

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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APPLE INC.,  
Petitioner,

v.

MPH TECHNOLOGIES OY,  
Patent Owner.

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IPR2019-00821  
Patent 8,037,302 B2

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Before SALLY C. MEDLEY, KAMRAN JIVANI, and  
JOHN D. HAMANN, *Administrative Patent Judges*.

HAMANN, *Administrative Patent Judge*.

JUDGMENT  
Final Written Decision  
Determining No Challenged Claims Unpatentable  
*35 U.S.C. § 318(a)*

## I. INTRODUCTION

In this *inter partes* review, instituted pursuant to 35 U.S.C. § 314, Apple Inc. (“Petitioner”) challenges the patentability of claims 1–16 (“the challenged claims”) of U.S. Patent No. 8,037,302 B2 (Ex. 1001, “the ’302 patent”), owned by MPH Technologies Oy (“Patent Owner”). We have jurisdiction under 35 U.S.C § 6. This Final Written Decision is entered pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73.

For the reasons discussed herein, we determine that Petitioner has not shown by a preponderance of the evidence that claims 1–16 are unpatentable.

## II. BACKGROUND

### *A. Procedural History*

Petitioner filed a Petition requesting *inter partes* review of the challenged claims of the ’302 patent. Paper 1 (“Pet.”). The Petition is supported by the Declaration of David Goldschlag, Ph.D. (Ex. 1003). Patent Owner filed a Preliminary Response. Paper 8.

We instituted *inter partes* review of all of the challenged claims of the ’302 patent on all of the grounds raised in the Petition. Paper 9 (“Dec. on Inst.”), 6–7, 31. Patent Owner filed a Response to the Petition. Paper 15 (“PO Resp.”). The Response is supported by the Declaration of Professor George N. Rouskas, Ph.D. (Ex. 2002). Petitioner filed a Reply to Patent Owner’s Response. Paper 18 (“Pet. Reply”). The Reply is supported by an additional Declaration of David Goldschlag, Ph.D. (Ex. 1020). Patent Owner filed a Sur-Reply to Petitioner’s Reply. Paper 21 (“PO Sur-Reply”).

An oral hearing was held on July 17, 2020. A transcript of the oral hearing is included in the record. Paper 27 (“Tr.”).

*B. Related Matter*

The parties identify *MPH Techs. Oy v. Apple Inc.*, Case No. 4:18-cv-05935-PJH (N.D. Cal.), as a matter that may affect or would be affected by a decision in this proceeding. Pet. 2; Paper 7, 1.

*C. The Challenged Patent (Ex. 1001)*

The '302 patent relates to providing “secure connections in telecommunication networks” more efficiently. Ex. 1001, 1:13–14, 4:55–63, 7:3–5. In particular, the '302 patent relates to reducing the handover latency for secure connections, such as those employing Internet Protocol (“IP”) Security (“IPSec”) with mobile terminals<sup>1</sup> (i.e., terminals that can move from one network to another). *Id.* at 4:55–63, 7:3–5, 7:39–41.

According to the '302 patent, IPSec comprises a set of rules for “provid[ing] the capability to secure communications” between hosts. *Id.* at 1:38–39. These rules describe, *inter alia*, the concept of a Security Association (“SA”), which the '302 patent describes as “a one-way relationship between a sender and a receiver that offers [negotiated IPSec] security services to the traffic carried on it.” *Id.* at 1:62–65. SAs are identified, in part, by the IP addresses of the hosts. *E.g., id.* at 2:14–16. The '302 patent discloses that when a new SA is formed, “it is registered for immediate and/or later use” in a Security Association Database (“SAD”), “which is the nominal place to store IPSec SAs in the IPSec model.” *Id.* at 7:45–53. Each host participating in the forming of the SA maintains a copy of the SAD, according to the '302 patent. *Id.* at 7:47–48.

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<sup>1</sup> The '302 patent discloses that “the term[s] mobility and mobile terminal do[] not only mean physical mobility, . . . [but also] mean[] moving from one network to another, which can be performed by a physically fixed terminal as well.” Ex. 1001, 3:51–55.

In addition, the '302 patent discloses that IPsec is intended to work with static network topologies. *Id.* at 3:19–22. For example, IPsec can secure communications between static hosts across a local area network (“LAN”), as well as across a private or public wide area network (“WAN”). *Id.* at 1:38–40. IPsec, however, “does not work well with mobile” terminals, according to the '302 patent, because when “a mobile terminal moves from one network to another [and changes addresses], an IPsec connection set up is required,” which typically “is expensive in terms of latency,” requiring “several seconds to complete.” *Id.* at 4:52–60.

To address this problem, the '302 patent discloses avoiding the need, if possible, to set up an IPsec connection when the mobile terminal moves networks by relying on a SA that is already established. *E.g., id.* at 10:39–43, 10:51–56. Figure 2, shown below, is a “signalling diagram,” which describes the invention of the '302 patent. *Id.* at 9:5–6.

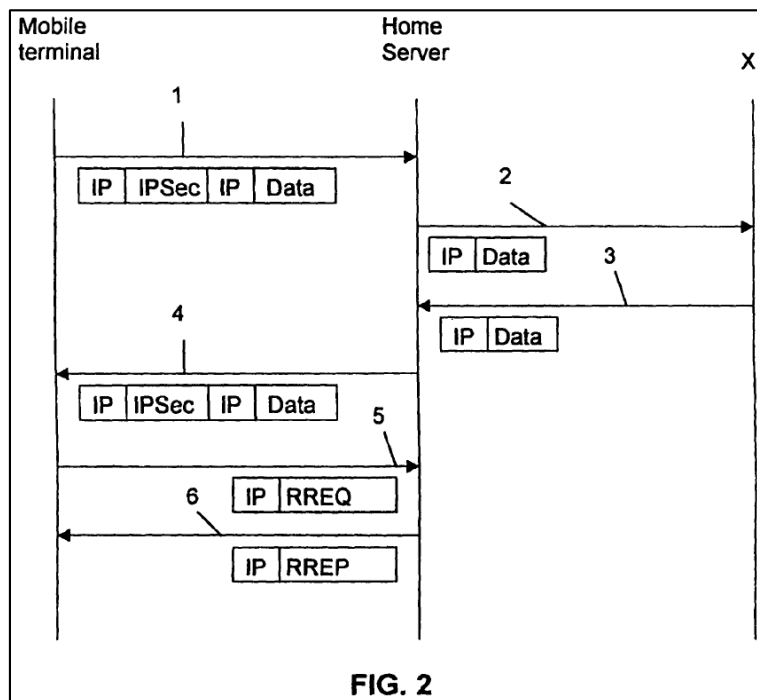


Figure 2 “describes an example of the method of the invention for sending messages[, as shown in steps 1–6,] when a mobile terminal moves to a new address.” *Id.* at 10:9–11. We focus on steps 1 and 5 between the mobile terminal and home server, because these are the illustrated steps relevant to our analysis below.

First, a SA is established between a first address of the mobile terminal and the address of the home server. *Id.* at 10:12–16. This SA is used to send a message from the mobile terminal to the home server, as illustrated in step 1. *Id.* at 10:21–25. Subsequently, the mobile terminal moves to a new network and obtains a new address from the new network. *Id.* at 10:39–40. “The mobile terminal then checks whether an SA . . . already exists between the new . . . address and the home server address. This check is normally done by inspecting the contents of” a SAD, “as specified by the IPsec protocol.” *Id.* at 10:40–46.

If a SA between the mobile terminal’s new address and the home server’s address “already exists, this SA is registered to be the actual SA to be used.” *Id.* at 10:51–56. Put differently, the SA is registered as an active connection (i.e., “a stored mobility binding that maps a given terminal address to one or more” SAs to determine to what address to forward packets). *E.g., id.* at 8:13–14, 10:12–27. “This happens by means of a signalling message . . . done between the mobile terminal and the home server, described by step[] 5 . . . .” *Id.* at 10:57–59; *see also id.* at 7:59–63 (describing sending a Registration Request signalling message to register the actual connection to use). Alternatively, the ’302 patent discloses that in lieu of a Registration Request, properly authenticated traffic from a new address can be used “as an implicit registration request, and a mobility

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