

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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GENIUS SPORTS LTD.,  
Petitioner,

v.

SPORTSCASTR INC. d/b/a PANDA INTERACTIVE,  
Patent Owner.

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IPR2024-01309  
Patent 10,425,697 B2

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Before THU A. DANG, JON M. JURGOVAN, and  
STEPHEN E. BELISLE, *Administrative Patent Judges*.

DANG, *Administrative Patent Judge*.

JUDGMENT

Final Written Decision

Determining All Challenged Claims Unpatentable

Denying Petitioner's Motion to Exclude

35 U.S.C. § 318(a); 37 C.F.R. § 42.64(c)

## I. INTRODUCTION

### *A. Background*

In response to a Petition (Paper 1, “Pet.”) filed by Genius Sports Ltd. (“Petitioner”), the Board instituted *inter partes* review of claims 19–25 and 27–30 (the “challenged claims”) of U.S. Patent No. 10,425,697 B2 (Ex. 1006, “the ’697 patent”). See Paper 9 (“Dec. Inst.”).

During trial, SportsCastr Inc. (d/b/a PANDA Interactive) (“Patent Owner”) filed a Response (Paper 15 (“PO Resp.”)), to which Petitioner filed a Reply (Paper 23 (“Pet. Reply”)). In turn, Patent Owner filed a Sur-reply. Paper 25 (“PO Sur-reply”). Oral Argument was held with the parties on December 18, 2025. A transcript of the hearing has been entered into the record. Paper 45 (“Tr.”).

Petitioner also filed a motion to exclude certain evidence. Paper 34 (“Exclude Mot.”). Patent Owner filed an opposition (Paper 35, “Exclude Opp.”).

We have jurisdiction under 35 U.S.C. § 6. This Decision is a Final Written Decision under 35 U.S.C. § 318(a) as to the patentability of the claims on which we instituted trial. Based on the record before us, Petitioner has shown by a preponderance of the evidence that claims 19–25 and 27–30 of the ’697 patent are unpatentable under 35 U.S.C. § 103(a).

### *B. Real Parties in Interest*

Petitioner identifies itself, Genius Sports Ltd., as the real party-in-interest. Pet. 3; Paper 38, 1. Patent Owner identifies itself, SportsCastr Inc., as the real party-in-interest. Paper 5, 1; Paper 18, 1.

*C. Related Proceedings*

Both parties identify, as a matter currently involving the '697 patent, *SportsCastr Inc. v. Genius Sports Ltd.*, No. 2:23-cv-00471 (E.D. Tex.) (“related parallel proceeding”). Pet. 3<sup>1</sup>; Paper 5, 1. Patent Owner also identifies *SportsCastr Inc. v. Sportradar Group, AG et al.*, 2:23-cv-00472 (E.D. Tex.) as a matter involving the '697 patent. Paper 5, 1; Paper 18, 1. Petitioner further identifies four other petitions challenging patents related to the '697 patent in IPR2024-01305, IPR2024-01307, IPR2024-01310, and IPR2024-01311. Pet. 3–4; Paper 38, 1.

*D. The '697 Patent*

The '697 patent is titled “Systems, Apparatus, and Methods for Scalable Low-Latency Viewing of Broadcast Digital Content Streams of Live Events, and Synchronization of Event Information with Viewed Streams, via Multiple Internet Channels.” Ex. 1006, code (54). The '697 patent relates to systems and methods that facilitate providing live stream video and/or audio broadcasts to viewers in real time. *Id.* at 2:49–57. Figure 1A of the '697 patent is reproduced below.

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<sup>1</sup> In the Petition, Petitioner misidentifies the case as “2:23-cv-04771-JRG.” See Pet. 3

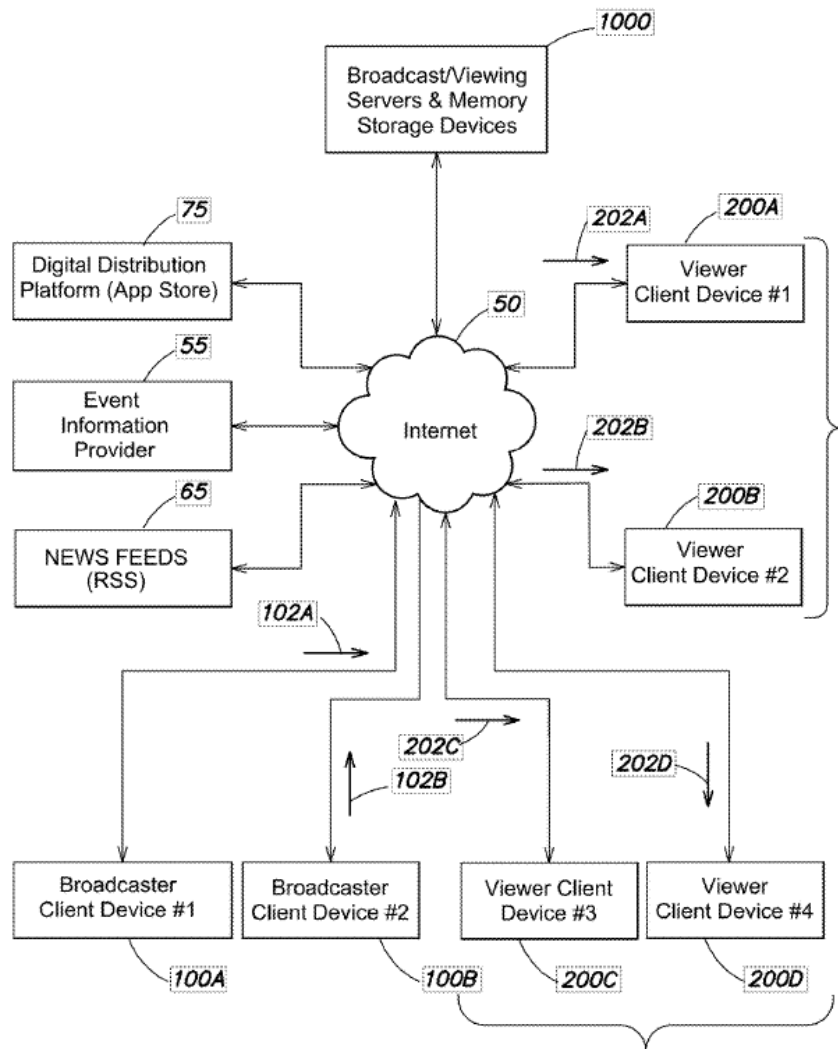


**FIG. 1A**

Figure 1A is a block diagram of a system facilitating live streaming digital content from multiple broadcasters to multiple viewers. *Id.* at 11:9–12. As shown in Figure 1A, the system includes broadcaster client devices 100A and 100B, viewer client devices 200A–200D, broadcast/viewing servers and memory storage devices 1000, event information provider 55, one or more news feeds 65, and digital distribution platform 75, all coupled together via Internet 50. *Id.* at 14:41–49. In Figure 1A, first broadcaster client device 100A provides first live stream of digital content 102A, and copies 202A and 202B of digital content 102A are

received by viewer client devices 200A and 200B, respectively. *Id.* at 15:11–16. Similarly, second broadcaster client device 100B provides second live stream of digital content 102B, and copies 202C and 202D are received by viewer client devices 200C and 200D, respectively. *Id.* at 15:17–22. Broadcast/viewing servers and memory storage devices 1000 may retrieve news and/or event information germane to a live stream of digital content from news feeds 65 and event information provider 55 and convey the relevant news and/or event information to one or more client devices. *Id.* at 15:22–29.

Figure 2, reproduced below, is a block diagram of broadcast/viewing servers and memory storage devices 1000 in the system of Figure 1A. *Id.* at 11:16–18, 18:26–34.

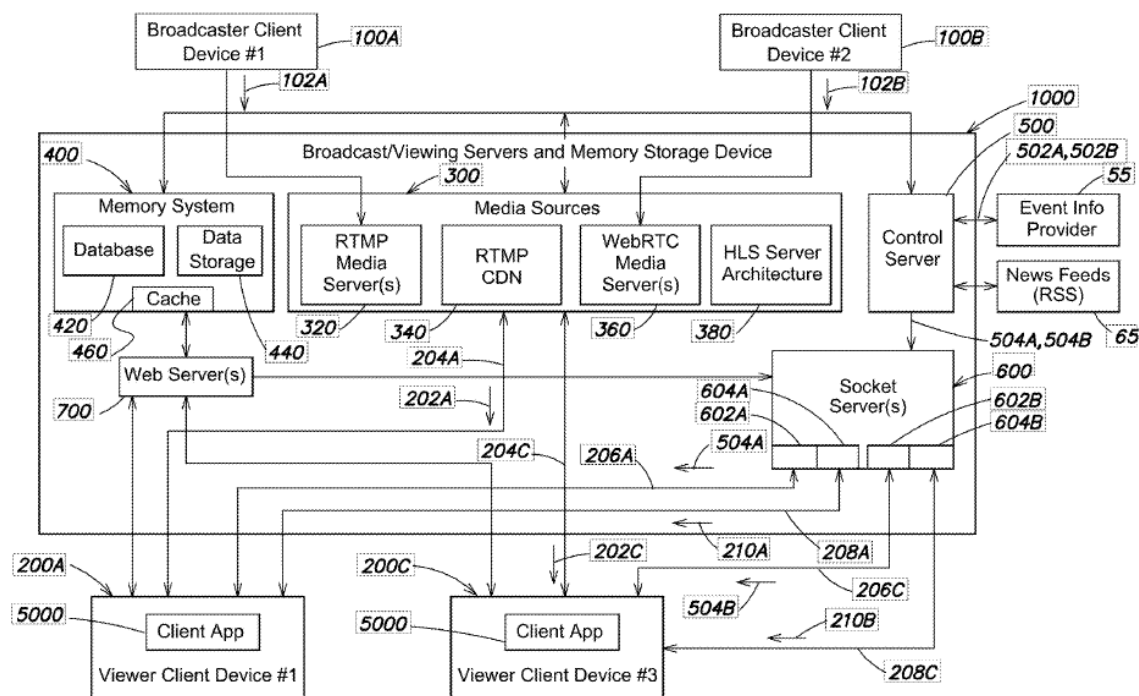


**FIG. 2**

Figure 2 is a block diagram of servers/memory storage devices 1000. *Id.* at 11:16–18, 18:26–34. Figure 2 shows servers/memory storage devices

1000 including, in relevant part, a plurality of media sources 300, control server 500, one or more web servers 700, and socket server 600. *Id.* at 18:45–52, 19:7–20:5. Media sources 300 receive live streams of digital content (102A, 102B) from broadcaster client devices (100A, 100B) and provide copies (202A, 202C) to viewer client devices (200A, 200C). *Id.* at 19:7–13. Web server 700 supports an application programming interface to facilitate communication between servers/memory storage devices 1000 and client devices. *Id.* at 18:45–52. Control server 500 retrieves news and/or event information germane to the live streams of digital content (102A, 202C) from news feeds 65 and event information provider 55. *Id.* at 19:41–45. Socket servers 600 facilitate communication of synchronized event information retrieved by control server 500 to broadcaster and viewer client devices. *Id.* at 19:67–20:5. For example, control server 500 may retrieve first score information 504A for a first live sporting event and provide it to socket server 600, which establishes event socket 602A. *Id.* at 21:37–52. First viewer client device 200A connects to event socket 602A via a URL, and first score information 504A is transmitted to first viewer client device 200A. *Id.* at 21:59–22:6.

*E. The Challenged Claims*

Petitioner challenges claims 19–25, and 27–30 of the '697 patent. Pet. 5. Of the challenged claims, claim 19, 23, and 27 are the independent claims. Claims 20–22 depend from claim 19, claims 24 and 25 depend from claim 23, and claims 28–30 depend from claim 27. Independent claim 19, reproduced below, is illustrative of the claimed subject matter.

19. A system for providing a first plurality of copies of a first broadcaster's live stream of digital content including first video-

based commentary about a first live sporting event from a first broadcaster client device to a first plurality of viewer client devices, and for providing a second plurality of copies of a second broadcaster's live stream of digital content including second video-based commentary about a second live sporting event from a second broadcaster client device to a second plurality of viewer client devices, the system comprising:

a plurality of media sources to:

receive the first broadcaster's live stream of digital content and the second broadcaster's live stream of digital content;

provide a first copy of the first plurality of copies to a first viewer client device of the first plurality of viewer client devices via a first Internet communication channel between the plurality of media sources and the first viewer client device of the first plurality of viewer client devices; and

provide a first copy of the second plurality of copies to a first viewer client device of the second plurality of viewer client devices via a second Internet communication channel between the plurality of media sources and the first viewer client device of the second plurality of viewer client devices;

a control server to periodically retrieve, via the Internet and from an event information provider, first event information germane to a first live sporting event and second event information germane to the second live sporting event; and

at least one socket server communicatively coupled to the control server to:

receive from the control server at least some of the first event information and at least some of the second event information; wherein:

the at least some of the first event information includes first score information for the first sporting event; and

the at least some of the second event information includes second score information for the second sporting event; and

transmit at least the first score information the at least some of the first event information to the first viewer client device of the first plurality of viewer client devices via a third Internet communication channel between at least one first event socket of the at least one socket server and the first viewer client device of the first plurality of viewer devices; and

transmit at least the second score information of the at least some of the second event information to the first viewer client device of the second plurality of viewer client devices via a fourth Internet communication channel between at least one second event socket of the at least one socket server and the first viewer client device of the second plurality of viewer devices.

Ex. 1006, 63:62–64:51.

*F. Asserted Grounds of Unpatentability*

The Board instituted *inter partes* review of all challenged claims, claims 19–25 and 27–30, on all challenges in the Petition. Dec. Inst. 69. Petitioner asserts that claims 19–25 and 27–30 of the '697 patent are unpatentable based on the following grounds (Pet. 6):

| <b>Claim(s)<br/>Challenged</b> | <b>35 U.S.C.<br/>§<sup>2</sup></b> | <b>References/Basis</b>                  | <b>Ground<br/>Name</b> |
|--------------------------------|------------------------------------|------------------------------------------|------------------------|
| 19–25, 27–30                   | 103                                | Ellis <sup>3</sup> , Spivey <sup>4</sup> | 1                      |
| 19–25, 27–30                   | 103                                | Herzog <sup>5</sup> , Spivey, Ellis      | 2                      |

Petitioner relies on declarations of Dr. Stephen B. Wicker, Ph.D. Ex. 1001 (in support of the Petition); Ex. 1064 (in support of Petitioner’s Reply). Patent Owner relies on declarations of Dr. Aviel Rubin, Ph.D. Ex. 2001; Ex. 2038. Dr. Rubin was cross-examined by Petitioner, and a transcript of his deposition was entered into the record. Ex. 1063. Dr. Wicker was cross-examined by Patent Owner, and a transcript of his deposition was entered into the record. Ex. 2039.

## II. ANALYSIS

### *A. Level of Ordinary Skill in the Art*

In determining whether an invention would have been obvious at the time it was made, we consider the level of ordinary skill in the pertinent art at the time of the invention. *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966). In our analysis, various factors may be considered, including the

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<sup>2</sup> The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284 (2011), amended 35 U.S.C. § 103, effective March 16, 2013. Because the challenged claims of the ’697 patent have an apparent effective filing date after March 16, 2013, the AIA version of § 103 applies. Our determinations and findings herein would not change if the pre-AIA provisions applied.

<sup>3</sup> US 2014/0229992 A1, pub. Aug. 14, 2014 (“Ex. 1016”).

<sup>4</sup> US 2016/0036910 A1, pub. Feb. 4, 2016 (“Ex 1017”).

<sup>5</sup> US 2015/0163379 A1, pub. June 11, 2015 (“Ex. 1015”).

“type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field.” *In re GPAC, Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995). Furthermore, the prior art itself can reflect the appropriate level of ordinary skill in the art. *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001).

Relying on the declaration of Dr. Wicker, Petitioner contends that a person of ordinary skill in the art (POSITA) at the time of the invention of the '697 patent would have had “at least a bachelor’s degree, or equivalent, in electrical engineering, computer engineering, computer science, or a related field or an equivalent number of years of working experience, and one to two years of experience in networking environments, including at least some experience with live-streaming network architecture.” Pet. 15 (citing Ex. 1001 ¶¶ 72–76). Petitioner also states that “[a]dditional education or experience in related fields could compensate for deficits in the above qualifications.” *Id.*

Patent Owner contends that a POSITA at the time of the invention of the '697 patent would have had “a bachelor’s degree in electrical engineering, computer engineering, computer science, or equivalent degree and, in addition, approximately two years of work experience with Internet video streaming, Internet communication, and related protocols.” PO Resp. 14 (citing Ex. 2001 ¶ 103).

The parties have not addressed whether the differences in these definitions impact the unpatentability analysis before us. We apply Patent Owner’s definition of a POSITA at the time of the claimed invention because, based on the record, this proposal is consistent with the '697 patent,

the asserted prior art, and is supported by the testimony of Dr. Wicker. We note that we would reach the same determination under Petitioner’s formulation of the level of ordinary skill.

*B. Claim Construction*

We construe each claim “in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.” 37 C.F.R. § 42.100(b). Under this standard, claim terms are generally given their plain and ordinary meaning as would have been understood by a POSITA at the time of the invention and in the context of the entire patent disclosure. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) (en banc).

Petitioner contends that “[t]he claim terms of the ’697 should be given their plain and ordinary meaning” as understood by POSITA. Pet. 6.

Further, Petitioner notes that claims 27–30 of the challenged claims of the ’697 patent include “means-plus-function” (“MPF”) claim limitations (Pet. 7), which creates a rebuttable presumption that the Patent Owner intended to invoke § 112, ¶ 6. *See Altiris Inc. v. Symantec Corp.*, 318 F.3d 1363, 1375 (Fed. Cir. 2003). Petitioner indicates that it “adopts the structure purportedly advanced by PO in the Texas Litigation to the best of its ability.” Pet. 7 (citing Exs. 1019, 1020). The table below summarizes Petitioner’s contentions for each means-plus-function limitation recited in claims 27–30.

| Claim | Structure                                           | Function                                                                                   |
|-------|-----------------------------------------------------|--------------------------------------------------------------------------------------------|
| 27    | Media sources performing the algorithm disclosed in | Providing the first copy to the first viewer client device via a first video communication |

|    |                                                                                                                               |                                                                                                                                                                                                                                                                                       |
|----|-------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | 9:16–41 and shown as media sources 300 in Figure 2 of the '697 patent.                                                        | channel;                                                                                                                                                                                                                                                                              |
|    | Control Server performing the algorithm disclosed in 9:41–46 and shown as control server 500 in Figure 2 of the '697 patent.  | Retrieving, via the Internet, first event information germane to a first live sporting event; and                                                                                                                                                                                     |
|    | Socket Server performing the algorithm disclosed in 9:46–58 and shown as socket server 600 in Figure 2 of the '697 patent.    | Transmitting the first event information to at least the first viewer client device via a first event information communication channel that is different from the first video communication channel.                                                                                 |
| 28 | Socket Server performing the algorithm disclosed in 20:17–25 and shown as socket server 600 in Figure 2 of the '697 patent.   | Transmitting and receiving first chat information regarding the first live sporting event via at least one first chat/system event Internet communication channel that is different from the first video communication channel and the first event information communication channel. |
| 29 | Control Server performing the algorithm disclosed in 17:28–38 and shown as control server 500 in Figure 2 of the '697 patent. | Updating the first event information and queueing an asynchronous message including the updated first event information for transmission on the first event information communication channel.                                                                                        |
| 30 | HLS mother server, HLS child servers, and an HLS CDN shown as HLS server architecture 380 in Figure 8                         | Providing the first copy to the first viewer client device via a first video communication channel between the HLS                                                                                                                                                                    |

|  |                                                                   |                                                                                                                                        |
|--|-------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
|  | performing the algorithm disclosed in 33:21–33 and Figures 9A–9D. | CDN and the first viewer client device, wherein the first copy is based on the first HLS file suite received by the HLS mother server. |
|--|-------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|

Pet. 7–8.

Petitioner further asserts in the Petition that a POSITA “would have understood a ‘socket’ to be a uniquely addressable communication endpoint on a server where first/second event information is provided to a VCD[viewer client device].” Pet. 39 (citing Ex. 1001 ¶¶ 594–595). Thus, Petitioner argues, a first/second “event socket” is “a socket where information about each sporting event is provided to VCDs.” *Id.*

In its “Claim Construction” section (PO Resp. 12–14), Patent Owner addresses only the claim term “means for transmitting the first score information to at least the first viewer client device via a first event information communication channel that is different from the first video communication channel” in claim 27. *Id.* at 12. In particular, Patent Owner responds as follows:

Patent Owner agrees with Petitioner’s construction; however, more specifically, a POSITA would understand the “means for transmitting” to be a socket server transmitting through an event socket that implements the algorithms described in Figures 2, 3, 21A–21E and accompanying disclosures, including 5:29–44 9:16–10:43, 19:64–20:61, 21:37–22:67, 23:20–45, 26:50–27:27, 29:25–43, 46:61–47:11, 51:27–49, and 53:21–37 of the ’697 patent. (EX-2001, §IV.B.1.)

*Id.* at 13. Patent Owner argues “a POSITA would understand ‘means for transmitting’ to be a socket server transmitting event information through an event socket.” *Id.* at 14.

Further, in its prior art arguments against Spivey, Patent Owner argues that “Spivey’s ‘topic queues’ do not disclose or suggest an ‘event socket’ because those topic queues are not ‘uniquely addressable communication endpoints.’” PO Resp. 2. Citing to Dr. Rubin, Patent Owner contends that “Spivey’s topic queues are neither ‘uniquely addressable’ nor ‘communication endpoint[s].’” *Id.* (citing Ex. 2001 ¶ 240).

“The Board is required to construe ‘only those terms . . . that are in controversy, and only to the extent necessary to resolve the controversy.’” *Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

Here, we have reviewed Petitioner’s proposed constructions of the means-plus-function (“MPF”) terms (Pet. 7–8), and we determine that Petitioner has set forth proposed structures that support these limitations. *See* 37 C.F.R. § 42.104(b)(3) (requiring Petitioner to construe a MPF limitation by identifying “the specific portions of the specification that describe the structure, materials, or acts corresponding to each claimed function”).

And Patent Owner states that it “agree[s] with Petitioner’s construction” with respect to the MPF terms. PO Resp. 13. Although Patent Owner also contends that a “POSITA would understand the ‘means for transmitting’ to be a socket server transmitting through an event socket that implements the algorithms described in Figures 2, 3, 21A–21E and accompanying disclosures” (*id.*), Patent Owner’s proposed further construction is not disputed by Petitioner. *See generally* Pet. Reply.

Furthermore, Petitioner’s proposed constructions of “socket” and “event socket” (Pet. 39) are not disputed by Patent Owner. PO Resp. 2, 13–14. In fact, by arguing that Spivey’s topic queues are neither “uniquely addressable” nor “communication endpoint[s],” Patent Owner appears to adopt Petitioner’s proposed construction of “socket” as a “uniquely addressable communication endpoint.” *Id.* at 2. As Patent Owner acknowledged during Oral Argument, “I don’t think there’s any dispute of what we mean by socket, a uniquely addressable communication endpoint.” Tr. 73:11–13.<sup>6</sup>

Thus, on this record, because there is no dispute between the parties regarding the terms “means for transmitting,” “event socket,” or “socket,” construction is not needed. Accordingly, we decline to provide further analysis or an express construction for these terms.

### *C. Principles of Law*

A claim is unpatentable under 35 U.S.C. § 103 “if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains.” 35 U.S.C. § 103; *see KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations: (1) the scope and

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<sup>6</sup> Patent Owner also refers to the District Court’s construction of “event socket” during Oral Argument, by claiming the court’s Claim Construction Order was a part of the record as “Exhibit 1069.” Tr. 73:14–74:17. However, as there is no “Exhibit 1069” in this proceeding, we will not consider arguments made during Oral Argument that are not supported by the record before us.

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 of record, objective evidence of nonobviousness. *Graham*, 383 U.S. at 17–18.

*D. Obviousness of Claims 19–25 and 27–30 over Ellis, and Spivey (Ground 1)*

Petitioner contends that claims 19–25 and 27–30 of the ’697 patent would have been obvious over the combination of Ellis and Spivey. Pet. 19–60. In response, Patent Owner disputes Petitioner’s contentions. PO Resp. 26–54. We briefly summarize Ellis and Spivey.

1. Ellis

Ellis is titled “Systems and Methods for Providing Enhanced Sports Watching Media Guidance,” and discloses systems and methods for accessing and displaying sports-related media content. Ex. 1016, codes (54), (57). Figure 1 of Ellis, reproduced below, illustrates an interactive media system. *Id.* ¶¶ 15, 39.

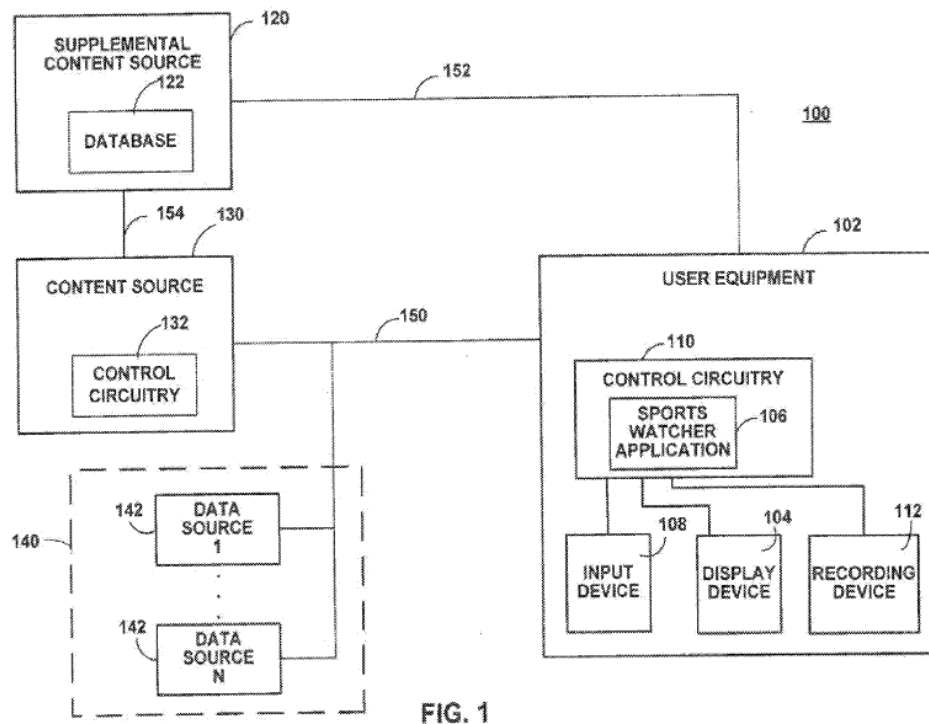


Figure 1 is a block diagram illustrating interactive media system 100. *Id.* ¶¶ 15, 39. As shown in Figure 1, interactive media system 100 includes user equipment 102, content source 130, supplemental content source 120, and data sources 140. *Id.* ¶ 39. User equipment device 102 receives media content, such as video broadcast programming, from content source 130 via communication path 150. *Id.* ¶¶ 39–40, Fig. 1. User equipment device 102 also receives content, such as real-time sports scores and game summary information, from supplemental content source 120 via communication path 152. *Id.* ¶¶ 39, 41, Fig. 1. Data sources 140 provide data for applications running on user equipment 102. *Id.* ¶ 46.

## 2. Spivey

Spivey is titled “Techniques to Broadcast Live Event Data in Real-Time,” and discloses a system for broadcasting live event data in real-time. Ex. 1017, codes (54), (57). According to Spivey, its techniques “increase

the speed at which live event data (e.g. sports scores and breaking news), are broadcast to mobile devices by using topic queues and open duplex communication connections, among other innovative techniques.” *Id.* ¶ 27.

Figure 1 of Spivey is reproduced below. *Id.* ¶¶ 3, 34.

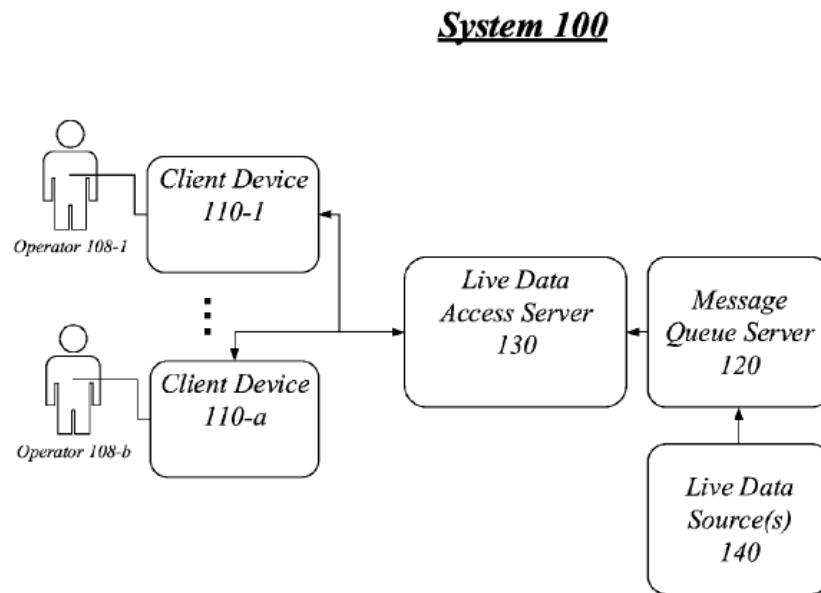


**FIG. 1**

Figure 1 illustrates system 100 for broadcasting live event data. *Id.* ¶¶ 3, 34. As shown in Figure 1, system 100 includes client devices 110-1 through 110-a, message queue server 120, and live data access server 130 (also “LDAS”) coupled via one or more networks. *Id.* ¶ 34. Message queue server 120 (also “MQS”) receives live data from live data source(s) 140 and processes the live data so that it can be provided to client devices 110-1 through 110-a. *Id.* ¶¶ 35–37. Live data access server 130 interfaces between message queue server 120 and client devices 110-1 and 110-a. *Id.* ¶ 38.

Figure 4 of Spivey, reproduced below, illustrates operating environment 400. *Id.* ¶¶ 6, 53.

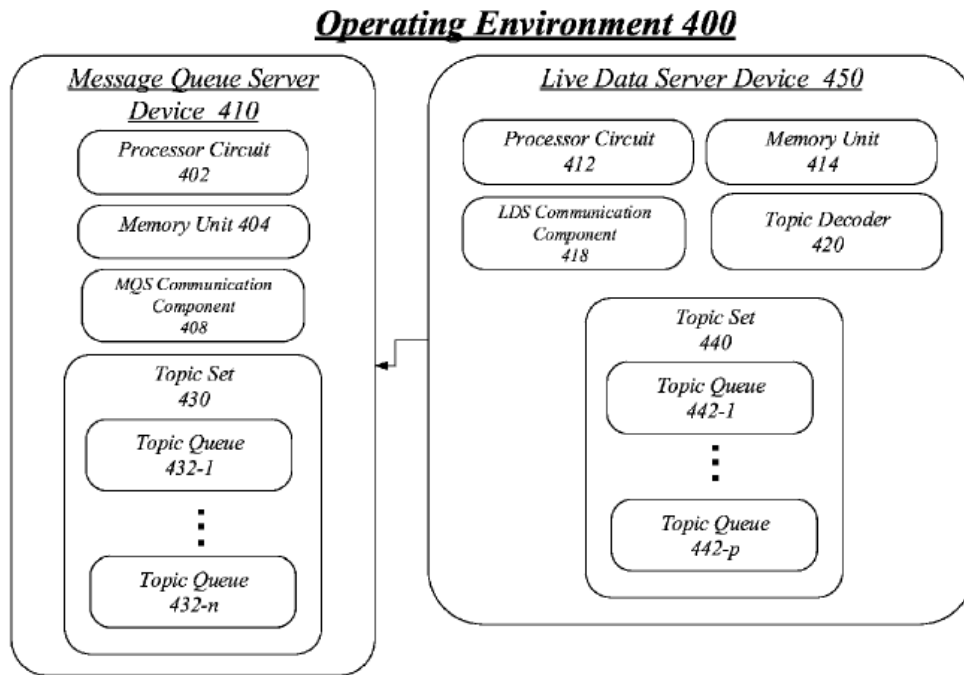


**FIG. 4**

Figure 4 illustrates operating environment 400. *Id.* ¶¶ 6, 53. As shown in Figure 4, in operating environment 400, message queue server 120 is implemented as message queue server device 410 and live data server device 450. *Id.* ¶ 53. Message queue server device 410 (“also “MQSD”) includes communication component 408, topic set 430, and topic queues 432. *Id.* ¶ 54. Live data server device 450 includes live data server communication component 418 that allows live data server device 450 to receive live data and transmit it to message queue server device 410. *Id.* ¶ 55. Live data server device 450 also includes topic decoder 420, topic set 440, and topic queues 442. *Id.* ¶ 56. In an embodiment, message queue server device 410 “may be implemented as [an open source message broker software,] RABBITMQ™ server” which “facilitates topic queues that receive published messages and push the messages to clients that have subscribed to the topic queues.” *Id.* ¶ 58.

In another embodiment, “[o]perating environment 500 may comprise . . . live data access server 510, which may be a representative example of live data access server 130,” wherein “[l]ive data access server 510 may include one or more functional components, for example, . . . live data access (LDA) communication component 520, . . . interface component 530, and . . . subscription component 540.” *Id.* ¶¶ 7, 59–60, Fig. 5. LDA communication component 520 may operate to receive connection requests from client devices 110 and to authenticate the requesting client. *Id.* ¶ 62. Interface component 530 may generally provide an interface to allow an operator to request and authenticate a connection to live data access server 510, to select one or more topics relating to live events for subscription, and to receive and display the live data as it is received by message queue server 120. *Id.* ¶ 63. Subscription component 540 may receive the selected topic(s) from interface component 530 for a particular connected client, and then communicate with message queue server 120 to subscribe to the topic queues that correspond to the selected topic. *Id.* ¶ 64.

### 3. Analysis

As to Ground 1, we begin by addressing Petitioner’s contentions and Patent Owner’s arguments with respect to the limitations of representative claim 19 in subsection *a* below, address independent claims 23 and 27 in subsection *b*, and address dependent claims 20–22, 24, 25, and 28–30 in subsection *c*. We address Patent Owner’s alleged evidence of objective indicia of non-obviousness in subsection *d* below.

#### *a. Independent Claim 19*

Petitioner contends that claim 19 of the ’697 patent would have been obvious over the combination of Ellis and Spivey.

- i. *Preamble - a “system” for providing “a first plurality of copies of a first broadcaster’s live stream of digital content including first video-based commentary about a first live sporting event from a first broadcaster client device to a first plurality of viewer client devices,” and “a second plurality of copies of a second broadcaster’s live stream of digital content including second video-based commentary about a second live sporting event from a second broadcaster client device to a second plurality of viewer client devices”*

Petitioner presents evidence to support its contention that, to the extent the preamble is limiting, Ellis discloses the preamble. Pet. 24–26 (citing, *e.g.*, Ex. 1016, code (57), ¶¶ 8, 11, 39–40, 45, 62–63, 74, Fig. 2B; Ex. 1001 ¶¶ 545–546, 580). In particular, Petitioner relies on Ellis’s disclosure of providing “enhanced information access and viewing functionality for sports-related programming,” as well as Ellis’s disclosure that sports-related programming includes “a sporting event, sports news, or sports commentary.” *Id.* at 24 (quoting Ex. 1016 ¶¶ 8, 11). Petitioner contends that Ellis discloses a system providing multiple live sporting events simultaneously available to any number of users, shown in Figure 2B, wherein the users can select which content to receive. *Id.* at 24–26 (citing Ex. 1016 ¶¶ 62–63, Fig. 2B).

Figure 2B of Ellis is reproduced below.

| 220   |                   | 230          |            |               |
|-------|-------------------|--------------|------------|---------------|
| 222   | 224               | 232          | 234        | 236           |
| Tuner | Primary Source ID | Source ID    | Type       | Profile Score |
| 1     | <sourceid_2>      | <sourceid_1> | Game       | 90            |
| 2     | <sourceid_1>      | <sourceid_2> | Game       | 95            |
| 3     | <sourceid_8>      | <sourceid_3> | Commentary | 45            |
| 4     | <sourceid_4>      | <sourceid_4> | News       | 75            |
|       |                   | <sourceid_5> | Movie      | 25            |
|       |                   | <sourceid_6> | Movie      | 35            |
|       |                   | <sourceid_7> | Highlights | 65            |
|       |                   | <sourceid_8> | Game       | 80            |

FIG. 2B

Figure 2B of Ellis illustrates tuner data tables 220 and 230 that are stored in memory 214 of control circuitry 110 (not shown in Figure 2B) that associate each of four tuners in column 222 with a primary sporting event or other sports-related content shown in source identifier column 224.

Ex. 1016 ¶¶ 62–63, Fig. 2B.

Ellis discloses that “one sporting event is designated as the primary sporting event” and “[o]ne or more sporting events other than the primary sporting event may be designated as secondary sporting events.” *Id.* ¶ 62. Ellis also discloses that “[t]he user may change or swap primary and/or secondary sporting events at any time.” *Id.* Ellis also discloses “[a]ny suitable number of users may have one or more equipment devices, such as user equipment 102.” *Id.* ¶ 39.

Patent Owner does not specifically contest Petitioner’s showing for the preamble of claim 1. *See* PO Resp. 1–6, 26–51 (presenting argument

contesting only Petitioner’s assertions as to the “event socket” and/or “means for transmitting” limitations and Petitioner’s asserted motivation to combine Ellis and Spivey).

We find Petitioner’s contentions are supported by the cited portions of Ellis. Based on the complete record presented, we determine that Petitioner has shown by a preponderance of the evidence that the proposed combination of Ellis and Spivey teaches a “system” for providing “a first plurality of copies of a first broadcaster’s live stream of digital content including first video-based commentary about a first live sporting event from a first broadcaster client device to a first plurality of viewer client devices,” and “a second plurality of copies of a second broadcaster’s live stream of digital content including second video-based commentary about a second live sporting event from a second broadcaster client device to a second plurality of viewer client devices,” as set forth in the preamble of claim 19.<sup>7</sup>

*ii. “a plurality of media sources”*

Petitioner presents evidence that Ellis teaches “a plurality of media sources.” Pet. 26–27 (citing, *e.g.*, Ex. 1016 ¶¶ 39–41, 45, 47, Fig. 1; Ex. 1001 ¶¶ 581–582). According to Petitioner, Ellis discloses content sources that are “any suitable source of media content” such as an “Internet or network media/web server, or any other suitable facility or system for originating or distributing passive or interactive content to user equipment

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<sup>7</sup> Because there is no dispute that the combination of Ellis and Spivey teaches providing first and second plurality of copies of first and second broadcaster’s live streams of digital content, there is no need to determine whether the preamble in claim 19 is limiting. *See Realtime Data*, 912 F.3d at 1375.

102.” *Id.* at 26 (quoting Ex. 1016 ¶ 40). Petitioner relies on Figure 1 of Ellis, reproduced below.

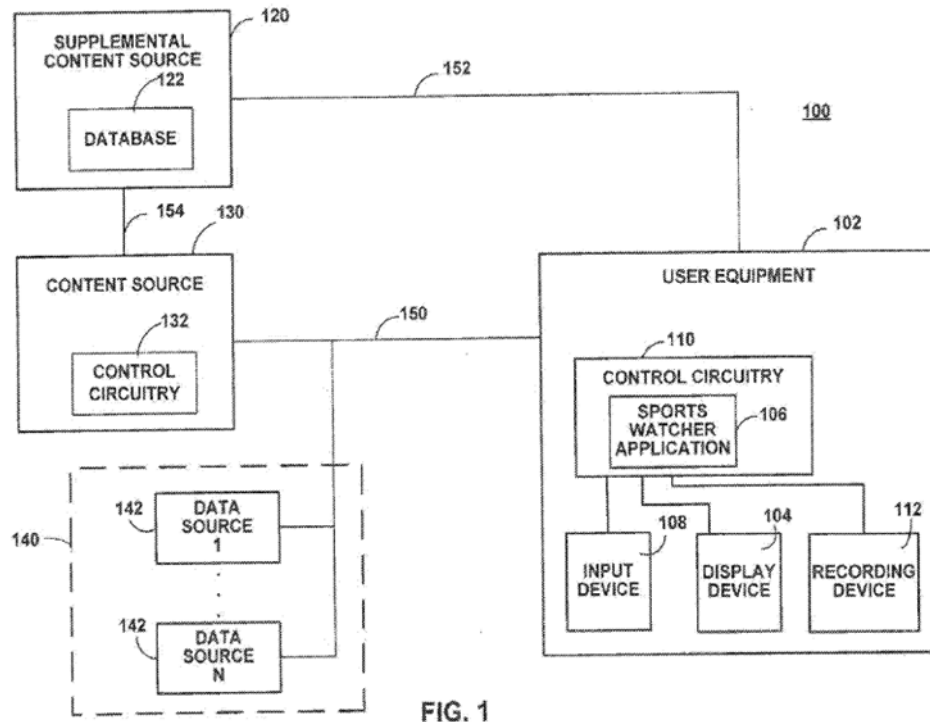


Figure 1 of Ellis is a block diagram illustrating interactive media system 100, showing interactive media system 100, which includes content source 130, as well as user equipment 102, supplemental content source 120, and data sources 140. Ex. 1016 ¶¶ 15, 39. Ellis describes that “[m]edia content that may be provided by content source 130 to user equipment 102 includes broadcast programming,” “news,” “newsgroups,” “chat rooms,” and “any other content capable of being displayed by, presented to, recorded, or interacted with, using user equipment 102.” *Id.* ¶ 40. Furthermore, Ellis describes with respect to Figure 1, “although in practice there may be numerous instances of content source 130 and supplemental content source 120, for clarity only one instance of each source has been shown in the example of FIG. 1.” *Id.* ¶ 39.

Patent Owner does not specifically contest Petitioner’s showing for this limitation. *See generally* PO Resp. 1–6, 26–51.

We find Petitioner’s contentions are supported by the cited portions of Ellis. Based on the complete record presented, we determine that Petitioner has shown by a preponderance of the evidence that the proposed combination of Ellis and Spivey teaches “a plurality of media sources,” as set forth in claim 19.

iii. *“receive the first broadcaster’s live stream of digital content and the second broadcaster’s live stream of digital content”*

Petitioner presents evidence that Ellis teaches receiving first and second “broadcaster’s live stream of digital content.” Pet. 27–28 (citing, e.g., Ex. 1016 ¶¶ 40, 45, 61–62, 74; Ex. 1001 ¶ 583). In particular, Petitioner relies on Ellis for disclosing that “a user may ‘actively watch one or more sporting events,’ and the user ‘may change or swap primary and/or secondary sporting events at any time.’” *Id.* at 28 (quoting Ex. 1016 ¶¶ 61–62). Further, Ellis describes that “[m]edia content” includes “broadcast programming,” “news,” “newsgroups,” “chat rooms,” and “any other content capable of being displayed by, presented to, recorded, or interacted with, using user equipment 102.” Ex. 1016 ¶ 40. As with respect to the preamble, Petitioner relies on Ellis’s disclosure of a “primary sporting event” and “secondary sporting events.” Pet. 28 (citing Ex. 1016 ¶ 62).

Patent Owner does not specifically contest Petitioner’s showing for this limitation. *See generally* PO Resp 1–6, 26–51.

We find Petitioner’s contentions are supported by the cited portions of Ellis. Based on the complete record presented, we determine that Petitioner has shown by a preponderance of the evidence that the combination of Ellis

and Spivey teaches “receiv[ing] the first broadcaster’s live stream of digital content and the second broadcaster’s live stream of digital content,” as set forth in claim 19.

- iv. *provide “a first copy of the first plurality of copies to a first viewer client device of the first plurality of viewer client devices via a first video Internet communication channel between the plurality of media sources and the first viewer client device of the first plurality of viewer client devices” and “a first copy of the second plurality of copies to a first viewer client device of the second plurality of viewer client devices via a second video Internet communication channel between the plurality of media sources and the first viewer client device of the second plurality of viewer client devices”*

Petitioner presents evidence that Ellis teaches providing a “first copy” of first and second plurality of copies to “a first viewer client device” of first and second plurality of viewer client devices via first and second “video Internet communication channel between the plurality of media sources and the first viewer client device” of the first and second plurality of viewer client devices. Pet. 28–30 (citing, *e.g.*, Ex. 1016 ¶¶ 39, 40, 45, 48, 55, 61, 62, 74, 94, 132, Fig. 2B; Ex. 1001 ¶¶ 549–553, 584–585). In particular, Petitioner relies on Ellis for disclosing an “‘interactive media system’ where ‘any suitable number of users’ may ‘select any game from the listing’ of ‘available games’ to ‘watch the selected game.’” *Id.* at 28 (quoting Ex. 1016 ¶¶ 39, 94). According to Petitioner, Ellis describes providing the copies “over a first/second Internet communication channel” because Ellis describes exemplary content sources as an “internet or network media/web

server,” and describes, “[f]or IPTV, tuned content may include content to be delivered on a particular network address (e.g., multicast address) on which an IP socket is currently joined.” *Id.* at 29–30 (quoting Ex. 1016 ¶¶ 40, 48, 74).

Patent Owner does not specifically contest Petitioner’s showing for these limitations. *See generally* PO Resp. 1–6, 26–51.

We find Petitioner’s contentions are supported by the cited portions of Ellis. Accordingly, based on the complete record presented, we determine that Petitioner has shown by a preponderance of the evidence that the combination of Ellis and Spivey teaches providing “a first copy of the first plurality of copies to a first viewer client device of the first plurality of viewer client devices via a first video Internet communication channel between the plurality of media sources and the first viewer client device of the first plurality of viewer client devices” and “a first copy of the second plurality of copies to a first viewer client device of the second plurality of viewer client devices via a second video Internet communication channel between the plurality of media sources and the first viewer client device of the second plurality of viewer client devices,” as set forth in claim 19.

- v. *“a control server to periodically retrieve, via the Internet and from an event information provider, first event information germane the first live sporting event and second event information germane the second live sporting event”*

Petitioner presents evidence that Ellis and Spivey both disclose “a control server” to periodically retrieve, via the Internet, “event information” “germane to a live sporting event.” Pet. 30–34 (citing, *e.g.*, Ex. 1016 ¶¶ 41, 42, 72, 117, 142, Fig. 1; Ex. 1017 ¶¶ 27, 35, 37, 48, 55, 66,

178, Fig. 4; Ex. 1001 ¶¶ 554–556). In particular, Petitioner relies on Ellis’s supplemental content source 120 for teaching a “content source” that “periodically retrieves . . . first and second event information germane to at least first/second live sporting event,” because the content source “may ‘provide real-time sports scores and game summary information, . . . spread and wagering data, and any other sports-related information to user equipment.’” *Id.* at 30–32 (citing Ex. 1016 ¶¶ 42, 72, 117, 142, Fig. 1; Ex. 1001 ¶ 555). Petitioner, alternatively, relies on Spivey’s live data server device 450 (the “LDSD”) that teaches “the same basic components as the ’697’s control server” and that contains a live data server communication component that “allows [the] LDSD ‘to receive live data and transmit the data payloads to MQS device 410,’” wherein the live data received by the LDSD includes “sport scores and breaking news” and can include “a score, a play, an error. . . and so forth” when related to baseball. *Id.* at 32–35 (citing Ex. 1017 ¶¶ 27, 35, 37, 48, 55, 66, 178, Fig. 4; Ex. 1001 ¶ 589). According to Petitioner, Spivey’s LDSD “retrieves the first event information germane to a first/second live sporting event” because “the live data sources are associated with the live event, and servers in Spivey communicate over the internet.” *Id.* at 34.

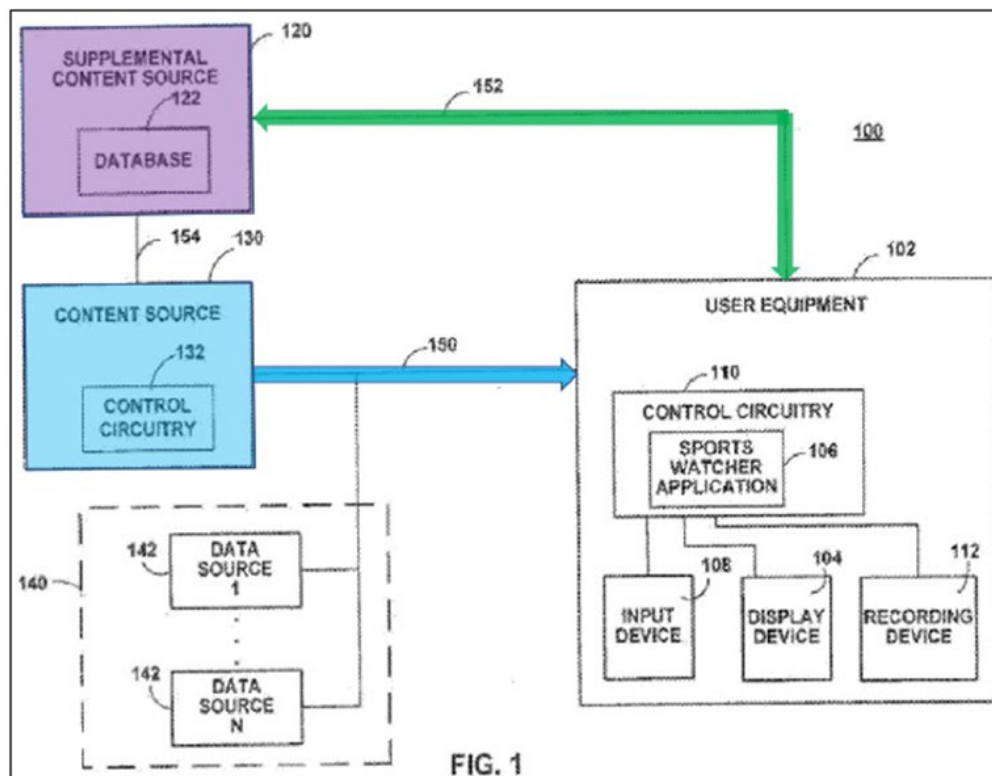
Patent Owner does not specifically contest Petitioner’s showing for this limitation. *See generally* PO Resp. 1–6, 26–51.

We find Petitioner’s contentions are supported by the cited portions of Ellis and Spivey. Accordingly, based on the complete record presented, we determine that Petitioner has shown by a preponderance of the evidence that the combination of Ellis and Spivey teaches “control server to periodically retrieve, via the Internet and from an event information provider, first event

information germane the first live sporting event and second event information germane the second live sporting event,” as set forth in claim 19.

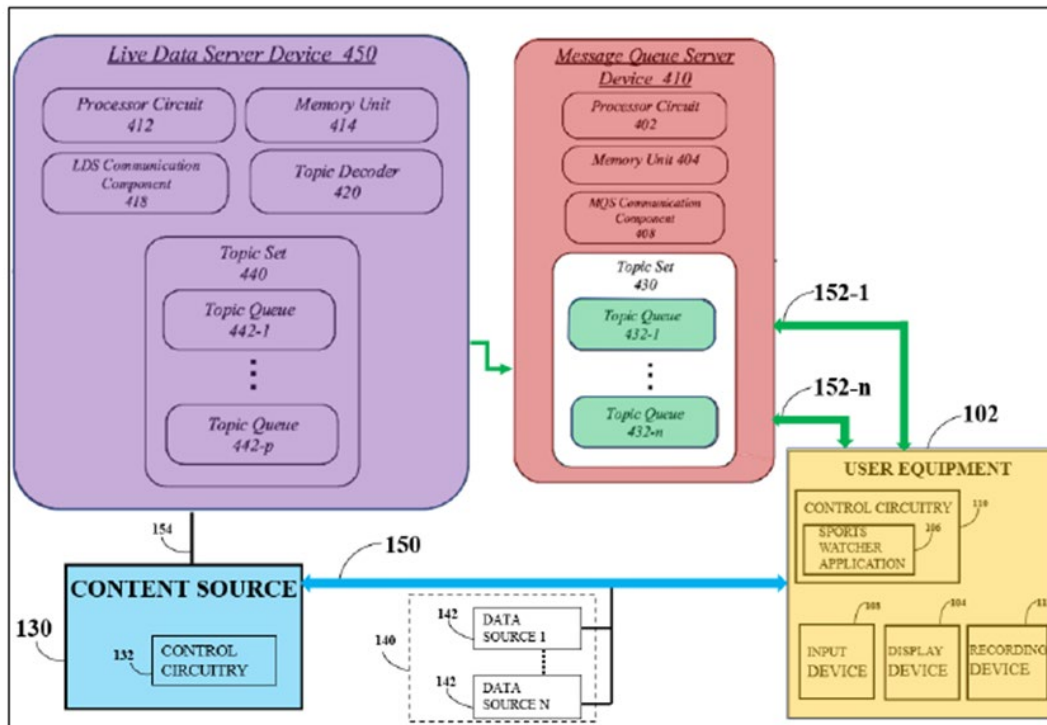
vi. “at least one socket server communicatively coupled to the control server”

Petitioner presents evidence that the combination of Ellis and Spivey teaches at least one “socket server communicatively coupled to the control server.” Pet. 35–37 (citing, *e.g.*, Ex. 1016 ¶¶ 39–41, 47, Fig. 1; Ex. 1017 ¶¶ 35, 45–47, 52–55, 96, Figs. 3, 4; Ex. 1001 ¶¶ 590–591). In particular, Petitioner relies on Ellis for providing video and data to a user over separate connections, similar to the ’697 patent’s “broad functionality.” *Id.* at 19. Petitioner provides an annotated Figure 1 of Ellis, which is reproduced below, to illustrate its contention.



According to Petitioner, the above annotated Figure 1 of Ellis shows Ellis's media system in which video from content source 130 (blue) and data from supplemental content source 120 (purple) are respectively provided to user equipment 102 over separate communication paths 150 (blue), 152 (green). Pet. 20.

Petitioner contends that Spivey's live data server device 450 teaches the claimed "control server." Pet. 32–35 (citing Ex. 1017 ¶¶ 27, 35, 37, 48, 55, 66, 178, Fig. 4; Ex. 1001 ¶ 589). Petitioner also contends that Spivey's message queue server device 410 teaches "a socket server communicatively coupled to a control server." *Id.* at 37. Then, according to Petitioner, a POSITA "would have implemented Spivey into Ellis's data delivery system." *Id.* at 21. To illustrate its proposed combination, Petitioner provides an annotated, combined diagram of Ellis's Figure 1 and Spivey's Figure 4, which is reproduced below.



Petitioner's above annotated, combined diagram of Ellis's Figure 1 and Spivey's Figure 4 shows Ellis's content source 130 (blue) and user equipment 102 (yellow) combined with Spivey's live data server device 450 (purple) and message queue server device 410 (red). Pet. 21. In particular, the above annotated, combined diagram in the Petition shows Ellis's content source 130 (blue) connected via connection 150 (blue) to Ellis's user equipment 102 (yellow). *Id.* Spivey's data server device 450 (purple) is connected via connection 154 to content source 130 and also is connected via a connection illustrated as an arrow in Spivey's Figure 4 (green) to Spivey's message queue server device 410 (red). *Id.* Further, Spivey's message queue server device 410 (red) is connected via arrows 152-1 and 152-n (green) to Ellis's user equipment 102 (yellow). *Id.*

During Oral Argument, Petitioner reasoned that “the combination uses Spivey’s topic queue architecture and push technology to improve the real-time delivery of sports-related data to the client’s viewing device,” wherein “[the] improved data connection between Spivey’s message queue server device and Ellis’ client device are shown in green 152-1 and 152-n” in the annotated, combined diagram in the Petition, such that “[e]ach of the green lines connects to a specific topic housed in the socket server.” Tr. 9:4–11. Petitioner contended that “[s]ocket servers were well established” at the time of the invention, wherein “a protocol identified as websockets . . . had been adopted and . . . was a socket-type technology that enabled bidirectional communication between two devices.” *Id.* at 9:19–22. According to Petitioner, [o]nce there was a handshake at the beginning of that connection, the devices were able to speak with each other to push data between each other.” *Id.* at 9:22–25. Petitioner contended that, “[m]ost servers are connected to multiple clients,” wherein “the one-to-many concept was also well-known.” *Id.* at 10:5–7.

Patent Owner does not specifically contest Petitioner’s showing for this limitation. *See* PO Resp. 1–6, 26–51 (presenting arguments contesting only Petitioner’s assertions as to the “event socket” limitation, not “socket server,” and Petitioner’s asserted motivation to combine Ellis and Spivey).

On the complete record before us, we find Petitioner’s contentions are supported by the cited portions of Ellis and Spivey. Accordingly, based on the complete record presented, we determine that Petitioner has shown by a preponderance of the evidence that the combination of Ellis and Spivey teaches or at least fairly suggests “at least one socket server communicatively coupled to the control server,” as set forth in claim 19.

- vii. *“receive from the control server at least some of the first event information and at least some of the second event information,” “the at least some of the first event information includes first score information for the first sporting event,” “the at least some of the second event information includes second score information for the second sporting event”*

Petitioner presents evidence that the combination of Ellis and Spivey teaches receiving from the control server at least “score information.” Pet. 37–39 (citing, *e.g.*, Ex. 1017 ¶¶ 55, 117, Fig. 10; Ex. 1001 ¶¶ 592–593). In particular, Petitioner contends that “Spivey’s LDSD (control server) ‘receive[s] live data and transmit[s] the data payloads to [MQSD (socket server)].” *Id.* at 37 (quoting Ex. 1017 ¶ 55; alterations by Petitioner). According to Petitioner, Spivey teaches that data payloads may include “a score, a player name, a play, and so forth.” *Id.* at 37–38 (quoting Ex. 1017 ¶ 117); *see also id.* at 38 (reproducing Figure 10 illustrating user interface 1000 displaying topic 1002 including text 1006 stating “Ravens: 14; Steelers: 7”). Thus, Petitioner contends that a POSITA would have understood that Ellis in view of Spivey discloses that “the first/second event information” received at the socket server “includes first/second score information.” *Id.* at 39 (citing Ex. 1001 ¶ 593).

Patent Owner does not specifically contest Petitioner’s showing for this limitation. *See generally* PO Resp. 1–6, 26–51.

On the complete record before us, we find Petitioner’s contentions are supported by the cited portions of Ellis and Spivey. Accordingly, based on the complete record presented, we determine that Petitioner has shown by a preponderance of the evidence that the combination of Ellis and Spivey

teaches “at least one socket server communicatively coupled to the control server “receiv[ing] from the control server at least some of the first event information and at least some of the second event information,” “the at least some of the first event information includes first score information for the first sporting event,” “the at least some of the second event information includes second score information for the second sporting event,” as set forth in claim 19.

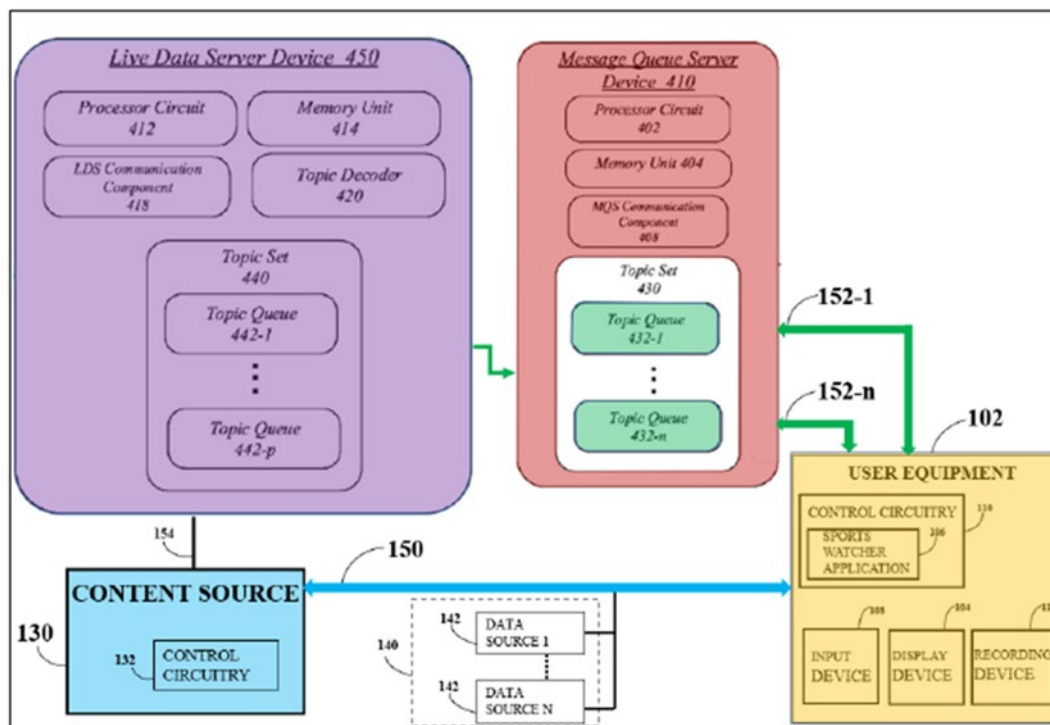
*viii. “transmit at least the first score information . . . to the first viewer client device of the first plurality of viewer client devices” via “a third Internet communication channel between at least one first event socket of the at least one socket server and the first viewer client device of the first plurality of viewer devices,” and “at least the second score information . . . to the first viewer client device of the second plurality of viewer client devices” via “a fourth Internet communication channel between at least one second event socket of the at least one socket server and the first viewer client device of the second plurality of viewer devices”*

Petitioner provides evidence that the combination of Ellis and Spivey teaches transmitting score information to viewer client devices via Internet communication channels between event sockets of the socket server and the viewer client devices, wherein the event socket corresponds to event information germane to the live sporting event. Pet. 39–43 (citing, e.g., Ex. 1016 ¶¶ 39–41, Fig. 1; Ex. 1017, code (57), ¶¶ 35–36, 38, 43, 46, 48–49, 51–52, 61, 66, 81–84, 96, 179, Fig. 9; Ex. 1001 ¶¶ 594–602).

In particular, Petitioner contends that “first/second event socket” is “a socket where information about each sporting event is provided to VCDs”

(Pet. 39 (citing Ex. 1001 ¶¶ 594–595), whereas “Spivey’s topic queues are ‘where data payloads are placed,’” and the data payloads, when the live event is a sporting event, “include, ‘for example, a score, a play, . . . , and so forth.’” Pet. 39 (citing Ex. 1017 ¶¶ 48–49, 51–52). Petitioner further contends that Spivey’s topic queues “have a corresponding ‘topic label’ which is used ‘to identify a topic queue,’” and “[c]lient devices use these topic label text strings to connect and subscribe MQSD’s topic queues.” *Id.* at 40 (citing Ex. 1017 ¶¶ 66, 81–82).

Accordingly, Petitioner contends that a person of ordinary skill in the art “would have understood that Spivey’s topic queues disclose first/second event sockets.” Pet. 41 (citing Ex. 1001 ¶¶ 596–599). Petitioner provides an annotated, combined diagram of Ellis’s Figure 1 and Spivey’s Figure 4, reproduced below, to demonstrate its contention. Pet. 21.



Petitioner's above annotated, combined diagram of Ellis's Figure 1 and Spivey's Figure 4 shows Ellis's content source 130 (blue) and user equipment 102 (yellow) combined with Spivey's live data server device 450 (purple) and message queue server device 410 (red). Pet. 21. As shown in Petitioner's annotated, combined diagram, Ellis's user equipment 102 (yellow) is connected via communication paths 152-1 through 152-n (green) to Spivey's message queue server device 410 (red). *Id.* As also shown, Spivey's message queue server device 410 (red) includes topic queues 432-1 through 432-n (green) (*id.*), which Petitioner relies on for teaching the "event socket." *See, e.g.,* Pet. 41.

Petitioner contends that the combination of Ellis and Spivey teaches "transmitting the first/second score information . . . to the first VCD" because Spivey discloses pushing data from topic queues to subscribers and Ellis discloses providing real-time sports scores to user equipment. Pet. 42 (citing Ex. 1017 ¶ 46; Ex. 1016 ¶ 41; Ex. 1001 ¶ 600). For example, Spivey describes "push[ing] data from topic queues 332-1, 332-n to the subscribers of the topics corresponding to those topic queues." Ex. 1017 ¶ 46. Spivey also describes live event data as including, for example, "sports scores." *Id.* ¶ 27; *see also id.* ¶ 48 (describing that "the data payload [topic entry] may include, for example, a score" of a sporting event). Ellis also describes providing to user equipment 102 "real-time sports scores." Ex. 1016 ¶ 41.

Petitioner then contends that Ellis in view of Spivey discloses "providing first/second score/event information over separate Internet communication channels, which are third/forth Internet communication channels" because "the first/second channels are the separate connections that receive the video data." Pet. 42 (citing Ex. 1001 ¶ 601). According to

Petitioner, Spivey discloses that “client devices ‘may request and participate in a websocket connection,’ which ‘typically comprises a two-way connection between two entities.’” *Id.* at 42–43 (quoting Ex. 1017 ¶¶ 43, 61). Petitioner relies on Spivey’s disclosure that message queue server device 410 comprises, for example, an “Internet server” and clients and servers communicate, for example, via “public networks such as the Internet.” Ex. 1017 ¶¶ 35, 178; *see also id.* ¶ 179 (describing communicating via “a communications network,” which may be “any one and the combination of wired and/or wireless networks including without limitation . . . a public network (e.g., the Internet)”).

Although Spivey’s Figure 1, for example, describes that live data access server 130 is connected between message queue server 120 and client devices 110-1 through 110-a (Ex. 1017, Fig 1), Petitioner contends that its proposed combination, in which message queue server device 410 is connected directly to Ellis’s user equipment 102, is consistent with Spivey’s disclosure because Spivey also discloses that the message queue server device may be accessible to clients over the network directly. Pet. 40 n.8 (citing Ex. 1017 ¶¶ 36, 84); *see also id.* (citing Ex. 1017 ¶¶ 38, 46, 81–82; Ex. 1001 ¶ 564) (providing additional explanation and reasoning to make the proposed combination).

Patent Owner argues that “Spivey’s ‘topic queues’ do not disclose or suggest an ‘event socket’ because those topic queues are not ‘uniquely addressable communication endpoint[s].’” PO Resp. 2. Further, Patent Owner argues that “Spivey does not disclose or suggest that its Message Queue Servers (‘MQS’) / topic queues are capable of handling communication to individual client devices.” *Id.*

According to Patent Owner, “Spivey’s topic queues are neither ‘uniquely addressable’ nor ‘communication endpoints.’” PO Resp. 2 (citing Ex. 2001 ¶ 240). Patent Owner contends that “Spivey’s topic queues are merely an internal data structure within the MQSD,” wherein, “Petitioner does not identify any disclosure that would suggest to a POSITA that Spivey’s topic queues are ‘uniquely addressable communication endpoints.’” *Id.* at 37. Patent Owner refers to Dr. Rubin’s declaration in which he testified that “a POSITA would not consider Spivey’s message queues to be ‘uniquely addressable communication endpoints’ because they lack an address through which they can communicate,” wherein “Spivey describes only its LDAS as being uniquely addressable.” *Id.* at 2. Although Patent Owner acknowledges that Spivey discloses that an “address may resemble a uniform resource locator (URL),” wherein user interface 900 “allow[s] an operator 108 of a client device to view and select . . . topics available from a message queue server,” Patent Owner contends that “Spivey’s user interfaces . . . ***all pertain to accessing the LDAS*** via a client mobile application.” *Id.* at 3 (citing, e.g., Ex. 1017 ¶¶ 81–88; Ex. 2038 ¶¶ 25–27). According to Patent Owner, “Spivey’s message queue servers immediately push data to the LDAS,” wherein “individual client devices subscribe to the LDAS to receive such data.” *Id.* Patent Owner contends that, accordingly, a POSITA would not understand “Spivey’s MQS’s and associated topic queues to be uniquely addressable communication endpoints.” *Id.*

As to its contention that Spivey’s topic queues are not capable of handling communication to individual client devices, Patent Owner contends that Petitioner’s proposed combination of Ellis and Spivey is fundamentally

“inoperable,” not fit for its intended purpose. PO Resp. 4–6. In particular, Patent Owner contends that the annotated, combined diagram of Ellis and Spivey in the Petition “lacks any component capable of data transmission between the Message Queue Server Device or ‘MQSD’ (from Spivey) and the user equipment (from Ellis).” *Id.* at 4 (citing Pet. 19–24). That is, “a POSITA would not understand Spivey’s MQSD as transmitting information between an ‘event socket’ and a client device,” because “Spivey does not describe the MQSD as capable of connecting with individual clients.” *Id.* at 31–32 (citing Ex. 2038 ¶¶ 11–19; Ex. 1017 ¶¶ 45, 53–54, 59–63).

According to Patent Owner, the only component of Spivey’s MQSD that is capable of transmitting data is the “MQS Communication Component 408” which “functions to ‘push the data payload from the topic queue to *a live data access server* that has subscribed to the topic of the topic queue.’” PO Resp. 5 (citing Ex. 1017 ¶ 49). Patent Owner repeats its contention that it is only through the LDAS of Spivey that clients can access data from the MQSD, and contends that “[a]bsent the LDAS, and its subscription component or interface component, Spivey’s architecture will not operate to deliver data to the user equipment.” *Id.* at 5–6 (citing Ex. 2038 ¶ 12). Patent Owner further contends that “Petitioner’s illustration of ‘communication channels’ 152-1, 152-n . . . are entirely of Petitioner and its expert’s own making,” wherein “[n]either Ellis nor Spivey disclose such multiple communication channels,” and thus, “despite Petitioner’s representation of a bi-directional arrow shown adjacent the topic queues, the topic queues . . . are not capable of handling communication to multiple end client or user equipment devices.” *Id.* at 6.

We find Patent Owner’s arguments unavailing. As a preliminary matter, we find unavailing Patent Owner’s argument that “Spivey’s ‘topic queues’ do not disclose or suggest an ‘event socket’ because those topic queues are not ‘uniquely addressable communication endpoint.’” PO Resp. 2.

Although Patent Owner argued during Oral Argument that the inventors of the challenged patent invented a version of one-to-many socket architecture that differs from Spivey’s topic queue architecture (Tr. 39:19–40:20), Patent Owner acknowledged that prior to the challenged patent, it was known to use two communication channels, one to send video, one to send information about that video. *Id.* at 44:11–18. In particular, Patent Owner acknowledged that the claimed invention is directed to sending a video feed of a sporting event on one channel and sending information about that sporting event on another channel, and although Patent Owner argues that its invention is “the synchronization and the latency improvements through that one-to-many socket architecture,” Patent Owner conceded that the claims “could be broader than that.” *Id.* at 44:24–46:16.

In its Response, Patent Owner’s contentions mostly rely on Dr. Rubin, who testified that a person of ordinary skill in the art “would not consider such a database, message queue, or any other internal data structure by themselves to be a ‘uniquely addressable communication endpoint[]’ because, as disclosed in Spivey, the queues themselves lack an address through which they can communicate at all.” Ex. 2001 ¶ 241. Dr. Rubin also testified that “[t]he only potential ‘communication endpoint’ Spivey discloses as being ‘uniquely addressable’ is the live data access server.” *Id.*

On the other hand, Petitioner contends that “Spivey’s topic queues are uniquely addressable via URLs that include topic labels as part of the publicly addressable URLs, and thus are communication endpoints for multiple client devices.” Pet. Reply 8; *see also* Pet. 39–43. Petitioner relies on Dr. Wicker, who testified as follows:

Further, this information is provided via a connection between a topic queue and the first user equipment device of the first/second plurality of user devices. Users can access the MQSD using a URL. *See* Ex.1017 ¶¶81-82. Then, the user can access the specific topic queue she wishes to receive information from by using a text string, *e.g.*, a topic label or Event ID, associated with a topic queue. *Id.* ¶179, Fig. 9 (“Gamecenter.nfl.ravenssteelers”). Thus, it is my opinion that a POS[IT]A would have understood that Ellis in view of Spivey discloses distributing event information from a first/second event socket to a first user device of a first/second plurality of user devices over an internet connection. Further, I believe a POS[IT]A would have understood that the internet connection is established using a URL and text string identifying a uniquely addressable communication endpoint on the MQSD, where first event information is transmitted to a VCD.

Ex. 1001 ¶ 602.

We find Petitioner’s contentions with Dr. Wicker’s supporting testimony persuasive. In particular, we find Petitioner’s reliance on Spivey for disclosing “event socket” is supported by Spivey’s disclosures that a topic queue’s address “may resemble a uniform resource locator (URL)” and that user interface 900 “allow[s] an operator 108 of a client device to view and select . . . topics available from a message queue server.” Ex. 1017 ¶¶ 82, 84, Fig. 9. In Spivey, the message flow begins “when message queue server . . . pushes data payloads to subscribers of the topics in [the] message.” *See* Ex. 1017 ¶ 134. As Petitioner explains, in Spivey, “the

address for connecting a topic queue may resemble a URL, and client devices can select from a list of available topics and subscribe to those queues, after which the MQSD pushes the relevant data payloads to the subscribed devices.” Pet. Reply 8 (citing Ex. 1017 ¶¶ 82–84, 134).

As Petitioner explains, and as supported by Dr. Wicker’s testimony, Spivey’s “topic label may be . . . ‘gamecenter.nfl.ravensteelers,’ and client devices use these topic label text strings to connect and subscribe to the MQSD’s topic queues.” Pet. Reply 8 (citing Ex. 1001 ¶¶ 353–354, 563–564). We find availing that, in Spivey, since the “client devices ‘request a live data connection’ by selecting or entering the address or connection information which ‘may resemble a uniform resource locator (URL),’” Spivey’s topic queues “are not only logically but also technically implemented as uniquely addressable communication endpoints.” *Id.* at 9 (citing Ex. 1064 ¶¶ 11–14).

We find that Dr. Rubin’s testimony that the only potential “communication endpoint” in Spivey that is “uniquely addressable” is the live data access server (Ex. 2001 ¶ 241) merely addresses particular embodiments in Spivey. That is, Dr. Rubin does not address sufficiently Spivey’s teachings *as a whole* as understood from the perspective of an ordinarily skilled artisan, which would include other embodiments. *See Sundance, Inc. v. DeMonte Fabricating Ltd.*, 550 F.3d 1356, 1361 n.3 (Fed. Cir. 2008) (“What a prior art reference discloses or teaches is determined from the perspective of one of ordinary skill in the art.”); *In re Hedges*, 783 F.2d 1038, 1041 (Fed. Cir. 1986) (noting that when evaluating claims for obviousness, “the prior art as a whole must be considered”). Dr. Rubin does not address Spivey’s disclosure that the system “may include” the LDAS

(Ex. 1017 ¶ 38), but, as Petitioner points out, merely acknowledges that “there are examples in Spivey using the language may.” Pet. Reply 4 (citing Ex. 1063, 62:8–13).

As Petitioner points out, in his deposition, Dr. Rubin acknowledges that “Spivey’s topic queues can be dedicated to specific events, such as a Ravens-Steelers game,” wherein “topic labels like ‘ravenssteelers.stats’ and ‘ravenssteelers.plays’ can be used to organize information hierarchically.” Pet. Reply 9 (citing Ex. 1063, 77:1–78:7). And Dr. Rubin further agrees that “data related to those topics are placed in their respective topic queues,” and that “a topic queue could be, for example, related to a specific Ravens-Steeler game.” *Id.* We find availing Petitioner’s explanation that, in Spivey, client devices use the topic queue’s topic label text strings to connect and subscribe. *Id.* at 8 (citing Ex. 1001 ¶¶ 353–354, 563–564). Thus, we find availing Petitioner’s contention and Dr. Wicker’s supporting testimony that Spivey’s topic queues are “uniquely addressable communication endpoints.” *Id.* at 9; *see also* Ex. 1064 ¶¶ 11–14.

We further find unavailing Patent Owner’s argument that “Spivey does not describe the MQSD as capable of connecting with individual clients,” because the only component of Spivey’s MQSD that is capable of transmitting data is the “MQS Communication Component 408” which “functions to ‘push the data payload from the topic queue to [an LDAS] that has subscribed to the topic of the topic queue.’” PO Resp. 4, 5, 31–32. In particular, we are not persuaded by Patent Owner’s contention that the “text string topic labels” of Spivey “represent one interface, in a series of interfaces, that visually depict individual clients *accessing the LDAS*.” *Id.* at 30 (citing Ex. 1017 ¶¶ 63, 81–90). Instead, we find that Spivey’s

disclosures support Petitioner's arguments that "Spivey does not require the live data access server ('LDAS') to serve as an intermediary between the MQSD and the Client." Pet. Reply 3.

Spivey specifically states that the system "may" include an LDAS, indicating that LDAS is optionally included. *See* Ex. 1017 ¶ 38. As Petitioner points out, Spivey states that the "MQS communication component 308 may also receive requests to subscribe to topics in a topic set 330, and *may push data from topic queues 332-1, 332-n to the subscribers* of the topics corresponding to those topic queues," which indicates that "the MQSD can deliver data directly to subscribers without the necessity of an LDAS." Pet. Reply 3 (citing Ex. 1017 ¶ 46). Although Spivey discloses that "[i]n some embodiments," message queue server is not accessible to clients "directly" because it is, for example, "behind a firewall," we find such disclosure supports Petitioner's contention that Spivey teaches or at least fairly suggests that the firewall is optional. Ex. 1017 ¶ 36 (cited in Pet. 40 n.8). In other words, such disclosure supports Petitioner's contention that, where the firewall is not implemented, the message queue server is directly accessible to the clients. *Id.* Thus, although Patent Owner points to Figure 9 of Spivey which shows "text string 'topic labels' that when selected 'cause the live data app 210 to send the selected topic(s) to live data access server 130'" (PO Resp. 38–39 (citing Ex. 1017 ¶ 87, Fig. 9)), such embodiment in Spivey is an embodiment in which a firewall may be implemented among many embodiments.

Accordingly, we find that Spivey supports Petitioner's contention that "the MQSD can deliver data directly to subscribers without the necessity of an LDAS." Pet. Reply 3. Spivey discloses that its message queue server

“may comprise one or more electronic devices capable of receiving, processing, and sending information for the system,” wherein the message queue server processes “live data to provide live data quickly to the client devices.” Ex. 1017 ¶¶ 35–36. Spivey also discloses clients and servers communicating information with each other over “a packet-switched network (e.g., public networks such as the Internet).” *Id.* ¶ 178.

As Petitioner explains, Spivey’s Figure 22, for example, shows an embodiment demonstrating “flexibility of Spivey’s architecture,” wherein “a single server [is provided] to implement the functionality of the LDAS and MQSD . . . , facilitating direct client-MQSD communication.” Pet. Reply 4–5 (citing Ex. 1017 ¶ 158, Fig. 22; Ex. 1064 ¶ 6). In particular, in the embodiment shown in Figure 22, “the server device 2250 may be the same or similar to live data access server 130, 1430, message queue server 120, 1420, and/or aggregator host server 1450.” Ex. 1017 ¶ 158. As Petitioner points out, Dr. Rubin acknowledges that “the functionality of the message queue server can be implemented in the server device 2250,” wherein “the client device makes a direct communication to the server device 2250.” Pet. 5 (citing Ex. 1063, 72:22–73:3 (“Q But doesn’t it illustrate that the client device makes a direct communication to the server device 2250? A Yes.”), 82:3–83:1 (“[T]he server device may implement [the] functionality [of the message queue server device], but that’s not being shown in Figure 22.”)).

As Petitioner further explains, Spivey’s user interface 900 presented by live data app 210 residing on client device 200 “allow[s] an operator 108 of a client device 110 to view and select topics of live data to subscribe to,”

which may comprise, for example, “the topics available from a message queue server.” *See* Ex. 1017 ¶ 84, Figs. 2, 9.

Here, we find availing Dr. Wicker’s testimony that a POSITA would have understood that “the MQSD’s communication component would act as an interface and subscription component allowing for MQSD-Client connections.” Pet. Reply 6 (citing Ex. 2039, 34:21–35:2, 52:5–12). This is because “the MQSD’s communication component ‘may [] receive requests to subscribe to topics; where the data is pushed ‘from topic queues. . . to the subscribers of the topics.’” *Id.* (citing Ex. 1017 ¶¶ 46, 49).

Furthermore, as Petitioner further points out, the language of the claims in Spivey “confirms” its contention that “Spivey contemplated direct MQSD-Client connections.” Pet. Reply 7. In particular, claim 7 recites a “connection” between the “requested topic at a message queue server” and the “client device,” which, as Petitioner points out, does not include an LDAS. *Id.* (citing Ex. 1017 ¶ 182). Further, claim 8 claims the MQSD-Client connection is a “websocket connection.” *Id.*

Spivey also discloses that message queue server device “may be implemented as a RABBITMQ[ ] server,” which is an “open source message broker software.” Ex. 1017 ¶ 58. As Petitioner points out, Patent Owner admits that “Spivey’s MQSD may be implemented RabbitMQ—an architecture which permits direct connections between clients and an MQSD,” which “effectively confirms that Spivey discloses such direct connection.” Pet. Reply 10 (citing PO Resp. 36–37). And Spivey explains that “RabbitMQ facilitates topic queues that receive published messages and push the messages to clients that have subscribed to the topic queues.” Ex. 1017 ¶ 58. Although Patent Owner contends that Spivey’s topic queues

“are not capable of handling communication to multiple end client or user equipment devices” (PO Resp. 2), according to Petitioner, with RabbitMQ, “multiple client devices can ‘receive data from one queue.’” Pet. Reply 11.

We find availing Dr. Wicker’s testimony that a POSITA “would have understood Spivey to disclose a direct connection between client devices and MQSD” and that a POSITA “would have used this implementation because reducing the amount of server transfers would reduce latency, which is Spivey’s main purpose.” Ex. 1001 ¶ 597.

Thus, although we agree with Patent Owner and the testimony of Dr. Rubin to the extent that we find Spivey discloses live data access server 130 connected to client devices 110-1 through 110-a in certain embodiments (*see, e.g.*, Ex. 1017, Fig. 1), we find that Spivey also teaches or at least fairly suggests a direct connection between the message queue server device and client devices in other embodiments.

In summary, after consideration of the arguments and evidence of both parties, we find that Petitioner’s contentions are supported by the cited portions of Ellis and Spivey. We find that Patent Owner’s arguments and evidence do not undermine Petitioner’s showing. Accordingly, based on the complete record presented, we determine that Petitioner has shown by a preponderance of the evidence that the combination of Ellis and Spivey teaches “transmit[ting] at least the first score information . . . to the first viewer client device of the first plurality of viewer client devices” via “a third Internet communication channel between at least one first event socket of the at least one socket server and the first viewer client device of the first plurality of viewer devices,” and “at least the second score information . . . to the first viewer client device of the second plurality of viewer client

devices” via “a fourth Internet communication channel between at least one second event socket of the at least one socket server and the first viewer client device of the second plurality of viewer devices,” as recited in claim 19.

*ix. Combination of Ellis and Spivey*

Petitioner contends that “Spivey explains that some live-event data delivery systems, such as Ellis’s, suffer from latency issues,” and thus, “Spivey taught a Live Data Server Device (‘LDSD’) and Message Queue Server Device (‘MQSD’) that could provide live-event data to any number of customers in milliseconds.” Pet. 19 (citing Ex. 1017 ¶¶ 27–28; Ex. 1001 ¶¶ 106–115). Petitioner thus contends that a POSITA would have “replac[ed] Ellis’s [supplemental content source 120] with Spivey’s LDSD and adding the MQSD to achieve a predictable result of decreased latency data delivery using a websocket connection in lieu of HTTPS.” *Id.* at 21 (citing Ex. 1001 ¶¶ 109–111; Ex. 1016 ¶¶ 39, 41, Fig. 1; Ex. 1017, Fig. 4).

According to Petitioner, Ellis and Spivey relate to the same subject matter and the references solve the same or similar problems. Pet. 22. Petitioner contends that a POSITA would have been motivated to combine the references because Spivey provides a complementary solution to Ellis and describes the details of a backend architecture for transmitting event data to multiple users. *Id.* at 22–23. Petitioner further contends that the combination “would have required only the simple substitution of known elements to obtain predictable results,” wherein a person of ordinary skill in the art would have had a reasonable expectation of success. *Id.*

Patent Owner argues that Petitioner’s combination “fails to account for critical distinctions between Ellis’s and Spivey’s teachings, explain the

modification necessary to combine such teachings, or articulate why a POSITA would have been motivated to make the necessary modification and proposed combination.” PO Resp. 43–44. Patent Owner argues that Petitioner’s lack of specific motivation to combine the prior art teachings demonstrates its reliance on impermissible hindsight bias. *Id.* at 44.

For the reasons given below, we find that Petitioner’s arguments are supported by the evidence in the complete record before us. We find that Patent Owner’s arguments do not undermine Petitioner’s showing.

Ellis describes that its supplemental content source 120 provides real-time data feeds with sports-related information, such as sports scores. *See, e.g.*, Ex. 1016 ¶ 41. Similarly, Spivey describes that its system including live data server device 450 and message queue server device 410 provides live event data, such as sports scores. *See, e.g.*, Ex. 1017 ¶ 27, Fig. 4.

We find unavailing Patent Owner’s argument that Petitioner’s combination “fails to account for critical distinctions between Ellis’s and Spivey’s teachings.” PO Resp. 43–44. Here, the evidence of record shows the similarity between, and complementary nature of, the Ellis and Spivey disclosures of providing content delivery for real-time events quickly to multiple users. *See, e.g.*, Ex. 1016, code (57) (describing “[s]ystems and methods for enhanced sports-related media content access and display”), ¶ 39 (describing that in system 100 “[u]ser equipment device 102 receives content . . . from content source 120 and/or supplemental content source 120 over communications paths 150 and 152, respectively” and “[a]ny suitable number of users may have one or more user equipment devices, such as user equipment 102”), ¶ 40 (describing that “[c]ontent source 130 may be any suitable source of media content” such as the “Internet or network

media/web server” and that “[m]edia content” includes “broadcast programming,” “news,” “newsgroups,” and “chat rooms”), ¶ 41 (describing that “[s]upplemental content source 120 may be any suitable content source configured to provide real-time sports scores and game summary information . . . [and] sports commentary” as well as other “sports-related information” via “a plurality of real-time data feeds”); Ex. 1017, code (57) (describing “[a]n apparatus to broadcast live event data in real-time” that receives “a topic entry from a message queue server” and pushes “the topic entry to a subscribed client device substantially simultaneously with the message queue server receiving the topic entry from the live data source”), ¶ 27 (describing techniques for broadcasting “media content in real-time” and that the “media content may comprise, for example, data from a live event (e.g., news event, a gaming event, sporting event, etc.)” and that “live event data (e.g., sports scores and breaking news)” also is broadcasted), ¶ 34 (describing “system 100 for broadcasting live data in real-time” that includes “client devices 110-1 through 110-a”).

Further, the evidence of record shows that Ellis and Spivey both disclose that content is provided over the Internet. In particular, Ellis describes that “[c]ontent source 130 and supplemental content source 120 may be configured to transmit signals to user equipment 102 over any suitable communication paths 150 and 152” (Ex. 1016 ¶ 45), and that, in certain embodiments, content is delivered “on a particular network address (e.g., multicast address) on which an IP socket is currently joined.” *Id.* ¶¶ 45, 74. Also, Spivey describes “[a]n apparatus to broadcast live event data in real-time” that receives “a topic entry from a message queue server” and pushes “the topic entry to a subscribed client device substantially

simultaneously with the message queue server receiving the topic entry from the live data source,” wherein the subscribed client device receives data over a websocket connection. *See* Ex. 1017, code (57), ¶¶ 43, 61, 74, 92, 182 (claim 8).

Both references disclose providing content delivery for real-time sporting events quickly to multiple users over the Internet. *See, e.g.*, Ex. 1016, code (57), ¶¶ 39–41, 45, 74; Ex. 1017, code (57), ¶¶ 27, 34. Thus, Patent Owner’s characterizations that Petitioner fails to account for critical distinctions between Ellis and Spivey (PO Resp. 43–44) are not based on the teachings of the references considered as a whole, or from the perspective of an ordinarily skilled artisan. *See Sundance*, 550 F.3d at 1361 n.3; *In re Hedges*, 783 F.2d at 1041.

As Petitioner explained during Oral Argument, Ellis “relates to the ability for the clients and the server to communicate,” which can be any system that can “provide real-time sports,” but “doesn’t discuss whether it’s a push system or a pull system,” wherein Spivey, on the other hand, “expressly indicates that it is a push type of data system which reduces latency over prior art systems that utilize push technologies.” Tr. 15:13–19. We find availing Petitioner’s contention that, “[a]s explained by Dr. Wicker, . . . a POS[IT]A would have been motivated to implement real-time data delivery using Spivey’s data pushing technique to reduce latency.” *Id.* at 16:2–4. “[I]f a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.” *KSR*, 550 U.S. at 417.

We find unavailing Patent Owner’s contention that Petitioner fails to “articulate why a POSITA would have been motivated to make the necessary modification and proposed combination.” PO Resp. 44. Here, Petitioner points out that its proposed combination would have been made to improve latency issues in Ellis’s system. Pet. 19–24. In particular, Spivey’s discloses that its techniques “may reduce . . . delay [on the order of seconds (e.g., 30 to 45 seconds) or minutes] to an order of milliseconds (ms) (e.g., 100 ms) or less, providing a significant advantage over the conventional practices.” Ex. 1017 ¶ 28. Spivey also discloses pushing data to the “subscribed connected client devices” substantially simultaneously with the message queue server receiving the topic entry from a live data source, *e.g.*, “with a time delay of 100 milliseconds or less,” which Spivey discloses is “at least two orders of magnitude shorter than conventional time periods of legacy devices.” *Id.* ¶ 96; *see also id.* at code (57) (disclosing pushing “the topic entry to a subscribed client device substantially simultaneously with the message queue server receiving the topic entry from a live data source”).

We find Patent Owner’s arguments that Petitioner fails to “explain the modification necessary to combine such teachings” are inconsistent with the evidence of record. PO Resp. 44–51. For example, Patent Owner’s argument that the proposed combination would be inoperable because the combination “does not include the LDAS” (*id.* at 46) is not consistent with the evidence of record that Spivey does not require the LDAS to serve as intermediary between the MQSD and the user equipment. *See* Ex. 1017 ¶¶ 38, 46. As discussed above, Spivey states that the system “may” include an LDAS (Ex. 1017 ¶ 38), supporting Petitioner’s contention that, in Spivey, the LDAS is “optional” wherein “the MQSD may be ‘accessible to clients

over the network directly.” Pet. Reply 3. As discussed above in Section II(D)(3)(a)(viii), we find availing Petitioner’s contention that Spivey’s MQSD may push data from topic queues to the subscribers of the topics corresponding to those topic queues, which indicates that “the MQSD can deliver data directly to subscribers without the necessity of an LDAS.” Pet. Reply 3 (citing Ex. 1017 ¶ 46).

On this record, we find unavailing Patent Owner’s arguments that Petitioner relies on impermissible hindsight bias “as a guidepost to fill in certain missing details of the Ellis supplemental content source delivery architecture.” PO Resp. 50. Instead, we find Petitioner’s argument that its proposed combination would have been made to improve latency issues in Ellis’s system (Pet. 19–24) is supported by Spivey’s disclosures. Spivey describes that “the data payload of the topic entry may be pushed to the subscribed connected client devices substantially simultaneously with the message queue server receiving the topic entry from a live data source, e.g., with a time delay of 100 milliseconds or less.” Ex. 1017 ¶ 96.

We find based on the complete record before us that Petitioner has shown by a preponderance of the evidence that there is sufficient rationale to combine the teachings of Ellis and Spivey. We also find that Petitioner has shown sufficiently that a person of ordinary skill in the art would have had a reasonable expectation of success. Accordingly, we determine that Petitioner has shown by a preponderance of the evidence that a person of ordinary skill in the art would have combined Ellis and Spivey as proffered in the Petition.

*x. Claim 19 Conclusion*

Based on the complete record presented, Petitioner has shown by a preponderance of the evidence that the proposed combination of Ellis and Spivey teaches or at least fairly suggests all limitations of claim 19 and that a person of ordinary skill in the art would have combined the teachings as asserted in the Petition.

*b. Independent Claims 23 and 27*

Independent claims 23 and 27 recite similar limitations recited in representative claim 19. Petitioner contends that the combination of Ellis and Spivey teaches or suggests the limitations in independent claims 23 and 27, citing Dr. Wicker's testimony for support. Pet. 49–50, 55–57 (citing, *e.g.*, Ex. 1001 ¶¶ 613–616, 626–628). In particular, Petitioner contends that the limitations recited therein are “substantially the same” as the corresponding limitation in claim 19, and thus, a POSITA “would have understood that Ellis discloses this limitation for the same reason stated.” *Id.*

Patent Owner does not address separately from claim 19 Petitioner's contentions regarding independent claims 23 and 27. *See* PO Resp. 26.

Based on the complete record presented, we determine that Petitioner has also shown by a preponderance of the evidence that the combination of Ellis and Spivey teaches all limitations of claims 23 and 27, that a person of ordinary skill in the art would have combined the teachings as asserted in the Petition, and thus, that claims 23 and 27 would have been unpatentable as obvious over the combination of Ellis and Spivey.

*c. Dependent Claims 20–22, 24, 25, and 28–30*

Claims 20–22, 24, 25, and 28–30 depend respectively from claims 19, 23, and 27, either directly or indirectly. *See* Ex. 1006, 64:52–68:34.

Petitioner provides evidence that the combination of Ellis and Spivey teaches or suggests the limitations in these dependent claims for “the same reasons as discussed” regarding the independent from which they depend, citing Dr. Wicker’s testimony for support. Pet. 43–60 (citing, *e.g.*, Ex. 1016 ¶¶ 4, 40, 43, 47, 74, 77, 126, 132, Figs. 1, 30, 32; Ex. 1017 ¶¶ 39, 46, 48, 51–52, 55–57, 104, 161, 167, Figs. 4, 8, 12–13; Ex. 1001 ¶¶ 603–604, 606, 608–609, 611–612, 617–625, 629–631, 633–636). In particular, Petitioner contends that the limitations in claim 20 “simply add transmitting the first/second score information of the first/second event information, to a second VCD.” *Id.* at 45.

As to claim 21, Petitioner contends that “Ellis in view of Spivey discloses transmitting and receiving chat information via individual communication channels between a first/second socket and a first VCD of a first/second plurality of VCDs who are watching the same event.” Pet. 46. In particular, Petitioner contends that “a POS[IT]A would have understood Spivey to disclose a first/second chat/system event socket corresponding to the first/second chat information regarding the first/second live sporting event video-based commentary.” *Id.* at 48 (citing Ex. 1001 ¶ 609).

With respect to claim 25, Petitioner contends that this claim “further requires that the system update the control server’s memory storage system with the event information details that were periodically retrieved,” wherein a POSITA “would have understood that Ellis’s database and Spivey’s memory units disclose memory systems where score information is stored for ‘updating the event information.’” Pet. 51–53. As for claim 30, Petitioner contends that a POSITA “would have understood that Ellis, filed

in 2014, teaches using all forms of standard internet transmission protocols, including HLS streaming.” *Id.* at 57–60.

Patent Owner does not address separately from claim 19 Petitioner’s explanations and supporting evidence regarding the limitations in dependent claims 20, 22, 24, 25, and 28–30. *See* PO Resp 51–54. However, with respect to claim 21, Patent Owner argues that “Spivey’s topic queues are incapable of at least ‘receiving first chat information.’” *Id.* at 52. Patent Owner repeats its assertions that Spivey “describes ‘pushing’ data from its topic queues to a live data access server,” and thus “Spivey’s topic queues do not receive anything from the client devices.” *Id.* at 52–54.

We have reviewed Petitioner’s explanations and supporting evidence regarding the limitations of dependent claims 20, 22, 24, 25, and 28–30 (Pet. 43–60). Based on the complete record presented, we determine that Petitioner has shown by a preponderance of the evidence that the combination of Ellis and Spivey teaches all limitations of claims 20, 22, 24, 25, and 28–30, and that a person of ordinary skill in the art would have combined the teachings as asserted in the Petition.

As to claim 21, we find unavailing Patent Owner’s assertion that “Spivey’s topic queues do not receive anything from the client devices.” PO Resp. 52–54. As discussed above in Section II(D)(4)(a)(viii), we find availing Petitioner’s contention that Spivey’s MQSD “can deliver data directly to subscribers without the necessity of an LDAS.” Pet. Reply 3; *see* Ex. 1017 ¶ 46. Based on the complete record presented, we determine that Petitioner has shown by a preponderance of the evidence that the combination of Ellis and Spivey teaches all limitations of claim 21, and that

a person of ordinary skill in the art would have combined the teachings as asserted in the Petition.

In sum, we determine that dependent claims 20–22, 24, 25, and 28–30 would have been unpatentable as obvious over the combination of Ellis and Spivey.

*d. Objective Indicia of Nonobviousness*

We next consider Patent Owner’s evidence concerning objective indicia of nonobviousness. PO Resp. 65–75; *see Apple Inc. v. Samsung Elecs. Co.*, 839 F.3d 1034, 1047–48 (Fed. Cir. 2016) (en banc). Objective evidence of nonobviousness “may often be the most probative and cogent evidence in the record” and “may often establish that an invention appearing to have been obvious in light of the prior art was not.” *Transocean Offshore Deepwater Drilling, Inc. v. Maersk Drilling USA, Inc.*, 699 F.3d 1340, 1349 (Fed. Cir. 2012) (quoting *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 1538 (Fed. Cir. 1983)).

For objective indicia of nonobviousness to be accorded substantial weight, “its proponent must establish a nexus between the evidence and the merits of the claimed invention.” *ClassCo, Inc. v. Apple, Inc.*, 838 F.3d 1214, 1220 (Fed. Cir. 2016). “[T]here is no nexus unless the evidence presented is ‘reasonably commensurate with the scope of the claims.’” *Id.* (quoting *Rambus Inc. v. Rea*, 731 F.3d 1248, 1257 (Fed. Cir. 2013)). The patentee “bears the burden of showing that a nexus exists.” *WMS Gaming, Inc. v. Int’l Game Tech.*, 184 F.3d 1339, 1359 (Fed. Cir. 1999).

A rebuttable presumption of nexus arises “when the patentee shows that the asserted objective evidence is tied to a specific product and that product ‘embodies the claimed features, and is coextensive with them.’”

*Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366, 1373 (Fed. Cir. 2019) (quoting *Polaris Indus., Inc. v. Arctic Cat, Inc.*, 882 F.3d 1056, 1072 (Fed. Cir. 2018)). Whether a rebuttable presumption of nexus arises “turns on the nature of the claims and the specific facts.” *Teva Pharm. Int’l GmbH v. Eli Lilly & Co.*, 8 F.4th 1349, 1362 (Fed. Cir. 2021). Absent a presumption of nexus, the patentee may prove nexus by showing that the objective evidence resulted directly from “the unique characteristics of the claimed invention.” *Fox Factory*, 944 F.3d at 1373–74; see *In re Huang*, 100 F.3d 135, 140 (Fed. Cir. 1996). “Where the offered secondary consideration actually results from something other than what is both claimed and novel in the claim, there is no nexus to the merits of the claimed invention,” meaning that “there must be a nexus to some aspect of the claim not already in the prior art.” *In re Kao*, 639 F.3d 1057, 1068–69 (Fed. Cir. 2011).

*i. Long-Felt Need*

“Evidence of a long-felt but unresolved need can weigh in favor of the non-obviousness of an invention because it is reasonable to infer that the need would not have persisted had the solution been obvious.” *Apple Inc. v. Samsung Elecs. Co.*, 839 F.3d 1034, 1056 (Fed. Cir. 2016). Patent Owner asserts that there was a long-felt need for a system that “allows broadcasters to deliver synchronized, low-latency video and audio content with scalable, flexible access for different types of views and service qualities.” PO Resp. 66. Patent Owner argues that the claimed invention of the ’697 patent satisfied this long felt need by “enabl[ing] enhanced live video streaming using a novel one-to-many socket architecture, allowing multiple viewer devices to receive synchronized, contextually matched event information from a single socket server.” *Id.* at 67. According to Patent Owner, “the

inventors were the first to recognize that incorporating dedicated socket servers, web servers, and control servers within a livestreaming server architecture could improve network functionality, enabling scalable, low-latency viewing of live events and commentary by many viewers.” *Id.* at 67–68.

As support, Patent Owner relies on the declaration of Dr. Rubin. PO Resp. 66–68 (citing Ex. 2001 ¶¶ 313–315). Dr. Rubin explains that “Patent Owner’s patented technologies use a novel socket server architecture that allows actionable and contextual-matched information to be provided in a synchronized and efficient way with online streaming video.” Ex. 2001 ¶¶ 316–317.

Considering the totality of the evidence, we find Patent Owner has not demonstrated that a long-felt but unresolved need existed for the claimed invention. *See Apple v. Samsung*, 839 F.3d at 1056. As Petitioner points out, although Patent Owner argues that there is a long-felt need for a system that “allows broadcasters to deliver synchronized, low-latency video and audio content. . . .” (PO Resp. 66), Patent Owner does not contest Petitioner’s showing that Ellis also discloses “a video streaming system that provided event information over a separate channel, which is not hard embedded in the video stream.” Pet. Reply 22–23.

Further, as Petitioner also points out, “claim 19 simply requires a media source to receive the live stream of digital content and distribute it.” Pet. Reply 23. In fact, during Oral Argument, although Patent Owner argues that its invention is “the synchronization and the latency improvements through that one-to-many socket architecture,” Patent Owner conceded that the claims “could be broader than that.” Tr. 44:24–46:16. We find availing

Petitioner’s argument that the “claim language” does not “relate to any synchronized, low-latency, scalable, flexible, or new and improved video streaming technique.” Pet. Reply 23.

Nevertheless, as Petitioner points out, Patent Owner does not cite to any evidence as to any long-felt but unresolved needs. Pet. Reply 23 (citing PO Resp. 67–68). In particular, Patent Owner merely provides conclusory statements that, prior to the claimed invention, “conventional video streaming systems” include “hard-embedded event information,” and that “[t]he claimed invention satisfied the long-felt need for an innovative system.” PO Resp. 66–68.

Thus, considering the totality of the evidence, we agree with Petitioner that Patent Owner has failed to establish that there was a long-felt but unresolved need for the claimed invention.

*ii. Industry Praise*

Evidence that the industry praised a claimed invention or a product that embodies the patent claims weighs against an assertion that the same claim would have been obvious. *WBIP, LLC v Kohler Co.*, 829 F.3d 1317, 1334 (Fed. Cir. 2016). Patent Owner contends that it has “earned numerous accolades such [as] being a finalist in Sports Tech Tokyo, the Yahoo! Sports Technology Awards, and Sports Business Journal’s Best in Sports Technology.” PO Resp. 68 (citing Ex. 2009). Further, according to Patent Owner, its technology and platform “have been featured in dozens of publications and TV broadcasts.” *Id.* (citing Ex. 2010). Patent Owner contends that “[f]ormer NBA commissioner David Stern opined in an article that states ‘SportsCastr.Live will allow a budding sportscaster to overlay streams carrying enhancements to update in real time (e.g., live betting lines)

and lend a professional look to the presentation.”” *Id.* at 69 (Ex. 2007). Patent Owner contends that “[t]he benefits and advantages highlighted by the industry result directly from the claims.” *Id.*

We find Patent Owner has not provided sufficient evidence showing the industry praised a claimed invention or a product that embodies the patent claims. *WBIP*, 829 F.3d at 1334. In particular, other than Patent Owner’s mere conclusory statement that the benefits and advantages highlighted by the industry “result directly from the claims” (PO Resp. 69), we see no evidence in the record that the subject matter specifically recited by claim 19 of the ’697 patent, for example, was the object of the praise. That is, Patent Owner does not explain how the relied-upon praise particularly relates to the claims of the ’697 patent. *Id.*

For Patent Owner’s evidence concerning objective indicia of non-obviousness to be considered, Patent Owner must establish a nexus between the evidence concerning objective indicia of non-obviousness and the merits of the claimed invention. *See ClassCo v. Apple*, 838 F.3d at 1220.

We find availing Petitioner’s argument that the evidence of industry praise submitted by Patent Owner does not “explain[] how those awards related to any embodying product, much less any relation between the award and the ’697’s claims.” Pet. Reply 23. For example, although Patent Owner notes that it was a finalist for “Best App,” as Petitioner argues, Patent Owner “does not explain how that award is related to the claimed ‘inventive server and memory storage architecture.’” *Id.* at 23–24.

Although Patent Owner also relies on the opinion of former NBA commissioner David Stern, Petitioner contends that “the late David Stern was an investor,” and thus, “in no way provides evidence of industry praise.”

Pet. Reply 24. We are persuaded by Petitioner’s contention that the opinion from an investor is insufficient evidence of “*industry* praise.” *Id.* (emphasis added). Thus, we find this evidence from Mr. Stern would be entitled to little weight in our analysis.

Since Patent Owner has not provided evidence that a product subject to industry praise embodies the claimed features and is coextensive with the claims, it is not entitled to presumption of nexus. Absent a presumption of nexus, the Board considers whether the patentee has demonstrated a legally and factually sufficient connection between the evidence and the claimed invention. *See Fox Factory*, 944 F.3d at 1373–74; *In re Huang*, 100 F.3d at 14. Here, Patent Owner also does not demonstrate any legally and factually sufficient connection of Patent Owner’s provided evidence to the claims of the ’697 patent. *See generally* PO Resp. 68–69.

Thus, considering the totality of the evidence, we agree with Petitioner that Patent Owner has failed to establish that there was industry praise of the claimed invention.

*iii. Copying*

Patent Owner contends that “Petitioner gained knowledge of Patent Owner’s products under the guise of exploring partnership, but in reality, was developing its own products by copying Patent Owner’s patented products.” PO Resp. 70. In particular, Patent Owner references emails from “Ben Turner” from “geniussports.com” as “evidence” that “Petitioner has been aware of and praised Patent Owner’s patented products,” and contends that this copying shows that the challenged claims are not obvious. *Id.* at 69–70 (citing Exs. 2016, 2017).

Petitioner denies Patent Owner’s “unsubstantiated accusations that Petitioner copied its products or was aware of its patents.” Pet. Reply 24. Petitioner contends that the two emails that Patent Owner provides “show Petitioner, at most, saw [Patent Owner’s] basic features and spoke politely over email correspondence.” *Id.*

Based on the records before us, we find that Patent Owner’s arguments that Petitioner “was developing its own products by copying Patent Owner’s patented products” (PO Resp. 70) are conclusory without sufficient supporting evidence. Although Patent Owner provides as evidence the two emails from Ben Turner (Exs. 2016, 2017), Patent Owner does not reference any specific product allegedly being copied that embodies and is coextensive with the claimed features, nor does Patent Owner show that the evidence is a direct result of unique characteristics of the claimed invention. *See id.* We find that these emails alone do not support sufficiently that Petitioner had access to a patented product, and we are left to speculate as to what Patent Owner asserts has been copied and how. We decline to “play archeologist with the record” in order to understand Patent Owner’s arguments. *Gen. Access Sols., Ltd. v. Sprint Spectrum L.P.*, 811 F. App’x 654, 657–58 (Fed. Cir. 2020).

Thus, considering the totality of the evidence, we agree with Petitioner that Patent Owner has failed to sufficiently establish that there was copying of the claimed invention.

*iv. Commercial Success*

Patent Owner then contends that it “implemented the claimed invention of the ’697 patent to meet the growing demand or improved user interactions with livestream broadcasters.” PO Resp. 71. According to

Patent Owner, “the extensive promotion by Patent Owner of the improved user experience and revenue generation underscores how the patented technology drives demand and commercial success of the patented products.” *Id.* at 74.

Petitioner points out that Patent Owner “does not discuss or cite any sales information of any patented product in any market.” Pet. Reply 25 (citing PO Resp. 69–74). Further, Petitioner contends that Patent Owner “does not explain how there is a nexus between the nonexistent sales and the patented invention’s claims.” *Id.* (citing PO Resp. 71–75). According to Petitioner, Patent Owner advertised its “‘custom-tailor[ing] for the unique needs of sports publishers’ and ‘new ways to increase engagement’” as selling points, but “not any patented, allegedly ‘inventive server and memory storage architecture.” *Id.* (quoting Ex. 2011).

We find Patent Owner has not provided sufficient evidence showing commercial success of a claimed invention or a product that embodies the patent claims. *WBIP*, 829 F.3d at 1334. In particular, other than Patent Owner’s mere conclusory statement that the extensive promotion by Patent Owner of the improved user experience and revenue generation underscores how the patented technology drives demand and commercial success (PO Resp. 74), we see no evidence in the record that the subject matter specifically recited by claim 19 of the ’697 patent, for example, was the object of commercial success. That is, Patent Owner does not explain how any commercial success particularly relates to the claims of the ’697 patent. *Id.* As Petitioner points out, Patent Owner does not discuss or even cite any sales information, wherein its advertisements are not even directed to the claimed invention. Pet. Reply 25

Patent Owner must establish a nexus between the evidence concerning objective indicia of non-obviousness and the merits of the claimed invention. *See ClassCo, v. Apple*, 838 F.3d at 1220.

Since Patent Owner has not provided evidence that a product subject to commercial success embodies the claimed features and is coextensive with the claims, it is not entitled to presumption of nexus. Further, Patent Owner also does not demonstrate any legally and factually sufficient connection of Patent Owner's provided evidence to the claims of the '697 patent. *See generally* PO Resp. 71–75.

Thus, considering the totality of the evidence, we agree with Petitioner that Patent Owner has failed to sufficient establish that there was commercial success of the claimed invention.

v.     *Objective Indicia of Non-Obviousness  
Conclusion*

For these reasons, although we have considered Patent Owner's evidence of objective indicia of non-obviousness, we accord it little weight, and do not find that it outweighs the countervailing evidence supporting a conclusion of obviousness.

e.     *Ground I Conclusion*

Weighing the evidence of the level of ordinary skill in the art, the disclosure of the prior art, differences between the prior art references and the claims at issue, the reasoning to combine the references with a reasonable expectation of success, and the objective indicia of nonobviousness or obviousness, we determine that Petitioner has shown by a preponderance of the evidence that the subject matter of claims 19–25, and

27–30 would have been unpatentable as obvious over the combination of Ellis and Spivey.

*E. Asserted Obviousness of Claims 19–25, and 27–30 over Herzog, Spivey, and Ellis (Ground 2).*

As an alternative to Ground 1, Petitioner contends that claims 19–25, and 27–30 of the '697 patent would also have been obvious over Herzog, Ellis and Spivey. Pet. 60–89. In response, Patent Owner disputes Petitioner's contentions. PO Resp. 54–64. We briefly summarize Herzog.

1. Herzog

Herzog is titled “Time Synchronization of Video and Data Inside a Mobile Device,” and discloses a mobile device including a processor configured to receive and format live video data, audio data, and meta-data for display on the mobile device, and synchronize selected meta-data with the video and audio for simultaneous display. Ex. 1015, codes (54), (57). Figure 4 of Herzog, reproduced below shows system 40 that provides communications for mobile devices. *Id.* ¶¶ 9, 43.

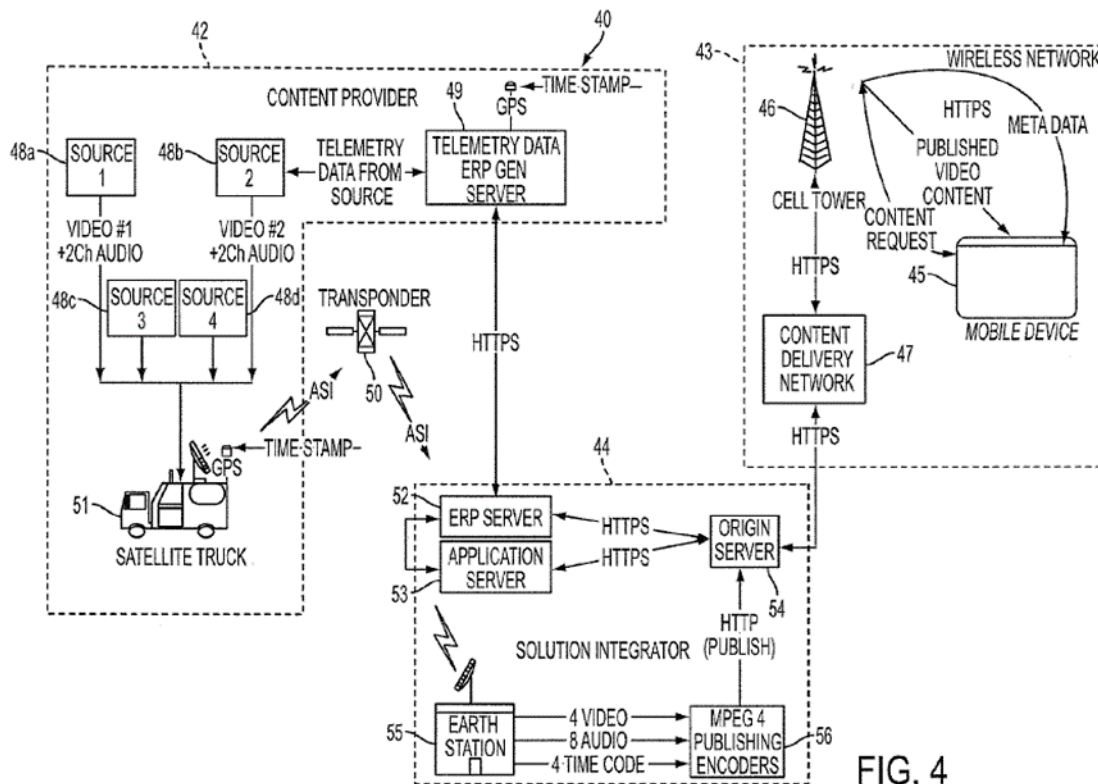


FIG. 4

Figure 4 shows system 40 that provides communications to exemplary mobile device 45. *Id.* ¶¶ 9, 43. As shown in Figure 4, system 40 provides communications to mobile device 45 in wireless network 43 via content delivery network 47. *Id.* ¶ 43. System 40 includes content provider 42, which provides video and audio data of an event occurring in real time, along with meta-data. *Id.* ¶ 45. Content provider 42 provides video/audio streams from imaging sources 48a–48d. *Id.* ¶ 46.

Content provider 42 also includes an Enhanced Result Protocol (ERP) generator server 49 configured to receive meta-data from imaging sources 48a–48d. *Id.* ¶ 47. ERP generator server 49 extracts meta-data parameters that may be of interest to a user, formats the extracted meta-data into a Hypertext Transfer Protocol Secure (HTTPS) protocol, and transmits

the formatted meta-data to solution integrator 44. *Id.* Solution integrator 44 transmits the video/audio stream and meta-data to content delivery network 47 for delivery to mobile device 45. *Id.* ¶¶ 48–51.

The video and audio data and the meta-data may both be time stamped with consistent (*e.g.*, GPS) timing protocols, wherein each respective data may be time-tagged to the same timing signature so that the video and audio data are time synchronized to the meta-data, displaying the data in a mobile device in correct time sync. *Id.* ¶ 18. In particular, as shown in Figure 4, an external clock or GPS timing system is added to ERP generator server 49 in content provider 42, wherein ERP generator 49 is responsible for inserting the time data into the meta-data field. *Id.* ¶ 52. In addition, as shown in Figure 4, an external clock or GPS timing system is added to the video transmission point or satellite uplink truck 51, to time stamp each video/audio channel at the video transmission point. *Id.* ¶ 53. Accordingly, two time stamps exist in the system, one associated with the video and one with the metadata. *Id.* ¶ 56.

Herzog recognizes that latency issues may exist due to ingesting and processing the video/audio and the meta-data. *Id.* In order to address latency between the video/audio stream and metadata stream, the time stamp for the video/audio stream “is deemed to be the master time for synchronization” with time stamp for the now timestamped metadata “slaved to the master time” generated by the audio/video time code. *Id.* ¶ 58. When the two separate streams arrive at the mobile device, “[b]oth types of data [are] assembled in the mobile device 45 via the client application software that resides within the mobile device, for appropriate presentation on the device’s display.” *Id.*

Thus, Herzog is directed to a system that synchronizes two different types of data, such as video/audio data and meta-data, wherein each type of data includes accurate time stamps, and where the latency associated with one type of data is different from the latency associated with the other type of data. *Id.* ¶ 64. Herzog combines the two types of data so that they display appropriately on a mobile device in correct time synchronization. *Id.*

## 2. Analysis

Petitioner contends that “Herzog discloses a system for viewing multiple videos related to the same sporting event in addition to live information about the event (meta-data).” Pet. 60. Although Petitioner acknowledges that “Herzog does not specifically disclose some backend server architecture supporting the data distribution—the claimed socket server,” Petitioner contends that a POSITA “would have known that the websocket client-server communication protocol employed by Spivey was an alternative to the HTTP polling used by Herzog.” *Id.* at 62 (citing Ex. 1001 ¶¶ 126, 142–143). According to Petitioner, a POSITA, “looking to improve Herzog’s latency issues, would have looked to implement a system such as Spivey.” *Id.* at 63 (citing Ex. 1001 ¶ 144). In particular, Petitioner argues that a person of ordinary skill in the art would have made its proposed combination of Herzog and Ellis “because a POS[IT]A would have understood that users would enjoy having more content options, e.g., multiple live event streams, chat information, and advertising content.” *Id.* at 65 (citing Ex. 1016 ¶¶ 39–41, 62, Figs. 1, 2B; Ex. 1001 ¶¶ 155–157).

Petitioner characterizes its proposed combination as “apply[ing] a known technique to a known device that was ready for improvement to yield a predictable result.” Pet. 66 (quoting Ex. 1001 ¶ 158). According to

Petitioner, a person of ordinary skill in the art would have had a reasonable expectation of success “because Ellis specifically contemplates being implemented in a content delivery system such as Herzog, stating that it can be used with ‘any suitable source of media content,’ which includes IPTV content ‘delivered on a particular network address (e.g., multicast address) on which an IP socket is currently joined.’” *Id.* (quoting Ex. 1016 ¶¶ 39–40, 74; citing Ex. 1016 ¶ 39; Ex. 1001 ¶¶ 158–163).

Patent Owner argues that Petitioner’s proposed combination would not result in reduced latency and would not be attempted. PO Resp. 6–8. In particular, Patent Owner contends that Herzog requires “a robust latency period during which Herzog performs its timestamp synchronization techniques.” *Id.* at 6 (citing Ex. 2037, 46–47). That is, “Herzog does not have a latency problem,” instead, “latency is a feature, not a bug,” and “[a]ttempting to reduce, modify or otherwise tamper with such disparate latencies period would destroy a fundamental principle of operation of Herzog.” *Id.* at 6–7.

Based on the complete record, we find Patent Owner’s contentions more availing. In particular, as Patent Owner points out, Herzog recognizes that latency issues may exist, and thus, in order to address latency between the video/audio stream and metadata stream, Herzog synchronizes the two types of streams. Ex. 1015 ¶¶ 56, 58, 64. As Patent Owner explained during Oral Argument, Herzog “never reduces the video latency,” but instead latency “is used by Herzog to match up the timestamps of the data and the video.” Tr. 54:6–14. That is, as Patent Owner explains, and as supported by the teachings of Herzog and Dr. Rubin’s testimony, “Herzog’s stated goal is matching timestamped video/audio streams with timestamped

meta-data streams at a mobile device,” which “relies on the projected latency period to synchronize the video/audio stream with the metadata stream.” PO Resp. 57–58 (citing Ex. 1015 ¶¶ 56, 64, 74, 82; Ex. 2001 ¶¶ 145, 210–212, 293; Ex. 2038 ¶ 30; Ex. 2039, 88:23–91:4).

Here, Herzog describes that “total latency in the video/audio data stream may be greater than 63 seconds,” and “[t]he metadata, on the other hand, includes a latency that is less than a total of 2 seconds.” Ex. 1015 ¶ 82. As Patent Owner points out, although Petitioner contends that it would have been obvious to “upgrade” Herzog’s “data delivery system to reduce latency” (Pet. 61–62), Petitioner “does not address the latency caused by Herzog’s audio/video stream.” PO Resp. 59. We find availing Patent Owner’s contention that Petitioner’s position “does not meet the motivation that one would use to combine these references,” since, as the data accumulates, the combined system “creates cumulative delays that defeats Herzog’s premise.” Tr. 54:21–55:13.

Although “[a] person of ordinary skill in the art is also a person of ordinary creativity, not an automaton” (*KSR*, 550 U.S. at 421), there may be limits in a particular case as to how much gap-filling may be based on such creativity. *See Arendi S.A.R.L. v. Apple Inc.*, 832 F.3d 1355, 1361 (Fed. Cir. 2016); *DSS Tech. Mgmt., Inc. v. Apple Inc.*, 885 F.3d 1367, 1374–75 (Fed. Cir. 2018) (reliance on ordinary creativity to supply a missing limitation requires the same “searching” inquiry as reliance on common sense).

Here, we find that Petitioner has not met its burden to prove that one of ordinary skill in the art “looking to improve Herzog’s latency issues, would have looked to implement a system such as Spivey.” Pet. 63.

Specifically, although Petitioner relies on Spivey to improve latency (*id.*), as Patent Owner points out, Herzog “relies on the projected latency period to synchronize the video/audio stream with the metadata stream.” PO Resp. 57–58; *see* Ex. 1015 ¶¶ 74, 82. Thus, to “upgrade” Herzog’s “data delivery system to reduce latency” (Pet. 61–62) without addressing the latency caused by Herzog’s audio/video stream (PO Resp. 59) requires gap-filling. Accordingly, we find Petitioner’s contention that a POSITA would have implemented Spivey “to improve Herzog’s latency issues” (Pet. 61–62) lacks sufficient support in the record.

We find Petitioner’s explanation in its Reply insufficient to support Petitioner’s position. Pet. Reply 18–22. In its Reply, Petitioner acknowledges that “video data must have latency,” but makes a conclusory statement that a POSITA “would have known that reducing the data-distribution latency would have improved the system’s capabilities.” *Id.* at 18. However, although such references explain “reducing the data-distribution latency,” Petitioner does not explain why a POSITA would have combined such teachings in Spivey to obtain the synchronization between the video/audio stream and the meta-data stream as required by Herzog. PO. Resp. 61–62. Without evidentiary support, we are left with speculation and impermissible hindsight. *See in Re Wagner*, 379 F.2d 1011, 1017 (CCPA 1967). We decline to engage in speculation. *See, e.g., In re Vaidyanathan*, 381 F. App’x 985, 993 (Fed. Cir. 2010); *In re Wallen*, 565 F. App’x 867, 869 (Fed. Cir. 2014), both citing *In re Zurko*, 258 F.3d 1379, 1386 (Fed. Circ. 2001) ([T]he Board must point to some concrete evidence in the record in support of these findings.”).

In sum, based on our review of the record, we find Petitioner's showing is insufficient. Thus, based on the complete record presented, we determine that Petitioner has not demonstrated that claim 19–25 and 27–30 would have been unpatentable as obvious under 35 U.S.C. § 103 over the combination of Herzog, Spivey, and Ellis.

### III. PETITIONER'S MOTION TO EXCLUDE

Petitioner moves to exclude “paragraph 315” of Dr. Rubin's Declaration (Ex. 2001) and Exhibits 2007–2017 submitted therewith because each item “relates to Patent Owner's unreliable and impermissible evidence of secondary indicia of non-obviousness.” Exclude Mot. 1. Petitioner argues that Dr. Rubin's testimony “relies on inadmissible hearsay evidence (Exhibits 2016 and 2017).” *Id.* Patent Owner then argues that Exhibits 2007, 2008, 2011, 2016, and 2017 are “unauthenticated documents under [Federal Rules of Evidence] FRE 901” and “inadmissible hearsay,” while Exhibits 2009, 2010, and 2012–2015 are “unauthenticated documents under FRE 901.” *Id.* at 1–2.

Patent Owner responds by arguing that “Petitioner has failed to establish any basis to exclude the challenged evidence.” Exclude Opp. 1. Petitioner argues that “concerns about authentication or hearsay are typically handled through weight, not wholesale exclusion.” *Id.* We agree with Patent Owner.

Although Petitioner argues that a portion of Dr. Rubin's Declaration and Exhibits submitted therewith should be excluded because they relate to “unreliable and impermissible evidence” (Exclude Mot. 1–2), such arguments are directed to the evidence's weight, rather than its admissibility. As the Board has previously indicated, “there is a strong public policy for

making all information filed in an administrative proceeding availing to the public.” *See Liberty Mut. Ins. Co. v. Progressive Cas. Ins. Co.*, CBM2012-00010, Paper 59 at 40 (PTAB February 24, 2014). Here, as to Dr Rubin’s testimony and supporting Exhibits, the Board, sitting as a non-jury tribunal with administrative expertise, is well positioned to determine and assign appropriate weight to evidence presented. *See, e.g., 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.”). Thus, in this proceeding, the better course is to have a complete record of the evidence to facilitate public access as well as appellate review. *See id.* (“If the record on review contains not only all evidence which was clearly admissible, but also all evidence of doubtful admissibility, the court which is called upon to review the case can usually make an end of it, whereas if evidence was excluded which that court regards as having been admissible, a new trial or rehearing cannot be avoided.”).

On this record, we deny Petitioner’s Motion to Exclude.

#### IV. CONCLUSION<sup>8</sup>

For the foregoing reasons, we determine on the record at hand that Petitioner has demonstrated by a preponderance of the evidence that challenged claims 19–25 and 27–30 of the ’697 patent are unpatentable.

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<sup>8</sup> Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this decision, we draw Patent Owner’s attention to the April 2019 Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding. *See* 84 Fed. Reg.

| <b>Claims</b>              | <b>35<br/>U.S.C.<br/>§</b> | <b>Reference(s)/Basis</b> | <b>Claims<br/>Shown<br/>Unpatentable</b> | <b>Claims Not<br/>Shown<br/>Unpatentable</b> |
|----------------------------|----------------------------|---------------------------|------------------------------------------|----------------------------------------------|
| 19–25,<br>27–30            | 103                        | Ellis, Spivey             | 19–25, 27–30                             |                                              |
| 19–25,<br>27–30            | 103                        | Herzog, Spivey,<br>Ellis  |                                          | 19–25, 27–30                                 |
| <b>Overall<br/>Outcome</b> |                            |                           | 19–25, 27–30                             |                                              |

#### IV. ORDER

For the reasons given, it is

ORDERED that, based on the preponderance of the evidence, claims 19–25 and 27–30 of the '697 patent have been shown to be unpatentable;

FURTHER ORDERED that Petitioner's Motion to Exclude is denied; and

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

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16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. *See* 37 C.F.R. § 42.8(a)(3), (b)(2).

IPR2024-01309  
Patent 10,425,697 B2

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