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Paper No. 8
Entered: December 18, 2014

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

INTERNATIONAL BUSINESS MACHINES CORPORATION,
Petitioner,

v.

INTELLECTUAL VENTURES II LLC,
Patent Owner.

Case IPR2014-01410
Patent 5,745,574

Before KRISTEN L. DROESCH, JENNIFER S. BISK, and JUSTIN BUSCH, *Administrative Patent Judges.*

BUSCH, *Administrative Patent Judge*.

DECISION
Institution of *Inter Partes* Review
37 C.F.R. § 42.108

INTRODUCTION

A. Background

International Business Machines Corporation ("Petitioner") filed a Petition to institute an *inter partes* review (Paper 2, "Pet.") of claim 30 of U.S. Patent No. 5,745,574 (Ex. 1004, "the '574 patent") on August 28, 2014. Intellectual Ventures II LLC ("Patent Owner") filed a Preliminary Response ("Prelim. Resp.") on November 17, 2014. Paper 6.

We have jurisdiction under 35 U.S.C. § 314. The standard for instituting an *inter partes* review is set forth in 35 U.S.C. § 314(a), which provides that an *inter partes* review may not be instituted "unless the Director determines . . . there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition."

After considering the Petition and Preliminary Response, we determine that Petitioner has established a reasonable likelihood of prevailing on its challenge to claim 30. Accordingly, we institute an *inter partes* review of claim 30.

B. Related Proceedings

Petitioner and Patent Owner indicate the '574 patent is at issue in several district court proceedings involving numerous parties, none of which name Petitioner as a defendant. Pet. 1; Paper 4, 1–2. Petitioner also indicates that the '574 patent is the subject of two co-pending[1] petitions for *inter partes* review (IPR2014-00660, IPR2014-00724) and a co-pending

[1] Decisions instituting *inter partes* reviews were issued in IPR2014-00660 and IPR2014-00724 after the filing of the instant petition.

petition for a covered business method patent review (CBM2014-00160). Pet. 2.

C. The '574 Patent

The '574 patent relates to public key encryption (PKE), which is used for securing and authenticating transmissions over unsecure networks. Ex. 1004, 1:6–8, 1:10–2:9. To use PKE for authenticating transmissions, a transmitted message is encrypted with a sender's private encryption key (a key known only to the sender) that can only be decrypted by the sender's public encryption key (freely available), ensuring that the message was sent by the sender. *Id.* at 1:57–65. A public key infrastructure (PKI), with a hierarchical system of encrypting public lower nodes' public keys, allows for a common point of trust between two parties who wish to communicate with each other. *Id.* at 3:16–39. The '574 patent explains that some of the problems with conventional PKE systems include that such systems do not have a "consistent public key infrastructure which can actually and automatically provide the certifications required for a public key system," a "hierarchical arrangement of certifying authorities which can cross policy certifying authority boundaries," or a convenient and transparent "way for permitting secure transactions to cross organizational boundaries." *Id.* at 4:41–51. The '574 patent purports to "provid[e] a full, correct, consistent and very general security infrastructure which will support global secure electronic transactions across organizational, political and policy certifying authority boundaries." *Id.* at 4:55–59.

The challenged claim recites a process for updating public key certificates used within a PKI system. Figure 4 of the '574 patent is reproduced below:

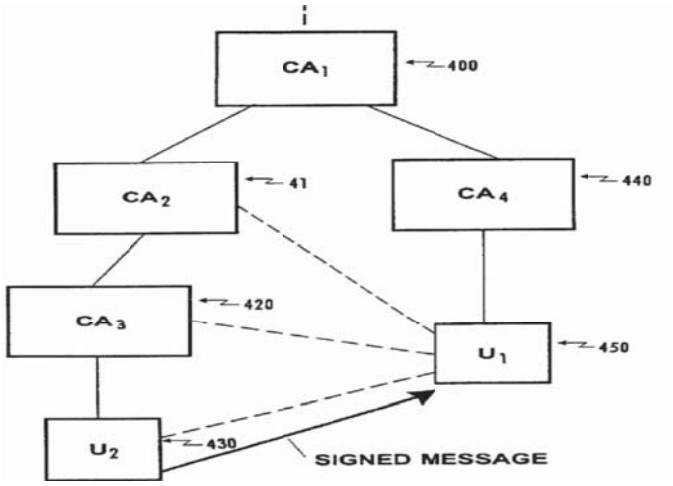

Figure 4 depicts a logical representation of a portion of a hierarchical PKI and one way in which that infrastructure may be used to verify transactions. Ex. 1004, 8:17–29. As can be seen in Figure 4, a hierarchy includes certification authorities (CAs) CA_1–CA_4 and users U_1,U_2. *Id.* at Fig. 4. Not depicted in Figure 4 is a policy certifying authority (PCA), located hierarchically above the CAs, "which defines a particular set of certification policies [and] set the standards for their particular certification sub-hierarchies." *Id.* at 9:26–30. Each of the CAs follows the policies set by the PCA they fall under and can then certify CAs underneath them "in a hierarchical fashion until ultimately the end users are certified at the bottom of the hierarchy." *Id.* at 9:37–42.

In order for U_2 to be added to the hierarchy and obtain a public key certificate, which will allow U_2 to send communications that can be verified and validated by a recipient, U_2 would send an application for registration to the PCA. Ex. 1004, 13:65–67. Any other node would follow the same procedure in order to participate in the PKI and obtain certificates so that

CAs may certify other nodes and so that users may send communications that can be verified and validated by a recipient. The PCA may accept or reject the application for registration. *Id.* at 14:1–7. If the PCA accepts the application, the new node is added to a network map certification infrastructure database and the node performs steps to obtain a certificate. *Id.* at 15:59–67.

A CA or user obtains a certificate by generating new public and private keys, generating a certificate including the newly generated public key and any other information required by the policies established by the PCA, self-signing the certificate, and sending the certificate in a message to the issuing CA (the CA above it in the hierarchy) to request a signature from that CA. Ex. 1004, 14:24–34, 15:4–9. The CA uses policies established by the PCA to authenticate the request. *Id.* at 14:35–41. If authenticated, the CA signs the certificate, stores a copy and/or sends a copy to a certificate repository, and issues the certificate by sending the signed certificate back to the CA or user in a reply message. *Id.* at 14:47–52.

When a node's certificate expires, the node follows a similar process of generating new keys and requesting issuance of a new certificate from its issuing CA. If the issuing CA determines that the requesting node is an already-existing node, the issuing CA also marks the node's old certificate as revoked and adds it to a certificate revocation list (CRL). Ex. 1004, 14:43–47.

The requesting node authenticates the reply message received from the issuing CA by comparing the public key in the signed certificate with the public key that corresponds to the private key used for signing the message sent from the node to the issuing CA. Ex. 1004, 14:54–60, 15:10–22. If the

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