Paper 48 Entered: September 9, 2015

# UNITED STATES PATENT AND TRADEMARK OFFICE

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#### BEFORE THE PATENT TRIAL AND APPEAL BOARD

# MOTOROLA MOBILITY LLC, Petitioner,

v.

INTELLECTUAL VENTURES I LLC, Patent Owner.

Case IPR2014-00501 Patent 7,136,392 B2

Before MICHAEL W. KIM, PATRICK R. SCANLON, and KRISTINA M. KALAN, *Administrative Patent Judges*.

KALAN, Administrative Patent Judge.

FINAL WRITTEN DECISION 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

#### I. INTRODUCTION

Motorola Mobility LLC ("Petitioner") filed a Petition to institute an *inter partes* review of claims 1–21 of U.S. Patent No. 7,136,392 B2 ("the '392 patent") pursuant to 35 U.S.C. § 311–319. Paper 4 ("Pet."). Intellectual Ventures I LLC ("Patent Owner") filed a Preliminary Response. Paper 8 ("Prelim. Resp."). We instituted trial on all challenged claims. Paper 13 ("Dec.").

During trial, Patent Owner filed a Patent Owner Response (Paper 22, "PO Resp."), which was accompanied by a Declaration from Ahmed Tewfik, Ph.D. Ex. 2004 (the "Tewfik Declaration"). Petitioner filed a Reply to the Patent Owner Response. Paper 28 ("Pet. Reply"). A hearing for this proceeding was held on May 5, 2015. A transcript of the hearing has been entered into the record. Paper 47 ("Tr.").

We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. We determine that Petitioner has shown by a preponderance of the evidence that claims 1–3, 7, 9–12, and 16–18 of the '392 patent are unpatentable. Patent Owner's Motion to Exclude (Paper 35) is dismissed-in-part and denied-in-part.

# A. Related Proceedings

Petitioner represents that the '392 patent has been asserted against it by Intellectual Ventures I LLC and Intellectual Ventures II LLC in *Intellectual Ventures I LLC v. Motorola Mobility LLC*, No. 0:13-cv-61358-RSR (S.D. Fla.) ("the district court case"). Pet. 1–2; Ex. 1007.

#### B. The '392 Patent

The '392 patent relates to a communication network having a plurality of stations that share a communication channel. Ex. 1001, 1:65–67. Each internal queue of a station accumulates and releases, for transmission during an appropriate transmission opportunity, data messages that have a specific traffic classification, and thus, a different level of priority than those accumulated and released by other internal queues of that station. *Id.* at 2:1–7. "[P]referential access to the shared communication channel is given to data messages having higher levels of priority." *Id.* at 2:9–11. The release of data messages having the same level of priority, however, is governed by a set of parameters that is common for all stations of the network. *Id.* at 2:13–16. Thus, the '392 patent states, transmission opportunities are fairly allocated between all queues containing data messages of the same priority level. *Id.* at Abstract.

#### C. Illustrative Claims

Of the challenged claims, claims 1, 7, 9, and 16 are independent. Claim 1 is illustrative of the claims at issue:

## 1. A method comprising:

directing to a first output queue at a first station of a communication network, message data units to be transmitted over a communication medium and having a first traffic classification;

directing to a second output queue at the first station, message data units to be transmitted over the communication medium and having a second traffic classification; and

sensing the communication medium for an opportunity to transmit message data units without interference from message data units transmitted by a second station, according to sets of rules that vary by traffic classification yet are common to the first station and the second station.

Ex. 1001, 11:45-59.

D. Prior Art Supporting Instituted Unpatentability Grounds
Ayyagari '508, U.S. 7,079,508 B2, issued July 18, 2006 (Ex. 1003).

Arun Ayyagari *et al.*, *IEEE 802.11 Quality of Service* — *White Paper*, IEEE 802.11-00/028, Feb. 15, 2000 ("Ayyagari White Paper") (Ex. 1005).

IEEE Standard for Information technology — Telecommunications and information exchange between systems — Local and metropolitan area networks — Specific requirements; *Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications*, ANS/IEEE Std. 802.11 (1999) ("IEEE 802.11 1999") (Ex. 1009).

# E. Instituted Unpatentability Grounds

We instituted an *inter partes* review of claims 1–21 of the '392 patent on the following grounds. Dec. 23.

References	Basis	Claim(s)
		Challenged
Ayyagari '508	§ 102(e)	1–21
Ayyagari White Paper	§ 102(b)	1–9 and 11–21
Ayyagari White Paper and IEEE 802.11 1999	§ 103(a)	10

#### II. ANALYSIS

We have reviewed the Petition, the Patent Owner Response, and Petitioner's Reply, as well as the relevant evidence discussed in those papers. The parties focus their arguments on whether the Ayyagari references are prior art, and also on several terms or common limitations present in certain claims of the '392 patent, namely:

- (A) attempting to initially transmit/as if (claims 4–6, 8, 13–15, and 19–21);
- (B) "means for sensing" (claims 16–21);
- (C) sensing a transmission opportunity (claims 9–15); and
- (D) transmission at a particular opportunity (claims 2, 7, 11, and 17).

#### A. Claim Construction

The Board interprets claims in an unexpired patent using the broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); *In re Cuozzo Speed Techs., LLC*, 793 F.3d 1268, 1277–79 (Fed. Cir. 2015), *reh'g en banc denied*, 2015 WL 4100060 (Fed. Cir. July 8, 2015); *see also* Office Patent Trial Practice Guide, 77 Fed. Reg. 48756, 48766 (Aug. 14, 2012). Under that construction, claim terms 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 patent disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

In the Decision to Institute, we construed various terms reciting "means," in claims 16–20: "means for directing to a first output queue," "means for directing to a second output queue," "means for sensing," "means for allowing," "means for attempting to retransmit," "means for

attempting to initially transmit," and "means for attempting to transmit." Dec. 7–11. Patent Owner indicates that it does not contest the Board's constructions of the construed claim terms. PO Resp. 6. Petitioner relies on these constructions in its Reply. Pet. Reply 9–13. Based on considering anew the complete record now before us, we see no reason to alter our earlier constructions, and maintain the constructions for this Final Written Decision. We see no need to construe expressly any other claim limitations.

## B. Summary of Prior Art

# 1. Ayyagari '508 (Ex. 1003)

Ayyagari '508 discloses providing "Quality of Service assurances in a manner expected in other media to communications over paths that include one or more wireless links." Ex. 1003, Abstract. Ayyagari '508 combines a subnet bandwidth manager at an access point to track allocations of wireless bandwidth, and "incorporates multiple priority levels for packet transmission in a two-prong stochastic scheme." *Id.* This scheme assures that data packets are transmitted based on priority and prior failure to transmit due to a collision. *Id.* at 3:56–57. Specifically, Ayyagari '508 discloses that "packets with a similar priority level are queued together to ensure earlier transmission of higher priority packets than packets having lower priority." *Id.* at 5:30–33.

# 2. Ayyagari White Paper (Ex. 1005)

The Ayyagari White Paper notes "[w]hile IEEE 802.11 provides high bandwidth connectivity in a LAN environment that is suitable for most data applications, it does not meet Quality of Service (QoS) requirements for real-time data traffic applications such as voice and video transmissions." Ex. 1005, 2. The Ayyagari White Paper proposes "the combined use of

resource based admission and traffic flow control and expedited transmission of higher priority data over the shared wireless network as the mechanisms to provide QoS guarantee for real-time application data traffic in IEEE 802.11." *Id.* at Abstract. The Ayyagari White Paper depicts one version of its proposed system of utilizing a tag that "carries one of eight priority values that correspond to one of eight possible service levels" in Figure 1. *Id.* at 5. In the Ayyagari White Paper, the network devices "transmit the frames based on the non-gated head-of-line priority scheme where transmission of the frame with the highest priority in the simple first in first out (FIFO) priority queue is scheduled ahead of the rest of the queued frames." *Id.* 

#### C. Priority Arguments

#### 1. Prior Art Status of Ayyagari '508

Certain dates relevant to this discussion are as follows, in reverse chronological order:

'392 patent filing date August 31, 2001 Ayyagari '508 filing date February 22, 2001

Wentink Declaration alleged reduction to practice by

January 2001

alleged conception date prior to

November 3, 2000

Ayyagari Provisional filing date February 23, 2000

# a. Ayyagari Provisional

Petitioner states that "Ayyagari '508 claims priority to U.S. Provisional Application No. 60/184,290 (Ex. 1005), filed on February 23, 2000, which is also prior to the August 31, 2001 filing date of the '392 patent, and thus is prior art under 35 U.S.C. §102(e)." Pet. 15–16. On its face, Ayyagari '508 discloses, under "Related U.S. Application Data,"

"Provisional application No. 60/184,290, filed on Feb. 23, 2000." Ex. 1003, Cover Page. The Petition further states: "Analysis of the disclosure of Provisional Application No. 60/184,290 (Exhibit 1005) with respect to the claims of the '392 patent, and thus the priority of the Ayyagari '508 patent, is included in the analysis of Ayyagari White Paper (Exhibit 1006), below." Pet. 16 n.2.

Patent Owner argues that "the Petition does not establish that the portions of Ayyagari '508 relevant to this IPR are entitled to the provisional filing date." PO Resp. 51. Patent Owner argues that, because Petitioner has the burden of establishing the Ayyagari '508 102(e) date, and because the Petition does not set forth any evidence that Ayyagari '508 is entitled to the provisional filing date, Ayyagari '508's 102(e) date should be February 22, 2001 rather than February 23, 2000. *Id.* at 51–52.

The Petition provides one claim chart comparing the claims of the '392 patent to Ayyagari '508 (Pet. 17–36), and a separate claim chart comparing the claims of the '392 patent to the Ayyagari White Paper and Ayyagari Provisional (Pet. 38–59). Petitioner also states that the "Ayyagari White Paper is also substantively identical to Provisional Application 60/184,290 [the Ayyagari Provisional]." Pet. 37. In question, however, is not the relationship of the Ayyagari Provisional to the Ayyagari White Paper, but the relationship of Ayyagari '508 to the Ayyagari Provisional.

With respect to entitlement to any earlier effective priority date, a party must identify, specifically, the disclosure in ancestral applications "which do not share the same disclosure," and which allegedly show § 112 support for the relied-upon priority date. *See, e.g., Polaris Wireless, Inc. v. TruePosition, Inc.*, Case IPR2013-00323, slip. op. at 29 (PTAB Nov. 15,

2013) (Paper 9). To link the Ayyagari Provisional with Ayyagari '508, Petitioner relates the claims of the '392 patent to Ayyagari '508, and then, separately, relates the claims of the '392 patent to the Ayyagari Provisional. This triangulation does not meet Petitioner's burden of showing that Ayyagari '508 is entitled to the earlier filing date of the Ayyagari Provisional. Specifically, while the cited portions of the Ayyagari Provisional and Ayyagari '508 may each disclose a certain claim limitation, the disclosures may be in different embodiments or contexts such that the cited portion of the Ayyagari Provisional does not provide an adequate ancestral basis for the cited portion of Ayyagari '508. Petitioner should not expect the Board to search the record and cull the evidence necessary to support Petitioner's arguments. Amazon.com, Inc. v. Personalized Media Comm., LLC, Case IPR2014-01533, slip op. at 6 (PTAB April 20, 2015) (Paper 16); cf., DeSilva v. DiLeonardi, 181 F.3d 865, 866–67 (7th Cir. 1999) ("A brief must make all arguments accessible to the judges, rather than ask them to play archeologist with the record."). Petitioner has not, in its casein-chief, linked the Ayyagari Provisional disclosure with the Ayyagari '508 disclosure in a sufficient manner to meet its burden. Petitioner has not shown that Ayyagari '508 is entitled to a priority date any earlier than its actual filing date of February 22, 2001.

#### b. Wentink Declaration

Petitioner also alleges that the Wentink Declaration and Exhibits, submitted during prosecution of the '392 patent, are insufficient to establish any date of invention prior to the August 31, 2001, filing date of the '392 patent. Pet. 4–5. The Wentink Declaration states that the date of conception

was "[s]ome time before . . . November 3, 2000," and alleges diligence until its "eventual reduction to practice in January 2001." Ex. 1002, 132, 134.

Patent Owner argues that the Wentink Declaration and supporting evidence establish a conception and reduction to practice of the claimed invention prior to the February 22, 2001 filing date of Ayyagari '508. PO Resp. 28. Narrowing the focus of its argument and relying on 37 C.F.R. § 1.131(b) and MPEP § 715.07(III)(A), which requires "(actual) reduction to practice of the invention prior to the effective date of the reference," Patent Owner argues that the Wentink Declaration and evidence show an actual reduction to practice by January 2001. *Id.* at 28–29, 47–51. Patent Owner provides a claim chart comparing the '392 patent claims to "Wentink's Facts and Evidence" to corroborate that Wentink had possession of each element of the claimed invention prior to February 2001. *Id.* at 34–47. Notably, however, apart from the Section 131 declaration, no declaration by or deposition of Mr. Wentink are in the record. Petitioner's argument in the Patent Owner Response, and its claim chart, rely on the Tewfik Declaration as support. Ex. 2004.

Petitioner responds that the Tewfik Declaration is "[t]he only possibly relevant addition to the record" since the Decision to Institute, and that the claim chart linking the claims to the Exhibits to the Wentink Declaration is "facially deficient." Pet. Reply 2. Petitioner argues that (1) Dr. Tewfik's stated understanding of the relevant legal standards is incorrect, in that one cannot show alleged reduction to practice by showing possession of the

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<sup>&</sup>lt;sup>1</sup> For the purposes of this Decision, we refer to Petitioner's inserted page numbers in Exhibit 1002, rather than the original page numbers of the relevant documents.

"heart of the invention" (*id.* at 3); (2) the Tewfik Declaration fails to discuss the Board's claim constructions with regard to the Wentink Declaration and supporting exhibits (*id.*); (3) nothing in the Response "supplements, or corroborates, the Wentink Declaration's inadequate evidence of diligence," (*id.* at 4); (4) the only evidence suggesting Exhibit F represents a reduction to practice of the claimed invention consists of the uncorroborated statements in the Wentink Declaration (*id.*); and (5) Patent Owner takes the position that Mr. Wentink need not be produced for cross-examination (*id.* at 4–5).

As we noted in our Decision to Institute, we are not bound by the implicit determinations of the Examiner regarding the Wentink Declaration. Dec. 12. Nevertheless, upon review of the complete record, we remain unpersuaded by Patent Owner's arguments that the reduction to practice date is prior to the filing date of Ayyagari '508.

Establishing an actual reduction to practice requires three things: (1) construction of an embodiment or performance of a process that met all the limitations of the claims; (2) determination that the invention would work for its intended purpose; and (3) the existence of sufficient evidence to corroborate inventor testimony regarding these events. *Medichem, S.A. v. Rolabo, S.L.*, 437 F.3d 1157, 1169 (Fed. Cir. 2006) (quoting *Cooper v. Goldfarb*, 154 F.3d 1321, 1327, 1330 (Fed. Cir. 1998)); *see Mahurkar v. C.R. Bard, Inc.*, 79 F.3d 1572, 1578 (Fed. Cir. 1996). A rule of reason applies to determine whether the inventor's testimony has been corroborated. *Price v. Symsek*, 988 F.2d 1187, 1195 (Fed. Cir. 1993).

The Wentink Declaration provides exhibits showing activity at specific times from October 2000 to January 2001, including Exhibit F, a

presentation given in January 2001. Ex. 1002, 133–134. As is relevant to Patent Owner's actual reduction to practice argument, the inventor declares:

In January 2001, Greg Chesson did complete a simulator that embodied the VDCF concepts within the D-QoS standard, thereby actually reducing the invention to practice as reflected in Exhibit F. Exhibit F, labeled "Simulation Results for QoS, pDCF, VDCF, Backoff/Retry" and presented to the 802.11 Task Group E in January 2001, provides a number of test results generated from the simulator. *See* slides 11, 20–23, and 27–34, for example.

*Id.* at 134. This alleged reduction to practice date of January 2001 would have been prior to the filing date of Ayyagari '508.

Patent Owner must establish reduction to practice of the subject matter of each of the challenged claims. In our Decision to Institute, we stated that the Wentink Declaration "does not appear to provide sufficient detail relating VDCF as described in the Exhibits to the subject matter of each of the challenged claims." Dec. 14. In response, Patent Owner provides the claim chart in its Response. PO Resp. 34–47.

We are concerned, primarily, at the unavailability of Mr. Wentink to explain the alleged reduction to practice embodied in Exhibit F. In evaluating a Patent Owner's reliance on a declaration, we take into consideration whether Petitioner has had an opportunity to cross-examine the declarant. *Amneal Pharms., LLC v. Endo Pharms. Inc.*, Case IPR2014-00360, slip op. at 4 (PTAB December 3, 2014) (Paper 39). If Patent Owner does not produce a declarant for cross-examination, we will give that declaration little to no weight. *See Mexichem Amanco Holdings S.A. de C.V. v. Honeywell Int'l, Inc.*, Case IPR2013-00576, slip op. at 3 (PTAB Sept. 5, 2014) (Paper 36). Petitioner, upon requesting deposition availability for Mr.

Wentink, was informed by Patent Owner that "[w]ith respect to Mr. Wentink, Patent Owner does not believe it is required, under the rules, to produce Mr. Wentink for deposition." Ex. 1017 (corrected), 1. No further explanation of Patent Owner's interpretation of the rules, or regarding availability of Mr. Wentink for deposition, is before us. Although we have no reason to question Dr. Tewfik's credentials, his value as a witness is compromised heavily by his distance from and *post hoc* evaluation of the circumstances of the alleged reduction to practice of the invention. Patent Owner is correct that it was not *required*, under the rules, to make Mr. Wentink available for cross-examination. Under these circumstances, however, we accord Mr. Wentink's declaration little weight.

The Wentink Declaration states that Exhibit E, a presentation given to the IEEE 802.11 Task Group E in November 2000, set forth a baseline proposal for the D-QoS mechanism. *Id.* at 133. The Wentink Declaration further states that "[a]s part of the Task Group E efforts, Greg Chesson prepared a simulator that embodied concepts proposed to be incorporated within the D-QoS standard." *Id.* The statement that the simulator "embodied concepts proposed to be incorporated" is insufficient to demonstrate that all the limitations of the ultimately claimed invention were to be tested. With no further testimony from Mr. Wentink, the relationships among the Exhibit E proposal, the Exhibit F results, and the ultimately claimed invention remain unclear. Thus, we are not persuaded that Mr. Wentink's testimony supports sufficiently an actual reduction to practice, as it does not persuasively support construction of an embodiment or performance of a process that met all the limitations of the claims, or a determination that the invention would work for its intended purpose.

Furthermore, we are not persuaded that the testimony of Dr. Tewfik corroborates sufficiently the Wentink Declaration, or in and of itself meets the first and second requirements of proof of actual reduction to practice. See Medichem, S.A., 437 F.3d at 1169. As we noted, Dr. Tewfik's value as a witness is limited by his post hoc evaluation of the circumstances and the content of the invention. Dr. Tewfik takes the various Exhibits proffered in the Wentink Declaration and applies them to the subject claims. Although the various Exhibits, as marshalled by Dr. Tewfik, may provide bits and pieces of the ultimately claimed invention, we do not, without further information about the links between the Exhibits, place much weight on the claim chart provided in the Response. We agree with Petitioner that Patent Owner has provided "no additional information regarding what simulation was performed, whether the simulation included all the claim limitations, or even whether any physical embodiment that incorporated or could perform the claim limitations existed prior to the filing of the application for either Ayyagari [']508 or the [']392 Patent itself." Pet. Reply 4. Dr. Tewfik could not determine the technical content of the simulation, which is discussed broadly in Exhibit F, and did not examine any code for the simulation to determine what it actually did. *Id.* (citing Ex. 1018, 13:12–21, 24:17–25:5).

We have considered all of Patent Owner's arguments and evidence in support of the effort to antedate Ayyagari '508. We find that Patent Owner has not carried its burden of producing sufficient evidence and corroboration to demonstrate a reduction to practice date prior to February 2001. Therefore, because the Ayyagari '508 filing date is prior to the '392 patent filing date, Ayyagari '508 constitutes prior art in this proceeding.

# 2. Prior Art Status of the Ayyagari White Paper

Petitioner alleges that the Ayyagari White Paper "was published to the IEEE database of 802.11 WG documents on January 25, 2000." Pet. 36. With its Petition, Petitioner submitted Exhibit 1005 (Ayyagari White Paper) that on its face indicates "Date: February 15, 2000," and Exhibit 1006 (IEEE 802.11 Documents) identifying the Ayyagari paper as "Uploaded" on February 25, 2000. Ex. 1006, 7. We noted in the Decision to Institute that none of these alleged publication dates removes the Ayyagari White Paper as a reference under § 102. Dec. 17.

Patent Owner alleges that the Petition fails to establish that the Ayyagari White Paper is prior art, as the Petition and the expert's "conclusory statements, unsubstantiated by any documentary evidence or testimonial evidence of anyone with knowledge of the alleged publication of Ayyagari White Paper, are entitled to no weight." PO Resp. 54. Patent Owner argues that Petitioner has not met its burden to show that Ayyagari White Paper is a "printed publication" and cannot rely upon evidence raised in its Reply to establish that Ayyagari White Paper is prior art. *Id*.

Petitioner responds that the Ayyagari White Paper (i) on its face, demonstrates that it was submitted as of February 15, 2000; (ii) was published to the IEEE 802.11 Working Group database at least as of February 25, 2000, as shown in Exhibit 1006, and (iii) that Patent Owner has failed to provide additional evidence to change the Board's initial determination that the Ayyagari White Paper is prior art. Pet. Reply 5. Petitioner submits testimony that "all submissions (as opposed to draft standards) uploaded to the IEEE's database were publicly available via an IEEE-maintained FTP site or website, and any member of the public

interested in submissions to any task group could access those submissions at the FTP site or website." *Id.* at 5–6 (citing Declaration of Harry Worstell, Vice Chair of the IEEE 802.11 Working Group from 2000 to 2008, Ex. 1010, 4); *see also* Exs. 1013, 1014. The Ayyagari White Paper itself, according to the testimony of Mr. Worstell, "would have been publicly available as of the upload date and time February 25, 2000 at 7:56:48 AM (Eastern Time) or within a few days thereafter." *Id.* at 6 (citing Ex. 1010, 6).

Although the ultimate determination of whether a document is a printed publication is a question of law, it is a question that is closely based on the underlying facts and circumstances surrounding the disclosure of a document to members of the public. *Suffolk Techs., LLC v. AOL Inc.*, 752 F.3d 1358, 1364 (Fed. Cir. 2014); *SRI Int'l, Inc. v. Internet Sec. Sys., Inc.*, 511 F.3d 1186, 1192 (Fed. Cir. 2008); *In re Klopfenstein*, 380 F.3d 1345, 1350 (Fed. Cir. 2004). Public accessibility is a key question in determining whether a document is a printed publication and is determined on a case-bycase basis. *Suffolk Techs.*, 752 F.3d at 1364. To qualify as a printed publication, a document "must have been sufficiently accessible to the public interested in the art." *In re Lister*, 583 F.3d 1307, 1311 (Fed. Cir. 2009).

"A given reference is 'publicly accessible' upon a satisfactory showing that such document has been 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." *SRI Int'l*, 511 F.3d at 1194 (quoting *Bruckelmyer v. Ground Heaters, Inc.*, 445 F.3d 1374, 1378 (Fed. Cir. 2006)).

The Ayyagari White Paper, on its face, has a date of February 15, 2000. Ex. 1005, 1. The IEEE 802.11 Documents webpage indicates that the Ayyagari White Paper was uploaded on February 25, 2000. Ex. 1006, 7. The question of whether the upload rendered the Ayyagari White Paper publicly accessible was addressed persuasively by Petitioner's deponent Harry Worstell, and not challenged by Patent Owner. To that end, we determine that evidence submitted with Petitioner's Reply is properly before us because (1) the Petition provided sufficient evidence to make at least an initial determination that the Ayyagari White Paper was publicly accessible; (2) the evidence was submitted in reply to Patent Owner's arguments; and (3) Patent Owner had an opportunity to challenge the evidence, in particular, the opportunity to cross-examine Mr. Worstell.

The evidence submitted with the Petition, and supplemented with properly submitted evidence, supports that the Ayyagari White Paper was publicly available as of at least February 25, 2000. The IEEE reference, as explained by Mr. Worstell, illustrates that the linked document was disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter or art exercising reasonable diligence could locate it. Ex. 1010, 4. We conclude that the Ayyagari White Paper was published at least as early as February 25, 2000, for the same reasons explained in the Decision to Institute. Patent Owner on this complete record does not show persuasively that the sources Petitioner relies upon to show a publication date are incorrect. Accordingly, we determine that Petitioner has met its burden of showing that the Ayyagari White Paper is prior art to the '392 patent.

D. Analysis of Unpatentability Challenges Group A: Claims 4–6, 8, 13–15, and 19–21: Attempting to Transmit/As If

Claims 4–6, 13–15, and 19–21 of the '392 patent each require attempting to "initially transmit a first message data unit . . . as if an unsuccessful attempt to transmit the first message data unit had already been made during a previous transmission opportunity." PO Resp. 7 (citing Ex. 2004 ¶ 31). Patent Owner argues that neither Ayyagari reference discloses this limitation, as the Ayyagari system is not concerned with "internal collisions" or pre-emption. *Id.* at 8.

Patent Owner characterizes "internal collision" or pre-emption as a situation in which a "single station with multiple schedulers could possibly attempt to transmit messages from multiple queues within that station at the same time." *Id.* at 2. Patent Owner calls this scenario an "internal collision" because "it is similar to an 'external collision' in which multiple stations in the network attempt to transmit messages at the same time." *Id.* Petitioner characterizes an "internal collision" as the situation in which, "when two queues within a station have data that are ready to transmit at the same time, the scheduling coordination function in the station will pick one packet from one queue (the higher priority queue) and identify it as the packet to be transmitted." Pet. Reply 7.

Patent Owner states that, in relation to this limitation, "this message that's being preempted, is going to be treated as if it's already tried to go out and access the medium, and it's been backed off." Tr. 29:16–18. Patent Owner emphasizes that the "initially transmit" language is important, in that

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before the message that is being preempted has even "gone out and been interfered with" it is given the backoff treatment. *Id.* at 35:10–12.

# 1. Ayyagari '508

Petitioner relies on the following language in Ayyagari '508 to disclose the disputed limitation: "a packet with higher priority than a packet waiting during step 640 may be transmitted if the higher priority packet has a shorter wait time even if it results in the superseded packet being forced into another backoff state." Pet. 22 (citing Ex. 1003, 13:61–65).

Patent Owner argues that Petitioner's claim charts fail to show where in Ayyagari '508 the "attempting to initially transmit" limitation is found. PO Resp. 8–9. Patent Owner alleges that Ayyagari '508 merely describes successful transmissions and unsuccessful transmissions, which does not teach or suggest "attempting to initially transmit." *Id.* at 10. Patent Owner criticizes the portion of Ayyagari '508 cited by Petitioner above (Ex. 1003, 13:61–65) as merely reciting "a characteristic of a communication system that prioritizes packets." *Id.* at 11. According to Dr. Tewfik, this passage indicates that the transmission of a higher priority packet before a lower priority packet "sometimes causes the lower priority packet to enter another backoff state and that a lower priority packet with a short time to live may be transmitted before a higher priority packet to save the lower priority packet from being discarded." Ex. 2004 ¶ 36.

Petitioner maintains that the above-quoted sentence of Ayyagari '508 discloses the "attempting to initially transmit" limitation. Pet. Reply 8 (citing Ex. 1003, 13:61–65; Ex. 1019 ¶¶ 7–15, 20–21). Dr. Roy opines that a person of ordinary skill in the art "would understand this passage to plainly disclose that when two packets are ready for transmission at the same time,

the higher priority packet will be transmitted and the lower priority packet will be forced into another backoff state." Ex. 1019 ¶ 21. In Ayyagari '508 the "internal" and "external" collisions are treated similarly, according to Petitioner. Pet. Reply 8.

We credit Dr. Tewfik's testimony that the quoted sentence of Ayyagari '508 simply "describes a buffer management strategy that transmits a higher priority packet before a lower priority packet, *without regard* to the potential consequence that the lower priority packet may be forced into another backoff state because it was not transmitted first." Ex. 2004 ¶ 38. The sentence focuses on the transmission of the higher priority packet, without much concern for the consequences to the lower priority packet. We are not persuaded by Petitioner's contentions that the "even if" language means that Ayyagari '508 "clearly describes superseding the lower priority queue and backing it off." Tr. 7:16–18. We agree with Patent Owner that the "even if" language demonstrates that the result of a superseded packet being forced into another backoff state is simply a possibility, not an automatic occurrence. PO Resp. 12.

We also do not discern any persuasive evidence that the feature of "attempting to initially transmit a first message data unit from the second output queue" as if an unsuccessful attempt to transmit the first message data unit had already been made is disclosed in Ayyagari '508 in a manner sufficient to support an anticipation position. A plain reading of the portions of Ayyagari '508 quoted by Petitioner does not yield an answer to the "initially transmit" question. Reading an "attempting to initially transmit" limitation into the sentence quoted by Petitioner (Ex. 1003, 13:61–65) would credit Ayyagari '508 with more complexity than that sentence actually

provides. The quoted sentence of Ayyagari '508 does not indicate whether the superseded packet is being initially transmitted; it would appear that it is not, because it is being forced into "another backoff state." Altogether, Petitioner's evidence is insufficient to support Petitioner's anticipation argument concerning the aforementioned claim limitation.

## 2. Ayyagari White Paper

Patent Owner argues that the portions of the Ayyagari White Paper relied upon by Petitioner do not support Petitioner's allegation that the Ayyagari White Paper discloses the attempting to initially transmit claim limitations. PO Resp. 13. The statements on which Petitioner relies, according to Patent Owner, do not explicitly state that any attempt is made to initially transmit a message as if it had already had an unsuccessful transmission attempt. *Id.* at 14. In fact, Patent Owner argues, certain language relied upon by Petitioner regarding incrementation of initial value of aCW<sub>min</sub> undermines Petitioner's assertions. *Id.* at 16.

Petitioner argues that the Ayyagari White Paper includes the same treatment of "external collisions" as the existing 802.11 MAC protocol. Pet. Reply 8. Regarding "internal collisions," Petitioner argues that the Ayyagari White Paper's explanation that transmission of a frame with the highest priority is scheduled ahead of the rest of the queue frames informs one of skill in the art that, when two packets simultaneously are ready for transmission, the scheduling coordination function forces the lower priority packet to defer to the higher priority packet, such that the lower priority packet enters a backoff state. *Id*.

We are unpersuaded by Petitioner's arguments, for reasons similar to those discussed *supra* relative to Ayyagari '508. There is no persuasive

evidence that "attempting to initially transmit a first message data unit from the second output queue," as if an unsuccessful attempt to transmit the first message data unit had already been made, is disclosed expressly in the Ayyagari White Paper in a manner sufficient to support an anticipation position. Even if we were to read the Petitioner's quoted FIFO transmission situation (Ex. 1005, 5) as an attempt at initial transmission of a lower priority message, there is no indication that the lower priority packet in the Ayyagari White Paper scenario is being treated as if an unsuccessful attempt to transmit it had already been made.

Petitioner's citation to the portion of the Ayyagari White Paper explaining determination of the backoff period and CW parameters also fails to address the "attempting to initially transmit" limitation. Pet. 44–46; Ex. 2004 ¶¶ 45–46. We agree with Dr. Tewfik that the quoted sentence, "[t]he CW parameter takes an initial value of aCW<sub>min</sub> that is incremented upon each consecutive unsuccessful transmission attempt by a STA," discusses unsuccessful transmission attempts, rather than an attempt to initially transmit. Ex. 2004 ¶ 46; Ex. 1005, 7.

#### 3. Claim 8

Patent Owner argues that the "attempting to transmit limitation of Claim 8 essentially states that a message preempted by an internal collision is backed off as if it had suffered an external collision." PO Resp. 18. Patent Owner further argues that Petitioner agrees that "the attempting to transmit limitation of Claim 8 is, for purposes of this IPR, essentially the same as the attempting to initially transmit limitation of Claim 4." Id (citing Pet. 12; Ex. 2004 ¶ 49). Petitioner does not specifically address claim 8 in its Reply.

Claim 8 is unlike the remainder of the Group A claims in that its language, "attempting to transmit a message data unit from the second output queue, over which a message data unit from the first output queue was preferentially transmitted, after an interval of random duration applicable to retransmission of an externally colliding message data unit at the second level of priority" (Ex. 1001, 47–52) does not mention "attempting to initially transmit." However, our discussion of the "even if" language of Ayyagari '508 applies to claim 8, in that Petitioner has not established that the "even if" language clearly describes forcing the lower priority packet into a backoff state. Pet. 27 (referring to claim 4 analysis). Similarly, our foregoing analysis of the backoff state outlined in the Ayyagari White Paper applies to claim 8, in that the Ayyagari White Paper discusses actual unsuccessful transmission attempts, rather than imposing an interval of random duration applicable to retransmission of an externally colliding message data unit. Pet. 50 (referring to claim 4 analysis).

On this record, we are not persuaded that Petitioner has shown, by a preponderance of the evidence, that Ayyagari '508 or the Ayyagari White Paper anticipate claims 4–6, 8, 13–15, and 19–21 of the '392 patent.

Group B: Claims 16–21: "Means for Sensing"

Regarding the "means for sensing" limitation, Patent Owner argues that Figure 3 of the '392 patent illustrates that "one fundamental aspect of the invention of Claims 16–21 is that each queue has its own scheduler." PO Resp. 19. Conversely, Patent Owner argues, the Ayyagari references "imply that each station employs a single scheduler that schedules all of the queues of the station." *Id.* at 20. Patent Owner argues that Ayyagari '508's scheme schedules just one queue for transmission during a particular

transmission opportunity. *Id.* Patent Owner argues that the Ayyagari White Paper discloses a "head-of-line priority scheme to schedule which queue will transmit a message." *Id.* 

Petitioner argues that, contrary to Patent Owner's position that the "means for sensing" limitation requires separate schedulers for each queue, as allegedly shown in Figure 3, the '392 patent allows that a single scheduler can be used to coordinate all queues. Pet. Reply 11–12 (citing Ex. 1001, 6:14–19). Petitioner argues that both Ayyagari '508 and the Ayyagari White Paper disclose each part of the algorithms, as adopted by the Board, for the "means" limitations, as shown by Petitioner's chart. Pet. Reply 9–11.

We have reviewed the evidence presented by the parties and are not persuaded that the '392 patent requires a separate scheduler for each queue. In our construction of the "means for sensing" limitation, we included the step that "each output queue competes for transmission opportunities using a coordinated scheduling function." Dec. 10 (citing Ex. 1001, 6:46–7:1). According to Patent Owner, "CF Schedulers" 52[0], 52[1], through 52[n], shown in Figure 3, are part of this structure. PO Resp. 19 (citing Ex. 2004 ¶ 50). Although Figure 3 shows these CF Schedulers as separate boxes, they all are located within a bigger box identified as Media Access and Scheduling Coordination Function. Located adjacent the Media Access and Scheduling Coordination Function box is another box, within which are separate boxes identified as Queue[0], Queue[1]... Queue[n]. Nothing diagrammatically connects the Media Access and Scheduling Coordination Function box with the box containing the Queues.

We are persuaded that a person of ordinary skill in the art would understand Figure 3 to mean that "a single software function coordinates

scheduling operations for all of the queues," because "within a single station, there necessarily must be coordination and sharing of information between the separate queues." Ex.  $1019 \, \P \, 10 \, (cited \, in \, \text{Pet. Reply 12})$ . Dr. Roy further testifies that the boxes 52[0], 52[1], through 52[n] are "components that perform the scheduling function" but that that the "entire box . . . is more appropriately identified as the complete scheduler for '392." Ex. 2007, 11:10-19. We do not agree with Patent Owner that Figure 3 shows "that each queue has its own scheduler." PO Resp.  $18-19 \, (\text{citing Ex. } 2004 \, \P \, 50)$ . As set forth in the Specification, scheduler 52, which is not specifically identified in Figure 3, "prioritizes the transmission of data message units *from each queue* in accordance with a defined access control algorithm." Ex. 1001, 6:14-19 (emphasis added). This disclosure, read together with the other disclosures, provides for separate treatment for each queue, but with a single scheduler.

We are persuaded by Petitioner's evidence that both Ayyagari '508 and the Ayyagari White Paper disclose each part of the algorithms for the "means for sensing" limitation.

Group C: Claims 9–15: Sensing a Transmission Opportunity
Patent Owner argues that plain meaning of the limitation "a
transceiver operative to . . . sense the communication medium for an
opportunity to transmit the message data units from *each* of the first and
second output queues" of claims 9–15 is that the system must sense the
medium for a transmission opportunity for *each* output queue, not just one of
the queues. PO Resp. 21. Patent Owner relies on Figure 7 of the '392 patent
to illustrate its contention that algorithm step 102 tests each queue prior to
determining which queue has the highest priority and will transmit. *Id.* at

22–23. Patent Owner further argues that the Specification makes clear that "sensing the medium is done *before* checking whether higher priority queues have a message scheduled for transmission, meaning that the medium is sensed for a transmission opportunity *for each queue*—even queues that are preempted by a higher priority queue." *Id.* at 23–24.

Regarding the two asserted references, Patent Owner argues that both Ayyagari '508 and the Ayyagari White Paper "implicitly disclose[] a system that schedules only one queue to transmit a message at a time and senses the medium for a transmission opportunity only for the scheduled queue." PO Resp. 24–25, 26. Each situation disclosed in Ayyagari '508, according to Patent Owner, "share[s] the common attribute that they all ensure that just one queue is scheduled for transmission during each transmission opportunity." *Id.* at 25. The Ayyagari White Paper, according to Patent Owner, discloses a "head-of-line priority scheme," which is a simple FIFO queue that schedules one queue to transmit a frame during a particular transmission opportunity. *Id.* at 26.

Petitioner argues that "Patent Owner misreads the claim language as requiring a separate scheduler for each queue, and contends that the transceiver must sense the communication medium separately for each queue." Pet. Reply 13. Petitioner interprets the '392 patent as requiring a single transceiver that listens to ("senses") the communications medium for opportunities to transmit messages from the station. *Id.* at 13. Petitioner argues that "Patent Owner's reliance on internal functions performed at the separate queues, after the transceiver has sensed a transmission opportunity, is simply misplaced." *Id.* at 14. In this light, Petitioner maintains that both Ayyagari references disclose a transceiver operative to determine whether

the communication medium is busy or idle, and the various operations for evaluating which queue ultimately attempts to transmit data. *Id.* 

We are unpersuaded that the language of the claims requires a transceiver that acts as Patent Owner urges. The transceiver is operative to sense the communication medium for an opportunity to transmit. Ex. 1001, 13:1–3. Patent Owner argues that the transceiver senses the communication medium for an opportunity to transmit the message data units from each of the first and second output queues, but we can find no requirement that it must do so separately for the first and second output queues. The transceiver simply senses the communication medium for an opportunity to transmit message data units, regardless of where they originate, that are available for transmission. As described in the '392 patent, "[o]nly when a station has determined [via the transceiver] that the medium has been idle for this required duration may it attempt to transmit any of the data messages within its data buffers (queues) 34." Ex. 1001, 6:31–34, Fig. 2 (showing Data Buffers (Queues) 34 and Transceiver 40). The Specification does not require sensing an opportunity to transmit from each of the first and second output queues, but rather from "any of the data messages within its data buffers."

We credit Dr. Roy's testimony that "both Ayyagari references disclose a transceiver operative to determine whether the communication medium is busy or idle." Ex. 1019 ¶ 35. Ayyagari '508 discloses a node that listens to the communication medium for a predetermined interval. Ex. 1003, 12:25–29. The Ayyagari White Paper discloses a CSMA/CA protocol, in which a transceiver senses the medium to determine whether the medium is busy. Pet. 53 (citing Ex. 1005, 2). This alone would meet the

limitation of the claim language, as we understand it. Even taking it a step further, as Patent Owner urges, and requiring that that each queue effectively be informed of a transmission opportunity by the transceiver, the transceivers of Ayyagari '508 and the Ayyagari White Paper coordinate the input from the transceiver with the internal scheduling functions to queue up a packet for transmission. Ayyagari '508 discloses a contention resolution scheme, coupled with a scheme for queueing packets, to transmit a packet based on information from the transceiver. Ex. 1003, 13:57–59. The Ayyagari White Paper discloses a non-gated, head of line priority scheme to schedule frame transmissions. Ex. 1005, 5–7.

Thus, we are persuaded that Petitioner has shown, by a preponderance of the evidence, that the "transceiver operative to sense the communication medium for an opportunity to transmit the message data units" claim limitation is met both by Ayyagari '508 and the Ayyagari White Paper.

Group D: Claims 2, 7, 11, and 17: Transmission at a Particular Opportunity

Claims 2, 7, 11, and 17 each require that messages "be transmitted during a particular opportunity to transmit," according to certain sets of rules.

Patent Owner argues that the Ayyagari systems always avoid the situation in which "the first and second output queues each contain message data units scheduled to be transmitted during a particular opportunity to transmit," because both Ayyagari references disclose a system that schedules only one message in one queue to be transmitted during a particular transmission opportunity. PO Resp. 27.

Petitioner responds that both Ayyagari references disclose procedures for handling Patent Owner's so-called "internal collisions." Pet. Reply 15. Specifically, Petitioner argues that in both references, higher priority packets are scheduled to transmit, while lower priority messages are forced into a backoff state. *Id.* 

In this instance, we agree with Petitioner that both Ayyagari references specifically contemplate and disclose the scenario in which two queues have data that is ready to be transmitted at the same time. *See* Ex.  $1019 \, \P \, 21-22$ , 39 (citing Ex. 1003, 13:61-65; Ex. 1005, 5).

On this record, we are persuaded by Petitioner's arguments that Ayyagari '508 and the Ayyagari White Paper, by a preponderance of the evidence, anticipate claims 2, 7, 11, and 17 of the '392 patent.

# E. Remaining Claim Elements; Claims 1, 3 and 10

We have reviewed the arguments presented in the Petition and the supporting evidence regarding the anticipation of claims 1, 3, and 10, and obviousness of claim 10, which were not disputed by Patent Owner in its Response. Pet. 15–21, 29, 36–43, 52–53. Patent Owner, in its Response, relies solely on its arguments and evidence concerning claims 2, 4–9, and 11–21. *See generally* PO Resp. In the Scheduling Order, we cautioned Patent Owner that any arguments for patentability not raised in the Response would be deemed waived. Paper 14, 3. After reviewing of the arguments and evidence presented concerning the remaining claims 1, 3, and 10, we determine, by a preponderance of the evidence, that Ayyagari '508 expressly discloses the elements of claims 1, 3, and 10; the Ayyagari White Paper expressly discloses the elements of claims 1 and 3; both references each disclose the remaining claim elements of disputed independent claim 9, from

which claim 10 depends; and that the combination of the Ayyagari White Paper and IEEE 802.11 1999 renders obvious each and every limitation of claim 10. We conclude that claims 1, 3, and 10 are anticipated by Ayyagari '508, claims 1 and 3 are anticipated by the Ayyagari White Paper, and claim 10 is obvious in view of Ayyagari White Paper and IEEE 802.11 1999.

#### F. Real Parties in Interest

The Petition, in its real-party-in-interest section, identified Google as a party that holds more than a 10% interest of Petitioner. Dec. 6. In the Decision to Institute, we determined that the Petition sufficiently identified all real parties-in-interest pursuant to 35 U.S.C. § 312(a)(2). *Id.* at 7. Patent Owner argues that the Decision to Institute relies on a legally incorrect interpretation of the statute. PO Resp. 59. In its Response, Patent Owner presents no substantially new arguments that require revisiting our determination regarding identification of real parties-in-interest. We, therefore, decline to dismiss the Petition for the same reasons given in the Decision to Institute.

#### G. Patent Owner's Motion to Exclude

Patent Owner filed a Motion to Exclude (Paper 35, "Mot. to Excl."), to which Petitioner responded (Paper 41, "Resp. to Mot. to Excl.") and on which Patent Owner filed a Reply (Paper 43, "Reply on Mot. to Excl."). Patent Owner's motion seeks to exclude (i) Exhibit 1005 (Ayyagari White Paper) as lacking foundation, irrelevant and hearsay; (ii) Exhibit 1006 (IEEE Standards Association Website Printout) as irrelevant and confusing; (iii) paragraphs 23 and 59 of Exhibit 1008 and paragraph 6 of Exhibit 1019 (Dr. Roy's Declarations) as deficient for lack of personal knowledge; (iv) Exhibit 1010 as untimely, and paragraphs 13–15 for lack of personal knowledge; (v)

Exhibits 1013 and 1014 as untimely and hearsay; and (vi) Exhibits 1016 and 1017 as irrelevant and likely to confuse issues. Mot. to Excl. 1–15. Petitioner argues that none of the evidence objected to by Patent Owner should be excluded. Resp. to Mot. to Excl. 1–15.

We do not rely upon paragraphs 23 and 59 of Exhibit 1008, paragraph 6 of Exhibit 1019, or Exhibit 1016 in our present determination. We therefore need not decide the Motion to Exclude as to those Exhibits; it is dismissed as moot.

The moving party has the burden of proof to establish that it is entitled to the requested relief. 37 C.F.R. § 42.20(c). A motion to exclude is neither a substantive sur-reply, nor a proper vehicle for arguing whether a reply or supporting evidence is of appropriate scope. *Zynga Inc. v. Personalized Media Commc'ns, LLC*, IPR2013-00162, slip op. at 3 (PTAB Aug. 28, 2013) (Paper 15); *Berk-Tek LLC v. Belden Tech., Inc.*, IPR2013-00057, slip op. at 3 (PTAB Oct. 31, 2013) (Paper 39).

Patent Owner's objections to Exhibits 1005, 1006, 1010, 1013, 1014, and 1017 go more to the weight that the information disclosed therein should be afforded, rather than to its admissibility. It is within our discretion to assign the appropriate weight to be accorded to the information in Exhibits 1005, 1006, 1010, 1013, 1014, and 1017. The Board, sitting as a non-jury tribunal with administrative expertise, is well-positioned to determine and assign appropriate weight to evidence presented. *Gnosis S.P.A. v. S. Ala. Med. Sci. Found.*, IPR2013-00118, slip op. at 43 (PTAB June 20, 2014) (Paper 64); *see also Donnelly Garment Co. v. NLRB*, 123 F.2d 215, 224 (8th Cir. 1941) ("One who is capable of ruling accurately upon the admissibility of evidence is equally capable of sifting it accurately after it has been

received."). We, thus, decline to exclude Exhibits 1005, 1006, 1010, 1013, 1014, and 1017. Moreover, we agree with Petitioner that Exhibits 1010, 1013, and 1014 are evidence that properly responds to arguments made by Patent Owner in its Response. Resp. to Mot. to Excl. 11, 12–14; 37 C.F.R. § 42.23.

Regarding Exhibit 1006, we are persuaded by Petitioner's arguments that the testimony of Mr. Worstell (Ex. 1010) authenticates Exhibit 1006. Resp. to Mot. to Excl. 7–8. Similarly, we are persuaded that Exhibit 1010, paragraphs 13–15, reflect testimony based on Mr. Worstell's personal knowledge and should not be excluded.

Accordingly, the Motion to Exclude is *dismissed* as to paragraphs 23 and 59 of Exhibit 1008, paragraph 6 of Exhibit 1019, and Exhibit 1016, and *denied* as to Exhibits 1005, 1006, 1010, 1013, 1014, and 1017.

#### **SUMMARY**

Petitioner has demonstrated, by a preponderance of the evidence, that claims 1–3, 7, 9–12, and 16–18 of the '392 patent are unpatentable under 35 U.S.C. § 102(e) as anticipated by Ayyagari '508, that claims 1–3, 7, 9, 11–12, and 16–18 are unpatentable under 35 U.S.C. § 102(b) as anticipated by the Ayyagari White Paper, and that claim 10 is unpatentable under 35 U.S.C. § 103(a) as obvious over the Ayyagari White Paper and IEEE 802.11 1999. Petitioner has not demonstrated, by a preponderance of the evidence, that claims 4–6, 8, 13–15, and 19–21 of the '392 patent are unpatentable under 35 U.S.C. § 102(e) as anticipated by Ayyagari '508 or unpatentable under 35 U.S.C. § 102(b) as anticipated by the Ayyagari White Paper. This is a Final Written Decision of the Board under 35 U.S.C. § 318(a).

# ORDER

For the reasons given, it is

ORDERED that Patent Owner's Motion to Exclude is *dismissed* as to Paragraphs 23 and 59 of Exhibit 1008, Paragraph 6 of Exhibit 1019, and Exhibit 1016, and *denied* as to Exhibits 1005, 1006, 1010, 1013, 1014, and 1017;

FURTHER ORDERED that claims 1–3, 7, 9–12, and 16–18 of the '392 patent are *unpatentable*;

FURTHER ORDERED that claims 4–6, 8, 13–15, and 19–21 of the '392 patent are *patentable*; and

FURTHER ORDERED that parties to the proceeding seeking judicial review of this final written decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

Case IPR2014-00501 Patent 7,136,392 B2

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