Alan P. Block
ablock@mckoolsmith.com
**MCKOOL SMITH, P.C.**
300 South Grand Avenue, Suite 2900
Los Angeles, California 90071
Telephone: (213) 694-1200
Facsimile: (213) 694-1234

Richard A. Kamprath*
rkamprath@mckoolsmith.com
Alexandra Easley*
aeasley@mckoolsmith.com
**MCKOOL SMITH, P.C.**
300 Crescent Court, Suite 1200
Dallas, Texas 75201
Telephone: (214) 978-4000
Facsimile: (214) 978-4044

Hannah Mirzoeff*
hmirzoeff@mckoolsmith.com
**MCKOOL SMITH, P.C.**
1301 Avenue of the Americas, 32nd Floor
New York, New York 10019
Telephone: (212) 402-9400
Facsimile: (212) 402-9444

Joshua W. Budwin*
jbudwin@mckoolsmith.com
**MCKOOL SMITH, P.C.**
303 Colorado Street, Suite 2100
Austin, Texas 78701
Telephone: (512) 692-8700
Facsimile: (512) 692-8744

Kevin Burgess*
kburgess@mckoolsmith.com
**MCKOOL SMITH, P.C.**
104 East Houston Street, Suite 300
Marshall, Texas 75670
Telephone: (903) 923-9000
Facsimile: (903) 923-9099

*Pro Hac Vice Applications forthcoming.

*Attorneys for Plaintiffs*

*InterDigital, Inc., InterDigital VC Holdings, Inc., InterDigital Madison Patent Holdings, SAS, and InterDigital CE Patent Holdings, SAS*

**IN THE UNITED STATES DISTRICT COURT**
**CENTRAL DISTRICT OF CALIFORNIA**
**WESTERN DIVISION AT LOS ANGELES**

| | |
|---|---|
| INTERDIGITAL, INC., INTERDIGITAL VC HOLDINGS, INC., INTERDIGITAL MADISON PATENT HOLDINGS, SAS, AND INTERDIGITAL CE PATENT HOLDINGS, SAS,<br><br>Plaintiffs,<br><br>v.<br><br>THE WALT DISNEY COMPANY, DISNEY MEDIA AND ENTERTAINMENT DISTRIBUTION LLC, DISNEY DTC LLC, DISNEY STREAMING SERVICES LLC, DISNEY ENTERTAINMENT & SPORTS LLC, DISNEY PLATFORM DISTRIBUTION, INC., BAMTECH, LLC, HULU, LLC, AND ESPN, INC.,<br><br>Defendants. | **Case No. 2:25-cv-895**<br><br>**COMPLAINT FOR PATENT INFRINGEMENT**<br><br>**JURY TRIAL DEMANDED** |

McKool Smith, P.C.
Los Angeles, CA

McKool Smith, P.C.
Los Angeles, CA

InterDigital, Inc., InterDigital VC Holdings, Inc., InterDigital Madison Patent Holdings, SAS, and InterDigital CE Patent Holdings, SAS (collectively, "Plaintiffs" or "InterDigital") bring this action for patent infringement against The Walt Disney Company; Disney Media and Entertainment Distribution LLC; Disney DTC LLC; Disney Streaming Services LLC; Disney Entertainment & Sports LLC; Disney Platform Distribution, Inc.; BAMTech, LLC; Hulu, LLC; and ESPN, Inc. (collectively, "Defendants" or "Disney"). Plaintiffs, on personal knowledge as to their own acts, and upon information and belief as to all others based on diligent investigation, allege as follows:

## NATURE OF THE ACTION

1. For years, Defendants have directly infringed and continue to infringe the following issued United States Patents: U.S. Patent No. 8,406,301 ("the '301 Patent"); U.S. Patent No. 10,805,610 ("the '610 Patent"); U.S. Patent No. 11,381,818 ("the '818 Patent"); U.S. Patent No. 9,185,268 ("the '268 Patent"); and U.S. Patent No. 8,085,297 ("the '297 Patent") (collectively, the "Asserted Patents") (attached hereto as Exhibits A.1-E.1). Plaintiffs accordingly file this Complaint seeking a judgment of and relief for Defendants' persistent and pervasive infringement of the Asserted Patents.

2. When companies use InterDigital's patented technologies without permission, InterDigital's approach is to engage such companies in good faith with the goal of carefully finding a mutually beneficial solution with them. This solution

usually takes the form of a globally negotiated patent license achieved through a mutual and trusting exchange of technical information and license offers, under the protection of confidentiality in order to resolve the unauthorized patent use by mutual agreement—and without resort to litigation.

3. Keeping with this approach, in July 2022 InterDigital reached out to Disney to request that the parties discuss the licensing of InterDigital's patented technologies used by Disney.

4. Disney is still not authorized to use InterDigital's patents. This Complaint is therefore necessary to put an end to Disney's infringing conduct. Today, Defendants continue their widespread infringement of the Asserted Patents by utilizing the claimed technology that enables the efficiency and efficacy of Defendants' video streaming business.

## THE PARTIES

5. Plaintiff InterDigital, Inc. is a Pennsylvania corporation with its principal place of business at 200 Bellevue Parkway, Suite 300, Wilmington, DE 19809.

6. Plaintiff InterDigital VC Holdings, Inc. is a Delaware corporation with its principal place of business at 200 Bellevue Parkway, Suite 300, Wilmington, DE 19809. InterDigital VC Holdings, Inc. is a wholly owned subsidiary of InterDigital, Inc.

7. Plaintiff InterDigital Madison Patent Holdings, SAS is a French société par actions simplifiée (simplified joint stock company) with its principal place of

business at 3 Rue du Colonel Moll, Paris, France 75017. InterDigital Madison Patent Holdings, SAS is a wholly owned subsidiary of InterDigital, Inc.

8. Plaintiff InterDigital CE Patent Holdings, SAS is a French société par actions simplifiée (simplified joint stock company) with its principal place of business at 3 Rue du Colonel Moll, Paris, France 75017. InterDigital CE Patent Holdings, SAS is a wholly owned subsidiary of InterDigital, Inc.

9. Defendant The Walt Disney Company is a Delaware corporation with a principal place of business at 500 South Buena Vista Street, Burbank, California, 91521. The Walt Disney Company has designated CSC–Lawyers Incorporating Service, 2710 Gateway Oaks Drive, Sacramento, California 95833 as its agent for service of process. On information and belief, The Walt Disney Company is the parent company that manages and directs operations, together with its subsidiaries, for all Disney video streaming entities.[1]

10. Defendant Disney Media and Entertainment Distribution LLC is a Delaware limited liability company with a principal place of business at 500 South Buena Vista Street, Burbank, California 91521. Disney Media and Entertainment Distribution LLC has designated CSC–Lawyers Incorporating Service, 2710 Gateway Oaks Drive, Sacramento, California 95833 as its agent for service of process. On information and belief, Disney Media and Entertainment Distribution LLC is an indirectly wholly owned subsidiary of the Walt Disney Company that handles profit

[1] The Walt Disney Co., Annual Report (Form 10-K), at 2 (Nov. 14, 2024).



McKool Smith, P.C.
Los Angeles, CA

and loss management, distribution, operations, sales, advertising, data, and technology function for the Disney+, Hulu, Hulu Live, and ESPN+ video streaming services.[2]

11. Defendant Disney DTC LLC is a Delaware limited liability company with a principal place of business at 500 South Buena Vista Street, Burbank, California 91521. Disney DTC LLC has designated CSC–Lawyers Incorporating Service, 2710 Gateway Oaks Drive, Sacramento, California 95833 as its agent for service of process.[3] On information and belief, Disney DTC LLC is an indirectly wholly owned subsidiary of The Walt Disney Company that is responsible for content planning and management, third party media sales efforts, affiliate marketing, affiliate related business operations, contract negotiation for distribution deals, and procuring content delivery network and cloud computing for the Disney+, Hulu, Hulu Live, and ESPN+ video streaming services.[4]

McKool Smith, P.C.
Los Angeles, CA

---

[2] *The Walt Disney Company Announces Strategic Reorganization Of Its Media and Entertainment Businesses*, The Walt Disney Company (Oct. 12, 2020), https://thewaltdisneycompany.com/the-walt-disney-company-announces-strategic-reorganization-of-its-media-and-entertainment-businesses/; *Adeia Techs. Inc. et al. v. The Walt Disney Company et al.*, No. 1:24-cv-01231 (D. Del. 2024), Dkt. 18 at 1.

[3] Public filings indicate that Disney DTC LLC may now be known as Disney Platform Distribution, Inc. *See e.g.*, *In re Disney DTC, LLC*, No. 05-23-00485-CV, 2024 WL 358117 (Tex. App. Jan. 31, 2024). On this basis, all allegations relating to Disney DTC LLC shall also apply to Disney Platform Distribution, Inc.

[4] The "Terms of Use" page on the ESPN website links to a Disney webpage that states, "Disney DTC LLC and/or its affiliates and subsidiaries (collectively, 'Disney' 'we' or 'us') are pleased to provide to you certain websites, software, applications, content, products, and services in any media format or channel, now known or hereafter devised ('Disney Products' and 'Products'), which may be branded Disney, ABC, ESPN, Marvel, Pixar, Lucasfilm, FX, Searchlight Pictures, 20th Century Studios, National Geographic, or another brand owned or licensed by Disney." *Terms of Use*, The Walt Disney Company (May 24, 2024), https://disneytermsofuse.com/english/. *See also Adeia Techs. Inc. et al. v. The Walt Disney Company et al.*, No. 1:24-cv-01231 (D. Del. 2024), Dkt. 18 at 1.

12. Defendant Disney Streaming Services LLC ("DSS") is a Delaware limited liability company with a principal place of business at 500 South Buena Vista Street, Burbank, California 91521. Disney Streaming Services LLC has designated CSC–Lawyers Incorporating Service, 2710 Gateway Oaks Drive, Sacramento, California 95833 as its agent for service of process. On information and belief, Disney Streaming Services LLC is an indirectly wholly owned subsidiary of the Walt Disney Company and provides financial and marketing functions for the Disney+, Hulu, Hulu Live, and ESPN+ video streaming services.[5]

13. Disney Entertainment & Sports LLC ("DES"), formerly known as Disney Streaming Technology LLC and/or Disney Technology LLC,[6] is a Delaware limited liability company with a principal place of business at 500 South Buena Vista Street, Burbank, California 91521. Disney Entertainment & Sports LLC has designated CSC–Lawyers Incorporating Service, 2710 Gateway Oaks Drive, Sacramento, California 95833 as its agent for service of process. On information and belief, Disney Entertainment & Sports LLC is an indirectly wholly owned subsidiary of the Walt

[5] Disney Streaming Services, LLC is listed as the distribution entity for both Disney+ and ESPN+ on the Disney website. *The Walt Disney Family of Companies*, THE WALT DISNEY COMPANY, https://privacy.thewaltdisneycompany.com/en/company-overview/. *See also Adeia Techs. Inc. et al. v. The Walt Disney Company et al.*, No. 1:24-cv-01231 (D. Del. 2024), Dkt. 18 at 2.

[6] Delaware and California public filings indicate that Disney Entertainment & Sports LLC was previously called Disney Streaming Technology LLC and/or Disney Technology LLC. For the avoidance of doubt, and with the goal to provide adequate notice to the appropriate party, all allegations relating to Disney Entertainment & Sports LLC shall also apply to Disney Streaming Technology LLC and Disney Technology LLC, and vice versa.



McKOOL SMITH, P.C.
LOS ANGELES, CA

Disney Company and design and maintains the websites for the Disney+, Hulu, Hulu Live, and ESPN+ video streaming services.[7]

14. Defendant Disney Platform Distribution, Inc. ("DPD") is a Delaware corporation with a principal place of business at 500 South Buena Vista Street, Burbank, California 91521. Disney Platform Distribution, Inc. has designated CSC–Lawyers Incorporating Service, 2710 Gateway Oaks Drive, Sacramento, California 95833 as its agent for service of process. On information and belief, Disney Platform Distribution, Inc. is an indirectly wholly owned subsidiary of The Walt Disney Company that manages distribution efforts, affiliate marketing, affiliate-related business operations, contract negotiation, content delivery networks, and cloud computing services for the Disney+, Hulu, Hulu Live, and ESPN+ video streaming services.[8]

15. Defendant BAMTech, LLC ("BAMTech") is a Delaware limited liability company with a principal place of business at 1211 Avenue of the Americas, New York, New York 10036. BAMTech, LLC has designated CSC–Lawyers Incorporating Service, 2710 Gateway Oaks Drive, Sacramento, California 95833 as its agent for service of process. On information and belief, BAMTech, LLC is an indirect

[7] *See Adeia Techs. Inc. et al. v. The Walt Disney Company et al.*, No. 1:24-cv-01231 (D. Del. 2024), Dkt. 18 at 2.

[8] The subscriber agreement for Disney+, ESPN+, and Hulu is hosted on a Disney webpage and refers to Disney Platform Distribution, Inc. as a relevant entity. *Disney+, ESPN+, and Hulu Subscriber Agreement*, DISNEY+ (Jan. 27, 2025), https://www.disneyplus.com/legal/subscriber-agreement. *See also Adeia Techs. Inc. et al. v. The Walt Disney Company et al.*, No. 1:24-cv-01231 (D. Del. 2024), Dkt. 18 at 2.



McKool Smith, P.C.
Los Angeles, CA

subsidiary of The Walt Disney Company, which owns 80% of BAMTech, and Hearst Brazil, Inc., a subsidiary of The Hearst Corporation, which owns the remaining 20% of BAMTech.[9] On information and belief, BAMTech, LLC is responsible for developing and maintaining the ESPN+ website,[10] in addition to providing technology that is used in connection with the Disney+, Hulu, and ESPN+ video streaming services.[11]

16. Defendant Hulu, LLC ("Hulu") is a Delaware limited liability company with a principal place of business at 2500 Broadway, Santa Monica, California 90404. Hulu, LLC has designated CSC–Lawyers Incorporating Service, 2710 Gateway Oaks Drive, Sacramento, California 95833 as its agent for service of process. On information and belief, Hulu, LLC is an indirect subsidiary of the Walt Disney Company, which owns 66.67% of Hulu, and Comcast Hulu Holdings, LLC, a subsidiary of Comcast Corporation, which owns the remaining 33.33% of Hulu.[12] On

[9] *Adeia Techs. Inc. et al. v. The Walt Disney Company et al.*, No. 1:24-cv-01231 (D. Del. 2024), Dkt. 18 at 2.

[10] The Walt Disney Co., Annual Report (Form 10-K), at 89 (Nov. 14, 2024) (stating that The Walt Disney Company purchased MLB's 15% interest in BAMTech LLC in November 2022). The "Privacy Policy" tab on the BAMTech website links to a page on a Disney website. *See Company Timeline*, BAMTECH, LLC, https://www.bamtechmedia.com/. The subscriber agreement for Disney+, ESPN+, and Hulu is hosted on a Disney webpage and refers to BAMTech, LLC as a relevant entity. *Disney+, ESPN+, and Hulu Subscriber Agreement*, DISNEY+ (Jan. 27, 2025), https://www.disneyplus.com/legal/subscriber-agreement.

[11] Alex Werpin, *Disney Pays $900M for MLB's Remaining Stake in Streaming Company BAMTech*, HOLLYWOOD REP. (Nov. 29, 2022), https://www.hollywoodreporter.com/business/digital/disney-pays-900m-for-bamtech-1235271788/.

[12] *Adeia Techs. Inc. et al. v. The Walt Disney Company et al.*, No. 1:24-cv-01231 (D. Del. 2024), Dkt. 18 at 2.



McKool Smith, P.C.
Los Angeles, CA

information and belief, Hulu, LLC operates the Hulu and Hulu Live video streaming services.[13]

17. Defendant ESPN, Inc. ("ESPN") is a Delaware corporation with a principal place of business at ESPN Plaza, Bristol, Connecticut 06010. ESPN, Inc. has designated CSC–Lawyers Incorporating Service, 2710 Gateway Oaks Drive, Sacramento, California 95833 as its agent for service of process. On information and belief, ESPN, Inc. is an indirect subsidiary of the Walt Disney Company, which owns 80% of ESPN, and Hearst Brazil, Inc., a subsidiary of The Hearst Corporation, which owns the remaining 20% of ESPN.[14] On information and belief, ESPN, Inc. manages and operates the ESPN+ video streaming service.[15]

## JURISDICTION AND VENUE

18. This action includes claims of patent infringement arising under the patent laws of the United States, 35 U.S.C. §§ 1 et seq. This Court has subject matter jurisdiction over this action pursuant to 28 U.S.C. §§ 1331 and 1338(a).

19. Defendants are subject to this Court's personal jurisdiction consistent with the principles of due process and/or the California Long Arm Statute. This Court

[13] The Walt Disney Co., Annual Report (Form 10-K), at 88-89 (Nov. 14, 2024) (stating that The Walt Disney Company owns 67% of Hulu and purchased NBC Universal's 33% interest in Hulu in November 2023, however the acquisition is not yet complete). The "Privacy Policy" tab on the Hulu website links to a page on a Disney website. *See* HULU, https://www.hulu.com/welcome.

[14] *Adeia Techs. Inc. et al. v. The Walt Disney Company et al.*, No. 1:24-cv-01231 (D. Del. 2024), Dkt. 18 at 2.

[15] The Walt Disney Co., Annual Report (Form 10-K), at 7 (Nov. 14, 2024) (stating that ESPN is 80% owned by the Walt Disney Company). The "Terms of Use" tab on the ESPN website links to a page on a Disney website. *See* ESPN, https://www.espn.com/.



McKool Smith, P.C.
Los Angeles, CA

has general personal jurisdiction over Defendants because each of their affiliations with the State of California are so systematic and continuous to render each Defendant at home in California.

20. This Court also has specific personal jurisdiction over Defendants because each Defendant has sufficient minimum contacts and/or has engaged in continuous and systematic activities in the forum due to business conducted within California, including in the Central District of California. Personal jurisdiction also exists over Defendants because each Defendant, directly or through subsidiaries, makes, uses, sells, offers for sale, imports, advertises, makes available, and/or markets products and/or services within California, including in the Central District of California, that infringe one or more claims of the Asserted Patents. Further, on information and belief, Defendants have placed or contributed to placing infringing products and/or services into the stream of commerce knowing or understanding that such products and/or services would be sold and used in the United States, including in this District. Defendants are registered to do business in California and maintain agents authorized to receive service of process within California.

21. Venue is proper in the Central District of California pursuant to 28 U.S.C. §§ 1391(b)-(c) and/or 1400(b) because Defendants have committed acts of infringement in this District and have regular and established places of business in this District. By way of example and without limitation, Defendants make, use, sell, offer to sell, and/or import products and/or services that are accused of infringing the

Asserted Patents into and/or within this District. Defendants further maintain a permanent and/or continuing presence within this District.

22. Defendants maintain multiple places of business within this District. For example, Defendants The Walt Disney Company, Disney Entertainment & Sports LLC, and Disney Streaming Services LLC, all maintain an office in this District at 500 South Buena Vista Street, Burbank, California 91521.

23. Moreover, Defendant ESPN, Inc. maintains an office within the Central District of California, located at 800 W. Olympic Blvd., Los Angeles, California 90015.

24. Defendant Hulu, LLC maintains its headquarters at 2500 Broadway, Santa Monica, California 90404.

25. Defendants have solicited business in the Central District of California, have transacted business within this District, and have attempted to derive financial benefit from the residents of this District, including benefits directly related to Defendants' infringement of the Asserted Patents.

26. In a recent action, Defendants The Walt Disney Company, Disney Streaming Services LLC, Disney Entertainment & Sports LLC, Disney Platform Distribution, Inc., BAMTech, LLC, Hulu, LLC, and ESPN, Inc. admitted that the Central District of California is a proper venue for patent infringement actions brought against them. *See WAG Acquisition, LLC v. The Walt Disney Company et al.*, No. 2:21-cv-08230 (C.D. Cal. 2021), Dkt. 74 ¶ 3 ("Disney admits that it has a regular and

established place of business in the District and that, in this case, venue is proper in the District."); *Id.* at Dkt. 90 ¶ 3 ("DSS and Hulu admit that they have a regular and established place of business in the District and that, in this case, venue is proper in the District."); *Id.* at Dkt. 99 ¶ 3 ("[DES], DPD, ESPN, and BAMTech admit they have a regular and established place of business in the District and that, in this case, venue is proper in the District."); *InCom Corporation v. The Walt Disney Company et al.*, No 2:15-cv-03011 (C.D. Cal. 2015), Dkt. 43 ¶¶ 2, 6 ("Defendants admit that TWDC is a corporation organized under the laws of the State of Delaware and has its principal place of business at 500 S. Buena Vista Street, Burbank, California. . . . TWDC admits that venue is proper under 28 U.S.C. § 1400(b) with respect to TWDC.").

## FACTUAL BACKGROUND

### A. *InterDigital & Its Persisting Innovation*

27. InterDigital is one of the most successful and innovative research and development companies of the last half century, both domestically and globally. As a dynamic and groundbreaking engineering company, for more than fifty years InterDigital has been at the forefront of developing foundational video, wireless communication, and other digital technologies.

28. Every year, InterDigital pours a massive amount of money into its world-class research and IP portfolio development engine. For example, in the most recently reported fiscal year alone, InterDigital reinvested well over nine figures—a sum

representing nearly *50% of its recurring revenues*—back into this cycle of innovation. At its facilities throughout the United States, and its bespoke video research laboratories in Rennes, France, InterDigital researches, develops, engineers, and licenses advanced video-related innovations as well as other cutting-edge technology. As discussed in further detail below, InterDigital has designed and developed a range of key technologies instrumental to video coding and related implementation techniques.

29. InterDigital and its employees' technical contributions have been recognized the world over. Its employees have held or currently hold more than 100 significant leadership positions on global industry-leading standard setting bodies. InterDigital has also won many awards for its technical discoveries. As just one example, InterDigital has been named as one of the world's 100 most innovative businesses by LexisNexis for the past three years.[16] InterDigital is one of the world's largest pure research and innovation companies, and relies heavily on the cycle of invention to enable its future research and development efforts. In particular, InterDigital relies on obtaining fair compensation for its novel contributions to

[16] *See Innovation Momentum 2022: The Global Top 100*, LEXISNEXIS (Jan. 18, 2022), https://go.lexisnexisip.com/hubfs/~IP%20-%20Intellectual%20Property%20Files/IP%20-%20PatentSight/2022%20Innovation%20Momentum%20Report/LexisNexis%20Innovation%20Momentum%20Report%202022.pdf; *Innovation Momentum 2023: The Global Top 100*, LEXISNEXIS (Jan. 2023), https://www.lexisnexisip.com/wp-content/uploads/2024/02/LexisNexis-Innovation-Momentum-Report-2023.pdf; *Innovation Momentum 2024: The Global Top 100*, LEXISNEXIS (Jan. 2024), https://go.lexisnexisip.com/hubfs/LexisNexis-Innovation-Momentum-Report-2024.pdf?hsCtaTracking=b73d2358-7d13-4732-afc6-e8a25be14c30%7C0b8f3fb0-888a-43b3-b2f6-70a6a3d96d87.



McKOOL SMITH, P.C.
LOS ANGELES, CA

technological advancement in multiple industry segments, including in video coding, to fund its ongoing work breaking new ground for implementers and consumers alike.

30. InterDigital has a portfolio of over 33,000 patent assets, with a strong emphasis on wireless and video technologies. More specifically, InterDigital has approximately 6,800 patents in its video portfolio, with over 3,500 patents and applications relating to current and developing codec technologies such as AVC, HEVC, VP9, AV1, and VVC.[17] InterDigital also has a portfolio of video-related patents including those related to improved dynamic range, "trick play" operations, and many other improvements to the user video experience.

**B. *Video Coding Technology***

31. Video coding technology refers to encoding video into a compressed form and decoding video so that it can be displayed and viewed by a user. This technology allows efficient transmission of video while at the same time maximizing quality.

32. In digital video, video content is represented by a series of images (called "frames"), which are displayed in sequence one after another to produce the illusion of motion. A frame is composed of many picture elements ("pixels"), which represent the smallest addressable unit of a digital video. These pixels are arranged in a grid, the resolution of which is expressed in terms of the number of pixels in the horizontal and

[17] InterDigital was recently ranked as a top ten video codec patent owner by LexisNexis. *See Who is Leading the VVC Patent Race?*, LEXISNEXIS (June 2024), https://www.lexisnexisip.com/wp-content/uploads/2024/08/LexisNexis-VVC-Report-2024.pdf?hsCtaAttrib=171211671835.



McKOOL SMITH, P.C.
LOS ANGELES, CA

vertical directions for each frame. For example, video with frames 1,920 pixels wide by 1,080 pixels high may be referred to as 1920x1080 or "1080p."

33. A pixel indicates the color of the portion of the frame it represents in terms of three color components. For example, a pixel may encode the red, green, and blue ("RGB") values of a unit of a frame or, equivalently, may encode the luminance, blue chrominance, and red chrominance ("YCbCr") components of a unit of a frame. Each of these components can be expressed as a collection of bits. For example, in 8-bit video each color component can take a value from 0 to 255 (*i.e.*, from 0 to $2^8$–1) with 0 indicating the minimum amount of that component and 255 indicating the maximum. Thus, a black pixel would have the color components [0, 0, 0] and a white pixel would have the components [255, 255, 255]. Higher bit-depths, *e.g.*, 10-bit video, allow a wider range of colors to be represented—but require commensurately greater information per pixel.

34. Modern digital video typically consists of frames displayed at a rate of around 30 frames per second ("fps"), allowing the total amount of data required for a single second of video to be calculated. For an 8-bit 1080p video at 30 fps, each pixel requires 24 bits (3 components x 8 bits), and each frame consists of 1920x1080 or 2,073,600 pixels, representing a total of 49,766,400 bits. Given a frame rate of 30 fps, just one second of raw video would require transmitting or storing nearly 1.5 *billion* bits, or about 187 megabytes of data. The large amount of information required to store or transmit digital video is a fundamental problem, which experts in the field



McKool Smith, P.C.
Los Angeles, CA

have aimed to solve by introducing a range of video encoders and decoders, often referred to as a "codecs" ("**co**der/**dec**oder"), which allow video to be compressed prior to storage and transmission then later decompressed prior to display. Video codecs take advantage of mathematical and statistical techniques to eliminate redundancy in digital video and reduce the amount of information that must be stored and transmitted to reproduce its content. Modern video codecs are very efficient, allowing consumers of digital video to store many hours of content on disk or to stream digital video directly to their TVs, computers, tablets, smartphones, and other devices over the internet.

35. One example of modern video coding is Advanced Video Coding ("AVC"), also referred to as H.264.[18] AVC describes a format for decompressing video data that attempts to maximize both efficiency and quality. AVC takes advantage of many different techniques for removing redundant information, allowing digital video to be represented using significantly less information than would be required for raw video as discussed above. AVC can achieve a compression ratio of 1000:1, meaning that an AVC-encoded video may require only a thousandth as much information relative to a raw, uncompressed, video sequence. AVC is widely used today, with the majority of video streamed on the internet being transmitted in an AVC-compliant bitstream.

[18] This nomenclature comes from AVC being part of the "H-Series Recommendations" of MPEG-4 Part 10, which are subcategorized into H.200 through H.499.

36. Another modern video codec is High Efficiency Video Coding ("HEVC"), the successor to AVC. HEVC, also referred to as H.265, takes advantage of many similar concepts to AVC and includes numerous advancements upon the prior technology, which allow for even more significant compression of digital video. HEVC can achieve 25-50% more compression than AVC without sacrificing video quality. As consumers of digital video come to expect higher resolution video at greater bit-depths, HEVC has steadily gained traction in the market as producers of digital video adopt the more efficient compression techniques that it enables.

37. InterDigital is one of the top technological contributors to video coding standards such as AVC and HEVC. For example, InterDigital's foundational contributions to HEVC have been adopted in technologies covering important elements of the decoding standard, including HEVC core, HEVC High Level Syntax, scalable coding, supplemental enhancement information messaging, and screen content coding.

38. By way of useful context, absent InterDigital's foundational contributions to the video coding technology used by today's video streaming services, an uncompressed 4K movie with a run time of 130 minutes would take over *four and one half days* to download at modern internet download speeds. In terms of raw data, this uncompressed 130-minute film roughly translates to 11,600 GB of data. Utilizing the advanced video codecs that implement and rely upon InterDigital's

innovations, this same 130-minute film can be reduced to approximately 14 GB—and can be downloaded in a matter of minutes.

**C. *Defendants' Infringing Streaming Services***

39. The streaming services that collectively infringe the Asserted Patents (as set forth in detail below) are Disney+, Hulu, Hulu Live (sometimes referred to as Hulu + Live TV), and ESPN+. These may sometimes be referred to herein as the Accused Instrumentalities.

40. Disney+ is a standalone service for streaming on-demand media content from Disney, Pixar, Marvel, Star Wars, and National Geographic. The Disney+ service also provides access to certain on-demand media content from Hulu for certain subscribers. A Disney+ subscription includes access to the Disney+ content available in the subscriber's geographic region and personalized recommendations. There are over 500 films, 15,000 episodes, and 80 Disney+ "Originals" available on Disney+.[19] The subscription allows users to stream across multiple supported devices at once.[20] Disney+ supports streaming on web browsers, mobile devices, tablets, streaming sticks, gaming consoles, smart TVs, and set-top boxes.[21]

[19] *See Getting started with Disney+*, DISNEY+ HELP CENTER, https://help.disneyplus.com/article/disneyplus-en-us-introduction.
[20] *Id.*
[21] *Id.*



McKool Smith, P.C.
Los Angeles, CA

41. Disney+ uses AVC and HEVC to stream video[22] and to deliver 3D movies. Disney+ uses multiple content delivery networks ("CDN").

42. For example, the following HTTP request & response captured during Disney+ viewing include HTTP headers that indicate use of the BAMTech Media platform and the Amazon Web Services ("AWS") CloudFront CDN.

```
POST https://disney.playback.edge.bamgrid.com/widevine/v1/obtain-license HTTP/1.1
Host: disney.playback.edge.bamgrid.com
Connection: keep-alive
Content-Length: 4205
sec-ch-ua: "Chromium";v="128", "Not;A=Brand";v="24", "Microsoft Edge";v="128"
sec-ch-ua-platform: "Windows"
X-BAMSDK-Client-ID: disney-svod-3d9324fc
X-Application-Version: 1.1.2
sec-ch-ua-mobile: ?0
Authorization: Bearer
eyJ6aXAiOiJERUYiLCJraWQiOiJ0Vy10M2ZQUTJEN2Q0YlBWTU1rSkd4dkJlZ0ZXQkdXek5KcFFtOGRJM
WYwI
<truncated for brevity>
X-BAMSDK-Platform: javascript/chromium/edge
X-BAMSDK-Version: 28.4
X-Request-ID:
X-DSS-Edge-Accept: vnd.dss.edge+json; version=2
Accept: */*
Origin: https://www.disneyplus.com
Sec-Fetch-Site: cross-site
Sec-Fetch-Mode: cors
Sec-Fetch-Dest: empty
Referer: https://www.disneyplus.com/
Accept-Encoding: gzip, deflate, br, zstd
Accept-Language: en-US,en;q=0.9

HTTP/1.1 200 OK
Content-Type: application/octet-stream
Connection: keep-alive
Date: Wed, 18 Sep 2024 15:52:52 GMT
x-bamtech-widevine-was-proxied: false
X-BAMTECH-MDRM-TRANSACTION-ID: 5686152028378383882
x-datadog-trace-id: 5686152028378383882
vary: origin, access-control-request-headers
access-control-allow-origin: https://www.disneyplus.com
access-control-allow-methods: GET, POST, PUT, PATCH, DELETE, OPTIONS
```

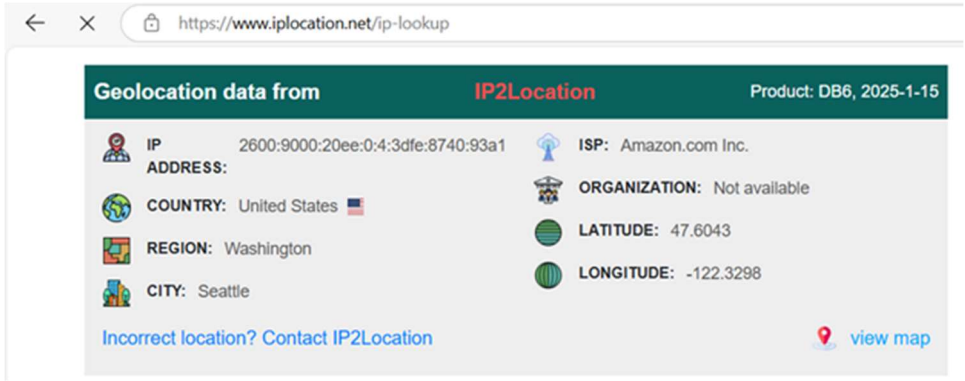
[22] *Google, Netflix & YouTube to require AV1 video decoding support*, FLATPANELSHD (Feb. 11, 2021), https://www.flatpanelshd.com/news.php?subaction=showfull&id=1613043929#:~:text=AV1%20is%20gaining%20momentum,under%20'OS%20&%20features'.



McKOOL SMITH, P.C.
LOS ANGELES, CA

```
access-control-allow-credentials: true
access-control-expose-headers: x-request-id, x-bamtech-region, date
access-control-max-age: 600
x-bamtech-region: us-east-1
cache-control: no-store
X-Cache: Miss from cloudfront
Via: 1.1 80246b01173b7304bbc7804bfe173f32.cloudfront.net (CloudFront)
X-Amz-Cf-Pop: BOS50-C2
X-Amz-Cf-Id: dYqC_wDLTJ8fQFZImvZBTeZ1wgTrIg-gSiiwQgQaMRzkZ-2XxIGxhQ==
Content-Length: 647
```

43. The IP address for host "disney.playback.edge.bamgrid.com" resolved to IPV6 address 2600:9000:20ee:0:4:3dfe:8740:93a1, confirmed to be an Amazon network address with iplocation.net.



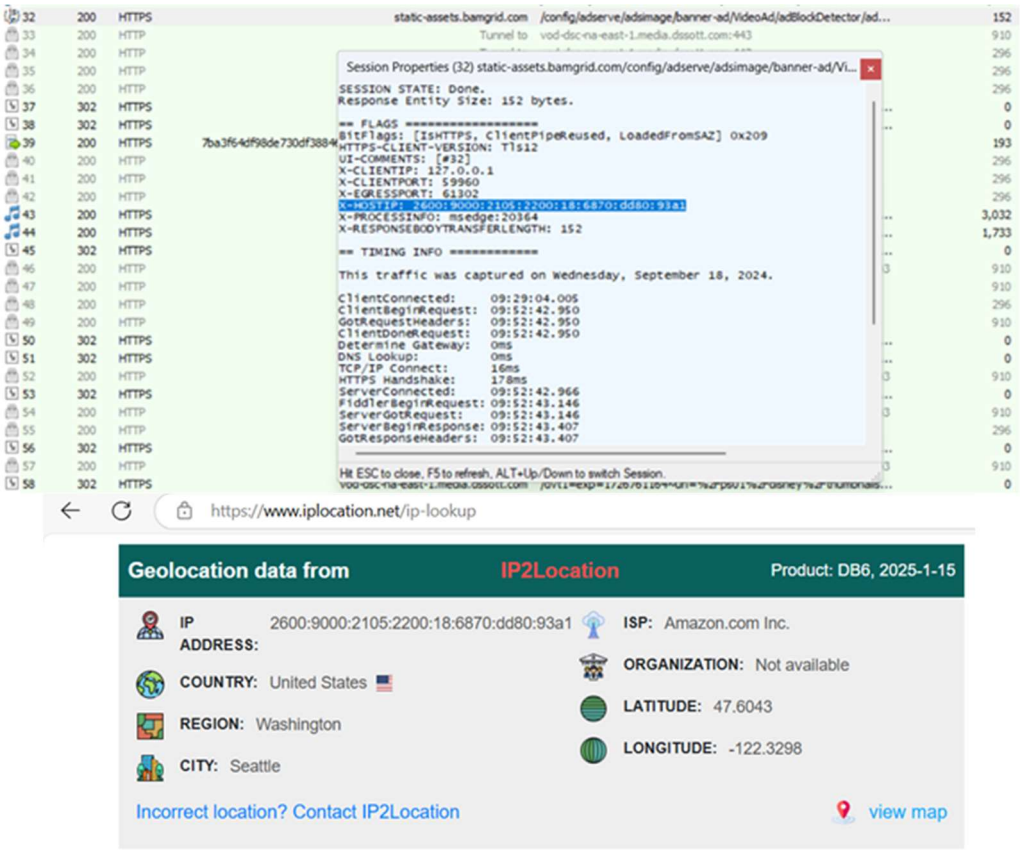

44. As another example, the following HTTP request & response captured during VOD viewing for the same content item include HTTP headers that indicate use of the AWS CloudFront CDN with an S3 bucket origin.



McKool Smith, P.C.
Los Angeles, CA

```
GET https://static-assets.bamgrid.com/config/adserve/adsimage/banner-
ad/VideoAd/adBlockDetector/ads.c9b27fd9a37506f0a7de49b2c12ee4b1.json?1024251
HTTP/1.1
Host: static-assets.bamgrid.com
Connection: keep-alive
sec-ch-ua: "Chromium";v="128", "Not;A=Brand";v="24", "Microsoft Edge";v="128"
sec-ch-ua-mobile: ?0
Accept: */*
Origin: https://www.disneyplus.com
Sec-Fetch-Site: cross-site
Sec-Fetch-Mode: cors
Sec-Fetch-Dest: empty
Referer: https://www.disneyplus.com/
Accept-Encoding: gzip, deflate, br, zstd
Accept-Language: en-US,en;q=0.9
HTTP/1.1 200 OK
Content-Type: application/json
Content-Length: 152
Connection: keep-alive
Access-Control-Allow-Origin: *
Access-Control-Allow-Methods: HEAD, GET
Access-Control-Max-Age: 3000
x-amz-replication-status: COMPLETED
Last-Modified: Wed, 28 Aug 2024 21:28:03 GMT
x-amz-server-side-encryption: AES256
x-amz-version-id: GIxg7pW2ypARe4_h35xA621qBJ1sCZ3E
Accept-Ranges: bytes
Server: AmazonS3
Date: Wed, 18 Sep 2024 15:51:31 GMT
Cache-Control: max-age=300
ETag: "c9b27fd9a37506f0a7de49b2c12ee4b1"
Vary: Accept-Encoding,Origin,Access-Control-Request-Headers,Access-Control-
Request-Method
X-Cache: Hit from cloudfront
Via: 1.1 0a84f3fd72c51aed32833055c4b982d2.cloudfront.net (CloudFront)
X-Amz-Cf-Pop: BOS50-C3
X-Amz-Cf-Id: 4OVu74LjNJzWx3YSFp-QRd-IZKvSKxbtY5bA5UJQzW1vx685hScB7w==
Age: 75
Timing-Allow-Origin: *
```

45. The IP address for host "static-assets.bamgrid.com" resolved to IPV6 address 2600:9000:2105:2200:18:6870:dd80:93a1, confirmed to be an Amazon network address with iplocation.net.



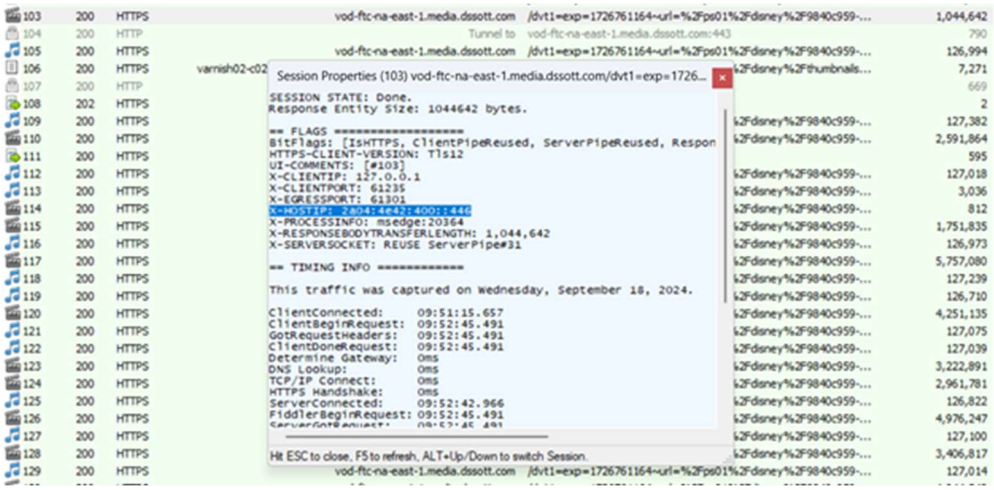

46. As another example, the following HTTP request & response for a media segment captured during VOD viewing for the same content item show the host name of "vod-ftc-na-east-1.media.dssott.com," which resolved to IP address 2a04:4e42:400::446 in the Fastly CDN.

```
GET https://vod-ftc-na-east-1.media.dssott.com/dvt1=exp=1726761164~url=%2Fps01%2Fdisney%2F9840c959-0358-42d9-99ef-28dd6b203104%2F~psid=9fc43352-fa30-48c6-8084-054d1646121f~aid=1cc37dd4-c033-4cef-bd0c-6b59e0e4469c~did=86fc37c8-81a8-4384-a0b9-a9334d05e962~kid=k01~hmac=776e55434d8544280996b9a91cda205b880c28aa84d4ab48ce6b9985bc98062d/ps01/disney/9840c959-0358-42d9-99ef-28dd6b203104/r/2bb19660-d7fc-44da-bb37-29ef0680c226/22f7-MAIN/02/2400K/00/00/00_000.mp4?CMCD=bl%3D3000%2Cbr%3D0%2Cd%3D8000%2Cdl%3D2999%2Cnor%3D%22%2Fps01%2Fdisney%2F9840c959-0358-42d9-99ef-28dd6b203104%2Fr%2F2bb19660-d7fc-44da-bb37-29ef0680c226%2F22f7-MAIN%2F02%2F2400K%2F00%2F00%2F08_000.mp4%22%2Cot%3Dv%2Cpr%3D1%2Csf%3Dh%2Cst%3Dv%2Csu%3Dfalse HTTP/1.1
Host: vod-ftc-na-east-1.media.dssott.com
Connection: keep-alive
sec-ch-ua: "Chromium";v="128", "Not;A=Brand";v="24", "Microsoft Edge";v="128"
sec-ch-ua-mobile: ?0
Accept: */*
Origin: https://www.disneyplus.com
```



McKool Smith, P.C.
Los Angeles, CA

```
Sec-Fetch-Site: cross-site
Sec-Fetch-Mode: cors
Sec-Fetch-Dest: empty
Referer: https://www.disneyplus.com/
Accept-Encoding: gzip, deflate, br, zstd
Accept-Language: en-US,en;q=0.9

HTTP/1.1 200 OK
Connection: keep-alive
Content-Length: 1044642
Content-Type: video/mp4
Expires: Fri, 08 Nov 2024 15:45:46 GMT
Last-Modified: Fri, 02 Aug 2024 02:01:27 GMT
X-MinIO-Node: 10.166.100.117:9000
x-dss-orig-etag: "583fb47d7a35267940c5d3c1caf08a42"
Etag: "583fb47d7a35267940c5d3c1caf08a42"
X-backend: D+
X-DSS-EXT-LB: lb04-ext01-gv-las1.prod.dssinfra.com
x-dss-int-os: varnish09-vod01-gen MISS (REQ-ID: 291174574 CLIENT-ID: 10.166.96.4)
x-dss-precached: true
x-dss-precache: duration: 1209600s, grace: 399168.000, ttl: 787152.375
x-dss-cr-status: (hit)
x-dss-debug-cr-status: (varnish14.c03.mt.gen.lax1.prod.dssott.net)(hit)
x-dss-ttl: 473083.790
x-dss-grace: 399168.000
x-dss-keep: 0.000
Cache-Control: max-age=5184000, s-maxage=86400
x-dss-s-maxage: 86400
x-dss-store: size
x-dss-media-id: 9840c959-0358-42d9-99ef-28dd6b203104
x-dss-property: DIS-VOD-SHIELD
X-ds-cache: pass (edge:varnish01.c03.mt.gen.lax1.prod.dssott.net) 5
(shield:varnish14.c03.mt.gen.lax1.prod.dssott.net)
X-ds-hits: 5
x-dss-tracing: varnish14.c03.mt.gen.lax1.prod.dssott.net/404558194
113733765,varnish01.c03.mt.gen.lax1.prod.dssott.net/298400186
Via: 1.1 varnish, 1.1 varnish, 1.1 varnish
Accept-Ranges: bytes
Age: 30319
Date: Wed, 18 Sep 2024 15:52:47 GMT
X-Served-By: cache-dca-kcgs7200228-DCA, cache-iad-kiad7000093-IAD, cache-bos4630-
BOS
X-Cache: MISS, HIT, HIT
X-Cache-Hits: 0, 13, 0
X-Timer: S1726674767.402340,VS0,VE1
access-control-allow-methods: GET, HEAD, OPTIONS
access-control-allow-credentials: true
access-control-allow-headers: Origin, X-Requested-With, Content-Type,
Authorization, Accept, Range, X-Dss-Baseurl
access-control-expose-headers: X-Dss-Baseurl
access-control-max-age: 600
access-control-allow-origin: https://www.disneyplus.com
```



47. As another example, the following HTTP request & response for a media segment captured during live viewing of the Disney Channel stream include HTTP headers that indicate use of the Akamai CDN.

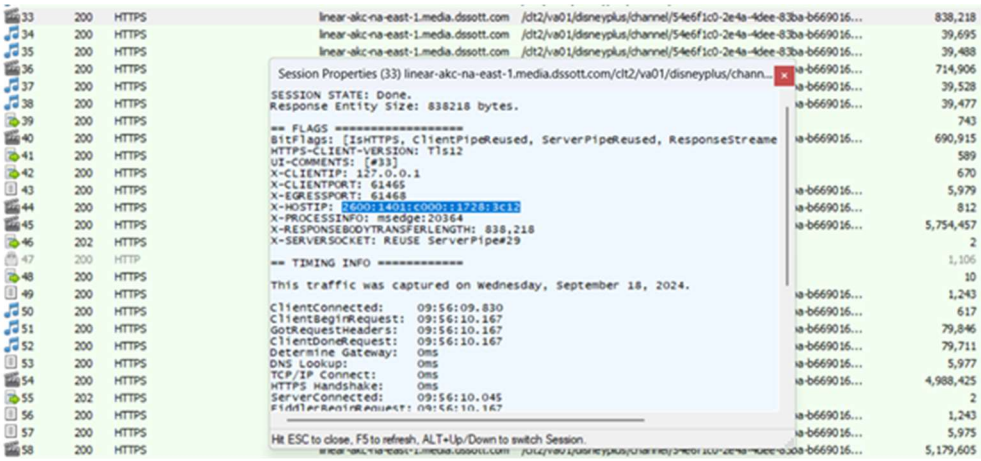
```
GET https://linear-akc-na-east-1.media.dssott.com/clt2/va01/disneyplus/channel/54e6f1c0-2e4a-4dee-83ba-b6690163c574-1726093874063/cmaf-cenc-ctr-1200K/262/15/55/45_807.mp4?CMCD=bl%3D0%2Cbr%3D0%2Cbs%2Cd%3D5005%2Cdl%3D0%2Cnor%3D%22%2Fclt2%2Fva01%2Fdisneyplus%2Fchannel%2F54e6f1c0-2e4a-4dee-83ba-b6690163c574-1726093874063%2Fcmaf-cenc-ctr-1200K%2F262%2F15%2F55%2F50_812.mp4%22%2Cot%3Dv%2Cpr%3D0%2Csf%3Dh%2Cst%3Dv%2Csu HTTP/1.1
Host: linear-akc-na-east-1.media.dssott.com
Connection: keep-alive
sec-ch-ua: "Chromium";v="128", "Not;A=Brand";v="24", "Microsoft Edge";v="128"
sec-ch-ua-mobile: ?0
Accept: */*
Origin: https://www.disneyplus.com
Sec-Fetch-Site: cross-site
Sec-Fetch-Mode: cors
Sec-Fetch-Dest: empty
Referer: https://www.disneyplus.com/
Accept-Encoding: gzip, deflate, br, zstd
Accept-Language: en-US,en;q=0.9
```



McKool Smith, P.C.
Los Angeles, CA

```
HTTP/1.1 200 OK
Content-Length: 838218
Last-Modified: Wed, 18 Sep 2024 15:55:53 GMT
Expires: Wed, 25 Sep 2024 15:55:54 GMT
Cache-Control: max-age=604800
x-dss-orig-etag: "66eaf809-cca4a"
ETag: "66eaf809-cca4a"
x-dss-int-ws: nginx04.live01.hls.star.clt2.prod.bamtech.co
x-dss-int-os: varnish12.live01.hls.star.clt2.prod.bamtech.co MISS (REQ-ID:
478384431 CLIENT-ID: 10.36.223.250)
x-dss-int-lb: lb04.ext01.inf.star.clt2.prod.bamtech.co
x-dss-int-ws-lb: lb04.ext01.inf.star.clt2.prod.bamtech.co
Accept-Ranges: bytes
x-dss-ttl: 205630.450
x-dss-grace: 399168.000
x-dss-keep: 0.000
x-dss-debug-origin-tag: clt2
url: /clt2/va01/disneyplus/channel/54e6f1c0-2e4a-4dee-83ba-b6690163c574-
1726093874063/cmaf-cenc-ctr-1200K/262/15/55/45_807.mp4
X-Varnish: 1620959028
x-dss-media-id:
x-dss-property: DIS-LINEAR
x-dss-tracing: 1:varnish06.c02.mt.gen.ewr1.prod.dssott.net/1380135048
1378189309,varnish10.c02.mt.gen.ewr1.prod.dssott.net/1620959028
Date: Wed, 18 Sep 2024 15:56:12 GMT
Connection: keep-alive
Akamai-Request-BC:
[a=23.40.60.14,b=344061720,c=g,n=US_MA_BILLERICA,o=20940],[c=c,n=US_MA_BOSTON,o=2
0940]
Akamai-Mon-Iucid-Del: 1637893
X-Forward-Proto: http
CDN-Origin-Protocol: HTTP
Content-Type: video/mp4
Access-Control-Allow-Origin: https://www.disneyplus.com
Access-Control-Max-Age: 600
Access-Control-Allow-Methods: GET,HEAD,OPTIONS
Access-Control-Allow-Credentials: true
Access-Control-Allow-Headers: Origin, X-Requested-With, Content-Type,
Authorization, accessToken, Accept, Range, X-Dss-Baseurl,CMCD-Request,CMCD-
Object,CMCD-Status,CMCD-Session
Access-Control-Expose-Headers: X-Dss-Baseurl,Akamai-Mon-Iucid-Ing,Akamai-Mon-
Iucid-Del,Akamai-Request-BC
Akamai-GRN: 0.0e3c2817.1726674972.1481f718
```

48. The IP address for host "linear-akc-na-east-1.media.dssott.com" resolved to IPV6 address 2600:1401:c000::1728:3c12, confirmed to be an Akamai network address with iplocation.net.



49. Hulu is a streaming service that offers both live and on-demand content. Hulu provides access to television shows from every major U.S. broadcast network, libraries of television series and films—including Hulu Originals and other content available exclusively on Hulu. Hulu supports streaming on web browsers, mobile devices, tablets, streaming sticks, gaming consoles, smart TVs, and set-top boxes.[23] Hulu offers a Live TV component to its subscriptions that includes access to 90+ live television channels. Hulu Live subscribers can watch live sports, breaking news, awards shows, primetime dramas, daytime soaps, local teams and weather forecasts,

[23] *See About Hulu*, HULU PRESS, https://press.hulu.com/corporate/.



McKOOL SMITH, P.C.
LOS ANGELES, CA

the latest Hulu Originals, and thousands of shows and movies in the Hulu streaming library.[24]

50. Hulu uses AVC and HEVC for at least some of its streaming[25] and employs multiple content delivery networks.

51. For example, the following HTTP request & response captured during Hulu VOD viewing include HTTP headers that indicate use of the BAMTech Media platform and the AWS CloudFront CDN.

```
POST https://hulu.playback.edge.bamgrid.com/widevine-hulu/v1/hulu/vod/obtain-license/61664796?deejay_device_id=214&nonce=207618731&signature=1730281218_e954ea741ec58901f9baf6f71b6b6b86113cb9d7 HTTP/1.1
Host: hulu.playback.edge.bamgrid.com

HTTP/1.1 200 OK
Content-Type: application/octet-stream
Connection: keep-alive
Date: Tue, 29 Oct 2024 23:40:19 GMT
cache-control: no-store
X-BAMTECH-MDRM-TRANSACTION-ID: 1110317887226113915
x-datadog-trace-id: 1110317887226113915
x-request-id: 8bee0462beea579b3a2dc349086c316e
vary: origin, access-control-request-headers
access-control-allow-origin: https://www.hulu.com
access-control-allow-methods: GET, POST, PUT, PATCH, DELETE, OPTIONS
access-control-allow-credentials: true
access-control-expose-headers: x-request-id, x-bamtech-region, date
access-control-max-age: 600
x-bamtech-region: us-west-2
X-Cache: Miss from cloudfront
Via: 1.1 2a3bfb7cadc3003297b11ce744cb58fa.cloudfront.net (CloudFront)
X-Amz-Cf-Pop: DEN53-P1
X-Amz-Cf-Id: yYJxnEPiq41YQA094_KRknRERv3l3dU8uR__UC62mrD1qHu0hmAcrA==
Content-Length: 703
```

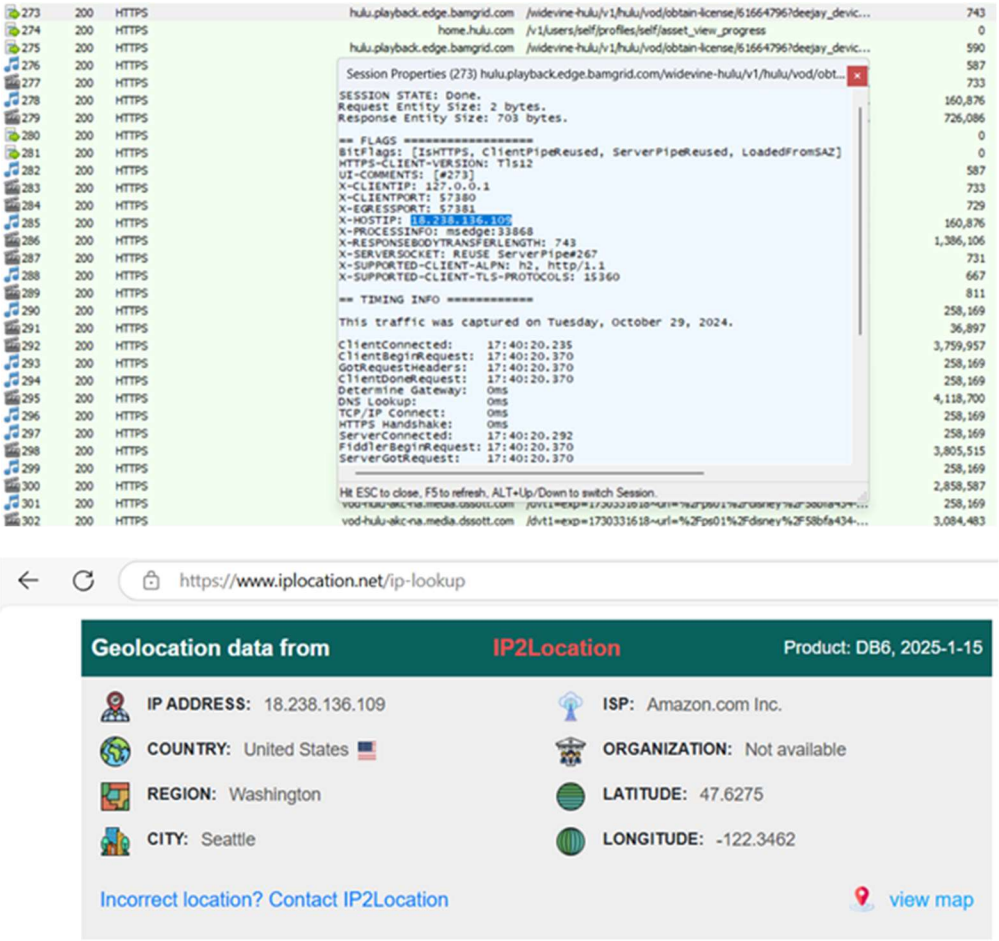
[24] *See Hulu + Live TV Plans*, HULU HELP CENTER, https://help.hulu.com/article/hulu-what-is-hulu-live-tv.

[25] *What Are HEVC and AVC? H.265 and H.264 Video Codecs Explained*, TOM'S HARDWARE (DEC. 23, 2020), https://www.tomshardware.com/reference/h264-h265-hevc-codec-definition; *New Report Highlights Impact of HEVC Codec on Streaming Industry*, INTERDIGITAL, INC. (Dec. 6, 2023), https://ir.interdigital.com/news-events/press-releases/news-details/2023/New-Report-Highlights-Impact-of-HEVC-Codec-on-Streaming-Industry/default.aspx.



McKOOL SMITH, P.C.
LOS ANGELES, CA

52. The IP address for host "hulu.playback.edge.bamgrid.com" resolved to IP address 18.238.136.109, confirmed to be an Amazon network address with iplocation.net.



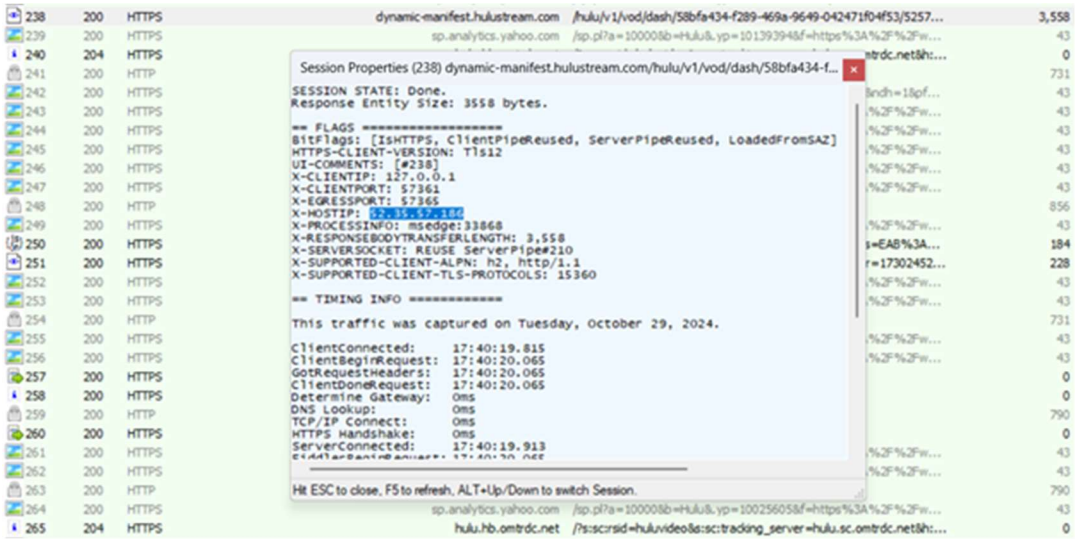

53. As another example, the following HTTP request & response for a DASH manifest captured during VOD viewing for the same content item show the host name of "dynamic-manifest.hulustream.com," which resolved to IP address 52.35.57.186 in the Amazon network.

```
GET https://dynamic-manifest.hulustream.com/hulu/v1/vod/dash/58bfa434-f289-469a-9649-042471f04f53/525726182935732727/manifest.mpd?boundary_signaling=hulu_segment_type&break_audio=3&break_dr=1&break_video=1&breaks=ChgSChDc5YLIzOrQugcSChDb9oDQotPMugcSEAgAEgxwczAxL2Rpc25leS8%3D&cdns=ak%2Cfoa&cluster=green&content_audio=3&content_dr=1&content_video=1&drm=6&h264=HD_60&max_bl=20000000&min_bl=250000&path_prefix=p
```



McKool Smith, P.C.
Los Angeles, CA

```
s01%2Fdisney%2F&prefer_text_roles=true&strip_locale=true&user_id=207618731&auth=1
730331618_a87b0671b607a063b73f131e82b96892 HTTP/1.1
Host: dynamic-manifest.hulustream.com
<truncated for brevity>

HTTP/1.1 200 OK
date: Tue, 29 Oct 2024 23:40:18 GMT
content-type: application/dash+xml
access-control-allow-origin: https://www.hulu.com
content-encoding: gzip
vary: Origin,Accept-Encoding
x-envoy-upstream-service-time: 10
x-diproton-route: Envoy
server: envoy
transfer-encoding: chunked
```



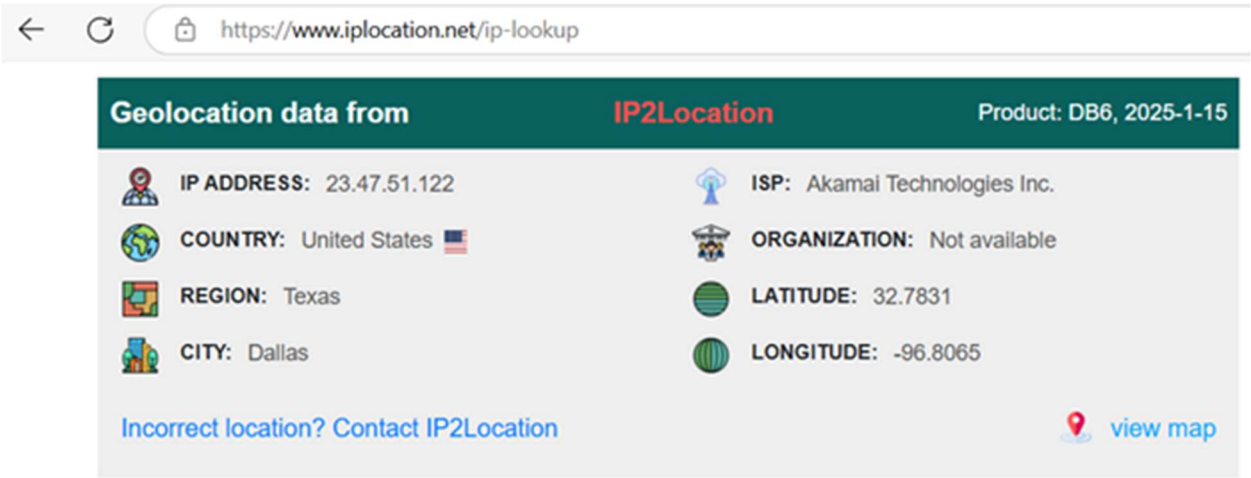
54. As another example, the following HTTP request & response for a media segment captured during VOD viewing for the same content item includes HTTP headers that indicate use of the Akamai CDN and the AWS CloudFront CDN with an S3 bucket origin.



McKool Smith, P.C.
Los Angeles, CA

```
GET https://vod-hulu-akc-
na.media.dssott.com/dvt1=exp=1730331618~url=%2Fps01%2Fdisney%2Fda81d9ed-3f68-
465e-b28d-a544f10ec454%2Fr%2Ff8e38256-c71d-4011-aa50-9429271948ba%2F4be7-
MAIN%2F03~kid=k01~hmac=7bafaa1ddaaefd18ab6f920e9b642eb21ae981b71744b62a50e9d7d38b
faad64/ps01/disney/da81d9ed-3f68-465e-b28d-a544f10ec454/r/f8e38256-c71d-4011-
aa50-9429271948ba/4be7-MAIN/03/H264_1_CMAF_1200K/da35d08b-50bc-443e-9e9a-
31ed1b95e794/pts_0.mp4 HTTP/1.1
Host: vod-hulu-akc-na.media.dssott.com
<truncated for brevity>

HTTP/1.1 200 OK
Last-Modified: Mon, 08 Apr 2024 17:46:34 GMT
ETag: "f3f851b2ef4fb7464ab1943b9b8d6ef5"
x-amz-server-side-encryption: AES256
Expires: Mon, 15 Apr 2024 17:46:33 GMT
X-Amz-Cf-Pop: EWR50-C1
X-Amz-Cf-Id: 2Ve1Sv1HW68Lg8D9vyNuDH_KV1_YmytxcKYRh0ijv3hRxylV4SV7FQ==
x-dss-store: size
x-dss-media-id: da81d9ed-3f68-465e-b28d-a544f10ec454
x-dss-property: HULU-VOD
X-ds-cache: 2 (shield:varnish01.c01.mt.gen.jfk3.qa.dssott.net)
X-ds-hits: 2
x-dss-cr-status: (hit)
x-dss-debug-cr-status: (varnish01.c01.mt.gen.jfk3.qa.dssott.net)(hit)
x-dss-ttl: 492628.848
x-dss-grace: 1710720.000
x-dss-keep: 0.000
Cache-Control: max-age=2592000, s-maxage=86400
x-dss-s-maxage: 86400
x-dss-tracing: varnish01.c01.mt.gen.jfk3.qa.dssott.net/500462567 495616244
Accept-Ranges: bytes
Content-Length: 726086
Date: Tue, 29 Oct 2024 23:40:19 GMT
Connection: keep-alive
Akamai-Request-BC: [a=23.47.56.122,b=63649943,c=g,n=US_TX_DALLAS,o=20940]
Akamai-Mon-Iucid-Del: 1628770
X-Forward-Proto: http
CDN-Origin-Protocol: HTTP
Content-Type: video/mp4
Access-Control-Allow-Origin: https://www.hulu.com
Access-Control-Expose-Headers: X-Dss-Baseurl,Akamai-Mon-Iucid-Ing,Akamai-Mon-
Iucid-Del,Akamai-Request-BC
Access-Control-Max-Age: 600
Access-Control-Allow-Headers: Origin, X-Requested-With, Content-Type,
Authorization, Accept, Range, X-Dss-Baseurl,CMCD-Request,CMCD-Object,CMCD-
Status,CMCD-Session
Access-Control-Allow-Credentials: true
Access-Control-Allow-Methods: GET,HEAD,OPTIONS
```

55. The IP address for host "vod-hulu-akc-na.media.dssott.com" resolved to IP address 23.47.51.122, confirmed to be an Akamai network address with iplocation.net.




56. ESPN+ is a streaming service that allows users to stream live sports from the best leagues in the world and original series from the biggest names in sports. An ESPN+ subscription provides users with access to thousands of live events from UFC, NFL, NHL, FA Cup, MLB, Grand Slam tennis, PGA TOUR LIVE, LaLiga, Top Rank Boxing, and more—plus a variety of college sports, including football, basketball, baseball, and lacrosse, from over 20 conferences.[26] ESPN+ supports streaming on web

[26] *See, e.g.*, *Getting Started With ESPN+*, ESPN SUPPORT, https://support.espn.com/hc/en-us/articles/13617221045652-Getting-Started-With-ESPN.



McKOOL SMITH, P.C.
LOS ANGELES, CA

browsers, mobile devices, tablets, streaming sticks, gaming consoles, smart TVs, and set-top boxes.[27]

57. Upon information and belief, ESPN+ uses AVC and multiple content delivery networks.

58. For example, the following HTTP request & response captured during ESPN+ live stream viewing include HTTP headers that indicate use of the BAMTech Media platform and the AWS CloudFront CDN.

```
POST https://playback.svcs.plus.espn.com/events/f1111d0c-7df7-4f18-be93-
dd64202807c0/media/ea481eaa-b490-4855-a973-9820749d2b7b/scenarios/silk-regular
HTTP/1.1
Host: playback.svcs.plus.espn.com
<truncated for brevity>
GvT8C3Pv3s1oe9Y0ICro3QaJkFo4JAimvhbVKuNOwcgNKuv5cnvONbqVyP89FqZY3Xk.VI2S69SglAitx
npR_VyN6g
sec-ch-ua-platform: "Windows"
sec-ch-ua: "Chromium";v="130", "Microsoft Edge";v="130", "Not?A_Brand";v="99"
x-bamsdk-client-id: espn-a9b93989
x-bamsdk-version: 29.0
sec-ch-ua-mobile: ?0
x-bamsdk-platform: javascript/chromium/edge
content-type: application/json
Origin: https://plus.espn.com
Sec-Fetch-Site: same-site
Sec-Fetch-Mode: cors
Sec-Fetch-Dest: empty
Referer: https://plus.espn.com/
Accept-Encoding: gzip, deflate, br, zstd
Accept-Language: en-US,en;q=0.9

HTTP/1.1 200 OK
Content-Type: application/vnd.media-service+json; version=5
Connection: keep-alive
Date: Mon, 04 Nov 2024 21:26:56 GMT
cache-control: no-store
vary: origin, access-control-request-headers
access-control-allow-origin: https://plus.espn.com
access-control-allow-methods: GET, POST, PUT, PATCH, DELETE, OPTIONS
access-control-allow-credentials: true
access-control-expose-headers: x-request-id, x-bamtech-region, date
access-control-max-age: 600
x-request-id: 967ec71c-1c30-47e3-bc4d-6d4e7bdb52a7
```

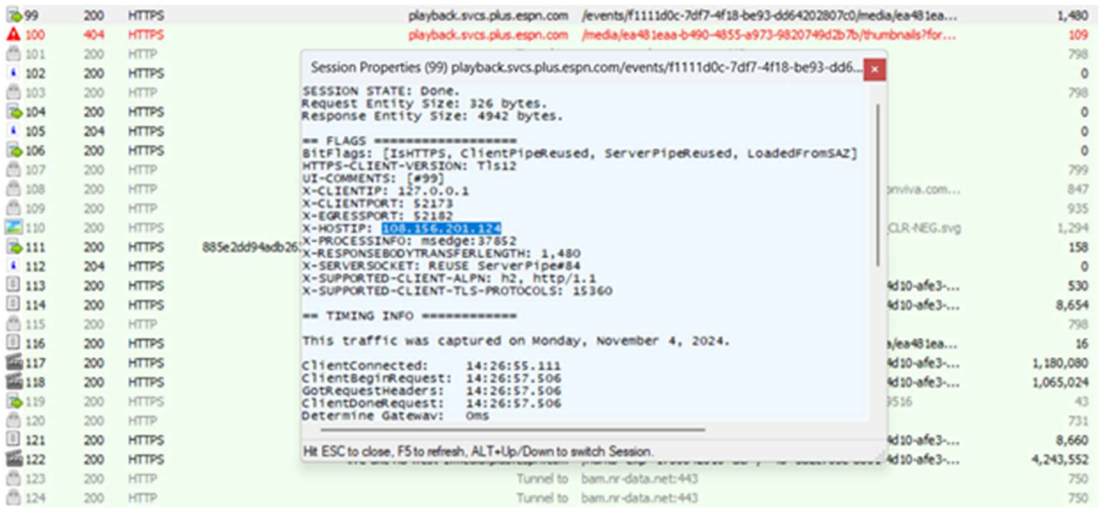
[27] *Id.*

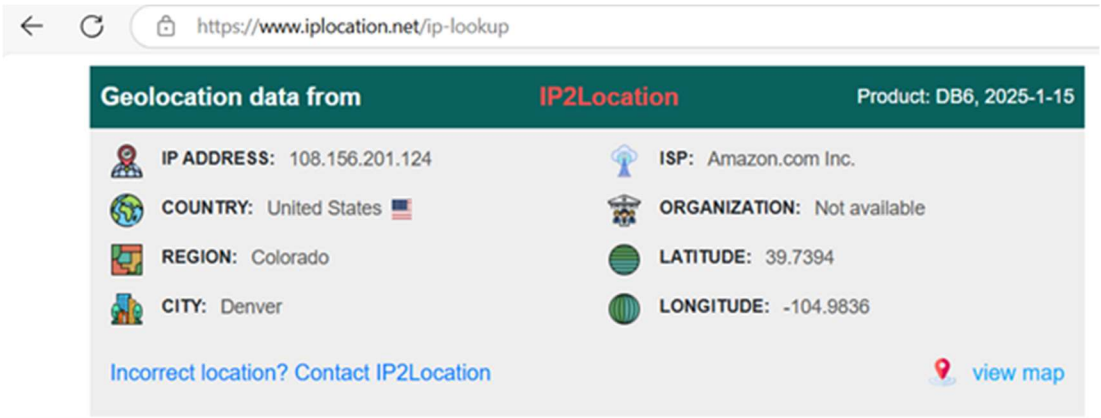


McKool Smith, P.C.
Los Angeles, CA

```
x-bamtech-region: us-west-2
X-Cache: Miss from cloudfront
Via: 1.1 056799adad256ab111ed778c35e4393a.cloudfront.net (CloudFront)
X-Amz-Cf-Pop: DEN52-P1
X-Amz-Cf-Id: fjNXKl9Hj0FlgyP6eQZmiobFUqVAZBK2GncyjjBHphVRnq-MSI-bvQ==
Content-Length: 4942
```

59. The IP address for host "playback.svcs.plus.espn.com" resolved to IP address 108.156.201.124, confirmed to be an Amazon network address with iplocation.net.




60. As another example, the following HTTP request & response for an HLS manifest captured during live stream viewing for the same live stream include HTTP headers that indicate use of the Akamai CDN and show the host name of "live-akc-na-



McKool Smith, P.C.
Los Angeles, CA

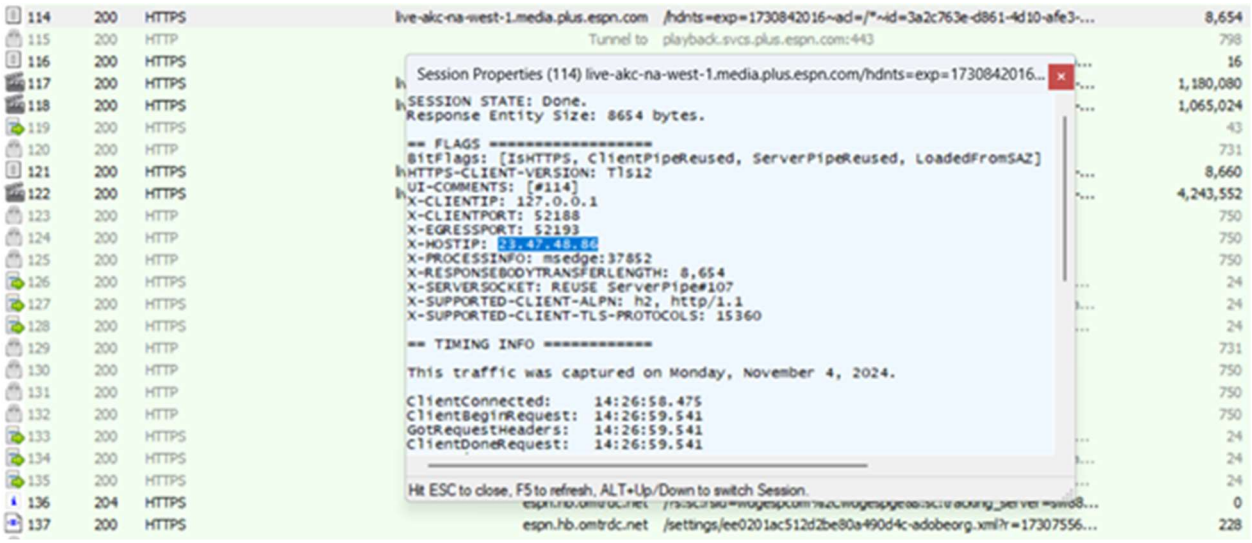
west-1.media.plus.espn.com," which resolved to IP address 23.47.48.86 in the Akamai network.

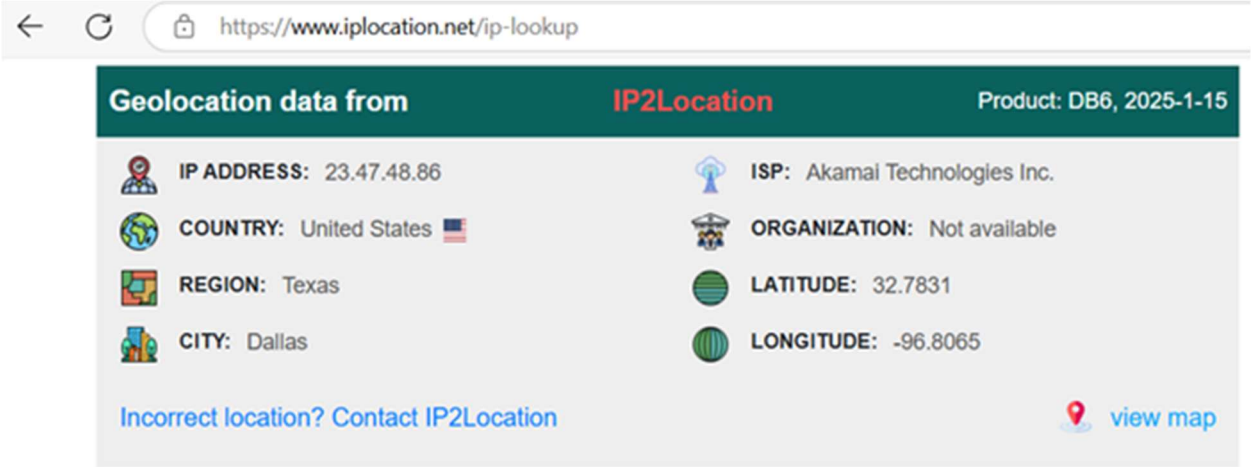
```
GET https://live-akc-na-west-1.media.plus.espn.com/hdnts=exp=1730842016~acl=/*~id=3a2c763e-d861-4d10-afe3-95d6237fa12a~data=ea481eaa-b490-4855-a973-9820749d2b7b~hmac=0f2a20bb600a1a901385673a00e7fb927cb1a8947f4cd620122575e369784737/14887fd72eb70588d2c2314ade05b8ad/las1/va01/espn/event/2024/11/04/Penn_State_York_vs_UMBC_20241104_1730748657018/1800K/1800_complete_aeng.m3u8 HTTP/1.1
Host: live-akc-na-west-1.media.plus.espn.com
<truncated for brevity>

HTTP/1.1 200 OK
Last-Modified: Mon, 04 Nov 2024 21:26:55 GMT
Expires: Mon, 04 Nov 2024 21:27:00 GMT
Cache-Control: max-age=4
X-MinIO-Node: 10.166.161.68:80
x-dss-orig-etag: "67293c1f-f9b6"
x-dss-int-ws: web07-deslive-las1.prod.dssinfra.com
x-dss-int-os: varnish11-deslive-las1.prod.dssinfra.com PASS (REQ-ID: 231863108
CLIENT-ID: 10.166.96.8)
x-dss-int-lb: lb02-ext01-gl-las1.prod.dssinfra.com
ETag: W/"67293c1f-f9b6"
x-dss-ttl: 0.680
x-dss-grace: 1.320
x-dss-keep: 0.000
x-dss-debug-origin-tag: las1
url:/las1/va01/espn/event/2024/11/04/Penn_State_York_vs_UMBC_20241104_1730748657018/1800K/1800_complete_aeng.m3u8
X-Varnish: 454426775
x-dss-media-id:
x-dss-property: ESPN-LIVE
x-dss-tracing:
varnish13.c03.mt.gen.lax1.prod.dssott.net/429308372,varnish16.c03.mt.gen.lax1.prod.dssott.net/454426775
Vary: Accept-Encoding
Content-Encoding: gzip
Date: Mon, 04 Nov 2024 21:26:58 GMT
Transfer-Encoding: chunked
Connection: keep-alive
Connection: Transfer-Encoding
Akamai-Request-BC:
[a=23.47.53.86,b=58640542,c=g,n=US_TX_DALLAS,o=20940],[c=c,n=US_TX_DALLAS,o=20940]
Akamai-Mon-Iucid-Del: 1221951
Content-Type: application/x-mpegURL
Accept-Ranges: bytes
Access-Control-Allow-Origin: https://plus.espn.com
Access-Control-Max-Age: 600
Access-Control-Allow-Methods: GET,HEAD,OPTIONS
Access-Control-Allow-Credentials: true
Access-Control-Allow-Headers: Origin, X-Requested-With, Content-Type,
Authorization, Accept, Range, ssess, X-Dss-Baseurl,CMCD-Request,CMCD-Object,CMCD-Status,CMCD-Session
```



McKool Smith, P.C.
Los Angeles, CA

```
Access-Control-Expose-Headers: X-Dss-Baseurl,Akamai-Mon-Iucid-Ing,Akamai-Mon-Iucid-Del,Akamai-Request-BC,Content-Length,Content-Range,Content-Encoding,Accept-Ranges
Akamai-GRN: 0.56352f17.1730755618.37ec89e
```




61. As another example, the following HTTP request & response for a content segment captured during live stream viewing for the same live stream include HTTP headers that indicate use of the Akamai CDN and show the host name of "live-akc-na-west-1.media.plus.espn.com," which resolved to IP address 23.47.48.86 in the Akamai network as shown above.

Session #122, live-akc-na-west-1.media.plus.espn.com, content segment, Akamai headers, Akamai IP (same as above):



McKool Smith, P.C.
Los Angeles, CA

```
GET https://live-akc-na-west-
1.media.plus.espn.com/hdnts=exp=1730842016~acl=/*~id=3a2c763e-d861-4d10-afe3-
95d6237fa12a~data=ea481eaa-b490-4855-a973-
9820749d2b7b~hmac=0f2a20bb600a1a901385673a00e7fb927cb1a8947f4cd620122575e36978473
7/14887fd72eb70588d2c2314ade05b8ad/las1/va01/espn/event/2024/11/04/Penn_State_Yor
k_vs_UMBC_20241104_1730748657018/7000K/309/21/26/47_154.ts HTTP/1.1
Host: live-akc-na-west-1.media.plus.espn.com
<truncated for brevity>

HTTP/1.1 200 OK
Content-Length: 4243552
Last-Modified: Mon, 04 Nov 2024 21:26:55 GMT
Expires: Mon, 11 Nov 2024 21:26:56 GMT
Cache-Control: max-age=604800
X-MinIO-Node: 10.166.161.62:80
x-dss-orig-etag: "67293c1f-40c060"
ETag: "67293c1f-40c060"
x-dss-int-ws: web01-deslive-las1.prod.dssinfra.com
x-dss-int-os: varnish05-deslive-las1.prod.dssinfra.com MISS (REQ-ID: 851728518
CLIENT-ID: 10.166.96.9)
x-dss-int-lb: lb03-ext01-gl-las1.prod.dssinfra.com
Accept-Ranges: bytes
x-dss-ttl: 205632.000
x-dss-grace: 399168.000
x-dss-keep: 0.000
x-dss-debug-origin-tag: las1
url:/las1/va01/espn/event/2024/11/04/Penn_State_York_vs_UMBC_20241104_17307486570
18/7000K/309/21/26/47_154.ts
X-Varnish: 496665858
x-dss-media-id:
x-dss-property: ESPN-LIVE
x-dss-tracing:
0:varnish01.c02.mt.gen.ord1.prod.dssott.net/548640615,varnish05.c02.mt.gen.ord1.p
rod.dssott.net/496665858
Date: Mon, 04 Nov 2024 21:26:59 GMT
Connection: keep-alive
Akamai-Request-BC:
[a=23.47.53.86,b=58641551,c=g,n=US_TX_DALLAS,o=20940],[c=c,n=US_TX_DALLAS,o=20940
]
Akamai-Mon-Iucid-Del: 1221951
Content-Type: video/MP2T
Access-Control-Allow-Origin: https://plus.espn.com
Access-Control-Max-Age: 600
Access-Control-Allow-Methods: GET,HEAD,OPTIONS
Access-Control-Allow-Credentials: true
Access-Control-Allow-Headers: Origin, X-Requested-With, Content-Type,
Authorization, Accept, Range, ssess, X-Dss-Baseurl,CMCD-Request,CMCD-Object,CMCD-
Status,CMCD-Session
Access-Control-Expose-Headers: X-Dss-Baseurl,Akamai-Mon-Iucid-Ing,Akamai-Mon-
Iucid-Del,Akamai-Request-BC,Content-Length,Content-Range,Content-Encoding,Accept-
Ranges
Akamai-GRN: 0.56352f17.1730755619.37ecc8f
```

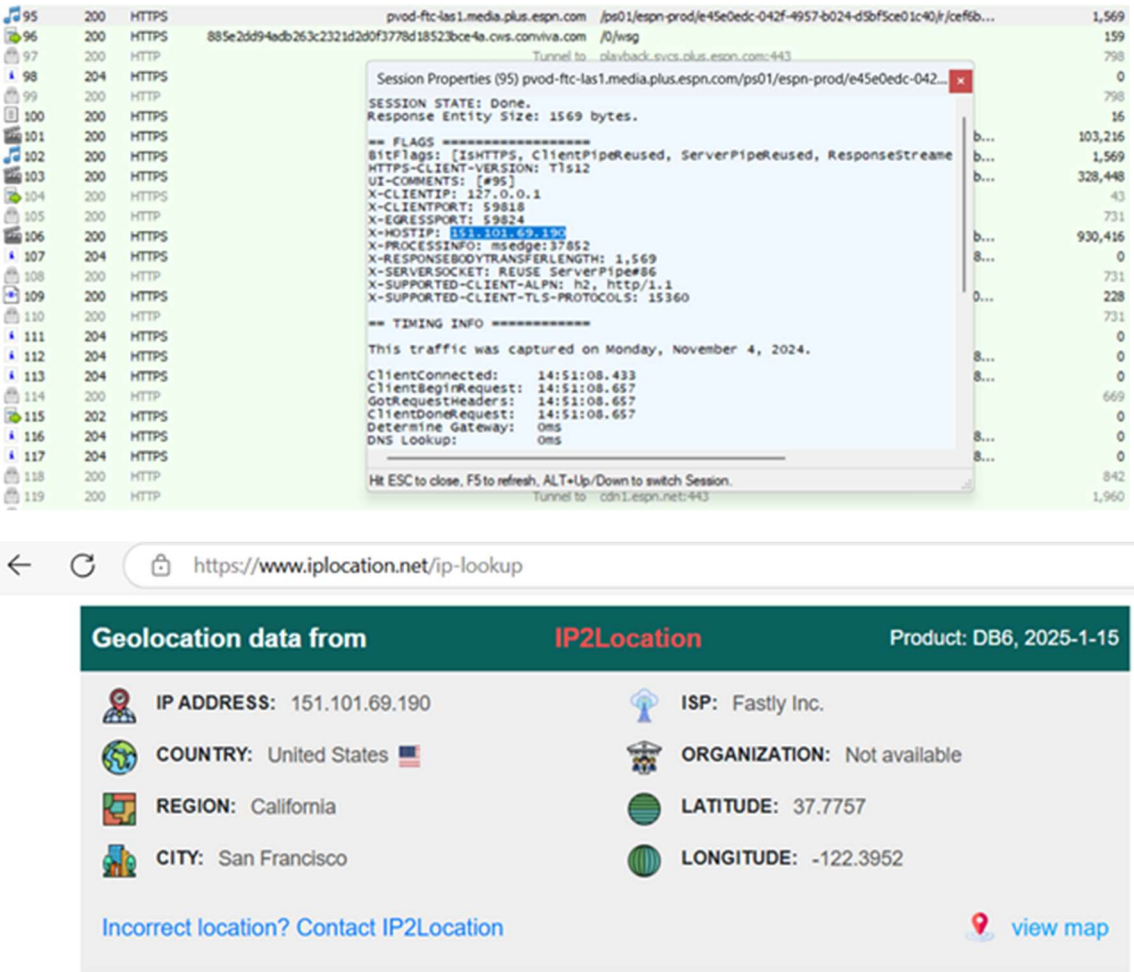
62. As another example, the following HTTP request & response for an HLS manifest captured during VOD viewing for a content item show the host name of



McKool Smith, P.C.
Los Angeles, CA

"pvod-ftc-las1.media.plus.espn.com," which resolved to IP address 151.101.69.190 in the Fastly network.

```
GET https://pvod-ftc-las1.media.plus.espn.com/ps01/espn-prod/e45e0edc-042f-4957-b024-d5bf5ce01c40/r/cef6b8c9-023a-40e9-8a88-533a60763b2a/1517-MAIN/09/800K/800_complete.m3u8 HTTP/1.1
Host: pvod-ftc-las1.media.plus.espn.com
<truncated for brevity>

HTTP/1.1 200 OK
Connection: keep-alive
Content-Length: 1569
Server: nginx
Content-Type: audio/mpegurl
Cache-Control: max-age=5184000
Last-Modified: Thu, 24 Oct 2024 22:20:45 GMT
Expires: Wed, 01 Jan 2025 19:19:18 GMT
X-MinIO-Node: 10.167.100.151:9000
x-dss-orig-etag: "a6b1ee16a984fc4bbf4282f3b364b646"
Etag: "a6b1ee16a984fc4bbf4282f3b364b646"
X-DSS-INT-OS: varnish14-vod01-gen MISS (REQ-ID: 988244753 CLIENT-ID: 10.167.96.3)
X-backend: E+
X-DSS-INT-LB: lb03-ext01-gv-iad1.prod.dssinfra.com
Content-Encoding: gzip
Via: 1.1 varnish, 1.1 varnish
Accept-Ranges: bytes
Age: 181910
Date: Mon, 04 Nov 2024 21:51:07 GMT
X-Served-By: cache-iad-kcgs7200160-IAD, cache-den8242-DEN
X-Cache: HIT, HIT
X-Cache-Hits: 11, 0
X-Timer: S1730757068.757798,VS0,VE1
Vary: Accept-Encoding
access-control-allow-methods: GET, HEAD, OPTIONS
access-control-allow-credentials: true
access-control-allow-headers: Origin, X-Requested-With, Content-Type,
Authorization, Accept, Range, X-Dss-Baseurl
access-control-expose-headers: X-Dss-Baseurl
access-control-max-age: 600
access-control-allow-origin: https://plus.espn.com
```



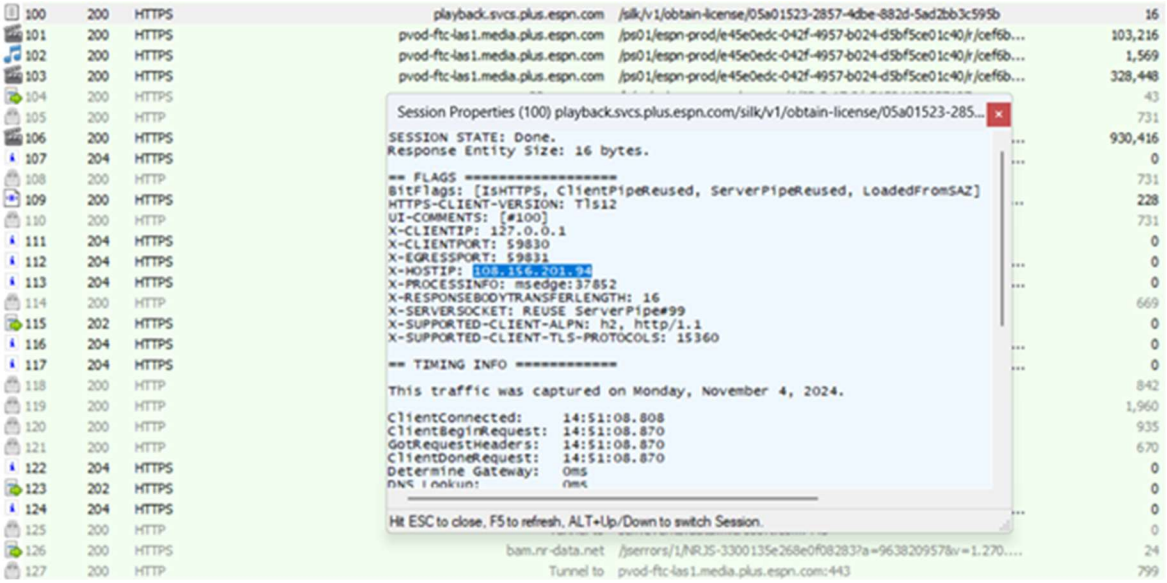

63. As another example, the following HTTP request & response captured during VOD viewing for the same content item include HTTP headers that indicate use of the BAMTech Media platform and the AWS CloudFront CDN and show the host name of "playback.svcs.plus.espn.com," which resolved to IP address 108.156.201.94 in the Amazon network.

```
GET https://playback.svcs.plus.espn.com/silk/v1/obtain-license/05a01523-2857-
4dbe-882d-5ad2bb3c595b HTTP/1.1
Host: playback.svcs.plus.espn.com
Connection: keep-alive
sec-ch-ua-platform: "Windows"
Authorization:eyJ6aXAiOiJERUYiLCJraWQiOiJNZHRlcVJ2R04yTDg3dW5OM2g5QzdReF9MUGNRdGN
4VTZZNnk5UjF4eHBFIiwiY3R5IjoiSldUIiwiZW5jIjoiQzIwUCIsImFsZyI6ImRpciJ9..n47NV11TEL
5V58WH.vw8t-
<truncated for brevity>
sKYVNXsRiVZiXTHM3ZfkEEiAYbOZVCZB1vysL1Cehf-
cLoVv_AdJpUdvFGFMxOuxXb6xM0T0XP.eieQh6roFsrJe81VEUSRgg
```



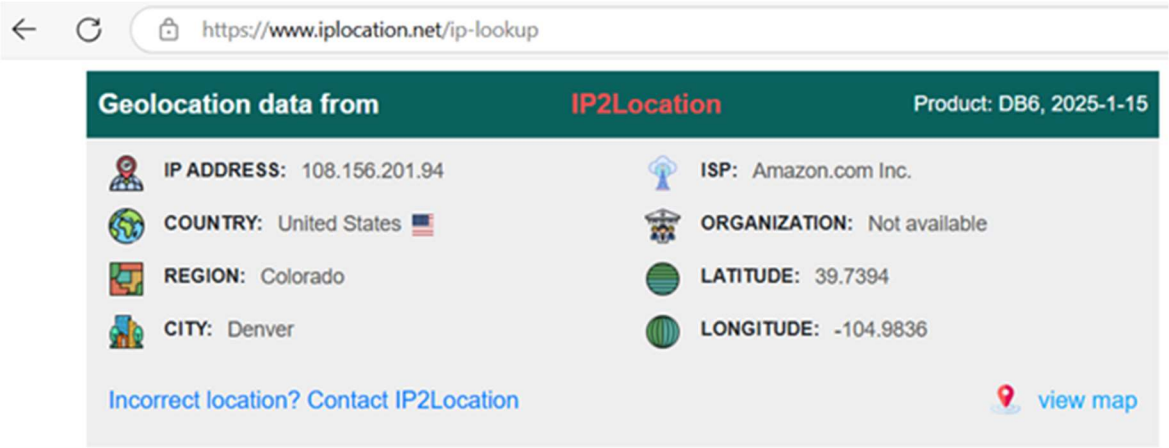
McKool Smith, P.C.
Los Angeles, CA

```
Accept: */*
Origin: https://plus.espn.com
Sec-Fetch-Site: same-site
Sec-Fetch-Mode: cors
Sec-Fetch-Dest: empty
Referer: https://plus.espn.com/
Accept-Encoding: gzip, deflate, br, zstd
Accept-Language: en-US,en;q=0.9
<truncated for brevity>

HTTP/1.1 200 OK
Content-Type: application/octet-stream
Content-Length: 16
Connection: keep-alive
Date: Mon, 04 Nov 2024 21:51:08 GMT
Cache-Control: no-store
X-BAMTECH-MDRM-TRANSACTION-ID: 7075372951441525041
x-datadog-trace-id: 7075372951441525041
x-request-id: c82a45fb24f513142abe121a973a3415
access-control-allow-origin: https://plus.espn.com
access-control-allow-methods: GET, POST, PUT, PATCH, DELETE, OPTIONS
access-control-allow-credentials: true
access-control-expose-headers: x-request-id, x-bamtech-region, date
access-control-max-age: 600
x-bamtech-region: us-west-2
Vary: origin,access-control-request-headers
X-Cache: Miss from cloudfront
Via: 1.1 96b078df4a5d96ad3cc52cfe9d984774.cloudfront.net (CloudFront)
X-Amz-Cf-Pop: DEN52-P1
X-Amz-Cf-Id: SVLKTm0C-yihsOqLD02kiI8j6fuyR5NsWef8rBB8kLhCitYdoAJECg==
```






McKool Smith, P.C.
Los Angeles, CA




64. The Walt Disney Company manages and directs the operations of Disney+.

65. The Walt Disney Company manages and directs the operations of Hulu.

66. The Walt Disney Company manages and directs the operations of Hulu Live.

67. The Walt Disney Company manages and directs the operations of ESPN+.

68. The Walt Disney Company employs and controls executives or other employees responsible for Disney+.

69. The Walt Disney Company employs and controls executives or other employees responsible for Hulu.

70. The Walt Disney Company employs and controls executives or other employees responsible for Hulu Live.

71. The Walt Disney Company employs and controls executives or other employees responsible for ESPN+.

72. Disney Media and Entertainment Distribution LLC manages and operates Disney+.

73. Disney Media and Entertainment Distribution LLC manages and operates Hulu.

74. Disney Media and Entertainment Distribution LLC manages and operates Hulu Live.

75. Disney Media and Entertainment Distribution LLC manages and operates ESPN+.

76. Disney Media and Entertainment Distribution LLC is responsible for the profit and loss management and distribution, operations, sales, advertising, data, and technology functions for Disney+.

77. Disney Media and Entertainment Distribution LLC is responsible for the profit and loss management and distribution, operations, sales, advertising, data, and technology functions for Hulu.

78. Disney Media and Entertainment Distribution LLC is responsible for the profit and loss management and distribution, operations, sales, advertising, data, and technology functions for Hulu Live.

79. Disney Media and Entertainment Distribution LLC is responsible for the profit and loss management and distribution, operations, sales, advertising, data, and technology functions for ESPN+.

80. Disney Platform Distribution, Inc. manages third-party media sales efforts for distribution, affiliate marketing, and affiliate-related business operations for Disney+.

81. Disney Platform Distribution, Inc. manages third-party media sales efforts for distribution, affiliate marketing, and affiliate-related business operations for Hulu.

82. Disney Platform Distribution, Inc. manages third-party media sales efforts for distribution, affiliate marketing, and affiliate-related business operations for Hulu Live.

83. Disney Platform Distribution, Inc. manages third-party media sales efforts for distribution, affiliate marketing, and affiliate-related business operations for ESPN+.

84. Disney Platform Distribution, Inc. negotiates contracts for the distribution of content for Disney+.

85. Disney Platform Distribution, Inc. negotiates contracts for the distribution of content for Hulu.

86. Disney Platform Distribution, Inc. negotiates contracts for the distribution of content for Hulu Live.

87. Disney Platform Distribution, Inc. negotiates contracts for the distribution of content for ESPN+.

McKool Smith, P.C.
Los Angeles, CA

88. Disney Platform Distribution, Inc. procures content delivery network and cloud computing services for Disney+.

89. Disney Platform Distribution, Inc. procures content delivery network and cloud computing services for Hulu.

90. Disney Platform Distribution, Inc. procures content delivery network and cloud computing services for Hulu Live.

91. Disney Platform Distribution, Inc. procures content delivery network and cloud computing services for ESPN+.

92. Disney Streaming Services LLC provides finance and marketing functions for Disney+.

93. Disney Streaming Services LLC provides finance and marketing functions for Hulu.

94. Disney Streaming Services LLC provides finance and marketing functions for Hulu Live.

95. Disney Streaming Services LLC provides finance and marketing functions for ESPN+.

96. Disney Entertainment & Sports LLC designs and maintains the front-end and back-end infrastructure of Disney+.

97. Disney Entertainment & Sports LLC designs and maintains the front-end and back-end infrastructure of Hulu.

98. Disney Entertainment & Sports LLC designs and maintains the front-end and back-end infrastructure of Hulu Live.

99. Disney Entertainment & Sports LLC designs and maintains the front-end and back-end infrastructure of ESPN+.

100. Disney Entertainment & Sports LLC builds and maintains critical back-end services responsible for supporting streaming media subscriptions on Disney+.

101. Disney Entertainment & Sports LLC builds and maintains critical back-end services responsible for supporting streaming media subscriptions on Hulu.

102. Disney Entertainment & Sports LLC builds and maintains critical back-end services responsible for supporting streaming media subscriptions on Hulu Live.

103. Disney Entertainment & Sports LLC builds and maintains critical back-end services responsible for supporting streaming media subscriptions on ESPN+.

104. Disney Entertainment & Sports LLC is responsible for end-to-end development for Disney+.

105. Disney Entertainment & Sports LLC is responsible for end-to-end development for Hulu.

106. Disney Entertainment & Sports LLC is responsible for end-to-end development for Hulu Live.

107. Disney Entertainment & Sports LLC is responsible for end-to-end development for ESPN+.

108. Disney Entertainment & Sports LLC provides the technological backbone and product development for Disney+.

109. Disney Entertainment & Sports LLC provides the technological backbone and product development for Hulu.

110. Disney Entertainment & Sports LLC provides the technological backbone and product development for Hulu Live.

111. Disney Entertainment & Sports LLC provides the technological backbone and product development for ESPN+.

112. Disney DTC LLC is responsible for content management and planning for Disney+.

113. Disney DTC LLC is responsible for content management and planning for Hulu.

114. Disney DTC LLC is responsible for content management and planning for Hulu Live.

115. Disney DTC LLC is responsible for content management and planning for ESPN+.

116. Disney DTC LLC manages third-party media sales efforts for distribution, affiliate marketing, and affiliate-related business operations for Disney+.

McKool Smith, P.C.
Los Angeles, CA

McKool Smith, P.C.
Los Angeles, CA

117. Disney DTC LLC manages third-party media sales efforts for distribution, affiliate marketing, and affiliate-related business operations for Hulu.

118. Disney DTC LLC manages third-party media sales efforts for distribution, affiliate marketing, and affiliate-related business operations for Hulu Live.

119. Disney DTC LLC manages third-party media sales efforts for distribution, affiliate marketing, and affiliate-related business operations for ESPN+.

120. Disney DTC LLC negotiates contracts for the distribution of content for Disney+.

121. Disney DTC LLC negotiates contracts for the distribution of content for Hulu.

122. Disney DTC LLC negotiates contracts for the distribution of content for Hulu Live.

123. Disney DTC LLC negotiates contracts for the distribution of content for ESPN+.

124. Disney DTC LLC procures content delivery network and cloud computing services for Disney+.

125. Disney DTC LLC procures content delivery network and cloud computing services for Hulu.

126. Disney DTC LLC procures content delivery network and cloud computing services for Hulu Live.

127. Disney DTC LLC procures content delivery network and cloud computing services for ESPN+.

128. BAMTech, LLC develops and maintains ESPN+.

129. BAMTech, LLC designs and maintains the front-end and back-end infrastructure for ESPN+.

130. BAMTech, LLC builds and maintains critical back-end services responsible for supporting streaming media subscriptions for ESPN+.

131. BAMTech, LLC is responsible for end-to-end development for ESPN+.

132. BAMTech, LLC provides the technological backbone and product development for ESPN+.

133. BAMTech, LLC develops and maintains Disney+.

134. BAMTech, LLC designs and maintains the front-end and back-end infrastructure for Disney+.

135. BAMTech, LLC builds and maintains critical back-end services responsible for supporting streaming media subscriptions for Disney+.

136. BAMTech, LLC is responsible for end-to-end development for Disney+.

137. BAMTech, LLC provides the technological backbone and product development for Disney+.

138. Hulu, LLC develops and maintains Hulu.

139. Hulu, LLC develops and maintains Hulu Live.

140. Hulu, LLC designs and maintains the front-end and back-end infrastructure for Hulu.

141. Hulu, LLC designs and maintains the front-end and back-end infrastructure for Hulu Live.

142. Hulu, LLC builds and maintains critical back-end services responsible for supporting streaming media subscriptions for Hulu.

143. Hulu, LLC builds and maintains critical back-end services responsible for supporting streaming media subscriptions for Hulu Live.

144. Hulu, LLC is responsible for end-to-end development for Hulu.

145. Hulu, LLC is responsible for end-to-end development for Hulu Live.

146. Hulu, LLC provides the technological backbone and product development for Hulu.

147. Hulu, LLC provides the technological backbone and product development for Hulu Live.

148. Hulu, LLC is responsible for financing and marketing functions for Hulu.

149. ESPN, Inc. manages and operates ESPN+.

150. ESPN, Inc. is responsible for content management and planning for ESPN+.

151. ESPN, Inc. is responsible for financing and marketing functions for ESPN+.

McKool Smith, P.C.
Los Angeles, CA

152. Disney Streaming Technology LLC (now known as Disney Entertainment & Sports LLC) is a party to the terms of use of a Disney Streaming technology blog hosted on the Medium website, titled "The Art of Possible," which displays the Hulu, Disney+, and ESPN+ logos next to the Disney Streaming logo at the top of the page.[28]

153. Disney Platform Distribution, Inc. is a party to the subscriber agreement for Disney+.[29]

154. BAMTech, LLC is a party to the subscriber agreement for ESPN+.[30]

155. Hulu, LLC is a party to the subscriber agreement for Hulu and Hulu Live.[31]

156. When an ESPN+ subscriber is logged in, the "Manage Your Account" page on the ESPN+ website lists the subscriber's account as a "MyDisney" account. The subscriber agreement link at the bottom of this page on the ESPN+ website links to a subscriber agreement webpage hosted on the Disney+ website. The ESPN+ website provides a link for the subscriber to manage his or her MyDisney account, which links to a page on a Disney website (my.disney.com).

157. Disney+ and ESPN+ share a subscriber agreement that is hosted on the Disney+ website.

---

[28] *See The Art of Possible*, MEDIUM, https://medium.com/disney-streaming.
[29] *See Disney+, ESPN+, and Hulu Subscriber Agreement*, DISNEY+ (Jan. 27, 2025), https://www.disneyplus.com/legal/subscriber-agreement.
[30] *Id.*
[31] *Disney+, ESPN+, and Hulu Subscriber Agreement*, HULU (Jan. 27, 2025), https://www.hulu.com/subscriber_agreement.



McKool Smith, P.C.
Los Angeles, CA

158. When a Hulu subscriber is logged in, the "Manage Your Account" page on the Hulu website lists the subscriber's account as a "MyDisney" account. The Hulu website provides a link for the subscriber to manage his or her MyDisney account, which links to a page on a Disney website (my.disney.com).

159. When a Disney+ subscriber is logged in, the "Manage Your Account" page on the Disney+ website lists the subscriber's account as a "MyDisney" account. The Disney+ website provides a link for the subscriber to manage his or her MyDisney account, which links to a page on a Disney website (my.disney.com).

160. Subscriptions to Disney+, Hulu, and ESPN+ are offered for sale on the Disney+ website.

161. Subscriptions to Disney+, Hulu, and ESPN+ are sold through the Disney+ website.

162. Subscriptions to Disney+, Hulu, Hulu Live, and ESPN+ are offered for sale on the Hulu website.

163. Subscriptions to Disney+, Hulu, Hulu Live, and ESPN+ are sold through the Hulu website.

164. Subscriptions to ESPN+ are offered for sale on the ESPN+ website.

165. Subscriptions to ESPN+ are sold through the ESPN+ website.

166. Subscriptions to Hulu Live include subscriptions to Disney+ and ESPN+.

167. The Disney+ website directs users to the Hulu website to sign up for subscriptions to Hulu Live.

168. The ESPN+ website directs users to the Disney+ or Hulu websites to sign up for subscriptions to Disney+, Hulu, and Hulu Live.

169. Executives and/or employees of one or more Defendants are shared among one or more of the other Defendants.

170. Technology infrastructure of one or more Defendants is shared among one or more of the other Defendants.

171. Technology resources of one or more Defendants are shared among one or more of the other Defendants.

172. One or more Defendants promote advertising and marketing for Hulu, Disney+, and ESPN+.

173. Advertising and marketing for Hulu, Disney+, and ESPN+ refers to bundle subscriptions to two or three of the services.

174. Advertising and marketing for Hulu, Disney+, and ESPN+ encourages users to purchase a bundle subscription of two or three of the services.

175. The streaming services and/or Defendants share back-end technology.

176. For example, according to Disney, "several shared-service organizations across the company . . . support both Disney Entertainment and ESPN, facilitating company-wide efficiencies and creating a more cost-effective, coordinated, and streamlined approach to operations. These include Product and Technology."[32]

[32] *The Walt Disney Company Announces Strategic Restructuring, Restoring Accountability To Creative Businesses*, THE WALT DISNEY COMPANY (Feb. 9, 2023),



McKOOL SMITH, P.C.
LOS ANGELES, CA

177. As another example, the Disney Entertainment & ESPN Technology business "design[s] and build[s] the infrastructure that [powers] Disney's media, advertising, and distribution businesses," including products and platforms "from Disney+ and Hulu, to ABC News and Entertainment, to ESPN and ESPN+, and much more."[33]

178. Furthermore, "Disney Entertainment and ESPN Technology (DE&E Technology) provides the technological backbone and product development for Disney's two media business units," which include Disney+, Hulu, and ESPN+.[34]

179. As another example, "[t]he Product & Data Engineering team is responsible for end to end development for Disney's world-class consumer-facing products, including streaming platforms Disney+, Hulu, and ESPN+."[35]

180. As another example, "BAMTech technology powers Disney+, Hulu and Disney's other offerings."[36]

---

https://thewaltdisneycompany.com/the-walt-disney-company-announces-strategic-restructuring-restoring-accountability-to-creative-businesses/.

[33] *Sr. Software Engineer (Rust Engineering)*, DISNEY CAREERS (Jan. 7, 2025), https://www.disneycareers.com/en/job/santa-monica/sr-software-engineer-rust-engineering/391/72468085792.

[34] *Id.*

[35] *Senior Data Engineer – Identity Data*, DISNEY CAREERS (Dec. 18, 2024), https://www.disneycareers.com/en/job/new-york/senior-data-engineer-identity-data/391/71800273968.

[36] Alex Werpin, *Disney Pays $900M for MLB's Remaining Stake in Streaming Company BAMTech*, HOLLYWOOD REP. (Nov. 29, 2022), https://www.hollywoodreporter.com/business/digital/disney-pays-900m-for-bamtech-1235271788/.



McKool Smith, P.C.
Los Angeles, CA

181. The streaming services and/or Defendants share advertising and sales functions.

182. For example, according to Disney, "several shared-service organizations across the company [] support both Disney Entertainment and ESPN, facilitating company-wide efficiencies and creating a more cost-effective, coordinated, and streamlined approach to operations. These include . . . Advertising Sales."[37]

183. The streaming services and/or Defendants share platform distribution functions.

184. For example, according to Disney, "several shared-service organizations across the company [] support both Disney Entertainment and ESPN, facilitating company-wide efficiencies and creating a more cost-effective, coordinated, and streamlined approach to operations. These include . . . Platform Distribution."[38]

185. The streaming services and/or Defendants share executives and/or employees.

186. For example, Aaron LaBerge served as the President and Chief Technology Officer of Disney Entertainment and ESPN.[39]

---

[37] *The Walt Disney Company Announces Strategic Restructuring, Restoring Accountability To Creative Businesses*, THE WALT DISNEY COMPANY (Feb. 9, 2023), https://thewaltdisneycompany.com/the-walt-disney-company-announces-strategic-restructuring-restoring-accountability-to-creative-businesses/.

[38] *Id.*

[39] Harry McCracken, *Why Disney Plus's new Hulu integration was such a huge, high-stakes challenge*, FAST COMPANY (Dec. 7, 2023), https://www.fastcompany.com/90993539/disney-plus-hulu-integration-beta.



McKOOL SMITH, P.C.
LOS ANGELES, CA

187. The Walt Disney Company's Disney Entertainment segment houses Disney+ and Hulu. The Walt Disney Company's ESPN segment houses ESPN+.[40]

188. As another example, Justin Connolly is the "President of Disney Platform Distribution," where he "oversees all third-party media sales efforts for distribution, distribution strategy, affiliate marketing and affiliate-related business operations for all of [The Walt Disney Company's] direct-to-consumer services."[41]

189. As another example, "Joe Earley is the President of Direct-to-Consumer, Disney Entertainment, where he leads efforts to expand the company's best-in-class streaming services," including "Disney+ and Hulu."[42]

190. As another example, April Carretta, "[a]s SVP of Communications for Direct-To-Consumer, Platform Distribution & Technology, . . . leads the team responsible for all communication efforts in support of Disney Entertainment's portfolio of direct-to-consumer businesses."[43]

---

[40] *The Walt Disney Company Announces Strategic Restructuring, Restoring Accountability To Creative Businesses*, THE WALT DISNEY COMPANY (Feb. 9, 2023), https://thewaltdisneycompany.com/the-walt-disney-company-announces-strategic-restructuring-restoring-accountability-to-creative-businesses/.

[41] *Justin Connolly*, THE ORG, https://theorg.com/org/disney/org-chart/justin-connolly. *See also The Walt Disney Company Announces Strategic Restructuring, Restoring Accountability To Creative Businesses*, THE WALT DISNEY COMPANY (Feb. 9, 2023), https://thewaltdisneycompany.com/the-walt-disney-company-announces-strategic-restructuring-restoring-accountability-to-creative-businesses/ ("Effective immediately, several shared-service organizations across the company will support both Disney Entertainment and ESPN, facilitating company-wide efficiencies and creating a more cost-effective, coordinated, and streamlined approach to operations. These include . . . Platform Distribution led by Justin Connolly.").

[42] *Our Executive Team*, HULU PRESS, https://press.hulu.com/executives/.

[43] *Id.*



McKOOL SMITH, P.C.
LOS ANGELES, CA

191. As another example, Alisa Bowen is or was the President of Disney+. According to the Disney+ website, "Bowen has led global business operations for Disney's streaming platforms, including Disney+, since its launch in 2019. . . . Bowen will work closely with key leaders across The Walt Disney Company to drive continued focus on innovation, including the forthcoming launch of the advertising-supported tier, as well as multi-channel promotional support for Disney+ and its robust content slate. . . . She most recently served as EVP of Global Business Operations for Disney Streaming, overseeing global content and business operations for the Company's direct-to-consumer video streaming businesses, Disney+, Hulu, ESPN+, and Star+."[44]

192. As another example, Michael Paull is the former President of Disney Streaming, where he was "responsible for Disney+, Hulu, [and] ESPN+."[45]

193. Many Defendants also share facilities and places of business.

194. For example, The Walt Disney Company, Disney Media and Entertainment Distribution LLC, Disney DTC LLC, Disney Streaming Services LLC, Disney Platform Distribution, Inc., and BAMTech, LLC have a place of business at 500 South Buena Vista Street, Burbank, California 91521.

---

[44] *Alisa Bowen Named President Of Disney+*, DISNEY+ PRESS (Sept. 29, 2022), https://press.disneyplus.com/news/alisa-bowen-named-president-of-disney-plus.

[45] Megan duBois, *Disney Announces Executives For Its Disney Media And Entertainment Segment*, FORBES (Jan. 21, 2022), https://www.forbes.com/sites/megandubois/2022/01/20/disney-announces-executives-for-its-disney-media-and-entertainment-segment/?sh=49a43e8c41f7.



McKOOL SMITH, P.C.
LOS ANGELES, CA

195. The privacy policy for each Accused Instrumentalities' website is a link to The Walt Disney Company website's privacy policy, https://privacy.thewaltdisneycompany.com/en/.[46]

196. The Walt Disney Company's website also includes job posting for its subsidiaries, including Defendants.

197. For example, The Walt Disney Company's website posted the following job application for a Senior Analyst for Hulu Subscriber Planning, which states, "This position is with Hulu, LLC."[47]

198. As another example, The Walt Disney Company's website posted the following job application for a Sr. Manager, Software Engineering, which states, "This position is with Disney Streaming Technology LLC."[48]

**D. *Certain Defendants Are Agents of One Another***

199. Disney Media and Entertainment Distribution LLC is an agent of The Walt Disney Company.

200. Disney Platform Distribution, Inc. is an agent of The Walt Disney Company.

---

[46] *See generally* ESPN+, https://plus.espn.com/ (scroll to the bottom of the page and click "Privacy Policy"); Disney+, https://www.disneyplus.com/ (scroll to the bottom of the page and click "Privacy Policy"); Hulu, https://www.hulu.com/welcome (scroll to the bottom of the page and click "Privacy Policy").

[47] *Senior Analyst, Hulu Subscriber Planning*, DISNEY CAREERS (Dec. 19, 2024), https://www.disneycareers.com/en/job/santa-monica/senior-analyst-hulu-subscriber-planning/391/74783297328.

[48] *Sr. Manager, Software Engineering*, DISNEY CAREERS (Jan. 23, 2025), https://www.disneycareers.com/en/job/new-york/sr-manager-software-engineering/391/76050096368.



McKool Smith, P.C.
Los Angeles, CA

201. Disney Streaming Services LLC is an agent of The Walt Disney Company.

202. Disney Entertainment & Sports LLC is an agent of The Walt Disney Company.

203. Disney DTC LLC is an agent of The Walt Disney Company.

204. BAMTech, LLC is an agent of The Walt Disney Company.

205. Hulu, LLC is an agent of The Walt Disney Company.

206. ESPN, Inc. is an agent of The Walt Disney Company.

207. Disney Platform Distribution, Inc. is an agent of Disney Media and Entertainment Distribution LLC.

208. Disney Streaming Services LLC is an agent of Disney Media and Entertainment Distribution LLC.

209. Disney Entertainment & Sports LLC is an agent of Disney Media and Entertainment Distribution LLC.

210. Disney DTC LLC is an agent of Disney Media and Entertainment Distribution LLC.

211. BAMTech, LLC is an agent of Disney Media and Entertainment Distribution LLC.

212. Hulu, LLC is an agent of Disney Media and Entertainment Distribution LLC.

McKool Smith, P.C.
Los Angeles, CA

213. ESPN, Inc. is an agent of Disney Media and Entertainment Distribution LLC.

214. Disney Platform Distribution, Inc. is an agent of Disney Streaming Services LLC.

215. Disney Entertainment & Sports LLC is an agent of Disney Streaming Services.

216. Disney DTC LLC is an agent of Disney Streaming Services LLC.

217. BAMTech, LLC is an agent of Disney Streaming Services LLC.

218. Hulu, LLC is an agent of Disney Streaming Services LLC.

219. ESPN, Inc. is an agent of Disney Streaming Services LLC.

220. Disney Platform Distribution, Inc. is an agent of Disney Entertainment & Sports.

221. Disney DTC LLC is an agent of Disney Entertainment & Sports LLC.

222. BAMTech, LLC is an agent of Disney Entertainment & Sports LLC.

223. Hulu, LLC is an agent of Disney Entertainment & Sports LLC.

224. ESPN, Inc. is an agent of Disney Entertainment & Sports LLC.

225. BAMTech, LLC is an agent of ESPN, Inc.

**E. *<u>The Walt Disney Company's Vicarious Liability</u>***

226. The Walt Disney Company directs and controls the actions and performance of Disney Media and Entertainment Distribution LLC, including those related to infringement of the Asserted Patents.

227. The Walt Disney Company conditions benefits derived by Disney Media and Entertainment Distribution LLC on the performance of activities, including those related to infringement of the Asserted Patents.

228. The Walt Disney Company specifies the timing and manner of the performance of activities by Disney Media and Entertainment Distribution LLC, including those related to infringement of the Asserted Patents.

229. The Walt Disney Company profits from the activities of Disney Media and Entertainment Distribution LLC.

230. The Walt Disney Company has the rights, powers, or abilities to cause Disney Media and Entertainment Distribution LLC to stop or limit its infringing activities.

231. The Walt Disney Company has not exercised its rights, powers, or abilities to cause Disney Media and Entertainment Distribution LLC to stop or limit its infringing activities.

232. The Walt Disney Company is vicariously liable for the infringing activities of Disney Media and Entertainment Distribution LLC.

233. The Walt Disney Company directs and controls the actions and performance of Disney Platform Distribution, Inc., including those related to infringement of the Asserted Patents.

234. The Walt Disney Company conditions benefits derived by Disney Platform Distribution, Inc. on the performance of activities, including those related to infringement of the Asserted Patents.

235. The Walt Disney Company specifies the timing and manner of the performance of activities by Disney Platform Distribution, Inc., including those related to infringement of the Asserted Patents.

236. The Walt Disney Company profits from the activities of Disney Platform Distribution, Inc.

237. The Walt Disney Company has the rights, powers, or abilities to cause Disney Platform Distribution, Inc. to stop or limit its infringing activities.

238. The Walt Disney Company has not exercised its rights, powers, or abilities to cause Disney Platform Distribution, Inc. to stop or limit its infringing activities.

239. The Walt Disney Company is vicariously liable for the infringing activities of Disney Platform Distribution, Inc.

240. The Walt Disney Company directs and controls the actions and performance of Disney Streaming Services LLC, including those related to infringement of the Asserted Patents.

241. The Walt Disney Company conditions benefits derived by Disney Streaming Services LLC on the performance of activities, including those related to infringement of the Asserted Patents.

242. The Walt Disney Company specifies the timing and manner of the performance of activities by Disney Streaming Services LLC, including those related to infringement of the Asserted Patents.

243. The Walt Disney Company profits from the activities of Disney Streaming Services LLC.

244. The Walt Disney Company has the rights, powers, or abilities to cause Disney Streaming Services LLC to stop or limit its infringing activities.

245. The Walt Disney Company has not exercised its rights, powers, or abilities to cause Disney Streaming Services LLC to stop or limit its infringing activities.

246. The Walt Disney Company is vicariously liable for the infringing activities of Disney Streaming Services LLC.

247. The Walt Disney Company directs and controls the actions and performance of Disney Entertainment & Sports LLC, including those related to infringement of the Asserted Patents.

248. The Walt Disney Company conditions benefits derived by Disney Entertainment & Sports LLC on the performance of activities, including those related to infringement of the Asserted Patents.

249. The Walt Disney Company specifies the timing and manner of the performance of activities by Disney Entertainment & Sports LLC, including those related to infringement of the Asserted Patents.

250. The Walt Disney Company profits from the activities of Disney Entertainment & Sports LLC.

251. The Walt Disney Company has the rights, powers, or abilities to cause Disney Entertainment & Sports LLC to stop or limit its infringing activities.

252. The Walt Disney Company has not exercised its rights, powers, or abilities to cause Disney Entertainment & Sports LLC to stop or limit its infringing activities.

253. The Walt Disney Company is vicariously liable for the infringing activities of Disney Entertainment & Sports LLC.

254. The Walt Disney Company directs and controls the actions and performance of Disney DTC LLC, including those related to infringement of the Asserted Patents.

255. The Walt Disney Company conditions benefits derived by Disney DTC LLC on the performance of activities, including those related to infringement of the Asserted Patents.

256. The Walt Disney Company specifies the timing and manner of the performance of activities by Disney DTC LLC, including those related to infringement of the Asserted Patents.

257. The Walt Disney Company profits from the activities of Disney DTC LLC.

McKool Smith, P.C.
Los Angeles, CA

258. The Walt Disney Company has the rights, powers, or abilities to cause Disney DTC LLC to stop or limit its infringing activities.

259. The Walt Disney Company has not exercised its rights, powers, or abilities to cause Disney DTC LLC to stop or limit its infringing activities.

260. The Walt Disney Company is vicariously liable for the infringing activities of Disney DTC LLC.

261. The Walt Disney Company directs and controls the actions and performance of BAMTech, LLC, including those related to infringement of the Asserted Patents.

262. The Walt Disney Company conditions benefits derived by BAMTech, LLC on the performance of activities, including those related to infringement of the Asserted Patents.

263. The Walt Disney Company specifies the timing and manner of the performance of activities by BAMTech, LLC, including those related to infringement of the Asserted Patents.

264. The Walt Disney Company profits from the activities of BAMTech, LLC.

265. The Walt Disney Company has the rights, powers, or abilities to cause BAMTech, LLC to stop or limit its infringing activities.

266. The Walt Disney Company has not exercised its rights, powers, or abilities to cause BAMTech, LLC to stop or limit its infringing activities.

267. The Walt Disney Company is vicariously liable for the infringing activities of BAMTech, LLC.

268. The Walt Disney Company directs and controls the actions and performance of Hulu, LLC, including those related to infringement of the Asserted Patents.

269. The Walt Disney Company conditions benefits derived by Hulu, LLC on the performance of activities, including those related to infringement of the Asserted Patents.

270. The Walt Disney Company specifies the timing and manner of the performance of activities by Hulu, LLC, including those related to infringement of the Asserted Patents.

271. The Walt Disney Company profits from the activities of Hulu, LLC.

272. The Walt Disney Company has the rights, powers, or abilities to cause Hulu, LLC to stop or limit its infringing activities.

273. The Walt Disney Company has not exercised its rights, powers, or abilities to cause Hulu, LLC to stop or limit its infringing activities.

274. The Walt Disney Company is vicariously liable for the infringing activities of Hulu, LLC.

275. The Walt Disney Company directs and controls the actions and performance of ESPN, Inc., including those related to infringement of the Asserted Patents.

276. The Walt Disney Company conditions benefits derived by ESPN, Inc. on the performance of activities, including those related to infringement of the Asserted Patents.

277. The Walt Disney Company specifies the timing and manner of the performance of activities by ESPN, Inc., including those related to infringement of the Asserted Patents.

278. The Walt Disney Company profits from the activities of ESPN, Inc.

279. The Walt Disney Company has the rights, powers, or abilities to cause ESPN, Inc. to stop or limit its infringing activities.

280. The Walt Disney Company has not exercised its rights, powers, or abilities to cause ESPN, Inc. to stop or limit its infringing activities.

281. The Walt Disney Company is vicariously liable for the infringing activities of ESPN, Inc.

282. The Walt Disney Company directs and controls the actions and performance of third parties AWS, Fastly, and Akamai (collectively, "the Third Parties"),[49] including those related to the direct infringement of the Asserted Patents.[50]

---

[49] *See supra* ¶¶ 40-62.

[50] AWS is used by Disney+, Hulu, Hulu Live, and ESPN+. *See Walt Disney Company Confirms AWS As Preferred Cloud Partner for Disney+ Streaming Service*, COMPUTERWEEKLY.COM (Apr. 29, 2021), https://www.computerweekly.com/news/252499973/Walt-Disney-Company-confirms-AWS-as-preferred-cloud-partner-for-Disney-streaming-service ("The Walt Disney Company has confirmed that Amazon Web Services (AWS) powered the global roll-out of its Disney+ streaming service."); *Streaming Success: How Disney+ Scaled Rapidly with AWS Cloud Services*, QSS TECHNOSOFT (Oct. 14, 2024), https://www.qsstechnosoft.com/blog/streaming-success-how-disney-scaled-rapidly-with-aws-cloud-



McKOOL SMITH, P.C.
LOS ANGELES, CA

283. The Walt Disney Company conditions benefits derived by the Third Parties on the performance of activities, including those related to the direct infringement of the Asserted Patents.

284. The Walt Disney Company specifies the timing and manner of the performance of activities by the Third Parties, including those related to the direct infringement of the Asserted Patents.

285. The Walt Disney Company profits from the activities of the Third Parties.

286. The Walt Disney Company has the rights, powers, or abilities to cause the Third Parties to stop or limit its infringing activities.

287. The Walt Disney Company has not exercised its rights, powers, or abilities to cause the Third Parties to stop or limit its infringing activities.

288. The Walt Disney Company is vicariously liable for the infringing activities of the Third Parties.

---

services/#:~:text=Disney+%20opted%20for%20AWS%20due,enhancing%20the%20overall%20streaming%20experience; *How Disney+ Uses Amazon DynamoDB To Serve Billions Of Customer Actions Daily*, MEDIUM (July 1, 2024), https://aws.plainenglish.io/how-disney-uses-amazon-dynamodb-to-serve-billions-of-customer-actions-daily-aa14b9a638dc; *AWS Chosen by Hulu as Its Cloud Provider*, AMAZON (Aug. 14, 2017), https://press.aboutamazon.com/2017/8/aws-chosen-by-hulu-as-its-cloud-provider ("Amazon Web Services, Inc. . . . announced that Hulu has selected AWS as its cloud provider, and leveraged AWS to launch its new, over-the-top (OTT) live TV service."); *AWS Infrastructure is Now Behind Three Main Streaming Media Providers*, ZDNET (Aug. 14, 2017), https://www.zdnet.com/article/aws-infrastructure-is-now-behind-three-main-streaming-media-providers/; *ESPN's 2024 College Football Coverage Takes to the Cloud for Super Slo-Mo Replay*, SPORTS VIDEO GROUP (Aug. 27, 2024), https://www.sportsvideo.org/2024/08/27/espn-embraces-cloud-for-aer-lingus-college-football-classic/#:~:text=ESPN's%20VP%2C%20Production%20Operations%2C%20Chris,needed%20and%20at%20any%20time (noting that ESPN operators utilize "ESPN's Direct Connect to AWS for control connectivity," which is then transmitted to ESPN+).



McKOOL SMITH, P.C.
LOS ANGELES, CA

McKool Smith, P.C.
Los Angeles, CA

**F. *Disney Media and Entertainment Distribution LLC's Vicarious Liability***

289. Disney Media and Entertainment Distribution LLC directs and controls the actions and performance of Disney Platform Distribution, Inc., including those related to infringement of the Asserted Patents.

290. Disney Media and Entertainment Distribution LLC conditions benefits derived by Disney Platform Distribution, Inc. on the performance of activities, including those related to infringement of the Asserted Patents.

291. Disney Media and Entertainment Distribution LLC specifies the timing and manner of the performance of activities by Disney Platform Distribution, Inc., including those related to infringement of the Asserted Patents.

292. Disney Media and Entertainment Distribution LLC profits from the activities of Disney Platform Distribution, Inc.

293. Disney Media and Entertainment Distribution LLC has the rights, powers, or abilities to cause Disney Platform Distribution, Inc. to stop or limit its infringing activities.

294. Disney Media and Entertainment Distribution LLC has not exercised its rights, powers, or abilities to cause Disney Platform Distribution, Inc. to stop or limit its infringing activities.

295. Disney Media and Entertainment Distribution LLC is vicariously liable for the infringing activities of Disney Platform Distribution, Inc.

296. Disney Media and Entertainment Distribution LLC directs and controls the actions and performance of Disney Streaming Services LLC, including those related to infringement of the Asserted Patents.

297. Disney Media and Entertainment Distribution LLC conditions benefits derived by Disney Streaming Services LLC on the performance of activities, including those related to infringement of the Asserted Patents.

298. Disney Media and Entertainment Distribution LLC specifies the timing and manner of the performance of activities by Disney Streaming Services LLC, including those related to infringement of the Asserted Patents.

299. Disney Media and Entertainment Distribution LLC profits from the activities of Disney Streaming Services LLC.

300. Disney Media and Entertainment Distribution LLC has the rights, powers, or abilities to cause Disney Streaming Services LLC to stop or limit its infringing activities.

301. Disney Media and Entertainment Distribution LLC has not exercised its rights, powers, or abilities to cause Disney Streaming Services LLC to stop or limit its infringing activities.

302. Disney Media and Entertainment Distribution LLC is vicariously liable for the infringing activities of Disney Streaming Services LLC.

303. Disney Media and Entertainment Distribution LLC directs and controls the actions and performance of Disney Entertainment & Sports LLC, including those related to infringement of the Asserted Patents.

304. Disney Media and Entertainment Distribution LLC conditions benefits derived by Disney Entertainment & Sports LLC on the performance of activities, including those related to infringement of the Asserted Patents.

305. Disney Media and Entertainment Distribution LLC specifies the timing and manner of the performance of activities by Disney Entertainment & Sports LLC, including those related to infringement of the Asserted Patents.

306. Disney Media and Entertainment Distribution LLC profits from the activities of Disney Entertainment & Sports LLC.

307. Disney Media and Entertainment Distribution LLC has the rights, powers, or abilities to cause Disney Entertainment & Sports LLC to stop or limit its infringing activities.

308. Disney Media and Entertainment Distribution LLC has not exercised its rights, powers, or abilities to cause Disney Entertainment & Sports LLC to stop or limit its infringing activities.

309. Disney Media and Entertainment Distribution LLC is vicariously liable for the infringing activities of Disney Entertainment & Sports LLC.

McKool Smith, P.C.
Los Angeles, CA

310. Disney Media and Entertainment Distribution LLC directs and controls the actions and performance of Disney DTC LLC, including those related to infringement of the Asserted Patents.

311. Disney Media and Entertainment Distribution LLC conditions benefits derived by Disney DTC LLC on the performance of activities, including those related to infringement of the Asserted Patents.

312. Disney Media and Entertainment Distribution LLC specifies the timing and manner of the performance of activities by Disney DTC LLC, including those related to infringement of the Asserted Patents.

313. Disney Media and Entertainment Distribution LLC profits from the activities of Disney DTC LLC.

314. Disney Media and Entertainment Distribution LLC has the rights, powers, or abilities to cause Disney DTC LLC to stop or limit its infringing activities.

315. Disney Media and Entertainment Distribution LLC has not exercised its rights, powers, or abilities to cause Disney DTC LLC to stop or limit its infringing activities.

316. Disney Media and Entertainment Distribution LLC is vicariously liable for the infringing activities of Disney DTC LLC.

317. Disney Media and Entertainment Distribution LLC directs and controls the actions and performance of BAMTech, LLC, including those related to infringement of the Asserted Patents.

318. Disney Media and Entertainment Distribution LLC conditions benefits derived by BAMTech, LLC on the performance of activities, including those related to infringement of the Asserted Patents.

319. Disney Media and Entertainment Distribution LLC specifies the timing and manner of the performance of activities by BAMTech, LLC, including those related to infringement of the Asserted Patents.

320. Disney Media and Entertainment Distribution LLC profits from the activities of BAMTech, LLC.

321. Disney Media and Entertainment Distribution LLC has the rights, powers, or abilities to cause BAMTech, LLC to stop or limit its infringing activities.

322. Disney Media and Entertainment Distribution LLC has not exercised its rights, powers, or abilities to cause BAMTech, LLC to stop or limit its infringing activities.

323. Disney Media and Entertainment Distribution LLC is vicariously liable for the infringing activities of BAMTech, LLC.

324. Disney Media and Entertainment Distribution LLC directs and controls the actions and performance of Hulu, LLC, including those related to infringement of the Asserted Patents.

325. Disney Media and Entertainment Distribution LLC conditions benefits derived by Hulu, LLC on the performance of activities, including those related to infringement of the Asserted Patents.

326. Disney Media and Entertainment Distribution LLC specifies the timing and manner of the performance of activities by Hulu, LLC, including those related to infringement of the Asserted Patents.

327. Disney Media and Entertainment Distribution LLC profits from the activities of Hulu, LLC.

328. Disney Media and Entertainment Distribution LLC has the rights, powers, or abilities to cause Hulu, LLC to stop or limit its infringing activities.

329. Disney Media and Entertainment Distribution LLC has not exercised its rights, powers, or abilities to cause Hulu, LLC to stop or limit its infringing activities.

330. Disney Media and Entertainment Distribution LLC is vicariously liable for the infringing activities of Hulu, LLC.

331. Disney Media and Entertainment Distribution LLC directs and controls the actions and performance of ESPN, Inc., including those related to infringement of the Asserted Patents.

332. Disney Media and Entertainment Distribution LLC conditions benefits derived by ESPN, Inc. on the performance of activities, including those related to infringement of the Asserted Patents.

333. Disney Media and Entertainment Distribution LLC specifies the timing and manner of the performance of activities by ESPN, Inc., including those related to infringement of the Asserted Patents.

McKool Smith, P.C.
Los Angeles, CA

334. Disney Media and Entertainment Distribution LLC profits from the activities of ESPN, Inc.

335. Disney Media and Entertainment Distribution LLC has the rights, powers, or abilities to cause ESPN, Inc. to stop or limit its infringing activities.

336. Disney Media and Entertainment Distribution LLC has not exercised its rights, powers, or abilities to cause ESPN, Inc. to stop or limit its infringing activities.

337. Disney Media and Entertainment Distribution LLC is vicariously liable for the infringing activities of ESPN, Inc.

338. Disney Media and Entertainment Distribution LLC directs and controls the actions and performance of the Third Parties, including those related to the direct infringement of the Asserted Patents.[51]

339. Disney Media and Entertainment Distribution LLC conditions benefits derived by the Third Parties on the performance of activities, including those related to the direct infringement of the Asserted Patents.

340. Disney Media and Entertainment Distribution LLC specifies the timing and manner of the performance of activities by the Third Parties, including those related to the direct infringement of the Asserted Patents.

341. Disney Media and Entertainment Distribution LLC profits from the activities of the Third Parties.

[51] *See supra* ¶¶ 40-62.

342. Disney Media and Entertainment Distribution LLC has the rights, powers, or abilities to cause the Third Parties to stop or limit its infringing activities.

343. Disney Media and Entertainment Distribution LLC has not exercised its rights, powers, or abilities to cause the Third Parties to stop or limit its infringing activities.

344. Disney Media and Entertainment Distribution LLC is vicariously liable for the infringing activities of the Third Parties.

**G. *Disney Streaming Services LLC's Vicarious Liability***

345. Disney Streaming Services LLC directs and controls the actions and performance of Disney Platform Distribution, Inc., including those related to infringement of the Asserted Patents.

346. Disney Streaming Services LLC conditions benefits derived by Disney Platform Distribution, Inc. on the performance of activities, including those related to infringement of the Asserted Patents.

347. Disney Streaming Services LLC specifies the timing and manner of the performance of activities by Disney Platform Distribution, Inc., including those related to infringement of the Asserted Patents.

348. Disney Streaming Services LLC profits from the activities of Disney Platform Distribution, Inc.

349. Disney Streaming Services LLC has the rights, powers, or abilities to cause Disney Platform Distribution, Inc. to stop or limit its infringing activities.

350. Disney Streaming Services LLC has not exercised its rights, powers, or abilities to cause Disney Platform Distribution, Inc. to stop or limit its infringing activities.

351. Disney Streaming Services LLC is vicariously liable for the infringing activities of Disney Platform Distribution, Inc.

352. Disney Streaming Services LLC directs and controls the actions and performance of Disney Entertainment & Sports LLC, including those related to infringement of the Asserted Patents.

353. Disney Streaming Services LLC conditions benefits derived by Disney Entertainment & Sports LLC on the performance of activities, including those related to infringement of the Asserted Patents.

354. Disney Streaming Services LLC specifies the timing and manner of the performance of activities by Disney Entertainment & Sports LLC, including those related to infringement of the Asserted Patents.

355. Disney Streaming Services LLC profits from the activities of Disney Entertainment & Sports LLC.

356. Disney Streaming Services LLC has the rights, powers, or abilities to cause Disney Entertainment & Sports LLC to stop or limit its infringing activities.

357. Disney Streaming Services LLC has not exercised its rights, powers, or abilities to cause Disney Entertainment & Sports LLC to stop or limit its infringing activities.

358. Disney Streaming Services LLC is vicariously liable for the infringing activities of Disney Entertainment & Sports LLC.

359. Disney Streaming Services LLC directs and controls the actions and performance of Disney DTC LLC, including those related to infringement of the Asserted Patents.

360. Disney Streaming Services LLC conditions benefits derived by Disney DTC LLC on the performance of activities, including those related to infringement of the Asserted Patents.

361. Disney Streaming Services LLC specifies the timing and manner of the performance of activities by Disney DTC LLC, including those related to infringement of the Asserted Patents.

362. Disney Streaming Services LLC profits from the activities of Disney DTC LLC.

363. Disney Streaming Services LLC has the rights, powers, or abilities to cause Disney DTC LLC to stop or limit its infringing activities.

364. Disney Streaming Services LLC has not exercised its rights, powers, or abilities to cause Disney DTC LLC to stop or limit its infringing activities.

365. Disney Streaming Services LLC is vicariously liable for the infringing activities of Disney DTC LLC.

McKool Smith, P.C.
Los Angeles, CA

366. Disney Streaming Services LLC directs and controls the actions and performance of BAMTech, LLC, including those related to infringement of the Asserted Patents.

367. Disney Streaming Services LLC conditions benefits derived by BAMTech, LLC on the performance of activities, including those related to infringement of the Asserted Patents.

368. Disney Streaming Services LLC specifies the timing and manner of the performance of activities by BAMTech, LLC, including those related to infringement of the Asserted Patents.

369. Disney Streaming Services LLC profits from the activities of BAMTech, LLC.

370. Disney Streaming Services LLC has the rights, powers, or abilities to cause BAMTech, LLC to stop or limit its infringing activities.

371. Disney Streaming Services LLC has not exercised its rights, powers, or abilities to cause BAMTech, LLC to stop or limit its infringing activities.

372. Disney Streaming Services LLC is vicariously liable for the infringing activities of BAMTech, LLC.

373. Disney Streaming Services LLC directs and controls the actions and performance of Hulu, LLC, including those related to infringement of the Asserted Patents.

McKool Smith, P.C.
Los Angeles, CA

374. Disney Streaming Services LLC conditions benefits derived by Hulu, LLC on the performance of activities, including those related to infringement of the Asserted Patents.

375. Disney Streaming Services LLC specifies the timing and manner of the performance of activities by Hulu, LLC, including those related to infringement of the Asserted Patents.

376. Disney Streaming Services LLC profits from the activities of Hulu, LLC.

377. Disney Streaming Services LLC has the rights, powers, or abilities to cause Hulu, LLC to stop or limit its infringing activities.

378. Disney Streaming Services LLC has not exercised its rights, powers, or abilities to cause Hulu, LLC to stop or limit its infringing activities.

379. Disney Streaming Services LLC is vicariously liable for the infringing activities of Hulu, LLC.

380. Disney Streaming Services LLC directs and controls the actions and performance of ESPN, Inc., including those related to infringement of the Asserted Patents.

381. Disney Streaming Services LLC conditions benefits derived by ESPN, Inc. on the performance of activities, including those related to infringement of the Asserted Patents.

382. Disney Streaming Services LLC specifies the timing and manner of the performance of activities by ESPN, Inc., including those related to infringement of the Asserted Patents.

383. Disney Streaming Services LLC profits from the activities of ESPN, Inc.

384. Disney Streaming Services LLC has the rights, powers, or abilities to cause ESPN, Inc. to stop or limit its infringing activities.

385. Disney Streaming Services LLC has not exercised its rights, powers, or abilities to cause ESPN, Inc. to stop or limit its infringing activities.

386. Disney Streaming Services LLC is vicariously liable for the infringing activities of ESPN, Inc.

387. Disney Streaming Services LLC directs and controls the actions and performance of the Third Parties, including those related to the direct infringement of the Asserted Patents.[52]

388. Disney Streaming Services LLC conditions benefits derived by the Third Parties on the performance of activities, including those related to the direct infringement of the Asserted Patents.

389. Disney Streaming Services LLC specifies the timing and manner of the performance of activities by the Third Parties, including those related to the direct infringement of the Asserted Patents.

[52] *See supra* ¶¶ 40-62.



McKool Smith, P.C.
Los Angeles, CA

390. Disney Streaming Services LLC profits from the activities of the Third Parties.

391. Disney Streaming Services LLC has the rights, powers, or abilities to cause the Third Parties to stop or limit its infringing activities.

392. Disney Streaming Services LLC has not exercised its rights, powers, or abilities to cause the Third Parties to stop or limit its infringing activities.

393. Disney Streaming Services LLC is vicariously liable for the infringing activities of the Third Parties.

**H. *Disney Entertainment & Sports LLC's Vicarious Liability***

394. Disney Entertainment & Sports LLC directs and controls the actions and performance of Disney Platform Distribution, Inc., including those related to infringement of the Asserted Patents.

395. Disney Entertainment & Sports LLC conditions benefits derived by Disney Platform Distribution, Inc. on the performance of activities, including those related to infringement of the Asserted Patents.

396. Disney Entertainment & Sports LLC specifies the timing and manner of the performance of activities by Disney Platform Distribution, Inc., including those related to infringement of the Asserted Patents.

397. Disney Entertainment & Sports LLC profits from the activities of Disney Platform Distribution, Inc.

McKool Smith, P.C.
Los Angeles, CA

398. Disney Entertainment & Sports LLC has the rights, powers, or abilities to cause Disney Platform Distribution, Inc. to stop or limit its infringing activities.

399. Disney Entertainment & Sports LLC has not exercised its rights, powers, or abilities to cause Disney Platform Distribution, Inc. to stop or limit its infringing activities.

400. Disney Entertainment & Sports LLC is vicariously liable for the infringing activities of Disney Platform Distribution, Inc.

401. Disney Entertainment & Sports LLC directs and controls the actions and performance of Disney DTC LLC, including those related to infringement of the Asserted Patents.

402. Disney Entertainment & Sports LLC conditions benefits derived by Disney DTC LLC on the performance of activities, including those related to infringement of the Asserted Patents.

403. Disney Entertainment & Sports LLC specifies the timing and manner of the performance of activities by Disney DTC LLC, including those related to infringement of the Asserted Patents.

404. Disney Entertainment & Sports LLC profits from the activities of Disney DTC LLC.

405. Disney Entertainment & Sports LLC has the rights, powers, or abilities to cause Disney DTC LLC to stop or limit its infringing activities.

McKool Smith, P.C.
Los Angeles, CA

406. Disney Entertainment & Sports LLC has not exercised its rights, powers, or abilities to cause Disney DTC LLC to stop or limit its infringing activities.

407. Disney Entertainment & Sports LLC is vicariously liable for the infringing activities of Disney DTC LLC.

408. Disney Entertainment & Sports LLC directs and controls the actions and performance of BAMTech, LLC, including those related to infringement of the Asserted Patents.

409. Disney Entertainment & Sports LLC conditions benefits derived by BAMTech, LLC on the performance of activities, including those related to infringement of the Asserted Patents.

410. Disney Entertainment & Sports LLC specifies the timing and manner of the performance of activities by BAMTech, LLC, including those related to infringement of the Asserted Patents.

411. Disney Entertainment & Sports LLC profits from the activities of BAMTech, LLC.

412. Disney Entertainment & Sports LLC has the rights, powers, or abilities to cause BAMTech, LLC to stop or limit its infringing activities.

413. Disney Entertainment & Sports LLC has not exercised its rights, powers, or abilities to cause BAMTech, LLC to stop or limit its infringing activities.

414. Disney Entertainment & Sports LLC is vicariously liable for the infringing activities of BAMTech, LLC.

415. Disney Entertainment & Sports LLC directs and controls the actions and performance of Hulu, LLC, including those related to infringement of the Asserted Patents.

416. Disney Entertainment & Sports LLC conditions benefits derived by Hulu, LLC on the performance of activities, including those related to infringement of the Asserted Patents.

417. Disney Entertainment & Sports LLC specifies the timing and manner of the performance of activities by Hulu, LLC, including those related to infringement of the Asserted Patents.

418. Disney Entertainment & Sports LLC profits from the activities of Hulu, LLC.

419. Disney Entertainment & Sports LLC has the rights, powers, or abilities to cause Hulu, LLC to stop or limit its infringing activities.

420. Disney Entertainment & Sports LLC has not exercised its rights, powers, or abilities to cause Hulu, LLC to stop or limit its infringing activities.

421. Disney Entertainment & Sports LLC is vicariously liable for the infringing activities of Hulu, LLC.

422. Disney Entertainment & Sports LLC directs and controls the actions and performance of ESPN, Inc., including those related to infringement of the Asserted Patents.

McKool Smith, P.C.
Los Angeles, CA

423. Disney Entertainment & Sports LLC conditions benefits derived by ESPN, Inc. on the performance of activities, including those related to infringement of the Asserted Patents.

424. Disney Entertainment & Sports LLC specifies the timing and manner of the performance of activities by ESPN, Inc., including those related to infringement of the Asserted Patents.

425. Disney Entertainment & Sports LLC profits from the activities of ESPN, Inc.

426. Disney Entertainment & Sports LLC has the rights, powers, or abilities to cause ESPN, Inc. to stop or limit its infringing activities.

427. Disney Entertainment & Sports LLC has not exercised its rights, powers, or abilities to cause ESPN, Inc. to stop or limit its infringing activities.

428. Disney Entertainment & Sports LLC is vicariously liable for the infringing activities of ESPN, Inc.

429. Disney Entertainment & Sports LLC directs and controls the actions and performance of the Third Parties, including those related to the direct infringement of the Asserted Patents.[53]

430. Disney Entertainment & Sports LLC conditions benefits derived by the Third Parties on the performance of activities, including those related to the direct infringement of the Asserted Patents.

[53] *See supra* ¶¶ 40-62.

431. Disney Entertainment & Sports LLC specifies the timing and manner of the performance of activities by the Third Parties, including those related to the direct infringement of the Asserted Patents.

432. Disney Entertainment & Sports LLC profits from the activities of the Third Parties.

433. Disney Entertainment & Sports LLC has the rights, powers, or abilities to cause the Third Parties to stop or limit its infringing activities.

434. Disney Entertainment & Sports LLC has not exercised its rights, powers, or abilities to cause the Third Parties to stop or limit its infringing activities.

435. Disney Entertainment & Sports LLC is vicariously liable for the infringing activities of the Third Parties.

**I. *ESPN, Inc.'s Vicarious Liability***

436. ESPN, Inc. directs and controls the actions and performance of BAMTech, LLC, including those related to infringement of the Asserted Patents.

437. ESPN, Inc. conditions benefits derived by BAMTech, LLC on the performance of activities, including those related to infringement of the Asserted Patents.

438. ESPN, Inc. specifies the timing and manner of the performance of activities by BAMTech, LLC, including those related to infringement of the Asserted Patents.

439. ESPN, Inc. profits from the activities of BAMTech, LLC.

McKool Smith, P.C.
Los Angeles, CA

440. ESPN, Inc. has the rights, powers, or abilities to cause BAMTech, LLC to stop or limit its infringing activities.

441. ESPN, Inc. has not exercised its rights, powers, or abilities to cause BAMTech, LLC to stop or limit its infringing activities.

442. ESPN, Inc. is vicariously liable for the infringing activities of BAMTech, LLC.

443. ESPN, Inc. directs and controls the actions and performance of the Third Parties, including those related to the direct infringement of the Asserted Patents.[54]

444. ESPN, Inc. conditions benefits derived by the Third Parties on the performance of activities, including those related to the direct infringement of the Asserted Patents.

445. ESPN, Inc. specifies the timing and manner of the performance of activities by the Third Parties, including those related to the direct infringement of the Asserted Patents.

446. ESPN, Inc. profits from the activities of the Third Parties.

447. ESPN, Inc. has the rights, powers, or abilities to cause the Third Parties to stop or limit its infringing activities.

448. ESPN, Inc. has not exercised its rights, powers, or abilities to cause the Third Parties to stop or limit its infringing activities.

[54] *See supra* ¶¶ 40-62.

449. ESPN, Inc. is vicariously liable for the infringing activities of the Third Parties.

**J. *Defendants' Actions to Directly Infringe***

450. The Walt Disney Company directly infringes the claims of the Asserted Patents by making, using, selling, and/or offering to sell the Accused Instrumentalities that encode video with technology covered by the Asserted Patents.

451. Disney Media and Entertainment Distribution LLC directly infringes the claims of the Asserted Patents by making, using, selling, and/or offering to sell the Accused Instrumentalities that encode video with technology covered by the Asserted Patents.

452. Disney Platform Distribution, Inc. directly infringes the claims of the Asserted Patents by making, using, selling, and/or offering to sell the Accused Instrumentalities that encode video with technology covered by the Asserted Patents.

453. Disney Streaming Services LLC directly infringes the claims of the Asserted Patents by making, using, selling, and/or offering to sell the Accused Instrumentalities that encode video with technology covered by the Asserted Patents.

454. Disney Entertainment & Sports LLC directly infringes the claims of the Asserted Patents by making, using, selling, and/or offering to sell the Accused Instrumentalities that encode video with technology covered by the Asserted Patents.

455. Disney DTC LLC directly infringes the claims of the Asserted Patents by making, using, selling, and/or offering to sell the Accused Instrumentalities that encode video with technology covered by the Asserted Patents.

456. BAMTech, LLC directly infringes the claims of the Asserted Patents by making, using, selling, and/or offering to sell the Accused Instrumentalities that encode video with technology covered by the Asserted Patents.

457. Hulu, LLC directly infringes the claims of the Asserted Patents by making, using, selling, and/or offering to sell the Accused Instrumentalities that encode video with technology covered by the Asserted Patents.

458. ESPN, Inc. directly infringes the claims of the Asserted Patents by making, using, selling, and/or offering to sell the Accused Instrumentalities that encode video with technology covered by the Asserted Patents.

459. The Walt Disney Company took the above actions intending to infringe and/or cause infringing acts by others.

460. Disney Media and Entertainment Distribution LLC took the above actions intending to infringe and/or cause infringing acts by others.

461. Disney Platform Distribution, Inc. took the above actions intending to infringe and/or cause infringing acts by others.

462. Disney Streaming Services LLC took the above actions intending to infringe and/or cause infringing acts by others.

463. Disney Entertainment & Sports LLC took the above actions intending to infringe and/or cause infringing acts by others.

464. Disney DTC LLC took the above actions intending to infringe and/or cause infringing acts by others.

465. BAMTech, LLC took the above actions intending to infringe and/or cause infringing acts by others.

466. Hulu, LLC took the above actions intending to infringe and/or cause infringing acts by others.

467. ESPN, Inc. took the above actions intending to infringe and/or cause infringing acts by others.

**COUNT 1: INFRINGEMENT OF U.S. PATENT NO. 8,406,301**

468. InterDigital incorporates the allegations of all of the foregoing paragraphs as if fully restated herein.

469. U.S. Patent No. 8,406,301 ("the '301 Patent") entitled "Adaptive Weighting of Reference Pictures in Video Encoding," was issued on March 26, 2013, and names Jill MacDonald Boyce as the inventor. The '301 Patent is attached as Exhibit A.1.

470. InterDigital VC Holdings, Inc. owns all rights, title, and interest in the '301 Patent, and holds all substantial rights pertinent to this suit, including the right to sue and recover for all past, current, and future infringement.

471. The ’301 Patent is valid and enforceable and directed to patentable subject matter.

**The ’301 Patent**

472. The ’301 Patent concerns video encoders and encoding methods where a reference picture weighting factor is associated with a particular reference picture index. *See* Ex. A.1 at Cl. 1-12. As the ’301 Patent explains, “[t]he more closely that the prediction is correlated with the current picture, the fewer bits that are needed to compress that picture, thereby increasing the efficiency of the process.” Ex. A.1 at 1:32-35. The ’301 Patent states that, in video compression, “a motion compensated version of a previous reference picture is used as a prediction for the current picture, and only the difference between the current picture and the prediction is coded.” Ex. A.1 at 1:39-43.

473. Weighting factor transmission methods such as those used before the innovation taught in the ‘301 Patent were inflexible and inefficiently communicated weighting factors, which led to higher bandwidth requirements. *See* Ex. A.1 at 1:37-51, 2:42-46. “Two methods have been proposed for indication of weighting factors.” Ex. A.1 at 3:17-18. In the first method, “if the ref_idx_10 index is less than or equal to ref_idx_11, weighting factors of (1/2, 1/2) are used, otherwise (2, -1) factors are used.” Ex. A.1 at 3:18-22. “In the second method offered, any number of weighting factors is transmitted for each slice.” Ex. A.1 at 3:23-24. “Then a weighting factor index is transmitted for each motion block or 8x8 region of a macroblock that uses

bidirectional prediction." Ex. A.1 at 3:24-26, *see also* Ex. A.1 at 3:26-31. "In some video sequences, in particular those with fading, the current picture or image block to be coded is more strongly correlated to a reference picture scaled by a weighting factor than to the reference picture itself." Ex. A.1 at 2:42-46. "These and other drawbacks and disadvantages of the prior art are addressed by a system and method for adaptive weighting of reference pictures in video coders and decoders." Ex. A.1 at 1:55-57; *see also* Ex. A.1 at 1:37-51.

474. The '301 Patent's advancement "dramatically reduces the amount of overhead in the transmitted bitstream [when utilizing] adaptive weighting of reference pictures." Ex. A.1 at 7:67-8:2. "The weighting factor adapts for individual motion blocks within a picture, based on the reference picture index that is used for that motion block." Ex. A.1 at 8:59-61. "Because the reference picture index is already transmitted in the compressed video bitstream, the additional overhead to adapt the weighting factor on a motion block basis is dramatically reduced." Ex. A.1 at 8:62-65.

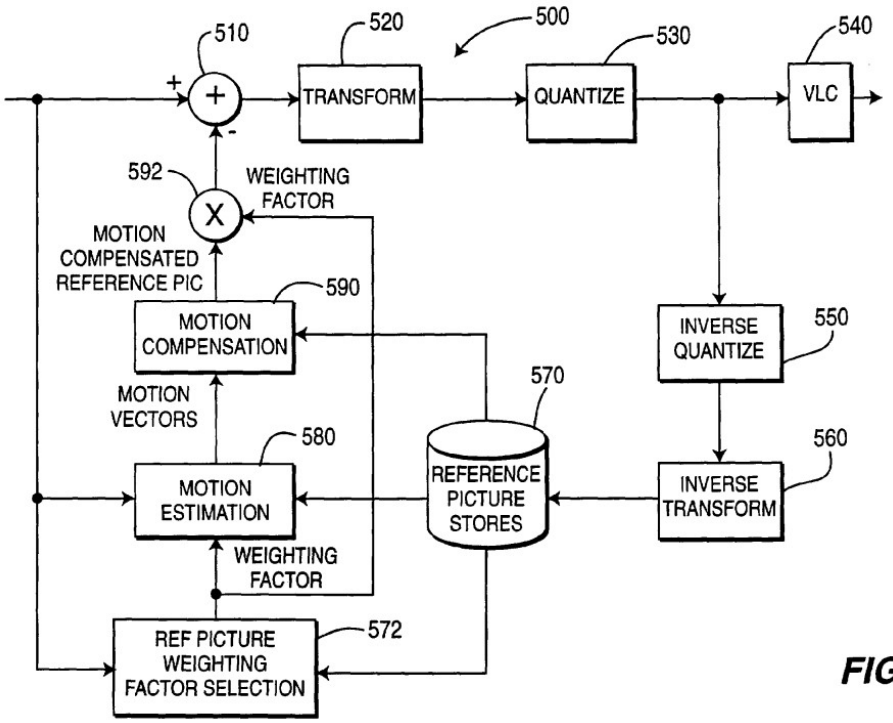



FIG. 5

Ex. A.1 at Fig. 5; *see also* Ex. A.1 at 5:57-6:32 (discussing encoder operation and structure).

475. Figure 5 of the '301 Patent, which is reproduced above, is a block diagram for a video encoder with reference picture weighting. Ex. A.1 at 2:29-31, 5:57-59. The patent describes this block diagram: "A first output of the reference picture store **570** is connected in signal communication with a first input of a reference picture weighting factor assignor **572**." Ex. A.1 at 6:6-8. "The input to the encoder **500** is further connected in signal communication with a second input of the reference picture weighting factor assignor **572**." Ex. A.1 at 6:8-11. "The output of the reference picture weighting factor assignor **572**, which is indicative of a weighting factor, is connected in signal communication with a first input of a motion estimator **580**." Ex. A.1 at 6:11-14. "A second output of the reference picture store **570** is connected in

signal communication with a second input of the motion estimator **580**." Ex. A.1 at 6:14-16.

476. "The input to the encoder **500** is further connected in signal communication with a third input of the motion estimator **580**." Ex. A.1 at 6:17-19. "The output of the motion estimator **580**, which is indicative of motion vectors, is connected in signal communication with a first input of a motion compensator **590**." Ex. A.1 at 6:19-21. "A third output of the reference picture store **570** is connected in signal communication with a second input of the motion compensator **590**." Ex. A.1 at 6:21-24. "The output of the motion compensator **590**, which is indicative of a motion compensated reference picture, is connected in signal communication with a first input of a multiplier **592**." Ex. A.1 at 6:24-27. "The output of the reference picture weighting factor assignor **572**, which is indicative of a weighting factor, is connected in signal communication with a second input of the multiplier **592**." Ex. A.1 at 6:26-30.

McKool Smith, P.C.
Los Angeles, CA

McKool Smith, P.C.
Los Angeles, CA

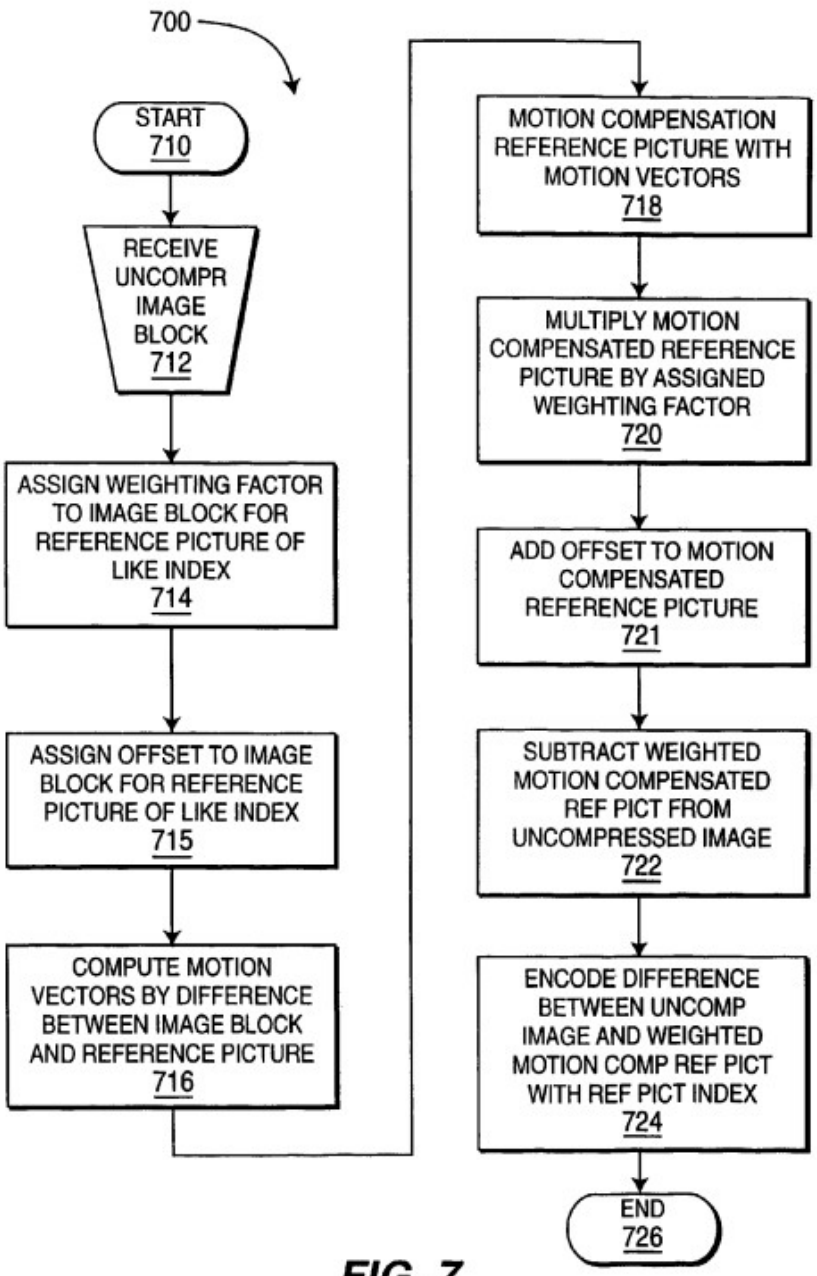



*FIG. 7*

Ex. A.1 at Fig. 7.

477. The ’301 Patent explains illustrative steps through which an encoder can implement adaptive reference picture weighting. Ex. A.1 at 2:34-35. For example, the ’301 Patent describes the following steps from Figure 7 (reproduced above):

> The input block **712** receives substantially uncompressed image block data, and passes control to a function block

> **714**. The function block **714** assigns a weighting factor for the image block corresponding to a particular reference picture having a corresponding index. The function block **714** passes control to an optional function block **715**. The optional function block **715** assigns an offset for the image block corresponding to a particular reference picture having a corresponding index. The optional function block **715** passes control to a function block **716**, which computes motion vectors corresponding to the difference between the image block and the particular reference picture, and passes control to a function block **718**. The function block **718** motion compensates the particular reference picture in correspondence with the motion vectors, and passes control to a function block **720**. The function block **720**, in turn, multiplies the motion compensated reference picture by the assigned weighting factor to form a weighted motion compensated reference picture, and passes control to an optional function block **721**. The optional function block **721**, in turn, adds the motion compensated reference picture to the assigned offset to form a weighted motion compensated reference picture, and passes control to a function block **722**. The function block **722** subtracts the weighted motion compensated reference picture from the substantially uncompressed image block, and passes control to a function block **724**. The function block **724**, in turn, encodes a signal with the difference between the substantially uncompressed image block and the weighted motion compensated reference picture along with the corresponding index of the particular reference picture, and passes control to an end block **726**.

Ex. A.1 at 6:61-7:28.

478. The ’301 Patent notes that “it will be appreciated by those skilled in the art that the block diagrams herein represent conceptual views of illustrative circuitry embodying the principles of the invention.” Ex. A.1 at 3:51-54. The ’301 Patent states that “[t]he functions of the various elements shown in the figures may be provided through the use of dedicated hardware as well as hardware capable of executing



McKool Smith, P.C.
Los Angeles, CA

software in association with appropriate software." Ex. A.1 at 3:60-63, *see also* Ex. A.1 at 3:63-4:13.

479. These advances are also reflected in the claims of the '301 Patent. *See, e.g.*, Ex. A.1 at Claims 8-12. Accordingly, the claims of the '301 Patent recite one or more inventive concepts rooted in computerized technology and overcome technical problems in that field. A person of ordinary skill in the art reading the '301 Patent and its claims would understand that the Patent's disclosure and claims are drawn to solving specific, technical problems arising in video coding systems/methods and provide for advancements in the field that were not routine, well-understood or conventional. Accordingly, the claims of the '301 Patent recite a combination of elements sufficient to ensure that the claims in practice amount to significantly more than a patent claiming an abstract concept. A person of ordinary skill in the art would understand that the ordered combination of claim elements is inventive. Further, the claimed improvements over prior art video coding systems are concrete and improve the capabilities of existing video coding translation systems/methods.

480. A person of ordinary skill in the art reviewing the specification of the '301 Patent would understand that the inventor had possession of the claimed subject matter and would know how to practice the claimed invention without undue experimentation.

**<u>The '301 Patent Allegations</u>**

481. The Accused Instrumentalities practice one or more claims of the '301 Patent by making, using, selling and/or offering to sell the Accused Instrumentalities in this District and elsewhere in the United States, and/or importing the Accused Instrumentalities into this District and elsewhere in the United States.

482. InterDigital provides the following explanation of infringement with regard to an exemplary claim compared to exemplary functionality. InterDigital reserves the right to present additional or alternative explanations of infringement for the claim and functionalities identified below and for other claims and functionalities of the services.

483. As illustrated in Exhibit A.2, Defendants infringe at least one method claim of the '301 Patent, including at least Claims 8-12, by encoding the Accused Instrumentalities' content.

484. Defendants took the above actions intending to infringe and/or cause infringing acts by others.

485. Accordingly, Defendants have directly infringed at least one method claim of the '301 Patent, including at least Claims 8-12.

486. Defendants' acts of infringement have caused damage to InterDigital. InterDigital is entitled to recover from Defendants the damages sustained by InterDigital as a result of their wrongful acts in an amount subject to proof at trial.

McKool Smith, P.C.
Los Angeles, CA

**COUNT 2: INFRINGEMENT OF U.S. PATENT NO. 10,805,610**

487. InterDigital incorporates the allegations of all of the foregoing paragraphs as if fully restated herein.

488. U.S. Patent No. 10,805,610 ("the '610 Patent") entitled "Methods and Apparatus for Intra Coding a Block having Pixels Assigned to Groups," was issued on October 13, 2020, and names Qian Xu, Joel Sole, Peng Yin, Yunfei Zheng, and Xiaoan Lu as inventors. The '610 Patent is attached as Exhibit B.1.

489. InterDigital VC Holdings, Inc. owns all rights, title, and interest in the '610 Patent, and holds all substantial rights pertinent to this suit, including the right to sue and recover for all past, current, and future infringement.

490. The '610 Patent is valid and enforceable and directed to patentable subject matter.

**The '610 Patent**

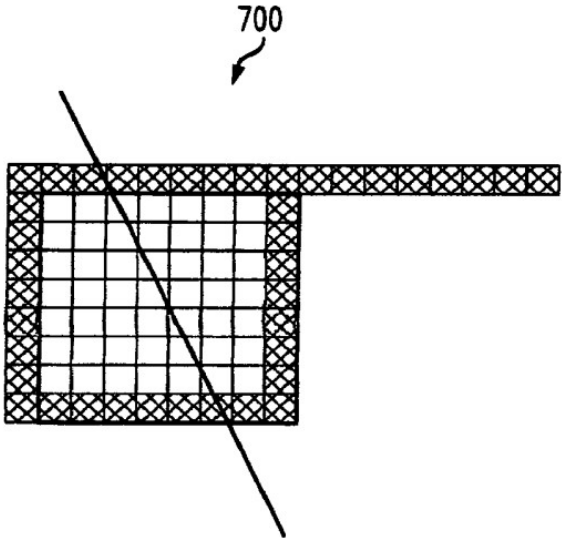
491. The '601 Patent is generally directed to video coding, and in particular intra coding a block having pixels assigned to groups. The benefits of the '610 Patent include improved efficiency in video coding. "Intra blocks make use of existing redundancy in spatial correlation to improve video coding efficiency." Ex. B.1 at 1:21-22. "How to effectively utilize spatial correlation is fundamental to the efficiency of current video codecs for intra coding." Ex. B.1 at 1:22-24. "It is observed that the correlation between pixels decreases with the spatial distance." Ex. B.1 at 1:24-26. "In current state-of-the art coding standards such as [MPEG-4 AVC] . . . , only the

encoded pixels above or to the left of the current block are used as its predictors, which may be quite far from the bottom right pixels to be predicted." Ex. B.1 at 1:24-36, *see also* Ex. B.1 at 2:63-66.

492. "As a natural affect of redundancy likely existing due to spatial proximity, the prediction accuracy in such schemes is normally limited, and the prediction accuracy of the bottom right pixels may be limited." Ex. B.1 at 1:36-39, *see also* Ex. B.1 at 2:66-3:3. "With a large spatial distance, the correlation between pixels can be low, and the residue signals can be large after prediction, which affects the coding efficiency." Ex. B.1 at 3:3-6. "In addition, extrapolation is used instead of interpolation because of the limitation of causality." Ex. B.1 at 1:39-41, *see also* Ex. B.1 at 3:3-6.

493. "When a macroblock is coded in planar mode, its bottom-right sample is signaled in the bitstream, the rightmost and bottom samples of the macroblock are linearly interpolated, and the middle samples are bi-linearly interpolated from the border samples." Ex. B.1 at 3:11-16. "Although the new planar prediction method exploits some spatial correlation with the bottom-right sample, the prediction accuracy of the right and bottom pixels are still quite limited." Ex. B.1 at 3:23-26. "These and other drawbacks and disadvantages of the prior art are addressed by the" '610 Patent. Ex. B.1 at 3:30-33.

FIG. 7

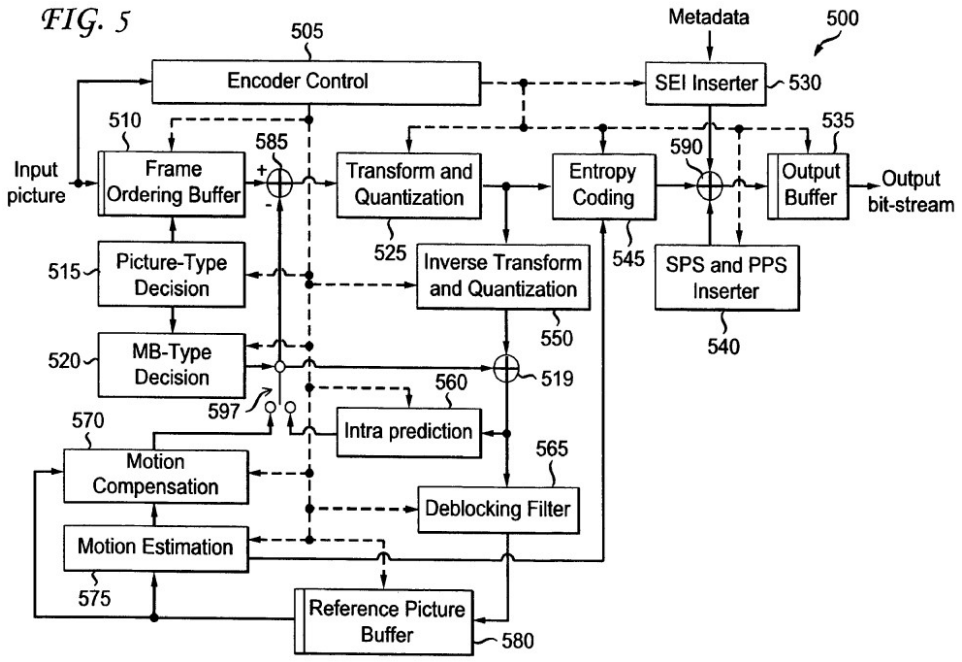



Ex. B.1 at Figure 7.

494. Figure 7 (reproduced above) "is a diagram showing an exemplary grouping of pixels within a block." Ex. B.1 at 4:30-32. "In an embodiment, for an intra block, we divide pixels within the block into at least two groups." Ex. B.1 at 8:19-20. "One of the groups of pixels in the block is encoded." Ex. B.1 at 8:19-20. "For the first group of pixels, the encoder generates the prediction based on neighboring encoded pixels using the DC/plane prediction method or some directional prediction methods, and then calculates the prediction residue." Ex. B.1 at 9:16-19. "The reconstructed pixels are then considered together with the pixels in the neighboring blocks that are already encoded to predict pixels in the second group." Ex. B.1 at 8:24-26, *see also* Ex. B.1 at 9:30-37. "[M]ore than two groups of pixels within a block may also be used in accordance with the teachings of the present

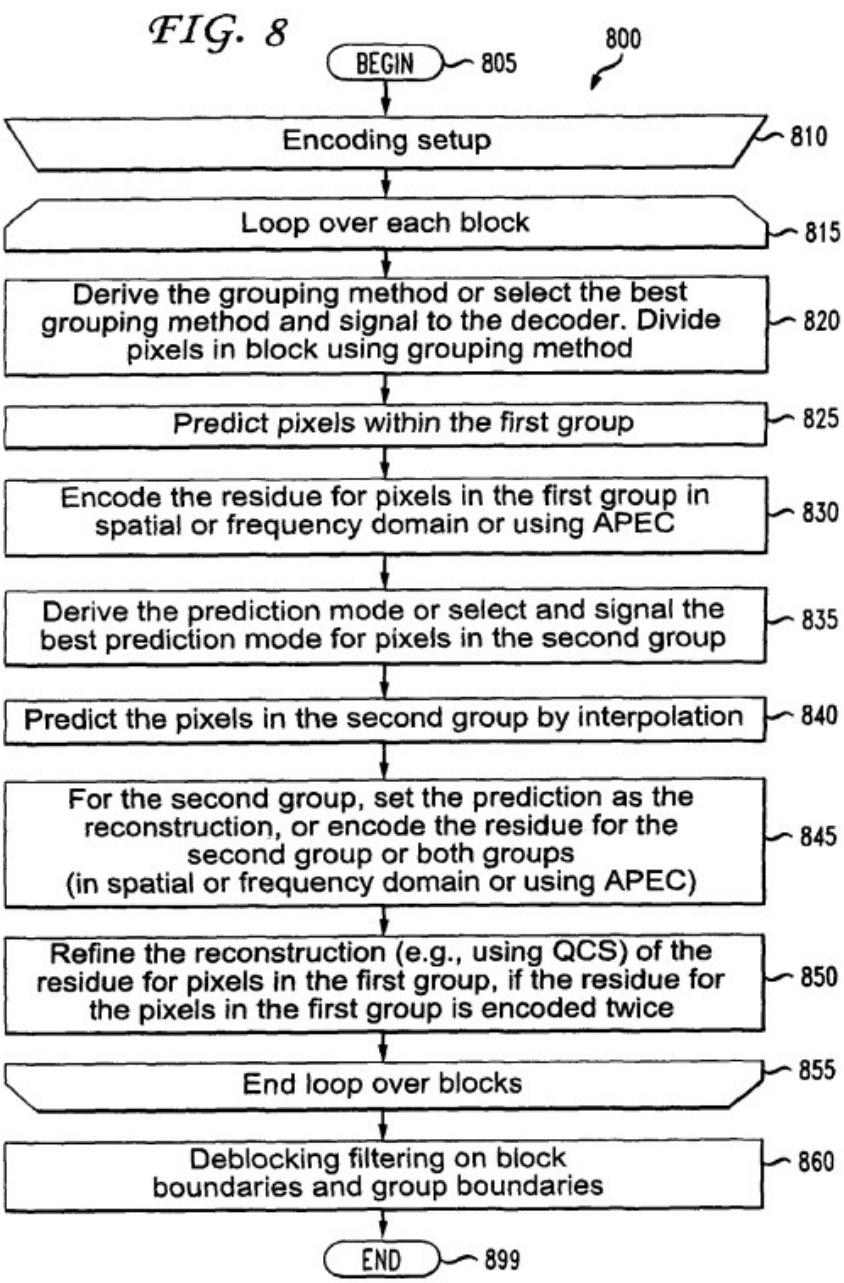
principles." Ex. B.1 at 8:58-63. "[T]he groups of pixels within the block may be divided in any manner desired and found to be effective." Ex. B.1 at 9:7-9.

495. "With a larger set of predictor pixels existing in more directions, the prediction of the second group of pixels is improved and so is the coding efficiency." Ex. B.1 at 8:26-29. "[T]he prediction accuracy of the second group can be improved, as the pixels serving as predictors (called predictor pixels) for the second group include reconstructed pixels of the first group, which are of shorter spatial distances from the pixels being predicted." Ex. B.1 at 8:31-36. "In addition, we improve coding efficiency by using interpolation instead of extrapolation." Ex. B.1 at 8:29-30, *see also* Ex. B.1 at 9:37-40.




Ex. B.1 at Figure 5, *see also* Exhibit B.1 at 6:23-7:37.

496. Figure 5 (reproduced above) "is a block diagram showing an exemplary video encoder." Ex. B.1 at 4:24-26. The encoder has the structure described at 6:23-7:37 of Exhibit B.1, which is incorporated here as if fully stated herein.




Ex. B.1 at Figure 8.



McKool Smith, P.C.
Los Angeles, CA

497. Figure 8 (reproduced above) "is a flow diagram showing an exemplary method for intra coding a block having pixels assigned to groups." Ex. B.1 at 4:33-36. For example, the '610 Patent describes the following steps from Figure 8:

> The method **800** includes a start block **805** that passes control to a function block **810**. The function block **810** performs an encoding setup, and passes control to a loop limit block **815**. The loop limit block **815** loops over each block (e.g., in a current picture being encoded), and passes control to a function block **820**. The function block **820** derives the grouping method or selects the best grouping method, signals the grouping method to the decoder, and passes control to a function block **825**. The function bloc **825** predicts pixels within the first group, and passes control to a function block **830**. The function block **830** encodes the residue for pixels in the first group in the spatial domain or the frequency domain or using adaptive prediction error coding (APEC), and passes control to a function block **835**. The function block **835** derives the prediction mode or selects and signals the best prediction mode for pixels in the second group, and passes control to a function block **840**. The function block **840** predicts pixels in the second group, and passes control to a function block **845**. The function block **845**, for the second group, sets the prediction as the reconstruction or encodes the residue for the second group or both groups (in the spatial domain or the frequency domain or using APEC), and passes control to a function block **850**. The function block **850** refines the reconstruction (e.g., using a quantization constraint set (QCS)) if the reside for pixels in the first group is encoded twice, and passes control to a loop limit block **855**. The loop limit block **855** ends the loop over the blocks, and passes control to a function block **860**. The function block **860** performs deblocking filtering on block boundaries and group boundaries, and passes control to an end block **899**.

Ex. B.1 at 10:3-34.

McKool Smith, P.C.
Los Angeles, CA

498. The ’610 Patent notes that “it will be appreciated by those skilled in the art that the block diagrams presented herein represent conceptual views of illustrative circuitry embodying the present principles.” Ex. B.1 at 4:64-67. The ’610 Patent states that “it will be appreciated that any flow charts, flow diagrams, state transition diagrams, pseudocode, and the like represent various processes which may be substantially represented in computer readable media and so executed by a computer or processor, whether or not such computer or processor is explicitly shown.” Ex. B.1 at 4:67-5:5. The ’610 Patent explains that “[t]he functions of the various elements shown in the figures may be provided through the use of dedicated hardware as well as hardware capable of executing software in association with appropriate software.” Ex. B.1 at 5:6-9.

499. These advances are also reflected in the claims of the ’610 Patent. *See, e.g.*, Ex. B.1 at Claims 6-10 and 16-20. Accordingly, the claims of the ’610 Patent recite one or more inventive concepts rooted in computerized technology and overcome technical problems in that field. A person of ordinary skill in the art reading the ’610 Patent and its claims would understand that the Patent’s disclosure and claims are drawn to solving specific, technical problems arising in video coding systems/methods and provide for advancements in the field that were not routine, well-understood or conventional. Accordingly, the claims of the ’610 Patent recite a combination of elements sufficient to ensure that the claims in practice amount to significantly more than a patent claiming an abstract concept. A person of ordinary

skill in the art would understand that the ordered combination of claim elements is inventive. Further, the claimed improvements over the prior art are concrete and improve the capabilities of existing video coding systems/methods.

500. A person of ordinary skill in the art reviewing the specification of the '610 Patent would understand that the inventor had possession of the claimed subject matter and would know how to practice the claimed invention without undue experimentation.

**The '610 Patent Allegations**

501. The Accused Instrumentalities practice one or more claims of the '610 Patent by making, using, selling and/or offering to sell the Accused Instrumentalities in this District and elsewhere in the United States, and/or importing the Accused Instrumentalities into this District and elsewhere in the United States.

502. InterDigital provides the following explanation of infringement with regard to an exemplary claim compared to exemplary functionality. InterDigital reserves the right to present additional or alternative explanations of infringement for the claim and functionalities identified below and for other claims and functionalities of the services.

503. As illustrated in Exhibit B.2, Defendants infringe at least one method claim of the '610 Patent, including at least Claims 6-10, by encoding the Accused Instrumentalities' content.

McKool Smith, P.C.
Los Angeles, CA

504. Defendants took the above actions intending to infringe and/or cause infringing acts by others.

505. Accordingly, Defendants have directly infringed at least one method claim of the ’610 Patent, including at least Claims 6-10.

506. Defendants’ acts of infringement have caused damage to InterDigital. InterDigital is entitled to recover from Defendants the damages sustained by InterDigital as a result of their wrongful acts in an amount subject to proof at trial.

**COUNT 3: INFRINGEMENT OF U.S. PATENT NO. 11,381,818**

507. InterDigital incorporates the allegations of all of the foregoing paragraphs as if fully restated herein.

508. U.S. Patent No. 11,381,818 (“the ’818 Patent”) entitled “Methods and Apparatus for Determining Quantization Parameter Predictors from a Plurality of Neighboring Quantization Parameters,” was issued on July 5, 2022, and names Xiaoan Lu, Joel Sole, Peng Yin, Qian Xu, and Yunfei Zheng as inventors. The ’818 Patent is attached as Exhibit C.1.

509. InterDigital VC Holdings, Inc. owns all rights, title, and interest in the ’818 Patent, and holds all substantial rights pertinent to this suit, including the right to sue and recover for all past, current, and future infringement.

510. The ’818 Patent is valid and enforceable and directed to patentable subject matter.

**The ’818 Patent**



McKool Smith, P.C.
Los Angeles, CA

McKool Smith, P.C.
Los Angeles, CA

511. The ’818 Patent is directed to novel improvements in the field of video coding. Specifically, the ’818 Patent is directed to improved systems and methods for determining quantization parameters in video coding. As the ’818 Patent explains, quantization is a means by which “a video encoder controls the number of encoded bits and the quality” of a bitstream. Ex. C.1 at 1:62-35. This type of adjustment is required for a video coding system to achieve “the highest possible perceptual quality for a given set of bit rate constraints.” Ex. C.1 at 1:25-26. Video coding systems use quantization to adjust the number of coded bits and quality through adjusting quantization parameter values. As the ’818 Patent explains, in the prior art, “quantization parameters can be adjusted on a slice or macroblock (MB) level.” Ex. C.1 at 2:5-7. While this level of adjustment provides the video coding system with sufficient control over the quality and size of the bitstream, it also “requires an overhead cost.” Ex. C.1 at 2:9-10.

512. Prior art methods attempted to improve the coding efficiency of quantization parameters using quantization predictors and quantization offset values. For example, in one prior art approach, the quantization predictor “is the quantization parameter of the previous macroblock in the decoding order.” Ex. C.1 at 2:25-31. In another prior art approach, “single QP, namely the slice QP ($SliceQP_Y$), is used as the predictor for the QP to be encoded.” Ex. C.1 at 4:29-30. These prior art methods would send a quantization delta to indicate the offset between the quantization

predictor and the actual quantization parameter to be used for a block. Ex. C.1 at 4:37-40.

513. The '818 Patent improves on these prior art methods through the use of a system wherein "the quantization parameter predictor is determined using multiple quantization parameters from previously coded neighboring portions." Ex. C.1 at 5:3-8. This provides the benefit of "the reduction of overhead needed for signaling quantization parameters to the decoder." Ex. C.1 at 10:45-47.

514. Generally, when considering quantization parameter adjustment, it is advantageous to "assign lower QPs to the regions of interest to improve the perceptual quality and higher QPs to other areas to reduce the number of bits." Ex. C.1 at 11:49-52. Typically, "picture content has great continuity" so that the "QPs for neighboring coding units are often correlated." Ex. C.1 at 11:52-54. Prior art systems attempted to exploit this correlation by using the slice and/or previously coded macroblock as a QP predictor. Ex. C.1 at 11:54-55. However, prior art systems failed to utilize the correlation between neighboring blocks aside from the previously coded block. The '818 Patent teaches that "[s]ince the QP can also correlate to QPs from other neighboring blocks, [the '818 Patent] improve[s] the QP predictor by considering more QPs." Ex. C.1 at 11:55-58. The use of additional QPs to determine the QP predictor allows for a more accurate QP predictor to be established. This, in turn, requires a smaller QP delta to be signaled, thus reducing bitstream overhead resulting in greater overall efficiency. The '818 Patent also teaches that, where the neighboring

coding units are unavailable, the Slice level QP can be used instead. Ex. C.1 at 12:13-19. This allows for the same QP predictor determination method to be used for all blocks in an image.

515. These advances are also reflected in the claims of the ’818 Patent. *See e.g.*, Ex. C.1 at Claims 1-4. Accordingly, the claims of the ’818 Patent recite one or more inventive concepts rooted in computerized technology and overcome technical problems in that field. A person of ordinary skill in the art reading the ’818 Patent and its claims would understand that the Patent’s disclosure and claims are drawn to solving specific, technical problems arising in video coding systems/methods and provide for advancements in the field that were not routine, well-understood or conventional. Accordingly, the claims of the ’818 Patent recite a combination of elements sufficient to ensure that the claims in practice amount to significantly more than a patent claiming an abstract concept. A person of ordinary skill in the art would understand that the ordered combination of claim elements is inventive. Further, the claimed improvements over prior art video coding systems are concrete and improve the capabilities of existing video coding systems/methods.

516. A person of ordinary skill in the art reviewing the specification of the ’818 Patent would understand that the inventor had possession of the claimed subject matter and would know how to practice the claimed invention without undue experimentation.

**<u>The ’818 Patent Allegations</u>**



McKool Smith, P.C.
Los Angeles, CA

517. The Accused Instrumentalities practice one or more claims of the ’818 Patent by making, using, selling and/or offering to sell the Accused Instrumentalities in this District and elsewhere in the United States, and/or importing the Accused Instrumentalities into this District and elsewhere in the United States.

518. InterDigital provides the following explanation of infringement with regard to an exemplary claim compared to exemplary functionality. InterDigital reserves the right to present additional or alternative explanations of infringement for the claim and functionalities identified below and for other claims and functionalities of the services.

519. As illustrated in Exhibit C.2, Defendants infringe at least one method claim of the ’818 Patent, including at least Claims 1-4, by encoding the Accused Instrumentalities’ content.

520. Defendants took the above actions intending to infringe and/or cause infringing acts by others.

521. Accordingly, Defendants have directly infringed at least one method claim of the ’818 Patent, including at least Claims 1-4.

522. Defendants’ acts of infringement have caused damage to InterDigital. InterDigital is entitled to recover from Defendants the damages sustained by InterDigital as a result of their wrongful acts in an amount subject to proof at trial.

McKool Smith, P.C.
Los Angeles, CA

McKool Smith, P.C.
Los Angeles, CA

**COUNT 4: INFRINGEMENT OF U.S. PATENT NO. 9,185,268**

523. InterDigital incorporates the allegations of all of the foregoing paragraphs as if fully restated herein.

524. U.S. Patent No. 9,185,268 ("the '268 Patent") entitled "Methods and Systems for Displays with Chromatic Correction with Differing Chromatic Ranges," was issued on November 10, 2015, and names Ingo Tobias Doser, Jurgen Stauder, and Bongsun Lee as inventors. The '268 Patent is attached as Exhibit D.1.

525. InterDigital Madison Patent Holdings, SAS owns all rights, title, and interest in the '268 Patent, and holds all substantial rights pertinent to this suit, including the right to sue and recover for all past, current, and future infringement.

526. The '268 Patent is valid and enforceable and directed to patentable subject matter.

**The '268 Patent**

527. "In today's motion picture industry, colors of motion picture content are mostly graded for displays with a single color gamut defined by cathode ray tube (CRT) phosphor colors, corresponding to either the European Broadcasting Union (EBU) or the Society of Motion Picture and Television Engineers color standard (SMPTE-C) for Standard Definition, and the International Telecommunication Union (ITU) 709 colors for High Definition." Ex. D.1 at 1:15-22. "These are the current standards for use in determining the reference color gamut (RCG) for displays." Ex. D.1 at 1:22-23. "However, displays with non-standard color gamuts are currently

prevalent among consumers of motion picture content." Ex. D.1 at 1:24-25. "When editing the colors of a picture on a display with a reference color gamut other than the color gamut of the target display, the resultant colors may look dissatisfying on the target display." Ex. D.1 at 1:26-29. Two such non-limiting cases are described below:

> The first case relates to consumer displays having color gamuts roughly the same size as the reference display, but the display primaries are not equal to the display primaries of the reference display during content creation. In such circumstances, it is desirable to ensure that the colors can be accurately represented on the consumer displays.
>
> The second case relates to the current existence of wide gamut color displays being utilized in the field. In such circumstances, no methods exist to color correct consumer displays with respect to these wide gamut color displays. For example, such consumer displays may use a different reference color gamut but may or may not be capable of even displaying colors in accordance with the wide gamut color standards.

Ex. D.1 at 1:31-44.

528. "The color gamut of a display is determined by the display technology chosen." Ex. D.1 at 1:60-61, 2:50-51 ("[T]here is significant variation in the color gamuts used in various displays currently available."); *see also* Ex. D.1 at 2:58-60 (noting significant display technology gamut differences illustrated in Figure 1, reproduced below). "[A] consumer has the choice between the following technologies . . . including, for example, liquid crystal display (LCD), Plasma, cathode ray tube (CRT), digital light processing (DLP), and silicon crystal reflective display (SXRD)." Ex. D.1 at 1:61-66. "However, there can be significant differences between different

display technologies, as well as between two representatives of the same display technology." Ex. D.1 at 1:66-2:1; *see, e.g.*, Ex. D.1 at 2:1-4 (discussing color gamut depending on LCD lighting sources); Ex. D.1 at 2:10-13 (noting wide gamut cold cathode fluorescent lights have larger color gamut); Ex. D.1 at 2:13-18 (noting impact of LCD color filters on color gamut); Ex. D.1 at 2:21-28 (discussing color gamut of DLP and SXRD displays). A "trend is that LCD display's CCFL back light units (BLU's) get replaced by RGB LED (Light Emitting Diodes) BLU's with an even higher color gamut." Ex. D.1 at 2:18-20. In "FIG. 1, color gamut measurements of currently available displays are indicated." Ex. D.1 at 2:56-58. "It is to be noted that none of the color gamuts of the various available displays are equal to the reference color gamy of the source material which, in this example, corresponds to ITU-R Bt. 709." Ex. D.1 at 2:60-63.

100

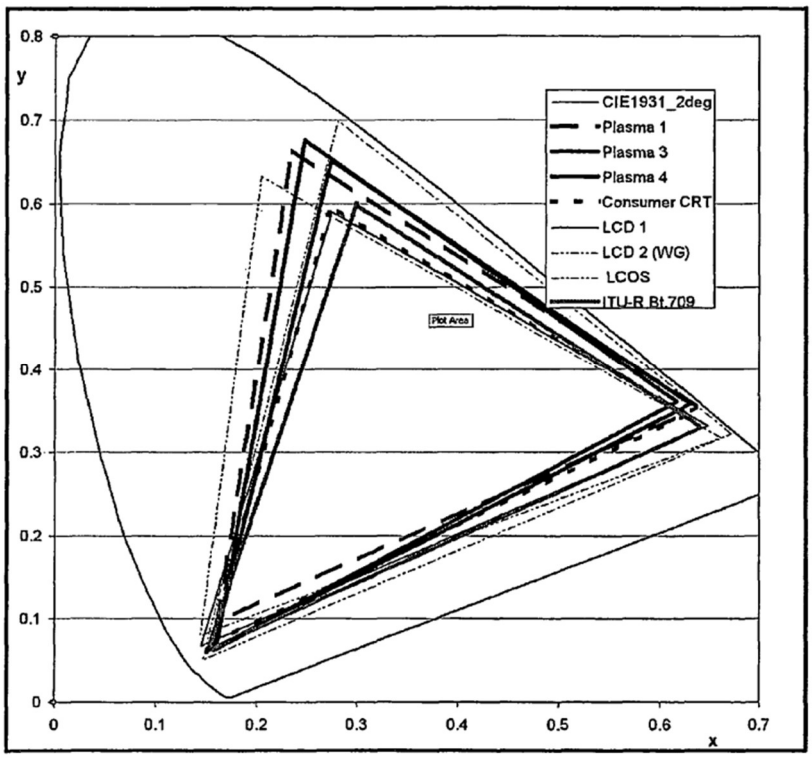



FIG. 1

Ex. D.1 at Figure 1.

529. "The current video content on digital video disks (DVD's), television broadcasts, and/or via video over Internet Protocol (VoIP), are encoded in a color space with a reference color gamut and, thus, follow the rules that were set many years ago when wide gamut color display was not feasible." Ex. D.1 at 2:31-36. "In fact, until recently it was difficult to achieve a reproduction even of the current reference color gamut." Ex. D.1 at 2:36-37. "With the advent of wide gamut displays, it has become possible to display a wider range of colors than was previously

possible." Ex. D.1 at 2:29-31. "An extended color gamut is feasible and there is a desire to utilize the wider color gamut." Ex. D.1 at 2:38-40.

530. "Additionally, current displays seem to simply replace the reference color primaries specified by the applicable standard by the color primaries corresponding to the respective display." Ex. D.1 at 3:1-6. "As a consequence, colors do not appear as they should." Ex. D.1 at 3:6-7; *see, e.g.*, Ex. D.1 at 3:7-10. "However, mapping primaries is the most primitive and cheapest way of gamut mapping." Ex. D.1 at 3:10-11. "In the case of wide gamut material on a wide gamut display, there still is a problem where colors may be displayed incorrectly due to the color gamut of the wide gamut material being different than the color gamut of the wide gamut display." Ex. D.1 at 3:12-15. "[B]y using . . . unrestrictive color standards . . . , it is always possible that a color gets transmitted that cannot be displayed on one or more particular wide gamut displays." Ex. D.1 at 3:15-20.

531. "'[C]olor correction' refers to a creative procedure to manually choose the right (preferred) colors on the content creation side (versus the consumer consumption side)." Ex. D.1 at 8:10-13. "One method for color correction involves 3×3 matrixing the source primaries to the display primaries." Ex. D.1 at 3:21-23. "This solution has problems when colors are transmitted that are beyond the color gamut of the display color gamut" (*e.g.*, "color may be out of the display range"). Ex. D.1 at 3:23-29. "The typical result of such a situation is that the color to be displayed may get clipped to their respective maximum ranges." Ex. D.1 at 3:29-31. "The

problem will manifest in a wrong color reproduction, in a hue, saturation, and also brightness error." Ex. D.1 at 3:31-33; *see, e.g.*, Ex. D.1 at 3:39-53, Figure 3. "The detrimental affect will be even worse if the color appears in a gradation (*e.g.*, as seen most often in animated movies), as a false contour will also appear." Ex. D.1 at 3:33-35.

532. Figure 4 (reproduced below) is "an exemplary high-level diagram showing the workflow for color correction using a display having a reference color gamut for content that may be subsequently displayed on a display with a different color gamut than the reference color gamut." Ex. D.1 at 4:1-6. "The undesirable result of the color correction workflow . . . is that when color correcting on a display with a reference color display (RCG), the colors on a display with a second color gamut or color gamut 2 (CG2) will be reproduced incorrectly." Ex. D.1 at 4:7-11. "A RCG display 482 is used on the content creation side 480." Ex. D.1 at 4:13-14. "A RCG display 492 and a CG2 display 494 are used on the content consumer side 590." Ex. D.1 at 4:14-16.

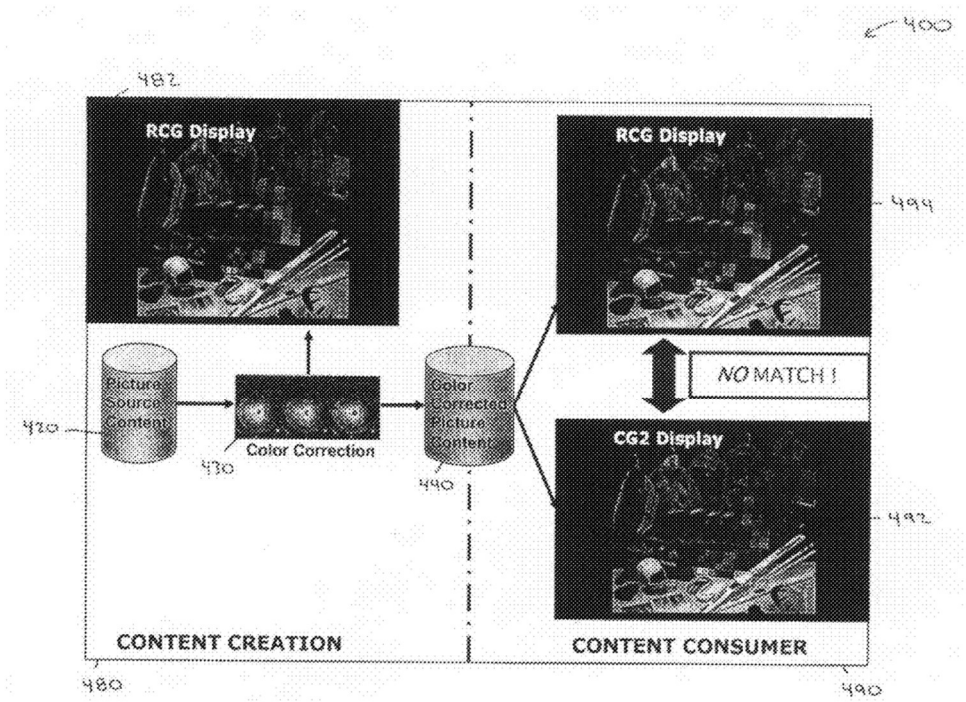



FIG. 4

Ex. D.1 at Figure 4.

533. "The picture source content may be stored, for example, in a picture source content store 420." Ex. D.1 at 4:17-18. "The color corrected picture content may be stored, for example, in a color corrected picture content store 440." Ex. D.1 at 4:18-20. "A color correction module 430 generates the content that only looks correct on a display of the same type and with the same color gamut." Ex. D.1 at 4:21-23. "Thus, the colors on the CG2 display will not look the same as the colors that were color corrected on the RCG display." Ex. D.1 at 4:23-25. "It is very likely that at least some of the colors on the RCG2 display will be clipped and at least some with be displayed with the wrong hue." Ex. D.1 at 4:25-27; *see, e.g.*, Ex. D.1 at 4:28-36.

534. "It is therefore essential that a proper way of color gamut mapping is used for rendering colors on the display used." Ex. D.1 at 3:54-55. "The present principles are directed to methods and systems for color correcting to provide predictable results on displays with different color gamuts." Ex. D.1 at 6:3-5; *see also* Ex. D.1 at 8:25-27.

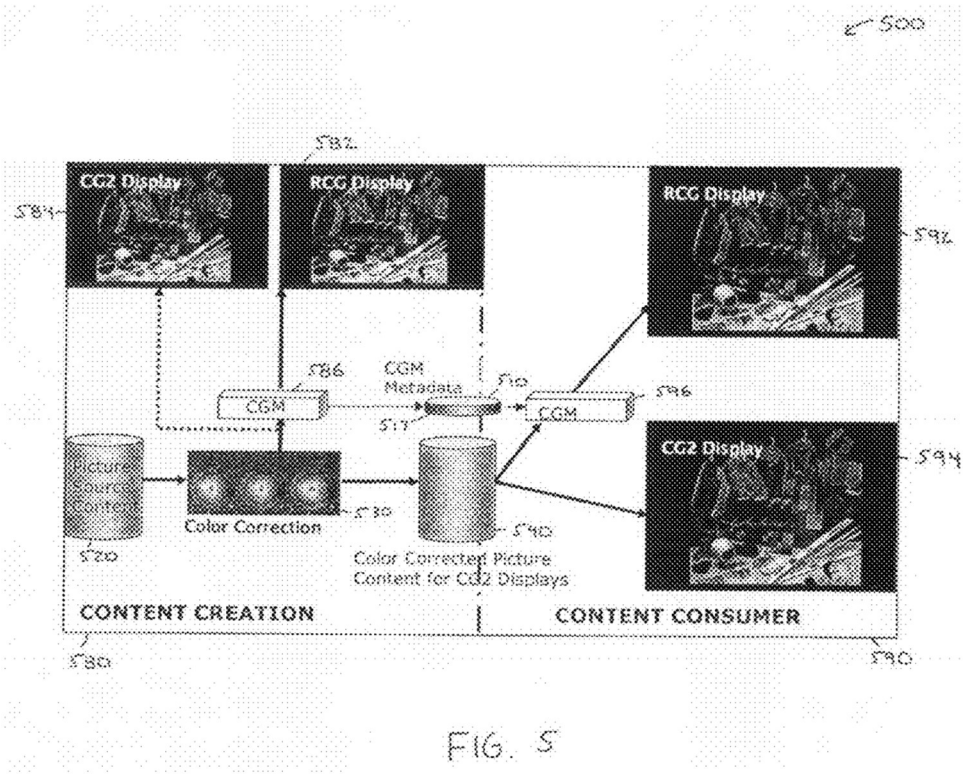



FIG. 5

Ex. D.1 at Figure 5.

535. "[T]he present principles may be used to address an exemplary problem where color correction is to be performed on a display with a reference color gamut, however, the corrected colors are to be displayed on a display with a different color gamut than the reference color gamut used for color correction." Ex. D.1 at 8:36-41. Figure 5 (reproduced above) is "a high-level diagram showing the exemplary workflow for color correction to obtain a master for CG2 displays and metadata for



McKool Smith, P.C.
Los Angeles, CA

RCG displays." Ex. D.1 at 8:42-45. The '268 Patent describes the color correction workflow of Figure 5 as the following:

> The color correction workflow **500** involves a content creation side **580** and a content consumer side **590**. The color correction **530** is done based on a color gamut for CG2 displays. A CG2 display **584** shall be directly attached to the color correction tool. A CGM **586** is used to map the content from a color gamut for display on CG2 display **584** to a color gamut for display on RCG display **582**, and the resultant picture content is then used for distribution/storage in color corrected picture content store **540**. An RCG display **592** and a CG2 display **594** are used on the content consumer side **590**.
>
> In the embodiment, the use of the present principles provides a controllable color difference between the content displayed on the RCG display **592** and the CG2 display **594** on the content consumer side **590**. As noted above, the embodiment involves the use of a master, i.e., one version of mastered content, for (use by) CG2 displays and metadata **510** for (use by) RCG displays.
>
> The metadata **510** describes a transformation of color corrected picture content for CG2 displays, into colors intended for RCG displays. Thus, the metadata **510** may describe, for example, the difference between the colors for a CG2 display and a RCG display.
>
> The picture source content may be stored, for example, in a picture source content store **520**. The color corrected picture content may be stored, for example, in a color corrected picture content store **540**. The metadata **510** may be stored, for example, in a metadata store **517**.
>
> A color correction module **530** is used to create the CG2 master by choosing the right colors. This may be done by a colorist in a Digital Intermediates facility.
>
> On the content creation side **580**, the CG2 mastered content and the metadata for the RCG displays is applied to a CGM

module **586** that performs a color gamut mapping so that the CG2 mastered content is color corrected for display on the RCG display **582**.

On the content consumer side **590**, the CG2 mastered content and the metadata **510** for the RCG displays is applied to a CGM module **596** that performs a color gamut mapping so that the CG2 mastered content is color corrected for display on the RCG display **592**. The CGM module **596** receives information about a transformation specification by means of metadata **510**. This metadata **510** is derived from the transform specification used in the CGM **586** on the content creation side.

Moreover, on the content consumer side **590**, the CG2 mastered content is provided directly to the CG2 display **594** without the use or need of the metadata **510** or a color gamut mapping.

Ex. D.1 at 8:46-9:27.

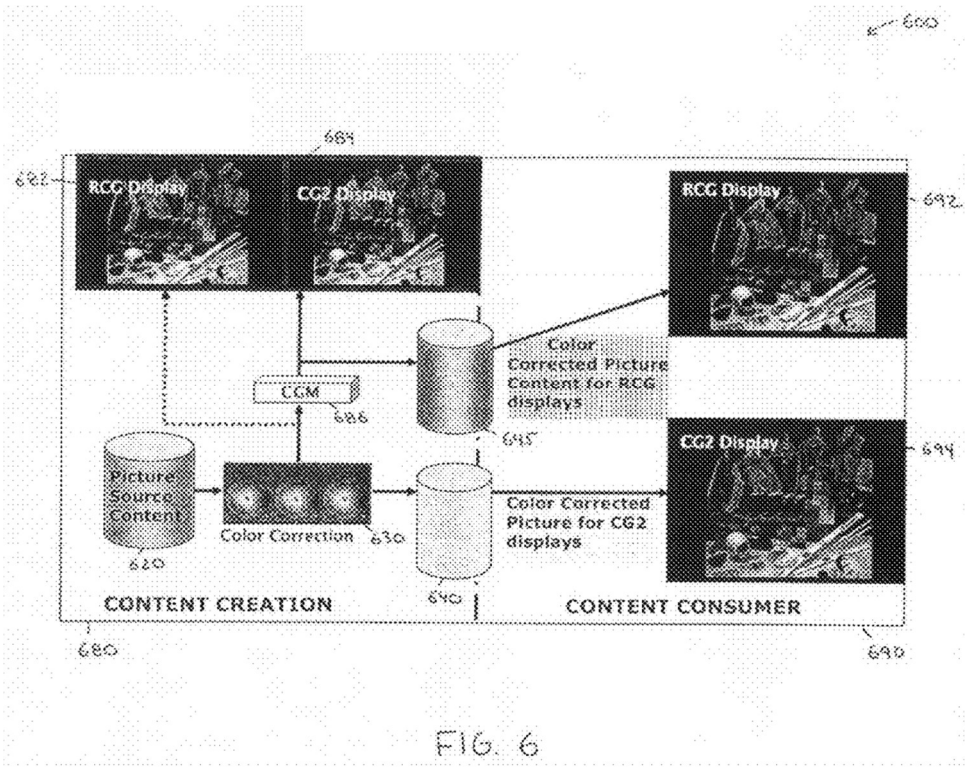



FIG. 6

Ex. D.1 at Figure 6.



McKool Smith, P.C.
Los Angeles, CA

536. Figure 6 (reproduced above) is "a high-level diagram showing the exemplary workflow for color correction to obtain a master for CG2 displays and one master for RCG displays." Ex. D.1 at 9:28-31. The '268 Patent describes the color correction workflow of Figure 6 as the following:

> The color correction workflow **600** involves a content creation side **680** and a content consumer side **690**. A RCG display **682** is used on the content creation side **680**. In addition, a CG2 display **684** shall be used on the content creation side **580** for proof viewing the content meant for consumer RCG displays. A RCG display **692** and a CG2 display **694** are used on the content consumer side **690**.
>
> In an embodiment, the color correction will result in a master for CG2 displays (such as CG2 display **694**), and a master for RCG displays (such as RCG display **692**). In an embodiment, the master for the RCG displays would be a derivative of the master for CG2 displays. The approach of FIG. 6 provides a controlled color difference between a consumer CG2 display and a RCG display **590** as the distinctive feature. The quality of the color accuracy is subject to the CG2 specifications used for color correction matching those used in the field, or the display in the field being calibrated to the specification used for color correction.
>
> The picture source content may be stored, for example, in a picture source content store **620**. The color corrected picture content for RCG displays, i.e., the master for RCG displays, may be stored, for example, in a color corrected picture content store **645**. The color corrected picture content for CG2 displays, i.e., the master for CG2 displays, may be stored, for example, in a color corrected picture content store **640**.
>
> On the content creation side, a color correction module **630** generates the CG2 master. Moreover, on the content creation side **680**, the CG2 mastered content is applied to a CGM module **686** that performs a color gamut mapping to



McKool Smith, P.C.
Los Angeles, CA

> generate the RCG master, so that the CG2 mastered content is color corrected for display on the RCG display **682**.
>
> On the content consumer side **690**, the RCG mastered content is provided directly to the RCG display **692** without the need for a color gamut mapping, and the CG2 mastered content is provided directly to the CG2 display **694** without the need for a color gamut mapping.

Ex. D.1 at 9:32-67.

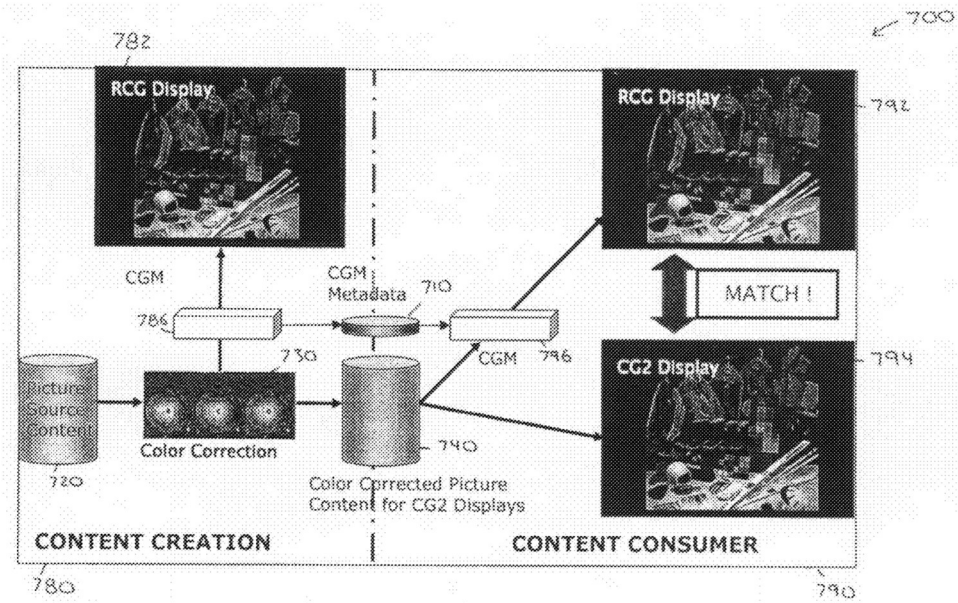



FIG. 7

Ex. D.1 at Figure 7.

537. Figure 7 (reproduced above) is "a high-level diagram showing the exemplary workflow for color correction to obtain a master for CG2 displays and metadata for RCG displays." Ex. D.1 at 10:13-16. The '268 Patent describes the color correction workflow of Figure 7 as the following:

> The color correction workflow **700** involves a content creation side **780** and a content consumer side **790**. A RCG display **782**, using CG2 simulation via a CGM module **786**, is used on the content creation side **780**. Alternatively or in



McKool Smith, P.C.
Los Angeles, CA

addition, a CG2 display may be used on the content creation side **780**. A RCG display **792** and a CG2 display **794** are used on the content consumer side **790**.

In the embodiment, the use of the present principles provides a substantial color match between the content displayed on the RCG display **792** and the CG2 display **794** on the content consumer side **790**. As noted above, the embodiment involves the use of a master, i.e., one version of mastered content, for (use by) CG2 displays and metadata **710** for (use by) RCG displays.

The metadata **710** describes a transformation of picture source content into color corrected picture content. The picture source content relates to colors for CG2 displays and the color corrected picture content relates to colors for RCG displays. Thus, the metadata **710** may describe, for example, the difference between the colors for a CG2 display and a RCG display.

The picture source content may be stored, for example, in a picture source content store **720**. The color corrected picture content may be stored, for example, in a color corrected picture content store **740**. The metadata **710** may be stored, for example, in a metadata store **717**.

A color correction module **730** generates the CG2 master and the metadata for RCG displays.

On the content creation side **780**, the CG2 mastered content and the metadata for the RCG displays is applied to a CGM module **786** that performs a color gamut mapping so that the CG2 mastered content is color corrected for display on the RCG display **782**.

On the content consumer side **790**, the CG2 mastered content and the metadata **710** for the RCG displays is applied to a CGM module **796** that performs a color gamut mapping so that the CG2 mastered content is color corrected for display on the RCG display **792**.

McKool Smith, P.C.
Los Angeles, CA

> Moreover, on the content consumer side **790**, the CG2 mastered content is provided directly to the CG2 display **794** without the use or need of the metadata **510** or a color gamut mapping.

Ex. D.1 at 10:17-58.

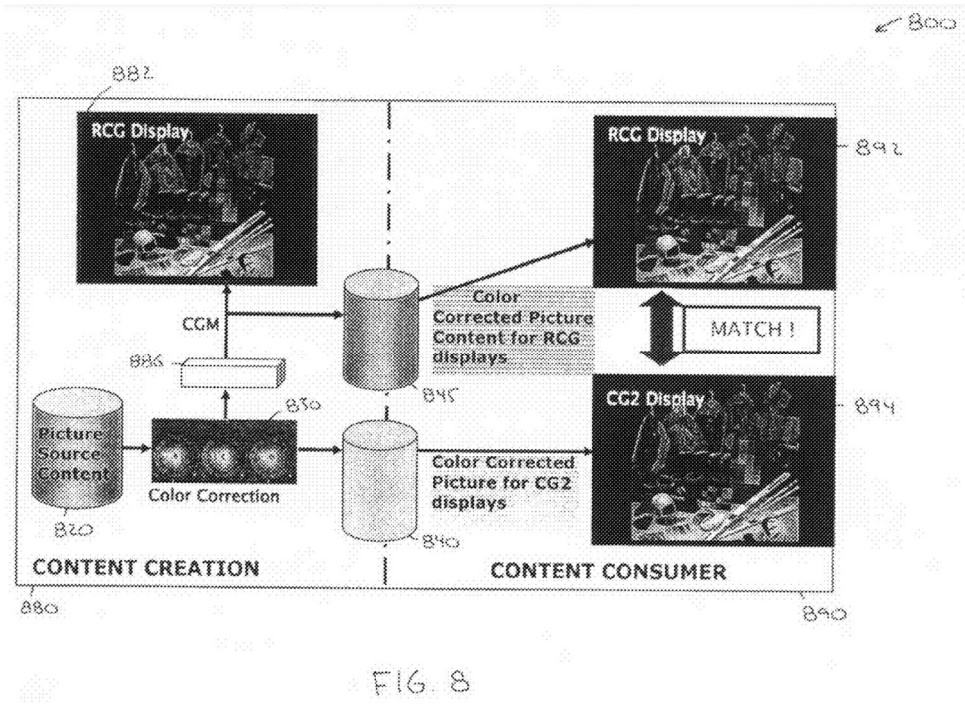



FIG. 8

Ex. D.1 at Figure 8.

538. Figure 8 (reproduced above) is "a high-level diagram showing the exemplary workflow for color correction to obtain a master for CG2 displays and one master for RCG displays." Ex. D.1 at 10:13-16. The '268 Patent describes the color correction workflow of Figure 8 as the following:

> The color correction workflow **800** involves a content creation side **880** and a content consumer side **890**. A RCG display **882** is used on the content creation side **880**. A RCG display **892** and a CG2 display **894** are used on the content consumer side **890**.
>
> In an embodiment, the color correction will result in a master for CG2 displays (such as CG2 display **894**), and a



McKool Smith, P.C.
Los Angeles, CA

> master for RCG displays (such as RCG display **892**). In an embodiment, the master for the RCG displays would be a derivative of the master for CG2 displays. The approach of FIG. 8 provides a match between a consumer CG2 display and a RCG display. The quality of the match is subject to the CG2 specifications used for color correction matching those used in the field, or the display in the field being calibrated to the specification used for color correction.
>
> The picture source content may be stored, for example, in a picture source content store **820**. The color corrected picture content for RCG displays, i.e., the master for RCG displays, may be stored, for example, in a color corrected picture content store **845**. The color corrected picture content for CG2 displays, i.e., the master for CG2 displays, may be stored, for example, in a color corrected picture content store **840**.
>
> On the content creation side, a color correction module **830** generates the CG2 master. Moreover, on the content creation side **880**, the CG2 mastered content is applied to a CGM module **886** that performs a color gamut mapping to generate the RCG master, so that the CG2 mastered content is color corrected for display on the RCG display **882**.
>
> On the content consumer side **890**, the RCG mastered content is provided directly to the RCG display **892** without the need for a color gamut mapping, and the CG2 mastered content is provided directly to the CG2 display **894** without the need for a color gamut mapping.

Ex. D.1 at 10:63-11:29.

539. "In some circumstances, the color correction process may be a bit cumbersome since the colors are being modified with a non-linear mapping between the color correction and the reference display." Ex. D.1 at 10:4-8, 11:33-37. "Some colors may not change as initially expected by the colorist." Ex. D.1 at 10:8-9, 11:37-38. "However, there will be no colors in the master that cannot be displayed by a



McKool Smith, P.C.
Los Angeles, CA

McKool Smith, P.C.
Los Angeles, CA

display with CG2, nor will there be a color that cannot be displayed by a RCG display." Ex. D.1 at 10:9-12, 11:38-41. "This is a real benefit of this approach." Ex. D.1 at 10:12, 11:41. "On the content consumer side, circuitry will be provided that connects the signal source with a CG2 display. This circuitry can be implemented in hardware and/or in software, and provides the signal transform to generate the CG2 version needed out of the picture for RCG displays." Ex. D.1 at 11:42-46.

540. The '268 Patent discloses that "the block diagrams presented herein represent conceptual views of illustrative circuitry." Ex. D.1 at 6:25-28. The '268 Patent states that "functions of the various elements shown in the figures may be provided through the use of dedicated hardware as well as hardware capable of executing software in association with appropriate software." Ex. D.1 at 6:34-37; *see also* Ex. D.1 at 11:53-12:2. "The present principles correct differences in colors between different target displays." Ex. D.1 at 8:27-29.

541. These advances are also reflected in the claims of the '268 Patent. *See, e.g.*, Ex. D.1 at Claims 1-11. Accordingly, the claims of the '268 Patent recite one or more inventive concepts rooted in computerized technology and overcome technical problems in that field. A person of ordinary skill in the art reading the '268 Patent and its claims would understand that the Patent's disclosure and claims are drawn to solving specific, technical problems arising in video transmission of improved dynamic color range systems/methods and provide for advancements in the field that were not routine, well-understood or conventional. Accordingly, the claims of the

’268 Patent recite a combination of elements sufficient to ensure that the claims in practice amount to significantly more than a patent claiming an abstract concept. A person of ordinary skill in the art would understand that the ordered combination of claim elements is inventive. Further, the claimed improvements over prior art dynamic range improvement systems are concrete and improve the capabilities of existing video color scheme translation systems/methods.

542. A person of ordinary skill in the art reviewing the specification of the ’268 Patent would understand that the inventor had possession of the claimed subject matter and would know how to practice the claimed invention without undue experimentation.

**The ’268 Patent Allegations**

543. The Accused Instrumentalities practice one or more claims of the ’268 Patent by making, using, selling and/or offering to sell the Accused Instrumentalities in this District and elsewhere in the United States, and/or importing the Accused Instrumentalities into this District and elsewhere in the United States.

544. InterDigital provides the following explanation of infringement with regard to an exemplary claim compared to exemplary functionality. InterDigital reserves the right to present additional or alternative explanations of infringement for the claim and functionalities identified below and for other claims and functionalities of the services.

McKool Smith, P.C.
Los Angeles, CA

545. As illustrated in Exhibit D.2, Defendants infringe at least one method claim of the ’268 Patent, including at least Claims 1-11, by encoding the Accused Instrumentalities’ content.

546. Defendants took the above actions intending to infringe and/or cause infringing acts by others.

547. Accordingly, Defendants have directly infringed at least one method claim of the ’268 Patent, including Claims 1-11.

548. Defendants’ acts of infringement have caused damage to InterDigital. InterDigital is entitled to recover from Defendants the damages sustained by InterDigital as a result of their wrongful acts in an amount subject to proof at trial.

**COUNT 5: INFRINGEMENT OF U.S. PATENT NO. 8,085,297**

549. InterDigital incorporates the allegations of all of the foregoing paragraphs as if fully restated herein.

550. U.S. Patent No. 8,085,297 (“the ’297 Patent”) entitled “Method for Modifying a User Interface of a Consumer Electronic Apparatus, Corresponding Apparatus, Signal and Data Carrier,” was issued on December 27, 2011, and names Harald Schiller as the inventor. The ’297 Patent is attached as Exhibit E.1.

551. InterDigital CE Patent Holdings, SAS owns all rights, title, and interest in the ’297 Patent, and holds all substantial rights pertinent to this suit, including the right to sue and recover for all past, current, and future infringement.

552. The ’297 Patent is valid and enforceable and directed to patentable subject matter.

**The ’297 Patent**

553. “In general terms a user interface (UI) includes all aspects of an apparatus or a program, which are used for an interaction with a user.” Ex. E.1 at 1:15-17. “This includes commands and mechanisms, which the user utilizes to control the operation of the apparatus or program and to input data but also an output by the apparatus or program, which can be seen or heard or otherwise perceived by the user.” Ex. E.1 at 1:17-21. “Especially for consumer electronic apparatuses and computer systems a wide range of user interfaces has been developed and implemented.” Ex. E.1 at 1:22-24.

554. The application that became the ’297 patent was filed in 2002. At that time, “[a] very simple and today in many areas outdated user interface requires the user to type textual commands by using a keyboard and produces a single stream of text as output.” Ex. E.1 at 1:24-27. “More comfortable are graphical user interfaces, which use for the output displayed windows, pictures or icons and for the input and control a cursor moved over the display using ‘up’- and ‘down’-keys or a pointing device such as a mouse, a trackball or a touch-pad.” Ex. E.1 at 1:27-31. “Even more sophisticated is a voice-controlled user interface based on speech recognition.” Ex. E.1 at 1:31-33. “However, a drawback of these user interfaces is that they are defined

and fixed once the respective apparatus has left the factory which means that no extensions or corrections are possible." Ex. E.1 at 1:33-36.

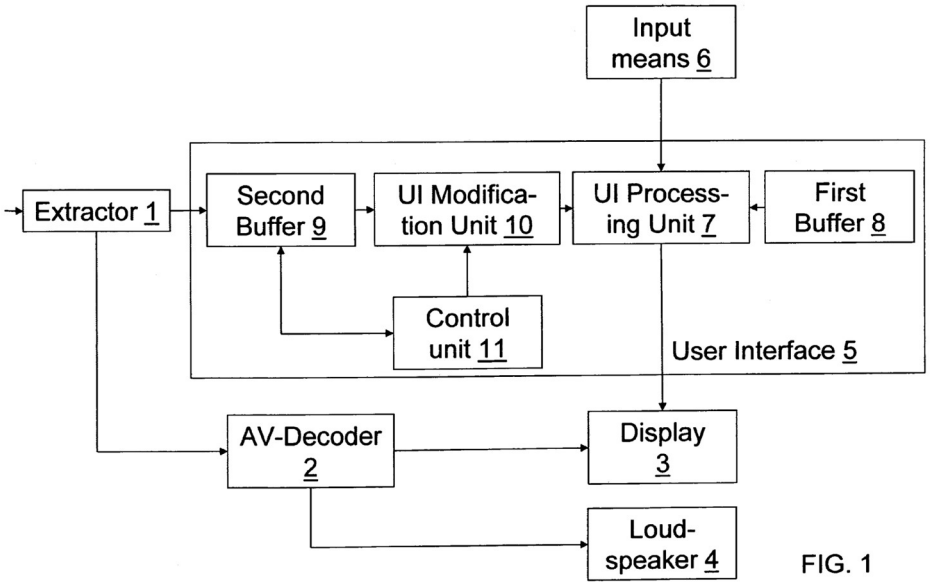


FIG. 1

Ex. E.1 at Figure 1.

555. The '297 Patent "disclose[s] a method for modifying a user interface of a consumer electronic apparatus, which can be used for example to update a given basic UI functionality or to temporarily implement isolated, dedicated UI sub-domains." Ex. E.1 at 1:39-43. Figure 1 (reproduced above) "illustrates a block diagram of an embodiment of the present invention." Ex. E.1 at 2:8-9. "A received signal consisting of main data and embedded side information is supplied to an extractor 1." Ex. E.1 at 2:9-10. "After separation of the side information from the main data the main data are forwarded to suited processing means 2, e.g. an MPEG-2 decoder, and are finally played-back using a display 3 and/or one or more loudspeakers 4." Ex. E.1 at 2:21-25.

556. "A user interface unit 5 controls the interaction between the user and the apparatus, e.g. the display of a graphical UI and the input of commands by the user using a mouse-controlled cursor." Ex. E.1 at 2:26-29. "The user interface unit 5 comprises user command input means 6 for receiving the user inputs, a processing unit 7 for handling the commands and mechanisms of the UI and a first buffer 8 for the permanent storage of parameters for UI parts, which shall be kept unaltered." Ex. E.1 at 2:29-33.

557. "Furthermore, a second buffer 9, a modification unit 10 and a control unit 11 are implemented for the purpose of modifying the UI according to the invention." Ex. E.1 at 2:33-36. "The second buffer 9 receives from the extractor 1 the side information comprising side information components for controlling the user interface and validity information defining the validity start and/or end time of said side information components, which both are stored in the buffer 9." Ex. E.1 at 2:36-41. "The side information components and validity information are fed to the modification unit 10, which processes these data and modifies the UI when the start time of the respective side information component is signalized by the control unit 11, possibly together with the processing unit 7." Ex. E.1 at 2:41-45. "When the end time of the side information component is reached, this is also signalised by the control unit 11 and the modification is reversed." Ex. E.1 at 2:45-48. "In a further embodiment the side information is written into the first buffer 8 and kept there for the duration of the UI modification instead of writing the side information into the second buffer 9." Ex.

E.1 at 2:49-52. "In this way the costs for the additional buffer 9 can be saved." Ex. E.1 at 2:52-53.

558. "The side information can be used to modify the visual appearance of the UI, e.g. to insert additional buttons with a new functionality or to create new subdirectories with additional commands." Ex. E.1 at 2:57-60. "In case of voice control, the additional user commands are new keywords to be recognized by the speech recognition algorithm, which may be stored as pieces of PCM waveform or in a time-parameter domain." Ex. E.1 at 2:60-63. "Also, for a user interface including voice synthesis the side information can be used to alter the parameter sets for the voice synthesis, e.g. to add new speech keywords or to change the sound of the voice." Ex. E.1 at 2:63-67.

559. "The side information can be received together with AV data, especially embedded into AV data, from a broadcasting station." Ex. E.1 at 3:1-3. "However, the AV data and the side information can also be supplied by a data carrier, e.g. an optical storage disc like a DVD disc." Ex. E.1 at 3:3-5. "Furthermore, the side information can also be received on a separate input channel, e.g. a telephone line." Ex. E.1 at 3:5-6.

560. "The main data may be AV data or pure video or audio data, either in analog or digital form, e.g. compressed according to the MPEG-2 standard." Ex. E.1 at 2:11-13. "In the case of an analog TV signal the side information can be received embedded in the vertical blanking interval and can be separated by a suited data slicer,

which may also be used for the separation of other VBI data like teletext, VPS or closed caption." Ex. E.1 at 2:13-17. "For a digital TV signal the side information may be embedded in a corresponding data channel, e.g. in not used user-data and can be separated by a suited demultiplexer." Ex. E.1 at 2:17-20.

561. These advances are also reflected in the claims of the '297 Patent. *See, e.g.*, Ex. E.1 at Claims 1-12. Accordingly, the claims of the '297 Patent recite one or more inventive concepts rooted in computerized technology and overcome technical problems in that field. These inventive concepts, set forth in the claims of the '297 Patent are directed to concrete, technological solutions to problems arising in the field rather than an abstract idea, law of nature, or natural phenomenon. More specifically, a person of ordinary skill in the art reading the '297 Patent and its claims would understand that the Patent's disclosure and claims are drawn to solving specific, technical problems arising in video transmission graphical user interface systems/methods and provide for advancements in the field that were not routine, well-understood or conventional. Accordingly, the claims of the '297 Patent recite a combination of elements sufficient to ensure that the claims in practice amount to significantly more than a patent claiming an abstract concept. A person of ordinary skill in the art would understand that the ordered combination of claim elements is inventive. The claims of the '297 Patent require detailed steps that are rooted in computer processes that cannot be performed merely by mental processes. Further, the claimed improvements over prior art video transmission graphical user interface

systems are concrete and improve the capabilities of existing video transmission graphical user interface systems/methods.

562. A person of ordinary skill in the art reviewing the specification of the '297 Patent would understand that the inventor had possession of the claimed subject matter and would know how to practice the claimed invention without undue experimentation.

**The '297 Patent Allegations**

563. The Accused Instrumentalities practice one or more claims of the '297 Patent by making, using, selling and/or offering to sell the Accused Instrumentalities in this District and elsewhere in the United States, and/or importing the Accused Instrumentalities into this District and elsewhere in the United States.

564. InterDigital provides the following explanation of infringement with regard to an exemplary claim compared to exemplary functionality. InterDigital reserves the right to present additional or alternative explanations of infringement for the claim and functionalities identified below and for other claims and functionalities of the services.

565. As illustrated in Exhibit E.2, Defendants infringe at least one method claim of the '297 Patent, including at least Claims 1-12, by encoding the Accused Instrumentalities' content.

566. Defendants took the above actions intending to infringe and/or cause infringing acts by others.

567. Accordingly, Defendants have directly infringed at least one method claim of the ’297 Patent, including at least Claims 1-12.

568. Defendants’ acts of infringement have caused damage to InterDigital. InterDigital is entitled to recover from Defendants the damages sustained by InterDigital as a result of their wrongful acts in an amount subject to proof at trial.

**JURY DEMAND**

Plaintiffs hereby demand a trial by jury on all issues so triable.

**PRAYER FOR RELIEF**

WHEREFORE, Plaintiffs InterDigital, Inc., InterDigital VC Holdings, Inc., InterDigital Madison Patent Holdings, SAS, and InterDigital CE Patent Holdings, SAS ask this Court for an order granting the following relief:

A. A judgment in favor of Plaintiffs that Defendants have infringed, either literally and/or under the doctrine of equivalents, the ’301, ’610, ’818, ’268, and ’297 Patents;

B. A judgment and order finding that Defendants’ infringement has been willful;

C. A permanent injunction prohibiting Defendants from further acts of infringement;

D. A judgment and order requiring Defendants to pay Plaintiffs their damages, costs, expenses, and any enhanced damages to which Plaintiffs are entitled for Defendants’ infringement;

E. A judgment and order requiring Defendants to provide an accounting and to pay supplemental damages to Plaintiffs, including without limitation, pre-judgment and post-judgment interest;

F. A judgment and order finding that this is an exceptional case within the meaning of 35 U.S.C. § 285 and awarding Plaintiffs their reasonable attorneys' fees against Defendants; and

G. Any and all other relief as the Court may deem appropriate and just under the circumstances.

McKool Smith, P.C.
Los Angeles, CA

Dated: February 2, 2025

Respectfully submitted,

*/s/ Alan P. Block*

Alan P. Block
ablock@mckoolsmith.com
**MCKOOL SMITH, P.C.**
300 South Grand Avenue, Suite 2900
Los Angeles, California 90071
Telephone: (213) 694-1200
Facsimile: (213) 694-1234

Richard A. Kamprath*
rkamprath@mckoolsmith.com
Alexandra Easley*
aeasley@mckoolsmith.com
**MCKOOL SMITH, P.C.**
300 Crescent Court, Suite 1200
Dallas, Texas 75201
Telephone: (214) 978-4000
Facsimile: (214) 978-4044

Hannah Mirzoeff*
hmirzoeff@mckoolsmith.com
**MCKOOL SMITH, P.C.**
1301 Avenue of the Americas, 32nd Floor
New York, New York 10019
Telephone: (212) 402-9400
Facsimile: (212) 402-9444

Joshua W. Budwin*
jbudwin@mckoolsmith.com
**MCKOOL SMITH, P.C.**
303 Colorado Street, Suite 2100
Austin, Texas 78701
Telephone: (512) 692-8700
Facsimile: (512) 692-8744

Kevin Burgess*
kburgess@mckoolsmith.com
**MCKOOL SMITH, P.C.**
104 East Houston Street, Suite 300
Marshall, Texas 75670

Telephone: (903) 923-9000
Facsimile: (903) 923-9099

**Pro Hac Vice Applications forthcoming*

*Attorneys for Plaintiffs InterDigital, Inc., InterDigital VC Holdings, Inc., InterDigital Madison Patent Holdings, SAS, and InterDigital CE Patent Holdings, SAS*

McKool Smith, P.C.
Los Angeles, CA