# Exhibit 5

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UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

SAN JOSE DIVISION

IN RE PERSONALWEB TECHNOLOGIES, LLC, ET AL., PATENT LITIGATION

AMAZON.COM, INC., et al.,

Plaintiffs,

v.

PERSONALWEB TECHNOLOGIES, LLC, et al.,

Defendants.

PERSONALWEB TECHNOLOGIES, LLC and LEVEL 3 COMMUNICATIONS, LLC,

Counterclaimants,

v.

AMAZON.COM, INC. and AMAZON WEB SERVICES, INC.,

Counterdefendants.

**CASE NO.: 5:18-md-02834-BLF**

**Case No.: 5:18-cv-00767-BLF**

**DECLARATION OF ERIK DE LA IGLESIA IN SUPPORT OF PERSONALWEB TECHNOLOGIES, LLC AND LEVEL 3 COMMUNICATIONS, LLC'S OPPOSITION TO AMAZON.COM, INC. AND AMAZON WEB SERVICES, INC.'S MOTION FOR SUMMARY JUDGMENT ON DECLARATORY JUDGMENT CLAIMS AND DEFENSES UNDER THE CLAIM PRECLUSION AND KESSLER DOCTRINE**

Date: February 7, 2019
Time: 2:00 PM
Dept.: Courtroom 3, 5th Floor
Judge: Hon. Beth L. Freeman

Trial Date: March 16, 2020

I, Erik de la Iglesia, declare as follows:

1. I, Erik de la Iglesia, am over the age of 18 and competent to make this declaration. The facts herein are, unless otherwise stated, based upon personal knowledge, and if called upon to do so, I could, and would testify to their truth under oath. I submit this declaration in support of PersonalWeb and Level 3 Communications' Opposition to Amazon.com, Inc. and Amazon Web Services, Inc.'s Motion for Summary Judgment of Declaratory Judgment Claims and Defenses Under the Claim Preclusion and Kessler Documents.

2. I hold a BS in Electrical Engineering with Highest Honors from the University of Florida and an MS in Electrical Engineering from Stanford where I was a National Science Foundation Graduate Research Fellow. I have been an entrepreneur and technologist in the area of network communication for the last 20 years with 68 issued US patents. Startups I have worked for and founded have been acquired by large, public networking companies (including Extreme Networks and McAfee). My industry work in Hypertext Transfer Protocol ("HTTP") analysis and handling qualifies me as a person of ordinary skill in the art during the timeframes relevant to this matter. More information regarding my qualifications and industry experience are described in my CV (Ex. A).

3. I have reviewed both the Infringement Contentions for the Amazon entities in PersonalWeb's Disclosures Pursuant to Patent Local Rules 3-1 and 3-2 served on October 29, 2018 and those for Twitch Interactive in PersonalWeb's Disclosures Pursuant to Patent Local Rules 3-1 and 3-2 served on December 22, 2018 in the current Multidistrict Litigation (5:18-md-02834-BLF), including the exhibits thereto. In the infringement contentions, PersonalWeb uses the terms "webpage base file," "asset file," and "fingerprint." I understand that "webpage base file," "webpage asset file," "webpage file," and "fingerprint" have been defined in discovery requests served by PersonalWeb, including, for example, the Notice of Taking Deposition of Amazon.com, Inc. and Amazon Web Services, Inc. Pursuant to Fed.R.Civ.P. 30(b)(6) served on November 16, 2018. I am using those terms herein in a manner consistent with those definitions. Generally speaking, the infringement contentions against both the Amazon entities and Twitch allege that those entities assign content-based ETags, described in more detail below, to webpage files and use those ETags to

control the mechanism by which anonymous browsers cache those webpage files in order to reduce the number of times a webpage file has to be sent to the browser while directing that the content displayed in the browser is updated when there is a change at the origin server. Additionally, the infringement contentions for Twitch Interactive allege that Twitch uses fingerprints, described in more detail below, in the filenames of webpage files to control the caching behavior of anonymous browsers and direct that the content displayed in the browser is updated when there is a change at the origin server.

4. I will now address the nature and use cases of content-based ETags and their relationship with cache control for web browsers. The document RFC 2616 is recognized in the industry as the specification for HTTP/1.1. RFC Documents (Request for Comment Documents) represent a standard when adopted by the industry and HTTP/1.1 is revision 1.1 of the HyperText Transfer Protocol (June 1999) that serves as the basis of most communication over the internet today. HTTP is a request-response protocol in which a "client" computer program sends a request message (typically a GET message) and the "server" provides a response message. HTTP messages contain header fields specifying the nature of the request or response and an optional body providing data such as the web page contents requested by a client. Response messages include three-digit numbers identifying the nature of the response (e.g. 200, 304, 404). The GET request message includes a Universal Resource Identifier (URI) identifying the resource on the server requested by the client. A true and correct copy of RFC 2616 obtained from https://tools.ietf.org/html/rfc2616 is attached hereto as Exhibit B.

5. Part 14 of RFC 2616 specifies the syntax of header fields in requests and responses in HTTP/1.1. One such header is the ETag response-header field in Part 14.19 which "provides the current value of the entity tag for the requested variant." When a client receives a value in an ETag header of a response, it may, in a subsequent request for the same resource, use that ETag in an If-None-Match header as described in Part 14.26. An If-None-Match header is "used with a method to make it conditional." When an ETag value is used in an If-None-Match header, the server compares the ETag value against current ETag of the requested resource and if there is a match it will not carry out the requested method (send the resource another time). In the case of a GET method using an If-

None-Match header, Part 14.26 specifies that the server should not perform the GET and instead should respond with a 304 (Not Modified) response.

6. I understand that PersonalWeb has previously referred to four categories of infringing activity in this action. If an ETag value is content-based, *i.e.*, the value is derived from the content of a resource, then its value can be used to verify whether the content of a requested resource has changed since the resource's content was previously delivered and cached. If the content-based ETag values match, it may be assumed that resource's content has not changed since it was cached and an HTTP 304 message can be sent reauthorizing the use of the previously cached content. In Categories 1 and in all other categories based upon the use of a content-based ETag (i.e., categories 2, 3 and '544), the ETag is generated using a method that produces a substantially unique value from the content of the resource, such as by applying the MD5 algorithm to the content of a resource to produce an MD5 hash of its content. In this manner, an ETag may be used for cache control purposes to avoid serving an object (sending a 304 response instead) if the requesting client's cache contains an asset having content that matches the current content of the requested resource. A content-based ETag may be used by a website operator to communicate to the browser when it is permitted to re-use previously cached content for a given webpage file, as in when the browser already has the latest authorized content in its cache, and when it must instead obtain the newer content for that file so as to use that new content in rendering the webpage.

7. PersonalWeb alleges that Twitch infringes certain asserted patents in a manner described as Category 1. Category 1 infringement involves assigning an ETag to a webpage base file. This ETag is not generated by the S3 system but rather by Twitch's own web server application system. When an anonymous browser or intermediate cache server has received a webpage base file with an ETag on a previous request and makes a subsequent request for the same resource using a conditional GET request with an If-None-Match header, the previously received ETag is sent for comparison to the ETag assigned to the current version of that resource. If the ETag values match, the requesting browser or intermediate cache server receives a 304 response from the server confirming authorization to continue using the locally cached file. If the ETag values do not match,

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