see supra* section II.A, “content received over a network” means data or information which has been modified and is received over a network. Instrumented applications and libraries both fall under the scope of the term, as both are data or information that has been modified. And, as stated above, we find that Khazan teaches or suggests instrumented applications and libraries received over a network.

c. The Content Including a Call to a First Function

Claims 1 and 4 recite the “content including a call to a first function.” Petitioner contends that both Khazan and Sirer disclose this limitation. With regard to Khazan, Petitioner contends that the function added by instrumentation is the first function included in the content. Pet. 20 (citing, for example, Ex. 1007, Fig. 7). Petitioner further contends that Sirer discloses “instrumented content” in more detail than Khazan. *Id.* Petitioner also argues that Sirer discloses remote dynamic analysis such that

substituting Sirer's instrumentation and dynamic analysis for Khazan's would make it more clear that it would have been obvious for instrumented content (including a function call) to be instrumented remotely from a client computer. *Id.* at 20–21. In particular, Petitioner explains that Sirer's distributed architecture with a centralized network security service parses and rewrites incoming applications to insert calls to the enforcement manager in accordance with a network security policy. Pet. 21 (citing Ex. 1004, 6). Petitioner's argument, in summary, is that Sirer, much like Khazan, uses "static" analysis to parse an application and insert a call that implements a "dynamic" analysis in order to check the security of the application. *Id.* (citing Ex. 1004, 3–6).

Petitioner offers three separate rationales for the motivation to combine the teachings of Khazan and Sirer. Pet. 21–27. For instance, Petitioner argues that a person of ordinary skill in the art would recognize the advantages of instrumenting an application at a proxy server (as done in Sirer) before the client receives it in order to use "the powerful network processor rather than the weaker client processor." *Id.* at 23 (citing Ex. 1004, Abs. 5; Ex. 1002 ¶ 89). For another rationale, Petitioner asserts that Sirer's instrumentation at the centralized proxy server was a known method and an obvious substitution for instrumentation performed at the client (such as disclosed with respect to some embodiments in Khazan), yielding a predictable result. *Id.* at 25–26 (citing Ex. 1002 ¶ 96 and discussing factors supporting the predictable substitution). Finally, Petitioner asserts that there were a limited number of locations in which to perform instrumentation: the client executing the application and a remote system. *Id.* at 27 (citing Ex. 1002 ¶ 97). And even without Sirer's teachings of instrumenting at a proxy

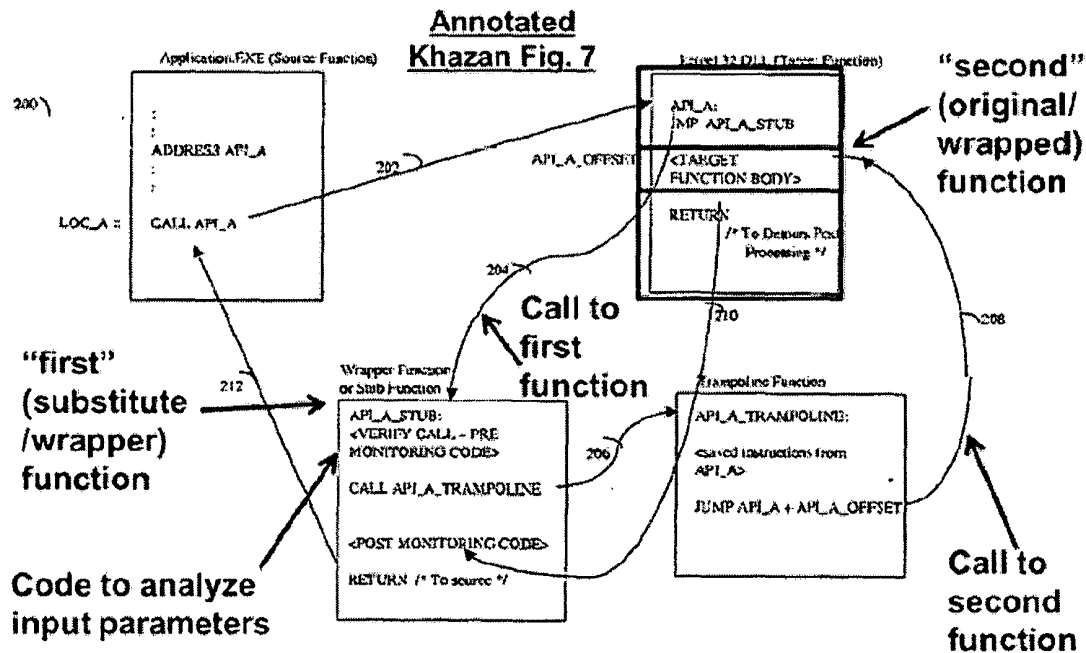
server, Petitioner argues that it would have been obvious to try instrumentation at the remote system. *Id.*

*Discussion of Khazan's Teachings*

Khazan, according to Patent Owner, does not disclose a “call to a first function” because Khazan implements a “jump” instruction, not a “call” to a function. PO Resp. 25–27. A “jump” is a “low-level computer instruction rather than the type of high-level ‘function call’ that would be found in the type of content described in the ’154 patent.” *Id.* at 26 (citing Ex. 2002 ¶¶ 108–109). Dr. Medvidovic, Patent Owner’s expert, opines that a person of ordinary skill in the art would not understand a jump (“JMP”) instruction and a function call to be same for three reasons. Ex. 2002 ¶¶ 108–111. By way of summary, these reasons focus on the different manner in which a jump instruction transfers control and data in a program in comparison with a “function call,” differences which, for a jump instruction, may require additional instructions in order to handle transfer of control back to the calling function and various transfers of data. *Id.* Dr. Rubin, Petitioner’s expert, also testifies to the similarities and differences between a “jump” and a “call,” stating they can be the same “when you call a function that involves jumping to the location in memory where that function code is, but you can also just jump in the code without calling a function.” Ex. 2005, 83:6–20 (also testifying that “in order to execute a call you have to have a Jump”).

Having considered the arguments and evidence presented by both parties, we find that Khazan discloses the “content including a call to a first function.” We credit the testimony of Dr. Rubin that the flow of control shown in Khazan’s Figure 7 illustrates that Khazan includes a call to a first function in the instrumented content. Pet. 24 (citing Ex. 1002 ¶ 91). In

particular, we find that the annotated Figure 7, reproduced below as proffered by Petitioner, conveys that Khazan’s instrumentation causes an instrumented library to be rewritten to execute a JMP instruction that transfers control to the wrapper function (the first function).



In particular, the annotated Figure 7, above, illustrates that Petitioner identifies the transfer of control 204 to a wrapper function `API_A_STUB`, as a “call to first function.” *Id.* at 24–25. For example, Khazan explains that the call to the function `API_A` (call to the original function) is intercepted using the instrumentation. Ex. 1003 ¶ 82. In other words, by intercepting the original function, the program does not execute the body of that original function, but, instead, executes another function altogether, i.e., the wrapper function.

Although Figure 7 does not illustrate the instrumentation of the application itself, we do not agree that the example in the embodiment is inapplicable to instrumenting applications. As stated above, we find that

Khazan expressly discloses that the instrumentation techniques are applicable to both applications and libraries. *See, e.g., id.* ¶ 114.

Furthermore, the Figure 7 embodiment's use of a JMP instruction, rather than a CALL instruction, does not persuade us that Khazan's teaching with respect to transfer of control is limited to a JMP instruction. Although Figure 7 implements a JMP instruction together with a Trampoline function to transfer control to and from a wrapper function (first function), we find that Khazan recognized that the transfer of control technique would be effected with either a JMP or CALL instruction. For example, we find instructive Khazan's explanation that monitoring for call instructions includes also jump instructions, or "other types of instructions transferring control from the application as may be the case for various routines being monitored." Ex. 1003 ¶ 46. We recognize that this statement in Khazan addresses the instructions monitored before instrumentation occurs. Nevertheless, the discussion regarding how a "jump" and a "call" are both instructions that transfer control from one function to another supports the finding that Khazan suggests its teachings are not limited to the use of a jump instruction when discussing transfer of control in executing code. *See* Ex. 1003 ¶ 90 ("the first instructions or instructions just saved from the current target are replaced by instructions which transfer control to the stub or wrapper for the current call").

The discussion of transfer of control is important, as we further find that Khazan teaches that the instrumented content requests the service of the first function, i.e., includes a call to a first function. In particular, as noted above, the transfer of control results in execution of the stub or wrapper function. *See id.* ¶ 83 ("The first instruction of the target function API\_A

includes a transfer or jump instruction to the wrapper or stub function as described elsewhere herein. This transfer is indicated by arrow 204.”). That transfer of control, in essence, involves the execution of an instruction requesting that the wrapper function verify the intercepted call. *See id.* ¶ 84 (“Within the pre-monitoring portion of the wrapper function, the intercepted call is verified. As used herein, the pre-monitoring code portion refers to that portion of code included in the wrapper or stub function executed prior to the execution of the body of the intercepted routine or function.”). We also note that Khazan broadly teaches using any instruction that transfers control to the wrapper function. *Id.* ¶ 88 (describing instrumentation as dynamically modifying libraries “in which the instruction or instructions of the API of the target function are replaced with a jump instruction *or other transfer instruction* transferring control to the wrapper function.”) (emphasis added). Accordingly, we find that Khazan’s transfer of control to the stub or wrapper function to execute that function, as illustrated in Figure 7 by the arrow 204, teaches or suggests “a call to a first function” as we have construed the term.

#### *Discussion of Simer’s Teachings*

Patent Owner challenges Petitioner’s assertion that Simer also teaches content including “a call to a first function.” PO Resp. 32–33. In particular, Patent Owner argues that Simer’s dynamic service component is not a “function,” but rather, it is a component that “provide[s] service functionality during the execution of applications.” *Id.* at 33 (citing Ex. 1004, 3). We find Patent Owner’s argument unpersuasive.

As discussed above, a “call to a first function” is a statement or instruction in the content, the execution of which causes the function to provide a service. We find that Simer describes its dynamic service

components in alignment with the definition of the term. For example, Sirer describes the dynamic service components as providing “service functionality” during execution of applications. Ex. 1004, 3 (also stating that “[d]ynamic service components provide service functionality to clients during run-time as necessary”). These dynamic service components are code that is delivered to the client from the central proxy server on demand. *Id.* at 4 (“[t]he code for the dynamic service components resides on the central proxy and is distributed to clients on demand.”). Sirer performs a dynamic service by inserting a call to the corresponding dynamic service component. *Id.* at 3; *see also id.* at 5 (“[T]he verification service modifies the code to perform the corresponding checks at runtime by invoking a simple service component (Figure 3).”). The call insertion is performed by Sirer’s static service components at a proxy server. *Id.* at 4 (“[t]he proxy transparently intercepts code requests from clients, parses JVM bytecodes and generates the instrumented program in the appropriate binary format”). In particular, Sirer teaches rewriting application code during static service when “encounter[ing] data-dependent operations that cannot be performed statically.” *Id.* at 3. One example of data-dependent operations checked dynamically is verifying program safety. *Id.* Another example is a security check for checking user-supplied arguments to system calls. *Id.*

Based on the foregoing, we find that Sirer teaches that content in need of a security check is instrumented at a proxy server where a call to dynamic service components is inserted. We find that this call to dynamic service components is a call to a first function because Sirer teaches that the call requests a particular service provided by the code comprising the dynamic service components. With respect to the example of performing a security

check, for example, we understand Sirer to teach that the call to the dynamic service component will be inserted into the application to check whether the user-supplied arguments are secure. *See, e.g., id.* at 5 (disclosing that, as shown in Figure 3, the verification service modifies the code to perform the corresponding checks at runtime by invoking a simple service component). One such particular example is provided in Figure 3 of Sirer, reproduced below.

```
class Hello {
    static boolean __mainChecked = false; // Inserted by the verifier
    public static void main() {
        if(__mainChecked == false) { // Begin automatically generated code
            RTVerifier.CheckField("java.lang.System", "out",
                "java.io.OutputStream");
            RTVerifier.CheckMethod("java.io.OutputStream", "println",
                "(Ljava/lang/String)V");
            __mainChecked = true;
        } // End automatically generated code
        System.out.println("hello world");
    }
}
```

Figure 3 provides the “hello world example” after it has been processed by the distributed verification service. The security checks deferred to execution time are shown in italics. *Id.* at 5. This example supports Petitioner’s contention and our finding that Sirer’s content includes a call to a first function. In particular, the italicized code, which is the instrumented portion of the program, shows that the program invokes a verifier function *RTVerifier.CheckMethod*, for example, that requests verification that class *OutputStream* implements a method “println” to print a string. *Id.*

Accordingly, we agree with Petitioner’s contention that Sirer teaches a call to a first function. Patent Owner’s arguments to the contrary are not persuasive.



*Combination of Khazan and Sirer*

In connection with the limitation “the content including a call to a first function,” Petitioner asserts that it would have been obvious to combine Sirer’s teachings of a proxy server’s instrumentation of applications (for including calls to the dynamic service components) with Khazan’s teachings. Pet. 21–25. We have already summarized Petitioner’s various contentions in this regard. These contentions appear applicable insofar as Khazan discloses instrumenting the application on a “host.” Pet. 22. We determined above, however, that Khazan teaches “content received over a network” and the “content including a call to a first function.” It is, therefore, unnecessary to determine if a person of ordinary skill in the art would have been motivated to combine the teachings of Sirer’s instrumentation at a proxy server with the teachings of Khazan resulting in the “content including a call to a first function.”

d. The Call Including an Input

Claims 1 and 4 require that the call to a first function include an input. Petitioner offers four contentions as to how the prior art teaches the limitation. First, Petitioner argues that Khazan’s “parameters” included in the wrapper function satisfy the limitation. Pet. 27–28. Second, Petitioner relies on Khazan’s description of the Microsoft Detours package, which “requires the original function parameter to be passed to the wrapper function.” *Id.* at 28 (citing Ex. 1002 ¶¶ 101–02; Ex. 1012 at 5). Third, alluding to instrumentation occurring at a proxy server, such as in Sirer, Petitioner asserts that a person of ordinary skill in the art would have passed the parameters for checking and verification to the substitute (wrapper) function. *Id.* (citing Ex. 1002 ¶¶ 101, 81–82). Finally, Petitioner argues that

it would have been obvious to a person of ordinary skill in the art for the wrapper function to include the parameters from the wrapped function because otherwise, the wrapper function could not verify the parameter information. *Id.* at 28–29 (citing Ex. 1002 ¶ 101).

In addition to the disclosure of Detours, the relevant Khazan disclosures Petitioner points to describe that the pre-monitoring code, which is part of the stub or wrapper function, performs verification of parameter information, “including type and value of some parameters.” Ex. 1003 ¶ 87. As an example, Khazan states that the parameters associated with the target call would have been also the subject of static analysis. *Id.* Dr. Rubin proffers that a function “input” is often called a function “parameter.” Ex. 1002 ¶ 100. Therefore, it appears reasonable to conclude that Khazan, when referring to the parameter verification in the wrapper function, refers to verifying “inputs” to the function.

Patent Owner argues that because Khazan discloses a jump instruction, and jumps do not include an input, Khazan does not disclose a “call including an input.” PO Resp. 28–29. Further, Patent Owner argues that Detours also uses jumps rather than function calls. *Id.* at 29–31. As we discussed above, we are not persuaded that the teachings of Khazan are limited to the use of only jump instructions. But, rather, Khazan discloses broadly the use of any instructions that transfer control to a wrapper function. Indeed, we credit Dr. Rubin’s explanation that parameters (or inputs) would be passed from the wrapped function to the wrapper function in order to verify the parameter information, as taught by Khazan. Ex. 1002 ¶¶ 100–02. Dr. Rubin also explains that the Detours package passes “the identical parameters from the calling code to the detoured function and then

into the original ‘target’ function.” *Id.* ¶ 101. From this testimony, we understand Khazan’s transfer of control to the wrapper function (call to a first function) to include the parameters (input) that will be verified during pre-monitoring. This understanding extends not only to the operation of Detours (which checks API calls), but also for the verification of parameters in instrumented scripted programs. *See id.*

As to Patent Owner’s further arguments that Khazan verifies parameters without using a call including an input, we are not persuaded. *See* PO Resp. 31 (Patent Owner arguing that “it may be appreciated that Khazan is able to ‘[verify] the parameter information’ despite not utilizing a call to the first function or a call including an input.”). Patent Owner’s argument focuses narrowly on the specific embodiments of Khazan. As stated above, Khazan broadly teaches using any instruction that transfers control to the wrapper function. Ex. 1003 ¶ 88 (describing instrumentation as dynamically modifying libraries “in which the instruction or instructions of the API of the target function are replaced with a jump instruction *or other transfer instruction* transferring control to the wrapper function.”) (emphasis added).

We do not see such a broad disclosure as limiting Khazan’s technique to jump instructions or to using the Detours package. To the contrary, as we have determined above, Khazan’s disclosure as a whole teaches or suggests that calls would be used, just as jump instructions, to transfer control. From Khazan’s verification of parameters, description of transfers of control, and Dr. Rubin’s testimony on this issue, we find that when using a call to effectuate the transfer of control, Khazan teaches or suggests that the call includes inputs in order to pass parameters to the wrapper function.

e. Invoking a Second Function With the Input

Claim 1 recites that the content processor invokes “a second function with the input, only if a security computer indicates that such invocation is safe.” Claim 4 similarly recites “invoking a second function with the input only if the indicator indicates that such invocation is safe.”

*Khazan’s Disclosures*

Petitioner argues that Khazan teaches that the “second function,” i.e., the original or target function, is invoked after verification. Pet. 29–30. In particular, Petitioner proffers an annotated Figure 9 from Khazan, reproduced below, showing the recited invocation. *Id.*

Petition Figure 2

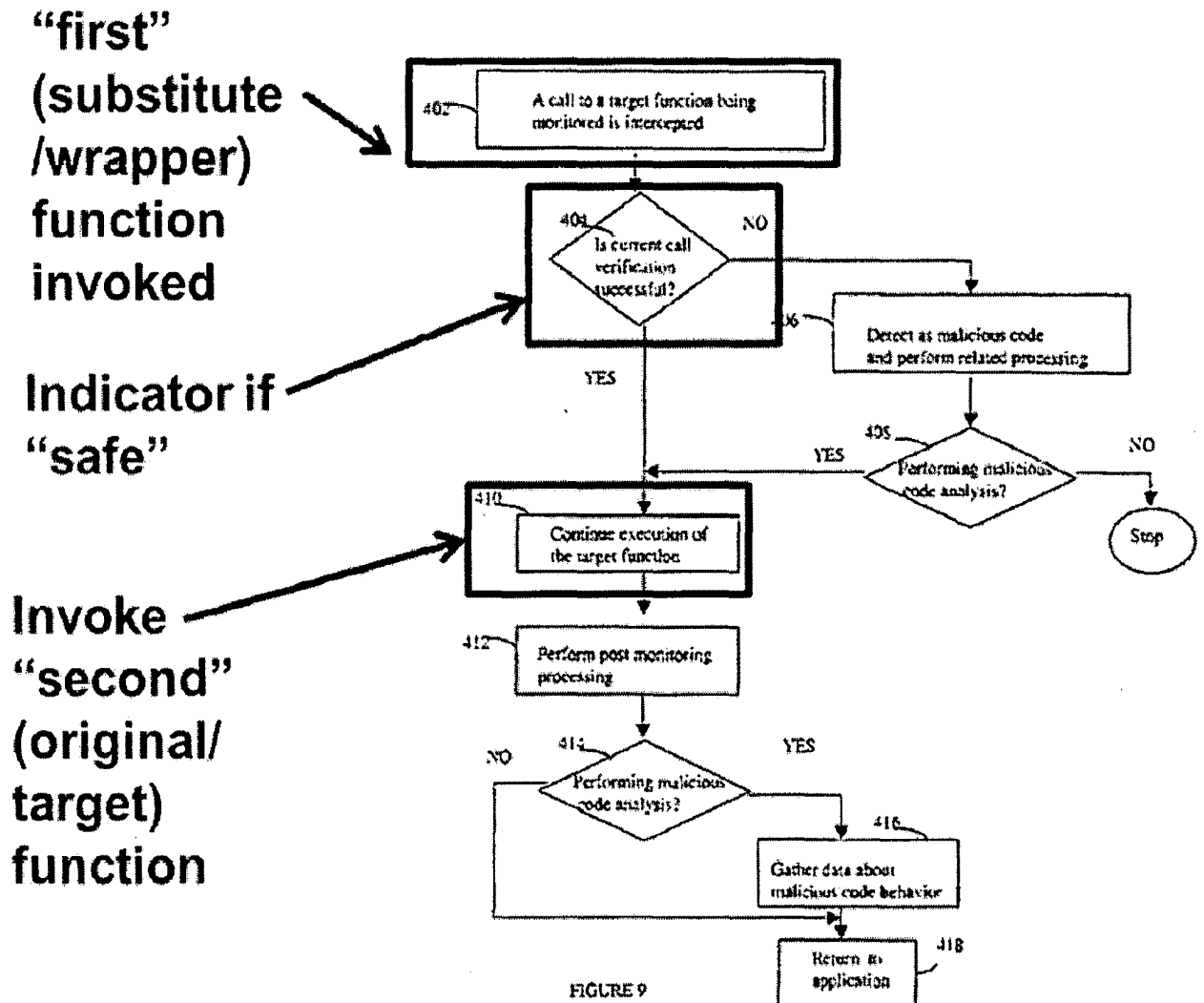


Figure 9 of Khazan is a flowchart of method steps summarizing the run-time processing performed by the dynamic analyzer. Ex. 1003 ¶ 27. According to the annotated figure, Petitioner asserts that Khazan invokes two functions: (1) step 402 is evidence of the invocation of the “first function”;<sup>13</sup> and (2) step 410 is evidence of the invocation of the “second

<sup>13</sup> We note that the claims require a call to a first function, but are silent regarding “invocation” of the first function. The distinction, however, is not

function.” *Id.* Step 402 of Figure 9, however, does not refer to invocation of a function, but instead refers to intercepting a call to a target function being monitored. *Id.* at Fig. 9 (“a call to a target function being monitored is intercepted”). As discussed above, Khazan intercepts the call to the target function by executing the jump instruction that transfers control to the stub or wrapper function, i.e. the first function. Thus, we understand that the act of intercepting the call is what Petitioner points to as invoking the “first” or wrapper function. The problem here is that, as we explain further below, for Khazan to transfer control or jump to the wrapper function, Khazan must call first the target function, which Petitioner maps to the “second function.” Petitioner’s pointing to the “second function” invoked at step 410 does not solve the problem, because the claims require invocation of the second function *only if* a security computer or the indicator indicates that the invocation is safe.

Patent Owner’s arguments correctly point out this problem in Petitioner’s contentions. Patent Owner argues that the description of Khazan’s dynamic analyzer shown in Figure 9 does not disclose the limitation. PO Resp. 35–36. Specifically, Khazan, according to Patent Owner, *always* invokes the second function. *Id.* (arguing that the CALL API\_A in Application.EXE is always invoked). We are persuaded by this argument. Khazan explains that “[b]eginning with the source function of the application’s binary, a call is made to the target function API\_A from the invocation address LOC\_A.” Ex. 1003 ¶ 83. Khazan further explains that

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relevant to our discussion of Khazan’s invocation of the target function, i.e., second function.

the “first instruction of the target function API\_A includes a transfer or jump instruction to the wrapper or stub function.” *Id.* That is, in order for the stub or wrapper function to be executed, the target function must be invoked first. Indeed, Khazan’s instrumentation rewrites the target function to include therein the transfer of control to the stub or wrapper function, indicating, therefore, that the target function (recited “second function”) must be invoked. The claims require, however, that the second function be invoked *only if* it is safe.

Petitioner, in reply, explains that the invocation of the target function (API\_A) in the trampoline routine is the invocation of the second function. Reply 15–16. We find this explanation insufficient to rebut Patent Owner’s argument and contrary to the facts of Khazan. First, Khazan describes the execution of the second function after the verification check as “continuing” execution. Ex. 1003, Fig. 9 (step 410: “*Continue* execution of the target function”) (emphasis added); ¶ 94 (“control proceeds to step 410 to *continue* execution of the target routine”) (emphasis added). Second, as described above, the target function must be invoked in order for control to transfer to the wrapper function. We find that this would be the case even if dealing with an instrumented application invoking internal target functions. When Khazan describes intercepting the target function, it refers to *invoking* the target function first, in order for the code inserted in the instrumented content to transfer control to the wrapper function. *See* Ex. 1003 ¶82 (“Referring now to FIG. 7, shown is the logical flow of control in one embodiment when an external *target function*, such as a Win32 API function, *is invoked at run time* from the application using a call instruction. The external call is intercepted using the instrumentation techniques

described herein.”) (emphasis added); ¶ 90 (“the first instruction or instructions just saved from the current target are replaced by instructions which transfer control to the stub or wrapper for the current call”); ¶ 92 (“the code of the target function is modified in memory rather than on a storage device”); ¶ 93 (“Every invocation of a Win32 API may be intercepted in the foregoing instrumentation technique. When one of the Win32 API calls is intercepted, this particular instance or *invocation* is checked against the list.”) (emphasis added); ¶ 94 (“a call to a target routine being monitored is intercepted”). Third, although we agree with Petitioner that the target function is verified during pre-monitoring and execution is suspended, the verification only occurs after invocation of the target function. Petitioner has failed to point out any teaching in Khazan where the target function is not invoked first. Accordingly, we find that Khazan does not teach or suggest the limitation “invoking a second function with the input only if” a security computer or the indicator indicates that such invocation is safe.

#### *Sirer’s Disclosures*

Patent Owner argues that the Petition maps to Khazan only the limitation of “invoking a second function with the input.” PO Resp. 39–40; Tr. 71:24–72:23. We agree that the Petition addresses only Khazan in connection with the limitation “invoking a second function with the input.” Pet. 29–30. We note, however, that Petitioner relies on Sirer for the portion of the limitation requiring invocation of the second function “only if a security computer indicates that such invocation is safe.” *Id.* at 30–34. According to Petitioner, Khazan “discloses *locally* invoking the intercepted function only if the pre-monitoring code verifies the function and its parameters (e.g., input) for safety.” *Id.* at 30 (emphasis in original). The



Petition then addresses Sirer's teachings on "remote verification" given Khazan's failure to disclose a remote computer for performing the verification. *Id.* Petitioner, therefore, does not rely on any of Sirer's teachings to disclose that invocation of the second function occurs *only if* it is safe to do so. Accordingly, there is no need to address Sirer's disclosures or the asserted combination of Sirer with Khazan, because, as stated above, we find that Khazan does not disclose, teach or suggest that the second function is invoked *only if* it is safe to do so.

f. Transmitting the Input . . . , When the First Function is Invoked

Petitioner argues that Sirer teaches transmitting the function input by disclosing that the "security service may check user-supplied arguments to system calls." Pet. 35. Sirer, according to Patent Owner, does not disclose any timing for the transmission of the user-supplied arguments. PO Resp. 41. Patent Owner argues that Khazan also is silent regarding when the alleged input to the first function is transmitted. *Id.*

Patent Owner's arguments are not persuasive. Instead, we agree with Petitioner's contention that Sirer teaches verification when the function is executed. Reply 16–17 (citing Ex. 1004 at 3–5, Figs. 1–4; Ex. 1002 ¶¶ 107–109). For example, Sirer describes that in order to perform a runtime verification, the "verification service modifies the code to perform the corresponding checks at runtime by invoking a simple service component." Ex. 1004 at 5. Sirer also describes that a security service, which is a dynamic service component, checks user-supplied arguments to system calls. *Id.* at 3. Dr. Rubin opines that the "system call" is the intercepted call and the wrapper function (we read here the modified code) contains the

access checks that query the security service. Ex. 1002 ¶¶107–109. From this discussion, we find that in order to perform the security service checks, the modified code or wrapper function (as identified by Dr. Rubin) would be invoked in order to execute the call to the applicable dynamic service component. Accordingly, any transmission of inputs in Sirer would occur “when the first function is invoked.” We also find persuasive Petitioner’s argument and evidence that Khazan’s verifications take place when the pre-monitoring code is executed, which timing also meets the claim language of transmitting an input, when the first function is invoked. Pet. 36 (citing Ex. 1003 ¶ 84).

g. Receiving an Indicator . . . Whether it is Safe to Invoke the Second Function With the Input

Petitioner points to Sirer as receiving information from querying the security service during execution of the application. Pet. 37–38 (citing Ex. 1002 ¶¶ 110–11). Petitioner also points out that Sirer checks the user-supplied arguments to system calls, ensuring that the arguments do not violate the security policy. *Id.* at 38 (citing Ex. 1004 at 4–5). Petitioner asserts that it would have been obvious to combine Sirer and Khazan to gain the benefits of performing a run-time analysis on a network server (as in Sirer) to receive the information about that analysis. *Id.* at 38–39 (citing Ex. 1002 ¶ 111). Patent Owner challenges Petitioner’s assertions in this regard. PO Resp. 42–43. We are not persuaded by Petitioner’s argument.

According to the mapping provided by Petitioner, Sirer’s client computer, which executes the application with the modified code, calls the security server to verify the security identifiers and permissions it maintains. Pet. 37–38 (citing Ex. 1004 at 6, Fig. 4). The verification Sirer performs

results in a query of the security service which is a lookup performed by the security service. Reply 17; Ex. 1004 at 6. The client caches the results of the lookup. *Id.* That is, Sirer teaches receiving the lookup results and providing access (e.g., allowing or disallowing access to a requested file). We find, therefore, that Sirer's client receives an indicator from a security computer whether it is safe to invoke the second function (the operation that is being checked) with the input (e.g., user-supplied arguments).

Nevertheless, Petitioner relies on the combination of Khazan and Sirer as teaching this limitation. The Petition explains that a person of ordinary skill in the art would have been motivated to obtain the benefits of analyzing the input at a remote computer, as taught by Sirer. Pet. 38. The premise is based on Khazan's teaching that the pre-monitoring code performs the verification of its parameters locally (not at a security computer, as required by the claims). *See* Pet. 30.

As discussed above, however, we are not persuaded that Khazan teaches the limitation of invoking the second function only if the invocation is safe. Khazan *continues* the operation of the second function, depending on the verification check performed by the pre-monitoring code. Ex. 1003, Fig. 9 (step 410: "*Continue* execution of the target function") (emphasis added); ¶ 94 ("control proceeds to step 410 to *continue* execution of the target routine") (emphasis added). It follows, therefore, that any combination of teachings of Khazan with Sirer would result in the second function being invoked, as taught by Khazan, upon execution of the instrumented content, but not "only if" the invocation is safe, after receiving the indicator. Accordingly, we are not persuaded that Petitioner has shown that the combination of Khazan and Sirer teaches or suggests this limitation.

h. Motivation to Combine Teachings of Khazan and Sirer

Patent Owner challenges the proffered rationale for the asserted combinations of Khazan and Sirer. PO Resp. 47–50. In particular, Patent Owner argues that the combination alters the principles of operation of Khazan. *Id.* And further, Patent Owner asserts that the combination of Khazan and Sirer would be inoperable. *Id.* at 50. In light of our determination that Khazan fails to disclose, teach, or suggest invoking a second function, as recited, we need not address Patent Owner’s additional arguments regarding the rationale for the asserted combination of teachings.

i. Conclusion Regarding Claims 1–5

Independent claims 1 and 4 recite the “invoking a second function” limitations addressed above. Having found that Khazan does not disclose, teach, or suggest the limitation, we determine that Petitioner has failed to establish by a preponderance of the evidence that claims 1 and 4, and claims 2, 3, and 5, dependent therefrom, are unpatentable over the combination of Khazan and Sirer. In light of our determination, we, therefore, do not address additional arguments and evidence proffered by Patent Owner regarding claims 2 and 3, and secondary considerations of nonobviousness.

E. GROUND BASED ON KHAZAN, SIRER, AND BEN-NATAN

This ground addresses claims 6–8, 10, and 11. Claims 6 and 10 are independent claims. Petitioner contends that the “modified input variable” recited in claims 6 and 10 is taught by Ben-Natan. *See, e.g.,* Pet. 48 (“Ben-Natan discloses ‘a modified input variable’ in the form of a ‘result data access statement.’”). For the remaining limitations of these claims,

Petitioner relies on Khazan and Sirer. Pet. 46–54. For example, claim 6 recites that a content processor calls “a second function with a modified input variable,” which Petitioner maps to Khazan’s execution, post-verification, of the target function combined with the teachings of Ben-Natan’s modification of a data access statement, in an SQL query. *Id.* at 48. Patent Owner challenges the combination with Ben-Natan on the basis that Ben-Natan is not analogous art and does not disclose the limitation. PO Resp. 51–53, 56–58. Patent Owner argues also that there is no motivation to combine Ben-Natan with Khazan and Sirer and that the combination would be inoperable. *Id.* at 54–56, 58.

*1. Overview of Ben-Natan (Ex. 1005)*

Ben-Natan is titled “System and methods for nonintrusive database security.” Ben-Natan describes “configurations of the invention [that] provide a nonintrusive data level security mechanism for intercepting database access streams.” Ex. 1005, 6:32–34. “Such an implementation deploys a security filter between the application and database, and observes, or ‘sniffs’ the stream of transactions between the application and the database.” *Id.* at 6:38–41. “If the ‘sniffed’ transactions indicate restricted data items, the security filter modifies the transaction to eliminate only the restricted data items, and otherwise allows the transaction to pass with the benign data items.” *Id.* at 6:50–54.

*2. Discussion*

Petitioner asserts that Khazan discloses identifying potentially malicious function parameters. Pet. 50, 53. According to Petitioner, Khazan performs two actions when identifying the existence of malicious code: (1) stop execution and return an error code; and (2) continue to run the

application to monitor the behavior of the malicious code. *Id.* at 50. Thus, Petitioner contends, Ben-Natan's limiter operation, which modifies the input of an SQL query, would allow for a program in Khazan to execute without harming the client computer, instead of stopping. *Id.* (citing Ex. 1002 ¶¶ 127–28). Petitioner further argues that given the limited number of known techniques for handling potentially malicious function inputs, it would have been obvious to try modifying Khazan's input as taught by Ben-Natan, to allow safe execution. *Id.* at 51. Finally, Petitioner asserts that the addition of Ben-Natan to the teachings of Khazan and Siner is "a natural progression," resulting in a "system in which the security service of Siner not only checks the function inputs, but modifies them if they are potentially malicious, to allow the downloaded application to execute safely (i.e., without violating the security policy)." *Id.* at 53.

Patent Owner challenges Petitioner's proffered rationale, arguing that a person of ordinary skill in the art would not be motivated to modify Khazan to make the inputs or parameters safe because Khazan would not perform the disclosed behavior analysis of detected malicious code. PO Resp. 54–55. We agree with Patent Owner's argument, and find that the alleged combination of teachings would so alter Khazan's operation that a person of ordinary skill in the art would not be motivated to combine the teachings as Petitioner alleges.

First, in order to combine the teachings of Khazan, Siner, and Ben-Natan to achieve the claimed requirements of a modified input variable, a number of modifications appear necessary, and not all are identified or explained by Petitioner. Khazan's pre-monitoring code would need to be rewritten to transmit the input variable of the target function to a network

server or proxy that performs analysis of the input variable (as Petitioner alleges in Sierer). Additionally, Sierer's dynamic analysis components would need modification to include the limiting technique taught in Ben-Natan in order to modify the input variable. Further, and unexplained by Petitioner, Sierer would need to modify its server communication stream with the client devices to transmit the modified input variable, instead of sending the results of the lookups. Further still, and also unexplained by Petitioner, Khazan would need to be modified to receive the modified input variable, and replace the parameters of the target function with the modified ones.

We find that Petitioner has not explained sufficiently how the reference's teachings would be combined in order to achieve the claimed limitations. For instance, Petitioner's assertion that the combination is predictable because the references continue to do what they did prior to the combination (Ex. 1002 ¶ 125) is conclusory and unreasonable in light of the various and necessary, yet unexplained modifications of Khazan's teachings for combinability with those of Sierer and Ben-Natan.

Particularly noteworthy, Petitioner relies, for this ground, on the combinations of Sierer and Khazan made with respect to the previous ground. *See* Pet. 49 ("As discussed above, it would have been obvious to the POSA to combine the teachings of Sierer with Khazan. (§§X.A.1.d.1, X.A.1.g.)"). But the previous ground addresses claims (1–5) that do not recite any modifications to the input or input variables. The rationale for the combination of Khazan and Sierer for those claims, therefore, does not address any rationale for obviousness concerning either Sierer or Khazan handling modified input variables. Indeed, at most, Sierer is alleged in the previous ground to produce an indicator indicating whether it is safe to

invoke the second function with the input. *See* Pet. 33 (“The POSA would be familiar with developing the software for performing the security analysis on a remote computer and would expect the predictable result of returning a security indicator from the remote computer regarding whether the input is safe to execute in the original function.”).

The instant ground, however, addresses claims that recite receiving the “modified input variable,” for which Sirer is relied on as teaching the centralized or remote verification. *See id.* at 52 (discussing the “receiver” limitation of claim 6); 53 (discussing the limitation regarding how the modified input variable is obtained and relying on Sirer as disclosing “the security computer in the form of a security service.”); 58 (discussing the “receive” limitation of claim 10, which does not require a security computer, but nevertheless relying on Sirer providing a security service). As stated above, to meet the claims it would be necessary for Sirer’s security service to send a modified input variable, not just an indicator that invocation with the input is safe. Further, it would be necessary for Khazan to substitute the modified input variable into the target function during runtime. Neither of these particulars are addressed in the reasoning provided for combining Khazan and Sirer in the ground concerning claims 1–5. The reasoning provided, as discussed above, focuses generally on Sirer providing a centralized or remote security service processing. No changes in either Khazan’s or Sirer’s operation or features were alleged with regard to the modified input variable, and no motivation has been asserted sufficiently to combine the teachings in a manner that achieves claims 6–8, 10, and 11. Therefore, we find that Petitioner’s reliance on the rationales asserted for the ground concerning claims 1–5 are insufficient articulated reasoning with a



rational underpinning for the asserted combinations regarding claims 6–8, 10, and 11.

Furthermore, we find insufficient the reasoning Petitioner provides to combine Ben-Natan’s teachings with those of Sirer and Khan. Petitioner’s expert, Dr. Rubin, opines that, in addition to the alleged similarities of the prior art systems, “Ben-Natan’s proposal to actually modify the inputs is a small and natural extension of the same operating principles that Khazan and Sirer use.” Ex. 1002 ¶ 122. With regard to utilizing Sirer’s security processing at a server, Dr. Rubin similarly opines that it is a “natural extension.” *Id.* ¶ 124. Finally, Dr. Rubin asserts that Ben-Natan’s contribution is “also a straight-forward and unsurprising addition.” *Id.*

We find these explanations insufficient to show an articulated reason with a rational underpinning for why a person of ordinary skill in the art would be motivated to combine the references as asserted by Petitioner. Such statements of “straight-forward,” “small,” “natural,” and “unsurprising” applications are generic, and fail to provide necessary factual support—they are akin to stating in a conclusory fashion that the combination “would have been obvious.” *In re Van Os.*, 844 F.3d 1359, 1361 (Fed. Cir. Jan. 3, 2017) (“Absent some articulated rationale, a finding that a combination of prior art would have been ‘common sense’ or ‘intuitive’ is no different than merely stating the combination ‘would have been obvious.’ Such a conclusory assertion with no explanation is inadequate to support a finding that there would have been a motivation to combine.”).

As for stating that it would have been “obvious to try,” the rationale also lacks factual support. It is not enough to assert that the prior art

provides two options and that it would have been predictable to implement either. An obviousness rationale generally requires some identification of “a design need or market pressure to solve a problem” before looking at the “finite number of identified, predictable solutions.” *See KSR*, 550 U.S. at 421. Accordingly, an obvious to try rationale requires that the design need or market pressure is what drives a person of ordinary skill in the art to consider the identified, predictable solutions. We find neither an assertion nor evidence proffered by the Petitioner concerning this need. The Petition states, with regard to the “obvious to try” rationale, that a person of ordinary skill in the art would expect “simply that the input would be modified to execute safely.” Pet. 51. This alleged result identifies a solution, but does not address either a design need or market pressure.

Moreover, the result of Petitioner’s asserted combinations would result in an alteration to Khazan that renders the disclosure inoperable for the analysis mode. *See PO Resp.* 54. In particular, we find persuasive Patent Owner’s argument and evidence that if a parameter of a target function is modified to be “safe,” Khazan would not operate in the analysis mode where the behavior of the malicious code is analyzed. *See Ex.* 1003 ¶ 99. In other words, after detecting malicious code, the technique of Khazan to conduct behavior analysis would not be possible, given that the malicious code, in the asserted combination, is excised by modifying the input variable. We also find persuasive Patent Owner’s argument that Petitioner has not supported its assertion that Ben-Natan “discloses a known method for modifying [a] function input to allow for safe execution of the downloaded application” because Ben-Natan is not concerned with downloaded applications or safe execution of those applications. *PO Resp.*

55 (addressing Petitioner’s Rationale “B” making the disputed assertion). Ben-Natan’s alleged known method is limiting a database query to narrow the scope of the database search, but does not discuss any downloaded applications or implementation of the limiting query to an execution of applications. Ex. 1005, 13:27–14:24. Petitioner fails to explain how the Ben-Natan disclosure constitutes a “known method for modifying an input to allow for safe execution of the downloaded application,” as asserted in the Petition.

Finally, we find unavailing Petitioner’s assertion that the “combination [of the references] is nothing more than combining known techniques in a different way to produce predictable results.” Pet. 54 (citing Ex. 1002 ¶¶ 122–129). The statement alone is not sufficient for Petitioner to carry its burden. The Federal Circuit has made clear that a petitioner in an *inter partes* review proceeding cannot “satisfy its burden of proving obviousness” by “employ[ing] mere conclusory statements” and “must instead articulate specific reasoning, based on evidence of record” to support an obviousness determination. *In re Magnum Oil Tools Int’l*, 829 F.3d 1364, 1380–81 (Fed. Cir. 2016). The “factual inquiry” into the reasons for “combin[ing] references must be thorough and searching, and the need for specificity pervades . . . .” *In re Nuvasive, Inc.*, 842 F.3d 1376, 1381–82 (Fed. Cir. 2016) (internal quotations and citations omitted). A determination of obviousness cannot be reached where the record lacks “explanation as to *how* or *why* the references would be combined to produce the claimed invention.” *Trivascular, Inc. v. Samuels*, 812 F.3d 1056, 1066 (Fed. Cir. 2016); *see Nuvasive*, 842 F.3d at 1382–85; *Magnum Oil*, 829 F.3d at 1380–81. The Petition’s statement that combining known techniques yields

predictable results relies exclusively on the paragraphs of Dr. Rubin's declaration discussed above, which we find conclusory and therefore unpersuasive. Furthermore, to the extent the statement is an attempt to invoke a rationale for finding obviousness asserted in *KSR*, that attempt fails, for *KSR* requires the known elements to be combined "according to known methods"—not "in a different way," as alleged by Petitioner. *See KSR*, 550 at 416.

### 3. Conclusion Regarding Claims 6–8, 10, and 11

Having considered the arguments and evidence presented by both parties, we determine that Petitioner has not shown by a preponderance of the evidence that claims 6–8, 10, and 11 would have been obvious over the combination of Khazan, Sirer, and Ben-Natan. As stated above, the proffered rationales to combine the references lack factual support or rational underpinning supporting the reasoning. Given our findings above, which address the assertions made with regard to independent claims 6 and 10, we find that the challenged claims dependent therefrom also have not been shown to be unpatentable.

### F. MOTIONS TO EXCLUDE

Petitioner moves to exclude Exhibits 2009 and 2011–2013 based on various objections as to relevance and hearsay. Paper 46 ("Pet. Motion to Exclude"). Petitioner's Motion to Exclude is denied as moot, because the evidence objected to is not relied upon in reaching our determination that Petitioner has not met its burden of showing that claims 1–8, 10, and 11 are unpatentable.

In turn, Patent Owner moves to exclude various exhibits in the record:

- a) Exhibits 1036, 1039–1042, 1044–1045 as outside the scope of Petitioner’s Reply. Paper 48 (“PO Motion to Exclude”).
- b) Exhibit 1008, the Simer Declaration, as hearsay and for lack of foundation. *Id.* at 5–8.
- c) Exhibit 1036, Declaration of Mr. Mel DeSart, for lack of foundation and because opinions are conclusory and unreliable. *Id.* at 8–9.
- d) Exhibits 1004 and 1024, Simer reference, as hearsay, irrelevant, and lack of authentication. *Id.* at 10–14.
- e) Exhibit 1012 and Annotated Figure 1–4 in the Petition, as prejudicial. *Id.* at 14–15.

Patent Owner’s motion is denied. From the outset, we have stated repeatedly that a motion to exclude is not a vehicle for arguing that Petitioner’s arguments and supporting evidence are outside the proper scope of a reply.<sup>14</sup> A motion to exclude evidence filed for the purpose of striking or excluding an opponent’s brief and/or evidence that a party believes goes beyond what is permitted under 37 CFR § 42.23 is improper. An allegation that evidence does not comply with 37 CFR § 42.23 is not a sufficient reason under the Federal Rules of Evidence for making an objection and requesting exclusion of such evidence. Accordingly, these arguments in Patent

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<sup>14</sup> See *Valeo v. Magna Elecs., Inc.*, Case IPR2014-00227, Paper 44 (PTAB Jan 14, 2015); *Carl Zeiss SMT GmbH v. Nikon Corp.*, Case IPR2013-00362, Paper 23 (PTAB June 5, 2014); *Ultratec, Inc. v. Sorenson Commc’ns, Inc.*, Case IPR2013-00288, Paper 38 at 2 (PTAB May 23, 2014); *Primera Tech., Inc. v. Automatic Mfg. Sys., Inc.*, Case IPR2013-00196, Paper 33 (PTAB Feb. 10, 2014); *ZTE Corp. v. Contentguard Holdings Inc.*, Case IPR2013-00133, Paper 42 (PTAB Jan. 21, 2014).

Owners' Motion to Exclude are not considered, and the request to exclude Exhibits 1036, 1039–1042, 1044–1045 as being outside the scope of a proper reply is denied.

With regard to Exhibit 1008, the Simer Declaration, we agree that Patent Owner was unable to cross-examine Mr. Simer. We stated above, *see supra* footnote 11, that we give no weight and do not rely on the Simer Declaration. In that same footnote we discuss Exhibit 1024, to which Patent Owner objects. We do not rely on either Exhibit 1008 or 1024 in rendering our findings regarding whether Simer is a printed publication. Accordingly, the request to exclude Exhibits 1008 and 1024 is denied as moot.

We deny on the merits Patent Owner's request to exclude the Declaration of Mr. Mel DeSart, Ex. 1036, and the Simer reference, Ex. 1004. First, as to Exhibit 1036, the Board granted the request to submit the DeSart Declaration as supplemental information under 37 C.F.R. ¶ 123(b). *See* Ex. 1037 at 24:5–19. Second, Patent Owner conducted the cross-examination of Mr. DeSart and points to no persuasive evidence that Mr. DeSart's testimony is unreliable or lacks foundation. We agree with Petitioner that Mr. DeSart's testimony is based on personal knowledge of the business practices of the University of Washington Engineering Library. Paper 50, at 8–9. We overrule Patent Owner's objections to Exhibit 1036 and deny Patent Owner's request to exclude it.

As to the Simer reference, Exhibits 1004 has not been shown to be either irrelevant or hearsay. Nor is there a lack of authentication of the Simer reference. The Simer reference is self-authenticating because it contains indicia sufficient to show that it is an ACM article as discussed *supra* at Section II.D.3 ("Whether Simer is a Printed Publication"). *See* Paper 50 at

12–13 (Petitioner asserting the periodical and inscription information that show Sirer is self-authenticating). Further, the Sirer article is not hearsay, as it is being considered only for what it describes and not for truth. *See* Fed. R. Evid. 807(c); *Joy Techs., Inc. v. Manbeck*, 751 F.Supp. 225, 233 n.2 (D.D.C. 1990), *aff'd*, 959 F.2d 226 (Fed. Cir. 1992). Accordingly, Patent Owner’s objections to Exhibit 1004 is overruled, and the requests to exclude it are denied.

With regard to Exhibit 1012 and annotated figures in the Petition, we adopt the reasons provided by Petitioner in its opposition to the Patent Owner motion to exclude. Paper 50 at 13–15. The objections to Exhibit 1012 are overruled, and the motion to exclude the exhibits and annotated figures is denied.

### III. CONCLUSION

For the foregoing reasons, we conclude that Petitioner *has not shown* by a preponderance of the evidence that claims 1–8, 10, and 11 of the ’154 patent are unpatentable. Petitioner’s Motion to Exclude is denied as moot. Patent Owner’s Motion to Exclude is denied.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claims 1–8, 10, and 11 of the '154 patent have not been shown to be unpatentable;

FURTHER ORDERED that Petitioner's Motion to Exclude is denied as moot;

FURTHER ORDERED that Patent Owner's Motion to Exclude is denied; and

FURTHER ORDERED that, because this is a Final Written Decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.



IPR2015-01979  
Patent 8,141,154 B2

PETITIONER:

Orion Armon  
Christopher Max Colice  
Jennifer Volk  
Brian Eutermoser  
COOLEY LLP  
[oarmon@cooley.com](mailto:oarmon@cooley.com)  
[mcolice@cooley.com](mailto:mcolice@cooley.com)  
[jvolkfortier@cooley.com](mailto:jvolkfortier@cooley.com)  
[beutermoser@cooley.com](mailto:beutermoser@cooley.com)

Nathaniel Hamstra  
QUINN EMANUEL URQUHART & SULLIVAN, LLP  
[nathanhamstra@quinnemanuel.com](mailto:nathanhamstra@quinnemanuel.com)

PATENT OWNER:

James Hannah  
Jeffrey H. Price  
Michael Kim  
KRAMER LEVIN NAFTALIS & FRANKEL LLP  
[jhannah@kramerlevin.com](mailto:jhannah@kramerlevin.com)  
[jprice@kramerlevin.com](mailto:jprice@kramerlevin.com)  
[mkim@finjan.com](mailto:mkim@finjan.com)

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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PALO ALTO NETWORKS, INC.,  
Petitioner,

v.

FINJAN, INC.,  
Patent Owner.

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Case IPR2015-01979<sup>1</sup>  
Patent 8,141,154 B2

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Before THOMAS L. GIANNETTI, RICHARD E. RICE, and  
MIRIAM L. QUINN, *Administrative Patent Judges*.

QUINN, *Administrative Patent Judge*.

DECISION  
ON PETITIONER'S REQUEST FOR REHEARING  
*37 C.F.R. § 42.71(d)*

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<sup>1</sup> Case IPR2016-00919 has been joined with this proceeding.

On March 15, 2017, the Board issued the Final Written Decision in this proceeding. Paper 62 (“Final Dec.”). On April 14, 2017, Palo Alto Networks, Inc. (“Petitioner”) filed a Request for Rehearing. Paper 63 (Req. Reh’g.). Petitioner’s Request focuses on our findings concerning the claim limitation “a content processor . . . for invoking a second function with the input, only if a security computer indicates that such invocation is safe” (claim 1) and “invoke the second function with the input only if the indicator indicates that such invocation is safe” (claim 4). *Id.*; (hereinafter “second function” limitation). Petitioner’s Request also addresses an asserted inconsistency in claim construction of the term “a call to a first function” with regard to another proceeding dealing with the patent-at-issue. *Id.* at 13–14 (referring to the Final Written Decision in IPR2016-00151<sup>2</sup>). We address each of the raised issues in turn.

A. INVOCATION OF THE SECOND FUNCTION LIMITATION

Petitioner argues that the Board misapprehended the plain meaning of the claim when finding that Khazan does not teach the second function limitation. Req. Reh’g 2–3. In particular, the issue is whether our findings regarding Khazan adequately considered that the claim requires invoking the second function *with the input*, only if the invocation is safe. *Id.* 3–12. We are not persuaded by Petitioner’s argument that we misapprehended the claim language in our findings of fact regarding this limitation.

In the Final Written Decision we made several findings of fact relevant to this issue, the most relevant being that,

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<sup>2</sup> *Palo Alto Networks, Inc., v. Finjan, Inc.*, IPR2016-00151, Paper 51 (PTAB Mar. 15, 2017).

- 1) Khazan teaches or suggests that the call to the target function includes inputs in order to pass the parameters to the wrapper function (second function). Final Dec. 47–48.
- 2) Khazan discloses that in order for the wrapper function to be executed, the target function must be invoked first. *Id.* at 52.
- 3) When Khazan describes intercepting the target function, it refers to invoking the target function first, in order for the code inserted in the instrumented content to transfer control to the wrapper function. *Id.* at 52.
- 4) Although we agree with Petitioner that the target function is verified during pre-monitoring and execution is suspended, the verification only occurs after invocation of the target function. *Id.* at 53.
- 5) Petitioner has failed to point out any teaching in Khazan where the target function is not invoked first. *Id.*
- 6) The Petition only maps Khazan to the second function limitation. *Id.*

Petitioner’s first argument, provided at pages 15–16 of the Petition, relies on an overview of Khazan to assert that certain passages of paragraphs 84, 85, and 88 teach the second function limitation. Req. Reh’g 5–7. We are not persuaded by this first argument that rehearing should be granted, because the argument was not presented in the Petition or the Reply. These passages of Khazan are explained for the first time on rehearing to assert a point that was not made in the Petition: that the target function is invoked “with the input,” only after Khazan’s pre-monitoring verification is successful. Pages 15 and 16 of the Petition provide a summary or overview

of Khazan that is devoid of any explanation as to how the disclosures of Khazan there summarized teach or suggest any of the limitations of the challenged claims. We could not have misapprehended the cited content of Khazan that was not particularly tied to any claim limitation, as our rules require that the Petition “must specify where each element of the claim is found in the prior art patents or printed publications relied upon.” 37 C.F.R. § 42.104(b)(4).<sup>3</sup> It would be patently unfair to Patent Owner if we were to consider new citations to Khazan and arguments regarding those citations, addressing this claim element, when those arguments were not presented properly by Petitioner.

To be sure, the Petition addresses the second function limitation at pages 29–30 (addressing limitation “1[f]”: “and (ii) for invoking a second function *with the input*” (emphasis added)). Pet. 29–30; *see* Final Dec. 49 (noting that Petitioner’s arguments concerning the limitation are in pages 29–30 of the Petition). The Petition there points to paragraph 85, where Khazan describes ““execution of the intercepted’ function if the pre-monitoring code verifies the intercepted function.” *Id.* at 29. That paragraph is reproduced below:

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<sup>3</sup> Petitioner also raises for the first time an argument that Dr. Rubin’s annotated Figure 7 supports its argument, but that annotated Figure 7 was not submitted either in the Petition or Reply as supporting the second function limitation, and does not explain in any detail how the input is not included in the intercepted target function. Req. Reh’g 7. Indeed, we find the argument presented on rehearing entirely inconsistent with the position that Dr. Rubin takes regarding the “call including an input” for which he opined that parameters would be passed from the wrapped function to the wrapper function in order to verify the parameter information. *See* Final Dec. 47 (crediting Dr. Rubin’s testimony on this point, Ex. 1002 ¶¶ 100–02).

The verification process of the pre-monitoring code may include examining the list of target and invocation locations **106** previously obtained during static analysis to verify that this call instance has been identified in the pre-processing step described elsewhere herein. In the event that the call is verified as being on the list **106**, execution of the intercepted routine may proceed. Otherwise, the verified call processing code portion of the pre-monitoring portion may determine that this is an MC segment and may perform MC processing without executing the routine called.

Ex. 1003 ¶ 85. This paragraph does not support Petitioner’s argument that the target function is not invoked with the input when it is intercepted. *See* Req. Reh’g 6 (“the system may perform malicious code processing without executing the routine called”); 8 (characterizing paragraph 85 as a “crucial disclosure”). To the contrary, we note that this paragraph is consistent with our findings in the Final Written Decision, at pages 49–53, that Khazan’s pre-monitoring code verifies the list of target functions and invocation locations *after the target routine is intercepted*, i.e., after the target routine (the alleged second function) is intercepted, which means that the target routine has been invoked. And considering our finding that the target function includes inputs that are passed to the wrapper function (Final Dec. 47–48), the target routine is invoked “with the input” when it is intercepted.

We agree that paragraph 85 states that the routine *called* may not be executed if the pre-monitoring code finds malicious code. However, that passage cannot be read in isolation from the rest of Khazan, which describes that the target routine was already invoked, and that it *continues* operation of the invoked target routine, including its parameters, if no malicious code is found. *See* Final Dec. 52; *see also* Ex. 1003 ¶ 88 (“After post-monitoring

code, the control transfers back 212 to the source function, to the location that follows LOC\_A from which *function API\_A was invoked.*” (emphasis added)); ¶ 94 (describing a call to a target routine is intercepted, current call is verified, if verification successful, “continue execution” of the target routine, if not successful, determination is made that malicious code has been detected and related processing may be performed); ¶ 96 (additional processing may include obtaining call-related information such as parameter information). In other words, we do not agree with Petitioner’s characterization of paragraph 85. The Reply arguments (allegedly addressing paragraph 88) were also considered and found unpersuasive for the same reasons. *Id.* at 52–53.

Petitioner further argues that the “earliest possible point at which the input to the second/target function could be invoked—are executed as part of the trampoline function *after* verification occurs.” Req. Reh’g 7. This argument was considered and found unpersuasive. Final. Dec. 52. We stated in our Final Written Decision that the explanation provided was “insufficient to rebut Patent Owner’s argument and contrary to the facts of Khazan.” *Id.* Further, to the extent Petitioner attempts to make a distinction that the “input” is “invoked” only after verification, that argument is not only new argument, but is also unpersuasive because the claims do not require the “input” to be invoked. The claims require invoking the *second function with the input.*

Finally, we address Petitioner’s argument that we misapprehended Khazan’s disclosures relied on for our determination that Khazan does not teach the second function limitation. Req. Reh’g 10–13. Petitioner argues that our application of the claims to the disclosure of Khazan “reads out” the

requirement of invoking the second function “with the input.” *Id.* at 10–11. And Petitioner argues that our interpretation of Khazan is erroneous. *Id.* at 11–12. We are not persuaded by either argument. First, we credited Dr. Rubin’s testimony that parameters (inputs) in Khazan are passed from the wrapped function (target or second function) to the wrapper function (first function) in order for Khazan to verify parameter information. *See* Final Dec. 47–48 (crediting Dr. Rubin’s testimony on this point, Ex. 1002 ¶¶ 100–02). The input that is passed is the same input that is verified. *See* Ex. 1002, 56 (“Khazan also discusses ‘[v]erifying the parameter information’ of the wrapped function”).<sup>4</sup> Petitioner has never explained in any detail its theory that Khazan passes the inputs such that when the target function is intercepted during runtime, the invocation of that target function does not include any of the inputs or parameters to be verified. Indeed such a theory would be unpersuasive because Khazan instruments the application or library to modify the *code* of the function that is being verified. *See* Final Dec. 52–53 (citing Ex. 1003 ¶¶ 82, 90, 92, 93 94); *see also* Reply 14 (“The call 202 included in the jump command 204 includes the same parameters as the original call.”). But there is no evidence that Khazan modifies *the call* to the target function such that the original inputs would be removed, changed, or otherwise not included in the call to the target function that is invoked before interception occurs.

Furthermore, we note that Khazan’s description of dynamic analysis during application execution is consistent with our findings that Khazan

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<sup>4</sup> Citation to this portion of the Rubin Declaration refers to the page number because the cited page omits paragraph numbers.



invokes the target function in the application in order for the wrapper function to be executed. *See* Req. Reh’g 12 (arguing that paragraph 94 does not refer to the target routine because it refers to the application execution). Putting it plainly, the call to the target routine is a program statement or instruction in the original (and unaltered) application. Final Dec. 51 (citing Ex. 1003 ¶ 83). When the application is executed, the call to the target routine is processed (for example, a particular library file is loaded), causing a wrapper function which was inserted in the body of the application or library file to be executed before the rest of the program code for the target routine is processed. *Id.* at 51–52 (citing Ex. 1003 ¶ 83). The call to the target routine, again, must be processed first, i.e., the target routine will be invoked. *Id.* at 52. And to the extent it needs to be said, though it is implied in our Final Written Decision, when the application is executed, the call to the target routine would include the inputs to that target routine, inputs which have been or are passed to the verification code. *See* Ex. 1002 ¶¶ 101–02 (stating, for example, that “for proper interception the prototype, target, trampoline, and detour functions must all have the same call signature including number of arguments and calling conventions”); Final Dec. 46–48 (addressing Petitioner’s argument, and finding persuasive evidence, that parameters are passed from the original function to the wrapper function, citing Ex. 1012 at 5 and opinion of Dr. Rubin that “identical parameters” are passed from the calling code to the detoured function and then to the original target function).

In sum, we are not persuaded that Petitioner’s arguments show an abuse of discretion in deciding the issue presented. Rather, we view Petitioner’s arguments as expressing a disagreement with our findings

concerning Khazan's disclosure. In our Final Written Decision we stated the reasons why we disagree with Petitioner's view of Khazan, and are not persuaded by Petitioner's rehearing request that the passages cited and explained during rehearing should alter our findings that Khazan does not teach invoking the second function *with the input*, only if that input is deemed safe. We reiterate our conclusion that Khazan invokes the target function, with its parameters as stated above, before any pre-monitoring code verifies those parameters. Final Dec. 49–53. Therefore, Khazan does not teach invoking the second function with the input, only if such invocation is deemed safe.

#### B. CLAIM CONSTRUCTION ISSUE

Petitioner argues that claim construction for the term “call to a first function” should be consistent across proceedings addressing the patent-at-issue. Req. Reh'g 13–14. We agree with Petitioner's contention that the claim construction should be consistent. Petitioner, however, does not allege that the construction we have given the term in this proceeding should be altered or modified in any way. Accordingly, we have not been directed to any particular issue that we misapprehended or overlooked in *this proceeding* concerning the claim construction of a “call to a first function.”

#### ORDER

For the reasons stated above, Petitioner's Request for Rehearing is *denied* because Petitioner failed to meet its burden of showing that the Final Written Decision should be modified as requested. 37 C.F.R. § 42.71(d).

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PETITIONER:

Orion Armon (Lead Counsel)  
Christopher Max Colice (Back-up Counsel)  
Jennifer Volk (Back-up Counsel)  
Brian Eutermoser (Back-up Counsel)  
[oarmon@cooley.com](mailto:oarmon@cooley.com)  
[mcolice@cooley.com](mailto:mcolice@cooley.com)  
[jvolkfortier@cooley.com](mailto:jvolkfortier@cooley.com)  
[beutermoser@cooley.com](mailto:beutermoser@cooley.com)

Nathaniel A. Hamstra (Back-up Counsel)  
[nathanhamstra@quinnemanuel.com](mailto:nathanhamstra@quinnemanuel.com)

PATENT OWNER:

James Hannah (Lead Counsel)  
Jeffrey H. Price (Back-up Counsel)  
Michael Kim (Back-up Counsel)  
[jhannah@kramerlevin.com](mailto:jhannah@kramerlevin.com)  
[jprice@kramerlevin.com](mailto:jprice@kramerlevin.com)  
[mkim@finjan.com](mailto:mkim@finjan.com)