**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

PERSONALIZED MEDIA COMMUNICATIONS, LLC, Plaintiff, v. NETFLIX, INC., Defendant.	**Civil Action No. _____** JURY TRIAL DEMANDED

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff Personalized Media Communications, LLC ("PMC"), as and for its Complaint against Defendant Netflix Inc. ("Netflix"), alleges as follows:

THE PARTIES

1. PMC is a limited liability company organized and existing under the laws of the State of Texas, having its principal place of business at 14090 Southwest Freeway, Suite 450, Sugar Land, Texas 77478.

2. On information and belief, Netflix is a Delaware corporation with its principal office at 100 Winchester Circle, Los Gatos, CA 95032. Netflix offers its products and/or services, including those accused herein of infringement, to customers and potential customers located in Texas and in the judicial Eastern District of Texas.

JURISDICTION AND VENUE

3.   PMC brings this action for patent infringement under the patent laws of the United States, 35 U.S.C. § 271 *et seq*. This Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a).

4.   This Court has personal jurisdiction over Netflix in this action because Netflix has committed acts within the Eastern District of Texas giving rise to this action and has established minimum contacts with this forum such that the exercise of jurisdiction over Netflix would not offend traditional notions of fair play and substantial justice. Netflix has committed and continues to commit acts of infringement in this District by, among other things, offering to sell and selling products and/or services that infringe the asserted patents.

5.   Netflix is a multinational company that provides subscription services that permit its users to search for and to watch streaming video content over an internet connection. Netflix has a substantial presence in the District through the products and services Netflix provides residents of this District, including delivering digital video content.

6.   Netflix uses a content delivery network called "Open Connect" to deliver Netflix content to its subscribers worldwide, including in this District. Netflix uses Open Connect to "deliver internet-based content efficiently by bringing the content that people watch close to where they're watching it."[1]

7.   The building blocks of Open Connect are "Open Connect Appliances" ("OCAs"), custom Netflix servers that store Netflix video content. OCAs "store encoded video/image bits

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[1]   https://openconnect.netflix.com/Open-Connect-Overview.pdf at 1.

and serve these bits via network connections to client devices."[2] Netflix installs OCAs "in significant Netflix markets throughout the world"[3] to "localize"[4] its video content and provides OCAs directly to local internet service providers ("ISPs") in the locations where Netflix subscribers live. Netflix "provide[s] the server hardware and the ISPs provide power, space, and connectivity."[5] Netflix's "traffic delivery is highly localized, [and] thousands of ISPs around the world enthusiastically participate."[6]

8. On information and belief, in order to serve Netflix video content to residents of this District effectively, Netflix contracts with ISPs that offer Internet services to residents of this District and installs OCAs with those ISPs in this District, including but not limited to Suddenlink,[7] Cable One,[8] AT&T, Frontier, and CenturyLink.[9]

9. On information and belief, the below map depicts Netflix OCAs in this District, either installed directly by Netflix, or housed by ISPs in this District under contract with Netflix.

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[2] *Id.*

[3] *Id.*

[4] https://media.netflix.com/en/company-blog/how-netflix-works-with-isps-around-the-globe-to-deliver-a-great-viewing-experience
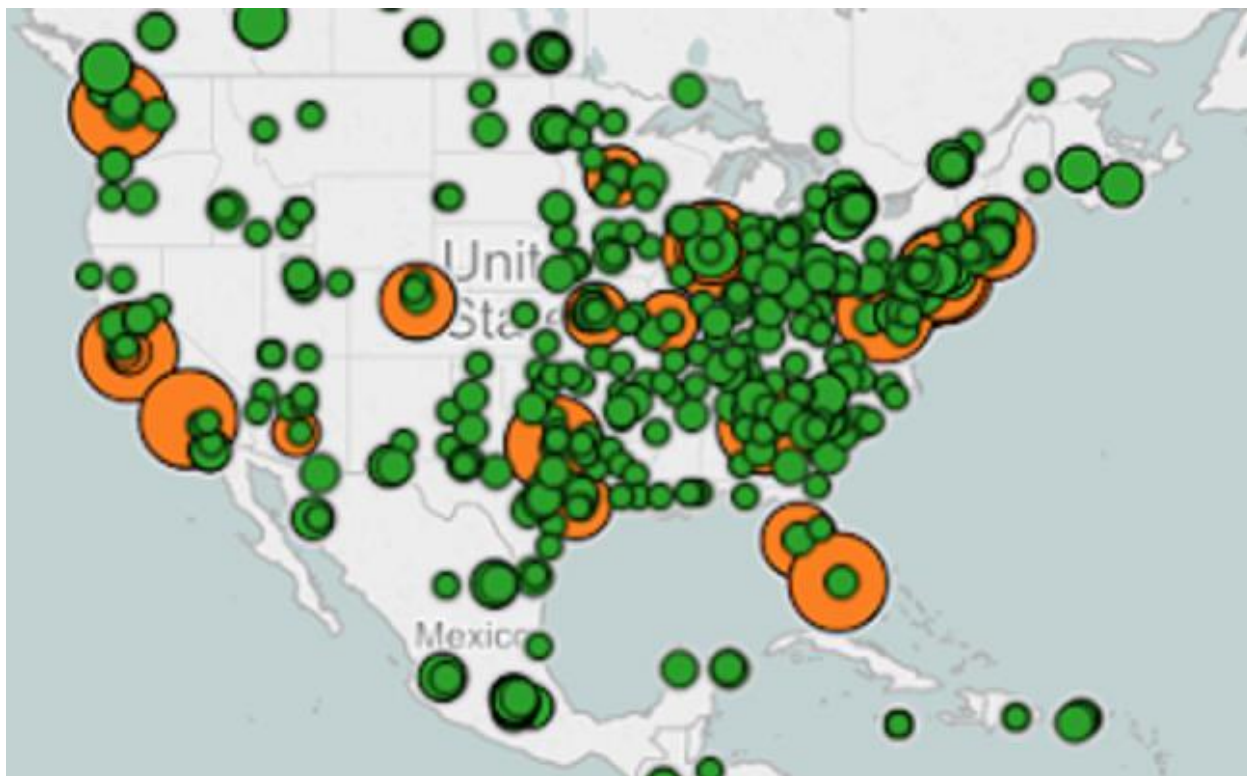
[5] https://openconnect.netflix.com/Open-Connect-Overview.pdf at 1.

[6] https://media.netflix.com/en/company-blog/how-netflix-works-with-isps-around-the-globe-to-deliver-a-great-viewing-experience

[7] *See* https://www.fiercevideo.com/cable/netflix-adds-suddenlink-to-open-connect-cdn and https://ecfsapi.fcc.gov/file/7522582779.pdf at 8.

[8] *See* https://www.cableone.net/press/Pages/CableONENamedAmongNetflixTopPerformers.aspx

[9] *See* https://ispspeedindex.netflix.com/country/us/

Source: https://media.netflix.com/en/company-blog/how-netflix-works-with-isps-around-the-globe-to-deliver-a-great-viewing-experience

10. For one non-limiting example, web traffic analysis indicates that when streaming certain Netflix video content from the District, Netflix hosts that video content on a server named "ipv4-c005-shv004-suddenlink-isp.1.oca.nflxvideo.net". The IP address associated with that server is 66.76.32.17, and the physical location associated with that IP address is a Suddenlink facility in this District in Tyler, Texas. Indeed, packet tracing software indicates that the client computer requesting the relevant video content is connected to the server described above.

11. On information and belief, Netflix retains ownership and exclusive control of its OCAs, which it provides to ISPs free of charge.[10] When Netflix engages with a new ISP, it

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[10]   *See*   https://media.netflix.com/en/company-blog/how-netflix-works-with-isps-around-the-globe-to-deliver-a-great-viewing-experience

confirms the ISP meets Netflix's network requirements, contracts with the ISP, and ships and configures the OCA at the ISP's locations.[11] After installation, Netflix continues to control the OCA by monitoring, updating, and maintaining the OCA, as well as filling it with video content.[12] On information and belief, Netflix retains exclusive control of its OCAs in its contracts with ISPs by, for example, limiting the activities contracted ISPs may take that could impact Netflix OCAs.[13]

12. Netflix's OCAs located in this District deliver cached content to residents in this District. Those physical servers are Netflix's regular and established places of business.

13. Netflix's infringement of PMC's patents—which, as described below, relate to adaptive video streaming—is substantially related to its regular and established places of business in this District because Netflix's local servers provide video content to this District's residents. Many of the claims discussed herein relate to Netflix's server architecture generally and OCAs specifically.

THE CLAIMED TECHNOLOGY

14. The technology claimed in this case relates to adaptive video streaming, which enables content providers like Netflix to serve each user the highest possible quality video over the Internet. Adaptive streaming permits Internet video content providers to serve users with content tailored to each specific user's device and Internet connection. Without adaptive streaming, streaming Internet video content can suffer from poor quality and delivery delays.

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[11] *See* https://openconnect.netflix.com/en/engagement-process/

[12] *See* https://openconnect.netflix.com/en/fill/

[13] *See id.*

15. On June 29, 2010, the United States Patent and Trademark Office duly and lawfully issued the '217 Patent, entitled "Signal Processing Apparatus and Methods," based upon an application filed by inventors John Christopher Harvey and James William Cuddihy. The '217 patent is directed to combining separate and distinct media to create a multimedia presentation. The media within the presentation are coordinated such that one medium is related to, and augments a second medium. Key to the invention is the use of identifiers associated with received media, which the receiver station processes in order to identify which of the received media are to be combined to generate the coordinated presentation. This invention was made in 1981 and represented a significant advance over what was conventional then. Advantages of the '217 invention over prior technologies include, but are not limited to: personalization of media presentations; receiver-controlled reception, identification, and selection of different but related media from separate external sources; and receiver generation of a multimedia presentation through the processing and coordinated display of at least two separate media. A true and correct copy of the '217 Patent is attached hereto as Exhibit A.

16. On August 3, 2010, the United States Patent and Trademark Office duly and lawfully issued the '344 Patent, entitled "Signal Processing Apparatus and Methods," based upon an application filed by inventors John Christopher Harvey and James William Cuddihy. The '344 patent is directed to remotely and dynamically reprogramming receiver station software to facilitate receiving video programming. This invention was made in 1981 and represented a significant advance over what was conventional then. Conventional systems of 1981—typically a television and cable box—did not have the capacity for remote reprogramming. In contrast, the '344 invention generates and sends a request for a set of instructions via a network connection of a processor operating under the control of another set of instructions. In response to the request,

the set of instructions are transmitted to the receiver station where they are received and executed to enable the receiver station to receive video media. Advantages of the '344 invention over prior technologies include, but are not limited to: fully automated updates to receiver station software; extension of receiver station operating life; standardization of receiver station software within a network; and the remote addition of new features and capabilities to a receiver station. A true and correct copy of the '344 Patent is attached hereto as Exhibit B.

17. On January 4, 2011, the United States Patent and Trademark Office duly and lawfully issued the '920 Patent, entitled "Signal Processing Apparatus and Methods," based upon an application filed by inventors John Christopher Harvey and James William Cuddihy. The '920 patent is directed to remotely controlling systems within a media distribution network. The invention was made in 1987 and represented a significant advancement over conventional media distribution available at the time. Network control is facilitated through the incorporation of selective communication devices (e.g. switches) within the transmission station hardware, with the switches in turn being controlled by network signals in combination with transmission station data stored in memory at the transmitter. Advantages of the '920 invention over prior technologies include, but are not limited to: network control of audio/video programming storage at an intermediate transmission station and network control of audio/video programming transmission by the intermediate transmission station. A true and correct copy of the '920 Patent is attached hereto as Exhibit C.

18. On December 3, 2013, the United States Patent and Trademark Office duly and lawfully issued the '528 Patent, entitled "Signal Processing Apparatus and Methods," based upon an application filed by inventors John Christopher Harvey and James William Cuddihy. The '528 Patent is directed to controlling a receiver station to skip over video frames if the receiver

station detects that they are incomplete. The invention uses data associated with a television signal to determine if a video image within the signal is complete. The data is either contained within, or received with the television signal, and is processed at the receiver station to make the determination. If the image is incomplete, the receiver station will prevent the image from being displayed and will automatically advance to subsequent information received with the television signal. The invention was made in 1987 and represented a significant advancement over conventional technology systems of that time, which, as a non-limiting example, had no capability to skip the display of incomplete video images. A true and correct copy of the '528 Patent is attached hereto as Exhibit D.

19. On May 27, 2014, the United States Patent and Trademark Office duly and lawfully issued the '241 Patent, entitled "Signal Processing Apparatus and Methods," based upon an application filed by inventors John Christopher Harvey and James William Cuddihy. The '241 patent is directed to remotely controlling systems within a media distribution network. Network control is facilitated through the inclusion of signals transmitted with the television programming. At least one of the signals is used to control subsequent transmission based on programming identification information previously stored at the intermediate transmitter station; and at least one of the signals is transmitted to the receiver station where it is processed to facilitate the output of the television programming. The invention was made in 1981 and represented a significant advancement over conventional technology systems of that time. Advantages of the '241 invention over prior conventional technology systems include, but are not limited to: network control of television programming storage and transmission at an intermediate transmitter station and network control of the receiver station to output the television program. A true and correct copy of the '241 Patent is attached hereto as Exhibit E.

20. On June 6, 2017, the United States Patent and Trademark Office duly and lawfully issued the '560 Patent, entitled "Signal Processing Apparatus and Methods," based upon an application filed by inventors John Christopher Harvey and James William Cuddihy. The '560 patent is directed to remotely controlling systems within a media distribution network. Network control of storage is realized by including control signals in the transmission of media to an intermediate transmission station. The control signals will facilitate the selection of received media for storage at the intermediate transmission station based on operating records stored there, cause the intermediate transmission station to select a storage location for the media, and cause the operating records to be updated to reflect reception and storage of the received media. The invention was made in 1987 and represented significant advancement over prior conventional technology systems in media storage and tracking, for non-limiting examples. A true and correct copy of the '560 Patent is attached hereto as Exhibit F.

21. The Patents-in-Suit generally relate to methods and systems for digital signal processing, which enable adaptive streaming.

22. PMC owns all right, title, and interest in and to the Patents-in-Suit and possesses all rights of recovery.

FACTUAL ALLEGATIONS

The Company

23. PMC is a family-run company that was founded by inventor and PMC Chairman John Harvey. PMC's Chairman, along with his co-inventor James Cuddihy, made numerous inventions in the early 1980s (collectively referred to hereinafter as "the Harvey Inventions") which have been the basis for nearly 100 patents.

24. PMC operates from Sugar Land, Texas. Its intellectual property commercialization and licensing activities have directly created jobs for engineers, technical specialists, management personnel, and counsel.

25. PMC's inventors created a visionary portfolio of intellectual property that covers a whole system of related technologies. Taken together, the system they invented in the early 1980's created possibilities unknown to those familiar with what was routine and conventional at the time. For example, content providers could use the control and information signals in these inventions to provide subscribers with personalized content. Content providers could use other PMC inventions to protect their content from piracy, and they could do so in consistent and cost-effective ways which were fully automated. PMC's patents also disclose and claim apparatuses and processes that improved on contemporary technology by adding capabilities to transmitter and receiver stations using remotely supplied software updates.

26. PMC first attempted to commercialize the Harvey Inventions' technology internally. From 1989 to 1992, in the pre-Internet era, the company developed and publicly disclosed a television system prototype that demonstrated many of its patented personalization and access control concepts.

27. The company also sought partnerships with more-established companies to jointly develop, market, and manufacture commercial embodiments of PMC's technology. PMC and its predecessor, Personalized Mass Media Corporation, made multiple attempts in the 1990's to market the Harvey Inventions by contacting a number of large technology companies. PMC entered into agreements with industry leaders, including General Electric, to explore the technology's possibilities. PMC also contracted with Sarnoff Labs to develop software implementing features of the Harvey Inventions to demonstrate the technology's potential.

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28. Most of these established firms eventually decided not to pursue the Harvey Inventions at that time. A few forward-focused firms, however, including Starsight and Gemstar (now subsidiaries of TiVo), did recognize the technological significance of the Harvey inventions and became some of PMC's first licensees.

29. Substantial improvements in computer networks have enabled many firms to adopt and to take advantage of the foundational contributions made by the Harvey Inventions. The Harvey Inventions have now received significant industry recognition and have been licensed by some of the world's most sophisticated and respected content and network companies. PMC has licensed its patented technology to Sony, Motorola, Sharp, Panasonic, DirecTV, DISH Network, EchoStar, FOX, The Weather Channel, Gemstar-TV Guide (now a subsidiary of TiVo), Cisco, Arris, Samsung, Vizio, Funai, Tongfang, Haier, and TCL, among others. PMC's patented technology makes content more relevant, more secure, and more reliable—all enhancements that directly contribute to licensees' profits.

30. PMC has never enforced third-party patents. PMC exclusively enforces the fruits of PMC's inventors, John Harvey and James Cuddihy.

31. This Court is familiar with PMC, and at least the '217 Patent, in addition to the patents from which the other Patents-in-Suit claim priority, having previously presided over numerous related cases, including *Personalized Media Communications, LLC v. TCL Corp. et al*, Case No. 2-17-cv-00433-JRG; *Personalized Media Communications, LLC v. Hisense Co. Ltd. et al*, Case No. 2-17-cv-00437-JRG-RSP; *Personalized Media Communications, LLC v. Haier America Company, LLC et al*, Case No. 2-17-cv-00438-JRG; *Personalized Media Communications, LLC v. Tsinghua Tongfang Co., Ltd. et al*, Case No. 2-17-cv-00439-JRG; *Personalized Media Communications, LLC v. Funai Electric Co., Ltd.*, Case No. 2-16-cv-00105-

JRG-RSP; *Personalized Media Communications, LLC v. Samsung Electronics America, Inc. et al*, Case No. 2-15-cv-01754-JRG-RSP; *Personalized Media Communications LLC v. Apple Inc.*, Case No. 2-15-cv-01366-JRG-RSP; *Personalized Media Communications, LLC v. TPV Int'l (USA), Inc. et al*, Case No. 2-15-cv-01206-JRG-RSP; *Personalized Media Communications, L.L.C. v. Zynga, Inc*., Case No. 2-12-cv-00068-JRG-RSP; and *Personalized Media Communications, L.L.C. v. Motorola, Inc., et. al*., Case No. 2-08-cv-00070-RSP.

Defendant and the Accused Products

32. As referred to in this Complaint, and consistent with 35 U.S.C. § 100(c), the "United States" means "the United States of America, its territories and possessions."

33. Upon information and belief, including based on products identified on Netflix websites, Netflix makes, uses, offers to sell, and/or sells in the United States, and/or imports into the Unites States, methods, services, systems, and products in accordance with the Patents-in-Suit, including, but not limited to, Netflix's video on demand streaming service and Netflix's Content Distribution Network ("CDN"), including its components such as origination servers, Open Connect Appliance ("OCA") nodes and OCA clusters, Netflix's control plane, Netflix software running on various Netflix servers and appliances, and Netflix's video player in website or software application form distributed by Netflix to end users (collectively, "Accused Netflix Products and Services").

34. Upon information and belief, Netflix actively and knowingly directs, causes, induces, and encourages others, including, but not limited to, its designers, manufacturers, suppliers, distributors, resellers, audio and video integrators and consultants, software developers, customers, and end users, to make, use, sell, and/or offer to sell in the United States, and/or import into the United States, Accused Netflix Products and Services made in accordance

with the Patents-in-Suit, by, among other things, providing instructions, manuals, technical descriptions, and technical assistance relating to the installation, set up, use, operation, and maintenance of the above methods, services, systems, and products.

Notice of Infringement

35. On February 6, 2014, PMC sent a letter to Netflix, offering Netflix a license to one or more patents in PMC's patent portfolio. PMC notified Netflix of its patent portfolio, and directed Netflix to a website that listed all of PMC's patents, which at that time included the '217, '344, '920, and '528 Patents. Netflix did not respond.

36. In view of the above, Netflix received actual notice of at least the '217, '344, '920, and '528 Patents, and Netflix's infringement thereof by Accused Netflix Products and Services, prior to this lawsuit.

37. Netflix has notice of the '241 and '560 Patents at least as of the time of the filing of the complaint.

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COUNT I: INFRINGEMENT OF THE '217 PATENT

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38. PMC incorporates the preceding paragraphs as if fully set forth herein.

39. Upon information and belief, Netflix has infringed at least claims 1-3, 9, 11-12, 16-18, and 20-22 of the '217 Patent, pursuant to 35 U.S.C. § 271(a) by making, using, offering to sell, and/or selling in the United States, and/or importing into the United States Accused Netflix Products and Services. For example, claim 1 of the '217 Patent recites a "method of outputting a multimedia presentation at a receiver station adapted to receive a plurality of signals." Netflix outputs multimedia presentations at devices running Netflix software (such as smartphones, tablets, televisions, computers, and gaming consoles), which are adapted to receive a plurality of signals (such as TCP/IP packets carrying audio/video signals and thumbnail images). Claim 1

recites: "receiving said plurality of signals including at least two media which include a first medium received in a digital data channel from a source external to said receiver station;" "storing information from said first medium in a storage medium at a computer at said receiver station;" "determining content, through use of processor instructions resident on said computer at said receiver station, of each medium received after said first medium in said plurality of signals, wherein determining content of each medium comprises:" "processing an identifier which identifies said content of each of said medium:" "comparing said processed identifier to a predetermined identifier, wherein said predetermined identifier is determined at a time prior to receiving said plurality of signals;" "coordinating, through use of processor instructions resident on said computer at said receiver station, a presentation using said information with a presentation of a medium comprising an identifier that matches said predetermined identifier based on said step of determining content; and" "outputting and displaying said multimedia presentation to a user at said receiver station based on said step of coordinating such that said presentation using said information has a predetermined relationship to said content of said medium comprising an identifier that matches said predetermined identifier and said content of said medium comprising an identifier that matches said predetermined identifier explains a significance of said presentation using said information." A Netflix video player receives one or more TCP/IP packets, which include audio/video signals (the first medium) for the title requested by the user through the Netflix software, and preview thumbnail images for that title (the second medium), with the audio/video signals received from a Netflix OCA (a source external to the receiver station) in a digital data channel, such as a TCP connection; stores such audio/video signals in the computer memory of the devices running Netflix software; Netflix uses processor instructions on such devices to determine content of each medium received after said first

medium in said plurality of signals; in order to determine such content, Netflix processes at least one identifier (such as a TCP destination port number included in headers of packets received by Netflix), compares said processed identifier to a predetermined identifier (such as comparing the port number received in the header to the port number assigned to the connection between the device running Netflix software and a Netflix OCA, where a port number is assigned to the connection before the devices running Netflix software receive the plurality of signals); Netflix identifies the content of the second medium when, for example, the TCP destination port identifies preview thumbnail images; through the use of the processor instructions, Netflix coordinates the presentation of information (for example, an overlay of the playback of the requested title) with a presentation of the medium comprising an identifier that matches the predetermined identifier (for example, preview thumbnail corresponding to the location of the progress bar over which the user hovers the pointing device); based on such coordination, Netflix outputs and displays such a multimedia presentation to the user at the device running Netflix software; the presentation has a predetermined relationship to said content of said medium comprising an identifier that matches said predetermined identifier (for example, displaying the preview thumbnail images at a given location of the progress bar is related to the audio/visual information at the corresponding time on the progress bar, with the relationship being predetermined before transmission and/or during encoding of the title); and said content of said medium comprising an identifier that matches said predetermined identifier explains a significance of said presentation using said information (for example, the preview thumbnail images explain a significance of the audio/video content that will follow or preceded that content that is currently playing). Upon information and belief, Netflix's infringement pursuant to 35 U.S.C. § 271(a) is ongoing.

40. Upon information and belief, since having notice of the '217 Patent, Netflix has induced infringement of at least claims 1-3, 9, 11-12, 16-18, and 20-22 of the '217 Patent pursuant to 35 U.S.C. § 271(b), by actively and knowingly inducing, directing, causing, and encouraging others, including, but not limited to, their designers, manufacturers, suppliers, distributors, resellers, audio and video integrators and consultants, software developers, customers, and end users, to make, use, sell, and/or offer to sell in the United States, and/or import into the United States, the Accused Netflix Products and Services made in accordance with the '217 Patent, by, among other things, providing instructions, manuals, and technical assistance relating to the installation, set up, use, operation, and maintenance of said Accused Netflix Products and Services. For example, where acts constituting direct infringement of claim 1 of the '217 Patent are not performed by Netflix, such acts constituting direct infringement are performed by Netflix's designers, manufacturers, suppliers, distributors, resellers, audio and video integrators and consultants, software developers, customers, and/or end users, who act at the direction and/or control of Netflix, with Netflix's knowledge. Upon information and belief, Netflix's inducement of infringement pursuant to 35 U.S.C. § 271(b) is ongoing.

41. Upon information and belief, Netflix committed the foregoing infringing activities without license from PMC and with notice of the '217 Patent.

42. Netflix knew the '217 Patent existed while committing the foregoing infringing acts, thereby willfully, wantonly, and deliberately infringing the '217 Patent. Accordingly, PMC's damages should be trebled pursuant to 35 U.S.C. § 284 because of Netflix's willful infringement of the '217 Patent.

43. The acts of infringement by Netflix have been with the knowledge of the '217 Patent and are willful, wanton, and deliberate, thus rendering this action "exceptional" within the

meaning of 35 U.S.C. § 285 and entitling PMC to its reasonable attorney's fees and litigation expenses.

44. The acts of infringement by Netflix will continue unless enjoined by this Court.

45. PMC has been and will continue to be irreparably harmed and damaged by Netflix's infringement of the '217 Patent and has no adequate remedy at law.

COUNT II: INFRINGEMENT OF THE '344 PATENT

46. PMC incorporates the preceding paragraphs as if fully set forth herein.

47. Upon information and belief, Netflix has infringed at least claims 1 and 2 of the '344 Patent, pursuant to 35 U.S.C. § 271(a) by making, using, offering to sell, and/or selling in the United States, and/or importing into the United States Accused Netflix Products and Services. For example, claim 1 of the '344 Patent recites a "method for reprogramming a receiver station that receives television or radio programming, said receiver station having a data network connection to an external data network, a processor, an input device, and a data storage device." Netflix reprograms devices running Netflix video player software—such as personal computers, mobile devices, and televisions, which have CPUs, touch screens, data storage, and are connected to the Internet—by supplying programming. Claim 1 recites: "storing first operating instructions at said receiver station, executing said first operating instructions at said processor to perform a first function, said first operating instructions being different from permanent operating instructions permanently stored at said receiver station;" "generating a query at said receiver station, said query comprising a request by said receiver station for reprogramming;" "promulgating said query from said receiver station under control of said processor executing said first operating instructions through said data network connection to said external data network;" "receiving second operating instructions different from both said

permanent operating instructions and said first operating instructions in response to said step of promulgating said query, said second operating instructions for controlling operation of said processor, wherein said first and said second operating instructions do not include audio data, video data, image data and any combination thereof;" "reprogramming said processor with said received second operating instructions;" "performing a second function by executing said second operating instructions at said processor, said second function including controlling reception of signals required to output a video programming transmission;" "receiving said signals required to output said video programming transmission;" "processing said signals to enable the output of said video programming transmission; and" "outputting said video programming transmission for display to a viewer." Netflix stores operating instructions, such as a content license that provides instructions on how to decrypt encrypted video programming; executes the operating instructions—which are different from permanent operating instructions permanently stored at the devices running Netflix's software such as BIOS—to, for example, perform a first function such as decrypting a first portion of a television program at the receiver station; generates a query to be reprogrammed with a license for a subsequent portion of the television program, such as during playback; promulgates the query from the devices running Netflix video player software executing the first operating instructions over the Internet to Netflix's servers; in response to promulgating the query, Netflix receives second license operating instructions that are different than the permanent operating instructions and the first operating instructions described above; the first and second operating instructions do not include audio data, video data, image data and any combination thereof; Netflix reprograms the processor, such as by updating the Content Decryption Module with the received second license operating instructions; performs a second function by executing said second operating instructions included in the

license, said second function including controlling reception of signals required to output a video programming transmission, such as performing the decryption process on subsequent audio or video contents of a television program, or portions thereof; receives signals containing video programming (such as the packets, containers, and frames comprising video); decodes the video frames to enable the output of said video programming; and outputs Netflix video programming to a viewer on a computer, mobile device, or digital television. Upon information and belief, Netflix's infringement pursuant to 35 U.S.C. § 271(a) is ongoing.

48. Upon information and belief, since having notice of the '344 Patent, Netflix has induced infringement of at least claims 1 and 2 of the '344 Patent pursuant to 35 U.S.C. § 271(b), by actively and knowingly inducing, directing, causing, and encouraging others, including, but not limited to, their designers, manufacturers, suppliers, distributors, resellers, audio and video integrators and consultants, software developers, customers, and end users, to make, use, sell, and/or offer to sell in the United States, and/or import into the United States, Accused Netflix Products and Services made in accordance with the '344 Patent, by, among other things, providing instructions, manuals, and technical assistance relating to the installation, set up, use, operation, and maintenance of said Accused Netflix Products and Services. For example, where acts constituting direct infringement of claim 1 of the '344 Patent are not performed by Netflix, such acts constituting direct infringement are performed by Netflix's designers, manufacturers, suppliers, distributors, resellers, audio and video integrators and consultants, software developers, customers, and/or end users, who act at the direction and/or control of Netflix, with Netflix's knowledge. Upon information and belief, Netflix's inducement of infringement pursuant to 35 U.S.C. § 271(b) is ongoing.

49. Upon information and belief, Netflix committed the foregoing infringing activities without license from PMC and with notice of the '344 Patent.

50. Netflix knew the '344 Patent existed while committing the foregoing infringing acts, thereby willfully, wantonly, and deliberately infringing the '344 Patent. Accordingly, PMC's damages should be trebled pursuant to 35 U.S.C. § 284 because of Netflix's willful infringement of the '344 Patent.

51. The acts of infringement by Netflix have been with the knowledge of the '344 Patent and are willful, wanton, and deliberate, thus rendering this action "exceptional" within the meaning of 35 U.S.C. § 285 and entitling PMC to its reasonable attorney's fees and litigation expenses.

52. The acts of infringement by Netflix will continue unless enjoined by this Court.

53. PMC has been and will continue to be irreparably harmed and damaged by Netflix's infringement of the '344 Patent and has no adequate remedy at law.

COUNT III: INFRINGEMENT OF THE '920 PATENT

54. PMC incorporates the preceding paragraphs as if fully set forth herein. Upon information and belief, Netflix has infringed at least claims 7-9, 12, and 17-19 of the '920 Patent, pursuant to 35 U.S.C. § 271(a) by making, using, offering to sell, and/or selling in the United States, and/or importing into the United States Accused Netflix Products and Services. For example, claim 7 of the '920 Patent recites a "method of communicating programming to subscribers in a network, said network including one or more programming origination stations, a plurality of intermediate transmission stations, and a plurality of subscriber stations, each intermediate transmission station receiving audio or video programming from said origination stations, each intermediate transmission stations including one or more selective communications

devices and a plurality of storage locations." Netflix communicates audio and video programming to its subscribers via its distributed network, which includes one or more programming origination stations, a plurality of intermediate transmission stations (such as Netflix OCAs and OCA clusters, which receive audio or video programming for television programs from the origination stations, and include a motherboard which includes a switch to permit selective communication and a plurality of storage locations, such as locations in flash or hard-disk drive storage drives), and a plurality of subscriber stations (such as computers, mobile devices, and digital televisions running Netflix software). Claim 7 recites: "passing a plurality of units of audio or video programming to a transmitter at said one or more programming origination stations"; "passing to said transmitter at said one or more programming origination stations, data identifying said units of audio or video programming or subject matter included in said units of audio or video programming, said data effective to instruct"; "at least one of said plurality of intermediate transmission stations to indicate when to retransmit said plurality of units of audio or video programming to at least one of said plurality of subscriber stations, wherein data of one or more predetermined transmission station capacities is processed at said at least one of said plurality of intermediate transmission stations to identify one of said plurality of storage locations at which to store at least one said plurality of units of audio or video programming"; "wherein said identified storage locations are different for each of said plurality of units of audio or video programming, and"; "wherein said stored at least one of said plurality of units of programming is transferred from said identified one of said plurality of storage locations to another of said plurality of storage locations based on said data identifying said units of audio or video programming or subject matter included in said units of audio or video programming and said data of one or more predetermined transmission station capacities; and";

"transmitting said plurality of units of audio or video programming and said data that identify said units of audio or video programming or a subject matter included in said units of audio or video programming to said plurality of intermediate transmission stations." Netflix passes units of audio and video television programming to a network port or network interface card at its origination servers; passes container data and metadata, and data indicating start and end of frames, such as a segment index, that identifies the units of audio or video programming, or subject matter included in said units of audio or video programming, to the transmitter described above; the data described above is effective to instruct an OCA to indicate when to retransmit the units of audio/video programming to the Netflix subscribers; Netflix OCAs process data relating to the type of OCA and its storage to identify one of said plurality of storage locations on an OCA at which to store the units of audio or video programming; in the storage used by Netflix, the identified storage locations are different for video data and audio data; based on information identifying the audio/video programming units (such as files and/or segments) and data of the transmission station capacities, Netflix transfers a file and/or segment of audio/video programming from an identified location in nonvolatile storage to another storage location in the OCA clusters or nodes; and Netflix origination servers send the units (such as the segments and/or files) of audio/video programming and said data described above to the OCAs. Upon information and belief, Netflix's infringement pursuant to 35 U.S.C. § 271(a) is ongoing.

55. Upon information and belief, since having notice of the '920 Patent, Netflix has induced infringement of at least claims 7-9, 12, and 17-19 of the '920 Patent pursuant to 35 U.S.C. § 271(b), by actively and knowingly inducing, directing, causing, and encouraging others, including, but not limited to, their designers, manufacturers, suppliers, distributors, resellers, audio and video integrators and consultants, software developers, customers, and end users, to

make, use, sell, and/or offer to sell in the United States, and/or import into the United States, the Accused Netflix Products and Services made in accordance with the '920 Patent, by, among other things, providing instructions, manuals, and technical assistance relating to the installation, set up, use, operation, and maintenance of said Accused Netflix Products and Services. For example, where acts constituting direct infringement of claim 7 of the '920 Patent are not performed by Netflix, such acts constituting direct infringement are performed by Netflix's designers, manufacturers, suppliers, distributors, resellers, audio and video integrators and consultants, software developers, customers, and/or end users, who act at the direction and/or control of Netflix, with Netflix's knowledge. Upon information and belief, Netflix's inducement of infringement pursuant to 35 U.S.C. § 271(b) is ongoing.

56. Upon information and belief, Netflix committed the foregoing infringing activities without license from PMC and with notice of the '920 Patent.

57. Netflix knew the '920 Patent existed while committing the foregoing infringing acts, thereby willfully, wantonly, and deliberately infringing the '920 Patent. Accordingly, PMC's damages should be trebled pursuant to 35 U.S.C. § 284 because of Netflix's willful infringement of the '920 Patent.

58. The acts of infringement by Netflix have been with the knowledge of the '920 Patent and are willful, wanton, and deliberate, thus rendering this action "exceptional" within the meaning of 35 U.S.C. § 285 and entitling PMC to its reasonable attorney's fees and litigation expenses.

59. The acts of infringement by Netflix will continue unless enjoined by this Court.

60. PMC has been and will continue to be irreparably harmed and damaged by Netflix's infringement of the '920 Patent and has no adequate remedy at law.

COUNT IV: INFRINGEMENT OF THE '528 PATENT

61. PMC incorporates the preceding paragraphs as if fully set forth herein.

62. Upon information and belief, Netflix has infringed at least claims 21-27, 32, and 37-39 of the '528 Patent, pursuant to 35 U.S.C. § 271(a) by making, using, offering to sell, and/or selling in the United States, and/or importing into the United States the Accused Netflix Products and Services. For example, claim 21 of the '528 Patent recites a "method of controlling the display of television programming at a receiver station, wherein said receiver station includes a monitor for displaying said television programming, a receiver operatively connected to said monitor, and a processor operatively connected to at least one of said monitor and said receiver." Netflix performs a method of controlling the display of television programming at a receiver station (such as a PC or laptop computer running the Netflix software in a browser or as an app), wherein said receiver station includes a monitor for displaying said television programming, a receiver (such as a wired or wireless network interface) operatively connected to said monitor, and a processor (such as a CPU) operatively connected to at least one of said monitor and said receiver. Claim 21 recites: "receiving an information transmission including a television signal;" "passing at least a portion of said information transmission to said processor;" "determining the absence of complete generated television image data by processing information at least one of included in and received with said television signal;" "determining a location of subsequent information for advancing to based on said step of determining the absence of complete generated television image data;" "advancing to the subsequent information received in said information transmission; and" "preventing said monitor from displaying an incomplete television image based on said step of determining the absence of complete generate television image data, wherein said method controls the display of said television programming at said

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receiver station." Netflix receives, at a receiver station, packets (i.e., an information transmission) that carry a television signal, such as a Netflix title requested by the user; Netflix's player software passes segments of video to said processor; Netflix determines (via software running on the receiver station) the absence of complete generated television image data (for example, missing frames) by processing information included in and received with said television signal; based on the step of determining the absence of complete generated television image, Netflix determines a location of subsequent information (such as the next random access point in the stream) from which it can continue the video presentation; advances to the subsequent information received in said information transmission; and prevents said monitor from displaying an incomplete television image based on the step of determining the absence of complete generated television image data. With the above method, Netflix controls the display of the television programming at the receiver station. Upon information and belief, Netflix's infringement pursuant to 35 U.S.C. § 271(a) is ongoing.

63. Upon information and belief, since having notice of the '528 Patent, Netflix has induced infringement of at least claims 21-27, 32, and 37-39 of the '528 Patent pursuant to 35 U.S.C. § 271(b), by actively and knowingly inducing, directing, causing, and encouraging others, including, but not limited to, their designers, manufacturers, suppliers, distributors, resellers, audio and video integrators and consultants, software developers, customers, and end users, to make, use, sell, and/or offer to sell in the United States, and/or import into the United States, the Accused Netflix Products and Services made in accordance with the '528 Patent, by, among other things, providing instructions, manuals, and technical assistance relating to the installation, set up, use, operation, and maintenance of said Accused Netflix Products and Services. For example, where acts constituting direct infringement of claim 21 of the '528 Patent are not

performed by Netflix, such acts constituting direct infringement are performed by Netflix's designers, manufacturers, suppliers, distributors, resellers, audio and video integrators and consultants, software developers, customers, and/or end users, who act at the direction and/or control of Netflix, with Netflix's knowledge. Upon information and belief, Netflix's inducement of infringement pursuant to 35 U.S.C. § 271(b) is ongoing.

64. Upon information and belief, Netflix committed the foregoing infringing activities without license from PMC and with notice of the '528 Patent.

65. Netflix knew the '528 Patent existed while committing the foregoing infringing acts, thereby willfully, wantonly, and deliberately infringing the '528 Patent. Accordingly, PMC's damages should be trebled pursuant to 35 U.S.C. § 284 because of Netflix's willful infringement of the '528 Patent.

66. The acts of infringement by Netflix have been with the knowledge of the '528 Patent and are willful, wanton, and deliberate, thus rendering this action "exceptional" within the meaning of 35 U.S.C. § 285 and entitling PMC to its reasonable attorney's fees and litigation expenses.

67. The acts of infringement by Netflix will continue unless enjoined by this Court.

68. PMC has been and will continue to be irreparably harmed and damaged by Netflix's infringement of the '528 Patent and has no adequate remedy at law.

COUNT V: INFRINGEMENT OF THE '241 PATENT

69. PMC incorporates the preceding paragraphs as if fully set forth herein.

70. Upon information and belief, Netflix has infringed at least claims 16-17, 22-23, 30, 33-34, 36-37, and 39 of the '241 Patent, pursuant to 35 U.S.C. § 271(a) by making, using, offering to sell, and/or selling in the United States, and/or importing into the United States

Accused Netflix Products and Services. For example, claim 16 of the '241 Patent recites a "method of controlling an intermediate transmitter station to communicate television programming to a receiver station." Netflix controls its OCAs (intermediate transmitter stations) to communicate television programming to a device (a receiver station) with Netflix software. Claim 16 recites: "receiving said television programming at an origination station;" "transmitting said television programming and a plurality of control signals from said origination station to said intermediate transmitter station, said control signals for controlling the operation and identification of signals by controlling how and where to search for signals at the intermediate transmitter station and automatically controlling the operation of said intermediate transmitter station;" "receiving at said intermediate transmitter station said television programming and said plurality of control signals;" "transmitting said television programming and at least a first portion of said plurality of control signals from said intermediate transmitter station to said receiver station based upon at least a second portion of said plurality of control signals received at said intermediate transmitter station;" "receiving, at said receiver station, said at least a first portion of said plurality of control signals from said intermediate transmitter station;" and "receiving and displaying at a television display device at said receiver station said transmitted television programming based upon said at least a first portion of said plurality of control signals." Netflix receives television programs on its origination servers; transmits audio and video portions of the television programing, as well as a plurality of control signals (such as TCP/IP port identifiers, title identifiers, and container data and metadata), from the origination servers to OCAs or OCA clusters; such control signals control the operation and identification of signals at the OCAs, which use the control signals to automatically find audio and video chunks, segments, fragments, and/or frames within numerous packets received by the OCAs; Netflix receives the television

programming and control signals at the OCAs; transmits the television programming and at least a first portion of the control signals (such as container data and metadata embedded into or encapsulating the audio/video portions of the television programming used to decode video frames and audio portions) from the OCAs to receiver stations running Netflix video player software; this transmission is based upon at least a second portion of the control signals received at the OCAs (such as title identifiers and container data and metadata encapsulating the audio/video portions of the television programming and identifying the types of audio/video encoding, resolutions, and chunk offset information present) which is used to locate individual audio/video portions of television programming and send it to the Netflix video players; the Netflix video player software receives at least the first portion of control signals from OCAs; and based on at least the first portion of control signals, the Netflix video player software controls the processing and display of the transmitted television programming. Upon information and belief, Netflix's infringement pursuant to 35 U.S.C. § 271(a) is ongoing.

71. Upon information and belief, since having notice of the '241 Patent, Netflix has induced infringement of at least claims 16-17, 22-23, 30, 33-34, 36-37, and 39 of the '241 Patent pursuant to 35 U.S.C. § 271(b), by actively and knowingly inducing, directing, causing, and encouraging others, including, but not limited to, their designers, manufacturers, suppliers, distributors, resellers, audio and video integrators and consultants, software developers, customers, and end users, to make, use, sell, and/or offer to sell in the United States, and/or import into the United States, the Accused Netflix Products and Services made in accordance with the '241 Patent, by, among other things, providing instructions, manuals, and technical assistance relating to the installation, set up, use, operation, and maintenance of said Accused Netflix Products and Services. For example, where acts constituting direct infringement of claim

16 of the '241 Patent are not performed by Netflix, such acts constituting direct infringement are performed by Netflix's designers, manufacturers, suppliers, distributors, resellers, audio and video integrators and consultants, software developers, customers, and/or end users, who act at the direction and/or control of Netflix, with Netflix's knowledge. Upon information and belief, Netflix's inducement of infringement pursuant to 35 U.S.C. § 271(b) is ongoing.

72. Upon information and belief, Netflix committed the foregoing infringing activities without license from PMC and with notice of the '241 Patent.

73. The acts of infringement by Netflix will continue unless enjoined by this Court.

74. PMC has been and will continue to be irreparably harmed and damaged by Netflix's infringement of the '241 Patent and has no adequate remedy at law.

COUNT VI: INFRINGEMENT OF THE '560 PATENT

75. PMC incorporates the preceding paragraphs as if fully set forth herein.

76. Upon information and belief, Netflix has infringed at least claims 4-10 of the '560 Patent, pursuant to 35 U.S.C. § 271(a) by making, using, offering to sell, and/or selling in the United States, and/or importing into the United States the Accused Netflix Products and Services. For example, claim 5 of the '560 Patent recites a "method of communicating units of programming to a subscriber in a network, said network including at least one programming origination station, an intermediate transmission station, and at least one subscriber station, said intermediate transmission station transmitting said units of programming to said at least one subscriber station." Netflix communicates units of programming to its network of subscribers via its CDN infrastructure, including its origination and OCA servers. The OCAs transmit the units of programming, such as television programs, to the subscriber stations. Claim 5 recites: "receiving an information transmission containing a control signal from said origination station

at said intermediate transmission station;" "detecting said control signal at said intermediate transmission station and passing said control signal to a computer;" "controlling said intermediate transmission station based on said control signal to: select a portion of said units of programming based on operating records stored at said intermediate transmission station;" "receive said units of programming at said intermediate transmission station;" "communicate said selected a portion of said-units of programming to a storage location;" "store said selected a portion of said units of programming at said storage location;" "alter said operating records stored at said intermediate transmission station to indicate at least one of reception and storage of said selected a portion of units of programming; and" "subsequently transmitting said selected a portion of said-units of programming to said at least one subscriber station." For example, a Netflix OCA receives a transmission with a control signal, such as a content manifest file, from a Netflix origination station. Netflix OCAs detect said control signal and pass it to a computer, such as the motherboard and processor of the OCA. Netflix controls the OCA, based on the content manifest, so that the OCA selects a portion of the units of programming based on the operating records stored at the OCA of what portions of television programming are already stored at the OCA, receives television programming not already stored at the OCA, communicates the received television programming to a storage location on an OCA, such as a location on a solid state drive or a hard-disk drive, stores the received television programming at the location on a solid state drive or hard-disk drive, and alters the operating records, such as the listing of titles received and stored on the OCA. Subsequently, the OCA transmits the received television programming to a subscriber station running Netflix player software. Upon information and belief, Netflix's infringement pursuant to 35 U.S.C. § 271(a) is ongoing.

77. Upon information and belief, since having notice of the '560 Patent, Netflix has induced infringement of at least claims 4-10 of the '560 Patent pursuant to 35 U.S.C. § 271(b), by actively and knowingly inducing, directing, causing, and encouraging others, including, but not limited to, their designers, manufacturers, suppliers, distributors, resellers, audio and video integrators and consultants, software developers, customers, and end users, to make, use, sell, and/or offer to sell in the United States, and/or import into the United States, the Accused Netflix Products and Services made in accordance with the '560 Patent, by, among other things, providing instructions, manuals, and technical assistance relating to the installation, set up, use, operation, and maintenance of said Accused Netflix Products and Services. For example, where acts constituting direct infringement of claim 4 of the '560 Patent are not performed by Netflix, such acts constituting direct infringement are performed by Netflix's designers, manufacturers, suppliers, distributors, resellers, audio and video integrators and consultants, software developers, customers, and/or end users, who act at the direction and/or control of Netflix, with Netflix's knowledge. Upon information and belief, Netflix's inducement of infringement pursuant to 35 U.S.C. § 271(b) is ongoing.

78. Upon information and belief, Netflix committed the foregoing infringing activities without license from PMC and with notice of the '560 Patent.

79. The acts of infringement by Netflix will continue unless enjoined by this Court.

80. PMC has been and will continue to be irreparably harmed and damaged by Netflix's infringement of the '560 Patent and has no adequate remedy at law.

PRAYER FOR RELIEF

WHEREFORE, PMC prays for judgment in its favor against Netflix, and specifically, for the following relief:

A.   Entry of judgment in favor of PMC and against Netflix on all counts;

B.   Entry of judgment that Netflix has infringed the Patents-in-Suit;

C.   Entry of judgment that Netflix's infringement of the '217,'344, '920, and '528 Patents has been willful;

D.   An order permanently enjoining Netflix, together with its officers, directors, agents, servants, employees, and attorneys, and upon those persons in active concert or participation with them, from infringing the Patents-in-Suit;

E.   An award of compensatory damages adequate to compensate PMC for Netflix's infringement of the Patents-in-Suit, in no event less than a reasonably royalty;

F.   PMC's reasonable fees for expert witnesses and attorneys, as provided by 35 U.S.C. § 285 or as otherwise permitted by law;

G.   PMC's costs;

H.   Pre-judgment and post-judgment interest on PMC's award, in an amount according to proof; and

I.   All such other and further costs and relief as the Court deems just and proper.

DEMAND FOR JURY TRIAL

Pursuant to Rule 38 of the Federal Rules of Civil Procedure, PMC hereby demands a trial

by jury in this action of all claims so triable.

Dated: March 21, 2019   Respectfully submitted,

                s/ Calvin Capshaw
                Arun S. Subramanian
                Tamar E. Lusztig
                SUSMAN GODFREY L.L.P.
                1301 Avenue of the Americas, 32nd Floor
                New York, NY 10022
                Telephone: (212) 471-8346
                asubramanian@susmangodfrey.com
                tlusztig@susmangodfrey.com

                Joseph S. Grinstein
                SUSMAN GODFREY L.L.P.
                1000 Louisiana Street, Suite 5100
                Houston, TX 77002
                Telephone: (713) 653-7820
                jgrinstein@susmangodfrey.com

                Dmitry Kheyfits
                KHEYFITS BELENKY LLP
                4 Embarcadero Center, Suite 1400
                San Francisco, CA 94111
                Telephone: (415) 429-1739
                dkheyfits@kblit.com

                Andrey Belenky
                KHEYFITS BELENKY LLP
                1140 Avenue of the Americas, 9th Floor
                New York, NY 10036
                Telephone: (212) 203-5399
                abelenky@kblit.com

                S. Calvin Capshaw
                CAPSHAW DERIEUX LLP
                114 East Commerce Avenue
                Gladewater, TX 75647
                Telephone: (903) 233-4826
                ccapshaw@capshawlaw.com

Attorneys for Plaintiff
Personalized Media Communications, LLC