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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.
Petitioner

v.

VIRNETX INC.
Patent Owner

Case IPR2014-00237
Patent 8,504,697

**Patent Owner's Preliminary Response
to Petition for *Inter Partes* Review
of U.S. Patent No. 8,504,697**

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I. Introduction

Patent Owner VirnetX Inc. respectfully submits this Preliminary Response in accordance with 35 U.S.C. § 313 and 37 C.F.R. § 42.107, responding to the Petition for *Inter Partes* Review of VirnetX's U.S. Patent No. 8,504,697 ("the '697 patent") filed by Apple Inc. VirnetX requests that the Board not institute *inter partes* review for several reasons.

First, the Petition proposes rejections that the Examiner considered during prosecution of the '697 patent and over which the Examiner allowed the claims. For example, the Petition proposes rejections based on U.S. Patent No. 6,496,867 to *Beser* and RFC 2543 by *Handley et al.* (See Pet. at i-iii.) During prosecution of the '697 patent, however, VirnetX submitted these references through an Information Disclosure Statement and the Examiner considered them. (See Ex. 1001 at 2, 5.) The Examiner also considered materials from reexaminations of patents related to the '697 patent, including claim charts for *Beser* and RFC 2543 against the claims of those patents. (See *id.* at 9, 11, 14-16.) Accordingly, Apple asks the Board and VirnetX to divert resources to revisit issues that the Office has already considered.

Second, the Petition fails to comply with several rules and regulations regarding the content of petitions. The Petition either never or rarely cites the asserted prior art references, violating the particularity requirements of 35 U.S.C.

§ 312(a)(3) and 37 C.F.R. § 42.104(b)(4). The Petition also proposes horizontally and vertically redundant grounds without identifying how any one ground improves on any other, violating Board precedent requiring petitioners to identify differences in the proposed rejections.

Finally, Apple proposes unreasonable claim constructions. Because its unpatentability challenges are premised on incorrect claim constructions, Apple has not met its burden of demonstrating a reasonable likelihood of prevailing in proving unpatentability of any '697 patent claim.

II. The Petition Fails to Meet the Requirements for Instituting an *Inter Partes* Review

Trial should not be instituted because Apple's Petition does not comply with the statutes and regulations that must be satisfied for institution. The Petition fails to comply with 35 U.S.C. § 312(a)(3)'s particularity requirement and 37 C.F.R. § 42.104(b)(4)'s requirement to "specify where each element of the claim is found in the prior art patents or printed publications relied upon," by citing almost solely to expert declarations, which often generalize the references, as opposed to citing the references themselves. The Petition also proposes redundant grounds without identifying how any one ground improves on any other.

A. The Petition Fails to Comply with 35 U.S.C. § 312(a)(3) and 37 C.F.R. § 42.104(b)(4)

A petition must identify “in writing and with particularity, each claim challenged, the grounds on which the challenge to each claim is based, and the evidence that supports the grounds for the challenge to each claim[.]” 35 U.S.C. § 312(a)(3). It must also “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). The “failure to point out where each element is found in the prior art is a deficiency in the substantive requirements of the petition,” which results in denial of the petition. *Wowza Media Sys., LLC et al. v. Adobe Sys., Inc.*, IPR2013-00054, Paper No. 16 at 3 (July 13, 2013). Accordingly, the Board has denied petitions for failure to cite prior art references being asserted. *See, e.g., Tasco, Inc. v. Pagnani*, IPR2013-00103, Paper No. 6 at 22 (May 23, 2013) (“Rather than providing citations to supporting evidence in [a prior art reference] Petitioner provides conclusory statements, such as ‘[s]ince each circuit of the circuit breaker receives a signal from a distinct transmitter, the signals of all the circuits must be different or unique.’ (Pet. at 42 (no citation to [prior art reference] provided).”)

Apple’s Petition fails to meet these requirements because the Petition cites almost exclusively to an accompanying declaration (Ex. 1003) rather than to the prior art references themselves. The result is that, for many claim features, it is unclear what feature in the prior art the Petition is attempting to refer to through

the declaration. Because of this flaw, the Board and VirnetX are forced to cobble together and, in some instances, to simply speculate about what specific invalidity theories are being asserted.¹

For example, the Petition asserts that *Beser* anticipates claims 1-11, 14-25, and 28-30, but the Petition fails to cite *Beser* at all in its purported discussion of *Beser* and the challenged claims. (Pet. at 16-33.) Similarly, the Petition asserts that *Beser* in view of *RFC 2401* renders obvious claims 1-11, 14-25, and 28-30, but never cites either reference in its purported analysis. (*Id.* at 33-38.) The Petition also contends that claims 1-11, 14-25, and 28-30 are anticipated by *RFC 2543*, but the Petition cites *RFC 2543* only four times, and only for portions of claims 1, 2, 16, and 24. (*Id.* at 39-56.) The Petition further asserts that claims 1-11, 14-25, and 28-30 are obvious in view of *RFC 2543* and *RFC 1889* and *RFC 2327*, but the Petition cites *RFC 1889* only for portions of claims 2 and 24 and fails to cite *RFC 2327* at all. (*Id.* at 56-58.) Lastly, the Petition contends that claims 8-9 and 22-23 are obvious in view of *RFC 2543* and *Mobility Support Using SIP*, but fails to cite *Mobility Support Using SIP* at all. (*Id.* at 58-59.) In short, the Petition fails to

¹ Apple was on notice of these deficiencies based on VirnetX's Preliminary Responses to the petitions Apple filed against other VirnetX patents, but chose to repeat them in this Petition. (See, e.g., *Apple Inc. v. VirnetX Inc.*, IPR2013-00349, Paper No. 10 at 13-16 (Sept. 17, 2013).)

identify where in the asserted prior art all of the features of any challenged claim are found.

The issue is compounded by the length of the cited declaration, which spans 196 pages—more than the length of three IPR petitions. (See Ex. 1003.) Apple asks the Board and VirnetX to parse this large volume of material by (i) collecting the Petition’s declaration citations for each claim feature, (ii) ascertaining the various arguments the declarant makes for each feature, (iii) comparing those arguments to the disclosure of the cited references, and (iv) determining whether referenced portions of the prior art correspond to the features of the claims. This does not meet the requirements for a petition, and it also circumvents the page limits for petitions.

As an example of a critical deficiency, claim 1 recites, among other things, “determining, in response to the request, whether the second network device is available for a secure communications service.” The Petition does not explain how *Beser* discloses that a second network device is “available” for a secure communications service. Instead, the Petition generally discusses what is purportedly contained in the request from the first network address. (See Pet. at 19 (“Beser explains that after first network device receives a request, it evaluates it, and if the device determines the packet contains a request to initiate an IP tunnel, it will send the request to the trusted-third-party network device.”); *id.* at 20 (“[I]f the

trusted-third-party network device determines the unique identifier specifies a destination that can establish a secure tunnel (*e.g.*, the terminating end device or destination of a VOIP request), it will negotiate with the first and second network devices to establish the IP tunnel between those network devices.”.) Nowhere does the Petition attempt to explain how *Beser* discloses “determining, in response to the request [from the first network device], whether the second network device is available for a secure communications service,” as recited in claim 1. The Petition is similarly deficient regarding independent claim 16. (*See id.* at 19-21.)

As a further example, the Petition discusses *RFC 2543* in generalities and fails to explain what in the reference specifically discloses “determining, in response to the request, whether the second network device is available for a secure communications service,” as recited in independent claim 1. (*See id.* at 43-45 (generally asserting that “RFC 2543 explains that after the caller sends the INVITE message, the callee’s SIP server will receive the message, and then try to locate the callee,” but never identifying what specific features of *RFC 2543* allegedly correspond to “determining” whether a “second network device” is “available for a secure communications service,” as recited in claim 1).) The Petition is similarly deficient regarding independent claim 16. (*Id.* at 43-45.)

Because the Petition fails to cite and identify the specific features of the prior art references it relies on to challenge the specific elements of claims 1-11,

14-25, and 28-30, it fails to comply with the “particularity” requirement of 35 U.S.C. § 312(a)(3) and fails to “specify where each element of the claim is found in the prior art patents or printed publications relied upon” as required by 37 C.F.R. § 42.104(b)(4). Due to these deficiencies, a trial should not be instituted.

B. The Board Should Not Institute Based on the Petition’s Redundant Grounds

The Board should reject this Petition because it raises grounds of rejection that are both internally redundant and also redundant in view of the proposed grounds in Apple’s ’238 Petition. The Board has held that it will not consider redundant grounds of rejection like Apple’s because the Board must issue a final written decision in *inter partes* review proceedings within one year of institution (or 18 months for good cause). *Liberty Mut. Ins. Co. v. Progressive Cas. Ins. Co.*, CBM2012-00003, Paper No. 7 (Oct. 25, 2012).² Redundant grounds place a significant burden on the Board and the patent owner, and they cause unnecessary

² Although *Liberty Mutual* is a decision in a covered business method review, the Board has applied its reasoning to *inter partes* reviews based on the similar considerations that apply in both types of proceedings. See, e.g., *LaRose Indus., LLC v. Capriola Corp.*, IPR2013-00120, Paper No. 20 at 4 (July 22, 2013) (citing *Liberty Mutual*, CBM2012-00003, Paper No. 7 at 2-12).

delay that jeopardizes completing the *inter partes* review by the statutory deadline.
Id.

Because “[t]he Board seeks to streamline and converge issues at all phases of the proceeding . . . at [the] time of institution the Board analyzes the petition on a claim-by-claim, ground-by-ground basis, to eliminate redundant grounds.” *Idle Free Sys., Inc. v. Bergstrom, Inc.*, IPR2012-00027, Paper No. 26 at 3 (June 11, 2013). As explained by the Board, the redundancy inquiry does not focus on “whether the applied prior art disclosures have differences, for it is rarely the case that the disclosures of different prior art references, will be literally identical.” *EMC Corp. v. Personal Web Techs., LLC*, IPR2013-00087, Paper No. 25 at 3 (June 5, 2013). Instead, the Board considers “whether the petitioner articulated a meaningful distinction in terms of relative strengths and weaknesses with respect to application of the prior art disclosures to one or more claim limitations.” *Id.* at 3-4. The onus is on the petitioner to articulate that “meaningful distinction.” See *ScentAir Techs., Inc. v. Prolitec, Inc.*, Case IPR2013-00180, Paper No. 18 at 3 (Aug. 26, 2013) (“To avoid a determination that a requested ground of review is redundant of another requested ground, a petitioner must articulate a meaningful distinction. . . .”).

In *Liberty Mutual*, the Board identified two types of redundant rejections: (1) “horizontally” redundant rejections and (2) “vertically” redundant

rejections. *Liberty Mutual*, CBM2012-00003, Paper No. 7 at 3. The Board explained that horizontally redundant rejections apply “a plurality of prior art references . . . not in combination to complement each other but as distinct and separate alternatives.” *Id.* In this type of redundancy, the references “provide essentially the same teaching to meet the same claim limitation, and the associated arguments do not explain why one reference more closely satisfies the claim limitation at issue in some respects than another reference, **and** vice versa.” *Id.*

Vertical redundancy “exists when there is assertion of an additional prior art reference to support another ground of unpatentability when a base ground already has been asserted against the same claim without the additional reference and the Petitioner has not explained what are the relative strength and weakness of each ground.” *Id.* at 12. Thus, an example of vertical redundancy is when a proposed rejection is based on one reference alone while another proposed rejection against the same claim is based on that same reference plus another reference. Apple’s petitions contain both types of redundancy.

In the ’238 Petition, Apple proposes five grounds of rejection against the ’697 patent claims, including the following:

P1-1. *Wesinger* allegedly anticipates claims 1-11, 14-25, and 28-30;

P1-2. *Wesinger* in view of *RFC 2543* allegedly renders obvious claims 4-7 and 18-21;

P1-3. *Aventail* allegedly anticipates claims 1-11, 14-25, and 28-30;

P1-4. *Aventail* in view of *RFC 2543* allegedly renders obvious claims 4-7 and 18-21; and

P1-5. *Kiuchi* allegedly anticipates claims 1-3, 8-11, 14-17, 22-25, and 28-30.

Here, Apple proposes six grounds of invalidity, including the following:

P2-1. *Beser* allegedly anticipates claims 1-11, 14-25, and 28-30;

P2-2. *Beser* in view of *RFC 2401* allegedly renders obvious claims 1-11, 14-25, and 28-30;

P2-3. *Beser* in view of *RFC 2401* and the knowledge of a person of ordinary skill in the art allegedly renders obvious claims 1-11, 14-25, and 28-30;

P2-4. *RFC 2453* allegedly anticipates claims 1-11, 14-25, and 28-30;

P2-5. *RFC 2453* in view of *RFC 1889* and *RFC 2327* allegedly renders obvious 1-11, 14-25, and 28-30; and

P2-6. *RFC 2453* in view of *Mobility Support Using SIP* allegedly renders obvious claims 8-9 and 22-23.

These examples demonstrate horizontal redundancy by proposing anticipation rejections of common claims based on *Wesinger*, *Aventail*, *Kiuchi*, *Beser*, and *RFC 2453* (P1-1, P1-3, P1-5, P2-1, and P2-4). In another instance of

horizontal redundancy, Apple proposes parallel obviousness grounds for overlapping claims (*e.g.*, P1-2, P1-4, P2-2, P2-3, P2-5, and P2-6). Apple’s petitions never explain which lead reference—*Wesinger*, *Aventail*, *Kiuchi*, *Beser*, or *RFC 2453*—or which obviousness combination is better in any respect compared to the others for any challenged claim.

The Petition also demonstrates vertical redundancy by proposing anticipation rejections based on *Beser* (P2-1) and *RFC 2453* (P2-4) while simultaneously challenging common claims as obvious using *Beser* and *RFC 2453* as the lead references (P2-2, P2-3, P2-5, and P2-6). Apple does not explain how these proposed obviousness rejections are any better or different from the proposed anticipation rejections based on *Beser* or *RFC 2453* alone. And neither of Apple’s petitions explains how any of the proposed obviousness combinations improves on any of the other combinations.³

As in *Liberty Mutual*, Apple simply proposes different references or different combinations that “provide essentially the same teaching to meet the same claim limitation, and the associated arguments do not explain why one

³ VirnetX highlighted similar deficiencies in the previous petitions filed by Apple, and the deficiencies are repeated here. (*See, e.g., Apple Inc. v. VirnetX Inc.*, IPR2013-00397, Paper No. 11 at 13-18 (Oct. 4, 2013).)

reference [or reference combination] more closely satisfies the claim limitation at issue in some respects than another reference [or reference combination], and vice versa.” *Liberty Mutual*, CMB2012-00003, Paper No. 7 at 3. Although “the focus of redundancy is on whether a petitioner articulated a meaningful distinction in terms of the relative strengths and weaknesses with respect to [the] application of the prior art reference disclosures to one or more claim limitations,” Apple has identified no distinctions whatsoever. *LaRose*, IPR2013-00120, Paper No. 20 at 4 (“Petitioner has not explained any such strengths and weaknesses”). Accordingly, the Board should deny the Petition because it presents internally redundant grounds and grounds redundant to those in the ’238 Petition.

III. The Petition’s Claim Constructions Are Flawed and Should Be Rejected

In *inter partes* review, claims are to be given their “broadest reasonable construction in light of the specification.” 37 C.F.R. § 42.100(b). In applying the “broadest reasonable construction” or interpretation (“BRI”) standard, the words of the claim must be given their plain meaning unless the plain meaning is inconsistent with the specification. *In re Zletz*, 893 F.2d 319, 321 (Fed. Cir. 1989). The ordinary meaning of a term may be evidenced by a variety of sources, including “the words of the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence concerning relevant scientific

principles, the meaning of technical terms, and the state of the art.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1314 (Fed. Cir. 2005) (en banc) (citation omitted).

Additionally, the prosecution history is part of the intrinsic record and should be considered when construing the claims. *Id.* at 1317. In *inter partes* review proceedings, the Board has consistently considered the prosecution history when construing the claims. *See Garmin Int’l, Inc. v. Cuozzo Speed Techs. LLC*, IPR2012-00001, Paper No. 15 at 8 (Jan. 9, 2013); *Motorola Solutions, Inc. v. Mobile Scanning Techs., LLC*, IPR2013-00093, Paper No. 28 at 10 (Apr. 29, 2013).

As explained below, Apple proposes several defective claim constructions that do not represent the BRI of the claims. Because it is based on incorrect claim constructions, the Petition cannot demonstrate a reasonable likelihood of prevailing for any claim of the ’697 patent.

A. Overview of the ’697 Patent

The ’697 patent discloses embodiments relating to initiating a secure communication link between a user’s computer 2601 (e.g., a “first network device” in the claims) and a target 2604 (e.g., a “second network device” in the claims) over a network.

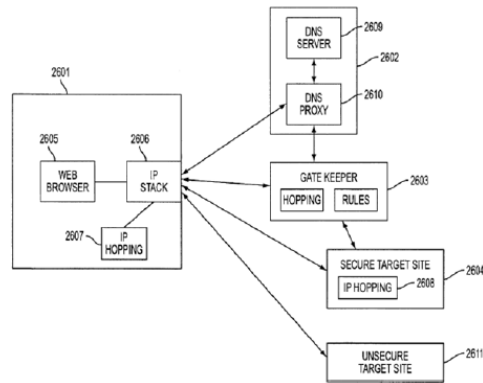


FIG. 26

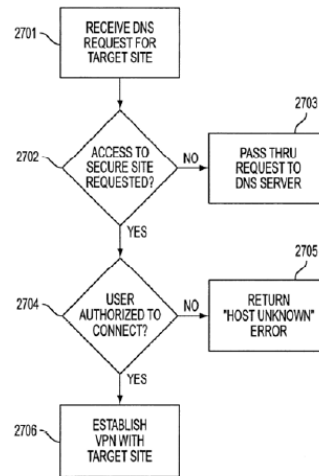


FIG. 27

(Ex. 1001, FIGS. 26 and 27.) In one embodiment, a request to look up an internet protocol (IP) address of the second network device based on a domain name associated with the second network device is intercepted by being received for an evaluation related to establishing the secure communication link. (*See id.* at 40:31-37; 41:6-19; FIG. 27, 2701, 2702, 2704.) A determination is made, in response to the request, whether the second network device is available for a secure communications service. (*See id.*) Additionally, the request is resolved into an address that is returned to the first network device. (*See id.* at 40:44-46.) A secure communication link is initiated between the first network device and the second network device based on a determination that the second network device is available for the secure communications service. (*See, e.g., id.* at 40:37-49, 41:30-39, 41:47-56; FIG. 27.) The secure communications service uses the secure communication link to communicate at least one of video data and audio data

between the first network device and the second network device. (*See, e.g., id.* at 21:52-62.) The secure communication link is a direct link between the first and second network devices, using encryption to provide data security.

B. Level of Ordinary Skill in the Art

A person of ordinary skill in the art at the relevant time would have had a master's degree in computer science or computer engineering and approximately two years of experience in computer networking and computer security. In litigation related to VirnetX's patents, this level of skill was adopted by Petitioner Apple Inc. and a host of other companies, including Cisco Systems, Inc.; NEC Corporation; NEC Corporation of America; Aastra USA, Inc.; Aastra Technologies Ltd.; Mitel Networks Corp.; Mitel Networks, Inc.; Siemens Enterprise Communications GmbH & Co. KG; Siemens Enterprise Communications, Inc.; and Avaya Inc. (Ex. 2006 at 4, Memorandum Opinion and Order in *VirnetX Inc. v. Mitel Networks Corp. et al.*, Case No. 6:11-CV-18 (E.D. Tex. Aug. 1, 2012); Ex. 1049 at 5, Memorandum Opinion and Order in *VirnetX Inc. v. Cisco Systems, Inc. et al.*, Case No. 6:10-CV-417 (E.D. Tex. April 25, 2012).)

Apple now proposes a lower level of skill in an attempt to ensure that its expert meets its proposed skill level. (Pet. at 5.) Apple's newfound definition should be rejected, however, as nearly a dozen companies, including Apple itself, have agreed that the appropriate level of skill is the one proposed by VirnetX.

C. “Domain Name” (Claims 1, 14, 16, and 28)⁴

VirnetX’s Proposed Construction	Apple’s Proposed Construction
A name corresponding to a network address	A name corresponding to an IP address

The BRI of “domain name” is “a name corresponding to a network address.” VirnetX’s proposed construction is consistent with Apple’s but recognizes that a name may correspond to types of network addresses other than an “IP” address. (Pet. at 6-7.) The ’697 patent claims support this construction by separately reciting a relationship between the claimed domain name and an IP address. (Ex. 1001, claim 1: “a request to look up an internet protocol (IP) address of the second network device based on a domain name.”) If the term “domain name” inherently required correspondence with an IP address, as Apple contends, then this “IP address” claim language would be redundant. Its presence suggests that “domain name” is a broader term consistent with VirnetX’s construction.

VirnetX’s construction is also consistent with the specification, which explains that Internet Protocol or “IP” is but one type of network. (*See e.g.*, Ex. 1001 at 4:19, 5:13-14, 11:51-53.) The specification also contemplates “‘boutique’ embodiments . . . for use in smaller networks, such as small virtual private

⁴ VirnetX identifies only the challenged claims that expressly recite the terms at issue. Claims that depend from the identified claims may also implicitly contain the terms.

networks” instead of large networks like the Internet, where IP addresses are commonplace. (Ex. 1001 at 16:62-66.) Nothing requires these smaller networks to use IP addresses. The specification similarly contemplates applications including “video-conferencing, e-mail, word processing programs, telephony, and the like,” which do not necessarily use IP addresses. (Ex. 1001 at 21:57-59.)

Accordingly, under the applicable BRI standard, a “domain name” is “a name corresponding to a network address.”

D. “Secure Communication Link” (Claims 1-3, 11-13, 16-17, and 24-27)

VirnetX’s Proposed Construction	Apple’s Proposed Construction
A direct communication link that provides data security through encryption	A communication link in which computers privately and directly communicate with each other on insecure paths between the computers where the communication is both secure and anonymous, and where the data transferred may or may not be encrypted

Apple’s proposed “secure communication link” construction raises two primary issues: whether a secure communication link requires (1) encryption and (2) anonymity. For the reasons discussed below, encryption is required but anonymity is not.

Encryption: Apple first contends that “[a] ‘secure communication link’ . . . must encompass virtual private networks.” (Pet. at 7.) VirnetX agrees that some features of VPNs are applicable to secure communication links. For example,

VPNs must be encrypted. The FreeS/WAN glossary of terms in the '697 patent's prosecution history explains that a VPN is "a network which can safely be used as if it were private, even though some of its communication uses insecure connections. All traffic on those connections is encrypted." (Ex. 2004 at 24, Glossary for the Linux FreeS/WAN Project.) A contemporaneous computing dictionary agrees that "VPNs enjoy the security of a private network via access control and encryption" (Ex. 2005 at 8, *McGraw-Hill Computer Desktop Encyclopedia* (9th ed. 2001).)

During litigation, Apple agreed that secure communication links in the context of VirnetX's patents shared the encryption requirement of VPNs. Apple and other defendants asked the district court to adopt an encryption requirement based on VirnetX's statements during reexamination that contrasted the "secure communication link" recited in claims of related U.S. Patent Nos. 7,418,504 and 7,921,211 with the unencrypted link described in *Beser*. (Ex. 2002 at 2-3, Motion for Reconsideration in the '417 Litigation (E.D. Tex. June 21, 2012), "VirnetX unequivocally disclaimed 'secure communications links' that are not encrypted"; Ex. 1056 at 25, Patent Owner's Response to Office Action of December 29, 2011.) VirnetX did not oppose the motion, and the district court granted it in full, adopting the same construction VirnetX proposes here. (See Ex. 2003 at 1, Order in the '417 Litigation (E.D. Tex. Oct. 4, 2012).)

Apple concedes that VirnetX disclaimed secure communication links that do not employ encryption, but disputes that this disclaimer is relevant in *inter partes* review. (Pet. at 10, n. 2, citing Ex. 1056 at 25.) Apple cites no authority to support its position. (*Id.*) However, the Federal Circuit has held that disclaimers do apply to proceedings before the PTO. See *In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004) (“Absent claim language carrying a narrow meaning, the PTO should only limit the claim based on the specification *or prosecution history* when those sources expressly disclaim the broader definition” (emphasis added)). The Board has also relied on prosecution history statements in construing claims in *inter partes* reviews. See *Garmin Int’l*, IPR2012-00001 Paper No. 15 at 8; *Motorola Solutions*, IPR2013-00093 Paper No. 28 at 10; *ZTE Corp. & ZTE (USA) Inc. v. ContentGuard Holdings, Inc.*, IPR2013-00134, Paper No. 12 at 16 (June 19, 2013); *Xilinx, Inc. v. Intellectual Ventures I LLC*, IPR2013-00112, Paper No. 14 at 6 (June 27, 2013).

Next, Apple asserts that “encryption” is not required because the specification does not expressly state that encryption is used in the “DNS-based VPN scheme.” (Pet. at 8, n. 1.) But the ’697 patent stems from a continuation-in-part application and explains that the later-discussed “DNS” embodiments can incorporate the earlier-described principles of encryption, e.g., a two-layer encryption technique. (See Ex. 1001 at 25:3-4, “different embodiments

or modes that can be employed using the aforementioned principles,” at 34:38-39, “The following describes various improvements and features that can be applied to the embodiments described above.”) Some of the sections Apple cites in its Petition, therefore, do not (and need not) expressly mention that a secure communication link requires encryption. (See Pet. at 8.) Apple takes this to mean that encryption is not present in those embodiments, but given the specification’s earlier discussion of encryption and its applicability to other embodiments, Apple is incorrect.

Apple also argues that, under the doctrine of claim differentiation, the secure communication link does not require encryption because “dependent claims 2 and 24 of the ’697 patent specify that data being sent over a ‘secure communication link’ must be encrypted.” (*Id.* at 8.) Apple is incorrect. Claims 2 and 24 only require that “at least one of the video data and the audio data is encrypted over the secure communication link.” Thus, claim differentiation only suggests that *the video data and/or the audio data itself need not be encrypted* in independent claims 1 and 16, not that the secure communication link does not use encryption whatsoever.

This is consistent with the specification’s “TARP” embodiments, for example, which describe a “unique two-layer encryption format” where “[e]ach TARP packet’s true destination address is concealed behind a layer of encryption”

(first layer) and “[t]he message payload is hidden behind an inner layer of encryption” (second layer). (Ex. 1001 at 4:7-9.) In independent claims 1 and 16, the secure communication link may apply the first layer of encryption to the addressing information, but not apply the second layer of encryption to the video data and/or the audio data itself (i.e., the payload). In this case, the video data and/or audio data is communicated over the secure communication link but is not necessarily encrypted. This may be desirable in scenarios where hiding the address information is important while hiding the video data and/or audio data itself is not. In dependent claims 2 and 24, the secure communication link may add the second layer of encryption to the video data and/or the audio data itself.

In other scenarios, the secure communication link may carry other data in addition to “at least one of video data and audio data,” where the other data is encrypted. Consistent with this, the specification explains that encryption may be applied to one portion of a message but not others. (*See, e.g.*, Ex. 1001 at 4:66-67 and 12:57-58, “encryption may be applied to a portion, or entirety, of a message,” at 26:49-51, “[t]his sync field could appear in the clear or as part of an encrypted portion of the packet.”)

Thus, Apple’s claim differentiation argument fails because there are meaningful differences between the independent and dependent claims that Apple fails to appreciate. *See Wenger Mfg., Inc. v. Coating Mach. Sys., Inc.*, 239 F.3d

1225, 1233 (Fed. Cir. 2001) (Claim differentiation “is clearly applicable when there is a dispute over whether a limitation found in a dependent claim should be read into an independent claim, and that limitation is the *only* meaningful difference between the two claims.”) Moreover, VirnetX’s disavowal of unencrypted secure communication links would supplant any presumption created by Apple’s claim differentiation argument (if it were correct). *InterDigital Comms., LLC v. Int’l Trade Comm’n*, 690 F.3d 1318, 1324 (Fed. Cir. 2012) (“[T]he doctrine of claim differentiation creates only a presumption, which can be overcome by strong contrary evidence such as definitional language in the patent or a clear disavowal of claim scope . . .”).

Based on the patent specification and its prosecution history, the Board should construe secure communication links to require encryption.

Anonymity: Apple contends that a link is only “secure” “if it protects the anonymity of the computers involved in the communications.” (Pet. at 7.) A link that prevents others from understanding the communications sent over it may still be considered “secure” even if the communicating parties do not enjoy any anonymity. The patent specification supports this view. For example, the ’697 patent discloses setting up a “secure communication” path where the true IP address of a web site “would be revealed over the Internet as part of the DNS inquiry.” (Ex. 1001 at 39:49-58.) According to the patent, “[t]his would hamper

anonymous communication on the Internet,” but it still refers to the path as being a “secure communication” path. (*Id.*) Thus, the ’697 patent does not require anonymity for a link to be considered “secure,” as Apple alleges.

Apple’s attempt to read an anonymity requirement into the term “secure communication link” is contrary to the specification, and Apple provides no other support for its position. (*See* Pet. at 7-10.) The Board should reject Apple’s proposed anonymity requirement.

For these reasons, “secure communication link” should be construed to mean “a direct communication link that provides data security through encryption.”

E. “Secure Communications Service” (Claims 1, 4-5, 10, 13-14, 16, 18-19, and 28-29)

VirnetX’s Proposed Construction	Apple’s Proposed Construction
The functional configuration of a network device that enables it to participate in a secure communications link with another network device	The functional configuration of a computer that enables it to participate in a secure communications link with another computer

VirnetX generally agrees with Apple’s proposed construction of “secure communications service.” Because the claims recite a secure communication link between a “first network device” and a “second network device,” however, any proposed construction of “secure communications service” should use those terms instead of “computer,” as proposed by Apple. The specification provides a variety of examples that do not involve traditional computers and may instead involve telephones or other devices. For example, it discloses “video conferencing, e-mail,

word processing programs, telephony, and the like.” (Ex. 1001 at 21:57-59.) And dependent claims 5, 6, 19, and 20 are directed to a telephony secure communications service.

Accordingly, “secure communications service” should be construed to mean “the functional configuration of a network device that enables it to participate in a secure communications link with another network device.”

F. “Intercept[ing] . . . a request to look up an internet protocol (IP) address” (Claims 1 and 16)

VirnetX’s Proposed Construction	Apple’s Proposed Construction
No construction necessary; alternatively, receiving a request to look up an internet protocol address and, apart from resolving it into an address, performing an evaluation on it related to establishing a secure communication link	A proxy computer or device receiving and acting on a request sent by a first computer that was intended for another computer

The phrase “intercept[ing] . . . a request to look up an internet protocol (IP) address,” as recited in independent claims 1 and 16, does not need construction. The surrounding claim language adequately explains that the phrase refers to receiving a request to look up an internet protocol address and, apart from resolving it, performing an evaluation on it related to establishing a secure communication link. For example, the claim goes on to recite that, “in response to the request,” it is “determin[ed] . . . whether the second network device is available for the secure communications service,” and that, based on the determination, a

secure communication link is initiated. This is consistent with the language in dependent claims 10 and 29, which recite that “intercepting” is accomplished by “receiving the request to determine whether the second network device is available for the secure communications service.” The meaning of the “intercepting” phrase is already apparent from the existing claim language and the Board need not construe it.

Apple’s proposed construction is inconsistent with the specification in two ways. The first inconsistency relates to the “another computer” requirement. To support its construction, Apple cites the specification’s “DNS proxy” embodiment in which “DNS proxy 2610 intercepts all DNS lookup functions from client 2605 and determines whether access to a secure site has been requested.” (Pet. at 13, citing Ex. 1001 at 40:31-33.) According to Apple, the DNS request was intended for “another computer”—the DNS server 2609. (*Id.*) But the specification explains that the DNS proxy 2610 and the DNS server 2609 might be on the *same* computer 2602, as shown in the following portion of FIG. 26. (Ex. 1001 at 40:25-27, “modified DNS server 2602 includes a conventional DNS server function 2609 *and* a DNS proxy 2610,” 41:1-3, “the functions of DNS proxy 2610 and DNS server 2609 can be combined into a *single* server for convenience.”)

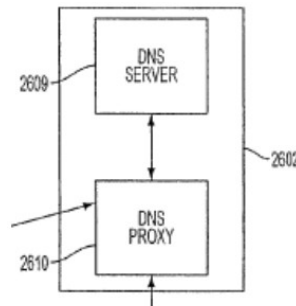


FIG. 26

In addition, dependent claims 15 and 30 recite that the intercepting occurs in a device “separate from the first network device.” This suggests that the independent claims do not already require the intercepting to occur on “another computer,” as Apple proposed. Apple’s “another computer” requirement is inconsistent with the specification and the claims, and it does not reflect the BRI.

The second inconsistency relates to Apple’s unduly narrow interpretation of “intercepting” to essentially mean illicitly receiving or acting upon a request. Although the specification uses “intercepting” in that sense when describing “interloper[s] intercept[ing] . . . messages and tr[ying] to interfere with communication,” (*id.* at 29:62-63), and “nefarious listeners on the Internet . . . intercept[ing] . . . packets and thus learn[ing] what IP addresses the user was contacting,” (*id.* at 39:49-51), it uses the term in a different sense when describing the claimed embodiments. When used there, the specification uses intercepting to mean receiving a request to look up a network address and, apart from resolving, performing an evaluation on it related to establishing a secure communication link.

For example, in the DNS proxy embodiment cited by Apple, the specification explains that, “[a]ccording to one embodiment, DNS proxy 2610 intercepts all DNS lookup functions from client 2605 and determines whether access to a secure site has been requested (as determined, for example, by a domain name extension, or by reference to an internal table of such sites).” (*Id.* at 40:31-33.) Here, the DNS request is received and evaluated—in this case, to determine whether access to a secure site has been requested. The DNS request is further evaluated to “determine[] whether the user has sufficient security privileges to access the site.” (*Id.* at 40:36-37.) Based on a result of the evaluations, a secure communication link may be established. (*Id.* at 40:37-40.) On top of the evaluations relating to establishing the secure communication link, the DNS request is also separately resolved into an address that is returned to the user’s computer. (*Id.* at 40:44-46.) Thus, “intercepting” does not mean illicitly receiving a request to look up a network address, as proposed by Apple, but receiving it and, apart from resolving it, performing an evaluation on it related to establishing a secure communication link.⁵

⁵ In the case of the ’697 patent claims, the specific evaluation is already recited. (*See, e.g., id.* at claim 1, “intercepting the request consists of receiving the request to determine whether the second network device is available for the secure communications service.”)

Apple also attempts to read in a requirement that “intercepting” must be performed by a specific hardware apparatus: “a proxy computer or device.” This is not the broadest reasonable interpretation of the disputed phrase. There is no basis for this requirement in the claims or the specification. Instead, only dependent claims 15 and 30 recite that the intercepting occurs in a device “separate from the first network device.” These claims confirm that the independent claims do not require a separate “proxy computer or device” to do the intercepting.

The Board should reject Apple’s “intercepting” construction and, if it deems construction necessary, adopt VirnetX’s proposed construction.

G. “Modulation” (Claims 6, 7, 20, and 21)

VirnetX’s Proposed Construction	Apple’s Proposed Construction
No construction necessary; alternatively, the process of encoding data for transmission over a medium by varying a carrier signal	The process of encoding data for transmission over a physical or electromagnetic medium by varying a carrier signal

The meaning of “modulation” is apparent to one skilled in the art without construction. Should the Board deem further construction necessary, however, VirnetX generally agrees with Apple’s proposed construction with one caveat. Although VirnetX agrees that transmission media can be physical or electromagnetic, Apple’s “physical or electromagnetic medium” language might imply that physical media cannot carry electromagnetic signals (e.g., electric current). It is not clear whether Apple intended this implication, but if so, it is

incorrect. To resolve this issue, VirnetX's construction removes the adjectives "physical or electromagnetic" before "medium." Thus, if construed, "modulation" should be construed to mean "the process of encoding data for transmission over a medium by varying a carrier signal."

IV. If Trial Is Instituted, VirnetX Requests an 18-Month Schedule

For the reasons discussed, Apple's Petition cannot be instituted. If trial is instituted in this matter, however, it would be very difficult to complete the proceeding within one year. In addition to the two *inter partes* review petitions against the '697 patent, there are numerous other pending *inter partes* review petitions and reexaminations involving related patents. See Patent Owner's Mandatory Notices Pursuant to 37 C.F.R. § 42.8, Paper No. 5 at 2-5 (identifying copending matters). The sheer number of issues, the overlapping issues (e.g., claim construction), the need for consistency, and other interplay between the numerous proceedings renders their administration complex for the Board and the parties. Thus, if instituted, there is good cause for the Board to set an 18-month schedule for this proceeding pursuant to 35 U.S.C § 316(a)(1) and 37 C.F.R. § 42.100(c).

V. Conclusion

For these reasons, Apple's Petition does not comply with the rules and regulations regarding petitions. Apple has also not met its burden of proving

invalidity of any '697 patent claim because its unpatentability challenges are premised upon incorrect claim constructions.

VirnetX respectfully requests that the Board deny the petition for *inter partes* review.⁶

Respectfully submitted,

Dated: March 6, 2014

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⁶ If trial is instituted, VirnetX reserves its rights to raise additional arguments as to why Apple has failed to carry its burden and why the claims should be confirmed.

Certificate of Service

I certify that I caused to be served on the counsel identified below a true and correct copy of the foregoing Patent Owner's Preliminary Response to Petition for *Inter Partes* Review of U.S. Patent No. 8,504,697 and its cited exhibits by electronic means on March 6, 2014:

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