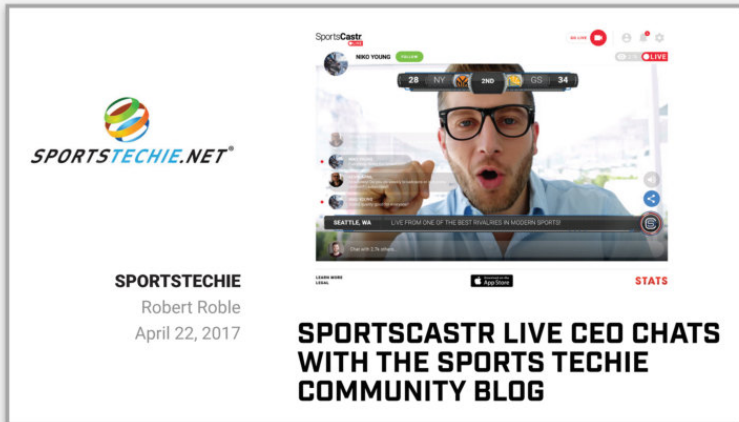
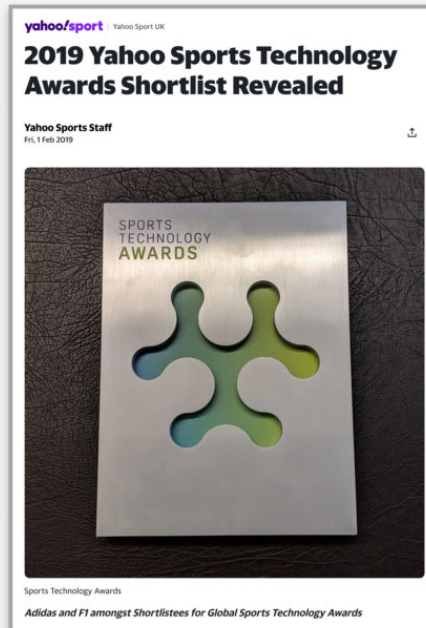


No Industry Praise

- ▶ PANDA fails to explain how its alleged awards relate to any embodying product, much less any relation between the award and the claimed invention



Ex. 2007; IPR2024-01305, Paper 14 (POR) at 66-67



Ex. 2008; IPR2024-01305, Paper 14 (POR) at 66



Ex. 2009; IPR2024-01305, Paper 14 (POR) at 66

No Industry Praise



code (60), 1:20–40. Moreover, certain of Patent Owner’s industry praise evidence quotes former NBA commissioner David Stern (Prelim. Resp. 64–65), but he is described as “one of SportsCastr.Live’s high-profile partners” and “a founding investor.” Ex. 2006, 2; Ex. 2008. His interest in Patent Owner undermines that his views represent those of the “industry.” Finally,

IPR2024-01307, Paper 8 (Institution Decision) at 41

No Copying

No Copying



Although Patent Owner alleges copying, Patent Owner does not name a particular product of Petitioner's that allegedly copied Patent Owner's products. *See* Prelim. Resp. 66–68. Rather, Patent Owner merely cites to a 50-page infringement claim chart from the related parallel proceeding. *Id.* at 67 (citing Ex. 2001 ¶ 320; Ex. 2017). Patent Owner is reminded that “[a]rguments must not be incorporated by reference from one document into another document.” 37 C.F.R. § 42.6(a)(3). At this stage, we decline to “play archeologist with the record” in order to understand Patent Owner's arguments, which “is precisely what the rule against incorporation by reference was intended to prevent.” *Gen. Access Sols., Ltd. v. Sprint Spectrum L.P.*, 811 F. App'x 654, 657–58 (Fed. Cir. 2020). Further, Dr. Rubin merely cites the claim chart at Exhibit 2017 and states that he “understand[s] that Patent Owner contends that the Petitioner launched its own sport's [sic] streaming platform and incorporated the claimed invention into its own products.” Ex. 2001 ¶ 320. He does not appear to have developed his own opinion regarding Petitioner's products. *Id.* For these reasons, and based on the present record, we accord Patent Owner's evidence of copying little to no weight.

No Substantial Commercial Success

No Substantial Commercial Success



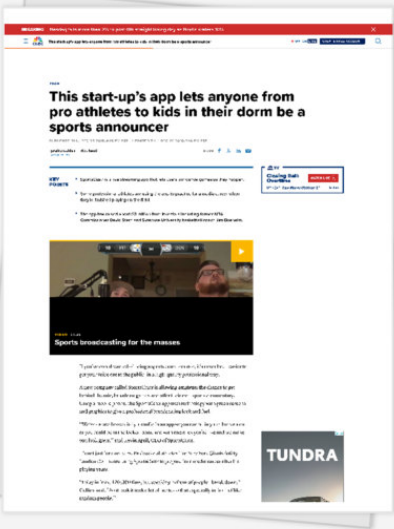
Owner undermines that his views represent those of the “industry.” Finally, Patent Owner acknowledges that commercial success is established by showing significant sales of the patented product, but Patent Owner does not cite any evidence of such significant sales. *See* Prelim. Resp. 68–72 (citing *Ormco Corp. v. Align Technology, Inc.*, 463 F.3d 1299, 1311–12 (Fed. Cir. 2006)).

IPR2024-01307, Paper 8 (Institution Decision) at 41

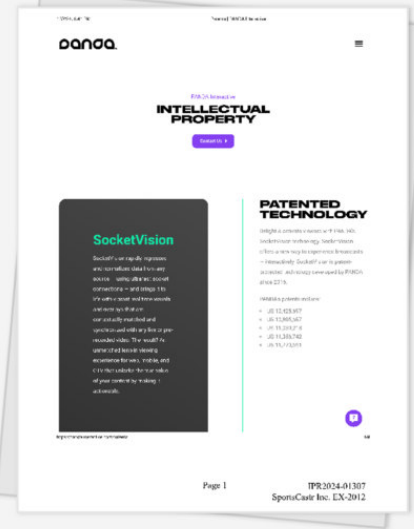
**Exhibits 2006-2016 and Paragraph 315 of
Exhibit 2001 Should Be Excluded**

PANDA's Web Ads Should Be Excluded as Inadmissible Hearsay

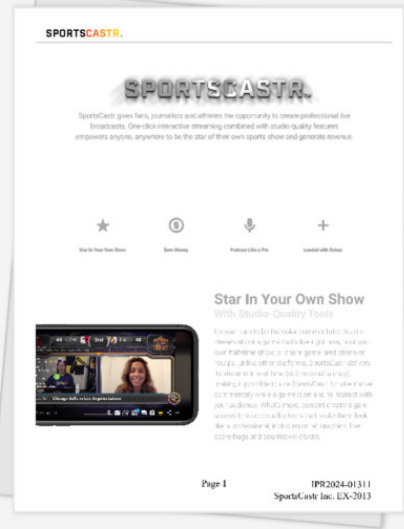
Exhibits 2011-2014



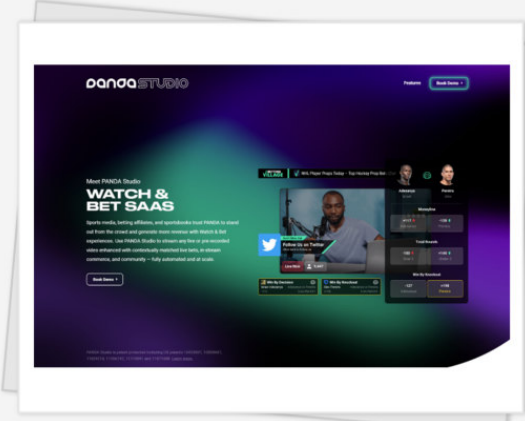
Ex. 2011



Ex. 2012



Ex. 2013



Ex. 2014

PANDA's Emails Should Be Excluded as Inadmissible Hearsay

Exhibits 2015, 2016

Kevin April (CEO) and Andrew Schupak (CFO) founded Sportscaster - <https://sportscaster.com/> - they are based in NY and doing amazing work around sports broadcast with social commentators, graphics and real time chat.

Ex. 2016 at 2

From: Kevin April <kevin@geniusports.com>
Sent: Fri, 7 May 2016 12:45 PM
To: Ben Turner <ben.turner@geniusports.com>
Cc: Andrew Schupak <andrew@sportscaster.com>

Thank you, Ben. LIGR looks very interesting and we will reach out. Will follow up with a separate email to lock down a time in the coming weeks to chat and look forward to seeing you next time you are in NYC.

Kevin

On May 7, 2016, 12:45 AM -0400, Ben Turner <ben.turner@geniusports.com>, wrote:

Hi Kevin,

Great to hear from you. I hope all is well. Congrats on the recent deals.

Andrew - look forward to meeting you when I am in NY.

I did make a quick flying visit to NY (Secaucus) for a couple of days in April but was in the NBA office the whole time so unfortunately couldn't get into NYC to see you on the trip. Once I am back in town I will let you know for sure.

Look out for the introduction to Luke, from LIGR. If make this email intro now.

Let's look to lock in some time in the coming weeks to chat about further collaboration opportunities.

Regards

Kevin April

Director - Sports Partnership
Genius Sports

K: kevin@geniusports.com

V: [2012621031](tel:2012621031)

M: [2012621031](tel:2012621031)

Skype: k_april2

Page 1

IPR2024-01307
Sportscaster Inc. EX-2015

Ex. 2015

Once I get closer to the 16th and know my plans post then we'll work out a time for a skype hook up.

Cheers. I'll be in touch.

On Tue, May 8, 2016 at 4:24 PM, Kevin April <kevin@sportscaster.com> wrote:

Thanks for reaching out, Luke. It would be great to chat about what we're doing and explore ways we could help each other.

Since you are in a different time zone, if you want to suggest a daytime frame that works best for you we'll try our best to accommodate. Thursday/Friday is pretty open right now.

Best,
Kevin

--

Kevin April, CEO - Sportscaster
666 Madison Avenue - New York, NY - 10022
Cell: (646) 334-4321 Office: (212) 582-4210 Fax: (212) 262-1031

On May 6, 2016, 4:52 AM -0400, Luke McCoy <luke@lucysystems.com>, wrote:

Hi Ben,

Thanks for the connection. Appreciated.

Andrew and Kevin great to meet you. I've followed your company closely post your investment. Sounds and looks exciting.

I'd be very interested in seeing if there is collaboration potential between our technologies considering the space we are in seems fairly aligned.

Page 1

IPR2024-01307
Sportscaster Inc. EX-2016

Ex. 2016

PANDA's Unauthenticated Documents Should Be Excluded

Unauthenticated Articles (Exhibits 2006, 2007, 2010)



NBA.COM
Steve Aschbumer
April 27, 2017



(David Stern has kept himself busy in retirement with several different ventures.)

TECH-SAVVY DAVID STERN FINDING WAYS TO STAY IN FOREFRONT, EVEN IN RETIREMENT

It's early still, but late enough somewhere that David Stern could be into his second or third umbrella drink by now.

And since it's been more than three years since Stern stepped down as NBA commissioner, he truly could be anywhere. A Hawaiian shirt, a cabana chair, some sun, some surf, all would seem proper rewards for a job well done.

Nope. Stern, 74, was in the Manhattan office he keeps these days, not far from the Manhattan office he kept at Olympic Tower for so many years. Neckties are optional now, but he still pulls from a vast closet full of Stern Collection suits, remnants from his commish days.

He was at work, not all that different from some of his previous work, wrangling the telephone, bantering with media folks, making sure his message was clear if maybe a little less loud.

One of Stern's many new ventures is the tech start-up SportsCastr Live, a streaming video platform that allowed users to call live games themselves or hear announcers of their choosing.

Or as Stern put it, "Fans want what they want, on whatever

Ex. 2006



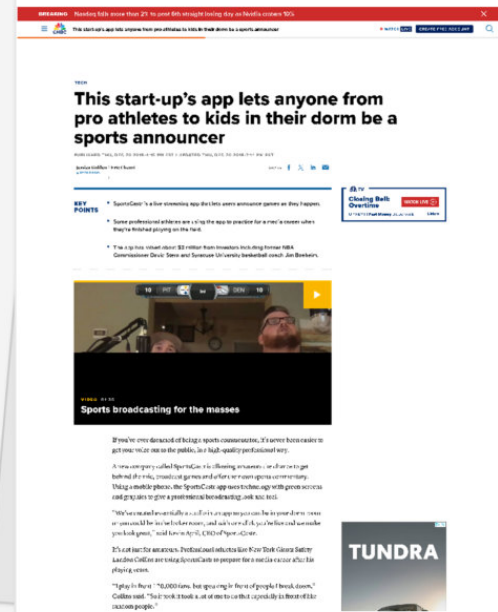
SPORTSTECHIE
Robert Roble
April 22, 2017



SPORTSCASTR LIVE CEO CHATS WITH THE SPORTS TECHIE COMMUNITY BLOG

SportsCastr Live is in beta testing mode until September yet launched their new customizable video platform this week designed for all digital devices to enable professional looking streamed video broadcasts over an iOS app, laptop or desktop computer. The innovative sports tech product allows users and viewers to interact through an enhanced second screen experience and via social media channels. SportsCastr CEO Kevin April chatted with The Sports Techie community blog about their proprietary technology, the company business plan and the compelling news that a founding investor is the 'Godfather' of New York and former NBA Commissioner, David Stern. The other notable savvy executive investors and successful sporting figure advisers together with Stern aim to help April distribute the existing status quo. I am also sharing the news that @THESportsTechie at @SportsTechieNET will be part of an ongoing SportsCastr program with other influencers that broadcast about and during live sport events in addition to talking about trending topics. In our case, I will be streaming various sports tech and Atlanta focused content regarding the Hawks, Braves, Atlanta United FC, and the Falcons, and chat about the cities new stadiums, SunTrust Park and Mercedes-Benz Stadium. The idea is to showcase SportsCastr technologies that truly make production seem as if it is coming from a studio quality feed as a premium fan engagement and social connection opportunity.

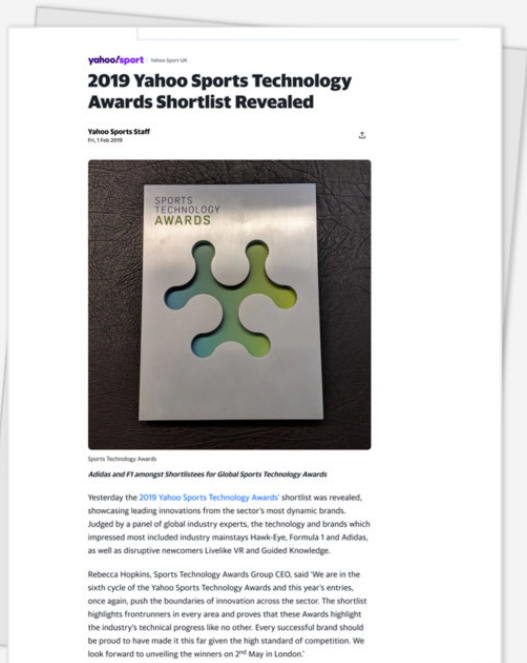
Ex. 2007



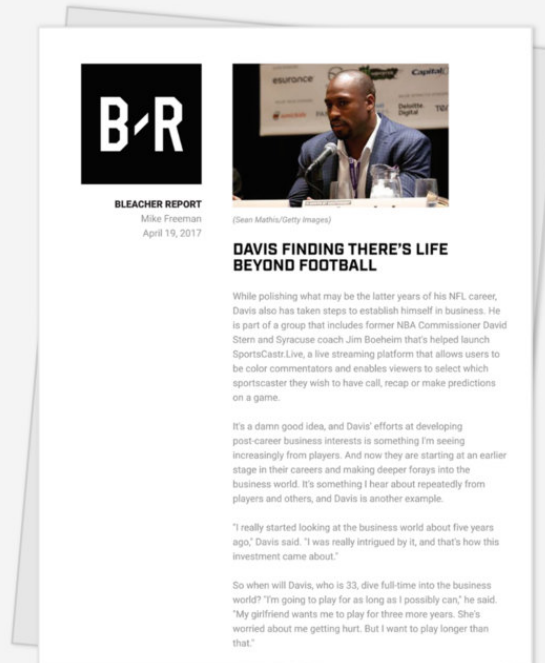
Ex. 2010

PANDA's Unauthenticated Documents Should Be Excluded

Unauthenticated Accolades and Awards (Exhibits 2008, 2009)



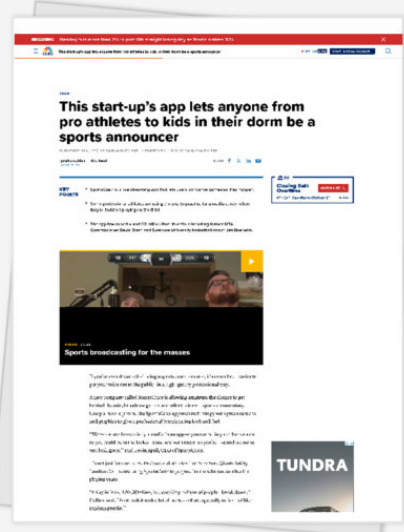
Ex. 2008



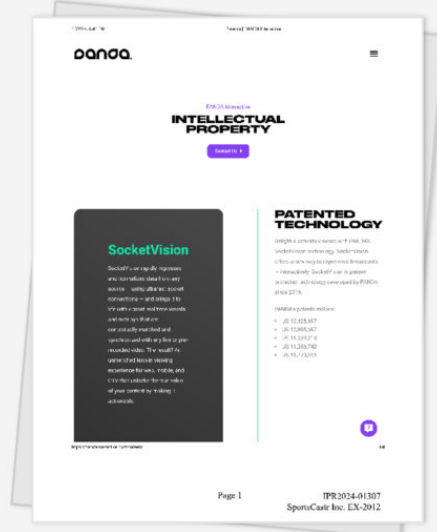
Ex. 2009

PANDA's Unauthenticated Documents Should Be Excluded

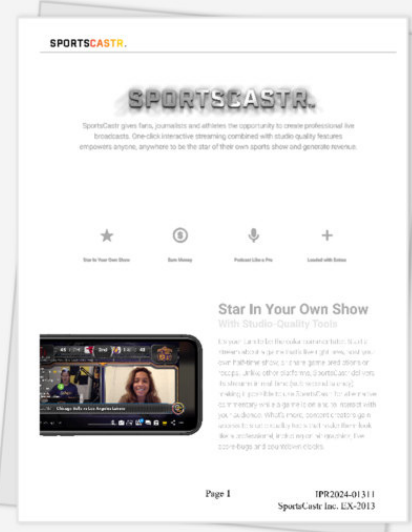
Unauthenticated Web Advertisements (Exhibits 2011-2014)



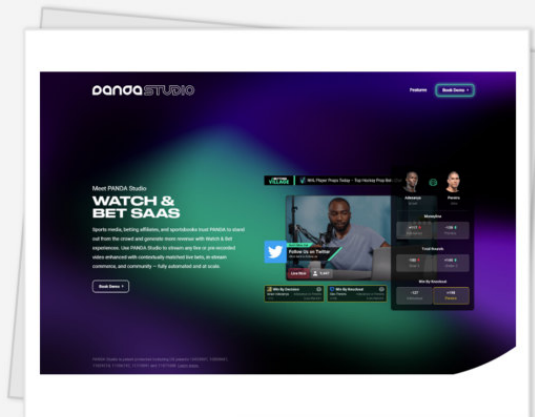
Ex. 2011



Ex. 2012



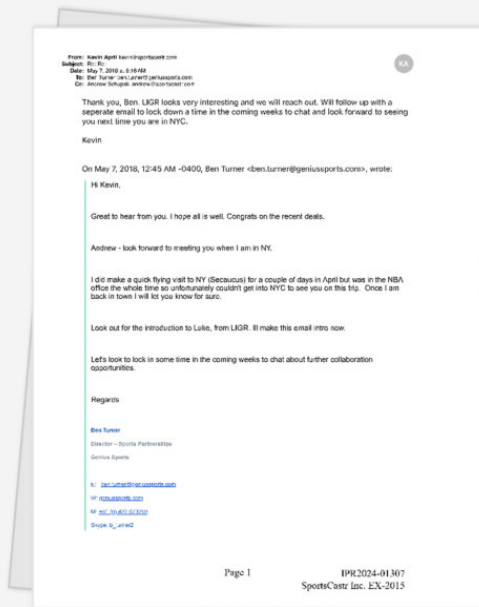
Ex. 2013



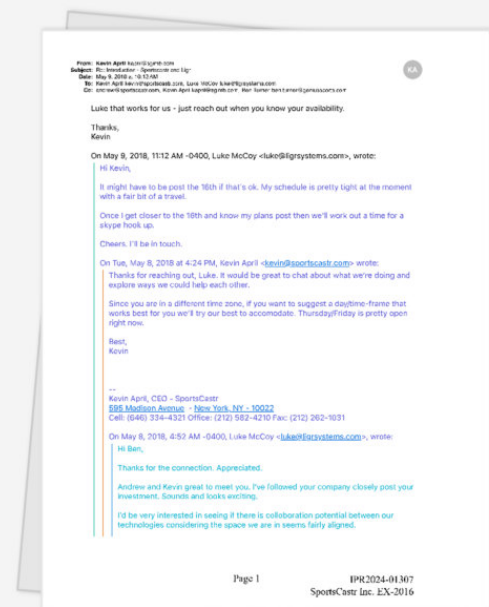
Ex. 2014

PANDA's Unauthenticated Documents Should Be Excluded

Unauthenticated Emails (Exhibits 2015, 2016)



Ex. 2015



Ex. 2016

Exhibit 2001 ¶ 315 Is Based on Inadmissible Hearsay Evidence

FRE 703, 801, 802

315. Dr. Wicker states that he is unaware of any evidence of secondary considerations (EX-1001, Section XI), despite Petitioner's own praise of the claimed invention and subsequent copying of the claimed invention in Petitioner's own Genius Sports Platform. As shown below, communications between Petitioner and Patent Owner showed that since 2018, Petitioner had access to and had high praise for Patent Owner's claimed invention and was eager to promote it:

Ex. 2001 ¶ 315

FRE 801, 802

On Feb 24, 2018, 3:10 PM -0500, Ben Turner <ben.turner@geniussports.com>, wrote:

Hey Kevin,

Thanks for your time yesterday. It is great to see what you guys are doing with SportsCastr. Let's organise a follow up call for when I am back in Australia and I will have a think about some potential intro's that might be of interest.

(EX-2015.)

On Mon, 7 May 2018 at 7:15 am, Ben Turner <ben.turner@geniussports.com> wrote:

Hi Kevin, Andrew and Luke,

I wanted to introduce you all to each other. As I travel around I find many great companies working in the sports digital/tech space and like to make introductions where synergies may exist. So...

Kevin April (CEO) and Andrew Schupak (CFO) founded Sportscastr - <https://sportscastr.com/> - they are based in NY and doing amazing work around sports broadcast with social commentators, graphics and real time chat.

(EX-2016.)

Ex. 2001 ¶ 315 (citing Ex. 2015, Ex. 2016)

Appendix

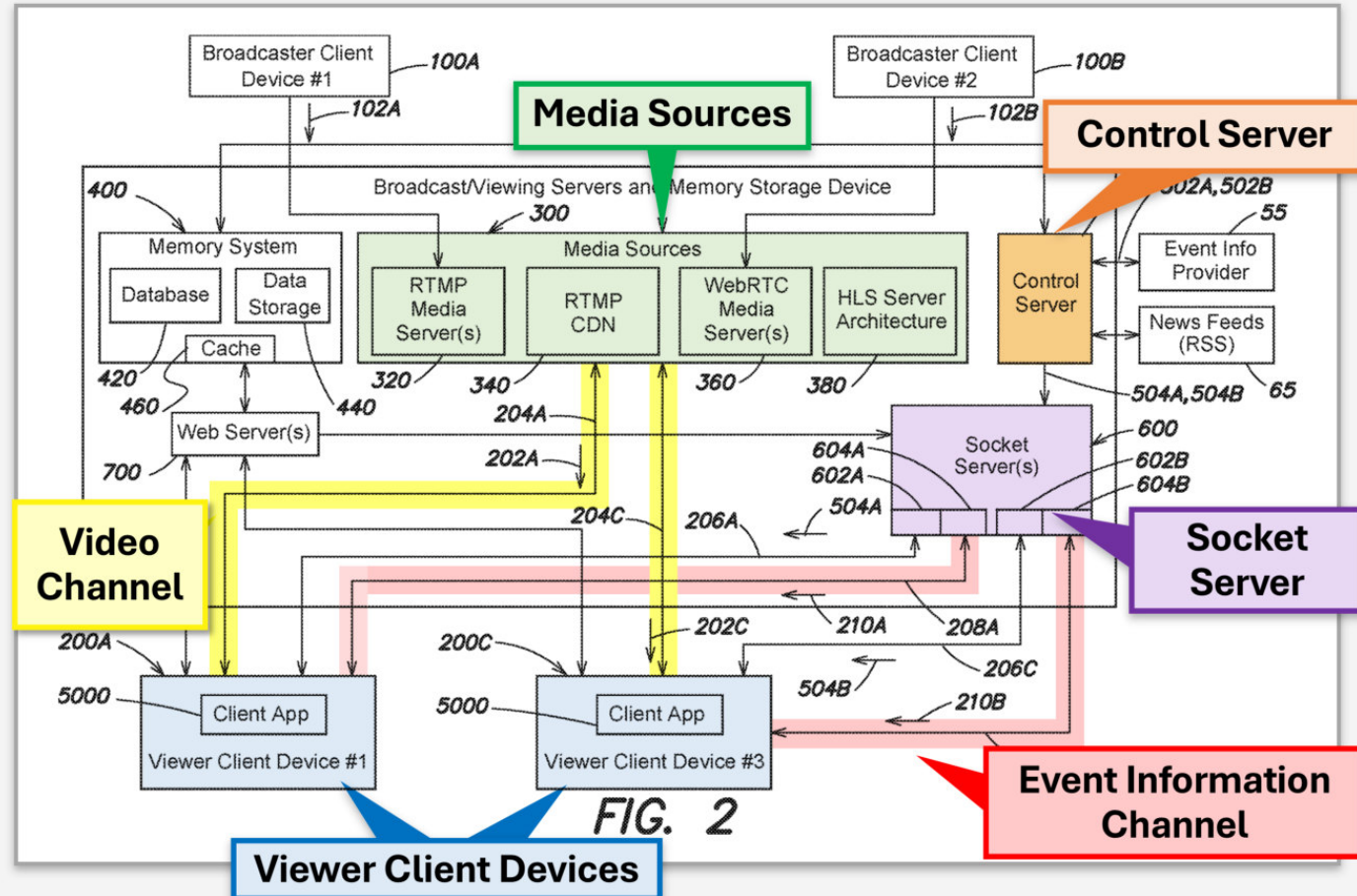
Representative Claims

'687 Patent, Claim 1

The invention claimed is:

1. A system for providing, to a first plurality of viewer client devices, a first plurality of copies of a first live stream of digital content relating to a first live sporting event, and for providing, to a second plurality of viewer client devices, a second plurality of copies of a second live stream of digital content relating to the first live sporting event or a second live sporting event, the system comprising:

- A) a plurality of **media sources** to:
- receive the first live stream of digital content and the second 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 **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
 - 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 video Internet communication channel between the plurality of media sources and the first viewer client device of the second plurality of viewer client devices;
- B) a **control server** to periodically retrieve, via the Internet, first event information germane to the first live sporting event; and
- C) at least one **socket server** communicatively coupled to the control server to:
- receive from the control server at least the first event information; and
 - 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, wherein the at least one first event socket corresponds to the first event information germane to the first live sporting event.



'218 Patent, Claim 1

1. A system for controlling a plurality of viewer client devices to receive first digital content relating to a first sporting event and first event information germane to the first sporting event, the first event information including online gaming information, the system comprising:

A) a control server to periodically retrieve, via the Internet, the first event information germane to the first sporting event;

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

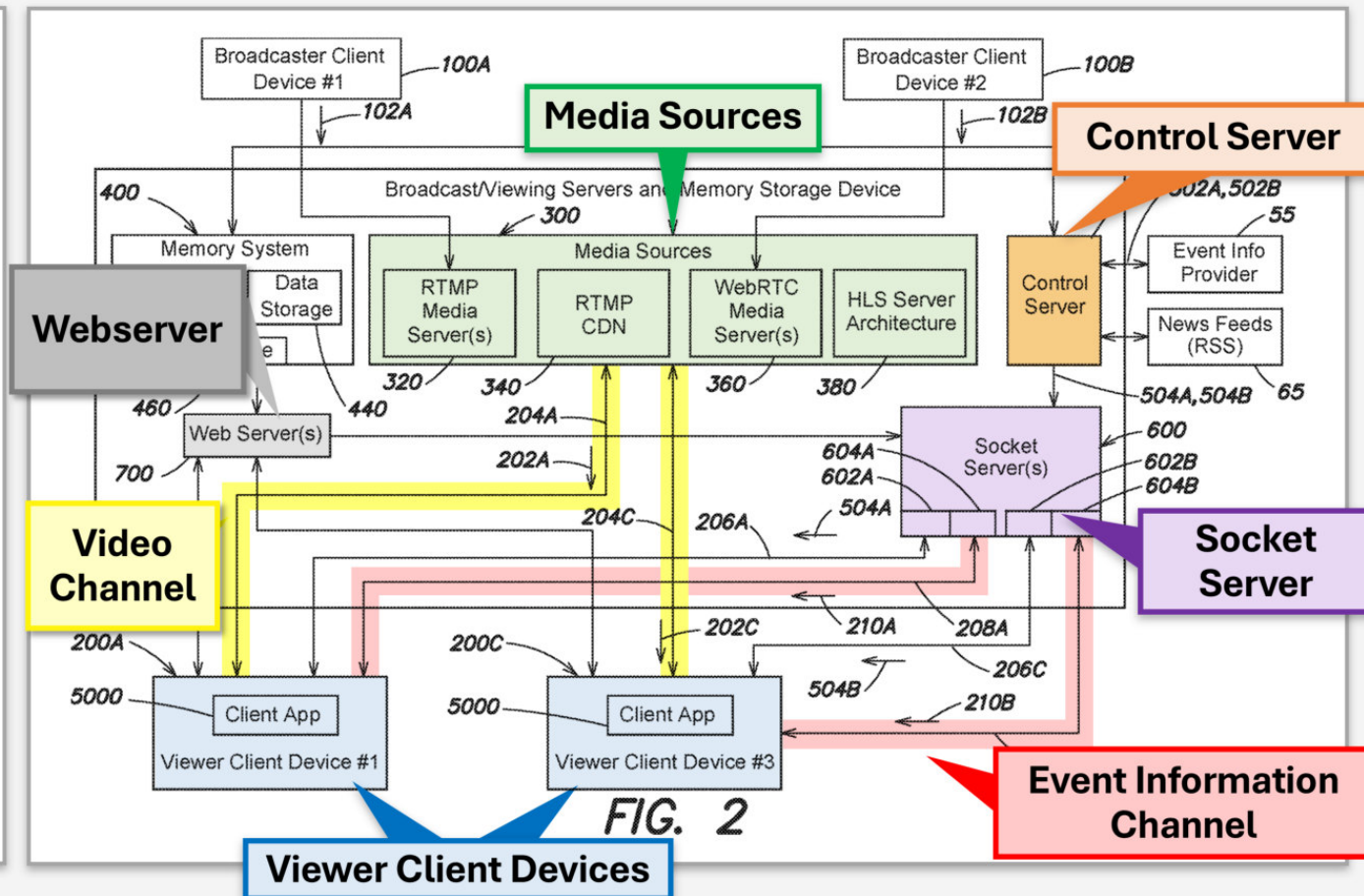
receive from the control server at least the first event information; and

transmit at least some of the first event information, including the online gaming information, to at least a first viewer client device of the plurality of viewer client devices via a first event information Internet communication channel between a first event socket of the at least one socket server and the first viewer client device, wherein the first event socket corresponds to the first event information germane to the first sporting event; and

C) at least one webserver communicatively coupled to the at least one socket server to transmit, to the first viewer client device:

a first Internet address of a first media source to establish a first video Internet communication channel between the first media source and the first viewer client device to carry the first digital content relating to the first sporting event; and

a first socket address of the first event socket to establish the first event information Internet communication channel to carry the online gaming information.



'218 Patent, Claim 21

21. A method, comprising:

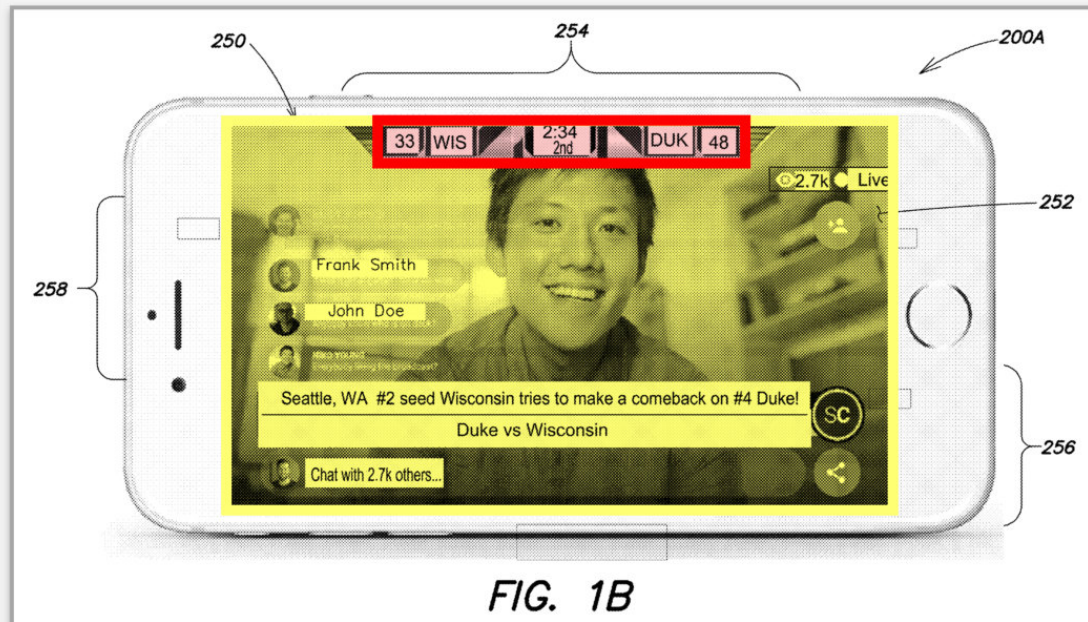
A) transmitting first instructions to a first client device that includes at least one first display to cause the at least one first display of the first client device to render a first video relating to a first sporting event and render online gaming information relating to the first sporting event, wherein the first instructions transmitted in A) cause the first client device to:

receive, on a first communication channel, first digital content corresponding to the first video relating to the first sporting event;

render, on the at least one first display of the first client device, the **first video** relating to the first sporting event based on the first digital content received on the first communication channel;

receive, on a second communication channel different from the first communication channel, second digital content corresponding to the online gaming information; and

render, on the at least one first display of the first client device, the **online gaming information** based on the second digital content received on the second communication channel.



Dependent Claim Disputes

Ellis-Spivey Discloses Bi-Directional Chat Communication

'687, Claim 5; see also '687, Claim 21; '697, Claims 5, 21; '218, Claim 15

5. The system of claim 2, wherein in C), the at least one socket server further:

transmits and receives first chat information regarding the first live stream of digital content via at least one first chat/system event Internet communication channel between at least one first chat/system event socket of the at least one socket server and the first viewer client device of the first plurality of viewer client devices, wherein the at least one first chat/system event socket corresponds to the first chat information; and

transmits and receives second chat information regarding the second live stream of digital content via at least one second chat/system event Internet communication channel between at least one second chat/system event socket of the at least one socket server and the first viewer client device of the second plurality of viewer client devices, wherein the at least one second chat/system event socket corresponds to the second chat information.

Ellis: Chat

sive or interactive content to user equipment 102. Media content that may be provided by content source 130 to user equipment 102 includes broadcast programming, VOD programming, digital music, news, interactive applications (e.g., interactive games), Internet resources and web services (e.g., websites, newsgroups, and chat rooms), and any other content capable of being displayed by, presented to, recorded, or interacted with, using user equipment 102.

[0132] As previously mentioned, game commentary from a variety of sources may also be displayed to the user. Game commentary may include text, graphics, video, and interactive elements (e.g., interactive playbooks, polls, and discussion forums). FIG. 25 shows display screen 2500 for accessing commentary content. The user may be presented with a number of commentary options, such as option 2502. The user may select any commentary option to be presented with the associated commentary. For example, in some embodi-

saging between teams to facilitate the trade. To create and send a message (e.g., instant message or email message), the user may select send message option 1812. Single and/or

Spivey Discloses Using RabbitMQ, Which Is Routinely Used For Chat

Genius
SPORTS



Dr. Stephen Wicker

Genius Sports
Technical Expert

Ex. 1016, ¶40. Spivey, on the other hand, discloses the use of message queue servers (e.g., RabbitMQ) for managing real-time data, a technology routinely used for chat room implementations. See Ex. 1017, ¶58. Spivey discloses multiple topic queues per live event, with hierarchical topics, at paragraphs [0052] and [0104], where it describes that topic queues may be hierarchically related (e.g., “gamecenter.nfl” for all NFL data, “gamecenter.nfl.ravenssteelers” for a specific game, and “gamecenter.nfl.ravenssteelers.stats” for statistics about that game), and that a data payload may be placed in multiple topic queues according to this hierarchy.

Ex. 1064 at ¶ 18; IPR2024-01305, Paper 22 (Reply) at 12-13

Spivey Discloses Multiple Sockets Per Event, Including A Chat Socket

Genius
SPORTS



Dr. Stephen Wicker

Genius Sports
Technical Expert

388. Ellis in view of Spivey discloses a socket specifically designated for chat information. Spivey utilizes topic queues to organize “data payloads” that “relate to a specific game between two NFL teams.” Ex.1017 ¶¶51-52; see §IX.A.1, *supra*. The data payloads, “[w]hen the live event is a sporting event,” include, “for example, a score, a play, ..., and so forth.” Ex.1017 ¶48. Topic queues may be “hierarchically related.” *Id.* ¶52. This means that when the system looks at the text string associated with the data payload, the system “may place the data payload only in the topic queue exactly matching the topic label.” *Id.* ¶104. For example, if there were two topics “at the same hierarchal level” the data payloads placed in “gamecenter.nfl.ravenssteelers.statistics’ would not be placed in” another topic queue “gamecenter.nfl.ravenssteelers.plays.” In sum, the statistics would be separate from the chat information. Thus, a POSA would have understood Spivey to disclose a first/second chat/system event socket corresponding to the first/second chat information related to the first/second live stream of digital content.

Ex. 1001 at ¶388

Spivey Discloses Bi-Directional Chat Communication

Genius
SPORTS



Dr. Stephen Wicker

Genius Sports
Technical Expert

19. Importantly, as acknowledged by Dr. Rubin, Spivey discloses bidirectional websocket connections between the topic queues and client devices, which support communications to and from the event sockets. See Ex.2001, ¶135 (“The websocket connection may be a two-way connection between two entities, where each of the two entities can send and receive data simultaneously.”)

Ex. 1064 at ¶19; IPR2024-01305, Paper 22 (Reply) at 12-13

Socket Server – Additional Evidence

Spivey's MQSD Functions As Socket Server

MQSD Communication Component Allows for MQSD-Client Connection

Genius
SPORTS



Dr. Stephen Wicker

Genius Sports
Technical Expert

- Q.** And Figure 3 does not illus- -- does not include an interface component, correct?
- A.** No, I don't agree with that. There are a number of interface components. For example, you've got a communication component 308. Memory units are by their nature designed with interfaces so that you can access what's stored.

* * *

- Q.** Yeah. And as we previously discussed, the interface component provides user interfaces like those in Figures 8 through 10 for allowing users to subscribe to topics, correct?
- A.** Yes, although obviously that would invite the subscription component as well. But the actual user interface would be provided as part of the interface column as described as an embodiment in Spivey.

Ex. 2039 (Wicker Tr.) at 34:21-35:2, 52:5-12

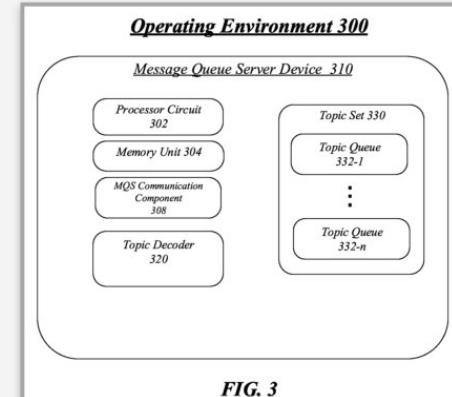


FIG. 3

*Ex. 1017
(Spivey) at
Fig. 3*

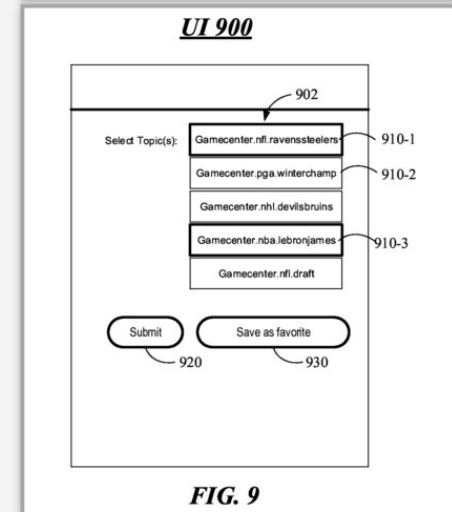


FIG. 9

*Ex. 1017
(Spivey) at
Fig. 9;
IPR2024-
01305,
Paper 1
(Petition)
at 37-39*

Spivey's Claims Confirm Direct MQSD-Client Connection

7. A computer-implemented method, comprising:
opening a connection with a client device;
receiving a request for a topic from the client device; and
subscribing to the requested topic at a message queue
server.

Ex. 1017 (Spivey) at Claim 7

NO LDAS REQUIRED

8. The computer-implemented method of claim 7, wherein
the connection is a websocket connection.

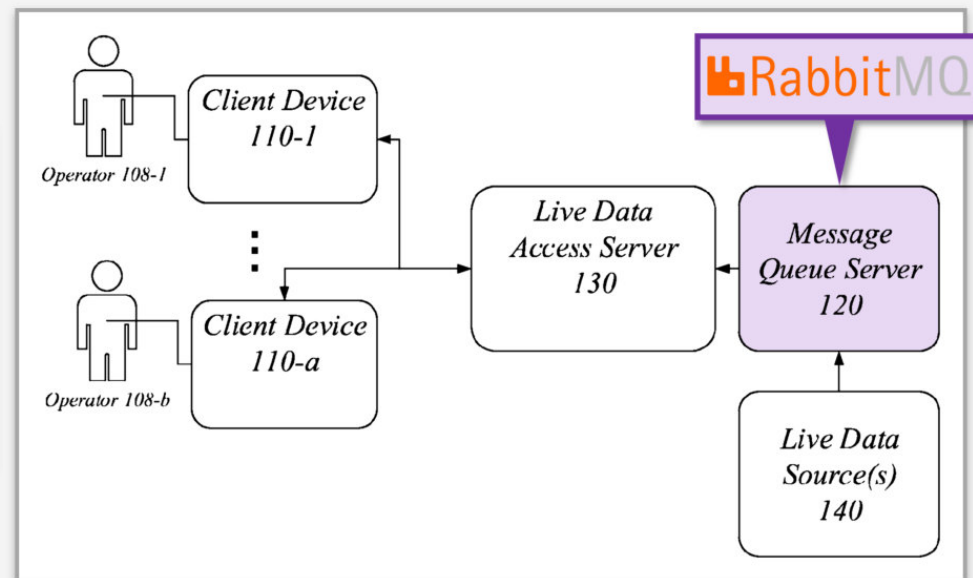
Ex. 1017 (Spivey) at Claim 8

**MQSD-Client
“websocket connection”
REQUIRED**

Spivey's RABBITMQ Disclosure Confirms Direct Connections

[0058] In an embodiment, message queue server device 410 may be implemented as a RABBITMQ™ server. RABBITMQ™ is open source message broker software provided by Pivotal Software, Inc. RABBITMQ™ facilitates topic queues that receive published messages and push the messages to clients that have subscribed to the topic queues. The embodiments are not limited to this implementation.

Ex. 1017 (Spivey) at ¶ 58; 2024/PR-01305, Paper 22 (Reply) at 10-11



Ex. 1017 (Spivey) at Fig. 1

Spivey's RABBITMQ Disclosure Confirms Direct Connections

topic queues.” *Id.*, ¶58. RabbitMQ was a well-established message broker that operates by accepting messages and immediately pushing them to client devices, mirroring the behavior of the message queue server device (MQSD) described in Spivey. Ex.1065. In RabbitMQ, messages are routed through queues, which function analogously to Spivey’s topic queues. RabbitMQ explicitly supports a one-to-many architecture, allowing multiple client devices to receive data from a single queue. *Id.*, (“many consumers can receive data from one queue”). Clients connect to the RabbitMQ server and receive messages from the queue by establishing a connection and channel, which directly links the receiver to the designated topic queue.

Ex. 1064 (Wicker Supp. Decl.) at ¶16

Full `receive.py` code:

```
1  #!/usr/bin/env python
2  import pika
3
4  connection = pika.BlockingConnection(pika.ConnectionParameters(
5      host='localhost'))
6  channel = connection.channel()
7
8  channel.queue_declare(queue='hello')
```

Dr. Rubin Is Unfamiliar With RabbitMQ

PANDA



Dr. Aviel Rubin

PANDA's Technical Expert

Q. Are you familiar with RabbitMQ?

A. Where -- where are you?

Q. Paragraph 71, maybe about two-thirds of the way down.

A. I've heard of it.

Q. When you say you've heard of it, have you ever used it or studied it?

A. No. I believe that appears in some documents that I read in this case. It's recognizable to me but I have not worked with it.

Ex. 1063 (Rubin Tr.) at 57:1-10

Socket Server – Additional Evidence

Spivey's Servers Are Compatible With Ellis

Presence of Database Not Required in Ellis

Genius
SPORTS



Dr. Stephen Wicker

Genius Sports
Technical Expert

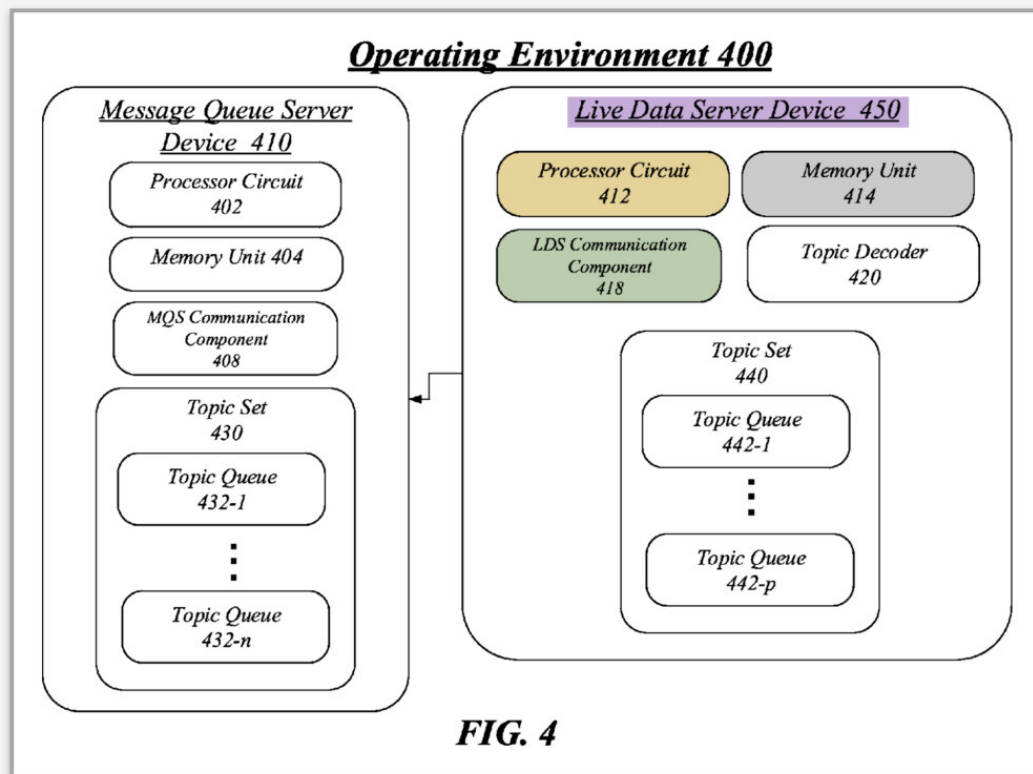
23. The presence of a database is not required in Ellis because the system is designed to flexibly handle sports-related content, user preferences, and interactive features through a combination of in-memory data structures, real-time data feeds, and direct communication between user equipment and content or supplemental sources, rather than relying on persistent storage in a traditional database. As described in paragraph 42 of Ellis, supplemental content source 120 may provide real-time sports scores, game summary information, commentary, and other sports-related data to user equipment as a plurality of real-time data feeds, which may be individually accessed or subscribed to by the user equipment. This information can be stored locally, managed in memory, or received dynamically, and the system architecture explicitly allows for the storage and delivery of such data without requiring a centralized or persistent database. The interactive features, such as scoreboards, user profiles, and fantasy league data, are supported by this flexible data delivery and storage approach, enabling real-time updates and user interaction without necessitating a database for the core operation of the invention. See Ex.1016 ¶42.

Ex. 1064 (Wicker Supp. Decl.) at ¶ 23

Spivey's LDSD Would Receive Supplemental Content In Ellis Combination

[0055] Live data server device **450** may be a separate computing device from MQS device **410**, and may have its own processor circuit **412** and memory unit **414**. Live data server device **450** may also include a live data server (LDS) communication component **418**. LDS communication component **418** may include hardware and/or software that allows live data server device **450** to receive live data and transmit the data payloads to MQS device **410**.

Ex. 1017 (Spivey) at ¶ 55; IPR2024-01305, Paper 1 (Petition) at 30-32



Ex. 1017 (Spivey) at Fig. 4; IPR2024-01305, Paper 1 (Petition) at 30-32

Spivey's LDSD Is an Intermediate Content Provider, Consistent With Ellis

[0041] Supplemental content source **120** may be any suitable content source **configured to provide real-time sports scores** and game summary information, tournament brackets and tournament information, sports commentary, athlete biographies, spread and wagering data, and any other sports-related information to user equipment **102**. In some embodiments, this sports-related information is provided to user equipment **102** as a plurality of real-time data feeds. Each data feed may be individually accessed or subscribed to by user equipment **102**. For example, sports score and game status information may be included in one real-time data feed, while sports commentary may be included in another feed. The sporting events with associated data available from supplemental content source **120** may include events in progress or events that have recently ended. In addition, supplemental content source **120** may include information relating to sporting events not available for viewing in media system **100**. For example, a non-televised game may nevertheless have associated sports-related information available on supplemental content source **120**.

[0042] Some or all of this sports-related information may be stored in database **122** and provided to content source **130** or directly to user equipment **120** over communications paths **154** and **152**, respectively. **Supplemental content source 120 may include any third-party application provider, data manager, content manager, content aggregator, or intermediate content provider.** Supplemental content source **120** may also be contracted to provide enhanced parental control services on behalf of user equipment **102**. For example, supplemental content source **120** may provide ratings information for media types that traditionally are not associated with ratings information. Supplemental content source **120** may provide sports news ratings, website ratings, interactive application and sports games ratings, as well as ratings information for any other type of content accessible by user equipment **102**. The ratings information may be derived, at least in part, from government agencies and public or private ratings bureaus (e.g., the TV Parental Guidelines Monitoring Board, the Federal Communications Commission (FCC), the Motion Picture Association of America (MPAA), and the Entertainment Software Ratings Board (ESRB)).

Ex. 1016 (Ellis) at ¶¶ 41-42; IPR2024-01305, Paper 1 (Petition) at 28-30

Spivey Reduces Latency Even Without Separate LDAS

[0027] Various embodiments are generally directed to techniques for managing communications of electronic information for electronic devices, such as mobile devices, for example. Some embodiments are directed to techniques to broadcast media content in real-time. The media content may comprise, for example, data from a live event (e.g., news event, a gaming event, sporting event, etc.). In particular, various embodiments 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.

[0028] Conventional live event data content providers may receive data about a live event, such as a sporting event, from various sources. The received data may then need to be added to a database system, written to files, and/or propagated to servers. Clients may then need to ask for new data, whereupon the data may be read from the servers and provided to the requesting clients. In practice, this may cause latency or a delay from the time the data is received by the live event data content provider to when the client receives the data. In some cases, this delay may be on the order of seconds (e.g., 30 to 45 seconds) or minutes. The embodiments discussed herein may reduce that delay to an order of milliseconds (ms) (e.g., 100 ms) or less, providing a significant advantage over the conventional practices.

Ex. 1017 (Spivey) at ¶¶ 27-28; IPR2024-01305, Paper 1 (Petition) at 18-19

Socket Server – Additional Evidence

Motivation to Combine Herzog + Spivey

Herzog: Video Latency Is an Intended Feature

[0074] 5. Upon viewing the live video from one or more video sources (or channels) of the live event, the user initiates a request for meta-data that is associated with the VITC time stamp of a particular video channel on the display of the video player. The latency or transaction time of the meta-data between the client and the server is less than 2 seconds. The latency of the video between when the user requests a video and when the video is shown on the display is approximately 63 seconds. This is due to the down linking, encoding, publishing and decoding of the video. The ERP Server 84 buffers the delay with the meta-data time stamp. The video becomes the master clock of when the corresponding meta-data arrives at the application.

Ex. 1015 (Herzog) at ¶ 74; IPR2024-01305, Paper 22 (Reply) at 18-19

Spivey's Push Minimizes Latency Of Data Delivery In Herzog

126. Herzog does not specifically disclose some backend server architecture supporting the data distribution—the claimed socket server. However, it is my opinion that a POSA would have known that the websocket client-server communication protocol employed by Spivey was an alternative to the HTTP polling used by Herzog. *See* Ex.1046 at 46-47. Resultingly, a POSA would have found it obvious to implement Herzog's Origin Server as a websocket server—as taught by Spivey—to achieve full-duplex communications between a client and a remote host with low latency. *Id.* at 46 (observing that a websocket protocol provided a three-to-one reduction in latency as compared to half-duplex HTTP polling).

Ex. 1001 at ¶ 126; IPR2024-01305, Paper 1 (Petition) at 60-61

[0096] The logic flow 1100 may push the data payload of the topic entry to the client device via the connection at block 1110. For example, live data access server 130 may push the data payload to client device 110, and to any other connected client devices that also requested that topic. In various embodiments, 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. In the embodiments described herein, a set of actions described as taking place “substantially simultaneously” means that the set of actions execute within the same defined period of time. The defined period of time may be of any length as suitable for a given implementation. In one embodiment, for example, the defined period of time is at least two orders of magnitude shorter than conventional time periods of legacy devices. For example, conventional time periods for legacy devices may be on the order of 30 to 45 seconds. The set of actions may be executed sequentially, in parallel, or some combination thereof within the defined time period.

Ex. 1017 (Spivey) at ¶ 96; IPR2024-01305, Paper 1 (Petition) at 61

