

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CISCO SYSTEMS, INC.,
Petitioner,

v.

VIDEO SOLUTIONS PTE. LTD.,
Patent Owner.

IPR2024-00194
Patent 9,204,099 B2

Before MICHAEL R. ZECHER, BARBARA A. PARVIS, and
JULIET MITCHELL DIRBA, *Administrative Patent Judges*.

DIRBA, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

On November 21, 2023, Cisco Systems, Inc. (“Petitioner”) filed a petition requesting an *inter partes* review of claims 3–6 and 10 of U.S. Patent No. 9,204,099 B2 (Ex. 1001, “the ’099 patent”). Paper 2 (“Pet.”). Petitioner filed a Declaration of A.L. Narasimha Reddy, Ph.D. (Ex. 1003) with its Petition. Video Solutions Pte. Ltd. (“Patent Owner”) timely filed a Preliminary Response (Paper 6, “Prelim. Resp.”), along with a Declaration of Dr. Jacob Sharony (Ex. 2001).

An *inter partes* review may not be instituted unless “the information presented in the petition . . . and any response . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a).

Having reviewed the parties’ papers and the evidence of record, we are not persuaded to discretionarily deny institution, and we determine that Petitioner has shown a reasonable likelihood it will prevail in establishing the unpatentability of at least one challenged claim. Accordingly, we institute an *inter partes* review.

I. BACKGROUND

A. Related Matters

The parties indicate that the ’099 patent has been asserted in *Video Solutions Pte. Ltd. v. Cisco Systems, Inc.*, 2:23-cv-00222 (E.D. Tex.) (“the Texas litigation”). Pet. 82; Paper 5 (Patent Owner Mandatory Notices), 1. The parties identify no other related matters. *Id.*

B. The Petition's Asserted Grounds

Petitioner asserts the following grounds of unpatentability (Pet. 11):

Claim(s) Challenged	35 U.S.C. ¹ §	Reference(s)/Basis
3, 10	103(a)	Setton, ² Baker ³
4–6	103(a)	Setton, Baker, Wong ⁴
3, 10	103(a)	Apostolopoulos, ⁵ Baker
4–6	103(a)	Apostolopoulos, Baker, Wong

C. The '099 Patent

The challenged claims in the '099 patent relate to “mixed topology [video] conferencing networks,” which include both mesh-connected and non-mesh-connected endpoints. Ex. 1001, 1:13–17; *see id.* at 18:25–55 (claims 3–6), 19:1–21 (claim 10).⁶

¹ The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, 285–88 (2011), revised 35 U.S.C. § 103 effective March 16, 2013. We refer to the pre-AIA version of § 103 because the application leading to '099 patent was filed on January 31, 2013, claiming priority to an application filed on February 1, 2012 (Ex. 1001, codes (22), (60)).

² US 2010/0287238 A1, published Nov. 11, 2010 (Ex. 1005).

³ US 8,581,958 B2, filed Apr. 18, 2011, issued Nov. 12, 2013 (Ex. 1006).

⁴ US 2009/0232129 A1, published Sep. 17, 2009 (Ex. 1009).

⁵ US 2005/0080894 A1, published Apr. 14, 2005 (Ex. 1007).

⁶ The Specification of the '099 patent also describes a teleconferencing system that “provide[s] a virtual physical context for a multiparty video call so that there is a sense of position of people and things with respect to each other.” Ex. 1001, 3:23–27; *see, e.g., id.* at 1:14–15, 1:30–33. However, the five claims challenged in this proceeding are not directed to this aspect of the '099 patent's disclosure.

In its background section, the '099 patent explains that “[m]ulti-party videoconferences [were] typically hosted by a Multiparty Control Unit (MCU),” which received endpoints’ video feeds and consolidated those feeds for presentation to the endpoints. Ex. 1001, 1:34–39. “In a multipoint conference employing an MCU[,] endpoints [were] interconnected in a star, or multi-star, topology.” *Id.* at 2:33–34. Alternatively, some prior art teleconferencing systems used a “mesh configuration,” in which each endpoint was directly connected to each other endpoint. *Id.* at 2:34–37; *see id.* at Fig. 2 (illustrating mesh configuration). Although “MCUs typically permit[ted only] limited independent control of what images are promoted to full-scale size” (*id.* at 1:40–41), a mesh configuration allowed “each endpoint . . . complete freedom to present video and other collaboration material uniquely and independently of the way it [was] presented at other endpoints” (*id.* at 2:34–40). In addition, some prior networks allowed a non-mesh connected endpoint to “participate in a mesh conference but without the personal control over video content.” *Id.* at 15:38–41; *see id.* at 4:52–53, Fig. 8 (illustrating a “typical prior art” mixed topology network).

The '099 patent seeks to improve upon the existing art by providing a filmstrip to a non-mesh endpoint in a mixed topology network so that the non-mesh endpoint user can “exercise the same control over [its] video presentation as would a mesh connected user.” Ex. 1001, 15:38–49. A “filmstrip consists of a frame strip containing reduced size video feeds from the various participants.” *Id.* at 4:63–65; *see id.* at 5:39–42 (“In one embodiment the filmstrip is located near the lower edge of the screen and is a single row of thumbnails . . .”). Using the filmstrip, a user may specify which video feed(s) should be “promoted” (i.e., “displayed at a larger

scale”) on its display. *Id.* at 4:65–5:3; *see, e.g.*, 6:13–41 (exemplary method of promotion), 7:38–40 (changes local to endpoint).

Figure 9 (reproduced below) “illustrates a multiparty conference embodying the invention.” Ex. 1001, 16:6–7.

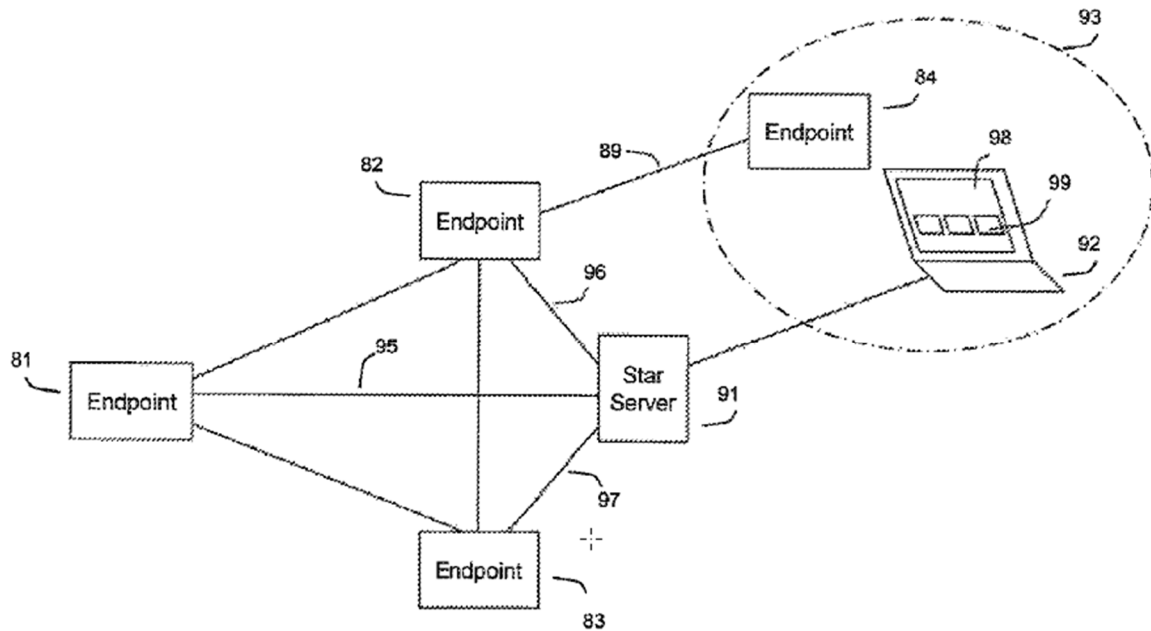


Fig 9

Figure 9 depicts mesh-connected endpoints 81, 82, 83; star endpoint 84; star server 91; computer 92; and various connections between these components. Of note, star endpoint 84 is directly connected to mesh endpoint 82 via link 89 (and is indirectly connected to the other endpoints via mesh endpoint 82). Star endpoint 84 and associated computer 92 and are co-located 93 (*id.* at 16:10–12) and may also be in the same device (*id.* at 16:20–21). Computer 92 may display webpage 98 (hosted by star server 91), which includes filmstrip 99. *Id.* at 16:12–16.

Figure 10 (reproduced below) shows mesh endpoint 82 “adapted to include a Star Proxy function, similar to an embedded MCU.” Ex. 1001, 16:36–38.

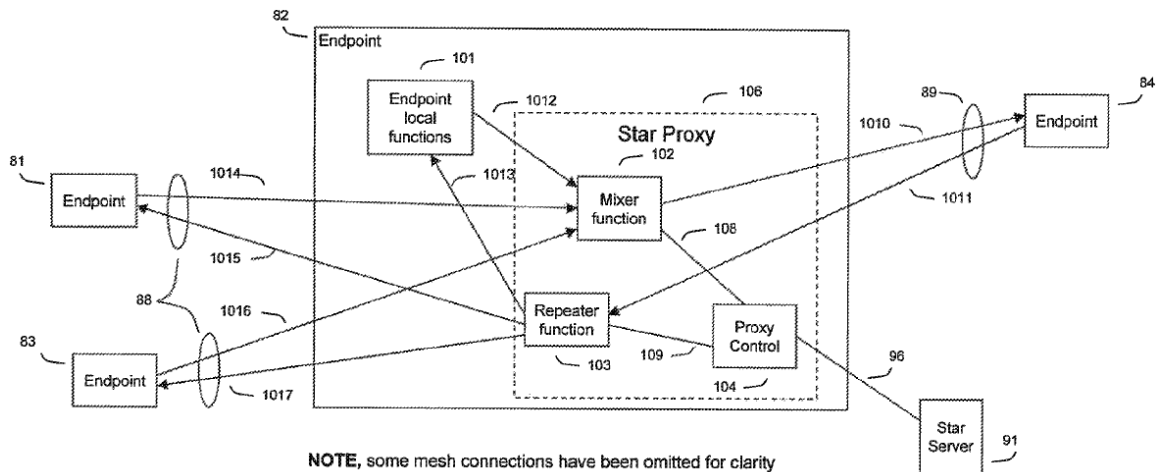


Fig 10

Figure 10 depicts most of the same components as Figure 9, but also depicts mesh endpoint 82 as including endpoint local functions 101 and star proxy 106 (which has mixer function 102, repeater function 103, and proxy control 104). “The proxy allows the endpoint 84 to participate in the conference in much the same way as if it were part of the mesh topology.” *Id.* at 17:47–49. Proxy control 104 communicates with other mesh endpoints 81, 83 to set-up a mesh conference. *Id.* at 16:47–51. Together, mixer 102 and repeater 103 receive media from mesh endpoints 81, 82, 83 and local endpoint 101 and output media to those endpoints. *Id.* at 16:53–64. Endpoint local functions 101, proxy control 104, mixer 102, and repeater 103 “are shown as discrete functions for the purpose of making the invention clear,” but “[i]n many embodiments these functions may be much more integrated and not easily identifiable as discrete functions.” *Id.* at 17:7–12.

D. Challenged Claims

Petitioner challenges claims 3–6 and 10 of the ’099 patent. Of these, claims 3 and 10 are independent, and for purposes of this Decision, claim 3 is representative. Claim 3 recites:

[3.0] A teleconferencing system comprising:

[3.1.1] a plurality of endpoints, at least some of which are connected in a mesh configuration and at least one of which is connected in a non-mesh configuration to a selected one of the mesh-connected endpoints, and [3.1.2] which are configured such that a film strip with frames containing reduced-size video feeds from the conference participants is displayed at the mesh endpoints;

[3.2] a proxy at the selected mesh-connected endpoint for the non-mesh connected endpoint and connected to each of the mesh-connected endpoints to receive video feeds from the mesh-connected endpoints for the non-mesh connected endpoint;

[3.3] a server associated with the proxy for serving the film strip with frames containing reduced-size video feeds from the mesh-connected conference participants to the non-mesh connected endpoint; and

[3.4] a control connection permitting a user located at the non-mesh connected endpoint to select a video feed on the film strip for promotion to full size and to initiate transfer of the full size video feed to the non-mesh connected endpoint.

Ex. 1001, 18:25–46 (Petitioner’s reference designations added).

II. EVALUATION OF DISCRETION

Patent Owner contends that we should exercise our discretion to deny the Petition in light of the co-pending Texas litigation. Prelim. Resp. 53–58. Petitioner disagrees. Pet. 77–81. For the reasons explained below, we determine that we should not discretionarily deny institution.

The Board considers six factors when determining whether to discretionarily deny institution due to the status of a co-pending proceeding:

1. whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted;
2. proximity of the court’s trial date to the Board’s projected statutory deadline for a final written decision;

3. investment in the parallel proceeding by the court and the parties;

4. overlap between issues raised in the petition and in the parallel proceeding;

5. whether the petitioner and the defendant in the parallel proceeding are the same party; and

6. other circumstances that impact the Board's exercise of discretion, including the merits.

Apple Inc. v. Fintiv, Inc., IPR2020-00019, Paper 11 at 6 (PTAB Mar. 20, 2020) (precedential) (“*Fintiv*”). “[I]n evaluating the factors, the Board takes a holistic view of whether efficiency and integrity of the system are best served by denying or instituting review.” *Id.*; see Trial Practice Guide⁷ 58 & n.2. In addition, our analysis of this issue is informed by the Director’s memorandum that provided “several clarifications . . . to the PTAB’s current application of *Fintiv* to discretionary institution where there is parallel litigation.” *Interim Procedure For Discretionary Denials In AIA Post-Grant Proceedings With Parallel District Court Litigation*, issued June 21, 2022 (“Guidance Memo”)⁸ at 2.

*Factor 1 – Whether a Stay Exists or Is Likely to Be
Granted if a Proceeding Is Instituted*

Petitioner contends that this factor is neutral because a motion to stay has not yet been filed. Pet. 78. Patent Owner argues that this factor favors denying institution because “Petitioner has not moved for a stay of the

⁷ PTAB Consolidated Trial Practice Guide (Nov. 2019), *available at* <https://www.uspto.gov/TrialPracticeGuideConsolidated>.

⁸ *Available at* https://www.uspto.gov/sites/default/files/documents/interim_proc_discretionary_denials_aia_parallel_district_court_litigation_memo_20220621_.pdf.

litigation and makes no representation to the Board that it will even move for a stay if institution is granted.” Prelim. Resp. 53.

We determine that this factor is neutral because neither party has produced evidence that a stay was requested or that the district court considered staying the Texas litigation. *See Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 15 at 12 (PTAB May 13, 2020) (informative) (“*Fintiv IP*”) (“We decline to infer . . . how the District Court would rule should a stay be requested by the parties in the parallel case here.”); *Sand Revolution II, LLC v. Continental Intermodal Group – Trucking LLC*, IPR2019-01393, Paper 24 at 7 (PTAB June 16, 2020) (informative) (“*Sand Revolution*”) (similar).

*Factor 2 – Proximity of the Court’s Trial Date to
the Board’s Projected Statutory Deadline*

Petitioner contends that this factor is neutral. Pet. 78–79. According to Petitioner, it was diligent by filing the Petition within six months of service of the complaint, and jury selection is scheduled for February 10, 2025. *Id.* (citing Ex. 1022, 1, 3). Patent Owner responds that this factor favors denying institution because “the district court trial date is . . . over three months before the projected statutory deadline for the Board’s final written decision.” Prelim. Resp. 54 (citing Ex. 2002, 1) (emphasis omitted). Also, Patent Owner argues that “the trial date . . . is right within the 21.4 month median time to trial statistic for the district.” *Id.* at 55–56 (citing Ex. 2005, 5); *see* Guidance Memo 2.

We determine that this factor is neutral. Jury selection is currently scheduled to begin on February 10, 2025, and time-to-trial statistics indicate that trial will likely occur in late-February or early-March 2025. Ex. 2002

(Second Amended Docket Control Order), 1; *see* Ex. 1021, 12 (original complaint was filed May 19, 2023); Ex. 2005, 5 (median time to trial in district is 21.4 months). The statutory deadline for our final written decision is March 28, 2025. Thus, trial is likely to begin within approximately one month of our final written decision. Where, as here, the trial date and the date of our final written decision are at or around the same time, this factor is neutral. *See Fintiv*, Paper 11 at 9 (noting that “[i]f the court’s trial date is at or around the same time as the projected statutory deadline . . . , the decision whether to institute will likely implicate other factors discussed herein, such as the resources that have been invested in the parallel proceeding”).

Factor 3 – Investment in the Parallel Proceeding

Petitioner contends that this factor weighs against denial because there has been “minimal” investment in the Texas litigation. Pet. 79. Patent Owner argues that “this factor at least modestly favors . . . denial” because “significant” resources have been invested. Prelim. Resp. 56. In particular, Patent Owner submits that “trial [is] scheduled to take place in less than a year,” and “Petitioner has raised over 35 separate art references and several other invalidity contentions.” *Id.* (citing Ex. 2006).

We determine that this factor weighs against discretionary denial. Some work has been completed, but the Texas litigation is in its early stages. Although infringement and invalidity contentions have been served (Ex. 1022, 5; Ex. 2002, 5), the majority of the work still remains to be completed, including the *Markman* briefing and order, fact discovery, and expert discovery (Ex. 2002, 3–5; *accord* Ex. 1022, 3).

*Factor 4 – Overlap Between Issues Raised in the
Petition and in the Parallel Proceeding*

Petitioner contends that this factor weighs against denial because “Petitioner stipulates that, if the Board institutes trial, Petitioner will cease asserting in the co-pending litigation the combination of references on which trial is instituted for the claims.” Pet. 79–80. Patent Owner responds that this factor favors denial because Petitioner provides only a “highly limited stipulation instead of a more robust *Sotera*-style stipulation.” Prelim. Resp. 57 (referencing *Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12 at 18–19 (PTAB Dec. 1, 2020) (precedential)).

We determine that this factor weighs slightly against discretionary denial because Petitioner’s stipulation “mitigates to some degree the concerns of duplicative efforts between the district court and the Board, as well as concerns of potentially conflicting decisions.” *Sand Revolution*, Paper 24 at 11–12.

*Factor 5 – Whether the Petitioner and the
Defendant in the Parallel Proceeding are the Same
Party*

Petitioner is the defendant in the Texas litigation (Ex. 1021), and the parties both contend that this factor is neutral (Pet. 80; Prelim. Resp. 58). We agree.

Factor 6 and Conclusion

The final *Fintiv* factor is a catch-all that takes into account any other relevant circumstances. For this factor, Petitioner contends that there is “compelling evidence of unpatentability” (Pet. 80 (quoting Ex. 1024, 2)), and Patent Owner disagrees (Prelim. Resp. 58).

On balance, we determine that *Fintiv* factors 1–5 do not favor discretionary denial of institution. Specifically, factor 3 weighs against denial given the minimal investment in the Texas litigation; factor 4 weighs slightly against denial given Petitioner’s stipulation; and the remaining factors (factors 1, 2, and 5) are neutral. As a result, we do not decide whether Petitioner presents a compelling unpatentability challenge. *See CommScope Techs. LLC v. Dali Wireless, Inc.*, IPR2022-01242, Paper 23 at 4–5 (PTAB Feb. 27, 2023) (Vidal) (precedential) (“[I]n circumstances where the Board determines that the other *Fintiv* factors 1–5 do not favor discretionary denial, the Board shall decline to discretionarily deny under *Fintiv* without reaching the compelling merits analysis.”).

Accordingly, considering the *Fintiv* factors as part of a holistic analysis, we are persuaded that the interests of the efficiency and integrity of the patent system would be best served by not invoking our authority under 35 U.S.C. § 314(a) to deny institution of a potentially meritorious petition.

III. ANALYSIS

A. Legal Standards

“In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)). This burden of persuasion never shifts to the patent owner. *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015).

The legal question of obviousness is resolved on the basis of underlying factual determinations including (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) when in evidence, objective evidence of obviousness or nonobviousness.⁹ *Graham v. John Deere Co. of Kan. City*, 383 U.S. 1, 17–18 (1966). One seeking to establish obviousness based on more than one reference also must articulate sufficient reasoning with rational underpinnings to combine teachings. *See KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007).

B. Level of Ordinary Skill in the Art

Petitioner asserts that the level of ordinary skill in the art corresponds to “a bachelor’s degree in computer science, computer engineering, electrical engineering, or equivalent, and approximately three years of work experience relating to video conferencing systems.” Pet. 9 (citing Ex. 1003 ¶¶ 18–20). According to Petitioner, an ordinarily skilled artisan “would have had a working knowledge of video conference techniques, mixed topology networks that are pertinent to the ’099 patent, including mesh and non-mesh (e.g., star, tree-based, and hybrid) networks, internet-based software development, video and audio compression, and user interface design.” *Id.*

Patent Owner asserts that an ordinarily skilled artisan “would have had a degree in computer science, electrical engineering or a similar field with at least 2-3 years of experience with data networks and video streaming

⁹ The current record does not include allegations or evidence of objective indicia of obviousness or nonobviousness.

systems or other comparable professional experience.” Prelim. Resp. 32 (citing Ex. 2001 ¶ 33).

For purposes of this Decision, we adopt Petitioner’s proposed level of skill. We are satisfied that Petitioner’s definition generally comports with the level of skill necessary to understand and implement the teachings of the ’099 patent and the asserted prior art. This definition is also supported by the testimony of Dr. Reddy. *See* Ex. 1003 ¶ 19. In addition, Patent Owner appears to agree with Petitioner regarding the educational background and number of years of work experience. *Compare* Prelim. Resp. 32, *with* Pet. 9.

At this stage, given the disclosure of the ’099 patent, we do not agree with Patent Owner’s contention that the ordinary artisan would have had experience with “data networks and video streaming systems” generally, rather than “video teleconferencing systems” specifically. However, the analysis in this Decision would not have changed if we had instead adopted Patent Owner’s proposal.¹⁰

C. Claim Construction

We interpret claim terms using “the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b).” 37 C.F.R. § 42.100(b). Under the principles set forth by our reviewing court, the “words of a claim ‘are generally given their ordinary and customary meaning,’” as would have been understood by a person of ordinary skill in the art at the time of the invention. *Phillips v. AWH Corp.*,

¹⁰ If Patent Owner elects to dispute our preliminary finding regarding the level of ordinary skill in the art, it should also explain whether its alternative articulation impacts the obviousness analysis.

415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)).

Petitioner states that, for purposes of this proceeding, “no claim term requires express construction.” Pet. 9–10. Patent Owner likewise states that it “does not propose constructions for any of the terms.” Prelim. Resp. 32.

We address the construction of one phrase because one of Patent Owner’s arguments is predicated on a particular understanding of it. During the trial, the parties should directly address any claim construction adopted in this Decision if either party contends we should not adopt that construction in the final written decision.

1. “reduced-size video feeds from the conference participants”

Claim 3 recites:

[3.1.1] *a plurality of endpoints*, at least some of which are connected in a mesh configuration and at least one of which is connected in a non-mesh configuration to a selected one of the mesh-connected endpoints, and [3.1.2] *which are configured such that a film strip with frames containing reduced-size video feeds from the conference participants is displayed at the mesh endpoints.*

Ex. 1001, 18:26–32 (emphasis and reference designations added).

Patent Owner argues that the “plain language” of these claim elements requires that all endpoints transmit “video feeds” for inclusion in the “film strip . . . displayed at the mesh endpoints.” Prelim. Resp. 36–37 (citing Ex. 2001 ¶ 94). Relatedly, Patent Owner argues that “‘the conference participants’ encompasses conference participants at ‘mesh-connected endpoints’ and the ‘non-mesh connected endpoint.’” *Id.* at 37 (citing Ex. 2001 ¶ 94; Ex. 1001, 5:13–17). In support, Patent Owner notes that the

claim later refers to “the mesh-connected conference participants,” and according to Patent Owner, this “show[s] that the scope of ‘the conference participants’ is broader than just ‘mesh-connected endpoints.’” *Id.* at 37. Patent Owner also asserts that the “plain language . . . is also consistent with and supported by the ’099 Patent’s stated objective to permit non-mesh connected endpoints to participate in teleconferences in the same or similar manner as mesh-connected conference participants.” *Id.* at 37–38 (citing Ex. 2001 ¶ 94; Ex. 1001, 17:47–49).

Petitioner has not yet had an opportunity to address Patent Owner’s arguments regarding claim scope.

At this stage, we do not agree with Patent Owner’s understanding of the claim’s plain language. Elements 3.1.1 and 3.1.2 require that the “plurality of endpoints” be “configured such that a film strip with frames containing reduced-size video feeds from the conference participants is displayed at the mesh endpoints.” This language does not require that each of the *endpoints* supply a video feed; rather, it requires that the *conference participants* supply the video feeds. Also, the claim does not appear to include language that requires any of “the conference participants” to be associated with the non-mesh connected endpoint.

Patent Owner assumes that “the conference participants” are the individuals participating from any and every endpoint (*see* Prelim. Resp. 37), but it fails to sufficiently support this understanding. According to Patent Owner, the claim’s later reference to “‘the *mesh-connected* conference participants’ . . . show[s] that the scope of ‘the conference participants’ is broader than just ‘mesh-connected endpoints.’” Prelim. Resp. 37; *see* Ex. 1001, 18:36. We disagree. Even if that claim language demonstrates that some “conference participants” are associated with mesh-

connected endpoints, it does not show that the set of “conference participants” is necessarily broader. In fact, the claim language cuts the other way—the claim refers to “*the* mesh-connected conference participants,” indicating that this term derives antecedent basis from (and is the same as) the “conference participants” referenced earlier in the claim. Moreover, the claim later refers to “a user located at the non-mesh connected endpoint” (Ex. 1001, 18:42–43), which further indicates that the “conference participants” need not include a person associated with the non-mesh connected endpoint.

Although Patent Owner points to two passages from the Specification to support its position (*see* Ex. 1001, 5:13–17, 17:47–49), neither suggests a particular meaning for this claim phrase. One passage describes a particular embodiment in which conference participants receive video streams “from all other endpoints” (*id.* at 5:13–17),¹¹ and the other simply states that the described system allows a non-mesh endpoint to participate “in much the same way” as mesh-connected endpoints (*id.* at 17:47–49). In addition, we have assigned little weight to Dr. Sharony’s testimony regarding the meaning of this phrase (*see* Ex. 2001 ¶ 94) because he reiterates Patent Owner’s legal arguments without either providing technical background or addressing the meaning of terms to an ordinarily skilled artisan. *See Philips*, 415 F.3d at 1318.

¹¹ “[I]t is improper to read limitations from a preferred embodiment described in the specification—even if it is the only embodiment—into the claims absent a clear indication in the intrinsic record that the patentee intended the claims to be so limited.” *GE Lighting Sols., LLC v. AgiLight, Inc.*, 750 F.3d 1304, 1309 (Fed. Cir. 2014) (alteration in original) (quoting *Liebel–Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 913 (Fed. Cir. 2004)).

Accordingly, on this record, we preliminarily disagree with Patent Owner's understanding of the plain language of elements 3.1.1 and 3.1.2. However, we expressly invite Patent Owner to explain and substantiate its position regarding the scope of the claim language, with reference to any applicable claim construction principles, in its Response at trial. For example, if Patent Owner contends that this phrase is properly construed to have the meaning it advocates, then Patent Owner should address any support provided by the intrinsic record of the '099 patent.

2. Other Terms/Phrases

At this stage, we determine that it is not necessary to address the construction of any other claim terms or phrases. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (noting that “we need only construe terms ‘that are in controversy, and only to the extent necessary to resolve the controversy’” (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

D. Summary of Asserted Prior Art References

1. Setton (Ex. 1005)

Setton describes a peer-to-peer network that streams video data for a teleconference. Ex. 1005, Abstr., ¶¶ 14, 19. Figure 1 (reproduced below) illustrates an exemplary network. *Id.* ¶ 15.

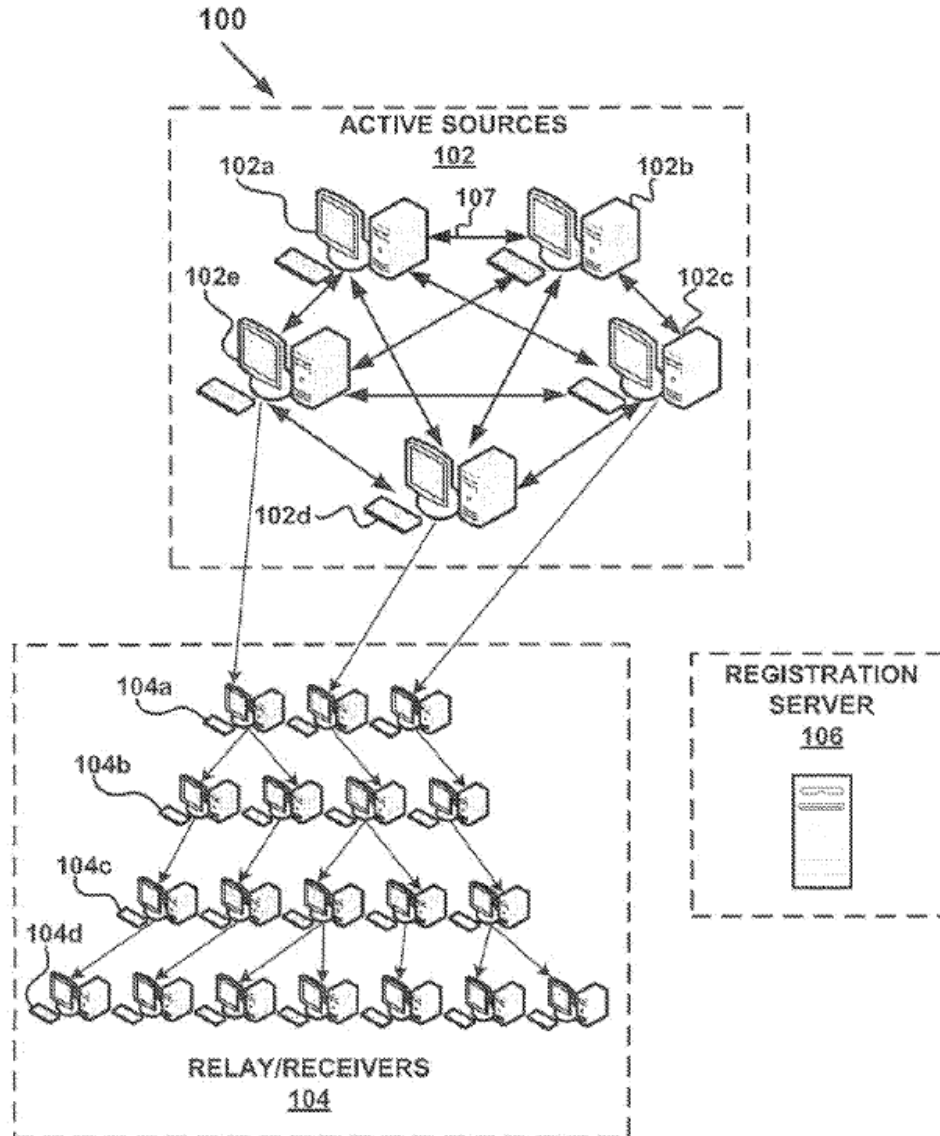


Figure 1 depicts active sources 102a–e, relay/receivers 104a–d, and registration server 106. Active sources 102 are inter-connected with each other via bi-directional arrows 107, and active sources 102 are connected to relay/receivers 104 via a tree configuration. *Id.* at Fig. 1; *see id.* ¶¶ 18, 23. Each active source 102 may generate content (e.g., a video and an audio stream for a teleconference), aggregate its content with other peer’s content, and transmit the aggregated media stream to relay/receivers 104. *Id.* ¶¶ 19, 21, 23. In the example depicted in Figure 1, active source 102e aggregates

the media streams and transmits the aggregated stream to relay/receiver 104a. *Id.* ¶ 23, Fig. 1.

2. Baker (Ex. 1006)

Baker describes techniques for using a portable electronic device to participate in a video conference. Ex. 1006, Abstr., 1:5–9. Figures 10A and 10B (reproduced below) depict exemplary displays for such a device.

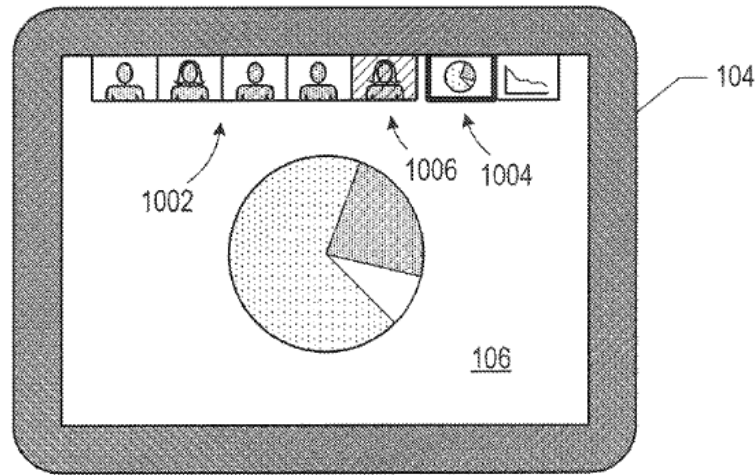


FIG. 10A

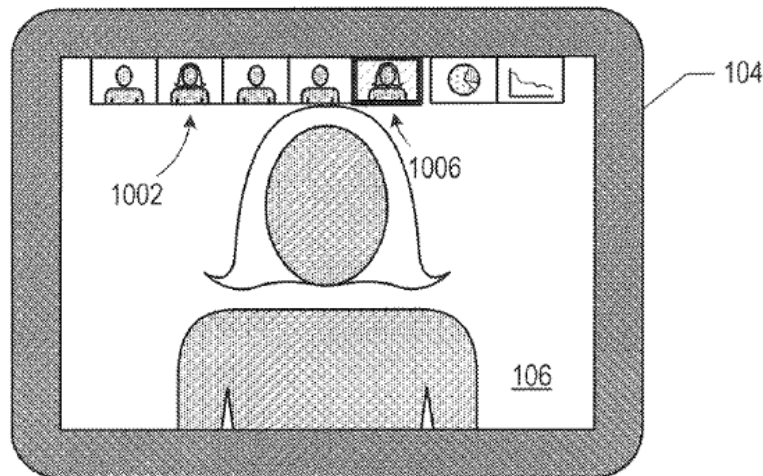


FIG. 10B

Figures 10A and 10B depict portable electronic device 104 having display 106 that shows a full-size view of a conference participant (or content) as

well as strip 1002 (located at the top of display 106) that includes reduced-size images of conference participants and content. The portion of strip 1002 associated with a speaking participant 1006 is highlighted (*id.* at 8:52–54), and “the local participant can touch or tap on the highlighted image 1006 . . . to bring up [the speaking participant’s] viewing area in the display 106” (*id.* at 8:60–62).

3. *Apostolopoulos (Ex. 1007)*

Apostolopoulos describes techniques for adapting network topology based on one or more performance metrics to support communication. Ex. 1007, Abstr., ¶ 2. The supported communication may be an N-way collaborative video conference where each participant transmits audio and video data streams to the other participants. *Id.* ¶¶ 32–33. Apostolopoulos describes several network topologies, including “a hybrid communication topology,” which is depicted in Figure 3C (reproduced below). *Id.* ¶ 69.

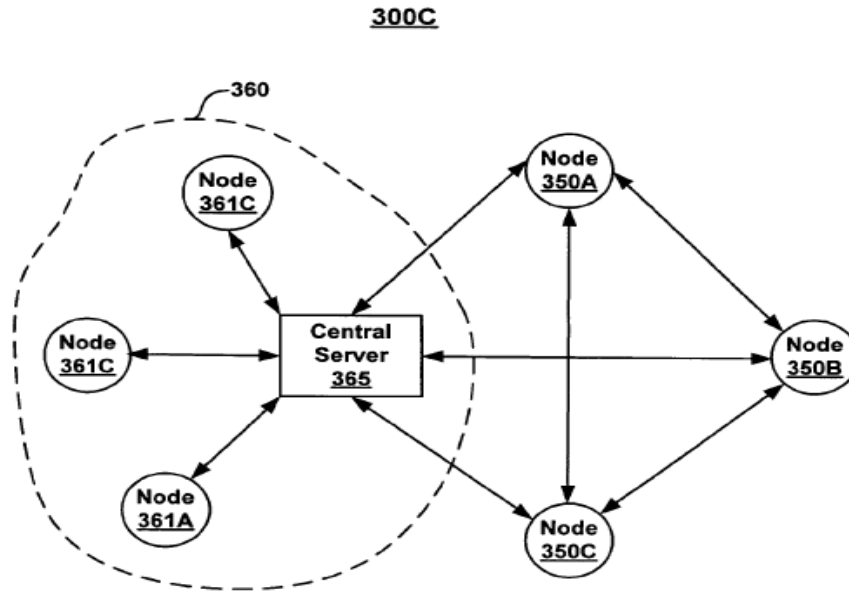


FIG. 3C

Figure 3C “illustrat[es] the virtual representation of communication paths in a hybrid communication topology 300C,” which includes full-mesh topology nodes 350A–C, central node/server 365, and star topology nodes 361A–C. *Id.* ¶¶ 69–70. “[H]ybrid topology 300 comprises the simultaneous use of a central node/server in a star topology [] connected to other nodes that are running a full-mesh topology.” *Id.* ¶ 69. “[C]entral server/node 365 provides the processing power for generating communication data streams for the collaborators at nodes 361A–C to communicate amongst themselves, as well as with the collaborators at nodes 350A–C.” *Id.* ¶ 70.

4. Wong (Ex. 1009)

Wong describes methods of providing media for a video teleconference to a participant using a web browser. *E.g.*, Ex. 1009 ¶¶ 13, 106–107.

E. Ground 1: Obviousness Based on Setton and Baker

Petitioner contends that the subject matter of independent claims 3 and 10 would have been obvious over Setton and Baker. Pet. 12–39. Patent Owner alleges defects in Petitioner’s showing for elements 3.1.2 and 3.4 of claim 3 and the corresponding requirements of claim 10. Prelim. Resp. 35–45.

We have considered the parties’ arguments and the evidence presented at this stage, and we address them in the context of representative claim 3. For the reasons explained below, we determine that Petitioner has demonstrated a reasonable likelihood that it will prevail in showing that the subject matter of claims 3 and 10 would have been obvious over the combination of Setton and Baker, notwithstanding Patent Owner’s arguments to the contrary.

1. Proposed Combination of Setton and Baker

Petitioner proposes modifying Setton to incorporate Baker’s strip of miniaturized participant videos and associated user-interface functionalities, which “allow the local participant to promote a miniaturized video stream to a full-sized video stream, and vice versa.” Pet. 16 (citing Ex. 1003 ¶ 56).

Petitioner submits that an ordinarily skilled artisan would have been motivated to make this combination because: (1) “Setton provides limited details about how different video streams are displayed or controlled” and

Baker provides those implementation details; (2) the use of Baker’s miniaturized strip may reduce delay, consistent with Setton’s purposes; (3) the combination would have “provide[d] flexibility for users (e.g., non-speakers) with network constraints while prioritizing network resources for higher-priority conference participants (e.g., the active speaker),” and (4) using Baker’s implementation details in Setton would have “enhance[d] Setton’s video conference experience.” Pet. 17–18 (citing Ex. 1005 ¶¶ 14, 17, 19, 26, 34; Ex. 1006, 8:40–62, Figs. 10A, 10B; Ex. 1003 ¶¶ 58–60). Petitioner also contends that the ordinarily skilled artisan would have had a reasonable expectation of success in making the proposed combination. *Id.* at 18–19 (citing Ex. 1003 ¶ 61); *see also id.* at 16–17 (citing Ex. 1003 ¶¶ 56–57).

In connection with element 3.4, Patent Owner argues that an ordinarily skilled artisan would not have been motivated to combine these references in this manner because it “would have increased the processing/serving burden for Setton’s active sources,” resulting in additional delays. Prelim. Resp. 42–43 (citing Ex. 2001 ¶¶ 104–107). As we explain *infra* in connection with that element, we determine that this argument is best evaluated at trial with the benefit of a full record.

On this record, we are persuaded that there is a reasonable likelihood that Petitioner will prevail in showing that an ordinary artisan would have been motivated to combine Setton and Baker as proposed.

2. Independent Claim 3

[3.0] “A teleconferencing system comprising”

Petitioner contends that Setton discloses the preamble. Pet. 19–20. According to Petitioner, Setton describes a peer-to-peer media streaming

network used for video teleconferencing, including active sources 102 and relay/receivers 104. *Id.* (citing Ex. 1005, Abstr., ¶¶ 14, 18–19; Ex. 1003 ¶¶ 62–64).

At this stage, Patent Owner does not allege any deficiencies in this aspect of Petitioner’s showing.

On this record, we are persuaded that Setton discloses a teleconferencing system that includes active sources 102 and relay/receivers 104. *See* Ex. 1005 ¶¶ 14, 19, Fig. 1. Accordingly, Petitioner has sufficiently shown that Setton discloses the claim’s preamble.¹²

[3.1.1] “a plurality of endpoints, at least some of which are connected in a mesh configuration and at least one of which is connected in a non-mesh configuration to a selected one of the mesh-connected endpoints, and”

Petitioner contends that Setton discloses element 3.1.1. Pet. 20–23. According to Petitioner, Setton’s active sources 102 disclose the claimed “endpoints . . . connected in a mesh configuration,” and Setton’s relay/receivers 104 disclose the claimed “endpoints connected in a non-mesh configuration.” *Id.* at 20–22 (citing Ex. 1005 ¶¶ 14, 16, 18, 22–23, 26, 32, Figs. 1, 4; Ex. 1003 ¶¶ 65–76). Petitioner submits that relay/receiver 104a is connected to active source 102e in a non-mesh configuration. *Id.* at 22–23 (citing Ex. 1005 ¶ 23, Fig. 1; Ex. 1003 ¶¶ 78–80).

¹² We need not determine whether the preamble is limiting because Petitioner has sufficiently shown that Setton discloses this aspect of the claim. *See Vivid Techs.*, 200 F.3d at 803.

At this stage, Patent Owner does not allege any deficiencies in this aspect of Petitioner's showing.¹³

On this record, we are persuaded that the claimed “plurality of endpoints” are disclosed by Setton's active sources 102 and relay/receiver 104a. *See* Ex. 1005 ¶¶ 14, 32, Fig. 1; Ex. 1003 ¶¶ 68–69. We are also preliminarily persuaded that Setton's active sources 102 are connected in a mesh configuration, and that relay/receiver 104a is connected in a non-mesh configuration to active source 102e. *See* Ex. 1005 ¶¶ 18, 23, Fig. 1; Ex. 1003 ¶¶ 70–77. Accordingly, Petitioner has sufficiently shown that Setton discloses element 3.1.1.

[3.1.2] “which are configured such that a film strip with frames containing reduced-size video feeds from the conference participants is displayed at the mesh endpoints”

Petitioner relies on the combination of Setton and Baker for this element. Pet. 23–27. Petitioner contends that Baker's “strip of miniaturized images” (e.g., strip 1002 shown in Figures 10A and 10B) discloses the claimed “film strip with frames containing reduced-size video feeds from the conference participants.” *Id.* at 24–26 (citing Ex. 1006, 2:40–43, 8:40–47, 8:63–66, 9:11–14, 9:19–26, Figs. 10A–B; Ex. 1003 ¶¶ 83–86). Petitioner further contends that it would have been obvious to incorporate this aspect of Baker into Setton's video conferencing system so that Setton's active sources 102 and relay/receiver 104a each displayed a strip of miniaturized

¹³ Although Patent Owner argues that the combination does not disclose or suggest “[e]lements 3.1.1–3.1.2” (Prelim. Resp. 35 (cleaned up)), Patent Owner refers to the limitations of element 3.1.1 solely for the purpose of establishing that element 3.1.2 further limits the claimed “plurality of endpoints.” *See id.* at 35–40. We agree with that point. For clarity, we address Patent Owner's arguments in connection with element 3.1.2.

images. *Id.* at 26–27 (citing Ex. 1003 ¶¶ 87–90; Ex. 1001, 4:42, Figs. 3b–3c; Ex. 1005 ¶¶ 4, 14, 28; Pet. 16–19 (rationale to combine)); *see also id.* at 23–24 (addressing Setton’s disclosure and similarity with Baker) (citing Ex. 1005 ¶¶ 14, 19; Ex. 1006, 2:40–43; Ex. 1002 ¶¶ 82–83).

Patent Owner argues that the Setton-Baker combination fails to teach or suggest element 3.1.2 because Setton’s relay/receivers 104 do not transmit video feeds for display at active sources 102. Prelim. Resp. 35–40. Patent Owner notes that element 3.1.2 further limits the “plurality of endpoints” recited in element 3.1.1. *Id.* at 35–36. Also, according to Patent Owner, the “plain language” of the claim requires all of these endpoints to transmit “video feeds” for inclusion in the “film strip . . . displayed at the mesh endpoints,” and “‘the conference participants’ encompasses conference participants at ‘mesh-connected endpoints’ and the ‘non-mesh connected endpoint.’” *Id.* at 36–38 (alteration in original) (citing Ex. 2001 ¶ 94; Ex. 1001, 5:13–17, 17:47–49). Patent Owner argues that the Petition erroneously assumes that “the mesh-connected active sources” are the only “teleconference participants” and fails to show how or why non-mesh endpoints would be included. *Id.* at 38–39; *see id.* at 39–40 (arguing that such a modification would have been contrary to Setton).

On this record, we are persuaded that there is a reasonable likelihood that Petitioner will prevail in showing that the Setton-Baker combination discloses element 3.1.2. In particular, we are preliminarily persuaded that Baker’s strip 1002 discloses “a film strip with frames containing reduced-size video feeds from the conference participants,” as required by the claim. *See* Ex. 1006, 8:40–47, Figs. 10A–B. We are also sufficiently persuaded that an ordinarily skilled artisan would have been motivated to add Baker’s strip to the video conference displays of Setton’s active sources 102 and

relay/receiver 104a. *See* Ex. 1003 ¶¶ 87–90; *see also supra* § III.E.1 (summarizing Petitioner’s rationale to combine Setton and Baker).

Patent Owner’s arguments are unavailing at this stage because they are premised on an unsupported claim construction. As explained *supra* in Section III.C.1, we do not agree that the claim requires the non-mesh connected endpoint to transmit a video feed for display in the film strip.

But, we preliminarily agree with Patent Owner on two points: (1) Setton’s relay/receivers 104 do not transmit video feeds for display at active sources 102 (*e.g.*, Ex. 1005 ¶ 16 (defining “those peers which generate content . . . as active sources”)), and (2) the Petition does not contend that it would have been obvious for relay/receivers 104 to transmit video feeds (*see* Pet. 20–27). But given our understanding of the claim’s requirements (*see supra* § III.C.1), neither of these facts diminishes Petitioner’s showing.

Accordingly, Petitioner has sufficiently shown that Setton discloses element 3.1.2, notwithstanding Patent Owner’s contrary arguments.

[3.2] “a proxy at the selected mesh-connected endpoint for the non-mesh connected endpoint and connected to each of the mesh-connected endpoints to receive video feeds from the mesh-connected endpoints for the non-mesh connected endpoint”

Petitioner contends that Setton discloses or renders obvious element 3.2. Pet. 27–30. Petitioner submits that Setton’s active source 102 includes “a content aggregator 304 for aggregating the content generated by the peer with content generated by other peers,” which is used for distributing the aggregated media stream to relay/receivers 104. *Id.* at 27–28 (quoting Ex. 1005 ¶ 21; citing Ex. 1005 ¶¶ 19, 21, 23, Fig. 3; Ex. 1003

¶¶ 93–95, 99, 102), 30 (citing Ex. 1005 ¶¶ 14, 19; Ex. 1003 ¶¶ 92, 100, 104–106). Petitioner argues that, to the extent Setton does not specifically disclose that active source 102e includes content aggregator 304, this would have been obvious to an ordinarily skilled artisan. *Id.* at 28–30 (citing Ex. 1005, Fig. 1; Ex. 1003 ¶¶ 96–103).

At this stage, Patent Owner does not allege any deficiencies in this aspect of Petitioner’s showing.

On this record, we are persuaded that an ordinarily skilled artisan would have understood Setton to teach or suggest that active source 102e includes content aggregator 304, and that content aggregator 304 discloses or renders obvious the claimed “proxy.” *See* Ex. 1005 ¶¶ 19, 21, 23, Fig. 3; Ex. 1003 ¶¶ 96–105. Accordingly, Petitioner has sufficiently shown that Setton discloses or renders obvious element 3.2.

[3.3] *“a server associated with the proxy for serving the film strip with frames containing reduced-size video feeds from the mesh-connected conference participants to the non-mesh connected endpoint”*

Petitioner contends that the Setton-Baker combination renders element 3.3 obvious. *Pet.* 30–33. According to Petitioner, an ordinarily skilled artisan would have understood that the content distribution feature in Setton’s active source 102 discloses the claimed “server,” and/or it would have been obvious to include server software in active source 102 to accomplish the content distribution and transmitting function. *Id.* at 31–32 (citing Ex. 1005 ¶¶ 14, 21, 27, 32; Ex. 1003 ¶¶ 109–114). Petitioner also contends that it would have been obvious for the content distribution feature to serve Baker’s strip of miniaturized images as reduced-size images. *Id.* at

32–33 (citing Ex. 1006, 8:63–67, 9:11–14, 9:19–26; Ex. 1003 ¶¶ 85, 115–118).

At this stage, Patent Owner does not allege any deficiencies in Petitioner’s showing for element 3.3.

On this record, we are persuaded that Setton discloses that active source 102e aggregates video feeds from active sources 102 and transmits the aggregated video feeds to relay/receiver 104a, and that the software responsible for this transmission discloses the claimed “server.” *See* Ex. 1005 ¶¶ 21, 23; Ex. 1003 ¶¶ 109–110, 113–114. Also, as noted above in connection with element 3.1.2, we are preliminarily persuaded that Baker discloses the claimed film strip and that it would have been obvious to display that film strip at Setton’s relay/receiver 104a. Finally, we are persuaded that there is a reasonable likelihood that Petitioner will prevail in showing that it would have been obvious to combine Setton and Baker such that active source 102e transmits the film strip with frames containing reduced-size video feeds to relay/receiver 104a. *See* Ex. 1006, 8:63–67, 9:23–26; Ex. 1003 ¶¶ 115–117.

Accordingly, Petitioner has sufficiently shown that the Setton-Baker combination renders element 3.3 obvious.

[3.4] “a control connection permitting a user located at the non-mesh connected endpoint to select a video feed on the film strip for promotion to full size and to initiate transfer of the full size video feed to the non-mesh connected endpoint”

Petitioner relies on the Setton-Baker combination for this element. Pet. 33–37. Petitioner points to Baker’s disclosure of a user touching or tapping an image of a participant “to bring up that conference participant[’]s

viewing area on the display,” and Petitioner contends this discloses “permitting a user . . . to select a video feed on the film strip for promotion to full size,” as claimed. *Id.* at 34 (citing Ex. 1006, 8:40–62, Fig. 10B; Ex. 1003 ¶ 124). In addition, Petitioner contends that it would have been obvious to make this functionality available to all endpoints (including relay/receiver 104a), and that it would have been obvious that the endpoint should receive the selected video stream as a full-size video feed. *Id.* at 34–37 (citing Ex. 1003 ¶¶ 61, 125–132; Ex. 1005 ¶ 14; Ex. 1006, 8:52–56, 9:9–26, 9:45–49).

Patent Owner argues that Petitioner’s proposal would require Setton’s active sources 102 to serve individualized video feeds to the relay/receivers, which “would have increased the processing/serving burden for Setton’s active sources,” resulting in additional delays. Prelim. Resp. 42–43 (citing Ex. 2001 ¶ 105). According to Patent Owner, this is contrary to Setton’s fundamental goal “to minimize network delay between active sources,” and as a result, an ordinary artisan would not have modified Setton with Baker as proposed. *Id.* (citing Ex. 2001 ¶¶ 104–107; Ex. 1005 ¶ 30). Patent Owner also argues that Baker does not teach or suggest “transmitting requests for full size video feeds” because its device receives all streams from other participants and then selects which to present in the user interface. *Id.* at 43–44 (citing Ex. 1006, 2:43–46, 3:55–4:13, 4:30–34, 4:48–55, 8:55–62, Figs. 1–4, 10A–B; Ex. 2001 ¶¶ 105–107).

On this record, we are persuaded that there is a reasonable likelihood that Petitioner will prevail in showing that element 3.4 is disclosed or rendered obvious by the Setton-Baker combination. In particular, we are preliminarily persuaded that Baker allows a user to select a video feed for promotion to full-size by tapping on the associated portion of strip 1002.

See Ex. 1006, 8:60–62, Figs. 10A–B. We are also preliminarily persuaded this functionality teaches or renders obvious the claimed “control connection.” *See* Ex. 1003 ¶¶ 120, 125–126. In addition, we are preliminarily persuaded that Baker suggests providing reduced-size video feeds for strip 1002 and a full-size video feed for the promoted video. *See* Ex. 1006, 8:45–47 (stating that strip 1002 includes “reduced size images”), 9:23–26 (stating that the video streams in strip 1002 “can be decoded at a slower frame [rate]”); *see also id.* at 8:63–66 (describing ways to “reduce the size of the data streaming into the [device] 104 from the network”), 9:11–14 (sending non-speakers’ videos at “a lower bit-rate/quality”). Finally, we are persuaded that there is a reasonable likelihood that Petitioner will prevail in showing that it would have been obvious to combine Setton and Baker such that Setton’s relay/receiver 104a displays Baker’s strip 1002. *See* Ex. 1003 ¶¶ 129–132; *see also supra* § III.E.1 (rationale to combine).

We do not agree with Patent Owner’s first argument (*see* Prelim. Resp. 42–43) that the Petition should be denied because Petitioner did not address whether its proposed modification would have increased the processing burden on Setton’s active sources 102 (and consequently increased delays). A petition need not exhaustively address every potential disadvantage or engineering tradeoff associated with a proposed combination. Patent Owner raises interesting arguments that could bear on our ultimate determination of whether the ordinarily skilled artisan would have been motivated to make the proposed combination; however, these issues are best resolved at trial with the benefit of a full record.

Patent Owner’s second argument (*see* Prelim. Resp. 43–44) is unavailing for three reasons. First, we do not currently agree with Patent Owner’s understanding of Baker. Patent Owner argues that Baker’s device

must receive all video streams (*id.* at 44), but Baker states that the local participant can control the manner in which “video data streams are to be received and displayed” in order to “reduce the size of the data streaming into the [device] 104 from the network.” Ex. 1006, 8:63–66; *see also id.* at 4:31–34 (“[L]ocal participant 102 has access to each of the remote participants computing devices to download the video and audio streams generated by the remote participants.”). Although Patent Owner cites to Dr. Sharony’s testimony to support its argument, we do not perceive testimony that sufficiently supports Patent Owner’s view. *See* Ex. 2001 ¶¶ 105–107.¹⁴

Second, Patent Owner does not allege any deficiencies in Petitioner’s contention (in connection with element 3.3) that it would have been obvious for Baker to serve reduced-size images in addition to a full-size image. *See* Pet. 32–33 (citing Ex. 1006, 8:63–67, 9:11–14, 9:19–26; Ex. 1003 ¶¶ 85, 115–118). As noted above, Petitioner makes a sufficient showing for this contention at this stage.

Third, Patent Owner does not appear to dispute that Baker’s system “initiate[s] transfer of the full size video feed to the non-mesh connected endpoint” (as the claim requires) at *some point*. Instead, Patent Owner’s argument is that Baker does not initiate transfer of the full-size video *in response to* a user selecting the video feed (Prelim. Resp. 44), but Patent Owner fails to sufficiently explain its view that the claim includes this

¹⁴ Paragraph 104 of Dr. Sharony’s declaration appears to be more relevant; however, it only provides a conclusory assertion and a citation to his summary of Baker, which does not sufficiently explain the basis for his conclusion. *See* Ex. 2001 ¶ 104 (citing *id.* ¶¶ 59–69); *see, e.g., id.* ¶¶ 60–61. As a result, at this stage, Dr. Sharony’s testimony on this point is entitled to little weight. *See* 37 C.F.R. § 42.65. We invite Patent Owner to provide support and explanation for its position on this issue at trial.

requirement. The claim language is “permitting a user . . . to select a video feed . . . *and* to initiate transfer of the full size video feed” (Ex. 1001, 18:42–45 (emphasis added)); it does not state, for example, *permitting* a user to select a video feed *and in response initiating* transfer of the full-size video.

Accordingly, at this stage, Petitioner has sufficiently shown that the Setton-Baker combination renders element 3.4 obvious.

Conclusion

For the reasons provided above, Petitioner has sufficiently shown (for purposes of institution) that an ordinarily skilled artisan would have been motivated to combine Setton and Baker as proposed, and that the combination teaches, suggests, or renders obvious each limitation of independent claim 3. We have considered Patent Owner’s arguments, but they are unavailing at this stage and on this record.

Accordingly, we are persuaded that Petitioner has demonstrated a reasonable likelihood that it will prevail in establishing that the subject matter of claim 3 would have been obvious over Setton and Baker.

3. Independent Claim 10

Petitioner also contends that the subject matter of claim 10 would have been obvious over Setton and Baker. Pet. 37–39. Petitioner substantiates its contentions with analysis addressing each claim limitation and identifying supporting evidence. *See id.*

We are persuaded that Petitioner has demonstrated a reasonable likelihood that it will prevail in establishing that the subject matter of claim 10 would have been obvious over Setton and Baker. Other than the arguments addressed above in connection with claim 3 (*supra* § III.E.2),

Patent Owner does not dispute Petitioner’s arguments, analysis, or evidence for claim 10 (*see* Prelim. Resp.).

4. *Institution of Inter Partes Review*

Because we are persuaded that Petitioner has shown a reasonable likelihood of prevailing in showing that the subject matter of claims 3 and 10 would have been obvious over Setton and Baker, we institute *inter partes* review of all claims and all challenges raised in the Petition. *See SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1356 (2020) (35 U.S.C. § 314 “simply requires [the Director] to decide whether the petitioner is likely to succeed on ‘at least 1’ claim. Once that single claim threshold is satisfied, it doesn’t matter whether the petitioner is likely to prevail on any *additional* claims; the Director need not even consider any other claim before instituting review.”); 37 C.F.R. § 42.108(a).

F. *Ground 3: Obviousness Based on Apostolopoulos and Baker*

Petitioner contends that the subject matter of claims 3 and 10 would have been obvious over Apostolopoulos and Baker. Pet. 49–71. Patent Owner argues that Petitioner makes an insufficient showing for elements 3.1.1, 3.1.2, and 3.4 of claim 3 and the corresponding elements of claim 10. Prelim. Resp. 46–52.

Because we have decided to institute an *inter partes* review of all claims and all challenges raised in the Petition (*see supra* §§ II.E.4), we do not need to assess whether there is a reasonable likelihood that Petitioner will prevail with respect to its challenge based on Apostolopoulos and Baker. But, in order to guide the parties at trial, we summarize Petitioner’s contentions for independent claim 3, and we address each of the arguments

raised by Patent Owner. Our final written decision will evaluate the merits of this ground if necessary or appropriate.

1. Proposed Combination of Apostolopoulos and Baker

Petitioner proposes modifying Apostolopoulos to incorporate Baker’s strip of miniaturized participant videos and associated user-interface functionalities. Pet. 51. Petitioner submits that an ordinarily skilled artisan would have been motivated to make this combination because:

(1) Apostolopoulos “provides fewer details on what the [user interface (UI)] looks like,” and Baker would provide “a user-friendly display and accompanying UI control mechanisms”; (2) the use of Baker’s miniaturized strip would “accommodate network and power constraints of different participants, and reduce delay,” consistent with Apostolopoulos’s goals; (3) the combination would allow important feeds (such as an active speaker) “to be prioritized while operating within network and power use limitations” and (4) Baker’s film strip allows participants to focus on the speaking participant while monitoring other participants. *Id.* at 51–53 (citing Ex. 1003 ¶¶ 198–200; Ex. 1007 ¶¶ 39–40, 48, 82–83). Petitioner also contends that the ordinarily skilled artisan would have had a reasonable expectation of success in making the proposed combination. *Id.* (citing Ex. 1003 ¶¶ 197, 199, 201).

In connection with elements 3.1.2 and 3.4, Patent Owner argues that an ordinarily skilled artisan would not have been motivated to combine these references in this manner. We address Patent Owner’s arguments in connection with those elements.

2. Independent Claim 3

[3.0] “A teleconferencing system comprising”

Petitioner contends that Apostolopoulos’s communication network, including its nodes, discloses the preamble, to the extent it is limiting. Pet. 53–54 (citing Ex. 1007 ¶¶ 21, 32–33; Ex. 1003 ¶¶ 203–206).

At this stage, Patent Owner does not allege any deficiencies in this aspect of Petitioner’s showing.

[3.1.1] “a plurality of endpoints, at least some of which are connected in a mesh configuration and at least one of which is connected in a non-mesh configuration to a selected one of the mesh-connected endpoints, and”

Petitioner contends that Apostolopoulos’s nodes disclose the claimed endpoints. Pet. 54 (citing Ex. 1007 ¶¶ 25, 33; Ex. 1003 ¶¶ 208–209). For “endpoints . . . connected in a mesh configuration,” Petitioner points to nodes 350A, 350B, 350C, and for “endpoints connected in a non-mesh configuration,” Petitioner points to nodes 361A, 361C. *Id.* at 54–55 (citing Ex. 1007 ¶ 69, Fig. 3C; Ex. 1003 ¶¶ 210–216). According to Petitioner, it also would have been obvious for node 361A to be “connected in a non-mesh configuration to a . . . mesh-connected endpoint[]” because it would have been obvious for “central/node server 365 to be implemented as a full-mesh node similar to the other full-mesh nodes 350A-350C.” *Id.* at 55–56. In support, Petitioner argues: (1) central server 365 is mesh-connected to mesh nodes 350; (2) central server 365 generates data streams “[c]onsistent with the other nodes”; (3) Apostolopoulos provides for dynamic topology changes, and the proposed modification “would provide a more flexible network configuration,” and (4) “[i]mplementing server functionality in an endpoint or end node was . . . well-known in the art,” as shown by Baker. *Id.*

at 55–58 (citing Ex. 1006, 3:58–4:4; Ex. 1007 ¶¶ 48, 69–70; Ex. 1003 ¶¶ 217–223).

Patent Owner argues that Petitioner fails to show that an ordinarily skilled artisan would have been prompted to modify Apostolopoulos as proposed. Prelim. Resp. 46–48 (citing Ex. 2001 ¶ 100). According to Patent Owner, “Apostolopoulos is directed to providing a three dimensional virtual environment,” and central server 365 is “key to [its] infrastructure by offloading processing of data streams from individual nodes to generate view dependent three dimensional models when the number of participating nodes increases.” *Id.* at 46–47 (citing Ex. 1007 ¶¶ 2, 6, 18–21, 26–28, 37, 48, 57–58, 65–67); *see id.* at 48 (citing Ex. 2001 ¶ 102). Patent Owner also argues that the Petition fails to “address why [an ordinarily skilled artisan] would have been motivated to move away from Apostolopoulos’s solution.” *Id.* at 47.

At this stage, we do not agree with Patent Owner’s argument that Apostolopoulos is premised on a three-dimensional virtual environment. *See* Prelim. Resp. 46–47. Although Apostolopoulos describes an embodiment with “a view dependent three-dimensional virtual environment” (Ex. 1007 ¶ 26), Apostolopoulos indicates that its disclosure is broader. *See, e.g., id.* ¶¶ 25 (“*In one embodiment, the data streams are user dependent.*” (emphasis added)), 26 (describing three-dimensional virtual environment “[i]n one embodiment” (emphasis added)). In addition, we do not agree with Patent Owner that Apostolopoulos requires central server 365 to perform processing on behalf of the nodes. *See* Prelim. Resp. 47. For example, Apostolopoulos describes an embodiment where the nodes (connected in a full-mesh topology) do not rely upon central server 365. Ex. 1007 ¶¶ 53–55, Fig. 3A. But, we do agree that Apostolopoulos’s central

server 365 is designed to perform processing on behalf of nodes 361A–C. *E.g.*, Ex. 1007 ¶¶ 36, 48, 58, 70.

At this stage, we also do not agree with Petitioner’s contention that Apostolopoulos suggests (or otherwise motivates) incorporating central server 365 into one of the nodes. *See* Pet. 56. Although we agree with Petitioner that Apostolopoulos provides for “dynamic topology changes” (Ex. 1003 ¶ 220), Apostolopoulos does not appear to contemplate the particular modification proposed by Petitioner (despite describing a variety of other, commensurate topology modifications). In addition, the fact that a node may offload its computation to central server 365 (*e.g.*, Ex. 1007 ¶ 58) does not suggest that central server 365 is (or should be) a node. We preliminarily determine that Petitioner’s reliance on Dr. Reddy’s testimony on these points is unavailing because it suffers from the same deficiencies. *See* Ex. 1003 ¶¶ 219–220.

Petitioner also argues that an ordinarily skilled artisan would have been motivated to modify Apostolopoulos in this manner because the resulting configuration was “well-known” and would “provide a more flexible network configuration.” Pet. 57–58. At this stage, Patent Owner does not clearly address this aspect of Petitioner’s contentions. The panel would benefit from additional arguments and evidence on this point, and we expressly encourage the parties to further address it at trial.

[3.1.2] “which are configured such that a film strip with frames containing reduced-size video feeds from the conference participants is displayed at the mesh endpoints”

Petitioner relies on the combination of Apostolopoulos and Baker for this element. Pet. 59–60. Petitioner contends that Baker’s “strip of miniaturized images” (*e.g.*, strip 1002 shown in Figures 10A and 10B)

discloses the claimed “film strip with frames containing reduced-size video feeds from the conference participants.” *Id.* at 59 (citing Pet. 24–26 (Setton-Baker ground, element 3.1.2)). Petitioner further contends that it would have been obvious to incorporate this aspect of Baker into Apostolopoulos’s system so that Apostolopoulos’s nodes 350 and 361 (as well as central server 365) each displayed a strip of miniaturized images. *Id.* at 59–60 (citing Ex. 1003 ¶¶ 228, 230–233; Ex. 1007 ¶¶ 37, 52, 62, 82–83; Pet. 51–53 (rationale to combine)).¹⁵

Patent Owner argues that Petitioner fails to reconcile its proposed combination with Apostolopoulos’s three-dimensional virtual environment, which represents participants with avatars. Prelim. Resp. 49–50 (citing Ex. 1007 ¶ 28; Ex. 2001 ¶¶ 100–102). Also, Patent Owner argues that “[t]he Petition’s only explanation for the modification . . . is that a film strip style user interface ‘was common in video conferencing systems.’” *Id.* at 49 (citing Pet. 59). Finally, Patent Owner argues that the Apostolopoulos-Baker ground suffers from the same deficiencies as the Setton-Baker ground. *Id.* at 50.

Patent Owner’s three arguments are unavailing on this record. First, Patent Owner does not sufficiently explain its view that Apostolopoulos’s three-dimensional virtual environment (*see* Prelim. Resp. 49–50) undermines Petitioner’s rationale to combine the references. As explained in connection with element 3.1.1, we do not currently agree that Apostolopoulos is limited to a three-dimensional virtual environment.

¹⁵ Petitioner cites “Section X.D.2” of the Petition (Pet. 60), which provides reasons to combine Setton, Baker and Wong (*id.* at 41). This appears to be a typographical error intended to reference Section X.E.2, which addresses the Apostolopoulos-Baker combination. We have corrected this citation.

Moreover, even if Apostolopoulos were limited to that particular embodiment, it is unclear why that fact would impact an ordinary artisan's motivation vis-à-vis combining Apostolopoulos with Baker. We have considered the cited portions of Dr. Sharony's testimony (*see* Ex. 2001 ¶¶ 100–102), but he also does not provide sufficient explanation or evidence to support these conclusions. The panel would benefit from additional arguments and evidence to explain Patent Owner's position.

Second, we do not agree with Patent Owner's argument that Petitioner provided only one reason for its proposed combination. *See* Prelim. Resp. 49 (citing Pet. 59). Petitioner argues that the combination would “address bandwidth and processing constraints while prioritizing important objects/speakers in the conference” (Pet. 60), and the Petition also includes a separate section that addresses the rationale to combine (*id.* at 51–53). *See also supra* § III.F.1 (summarizing Petitioner's rationale to combine Apostolopoulos and Baker).

Finally, Patent Owner does not sufficiently explain its argument that this ground suffers from the same deficiencies as the Setton-Baker ground. *See* Prelim. Resp. 50. Also, we do not currently agree with Patent Owner's arguments regarding that ground. *See supra* § III.E.2.

[3.2] “a proxy at the selected mesh-connected endpoint for the non-mesh connected endpoint and connected to each of the mesh-connected endpoints to receive video feeds from the mesh-connected endpoints for the non-mesh connected endpoint”

Petitioner contends that it would have been obvious to incorporate a proxy at Apostolopoulos's central server 365 that receives video feeds from

nodes 350 for the non-mesh node 361A. Pet. 60–63 (citing Ex. 1007 ¶¶ 51, 56–57, 70; Ex. 1003 ¶¶ 214, 236–239, 242–244).

At this stage, Patent Owner does not allege any deficiencies in this aspect of Petitioner’s showing.

[3.3] “a server associated with the proxy for serving the film strip with frames containing reduced-size video feeds from the mesh-connected conference participants to the non-mesh connected endpoint”

Petitioner contends that, in the Apostolopoulos-Baker combination, it would have been obvious for central server 365 to include a server to transmit the film strip of reduced-sized video feeds to non-mesh node 361A. Pet. 64–66 (citing Ex. 1007 ¶ 70; Ex. 1003 ¶¶ 246–255).

At this stage, Patent Owner does not allege any deficiencies in Petitioner’s showing for this element.

[3.4] “a control connection permitting a user located at the non-mesh connected endpoint to select a video feed on the film strip for promotion to full size and to initiate transfer of the full size video feed to the non-mesh connected endpoint”

Petitioner relies on the Apostolopoulos-Baker combination for this element. Pet. 66–68. Petitioner points to Baker’s disclosure of a user touching or tapping an image of a participant “to bring up that conference participant’s viewing area on the display,” and Petitioner contends this discloses “permitting a user . . . to select a video feed on the film strip for promotion to full size,” as claimed. *Id.* at 66–67 (citing Pet. 33–37 (Setton-Baker ground, element 3.4); Ex. 1006, 8:32–37, 9:9–26, 9:45–49, Fig. 10B; Ex. 1003 ¶¶ 259, 261–262). In addition, Petitioner contends that it would have been obvious to make this functionality available to star node 361A

and to allow the user to initiate transfer of the full-size video feed. *Id.* at 67–68 (citing Pet. 33–37 (Setton-Baker ground, element 3.4); Ex. 1003 ¶¶ 258–260, 262–265; Ex. 1007 ¶¶ 48, 70, 82–83).

Patent Owner argues that an ordinarily skilled artisan would not have been motivated to combine Apostolopoulos and Baker in this way. Prelim. Resp. 51–52. According to Patent Owner, an ordinarily skilled artisan “would not have incorporated the film strip user interface from Baker into Apostolopoulos’s three dimensional virtual environment because the film strip would detract from and be inconsistent with Apostolopoulos’s aim to permit users to interact with each other in a three dimensional virtual environment through view dependent rendered avatars.” *Id.* at 51 (citing Ex. 2001 ¶¶ 88–90, 108). Patent Owner also argues that Baker receives and locally stores the streams from all participants, as explained in connection with the Setton-Baker ground. *Id.* at 51–52.

At this stage, Patent Owner does not sufficiently explain its view that Apostolopoulos’s three-dimensional/avatar embodiment undermines Petitioner’s articulated motivation for combining Apostolopoulos and Baker. Dr. Sharony notes differences between the references—for example, Baker provides two-dimensional images and “does not address challenges associated with a hybrid network topology,” where Apostolopoulos provides three-dimensional images and a dynamic topology—but he does not sufficiently explain why these differences matter to Petitioner’s obviousness contentions. *See* Ex. 2001 ¶¶ 88–90. The panel would benefit from additional arguments and evidence to explain Patent Owner’s position in this regard. Also, to the degree Dr. Sharony opines that the results of the combination would not have been predictable (*id.* ¶ 89), that opinion is insufficiently explained given the generally predictable nature of the

technology at issue. Finally, as we explained in the discussion of element 3.4 in the Setton-Baker ground, Patent Owner's arguments regarding Baker's disclosure are unavailing at this stage. *See supra* § III.E.2.

G. Grounds 2 and 4: Obviousness Based on Setton, Baker, and Wong or Apostolopoulos, Baker, and Wong

Petitioner contends that the subject matter of dependent claims 4–6 would have been obvious over Setton, Baker, and Wong. Pet. 40–48. Petitioner also contends that the subject matter of these claims would have been obvious over Apostolopoulos, Baker, and Wong. *Id.* at 71–76. At this stage, Patent Owner presents no separate arguments directed to these grounds. *See* Prelim. Resp. 45, 52–53. In this Decision, we need not (and do not) address these grounds of unpatentability, but we will evaluate them in our final written decision, if necessary or appropriate.

IV. CONCLUSION

As explained above, we determine that Petitioner has established a reasonable likelihood of prevailing in its challenge to at least one claim of the '099 patent, and we are not persuaded to exercise our discretion to deny institution. Thus, we institute an *inter partes* review of all challenged claims on all asserted grounds. *See* 37 C.F.R. § 42.108(a).

The factual findings and conclusions of law in this Decision are preliminary and based on the current record. They are made for the sole purpose of determining whether Petitioner meets the reasonable likelihood threshold for initiating review. Any final decision as to the patentability of the challenged claims will be based on the full record developed during trial, including any response timely filed by Patent Owner. Any arguments not raised by Patent Owner in such a response may be deemed forfeited.

V. ORDER

It is:

ORDERED that an *inter partes* review is instituted on all challenged claims, i.e., claims 3–6 and 10 of the '099 patent, on all grounds of unpatentability specified in the Petition, as identified in Section I.B of this Decision; and

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4(b), *inter partes* review of the '099 patent shall commence on the entry date of this Decision, and notice is hereby given of the institution of a trial.

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