

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SPORTRADAR AG,
Petitioner,

v.

SPORTSCASTR INC.
(d/b/a PANDA Interactive),
Patent Owner.

IPR2025-00315

U.S. Patent No. 10,805,687

PATENT OWNER PRELIMINARY RESPONSE

Mail Stop PATENT BOARD
Patent Trial and Appeal Board
U.S. Patent & Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

TABLE OF CONTENTS

I.	DISCRETIONARY DENIAL REQUEST TO DIRECTOR.....	1
II.	INTRODUCTION.....	1
A.	Topic queues are not sockets under Petitioner’s own definition	2
B.	Petitioner’s Ellis / Spivey combination fails to relay data to Ellis’s User Equipment; it’s fundamentally inoperable and not fit for purpose.....	4
III.	THE ’687 PATENT	6
A.	Inadequacy of the Prior Art.....	6
B.	Innovations of the ’687 Patent	8
C.	Claim Construction	11
D.	Level of Ordinary Skill in the Art.....	11
IV.	PRIOR ART OVERVIEW.....	11
A.	Ellis.....	11
B.	Spivey.....	15
C.	Kellicker	18
D.	Phillips.....	20
E.	Stoica.....	25
F.	Pantos	28
V.	THE CHALLENGED CLAIMS ARE PATENTABLE	29
A.	Ground 1: Petitioner Fails to Establish that Ellis in View of Spivey Renders Obvious Every Limitation of the Challenged Claims.	30
1.	Petitioner’s combination does not render obvious the claimed “event socket.”	30

2.	Petitioner fails to show that a POSITA would have been motivated to combine Ellis with Spivey.....	46
B.	Ground 2: Petitioner Fails to Establish that Ellis in view of Spivey and Kellicker Renders Obvious Every Limitation of the Challenged Claims...	54
C.	Ground 3: Petitioner Fails to Establish that Ellis in View of Spivey, Kellicker, and Phillips Renders Obvious Every Limitation of the Challenged Claims	54
D.	Ground 4: Petitioner Fails to Establish that Ellis in View of Spivey, Kellicker, Philips, and Stoica Renders Obvious Every Limitation of the Challenged Claims	55
E.	Ground 5: Petitioner Fails to Establish that Ellis in View of Spivey, Kellicker, Philips, and Pantos Renders Obvious Every Limitation of the Challenged Claims	55
F.	Petitioner’s Grounds Fail to Render Obvious All Dependent Claims.....	55
G.	Other Limitations Not Addressed	56
VI.	CONCLUSION	56

TABLE OF AUTHORITIES

Cases:

<i>Belden Inc. v. Berk-Tek LLC</i> , 805 F.3d 1064 (Fed. Cir. 2015).....	49
<i>Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.</i> , 800 F.3d 1375 (Fed. Cir. 2015).....	29
<i>Harmonic Inc. v. Avid Tech., Inc.</i> , 815 F.3d 1356 (Fed. Cir. 2016).....	29
<i>In re Hedges</i> , 783 F.2d 1038 (Fed. Cir. 1986).....	35, 38, 40
<i>In re Merck & Co.</i> , 800 F.2d 1091 (Fed. Cir. 1986).....	51
<i>Interconnect Planning Corp. v. Feil</i> , 774 F.2d 1132 (Fed. Cir. 1985).....	52
<i>KSR Int’l Co. v. Teleflex Inc.</i> , 550 U.S. 398 (2007).....	45, 51
<i>Metalcraft of Mayville, Inc. v. The Toro Co.</i> , 848 F.3d 1358 (Fed. Cir. 2017).....	52

Other Authority:

Bolt, 64 EMORY LAW J.	45
----------------------------	----

EXHIBIT LIST

Exhibit	Description
EX-2001	Declaration of Aviel Rubin, Ph.D.
EX-2002	<i>Curriculum vitae</i> of Aviel Rubin, Ph.D.
EX-2003	Joint Claim Construction and Prehearing Statement, Dkt. 124
EX-2004	Memo on Interim Processes for PTAB Workload Management
EX-2005	Instituted Matters
EX-2006	NBA.com, Steve Ashburner April 27, 2017 Article
EX-2007	Sportstechie, Robert Roble, April 22, 2017
EX-2008	Sports Tech Tokyo Award; 2019 Yahoo! Sports Tech Awards; Sports Business Awards
EX-2009	Various Media Reports on the Patented Invention
EX-2010	CNBC, December 20, 2018
EX-2011	https://sportscastr.com/about
EX-2012	https://pandainteractive.com/patents
EX-2013	https://sportscastr.com
EX-2014	https://studiopanda.live/
EX-2015	Sportradar August 2019 Email
EX-2016	Guidance on USPTO’s recission of “Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation”
EX-2017	Exhibit Not Used
EX-2018	https://www.opensourceforu.com/2015/03/a-guide-to-using-raw-sockets
EX-2019	https://learn.microsoft.com/en-us/windows/win32/winsock/tcp-ip-raw-sockets-2
EX-2020	Oracle documentation in 2011: Anatomy of the Client/Server Model https://docs.oracle.com/cd/E13203_01/tuxedo/tux80/atmi/intbas3.htm
EX-2021	Peng, Gang, “CDN: Content distribution network,” arXiv preprint cs/0411069 (2004) https://arxiv.org/pdf/cs/0411069
EX-2022	The History of Streaming Media https://boyetblog.s3.amazonaws.com/PCPlus/324.Streaming.pdf
EX-2023	RFC 2326: Real Time Streaming Protocol (RTSP) https://www.ietf.org/rfc/rfc2326.txt

Exhibit	Description
EX-2024	Adobe's Real Time Messaging Protocol https://rtmp.veriskope.com/pdf/rtmp_specification_1.0.pdf
EX-2025	WebRTC 1.0: Real time Communication Between Browsers https://www.w3.org/TR/2011/WD-webrtc-20111027/
EX-2026	HTTP Live Streaming: draft-pantos-http-live-streaming-01 https://datatracker.ietf.org/doc/html/draft-pantos-http-live-streaming-01
EX-2027	Microsoft To Add Smooth Streaming in IIS7 https://virtualizationreview.com/articles/2008/11/04/microsoft-to-add-smooth-streaming-in-iis7.aspx
EX-2028	HTTP Dynamic Streaming. (Archived May 14, 2010) https://web.archive.org/web/20100514170442/http://www.adobe.com/products/httpdynamicstreaming/
EX-2029	MPEG ratifies its draft standard for DASH. (Archived December 14, 2011) https://web.archive.org/web/20111214104626/http://mpeg.chiariglione.org/meetings/geneva11-1/geneva_press.htm
EX-2030	Mogulus Rebrands With A Killer Domain: Livestream.com https://techcrunch.com/2009/05/18/mogulus-gets-a-killer-domain-for-rebranding-livestreamcom/
EX-2031	How to watch Obama's inauguration (and the parties) online https://www.cnet.com/tech/tech-industry/how-to-watch-obamas-inauguration-and-the-parties-online/
EX-2032	Twitch is 4 th in Peak US Internet Traffic https://blog.twitch.tv/en/2014/02/05/twitch-is-4th-in-peak-us-internet-traffic-90b1295af358/
EX-2033	Twitch Engineering: An Introduction and Overview https://blog.twitch.tv/en/2015/12/18/twitch-engineering-an-introduction-and-overview-a23917b71a25/
EX-2034	<i>Proceedings of the 25th ACM workshop on network and operating systems support for digital audio and video</i> , pp. 55-60, 2015 https://arxiv.org/pdf/1502.04666
EX-2035	Third Amended Complaint
EX-2036	<i>SB IP Holdings, LLC v. Vivint, Inc.</i> , No. 4:21-cv-00912 (Stay Order)
EX-2037	<i>Portsmouth Network Corp. v. Cisco Systems, Inc.</i> , No. 2:23-CV-00441 (Stay Order)
EX-2038	Second Amended DCO, Dkt. 174

Exhibit	Description
EX-2039	Sportradar Redacted Motion to Amend DCO, Dkt. 144
EX-2040	Order Granting and Dismissing Motion to Amend DCO in Part, Dkt. 154
EX-2041	E.D. Texas Patent Timing to Trial
EX-2042	Sportradar Invalidity Contentions, December 9, 2024
EX-2043	Sportradar Initial Invalidity Contentions, May 6, 2024

SportsCastr Inc. (d/b/a PANDA Interactive) (“Patent Owner” or “PANDA”) submits this Preliminary Response to the Petition of Sportradar AG. (“Petitioner” or “Sportradar”) seeking inter partes review of U.S. Patent No. 10,805,687 (“the ’687 patent”).

I. DISCRETIONARY DENIAL REQUEST TO DIRECTOR

Pursuant to Acting Director Stewart’s March 26, 2025 memorandum (“Stewart Memo”), Patent Owner has filed a separate request for discretionary denial to the Director. The discretionary denial brief demonstrated that in view of the abrogation of the 2022 Vidal Memo (EX-2016) and the guidance outlined in the Stewart Memo (EX-2004), the Board should exercise its discretionary authority to deny institution under 35 U.S.C. § 314(a).

II. INTRODUCTION

The ’687 patent discloses and claims a novel one-to-many socket architecture that supplies multiple client devices real-time, actionable event information, which may be paired with a digital content stream, e.g., a video stream. (EX-1003, 9:25-67; EX-2001, ¶¶78-84.) This novel architecture reduces latency among client devices receiving these updates, which plagued prior art systems.

Nevertheless, the Board instituted inter partes review proceedings in six IPRs (concerning US 10,425,697; US 10,805,687; US 11,039,218) that relate to similar technology, and that involve similar prior art (the “Instituted Matters”). (EX-2005.)

Patent Owner respectfully submits that the Board's institution decisions in the Instituted Matters should not be viewed as controlling here, for at least two reasons:

1. Petitioner does not demonstrate that the prior art's "topic queues" correspond to the claimed "event socket."

2. Petitioner's Ellis / Spivey combination is fundamentally inoperable because it includes no server component that functions to relay data to Ellis's "user equipment."

A. Topic queues are not sockets under Petitioner's own definition

First, in its Institution Decisions, the Board overlooked key differentiating features of the claimed socket architecture over prior art reference Spivey: (i) Spivey's "topic queues" do not disclose or suggest an "event socket" because those topic queues are not "uniquely addressable communication endpoints;" and (ii) Spivey does not disclose or suggest that its Message Queue Servers ("MQS") / topic queues are capable of handling communication to individual client devices. Either one of the above findings is sufficient to deny Institution here.

According to Petitioner's expert, a "first event socket . . . is simply a socket" and a "socket" is a "uniquely addressable communication endpoint." (EX-1001, ¶454.) Spivey's topic queues are neither "uniquely addressable" nor "communication endpoints." (EX-2001, ¶¶195-207.)

Yet the Board did not credit Patent Owner's expert testimony, of Dr. Rubin, which firmly established that Spivey's topic queues are not uniquely addressable communication endpoints, because he had not "address[ed] sufficiently Spivey's teachings as a whole." (EX-2005, 37, 98, 171, 236, 298, 355.) But Dr. Rubin did in fact explain 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 at all. Dr. Rubin also explained that Spivey describes only its live data access server as being uniquely addressable.

In response, the Board found Spivey's disclosure that an "address may resemble a uniform resource locator (URL)" and that a user interface 900 "allow[s] an operator 108 of a client device to view and select...topics available from a message queue server" supports a finding that Dr. Rubin's testimony "is limited to addressing live data access server 130." (EX-2005, 37, 98, 171, 236, 298, 355.)

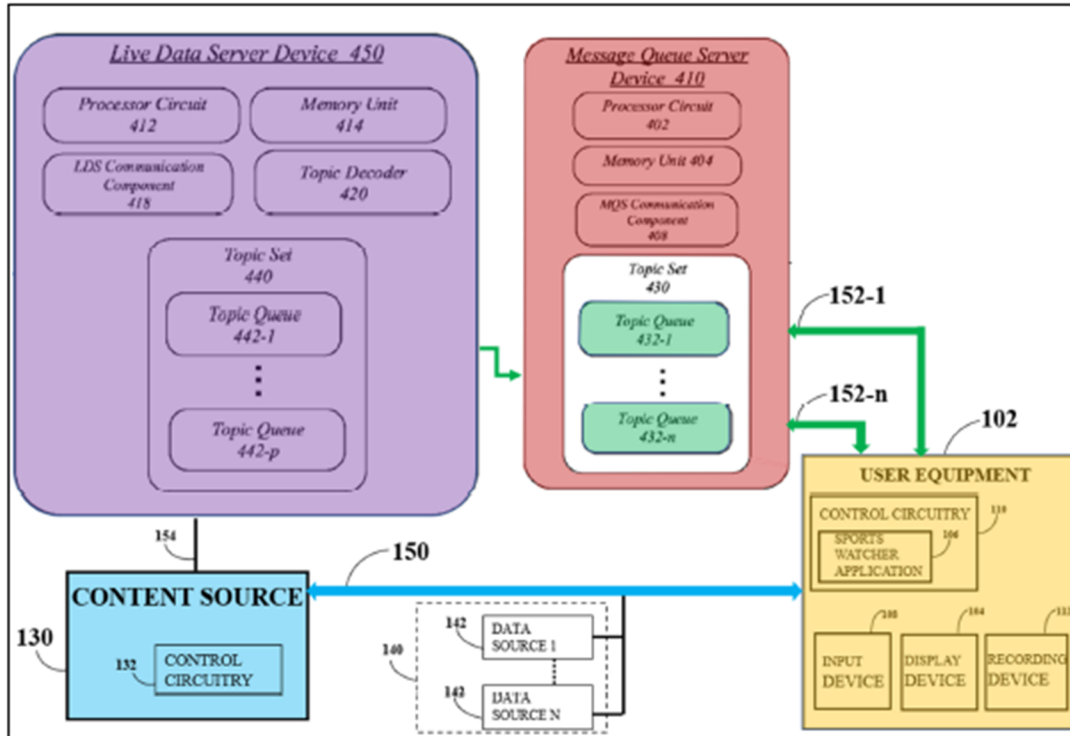
But Spivey's user interfaces 800, 900, 1000 (FIGS. 8-10) ***all pertain to accessing the live data access server*** via a client mobile application. (EX-2001, ¶¶198-200; EX-1017, ¶¶81-84.) Spivey's message queue servers immediately push data to the live data access server, and individual client devices subscribe to the live data access server to receive such data. Spivey's user interfaces merely depict graphical displays viewable by individual clients for accessing data via the live data access server. While the live data access server provides a communication endpoint

for individual client devices, Spivey does not describe, nor would a POSITA understand, Spivey's message queue servers and associated topic queues to be uniquely addressable communication endpoints. Dr. Rubin further elaborates on these points in his declaration submitted herewith. In view of this clarification, there is no reasonable likelihood that Petitioner can prove invalidity of any challenged claim.

B. Petitioner's Ellis / Spivey combination fails to relay data to Ellis's User Equipment; it's fundamentally inoperable and not fit for purpose

Second, the Board did not recognize the fundamental inoperability of Petitioner's Ellis / Spivey combination. Petitioner's entire argument rests on a fabricated diagram that lacks any component capable of data transmission between the Message Queue Server Device or "MQSD" (from Spivey) and the user equipment (from Ellis). (Petition, 10-14.) Accordingly, a POSITA would not understand Petitioner's creation to cause the flow of any data to the user equipment, and thus would see it as inoperable, and not worthy of attempting.

Petitioner's patchwork of Ellis's and Spivey's architecture (shown below) does not include any component described in the prior art as being capable of transmitting data to the user equipment.



(Petition, 12.)

Despite Petitioner’s attempt to suggest that Spivey’s “topic queues” transmit data (Petition, 29-31), according to Spivey, the only component of the MQSD capable of transmitting data is the “MQS Communication Component 408.” The MQS Communication Component 408 (which is analogous to the MQS Communication Component 308) 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.” (EX, 1017, ¶49 (emphasis added).) But Petitioner’s diagram leaves out the live data access server or “LDAS” entirely. It is only through the LDAS of Spivey (which includes the necessary components—“subscription component 540” and “interface component 530”—to handle communication to individual clients) that clients can

access data from the MQSD. (EX-2001, ¶177.) Absent the LDAS, and its subscription component or interface component, Spivey's architecture will not operate to deliver data to the user equipment shown on Petitioner's make-believe diagram. Spivey's teachings, *when considered as a whole*, require the LDAS; Petitioner's discarding of the LDAS disrupts and ruins the very message flow Spivey teaches.

Petitioner's illustration of "communication channels" 152-1, 152n does not remedy the lack of any component in its diagram for communicating with Ellis's user equipment. The concept of communication channels 152-1, 152-n are entirely of Petitioner's and its expert's own making. Neither Ellis nor Spivey disclose such multiple communication channels. And despite Petitioner's representation of a bi-directional arrow shown adjacent the topic queues, the topic queues (as demonstrated extensively herein) do not function as a "uniquely addressable communication endpoint" and are not capable of handling communication to multiple end client or user equipment devices.

For these reasons, and those discussed below, the Board should deny institution.

III. THE '687 PATENT

A. Inadequacy of the Prior Art

Synchronized data and digital content streams (including video streams) form cornerstone technologies that support the exploding online broadcasting market.

Interactive features alongside germane digital content may allow and even encourage viewers to engage and interact—all without the viewer leaving an immersive viewing experience. (EX-2001, §§III, IV.)

However, despite years and countless investments in streaming technology, conventional systems continue to suffer from significant drawbacks that have hindered product offerings. (EX-1003, 2:31-3:6; EX-2001, §III.C.) “One such technological problem relates to viewer ‘latency,’ i.e., the delay between a first user generating a live video stream for transmission via the Internet and a second user receiving a copy of the live video stream via the Internet for viewing.” (EX-1003, 2:36-40; EX-2001, §III.B.2.) While any streaming technology may seek to reduce latency, the inventors of the ’687 patent sought to address specific problems related to latency. (EX-1003, 25:4-43.) For example, conventional techniques made it challenging to provide “relatively low latency copies of live video streams with relatively high quality (e.g., high definition HD and high bit rate).” (EX-1003, 2:433-49; EX-2001, §III.C.) The inventors also addressed synchronizing high quality (“e.g., high definition HD and high bit rate, such as 2 to 5 megabits per second”) copies of digital content streams amongst multiple viewers—particularly a large number of viewers—while *maintaining low latency delivery*, and also “allowing for different classes or types of viewers to flexibly access copies...via different live streaming formats.” (EX-1003, 2:48-56.)

“Particularly in the context of a ‘second screen’ experience relating to a live event”—as is common among sports viewers and sports betting fans—any “discernible delay between the observation of the live event itself [e.g., a sport] and a given broadcaster’s video-based commentary would significantly undermine viewer experience.” (EX-1003, 4:33-49.) For example, any noticeable offset between the digital content and contextually matched information (e.g., information or commentary that may be used for betting purposes) may confuse the viewer and detract from the ability to place wagers due to the problem of out-of-date, stale, or unsynchronized data served to the viewer. (EX-2001, ¶¶73-76.) Conventional approaches also struggle to synchronize the broadcasting of contextual-matched event information and digital content streams to multiple viewers because the “offset” between the video signal and matched information may become more pronounced as additional viewers, each having potentially differing bandwidths and connection speeds, join the broadcast. (EX-2001, ¶269.)

Accordingly, there was a need for improved systems and techniques to synchronize contextually matched information with delivered video content.

B. Innovations of the ’687 Patent

The ’687 patent discloses systems and processes related to digital content, such as video, with contextual-matched event information. (EX-1003, 4:50-5:4, 8:30-31. 9:25-67; EX-2001, ¶77.) Instead of contending with a viewer-noticeable

offset between a delivered digital content stream and associated information, the claimed inventions implement a novel, technologically improved, one-to-many socket architecture. (EX-1003, 20:7-21, 21:46-62, 22:17-48; EX-2001, ¶¶78-79.) This socket architecture allows multiple client devices to establish an event information channel with an “event socket,” which may supply real time, actionable event information to each client device that is contextually matched with a delivered digital content stream, including, as applicable, the delivered video stream. (EX-1003, 21:46-62, 22:17-48; EX-2001, ¶77.) The ’687 patent discloses and claims transmitting such event information to the client device via an event information Internet communication channel. (EX-1003, 9:25-67; EX-2001, ¶¶84, 85.)

Among the innovations of the ’687 patent is a novel architecture with a dedicated channel to transmit event information, separate from a communication channel for content streaming, to facilitate the pairing of real time, actionable information with related digital content. (EX-1003, 21:46-62, 27:15-37; EX-2001, ¶86.) By transmitting signals (including those for video delivery) to the viewer device separate from event information, the ’687 patent facilitates the inclusion of real time, contextually matched data alongside the digital content stream. (EX-1003, 9:25-67, 21:46-62, 27:15-37; EX-2001, ¶91.) For example, all event viewers (regardless of the content stream they receive) may receive synchronized information from the same event socket dedicated to that event. (EX-1003, 9:25-67,

26:60-27:14, FIG. 2, FIG. 4; EX-2001, ¶¶82-83.) All live streams across multiple viewer client devices, may therefore similarly receive synchronized event information, received in real time via the “event information Internet communications channel.” (EX-1003, 22:8-16, 26:60-27:14; EX-2001, ¶¶80-81.)

This represents a significant improvement over the prior art not found in the references cited by Petitioner. (EX-2001, ¶91.) The ’687 patent solves the technical challenge of providing the same event information in a synchronized manner to all viewers of such broadcast (e.g., via the socket architecture and paired video stream). (EX-1003, 25:4-43, 27:15-36.) Because all viewers of the broadcast may receive the same synchronized information via the same event socket, each viewer client device may be capable of receiving the same information, at generally the same time, in real time, regardless of transmission protocol. (EX-1003, 26:60-27:37; EX-2001, ¶89.)

The claimed inventions facilitate enhanced online sports offerings because each viewer may interact with (and, more generally, make decisions based on) the same information as other viewers, all while watching the same digital content. (EX-1003, 26:60-27:37; EX-2001, ¶90.) Using this novel socket architecture and paired content stream enables the claimed invention to leverage real time communication protocols in a distributed network to deliver high-quality, low-latency copies of

certain content streams to multiple viewers, each of whom is receiving synchronized event information. (EX-1003, 26:60-27:37; EX-2001, ¶¶77, 81, 91.)

C. Claim Construction

Petitioner takes conflicting claim construction positions in two proceedings. Here, Petitioner contends the Board need not construe any claim terms. (Petition, 6.) But, in co-pending district court litigation, Petitioner has proposed construction of twelve claim terms. (EX-2003.)

Except for the “event socket” term for which Patent Owner applies Petitioner’s construction as discussed below, for purposes of this preliminary response, Patent Owner agrees that no terms require construction and construes all other terms consistent with their plain and ordinary meaning.

D. Level of Ordinary Skill in the Art

A person of ordinary skill in the art would have 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. (EX-2001, §IV.C, ¶96.)

IV. PRIOR ART OVERVIEW

A. Ellis

Ellis recognized that media guidance applications (e.g., television program guides) were typically generalized applications that failed to leverage the increased

capabilities of television equipment, such as having multiple tuners. (EX-1016, ¶¶3-7; EX-2001, §V.A, ¶103.) Specifically, television viewers were “unable to efficiently switch” between programs of interest. (EX-1016, ¶7; EX-2001, ¶¶104-105.)

Accordingly, Ellis discloses systems and methods directed to an “intelligent tuning module” that facilitates a user (e.g., of a television) rapidly switching between programs. (EX-1016, Abstract; EX-2001, ¶¶103-104.) For example, using the system Ellis describes, a viewer may tune into a first television program while concurrently tuning into a second television program. (EX-1016, ¶¶5, 49; FIG. 2A; EX-2001, ¶106.) Because the television is tuned to both (or more) programs simultaneously, the user may switch between the sporting events quickly. (EX-1016, ¶¶5, 137, 176, 178; EX-2001, ¶¶107, 112, 123.)

For example, the user’s equipment may include control circuitry, having multiple “tuners” (e.g., Tuners 202, 204, 206, 208)—the first being tuned to a primary event and a second tuned to a second event. (EX-1016, ¶¶57-59; FIG. 2A; EX-2001, ¶¶106, 107.) The systems and methods described in Ellis allow for ranking and prioritization of content streamed into the tuners. (EX-1016, ¶¶64, 73, 164; EX-2001, ¶¶109-111.)

Ellis further describes a graphical user interface (e.g., “display screen 300”) to facilitate switching from the primary sporting event to the second sporting event,

as shown in Ellis FIG. 3 (below). (EX-1016, ¶¶68-69; EX-2001, ¶¶113-114.) For example, an interactive scoreboard 302 may be overlaid in a main window. The interactive scoreboard may include scoreboard entries 304, 306 with information indicative of the currently tuned events. (EX-1016, ¶68 EX-2001, ¶113.) In some cases, the viewer may select scoreboard entries to facilitate viewing the tuned-in game on the device, for example, by indicating with a television icon when that game is available for viewing. (EX-1016, ¶73; FIG. 4; EX-2001, ¶¶115-116.)

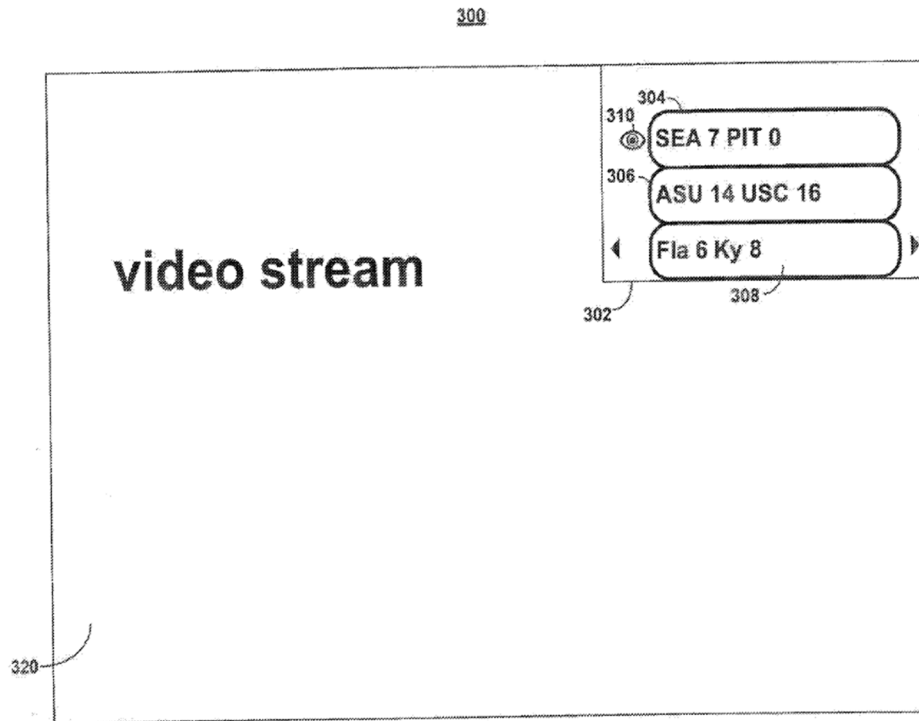


FIG. 3

(EX-1016, FIG. 3.)

Ellis describes a generic two-track architecture whereby the user's equipment "receives content in the form of signals from content source 130 and/or supplemental content source 120 over communications paths 150 and 152, respectively," for

example, as shown in FIG. 1 (below). (EX-1016, ¶39; FIG. 1; EX-2001, ¶117.) The viewer may view content from content source 130 via communication path 150, while also receiving data from supplemental content source 120 via communication path 152 (e.g., data used to update the scoreboard). (EX-1016, ¶¶39-41, 70-71; FIG. 1; EX-2001, ¶¶118, 120, 122.)

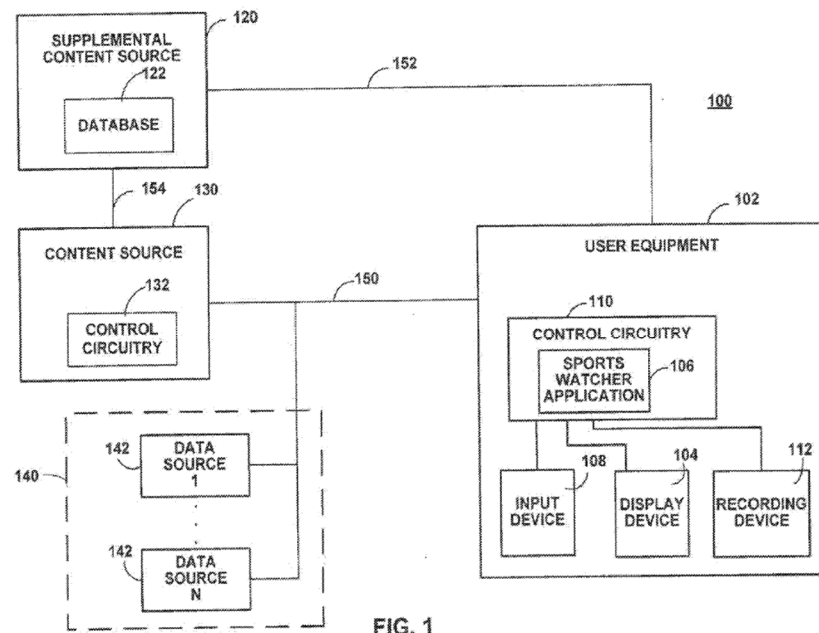


FIG. 1

(EX-1016, FIG. 1.)

Petitioner’s own expert, Dr. Kia, conceded the lack of specificity in Ellis’s data delivery, noting that “Ellis does not explicitly disclose the backend architecture/process flows for delivering the supplemental content data.” (EX-1001, ¶105.)

Ellis differs from the inventions of the ’687 patent in multiple ways. As acknowledged by Petitioner’s own expert, Dr. Kia, Ellis discloses only a generic

computer architecture, with no discussion of a socket server of any type. (EX-1016, ¶¶39-42; EX-1001, ¶105; EX-2001, ¶¶103, 121.) Further, Ellis discloses using the equipment of each viewer, individually, and is irrelevant to the problem addressed by the '687 patent of delivering data to multiple users in a synchronized manner.

B. Spivey

Spivey discloses an apparatus directed to rapidly distributing live event data to users in “real time” utilizing a message queue server (MQS). (EX-1017, Abstract; EX-2001, §V.B, ¶¶124, 126.) According to Spivey, content providers experience obstacles in providing real time event data to mobile devices. (EX-1017, ¶2; EX-2001, ¶125.) For example, conventional systems that must store data in a database before sending it to a requesting client often fail to timely deliver real time data to mobile devices. (EX-1017, ¶¶27-28; EX-2001, ¶125.) Spivey therefore discloses a “message queue server” that operates to receive, sort, and transmit data payloads “immediately,” without the need for interim storage in a database. (EX-1017, ¶¶51, 46, 128, 131; EX-2001, ¶¶126-127.) For example, as shown in FIG. 1 (below), Spivey discloses data topic entries (which include both a topic label and data payload) transmitted from live data sources (e.g., data feeds generated by computers at a live event) to a message queue server. (EX-1017, ¶37; EX-2001, ¶¶128-129, 131.) The message queue server sorts the data payload into a designated queue based on the topic label, and then sends the data payload from the data queue to a live

access server. (EX-1017, ¶¶47, 67; EX-2001, ¶¶130-131.) Notably, in the example of FIG. 1, the queue server 120 (which may sit “behind a firewall”) pushes the payload to live data access server 130, and “is not accessible to clients over the network directly.” (EX-1017, ¶36; FIG. 1; EX-2001, ¶¶131-133.)

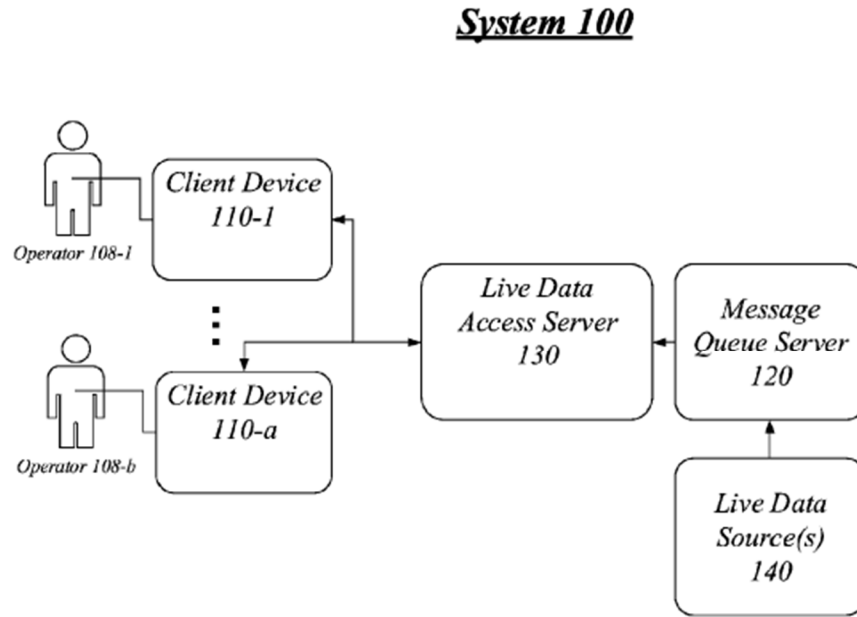


FIG. 1

(EX-1017, FIG. 1.)

Live data access server 130 serves as a “public interface” for the message queue server 120 and various client devices. (EX-1017, ¶38; EX-2001, ¶¶133-135.) At the live data access server, client devices may select topics related to a given event to which they want to subscribe. (EX-1017, ¶38; EX-2001, ¶¶133-135.)

Spivey discloses implementing message queue server 120 as two separate devices to “protect proprietary data.” (EX-1017, ¶57.) For example, as shown in

FIG. 4 (below), message queue server 120 may be implemented by message queue server device 410 and live data server device 450. (EX-1017, ¶53.) The live data server device includes topic decoder 420, which sorts a topic entry into one or more appropriate queues (e.g., topic queue 442-1, 442-2, etc.) before sending the data payload to the message queue server device. (EX-1017, ¶¶49, 56.) The message queue server device may, in turn, operate as a “message broker” to facilitate receiving published messages from the live data server device and sending such messages to subscribers (e.g., the “aggregator component” and/or “live data access server”) via MQS communication component 408. (EX-1017, ¶¶57, 128, 131.)

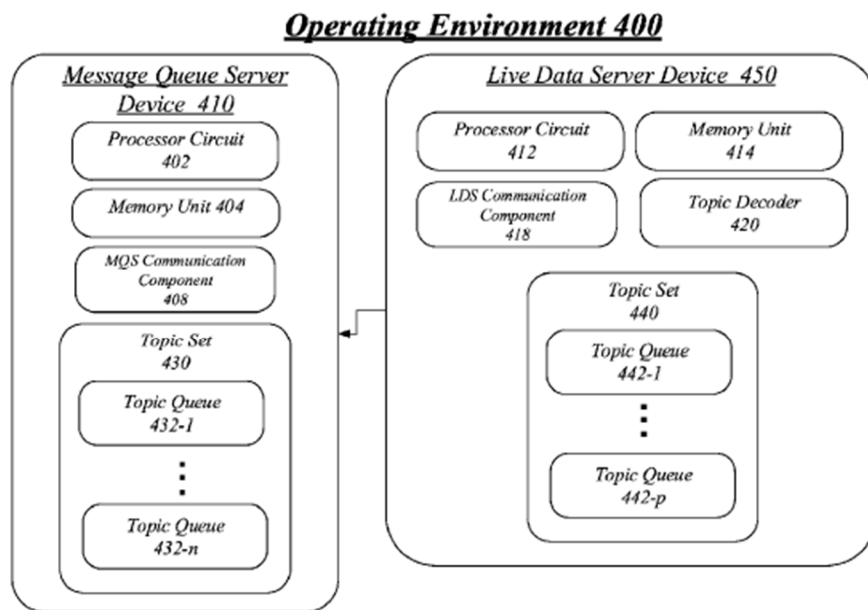


FIG. 4

(EX-1017, FIG. 4.)

Spivey differs from the inventions of the '687 patent in multiple ways. For example, Spivey does not address video delivery. Indeed, the Spivey's illustrative

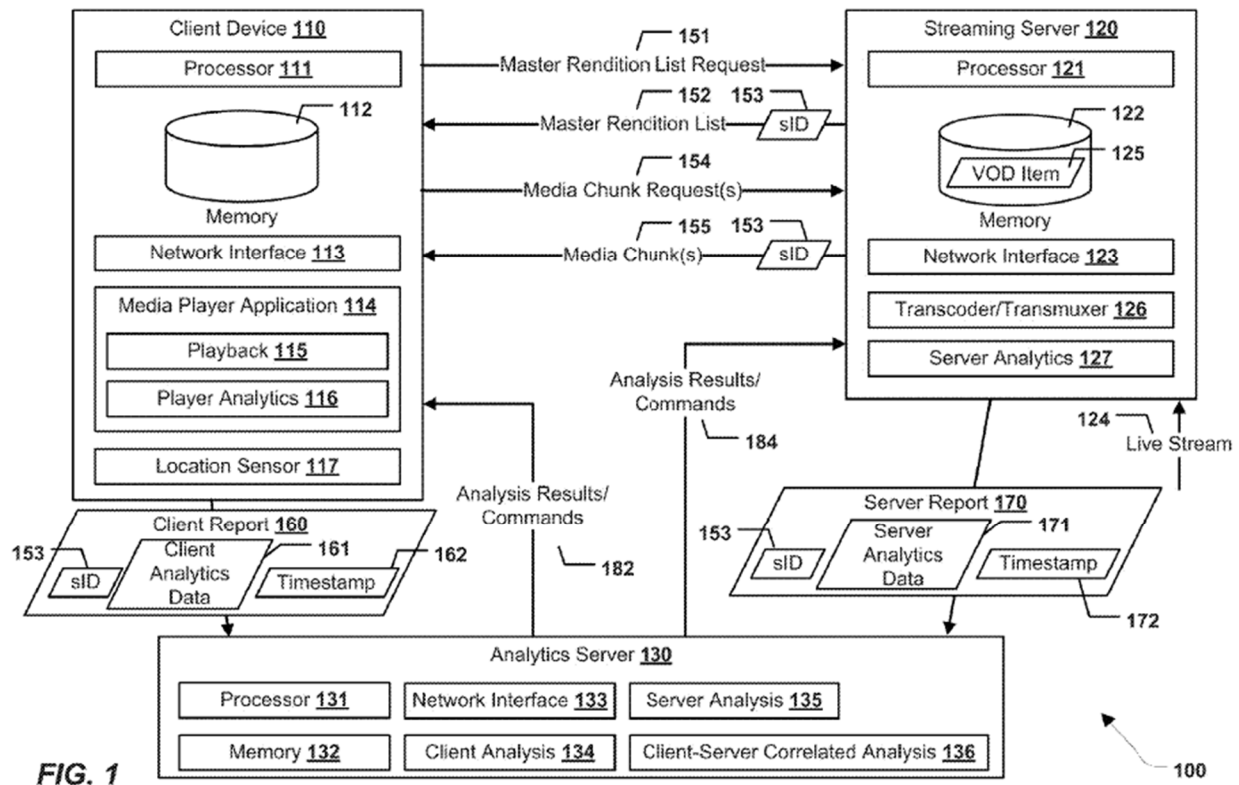
use case is a mobile device user trying to access real time statistics of the latest professional sporting event on the go. (EX-1017, ¶¶2, 27.) Spivey attempts to solve the user's dilemma with a messaging server for quick sending of message payloads.

C. Kellicker

Kellicker documents the availability of certain “performance statistics” from client devices. (EX-1049, ¶2, Abstract; EX-2001, ¶¶138-139.) For example, client devices may generate performance statistics associated with content streamed by the device, including bitrate, error, and client interaction information. (EX-1049, ¶¶2, 4.). Kellicker further documents that certain streaming servers may generate certain “server statistics,” including, “details regarding streams being provided to each connected client[].” (EX-1049, ¶¶2, 5.) According to Kellicker, a developer or vendor may not understand the correlation between such client and server performance statistics, and thus, may be unable to adapt the streaming parameters that influence such statistics. (EX-1049, ¶2; EX-2001, ¶¶139-140.)

Kellicker thus discloses a system of correlating performance statistics of a streaming server and a client device receiving a stream from said streaming server. (EX-1049, ¶¶4-6, 19-25, FIG. 1; EX-2001, ¶139.) A streaming server 120 may provide streaming content to a client device 110, such as a “video stream.” (EX-1049, ¶24.) The client device 110 may receive and stream said video stream (e.g., via a media player application 114) and generate a corresponding client report 160.

(EX-1049, ¶¶19, 32.) The client report 160 may include client analytics data 161 that “identif[ies] one or more events and/or statistics logged by the player analytics module 116.” (EX-1049, ¶24; EX-2001, ¶141.) The client device 110 may send the client report 160 to the analytics server 130 with certain identification and timestamp information in support of the analytics servers correlating the client report information with statics from the streaming server 120. (EX-1049, ¶¶27, 32, 37; EX-2001, ¶¶140-143.)



(EX-1049, FIG. 1.)

Accordingly, the streaming server may also generate a server report 170, including “the server ID 153 and server analytics data 171 identifying one or more

statistics associated with operation of the streaming server 120, where each statistic[] is associated with a timestamp 172, as described above with reference to the server report data.” (EX-1049, ¶34.) At the analytics server 130, various items of analytics information may be calculate using the client report 160 and corresponding server report 170. (EX-1049, ¶38.) For example, the analytics server 130 may be used to determine “information [that] may indicate how user engagement (e.g., how long users watch a stream, how often users post on social media regarding a stream, etc.) correlates to streaming server load (e.g., number of concurrent client device connections, processor utilization, memory utilization, network bandwidth/throughput, etc.).” (*Id.*)

Kellicker differs from the ’687 patent in multiple ways. Kellicker does not disclose a one-to-many socket architecture that supplies multiple client devices real-time, actionable event information, which may be paired with a digital content stream, e.g., a video stream. (EX-2001, ¶140.)

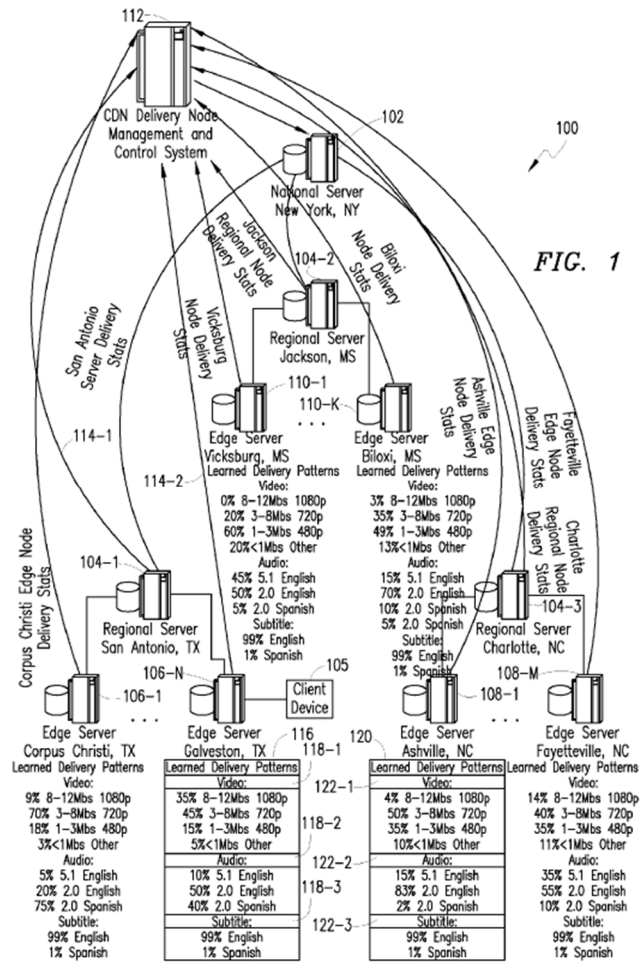
D. Phillips

Phillips recognizes certain purported problems with adaptive bitrate (ABR) streaming. (EX-1050, ¶3; EX-2001, ¶¶144-146.) According to Phillips, in conventional systems, a content delivery network or CDN distributes content in a “best effort” manner using ABR streaming. (*Id.*) Because bandwidth usage in such distribution models is typically determined by clients, inefficient allocation of

bandwidth may result. (*Id.*) For example, clients may be “greedy” in their determination of bandwidth, such as may be the case where “a low resolution (e.g., a cellular phone) may end up consuming a disproportionate amount of the bandwidth when compared to the bandwidth required for a higher resolution device such as, e.g., a high-definition TV (HDTV).” (*Id.*)

Phillips proposes a system and method for optimizing CDN in support of efficient allocation of resources across the network. (EX-1050, Abstract; EX-2001, ¶¶145-153.) For example, Phillips contemplate implementing certain “pre-provisioning policies” across nodes of a CDN in order to pre-provision certain assets at or proximal nodes based on historical delivery patterns. (EX-1050, ¶¶5-11, 44; EX-2001, ¶¶146-153.)

Phillips discusses pre-provisioning of assets in the content of a CDN 100, show in FIG. 1:

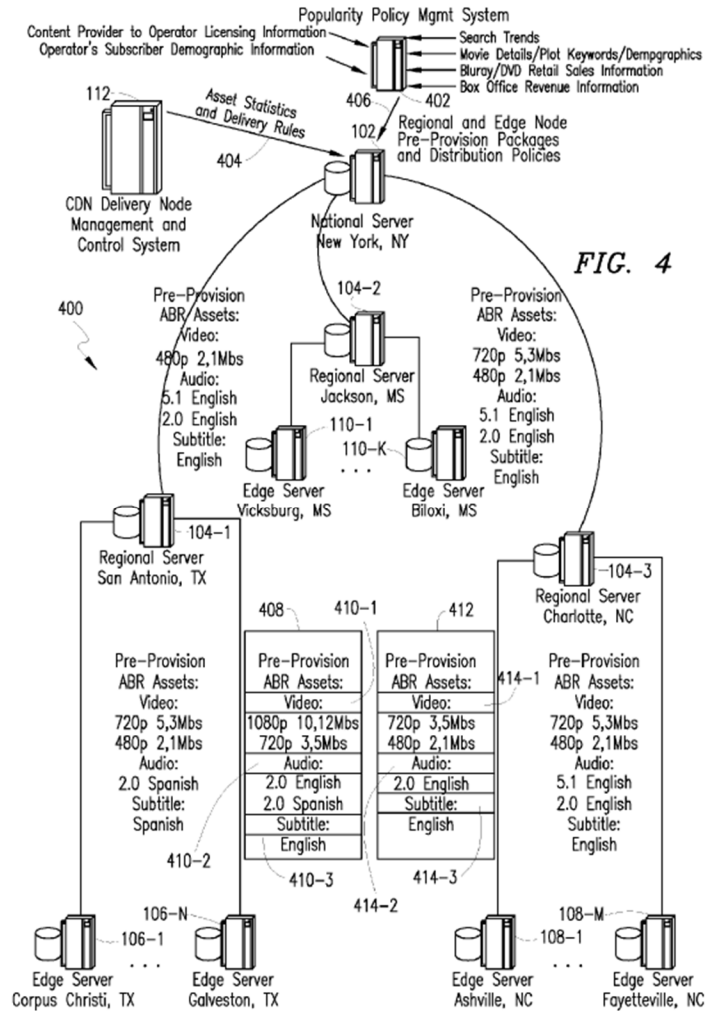


(EX-1050, FIG. 1.)

The CDN 100 depicts a variety of hierarchical relationship among a CDN delivery node 112, national servers, regional servers, edge servers, and client devices. (EX-1050, ¶¶31-35, FIG. 1.) The CDN may operate to determine certain “learned delivery patterns” with respect to given servers or nodes in the CDN. (*Id.*) As one example, FIG. 1 of Phillips depicts an asset delivery pattern 116, associated with a “Galveston” edge server, “that shows a distribution of various video bit rates (sometimes also referred to as bitrates) delivered from that server over a certain

period of time (e.g., 35% of downloaded content being high definition, 1080p video encoded at 8-10 Mbs; 45% of downloaded content being high definition, 720p video encoded at 3-8 Mbs, and so on).” (EX-1050, ¶36, FIG. 1.) FIG. 1 further depicts that the asset delivery pattern for the Galveston edge server is different from that of other edge servers, such as the asset delivery pattern 120 shown in FIG. 1 for the Ashville edge server. (EX-1050, ¶¶35-36, FIG. 1; EX-2001, ¶147.)

Phillips attempt to optimize the CDN by “establish one or more delivery rules that may be based on the differential statistical distributions of various ABR asset delivery patterns and/or historical network conditions associated with respective content delivery nodes of CDN 100.” (EX-1050, ¶38; EX-2001, ¶147.) For example, Phillips further depicts a content delivery system 400 in FIG. 4, which includes a popularity policy management system 402 for “determining or otherwise estimating or predicting where a particular content might become popular.” (EX-1050, ¶41, FIG. 4.)



(EX-1050, FIG. 4.)

As show in FIG. 4, the CDN 400 includes a pre-provisioned asset package 408 for the Galveston node and a pre-provisioned asset package 412 at the Ashville node based on historical patterns. (EX-1050, ¶44, FIG. 4; EX-2001, ¶150.) According to Phillips, such pre-provisions of assets provides “finer-grain pre-provisioning of the ABR assets, resulting in more efficient deployment of network resources.” (EX-1050, ¶46; EX-2001, ¶¶147-153.)

Phillips differs from the '687 patent in multiple ways. Phillips does not disclose a one-to-many socket architecture that supplies multiple client devices real-time, actionable event information, which may be paired with a digital content stream, e.g., a video stream. (EX-2001, ¶154.)

E. Stoica

Stoica discusses certain challenges in distributing content to client devices in a distributed network. (EX-1051, 1:15-25; EX-2001, ¶155.) For example, a client device may request content that is potentially availability from a variety of sources, and at a variety of bitrates. (*Id.*) But due to the inefficient allocation of resources, such client may not ultimately be paired with the most appropriate content source. (*Id.*)

Stoica attempts to solve such inefficient allocations by assigning a client device to a source based on, for example, the history of the client device and/or other factors. (EX-1051, 4:8-54, FIG. 4; EX-2001, ¶156.) Stoica describes a content distribution coordinator 408 to support the assignment of a client device to an appropriate node or content source. (*Id.*) For example, “quality experienced by clients such as clients 414 is measured and stored by content distribution coordinator 408.” (EX-1051, 4:48:50.) In turn, “[t]he information obtained from/about clients 414 is partitioned (412) and can be used, e.g., by a video direction engine 410 to

predict a performance quality likely to be experienced by a client device if it is assigned a given content source.” (EX-1050, 4:50-54; EX-2001, ¶¶156-157.)

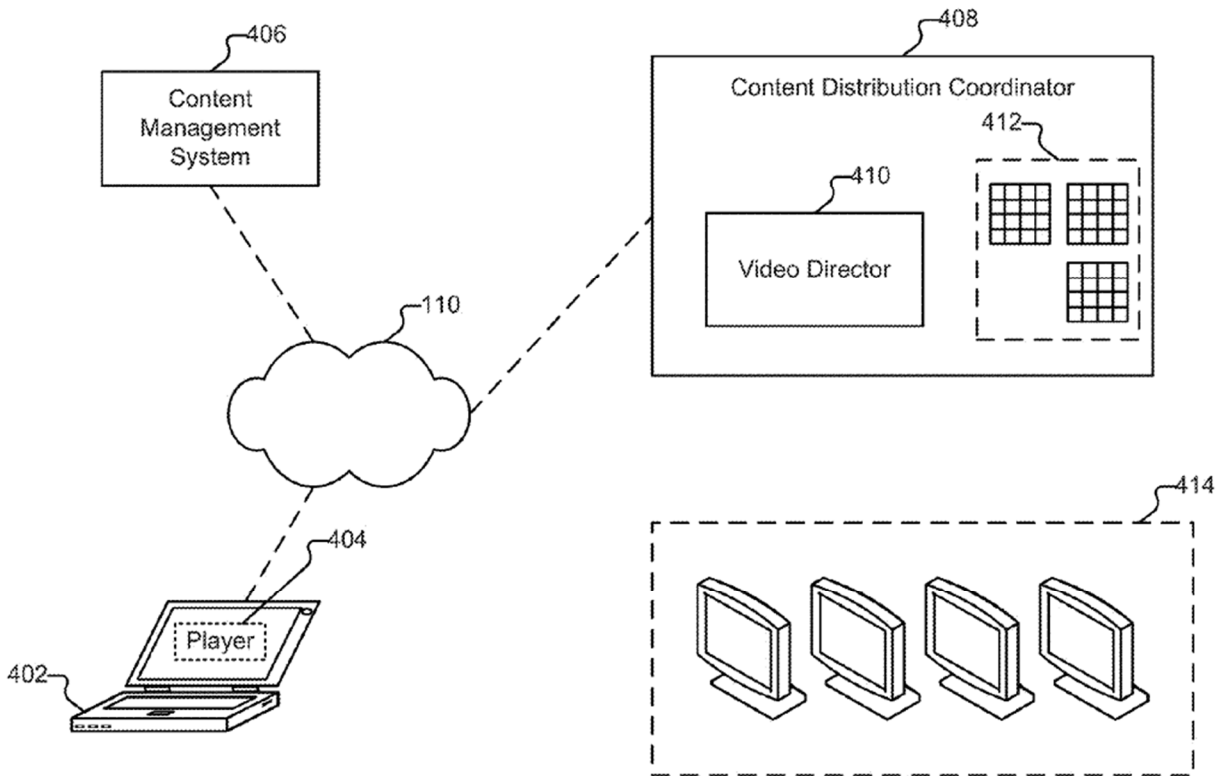


FIG. 4

(EX-1051, FIG. 4.)

Armed with information concerning the quality or experience of client device with respect to certain content sources, Stoica describes a process 1000 (set forth in FIG. 10), by which a client is provided instructions for connecting to a certain node or source based on “past performance”:

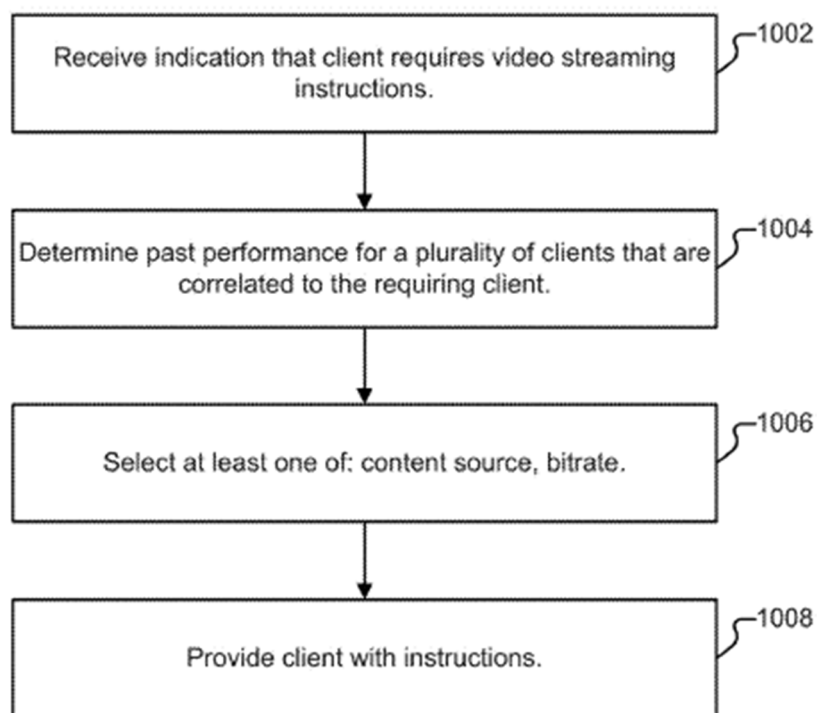


FIG. 10

(EX-1051, FIG. 10.)

For example, at step 1004, a past performance of a request client device may be determined, such as via the content distribution coordinator 408 described in relation to FIG. 4. (EX-1051, 8:16-48; EX-2001, ¶¶157-158.) Subsequently, Stoica’s method includes a step 1006 that selects “at least one of: content source, bitrate” based on said past performance. (EX-1051, 8:49-9:20.)

Stoica differs from the '687 patent in multiple ways. Stoica does not disclose a one-to-many socket architecture that supplies multiple client devices real-time, actionable event information, which may be paired with a digital content stream, e.g., a video stream. (EX-2001, ¶160.)

F. Pantos

Pantos discloses an “HTTP Live Streaming” protocol. (EX-1052, Title; EX-2001, ¶¶161-166.) According to Pantos, the protocol describes “transferring unbounded streams of multimedia data” and “specifies the data format of the files and the actions to be taken by the server (sender) and the client (receivers) of the streams.” (*Id.*) Version 7 of the protocol is described. (*Id.*)

Pantos states that HTTP Live Streaming “provides a reliable, cost-effective means of delivering continuous and long-form video over the Internet.” (EX-1052, §1.) HTTP Live Streaming may “allow[] a receiver to adapt the bit rate of the media to the current network conditions in order to maintain uninterrupted playback at the best possible quality.” (*Id.*) The protocol described by Pantos aims to “facilitate interoperability between HTTP Live Streaming implementations by describing the media transmission protocol” such that “a client can receive a continuous stream of media from a server for concurrent presentation.” (*Id.*)

Pantos differs from the '687 patent in multiple ways. Pantos does not disclose a one-to-many socket architecture that supplies multiple client devices real-time,

actionable event information, which may be paired with a digital content stream, e.g., a video stream. (EX-2001, ¶167.)

V. THE CHALLENGED CLAIMS ARE PATENTABLE

The Board should deny institution because Petitioner fails to show it is reasonably likely to prevail on any claim.

“In an *inter partes* review, the burden of persuasion is on the Petitioners.... Failure to prove the matter as required by the applicable standard means that the party with the burden of persuasion loses on that point—thus, if the fact trier of the issue is left uncertain, the party with the burden loses.” *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378-79 (Fed. Cir. 2015); *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (noting petitioners have the “burden from the onset to show with particularity why the patent it challenges is unpatentable”).

Petitioner identifies five grounds challenging claims 1 and 10-18 of the ’687 patent:

Ground	Claims	Argument
1	1	§103: Obvious over Ellis in view of Spivey
2	10	§103: Obvious over Spivey in view of Kellicker
3	11, 15-16	§103: Obvious over Spivey in view of Kellicker and Phillips
4	12-14	§103: Obvious over Spivey in view of Kellicker, Phillips, and Stoica
5	17-18	§103: Obvious over Ellis in view of Spivey, Kellicker, Phillips, and Pantos

A. Ground 1: Petitioner Fails to Establish that Ellis in View of Spivey Renders Obvious Every Limitation of the Challenged Claims.

Petitioner fails to show a reasonable likelihood of success as to any challenged claim because: (1) the cited prior art does not render obvious an “event socket”; and (2) a POSITA would not have been motivated to combine Ellis with Spivey.

1. Petitioner’s combination does not render obvious the claimed “event socket.”

In sum, according to Petitioner’s expert, a “first event socket . . . is simply a socket” and a “socket” is a “uniquely addressable communication endpoint.” (EX-1001, ¶454.) The Petition relies *only* on Spivey’s topic queues as the claimed “event socket”—not the MQSD server or any other component of any server. But Spivey’s “topic queues” are neither “uniquely addressable” nor “communication endpoints.” (EX-2001, ¶¶195-207.) In the Instituted Matters, the Board did not address the fact that it is Spivey’s topic queues themselves that must be both “uniquely addressable”

and “communication endpoints” according to the Petition. For the reasons described below, they are not. Accordingly, Petitioner’s argument that Spivey’s topic queues disclose the claimed “event sockets” must fail.

Specifically, Petitioner relies on the “topic queues” of Spivey’s message queue server device 410 (“MQSD”) as allegedly disclosing, e.g., “transmit the first event information to at least the first viewer client device of the first plurality of viewer client devices via a first event information 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 other functionality recited in claim 1 of the ’687 patent. (Petition, 24-27, 29-31 (Limitation 1.8).) Petitioner’s argument fails because Spivey does not describe or suggest the MQSD (nor its “topic queues”) as being capable of: (i) handling communication to individual client devices, or (ii) functioning as uniquely addressable communication endpoints.

But in the Instituted Matters, the Board agreed with Petitioner’s position that Spivey at least suggests a direct, websocket, connection between the MQSD and individual client devices. (EX-2005, 44-45, 105-106.) Patent Owner respectfully submits that the explicit text of Spivey contradicts such finding. Rather, Spivey’s MQSD undoubtedly requires an intervening Live Data Access Server 130 (“LDAS”) to connect individual clients to the MQSD – only the LDAS has the necessary

components (e.g., “subscription component 540,” “interface component 530”) to handle communication with numerous individual clients. (EX-2001, ¶177; EX-1017, ¶59, FIG. 5.) Because the MQSD requires the interviewing LDAS, the MQSD is not capable satisfying Limitation 1.8.

Also in the Instituted Matters, the Board agreed with Petitioner’s position that Spivey’s text strings (e.g., topic labels) support uniquely addressable communication endpoints. (EX-2005, 36-37, 169-171, 297-298, 354-355.) Again, Patent Owner respectfully submits that the explicit text of Spivey contradicts such finding. The very user interfaces Petitioner points to in FIGS. 9 and 10 of Spivey (Petition, 28, 31) require an LDAS to access the MQSD. (EX-2001, ¶¶179-180, 198-200; EX-1017, ¶¶63, 81-90.)

Spivey must be considered, *as a whole*; the text string topic labels of FIG. 9 represent one interface, in a series of interfaces, that visually depict individual clients ***accessing the LDAS***. (EX-2001, ¶¶198-207; EX-1017, ¶¶63, 81-90.) Spivey simply does not support the notion that the topics queues are assigned publicly-accessible URLs or address, or that such topic queues are designed to handle real-time access from potentially a large number of individual client devices. Because the topic queues are not uniquely addressable communication endpoints, the topic queues are not capable of satisfying Limitations.

Patent Owner demonstrates that Petitioner's argument fails due to each of the foregoing deficiencies in Spivey, and due to Petitioner's failure to show that a POSITA would have been motivated to combine or modify the references.

a) Spivey's MQSD does not render obvious transmitting information between an "event socket" and a client device.

First, a POSITA would not understand Spivey's MQSD as transmitting information between an "event socket" and a client device. Spivey does not describe the MQSD as capable of connecting with individual clients. (EX-2001, ¶¶173-194; EX-1017, ¶¶45, 53-54, 59-63.) Considering Spivey, *as a whole*, the MQSD requires an intervening LDAS to facilitate connection with individual end user clients. (EX-2001, ¶180; EX-1017, ¶¶59, 64, FIG. 5.) Because the MQSD is not described as including components for connecting to multiple individual client devices, the MQSD does not transmit information between an "event socket" and clients, and therefore, Petitioner has not met its burden for institution. (EX-2001, ¶¶173-194; EX-1017, ¶¶45, 53-54, 59-64.)

Petitioner's argument rests on Spivey FIG. 4 (reproduced below), which Spivey shows as a Live Data Server Device ("LDSR") and MQSD that essentially "plug in," collectively, as the MQS shown in FIG. 1. (Petition, 26; EX-2001, ¶181; EX-1017, ¶¶34, 53-58, FIG. 1, 4.)

Spivey unequivocally states: “[a]s shown in FIG. 4, *message queue server 120* may be implemented with at least two separate devices: *a message queue server device 410* and *a live data server device 450*.” (EX-1017, ¶53 (emphasis added).)

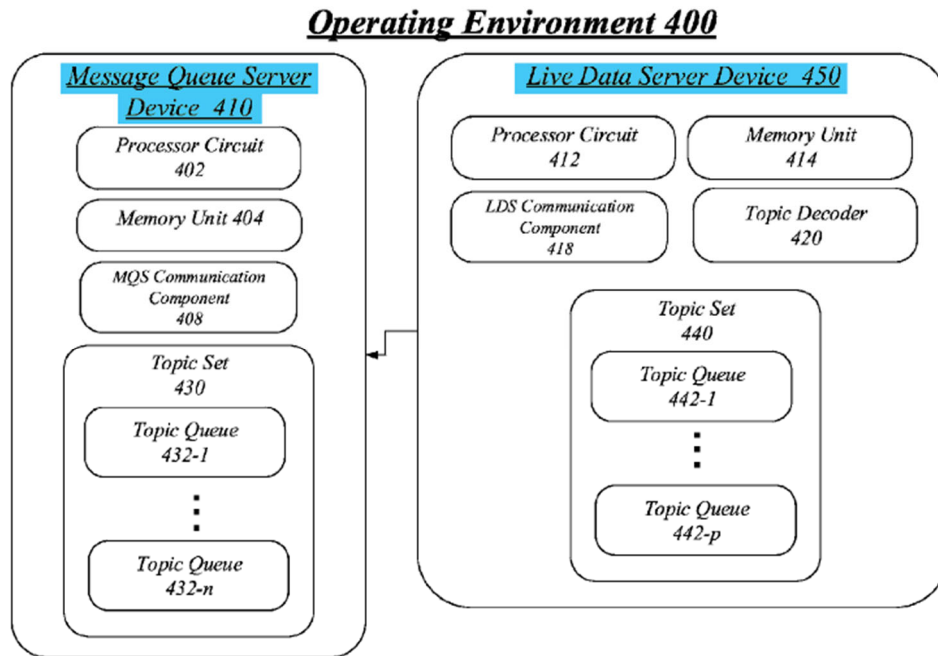


FIG. 4

(EX-1017, FIG. 4 (annotated).)

And FIG. 1 (reproduced below) clearly shows this MQS (or, the LDSR and MQSD, two-server variety) can only ferry or relay data to client devices using the LDAS. (EX-2001, ¶¶181-184; EX-1017, ¶¶38-39, 45, 53.)

System 100

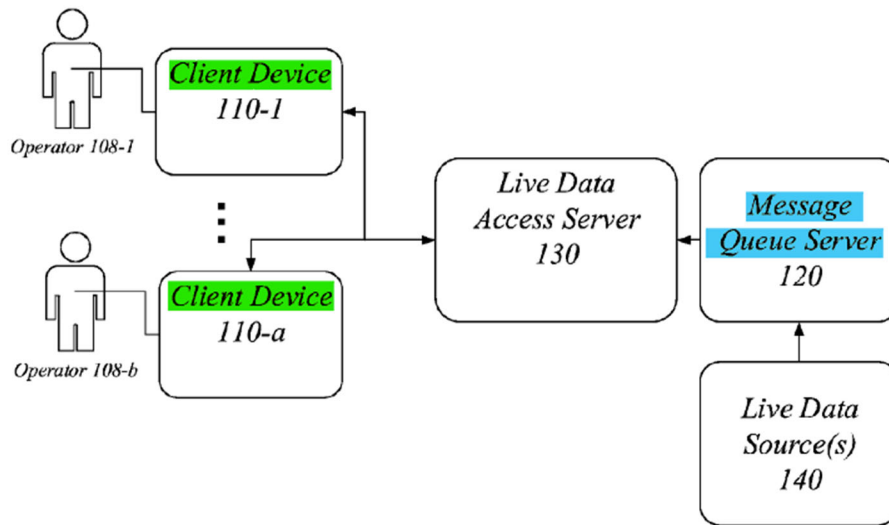


FIG. 1

(EX-1017, FIG. 1 (annotated).)

Petitioner’s expert states that “the message queue server 120 communicates directly with client devices (110-1...110-a) without the use of a live data access server,” citing Spivey at ¶¶34, 38, 46, 53 and 84 and FIG. 4. (EX-1001, ¶98 (“[t]hese embodiments,...shown as operating environment 400, in Figure 4”).) But Petitioner’s expert fails to consider Spivey, *as a whole*. See *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”).

Operating environment 400 and FIG. 4 cannot be divorced from the teachings of Spivey, *as a whole*. As a threshold matter, the LDS and MQSD of FIG. 4 are explicitly described as an implementation of the MQS of FIG. 1 – which Spivey

unambiguously depicts and describes as requiring an intervening LDAS to facilitating connection of multiple individual client devices. (EX-2001, §VI.A.1; EX-1017, ¶¶34-35, 53-58, FIG. 1, 4.)

Regardless, Spivey never discloses technology that would lead a POSITA to understand the MQSD (of FIG. 4) as a communication endpoint: (i) assigned with a publicly-accessible URL or address; (ii) designed to handle real-time *access* from a potentially large number of individual clients; or (iii) capable of pushing its data packets to multiple individual clients. (EX-2001, ¶185; EX-1017, ¶¶59-64.) Spivey never describes such technology because Spivey does not contemplate the MQSD as transmitting information to multiple individual clients. (EX-2001, ¶185; EX-1017, ¶¶45, 53, 59-64.)

Here, Petitioner’s proposal—the MQSD is accessible by individual clients—fails because it results in a contradictory or absurd result with the express technical disclosure of Spivey, again, *when considered as a whole*. Spivey’s “client devices” are only those client devices “subscribed” to “receive data via live data access sever 130.” (EX-2001, ¶¶187-188; EX-1017, ¶39.) Rather than communicate with these subscribed client devices, the MQSD communicates only by operation of an “MQS Communication Component.” (EX-2001, ¶188; EX-1017, ¶54.) And the MQS Communication Component only “push[es] the data payload *from the topic queue to a live data access server* that has subscribed to the topic of the topic queue.” (EX-

2001, ¶188; EX-1017, ¶49.) Petitioner’s attempt to imbue the MQSD with additional functionality (communication with multiple individual clients) is not consistent with evidence that Spivey does not disclose any functional component of the MQSD capable of communication with multiple individual clients. (EX-2001, ¶188; EX-1017, ¶49.)

Rather, only the Spivey LDAS has the necessary components (e.g., “subscription component 540,” “interface component 530”) to handle communication to individual clients. (EX-2001, ¶¶177, 189; EX-1017, ¶¶49, 53.) Absent the interface component (found only in the LDAS), a user would be unable to access the user interfaces of FIGS. 8-10, and without these interfaces, the user would have no mechanism for accessing any data whatsoever. (EX-2001, ¶¶198-200; EX-1017, ¶49.) Petitioner’s proposal therefore not only contradicts Spivey, but it also fails to establish any mechanism through which the MQSD can execute the functionality of communication to multiple client devices. (EX-2001, ¶232; EX-1017, ¶¶36, 39, 49.) Petitioner’s incomplete MQSD-based proposal would not operate as intended because it would lack the functionality to communicate with multiple individual clients. (EX-2001, ¶¶178, 185, 232; EX-1017, ¶¶36, 39, 49.) Spivey simply does not include any technical discussion of a module, or any other component for deployment in the MQSD, that would be capable of permitting the MQSD to handle the interface and subscription functionality set forth in relation to

the LDAS. (EX-2001, ¶¶176-178, 197; EX-1017, ¶49.) Petitioner’s arguments appear to be based on incorrect characterizations of Spivey, and as such, do not support Petitioner’s burden of showing a reasonably likelihood of unpatentability of the challenged claims.

Accordingly, the factual record not only fails to support Petitioner’s contention—the MQSD is accessible by individual clients—but it also demonstrates that if the Board were to accept Petitioner’s contention, it would lead to an absurd result: the contradiction of Spivey’s express teachings, including the functionality of its required LDAS. (EX-2001, ¶¶180-181; EX-1017, ¶¶36, 39, 49.) That Spivey discloses the MQSD may be implemented as a “RABBITMQ” does not change this result; the RABBITMQ must be understood with the context of Spivey, *as a whole*. *See Hedges*, 783 F.2d at 1041. Spivey discusses RABBITMQ only within the context of subscriptions between the LDAS and MQS. (EX-1017, ¶58.) Thus, considering Spivey, *as a whole*, demonstrates that the MQSD requires a LDAS to operate, and therefore, Spivey cannot render obvious the recited “event socket.”

b) Regardless of the MQSD’s transmission destination, Petitioner fails to show that Spivey’s topic queues are “event sockets.”

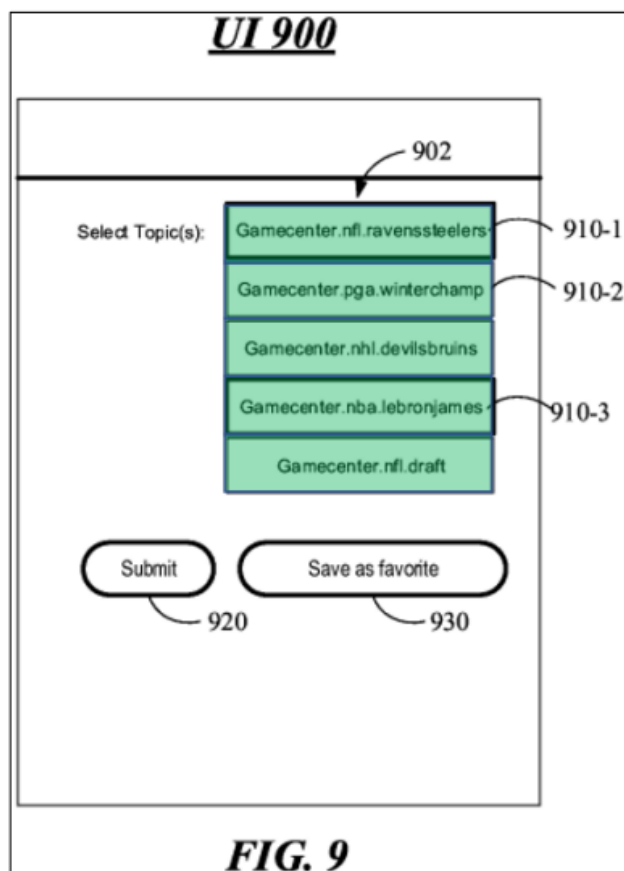
Second, Petitioner fails to show that Spivey’s topic queues are “event sockets” under Petitioner’s (and its expert’s) implied definition, which requires them to be

“uniquely addressable communication endpoint[s].”¹ (EX-1001, ¶454 (“[i]t is my opinion that a POSA would have understood a ‘socket’ to be a uniquely addressable communication endpoint on a server where first event information is provided to a VCD”).)

Spivey’s topic queues are merely an internal data structure within the MQSD. Petitioner does not identify any disclosure that would suggest to a POSITA that Spivey’s topic queues are “uniquely addressable communication endpoints.” To the contrary, Spivey’s disclosures would have suggested the opposite to a POSITA. (EX-2001, §VI.A.1.) Therefore, Petitioner has failed to show that Spivey’s MQSD satisfies the limitations of claim 1 of the ’687 patent, regardless of whether it communicates with any client devices. (EX-2001, ¶¶195-207.)

Petitioner’s argument rests on Spivey FIG. 9 (reproduced below), in which a UI 900 is shown as including 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*.” (EX-1017, ¶87 (emphasis added); FIG. 9.)

¹ Although the parties dispute the meaning of “socket” and “event socket” in the district court, Petitioner does not address either party’s construction. And even if one were to apply Petitioner’s proposed district court constructions of those terms here, Petitioner would still not meet its burden for institution.



(Petition, 31.)

As a threshold matter, UI 900 must be considered within the context of Spivey *as a whole*. See *Hedges*, 783 F.2d at 1041. UI 900 is one UI in a three-part series (e.g., UIs 800, 900, 1000 of FIGS. 8-10) that collectively depict an interface for accessing the topic MQSD topic queues *via the LDAS via the LDAS's interface component 530*. (EX-2001, ¶¶198-200; EX-1017, ¶63 (“Interface component 530 may provide user interface elements...examples of user interfaces are discussed with respect to FIGS. 8-10.”).) Petitioner’s very reliance on these UIs undercuts its

central argument that the MQSD is capable of connecting to numerous individual end client devices. (*Infra.*)

FIG. 8 of Spivey shows an initial log-in screen for a client device that allows said client device to access topic queues via the “*Live Data Access Server Address.*” (EX-2001, ¶198; EX-1017, ¶81, FIG. 8 (element “830”).) The fact that the LDAS Address “resemble[s] a uniform resource locator (URL)” (Petition, 30) is immaterial; the LDAS Address is used to access the LDAS, not individual topic queues of the MQSD. (EX-2001, ¶198.) In other words, the LDAS Address is not evidence of the MQSD topic queues being uniquely addressable communication end points; the LDAS Address demonstrates only the ability of the client device to subscribe to and interface with the LDAS. (EX-2001, ¶198; EX-1017, ¶¶55, 82.)

FIG. 9 of Spivey then shows texts strings of data topics available to the client device, again, using the LDAS. (EX-2001, ¶199; EX-1017, ¶84.) But the text strings shown in FIG. 9 are not URLs themselves, nor are they used in URLs (or any other address in Spivey). (EX-2001, ¶199; EX-1017, ¶84-86.) A “topic label” is merely that; a label, such as that used to identify data in an internal data structure. (EX-2001, ¶199.)

FIG. 10 of Spivey then shows example text data (e.g., text data 1004, 1006) that may be presented to a user, again, using the LDAS. (EX-1017, ¶88; EX-2001, ¶200.) Spivey describes presenting this text data at the user interface in connection

with the topic label selected in relation to the user interface of FIG. 9. (EX-1017, ¶¶84-88; EX-2001, ¶200.)

Accordingly, a POSITA would have understood that Spivey’s “topic queue” is merely an organization of data, such as a database table, that includes information about a particular topic. (EX-2001, ¶196.) And without more, a POSITA would not consider such a database, message queue, or other internal data structure by itself to be a “uniquely addressable communication endpoint” because as disclosed by Spivey, the queues themselves lack any address at all through which they communicate. (EX-2001, ¶196.)

Contrary to the teachings of Spivey, Petitioner and its expert, Dr. Kia, only argue that the client devices disclosed in Spivey “use these topic label text strings to connect and subscribe to MQSD’s topic queues.” (EX-1001, ¶455; Petition, 30). But this is incorrect—Spivey does not disclose that the text strings are used to “connect” to the MQD’s topic queues. To support this incorrect statement, Petitioner and Dr. Kia must erroneously state that the client devices “request a live data connection” with the MQSD by “selecting or entering address or connection information to a particular MQSD,” citing paragraphs 81-82 of Spivey. (EX-1001, ¶455.) But those paragraphs of Spivey are explicit that the client devices request a live data connection with the *live data access* server, *not* the message queue server

(and not the topic queues within the MQS). (EX-1017, ¶¶81-82; EX-2001, ¶¶200-203.)

Accordingly, Petitioner fails to show that Spivey’s topic queues are “*uniquely addressable communication endpoint[s]*” on a server where first event information is provided to a VCD,” which it contends is required for the “event socket” limitation. (EX-1017, ¶¶46-49; Petition, 29-33.) Indeed, Spivey discloses that its topic queues are internal to its MQS, and Spivey nowhere discloses or suggests that the topic queues are “uniquely addressable” or “communication endpoints.” (EX-2001, ¶¶195-196.)

Indeed, the only potential “communication endpoint” Spivey discloses as being “uniquely addressable” is its live data access server, not any of the topic queues within the message queue servers. (EX-1017, ¶¶38-39; EX-2001, ¶203.) The only URL that Spivey’s clients are provided is for the live data access server, not the message queue server, and certainly not the topic queues therein: “UI 800 may also include an address UI element 830 to allow the operator to select or enter the address or connection information to a particular live data access server.” EX-1017, ¶82; *see also id.* Nowhere does Spivey disclose or suggest any topic queue with its own “unique” URL—and neither Petitioner nor Dr. Kia argues otherwise.

This is fundamental to how Spivey operates: the client connects to the live data access server and selects the topics they subscribe to; the live data access server

then subscribes to those topics on the MQS for the client. (EX-1017, ¶¶49, 128, 131; 71-78, FIG. 7; EX-2001, ¶¶189-190.) When there is an update for a topic queue, the live data access server must receive that update, determine which of the clients are subscribed to that topic, and then push that data to the client. (EX-1017, ¶¶38, 46, 49; 79-80.) There is no disclosure of any connection for the client to anything other than the live data access server, and certainly no disclosure that each topic queue is a “uniquely addressable communication endpoint.” (*See generally* EX-1017; EX-2001, §VI.A.)

But even if one were to accept Petitioner’s argument that requires an “event socket” to be a “uniquely addressable communication endpoint on a server where first event information is provided to a VCD” (Petition, 30), the fact that each “topic queue” has a text identifier does not mean that topic queues are either endpoints or uniquely “addressable.” (EX-2001, ¶201.) Indeed, the MQSD is only capable of communicating via an MQS Communication Component, its topic queues are not described as having any functionality themselves to communication, much less be individually addressable. (EX-2001, ¶¶189, 196.) As such, Spivey does not disclose that any URL in its system includes a topic text identifier or that a URL corresponds to any of the topic queues. (*See generally* EX-1017.) The only Spivey components that have public addresses (corresponding to the URL in Spivey) are the live data

access servers (not the message queue server) themselves, not the topic queues within the message queue server. (EX-1017, ¶¶81-82.)

Petitioner relies entirely on Spivey’s topic queues as allegedly disclosing the claimed “event sockets,” which Petitioner combines with Ellis. (Petition, 29-33.) Accordingly, Petitioner fails to establish that Spivey, alone or in combination with the other references, teaches or renders obvious the claimed “event sockets.”

c) Petitioner fails to articulate sufficient motivation to combine and modify the prior art.

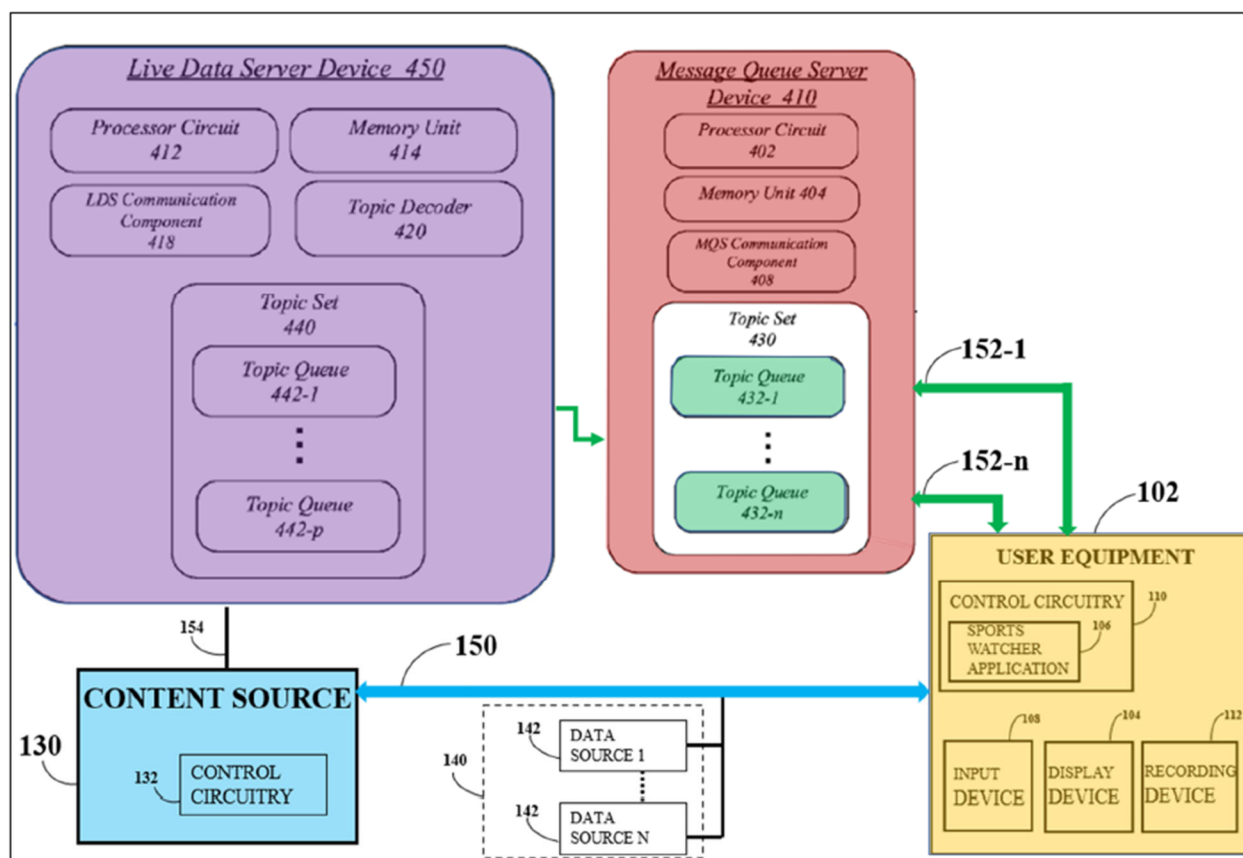
Regarding Limitation 1.8, Petitioner argues that a POSITA “would have understood Spivey’s topic queues disclose first event sockets corresponding to the first event information germane to the first live sporting event” without even attempting to show how the systems in Spivey and Ellis are compatible with one another. (Petition, 31-33.) As discussed below, Petitioner’s combination fails to account for critical distinctions between Ellis’s and Spivey’s teachings, explain the modifications necessary to combine such teachings, or articulate why a POSITA would have been motivated to make the necessary modifications and proposed combination. (*Infra*, V.A.2.) Again, Petitioner’s lack of specific motivation to combine the prior art teachings demonstrates its impermissible reliance on hindsight bias. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. at 418; Bolt, 64 EMORY LAW J. at 1158.

2. Petitioner fails to show that a POSITA would have been motivated to combine Ellis with Spivey

Contrary to the Instituted Matters, the Board did not consider the inoperability of Petitioner's Ellis/Spivey combination caused by the lack of any server component that would transmit data between the MQSD (from Spivey) and the user equipment (from Ellis). Further, Petitioner fails to show that a POSITA would have been motivated to combine Ellis with Spivey. (EX-2001, §VI.A.2.) Petitioner's proposed reduction in latency would not occur because Petitioner proposal disrupts the very message flow in Spivey that allegedly reduces latency. (EX-2001, ¶¶212-220.) Rather, Petitioner's rationale to combine the prior art rests on impermissible hindsight.

a) Petitioner's proposed combination is fundamentally inoperable and departs from the express teachings of the prior art.

In an attempt to recreate the claimed architecture of the '687 patent, Petitioner cobbles together elements of Ellis's media system with Spivey's "second operating environment" in order to create the following concept:



(Petition, 12.)

Petitioner replaces the Ellis supplemental content source 120 and database 122 with Spivey’s message queue server device 410 and the live data server device 450, all in an effort to somehow “upgrade the data delivery system” of Ellis. (Petition, 12; EX-1017, ¶53.) But a POSITA would not have been motivated to implement Spivey’s database-less system in the Ellis architecture because such formulation would be fundamentally inoperable. (See EX-2001, §VI.A.2.)

Petitioner’s Ellis/Spivey diagram would be fundamentally inoperable for at least because there is no server component that functions to relay data between the MQSD and the user equipment. (EX-2001, ¶232.) Even if a POSTA were to pluck

the two-component MQSD and LDSO embodiment of Spivey FIG. 4 and insert it into Ellis's architecture (which a POSITA would not do), Spivey never discusses or contemplates the MQSD and/or the MDSD operating in isolation, without any intervening LDAS. (EX-2001, §VI.A.1; *see generally* EX-1017.) And Spivey never describes or contemplates the MQSD as having a uniquely addressable communication endpoint or other publicly available address by which individual end clients could communicate with the MQSD. (EX-2001, §VI.A.1; *see generally* EX-1017.) As such, Petitioner's insertion of the MQSD/LDSO into Ellis's architecture has in fact disrupted any flow of data to the user equipment, thereby rendering the proposed combination inoperable. (EX-2001, ¶¶212-220.) To the extent that the user equipment in Petitioner's Ellis/Spivey combination is now incapable of receiving any data, a POSITA would not be motivated to make such combination.

Petitioner's Ellis/Spivey diagram does not include the LDAS. (Petition, 12.) Nor does Petitioner's diagram show literally any other mechanism by which to transmit data from the MQSD other than the "MQS Communication Component." (*Id.*) It is only through the LDAS of Spivey (which includes the necessary components—"subscription component 540" and "interface component 530"—to handle communication to individual clients) that clients can access data from the MQSD. (EX-2001, ¶¶177, 189.) Absent the LDAS, and its subscription component or interface component, Spivey's architecture will not operate to deliver data to the

user equipment shown on Petitioner’s make-believe diagram. Therefore, Petitioner’s Ellis/Spivey combination would not operate for the straightforward reason that there is no component or mechanism for the use equipment to receive data. (EX-2001, ¶232.)

The POSITA, when faced with Ellis, would not have found the replacement of the supplemental content source with the LDSD/MQSD of Spivey to complement Ellis’s operation nor constituted a “simple substitution,” but rather would have seen it as hindering the operation of a fundamental principle of operation of Ellis (namely, providing at least some data to the user equipment), and therefore, the POSITA would not have attempted such combination. (EX-2001, ¶251.)

b) Petitioner’s proposed motivations to combine Ellis and Spivey do not withstand scrutiny.

Petitioner’s proposed rationales fail to satisfy the Federal Circuit’s obviousness rubric – obviousness turns on “whether a skilled artisan not only could have made but *would have been motivated* to make the combinations or modifications of prior art to arrive at the claimed invention.” *Belden Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1073 (Fed. Cir. 2015) (emphasis added).

As one example, Petitioner alleges that a POSTA would seek to integrate Spivey’s servers in Ellis’s system “to reduce latency.” (Petition, 12.) However, as previously explained, Petitioner’s modifications to Spivey’s teachings radically alter the solution Spivey purportedly taught for reducing latency (§V.A.1.b, *supra*; EX-

2001, §VI.A.2), and a POSITA would not have a reasonable expectation that any beneficial reductions in latency would be achieved in the resulting combination. (EX-2001, ¶231.) Petitioner’s bare assertion that a POSITA would look to improve Ellis’s “latency issues” (Petition, 11), which Ellis does not identify as a problem, ignores that the proposed combination is inoperable, and as such, a POSITA would have no reasonable expectation of success. (See §V.A.3.a, *supra*; EX-2001, §VI.A.2.)

Despite this, Petitioner relies on Spivey’s promise of reducing latency to a time period “at least two orders of magnitude shorter than conventional time periods of legacy devices.” (EX-1017, ¶96; Petition, 25, 27.) And in the Instituted Matters, the Board agreed with Petitioner’s position that Spivey would offer such latency reduction to the Ellis system. (EX-2005, 20, 81.)

However, Patent Owner respectfully submits that Spivey’s promise of “two orders of magnitude” reduction is only achievable (if at all) by implementing the message flow Spivey discloses—i.e., by allowing the live data access server to “push the data payload to client device 110, and to any other connected client devices that also requested that topic.” (EX-1017, ¶96.) And Petitioner completely ignores this mission critical component in its Ellis/Spivey combination.

As another example, Petitioner alleges that implementing “certain portions” of the Spivey disclosure into Ellis’ disclosed architecture would “have required only

the simple substitution of known elements to obtain predictable results.” (Petition, 13.) However, to establish a prima facie case of obviousness there must be a reasonable expectation of success. *In re Merck & Co.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986); *see, also, KSR*, 550 U.S. 398 at 418. The immediate “push” provision of data taught by Spivey is not compatible with the enhanced viewing and tuning techniques of Ellis, and a POSITA would not have a reasonable expectation of success. (EX-2001, ¶¶235, 240.) Petitioner’s Ellis/Spivey combination is not a matter of a simple substitution because neither Spivey nor Ellis disclose how to integrate Spivey’s immediate “push” data delivery and Ellis’s video delivery. (EX-2001, ¶251.)

As another example, Petitioner alleges that “Spivey provides a complementary, detailed solution for the backend architecture for transmitting event data to multiple users.” (Petition, 13.) Petitioner’s argument appears to rest on the notion that because Ellis does not specify the backend architecture of the supplement content source 120, that literally any architecture could be slotted into the Ellis interactive media system 100. (EX-2001, ¶¶257-258.)

However, absent an articulated reason why a POSITA would specially choose Spivey’s architecture (among a universe of options), the Petitioner’s rational is merely conclusory, and therefore insufficient to demonstrate a motivation to combine Ellis with Spivey.

c) Petitioner relies on impermissible hindsight bias.

Absent a clearly articulated reason to combine Ellis, Spivey, and POSA's knowledge, ***Petitioner relies exclusively on impermissible hindsight*** to stitch together unrelated elements of the prior art in a misguided attempt to reconstruct the invention addressed by the '687 patent. Petitioner attempts to ***integrate*** Spivey's "push" data techniques with Ellis's television techniques, despite neither reference disclosing such integration. (EX-2001, ¶¶246-251.)

As set forth by the Federal Circuit, "[t]he invention must be viewed not with the blueprint drawn by the inventor, but in the state of the art that existed at the time." *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1138 (Fed. Cir. 1985). Petitioner must put forward some "explanation as to how or why the references would be combined to arrive at the claimed invention...[otherwise] hindsight bias [becomes] the thread that stitches together prior art patches into something that is the claimed invention." *Metalcraft of Mayville, Inc. v. The Toro Co.*, 848 F.3d 1358, 1367 (Fed. Cir. 2017) (citation omitted).

As one example of Petitioner's reliance on hindsight, Petitioner uses the claims of the '687 patent as a guidepost to fill in certain missing details of the Ellis supplemental content source delivery architecture. As Dr. Kia concedes, "Ellis does not explicitly disclose the backend architecture/process flows for delivering the supplemental content data." (EX-1001, ¶105.)

But a POSITA would not create the backend architecture proposed by Petitioner without knowledge of the '687 patent claims (*see* EX-2001, §VI.A.2). For example, claimed invention addresses, among other things, the technical challenge of providing the same event information in a synchronized manner to all viewers of a broadcast (e.g., via the claimed socket architecture and paired video stream). But ***synchronization*** of contextual-matched event information with video streaming is taught only in the specification of the '687 patent, which is unavailable to Petitioner as a basis for formulating a rationale to combine Ellis and Spivey.

Moreover, absent reference to the '687 patent, there was no reason for implementing Spivey's non-video-related teachings into Ellis's system, which necessarily requires video delivery. Spivey does not teach or suggest how to implement either MQSD or the LDSO with video streaming. Again, ***synchronization*** of contextual-matched event information with video streaming is taught only in the specification of the '687 patent, which is unavailable to Petitioner as a basis for formulating a rationale to combine Ellis and Spivey.

* * *

In sum, Petitioner fails to articulate a sufficient rationale to combine Ellis and Spivey, and therefore, Petitioner has not met its burden in showing a reasonable likelihood of success. Petitioner's hindsight-based reconstruction of Ellis and Spivey

cannot be used to institute an *inter partes* review, and Patent Owner respectfully requests the Board deny institution of the Petition.

B. Ground 2: Petitioner Fails to Establish that Ellis in view of Spivey and Kellicker Renders Obvious Every Limitation of the Challenged Claims

Petitioner's Ground 2 challenges only dependent claims. (Petition, 33.) While Petitioner does not explicitly address disclosure of independent claim 1 under Ground 2, presumably Petitioner relies on its arguments under Ground 1. Because Petitioner has failed to establish that Ground 1 renders obvious all limitations of the independent claim 1, Petitioner's Ground 2 fails to render obvious dependent claim 10 for the same reasons.

C. Ground 3: Petitioner Fails to Establish that Ellis in View of Spivey, Kellicker, and Phillips Renders Obvious Every Limitation of the Challenged Claims

Petitioner's Ground 3 challenges only dependent claims. (Petition, 40.) While Petitioner does not explicitly address disclosure of independent claim 1 under Ground 3, presumably Petitioner relies on its arguments under Ground 1. Because Petitioner has failed to establish that Ground 1 renders obvious all limitations of the independent claim 1, Petitioner's Ground 3 fails to render obvious dependent claims 11 and 15-16 for the same reasons.

D. Ground 4: Petitioner Fails to Establish that Ellis in View of Spivey, Kellicker, Philips, and Stoica Renders Obvious Every Limitation of the Challenged Claims

Petitioner's Ground 4 challenges only dependent claims. (Petition, 51.) While Petitioner does not explicitly address disclosure of independent claim 1 under Ground 4, presumably Petitioner relies on its arguments under Ground 1. Because Petitioner has failed to establish that Ground 1 renders obvious all limitations of the independent claim 1, Petitioner's Ground 4 fails to render obvious dependent claims 12-14 for the same reasons.

E. Ground 5: Petitioner Fails to Establish that Ellis in View of Spivey, Kellicker, Philips, and Pantos Renders Obvious Every Limitation of the Challenged Claims

Petitioner's Ground 5 challenges only dependent claims. (Petition, 70.) While Petitioner does not explicitly address disclosure of independent claim 1 under Ground 5, presumably Petitioner relies on its arguments under Ground 1. Because Petitioner has failed to establish that Ground 1 renders obvious all limitations of the independent claim 1, Petitioner's Ground 5 fails to render obvious dependent claims 17-18 for the same reasons.

F. Petitioner's Grounds Fail to Render Obvious All Dependent Claims

Because Petitioner has failed to establish that any of its grounds render obvious all limitations of the independent claims, Petitioner cannot show that such grounds render obvious dependent claims 10-18.

G. Other Limitations Not Addressed

At this preliminary stage, Patent Owner addresses those deficiencies in the prior art which clearly show a lack of reasonable likelihood of the petition's success. Patent Owner's decision not to address certain limitations or secondary prior art references at this preliminary stage in no way reflects Patent Owner's agreement with the petition or lack of dispute as to additional limitations or prior art.

VI. CONCLUSION

For the foregoing reasons, the Board should decline to institute an IPR of the '687 Patent.

Dated: May 20, 2025

/Brian Eutermoser/
Brian Eutermoser
Reg. No. 64,058
KING & SPALDING LLP
1401 Lawrence Street, Suite 1900
Denver, CO 80206
Telephone: (720) 535-2312
*Counsel for Patent Owner SportsCastr
Inc. (d/b/a PANDA Interactive)*

CERTIFICATION OF WORD COUNT

The undersigned hereby certifies that the portions of the above-captioned **PATENT OWNER PRELIMINARY RESPONSE** specified in 37 C.F.R. § 42.24 have 10,049 words, in compliance with the 14,000 word limit set forth in 37 C.F.R. § 42.24. This word count was prepared using Microsoft 365 Word version 2202.

Dated: May 20, 2025

/Brian Eutermoser/
Brian Eutermoser
Reg. No. 64,058
KING & SPALDING LLP
1401 Lawrence Street, Suite 1900
Denver, CO 80206
Telephone: (720) 535-2312
*Counsel for Patent Owner SportsCastr
Inc. (d/b/a PANDA Interactive)*

CERTIFICATE OF SERVICE

I certify that I caused to be served a true and correct copy of the foregoing:
PATENT OWNER PRELIMINARY RESPONSE and EXHIBITS were served
by filing this document through the Patent Trial and Appeal Case Tracking System
(P-TACTS) on May 20, 2025, in its entirety on the following:

Scott W. Cummings
Reg. No. 41,567
scott.cummings@bclplaw.com
BRYAN CAVE LEIGHTON PAISNER LLP
1155 F St, N.W.
Washington, D.C. 20004
Telephone: (202) 508-6000

Alexander Walden
Admitted pro hac vice
alexander.walden@bclplaw.com
Frank Fabiani
Reg. No. 75,934
frank.fabiani@bclplaw.com
BRYAN CAVE LEIGHTON PAISNER LLP
1290 Avenue of the Americas
New York, NY 1104
Telephone: (212) 541-2000
Facsimile: (212) 541-4630

Dated: May 20, 2025

/Brian Eutermoser/
Brian Eutermoser
Reg. No. 64,058
KING & SPALDING LLP
1401 Lawrence Street, Suite 1900
Denver, CO 80206
Telephone: (720) 535-2312