UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF TEXAS
TEXARKANA DIVISION

OPTIMORPHIX, INC., ***Plaintiff,*** v. **CISCO SYSTEMS, INC.,** ***Defendant.***	**Civil Action No._____** **JURY TRIAL DEMANDED**

COMPLAINT FOR PATENT INFRINGEMENT

OptiMorphix, Inc. ("OptiMorphix" or "Plaintiff") brings this action and makes the following allegations of patent infringement relating to U.S. Patent Nos.: 7,031,314 (the "'314 patent"); 7,099,273 (the "'273 patent"); 7,444,418 (the "'418 patent"); 7,586,871 (the "'871 patent"); 7,987,285 (the "'285 patent"); 7,991,904 (the "'904 patent"); 8,230,105 (the "'105 patent"); 8,769,141 (the "'141 patent"); and 9,191,664 (the "'664 patent") (collectively, the "patents-in-suit"). Defendant Cisco Systems, Inc. ("Cisco" or "Defendant") infringes the patents-in-suit in violation of the patent laws of the United States of America, 35 U.S.C. § 1 *et seq*.

THE PARTIES

1. Plaintiff OptiMorphix, Inc. ("Plaintiff" or "OptiMorphix") is a Delaware corporation that holds a portfolio of over 250 patent assets that were developed at Citrix Systems, Inc. ("Citrix") and Bytemobile, Inc.

2. Bytemobile, Inc. ("Bytemobile") was a global leader in mobile internet solutions for network operators. The company was founded in 2000. Bytemobile's mission was to optimize video and web content services for mobile network operators to improve users' experiences while maximizing the efficiency of network infrastructure.

3. Bytemobile was established during a time when the mobile landscape was evolving rapidly. The advent of 3G technology, coupled with increasingly sophisticated smartphones, led to a surge in demand for data services. However, mobile networks at the time were not optimized to handle this influx, particularly for data-rich services like video streaming. Recognizing this opportunity, Bytemobile sought to create solutions that would enable network operators to deliver high-quality, consistent mobile data services. By 2011, Bytemobile was a "market leader in video and web optimization, with more than 125 cumulative operator deployments in 60 countries.[1]

Andrew Zipern, *Vodafone in Deal with Start-Up Bytemobile,* NYTimes at C4 (January 29, 2002) ("Bytemobile, a wireless data start-up . . . reached a deal with Vodafone, Britain's largest mobile phone operator"); *NTT DoCoMo Launches Bytemobile Optimization Solution in its Core Network,* WIRELESSWATCH IP (October 5, 2004) ("NTT DoCoMo has deployed Bytemobile's optimization solution in its core network"); *China Mobile Selects Bytemobile for Nationwide Web Gateway Project*, BUSINESS WIRE (July 8, 2009) ("A Bytemobile customer since 2004, CMCC has deployed its web optimization solutions"); *Bytemobile Juices Up Orange*, ESPICOM TELECOMMUNICATION NEWS (October 10, 2002) ("Orange customers will experience faster application performance and Web page downloads"); *ByteMobile Wins 2013 LTE Award for Best LTE Traffic Management Product*, MARKETSCREENER (July 1, 2013) ("ByteMobile technology has been deployed . . . in networks serving nearly two billion subscribers.").

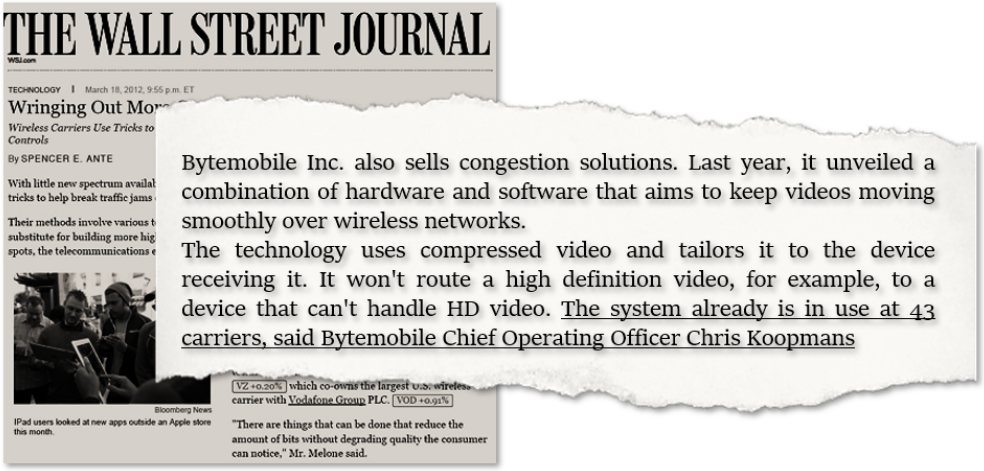
[1] *Bytemobile: Importance of Video and Web Optimizations*, TELECOM REVIEW at 58 (2011); *see also Bytemobile Secures Its 36th Video Optimisation Win for MNO Deployment,* TOTAL TELECOM & TOTAL TELECOM MAGAZINE (March 21, 2011).

4. Bytemobile products, such as the Unison platform and the T3100 Adaptive Traffic Manager, were designed to optimize mobile data traffic in real-time, ensuring a high-quality mobile internet experience for end-users. This approach was groundbreaking at the time and set the stage for many of the mobile data optimization techniques used today.

5. Bytemobile's innovative technologies and customer-centric approach led to rapid growth and success. Bytemobile's innovative product portfolio included: the T3100 Adaptive Traffic Manager which was designed to handle high volumes of traffic efficiently and provide real-time optimization, compression, and management of mobile data; Bytemobile's T2000 Series Video Cache, which supported transparent caching of content; and Bytemobile's T1000 Series Traffic Director, which enabled traffic steering and load balancing for high availability of applications.

Bytemobile Adaptive Traffic Management Product Family, BYTEMOBILE DATA SHEET at 1-2 (2014).

6. Bytemobile's groundbreaking technologies also included products for data optimization. Bytemobile's data optimization solutions were designed to compress and accelerate data transfer. By reducing the size of data packets without compromising quality, these technologies allowed faster data transmission and minimized network congestion. Bytemobile also offered solutions to analyze and manage network traffic, allowing network operators to identify patterns, allocate bandwidth intelligently, and prioritize different types of content.


THE WALL STREET JOURNAL

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Wringing Out Mor

Wireless Carriers Use Tricks to Controls

By SPENCER E. ANTE

With little new spectrum availab tricks to help break traffic jams

Their methods involve various t substitute for building more hig spots, the telecommunications

Bloomberg News

IPad users looked at new apps outside an Apple store this month.

Bytemobile Inc. also sells congestion solutions. Last year, it unveiled a combination of hardware and software that aims to keep videos moving smoothly over wireless networks.

The technology uses compressed video and tailors it to the device receiving it. It won't route a high definition video, for example, to a device that can't handle HD video. The system already is in use at 43 carriers, said Bytemobile Chief Operating Officer Chris Koopmans

VZ +0.20% which co-owns the largest U.S. wireless carrier with Vodafone Group PLC. VOD +0.91%

"There are things that can be done that reduce the amount of bits without degrading quality the consumer can notice," Mr. Melone said.

Spencer E. Ante, *Wringing Out More Capacity*, WALL STREET JOURNAL at B3 (March 19, 2012) (emphasis added).

7. In July 2012, Bytemobile was acquired by Citrix Systems, Inc. ("Citrix") for $435 million. Bytemobile "became part of [Citrix's] Enterprise division and extend[ed] [Citrix's] industry reach into the mobile and cloud markets."[2]

8. OptiMorphix owns a portfolio of patents developed at Bytemobile and later Citrix. Highlighting the importance of the patents-in-suit is the fact that the OptiMorphix's patent portfolio has been cited by over 4,800 U.S. and international patents and patent applications assigned to a wide variety of the largest companies operating in the networking, content delivery, and cloud computing fields. OptiMorphix's patents have been cited by companies such as:

[2] CITRIX SYSTEMS, INC. 2012 ANNUAL REPORT at 33 (2013).

- ***Cisco Systems, Inc. (277 citing patents and applications)***[3]
- Amazon.com, Inc. (263 citing patents and applications)[4]
- Oracle (59 citing patents and applications)[5]
- Alphabet, Inc. (103 citing patents and applications)[6]
- Broadcom Ltd. (93 citing patents and applications)[7]
- Lumen Technologies, Inc. (77 citing patents and applications)[8]
- Intel Corporation (45 citing patents and applications)[9]
- Microsoft Corporation (150 citing patents and applications)[10]
- AT&T, Inc. (93 citing patents and applications)[11]
- Verizon Communications, Inc. (31 citing patents and applications)[12]
- Juniper Networks, Inc. (29 citing patents and applications)[13]

9. Defendant Cisco Systems, Inc. ("Cisco"), is a Delaware corporation with its principal place of business at 170 West Tasman Drive, San Jose, California 95134. Cisco may be served through its registered agent Corporation Service Company dba CSC – Lawyers Incorporating Service Company, 211 E. 7th Street, Suite 620, Austin, Texas 78701. Cisco is registered to do business in the State of Texas.

10. Cisco conducts business operations within the Eastern District of Texas where it sells, develops, and/or markets its products including facilities at: 2250 East President George Bush Turnpike, Richardson, Texas 75082 and 2300 East President George Bush Turnpike, Richardson, Texas 75082. The facilities in Richardson, Texas employ over 1,400 people and include a Tier 3 data center.

[3] *See e.g.,* U.S. Patent Nos. 7,656,800; 7,930,734; 8,339,954; 9,350,822; and 10,284,484.
[4] *See e.g.*, U.S. Patent Nos. 7,817,563; 9,384,204; 9,462,019; 11,343,551; and 11,394,620.
[5] *See e.g.,* U.S. Patent Nos. 7,475,402; 7,574,710; 8,589,610; 8,635,185; and 11,200,240.
[6] *See e.g.,* U.S. Patent Nos. 7,743,003; 8,458,327; 9,166,864; 9,665,617; and 10,733,376.
[7] *See e.g.,* U.S. Patent Nos. 7,636,323; 8,448,214; 9,083,986; 9,357,269; and 10,091,528.
[8] *See e.g.,* U.S. Patent Nos. 7,519,353; 8,315,179; 8,989,002; 10,511,533; and 11,233,740.
[9] *See e.g.,* U.S. Patent Nos. 7,394,809; 7,408,932; 9,515,942; 9,923,821; and 10,644,961.
[10] *See e.g.,* U.S. Patent Nos. 8,248,944; 9,071,841; 9,852,118; 10,452,748; and 11,055,47.
[11] *See e.g.,* U.S. Patent Nos. 8,065,374; 8,429,302; 9,558,293; 9,800,638; and 10,491,645.
[12] *See e.g.,* U.S. Patent Nos. 8,149,706; 8,930,559; 9,253,231; 10,003,697; and 10,193,942.
[13] *See e.g.,* U.S. Patent Nos. 8,112,800; 8,509,071; 8,948,174; 9,407,726; and 11,228,631.

CISCO ON CISCO: RICHARDSON DATA CENTER TOUR (last visited October 2023), available at: https://www.cisco.com/web/about/ciscoitatwork/data_center/flash/rcdn_dc_tour/ and *Global Networks and Data Centers Briefing*, Cisco Presentation (2011).

11. Cisco also maintains a 162,000 square foot data center at 2260 Chelsea Boulevard, Allen, Texas 75013. Collin County, Texas has appraised the market value of Cisco's various facilities at over $300 million.

Tour of The Cisco Allen Data Center, YOUTUBE VIDEO (November 25, 2019), available at: https://www.youtube.com/watch?v=i4IrSARTUkY.

JURISDICTION AND VENUE

12. This action arises under the patent laws of the United States, Title 35 of the United States Code. Accordingly, this Court has exclusive subject matter jurisdiction over this action under 28 U.S.C. §§ 1331 and 1338(a).

13. This Court has personal jurisdiction over Cisco in this action because Cisco 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 Cisco would not offend traditional notions of fair play and substantial justice. Defendant Cisco, directly and/or through subsidiaries or intermediaries (including distributors, retailers, and others), 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 patents-in-suit. Moreover, Cisco is registered to do business in the State of Texas, has offices and facilities in the State of Texas, and actively directs its activities to customers located in the State of Texas.

14. Venue is proper in this District under 28 U.S.C. §§ 1391(b)-(d) and 1400(b). Defendant Cisco is registered to do business in the State of Texas, has offices in the State of Texas, has transacted business in the Eastern District of Texas and has committed acts of direct and indirect infringement in the Eastern District of Texas.

15. Cisco has a regular and established place of business in this District and has committed acts of infringement in this District. Cisco has permanent locations in Allen and Richardson, Texas, both of which are located within this District. Cisco employs full-time personnel such as sales personnel and engineers in this District, including in Allen and Richardson, Texas. Cisco has also committed acts of infringement in this District by commercializing, marketing, selling, distributing, testing, and servicing the Accused Products.

16. This Court has personal jurisdiction over Cisco. Cisco has conducted and does conduct business within the State of Texas. Cisco, directly or through subsidiaries or intermediaries (including distributors, retailers, and others), ships, distributes, makes, uses, offers for sale, sells, imports, and/or advertises (including by providing an interactive web page) its products and/or services in the United States and the Eastern District of Texas and/or contributes to and actively induces its customers to ship, distribute, make, use, offer for sale, sell, import, and/or advertise (including the provision of an interactive web page) infringing products and/or services in the United States and the Eastern District of Texas. Cisco, directly and through subsidiaries or intermediaries (including distributors, retailers, and others), has purposefully and voluntarily placed one or more of its infringing products and/or services, as described below, into the stream of commerce with the expectation that those products will be purchased and used by customers and/or consumers in the Eastern District of Texas. These infringing products and/or services have been and continue to be made, used, sold, offered for sale, purchased, and/or imported by customers and/or consumers in the Eastern District of Texas. Cisco has committed acts of patent infringement within the Eastern District of Texas. Cisco interacts with customers in Texas, including through visits to customer sites in Texas. Through these interactions, Cisco directly infringes the patents-in-suit. Cisco also interacts with customers who sell the Accused Products into Texas, knowing that these customers will sell the Accused Products into Texas, either directly or through intermediaries.

17. Cisco has minimum contacts with this District such that the maintenance of this action within this District would not offend traditional notions of fair play and substantial justice. Thus, the Court therefore has both general and specific personal jurisdiction over Cisco.

THE ASSERTED PATENTS

U.S. PATENT NO. 7,031,314

18. U.S. Patent No. 7,031,314 (the "'314 patent") entitled, *Systems and Methods for Providing Differentiated Services Within a Network Communication System*, was filed on April 19, 2002. The '314 patent claims priority to U.S. Provisional Patent Application No. 60/291,918, which was filed on May 16, 2001, and U.S. Provisional Patent Application No. 60/309,213 filed on July 31, 2001. The '314 patent is subject to a 35 U.S.C. § 154(b) term extension of 625 days. A true and correct copy of the '314 patent is attached hereto as Exhibit 1.

19. The '314 patent has been in full force and effect since its issuance. OptiMorphix, Inc. owns by assignment the entire right, title, and interest in and to the '314 patent.

20. The '314 patent is directed to solving the problem of deploying differentiated services within existing network infrastructure. The patent identifies that existing network infrastructure was generally not designed to support a wide variety of application-specific and subscriber-specific services as the corresponding data flowed through a network. "Consequently, the different and potentially incompatible requirements of the increasingly diverse applications, Subscribers and networking environments has placed demands on the existing network infrastructure for which the network infrastructure was not originally designed to handle." '314 patent, col. 1:37-42.

21. The '314 patent addresses the issue of identifying the data streams on which to perform the differentiated services, which may involve a significant processing penalty. "The problem with deploying these differentiated services within the existing network infrastructure is that the network infrastructure was not designed to support a wide variety application-specific and subscriber specific services as the corresponding data flows through the network." '314 patent, col. 1:47-52.

22. The inventions disclosed in the '314 patent provide significant benefits and improvements to the function of the hardware in a computer network by enabling differentiated services within the network infrastructure. By incorporating a service module within the network infrastructure that can intercept packets, determine whether the connection corresponds to a service application, and then break and reestablish the connection for application-specific processing, the invention allows for a more efficient and flexible network communication system.

23. The inventions taught by the '314 patent solves discrete, technological problems associated with computer systems, specifically those related to network communication systems. The patent addresses the limitations of existing network infrastructures that were not designed to support a wide variety of application-specific and subscriber-specific services as data flows through the network. It also solves the problem of the significant processing penalty associated with identifying the data streams on which to perform the differentiated services.

24. The '314 patent family has been cited by 1,466 United States and international patents and patent applications as relevant prior art. Specifically, 141 United States and international patents and patent applications have cited the '314 patent itself as relevant prior art. The following companies and research institutions have cited the '314 patent as relevant prior art:

- ***Cisco Technology, Inc.***
- Alphabet Inc.
- Oracle Corporation
- International Business Machines Corp.
- Microsoft Corporation
- Qualcomm, Inc.
- Telefonaktiebolaget Lm Ericsson
- Intel Corporation
- Check Point Software Technologies Ltd.
- Hitachi, Ltd.
- Open Text Corporation
- Fujitsu Limited
- Broadcom Limited
- Samsung Electronics Co., Ltd.

U.S. PATENT NO. 7,099,273

25. U.S. Patent No. 7,099,273 (the "'273 patent") entitled, *Data Transport Acceleration and Management Within a Network Communication System,* was filed on January 29, 2002. The '273 patent is subject to a 35 U.S.C. § 154(b) term extension of 1,021 days. The '273 patent claims priority to U.S. Provisional Patent Application No. 60/309,212 filed on July 31, 2001, and U.S. Provisional Patent Application No. 60/283,542 filed on April 12, 2001. A true and correct copy of the '273 patent is attached hereto as Exhibit 2.

26. The '273 patent has been in full force and effect since its issuance. OptiMorphix, Inc. owns by assignment the entire right, title, and interest in and to the '273 patent.

27. The technologies disclosed in the '273 patent improve the efficiency and speed of data transmission within network communication systems. The '273 patent introduces methods and apparatuses that enhance data transport, especially in environments where network conditions are variable or unpredictable and "provide systems and method for data transport acceleration and management within a network communication system." '273 patent, col. 3:31-33.

28. The '273 patent is directed to solving the problem of inefficient data transport within network communication systems. This inefficiency can lead to poor utilization of network resources, increased latency, and reduced overall performance.

29. The '273 patent identifies the shortcomings of the prior art. Specifically, the specification describes that traditional methods of data transport in network communication systems often fail to efficiently manage and accelerate data transport, especially in environments with variable or unpredictable network conditions. These methods may not adequately handle network congestion, leading to poor utilization of network resources, increased latency, and

reduced overall performance. "This bursty nature of data transmission may under-utilize the available bandwidth on the downlink channel, and may cause some applications requiring a steady flow of data, such as audio or video, to experience unusually poor performance." '273 patent, col. 2:1-6.

30. The '273 patent identifies several shortcomings of the prior art, particularly in the context of the Transport Control Protocol (TCP) which is commonly used in modern data communication networks. The patent specification describes that:

> Many of the problems associated with conventional TCP architectures stem from the flow control, congestion control and error recovery mechanisms used to control transmission of data over a communication network.

'273 patent, col. 1:38-41.

31. Conventional TCP architectures assume that the network employs symmetric communication channels that enable data packets and acknowledgements to be equally spaced in time. This assumption often does not hold true in networks that employ asymmetric uplink and downlink channels, such as wireless communication networks. Bursty data transmission might result in the inefficient use of the available bandwidth on the downlink channel, leading to suboptimal performance in applications that need a consistent data flow, such as those involving audio or video.

32. Another shortcoming identified is that conventional TCP architectures react to both random loss and network congestion by significantly and repeatedly reducing the congestion window, which can lead to significant and potentially unjustified deterioration in data throughput. This is particularly problematic in wireless and other bandwidth constrained networks where random packet loss due to fading, temporary degradation in signal quality, signal handoffs or large propagation delays occur with relatively high frequency.

33. The '273 patent also points out that conventional TCP congestion control mechanisms tend to exhibit sub-optimal performance during initialization of data connections over reduced-bandwidth channels, such as wireless links. When a connection is initiated, the congestion control mechanism aggressively increases the size of the congestion window until it senses a data packet loss. This process may adversely impact other connections that share the same reduced-bandwidth channel as the connection being initialized attempts to maximize its data throughput without regard of the other pre-existing connections. This can lead to inefficient use of resources with decreased overall throughput.

34. The '273 patent teaches the use of various techniques to accelerate and manage data transport in network communication systems. These techniques include the use of congestion control mechanisms, timers, and other methods to optimize data transmission. By implementing these techniques, the patent aims to improve the efficiency of data transport, particularly in environments with variable or unpredictable network conditions. This can lead to better utilization of network resources, reduced latency, and improved overall performance. The inventions disclosed in the '273 patent provide significant benefits and improvements to the function of the hardware in a computer network.

35. The '273 patent family has been cited by 1,466 United States and international patents and patent applications as relevant prior art. Specifically, patents issued to the following companies and research institutions have cited the '273 patent family as relevant prior art:

- ***Cisco Technology, Inc.***
- Qualcomm Incorporated
- International Business Machines Corporation
- Intel Corporation
- Microsoft Corporation
- Broadcom Corporation
- Google Inc.
- F5 Networks, Inc.

- Adobe Systems Incorporated
- Apple Inc.
- Lumen Technologies, Inc
- Oracle Corporation
- Amazon.com, Inc.

U.S. PATENT NO. 7,444,418

36. U.S. Patent No. 7,444,418 (the "'418 patent") entitled, *Transcoding Multimedia Information Within a Network Communication System*, was filed on May 9, 2002. The '418 patent claims priority to Provisional Application No. 60/290,269, which was filed on May 11, 2001. The '418 patent is subject to a 35 U.S.C. § 154(b) term extension of 766 days. A true and correct copy of the '418 patent is attached hereto as Exhibit 3.

37. The '418 patent has been in full force and effect since its issuance. OptiMorphix, Inc. owns by assignment the entire right, title, and interest in and to the '418 patent.

38. The '418 patent describes a method for transcoding multimedia information, which involves intercepting the multimedia data transmitted between a sender and a receiver. "Embodiments of the present invention alleviate many of the foregoing problems by providing systems and methods for transcoding multimedia information within a network communications system." '418 patent, col. 2:45-48.

39. The '418 patent is directed to solving the problem of transmitting multimedia information over network communication systems, particularly in scenarios where the transmission rate at which the multimedia information is encoded is greater than the available transmission rate. "As a result, these bandwidth constrained networks are susceptible to a mismatch between the required transmission rate of the multimedia information and the available transmission rate of the communication channel." '418 patent, col. 1:56-60. This problem is

especially pronounced in wireless and other bandwidth-constrained networks, which have physical limitations on the maximum bandwidth that the communication channel can support.

40. The inventions disclosed in the '418 patent provide significant benefits and improvements to the function of the hardware in a computer network by enabling more efficient transmission of multimedia information. By transcoding the multimedia information to match the available transmission rate of the downlink channel, the '418 patent teaches methods that prevent the receiver from being overloaded with data transmitted at a rate higher than it can handle. This can help to prevent disruptions and degradation in the performance of multimedia applications, leading to a better functioning of computer hardware.

41. The '418 patent family has been cited by 166 United States and international patents and patent applications as relevant prior art. Specifically, patents issued to the following companies and research institutions have cited the '418 patent family as relevant prior art:

- Apple, Inc.
- Verizon Communications Inc.
- Siemens Ag
- Microsoft Corporation
- ***Cisco Systems, Inc.***
- Alphabet Inc.
- Amazon.com, Inc.
- Broadcom Limited
- Qualcomm, Inc.
- Koninklijke Philips Nv

U.S. PATENT NO. 7,586,871

42. U.S. Patent No. 7,586,871 (the "'871 patent") entitled, *Platform and Method for Providing Data Services in a Communication Network*, was filed on January 11, 2006. The '871 patent claims priority to U.S. Application Ser. No. 10/061,953, which was filed on February 2, 2002, which claims the benefit of U.S. Provisional Applications No. 60/292,564, which was filed on May 22, 2001, and No. 60/293,756, which was filed on May 25, 2001. The '871 patent also

claims the benefit of U.S. Provisional Application No. 60/654,730, which was filed on February 18, 2005. The '871 patent is subject to a 35 U.S.C. § 154(b) term extension of 748 days. A true and correct copy of the '871 patent is attached hereto as Exhibit 4.

43. The '871 patent has been in full force and effect since its issuance. OptiMorphix, Inc. owns by assignment the entire right, title, and interest in and to the '871 patent.

44. The '871 patent generally relates to a communication node and corresponding method for processing data communications passing through the node between a first data network and a second data network. The method includes detecting an event associated with data communication arriving at the node from the first data network, determining whether the data communication is to be suspended for service at the node based on the detected event, and processing suspended data communication based on information in the data communication. The patent also covers the detection of return data communication arriving at the node from the second data network in response to the processed data communication from the first data network. The detected return data communication is allowed to pass through the node without processing the detected return data communication.

45. The '871 patent is directed to solving the problem of efficiently providing data services, such as content filtering, in a communication network. This includes the ability to determine whether a packet flow should be suspended for filtering a content request based on packet flow characteristics detected at the layers implemented in hardware, without the need for assistance from higher layers in the architecture implemented in software.

46. The '871 patent teaches the use of a communication node that processes data communication between two networks. This node detects an event associated with data communication from the first network, determines whether the data communication should be

suspended for service at the node based on the detected event, and processes suspended data communication based on information in the data communication. The '871 patent also teaches the detection of return data communication from the second network in response to the processed data communication from the first network, allowing this return data communication to pass through the node without further processing. This approach allows for more efficient processing of data communication, reducing the need to inspect every packet in a flow and avoiding the need to terminate or establish a communication session associated with the data communication.

47. The inventions disclosed in the '871 patent provide significant benefits and improvements to the function of the hardware in a computer network. Specifically, the inventions taught by the '871 patent can determine whether a packet flow should be suspended for filtering a content request based on packet flow characteristics detected at the layers implemented in hardware. This improves the efficiency and scalability of content filtering and other services, particularly for mobile data networks that carry delay-sensitive traffic such as voice or video streaming traffic.

48. The '871 patent family has been cited by 962 United States and international patents and patent applications as relevant prior art. 166 United States and international patents and patent applications have cited the '871 patent itself as relevant prior art. The following companies and research institutions have cited the '871 patent as relevant prior art:

- A10 Networks, Inc.
- Thoma Bravo, LLC
- AT&T, Inc.
- NEC Corporation
- Nokia Corporation
- ***Cisco Systems, Inc.***
- Juniper Networks, Inc.
- Fujitsu Limited

U.S. PATENT NO. 7,987,285

49. U.S. Patent No. 7,987,285 (the "'285 patent") entitled, *Adaptive Bitrate Management for Streaming Media Over Packet Networks*, was filed on July 9, 2008. The '285 patent claims priority to U.S. Provisional Application No. 60/948,917, which was filed on July 10, 2007. The '285 patent is subject to a 35 U.S.C. § 154(b) term extension of 105 days. A true and correct copy of the '285 patent is attached hereto as Exhibit 5.

50. The '285 patent has been in full force and effect since its issuance. OptiMorphix, Inc. owns by assignment the entire right, title, and interest in and to the '285 patent.

51. The '285 patent relates to adaptive bitrate management for streaming media over packet networks. It teaches a method that includes receiving a receiver report from a terminal, estimating network conditions of a media network based on the receiver report, determining an optimal session bitrate based on the estimated network conditions, and providing media data to the terminal based on the optimal session bitrate.

52. The '285 patent is directed to solving the problem of delivering bandwidth-intensive content like multimedia over capacity-limited, shared links, particularly in wireless networks. The challenge is to quickly respond to changes in network conditions by adjusting the bitrate and media encoding scheme to optimize the user's viewing and listening experience. This includes addressing issues like network buffer overflow, packet loss, playback stall, sudden adjustment of nominal transmission rate, packet loss due to link transmission errors or network congestion, reduction of effective bandwidth, and limited capacity in wireless networks.

53. The '285 patent identifies the shortcomings of the prior art. Specifically, existing rate control protocols and recommendations were insufficient for delivering multimedia sessions over wireless networks. Issues included sudden adjustments in nominal transmission rates, packet loss, reduction of effective bandwidth, limited capacity, infrequent and incomplete network state

information, handling different media streams separately, and low bitrates available for wireless multimedia sessions. These challenges made it difficult to set up a consistent streaming media session.

54. The inventions disclosed in the '285 patent provide significant benefits and improvements to the function by enabling more efficient and responsive control over the bitrate of streaming media sessions according to instantaneous network capacity. This leads to better user experience in streaming media over wireless packet networks, minimizing issues like buffer overflow, packet loss, and playback stall. The adaptive bitrate management system can work with existing media players and networks, providing a more robust and flexible solution for streaming media, especially in challenging wireless environments.

55. The inventions disclosed in the '285 patent solve discrete, technological problems associated with computer systems, particularly in the context of streaming media over packet networks. These problems include managing bitrate in fluctuating network conditions, handling different types of media streams, optimizing the viewing and listening experience, and addressing specific challenges in wireless networks such as interference, fading, link transmission errors, network congestion, and limited capacity. The patent provides technical solutions through adaptive bitrate management, network state estimation, control algorithms, and specific encoding and packetization methods.

56. The '285 patent family has been cited by 357 United States and international patents and patent applications as relevant prior art. Specifically, patents issued to the following companies and research institutions have cited the '285 patent family as relevant prior art:

- Alphabet Inc.
- ***Cisco Systems, Inc.***
- Nokia Corporation
- Tencent Holdings Ltd.

- Hitachi Ltd.
- Oracle Corporation
- Microsoft Corporation
- DISH Network Corp.
- Broadcom Limited
- Amazon.com, Inc.
- Samsung Electronics Co., Ltd.
- Comcast Corporation
- Canon Inc.
- Qualcomm, Inc.
- CommScope, Inc.
- Intel Corporation
- Meta Platforms, Inc.
- Verizon Communications Inc.

U.S. PATENT NO. 7,991,904

57. U.S. Patent No. 7,991,904 (the "'904 patent") entitled, *Adaptive Bitrate Management for Streaming Media Over Packet Networks*, was filed on March 31, 2009. The '904 patent claims priority to U.S. Provisional Patent Application No. 60/948,917, which was filed on July 10, 2007. The '904 patent is subject to a 35 U.S.C. § 154(b) term extension of 39 days. A true and correct copy of the '904 patent is attached hereto as Exhibit 6.

58. The '904 patent has been in full force and effect since its issuance. OptiMorphix, Inc. owns by assignment the entire right, title, and interest in and to the '904 patent.

59. The '904 patent relates to adaptive bitrate management for streaming media over packet networks. The patent includes a comprehensive framework for adjusting the bitrate of streaming media sessions according to instantaneous network capacity, particularly in wireless packet networks.

60. The '904 patent is directed to solving the problem of rate control for media streaming over packet networks, particularly in wireless environments. The challenge lies in delivering bandwidth-intensive content like multimedia over capacity-limited, shared links and quickly responding to changes in network conditions. The patent addresses issues such as network

buffer overflow, packet loss, playback stall, and challenges in implementing bitrate management for pseudo-streaming.

61. The '904 patent identifies the shortcomings of the prior art. Specifically, existing mechanisms for multimedia transport over packet networks, such as streaming protocols (e.g., RTP) and pseudo-streaming (e.g., TCP), had limitations. For example, TCP's acknowledgment packets are unaware of the media time being transferred, making it difficult to implement a bitrate management algorithm for pseudo-streaming. The prior art also lacked efficient solutions for challenges encountered in delivering multimedia sessions over packet wireless networks, such as sudden adjustments in transmission rate, packet loss, reduction of effective bandwidth, and limited capacity.

62. The inventions disclosed in the '904 patent provide significant benefits and improvements to the function of the hardware in a computer network by enabling adaptive bitrate management for streaming media. This allows for more efficient utilization of network resources, minimizes issues like buffer overflow and packet loss, and enhances the user experience by optimizing the viewing and listening experience. The patent's approach to adaptive bitrate management can be applied to various media transports and provides a comprehensive framework for delivering streaming media over wireless packet networks, particularly in fluctuating network conditions.

63. The '904 patent family has been cited by 357 United States and international patents and patent applications as relevant prior art. Specifically, patents issued to the following companies and research institutions have cited the '904 patent family as relevant prior art:

- Oracle Corporation
- Microsoft Corporation
- Comcast Corporation
- Alphabet Inc.

- International Business Machines Corp.
- Hitachi, Ltd.
- Electronics And Telecommunications Research Institute
- EchoStar Technologies LLC
- Amazon Technologies, Inc.
- Samsung Electronics Co., Ltd.
- Qualcomm, Inc.
- CommScope, Inc.
- Intel Corporation
- Meta Platforms, Inc.
- Verizon Communications Inc.
- Broadcom Limited

U.S. PATENT NO. 8,230,105

64. U.S. Patent No. 8,230,105 (the "'105 patent") entitled, *Adaptive Bitrate Management for Streaming Media Over Packet Networks*, was filed on July 25, 2011. The '105 patent is a continuation of U.S. Patent Application No. 12/170,347, which was filed July 9, 2008 and issued as U.S. Patent No. 7,987,285, and which claims the benefit of U.S. Provisional Application No. 60/948,917, which was filed July 10, 2007. A true and correct copy of the '105 patent is attached hereto as Exhibit 7.

65. The '105 patent has been in full force and effect since its issuance. OptiMorphix, Inc. owns by assignment the entire right, title, and interest in and to the '105 patent.

66. The '105 patent relates to a method for adaptive bitrate management in streaming media over packet networks. It discloses receiving a receiver report from a terminal, estimating network conditions based on the report, determining an optimal session bitrate according to the estimated network conditions, and providing media data to the terminal based on the optimal session bitrate. The patent emphasizes the need for rate control in delivering bandwidth-intensive content like multimedia over capacity-limited, shared links, and the challenges faced in wireless networks.

67. The ‘105 patent is directed to solving the problem of delivering consistent and optimized streaming media sessions over packet networks, particularly in wireless networks. The challenges include sudden adjustments in nominal transmission rates, packet loss, reduction of effective bandwidth, limited capacity, and difficulties in setting up a consistent streaming media session.

68. The ‘105 patent identifies the shortcomings of the prior art. Specifically, existing protocols and methods were inadequate in handling network buffer overflow, playback stall, interference, fading, and other challenges in wireless networks. The existing solutions were not efficient in responding to changes in network conditions, and the typical wireless media player support was limited and sporadic, leading to difficulties in providing a good streaming experience.

69. The ‘105 patent teaches the use of adaptive bitrate management, which includes an adaptive bitrate controller and a variable bitrate encoder. This framework enables the delivery of self-adjusting streaming sessions to media players, such as standard 3GPP-compliant media players. It adjusts the bitrate according to instantaneous network capacity, optimizes performance by adjusting the streaming media bitrate, and implements joint session bitrate management for audio, video, and other streams simultaneously.

70. The inventions disclosed in the ‘105 patent provide significant benefits and improvements to the function of the hardware in a computer network by enabling more efficient and adaptive control of streaming media sessions. By dynamically adjusting the bitrate according to network conditions, the invention minimizes issues like buffer overflow, packet loss, and playback stall. It enhances the user’s viewing and listening experience, particularly in wireless networks where traditional methods were inadequate.

71. The inventions taught by the '105 patent solves discrete, technological problems associated with computer systems and networks, particularly in the context of streaming media over packet networks. These problems include network buffer management, bitrate optimization, handling of packet loss, and adjustments to sudden changes in network conditions. The invention addresses these technical challenges through a comprehensive framework that adapts to the network's instantaneous capacity, ensuring a consistent and optimized streaming experience.

72. The '105 patent family has been cited by 357 United States and international patents and patent applications as relevant prior art. Specifically, patents issued to the following companies and research institutions have cited the '105 patent family as relevant prior art:

- Amazon.com, Inc.
- Hulu LLC
- Tencent Holdings Ltd.
- ***Cisco Systems, Inc.***
- Oracle Corporation
- Microsoft Corporation
- Comcast Corporation
- Alphabet Inc.
- International Business Machines Corp.
- Hitachi, Ltd.
- Electronics And Telecommunications Research Institute
- EchoStar Technologies LLC
- Samsung Electronics Co., Ltd.
- Qualcomm, Inc.
- CommScope, Inc.
- Intel Corporation
- Meta Platforms, Inc.
- Verizon Communications Inc.
- Broadcom Limited

U.S. PATENT NO. 8,769,141

73. U.S. Patent No. 8,769,141 (the "'141 patent") entitled, *Adaptive Bitrate Management for Streaming Media Over Packet Networks*, was filed on March 14, 2013. The '141

patent is a continuation of U.S. Application Ser. No. 13/183,317, which was filed July 14, 2011 and issued as U.S. Patent No. 8,255,551, which is a continuation of U.S. Patent Application No. 12/416,085, which was filed March 31, 2009 and issued as U.S. Patent No. 7,991,904, which is a continuation-in-part of U.S. Patent Application No. 12/170,347, which was filed July 9, 2008 and issued as U.S. Patent. No. 7,987,285, which claims the benefit of U.S. Provisional Application No. 60/948,917, which was filed July 10, 2007. A true and correct copy of the '141 patent is attached hereto as Exhibit 8.

74. The '141 patent has been in full force and effect since its issuance. OptiMorphix, Inc. owns by assignment the entire right, title, and interest in and to the '141 patent.

75. The '141 patent discloses a method for adaptive bitrate management in streaming media over packet networks. It includes providing pseudo-streaming media data to a terminal, receiving a TCP acknowledgment, estimating network conditions based on the acknowledgment, determining an optimal session bitrate, and providing pseudo-streaming media data based on the optimal bitrate. The patent encompasses a comprehensive framework that enables the delivery of self-adjusting streaming or pseudo-streaming sessions to media players, such as standard 3GPP-compliant media players or Flash plugins used for web-embedded video.

76. The '141 patent is directed to solving the problem of rate control for media streaming over packet networks, particularly in bandwidth-limited and shared links. The challenge is to quickly respond to changes in network conditions by adjusting the bitrate and media encoding scheme to optimize the user's viewing and listening experience. The patent addresses issues like network buffer overflow, packet loss, playback stall, and the challenges encountered in delivering multimedia sessions over packet wireless networks.

77. The inventions disclosed in the '141 patent provide significant benefits and improvements to the function of the hardware in a computer network by enabling adaptive bitrate management. This ensures optimal user experience by dynamically adjusting the bitrate according to network conditions. It minimizes undesirable effects like packet loss, buffer overflow, and playback stall. The system's ability to implement joint session bitrate management for audio, video, and other streams simultaneously, and its applicability to all media transports that provide transmission progress report mechanisms, make it a versatile solution.

78. The '141 patent family has been cited by 357 United States and international patents and patent applications as relevant prior art. Specifically, patents issued to the following companies and research institutions have cited the '141 patent family as relevant prior art:

- Alphabet Inc.
- Oracle Corporation
- AT&T Inc.
- Telefonaktiebolaget LM Ericsson
- International Business Machines Corp.
- Microsoft Corporation
- ***Cisco Systems, Inc.***
- DISH Network Corp.
- Broadcom Limited
- Amazon.com, Inc.
- Adobe Inc.
- Samsung Electronics Co., Ltd.
- Comcast Corporation
- Canon Inc.
- Technicolor S.A.
- Qualcomm, Inc.
- CommScope, Inc.
- Intel Corporation
- Meta Platforms, Inc.
- Hitachi, Ltd.
- Verizon Communications Inc.

U.S. PATENT NO. 9,191,664

79. U.S. Patent No. 9,191,664 (the "'664 patent") entitled, *Adaptive Bitrate Management for Streaming Media Over Packet Networks*, was filed on November 11, 2013. The '664 patent claims priority to U.S. Provisional patent Application No. 60/948,917, which was filed on July 10, 2007. A true and correct copy of the '664 patent is attached hereto as Exhibit 9.

80. The '664 patent has been in full force and effect since its issuance. OptiMorphix, Inc. owns by assignment the entire right, title, and interest in and to the '664 patent.

81. The '664 patent is generally directed to adaptive bitrate management for streaming media over packet networks. Specifically, it aims to solve the problem of delivering multimedia content over capacity-limited, shared wireless links. Challenges like sudden bandwidth fluctuations, packet loss, reduction in effective capacity, and limited total bitrate budgets make consistent high-quality streaming difficult over wireless networks. Further, the '664 patent teaches ways to quickly respond to changes in network conditions by adjusting the bitrate and the media encoding scheme to optimize the viewing and listening experience of the user. It addresses the issue of transferring a fixed bitrate over a connection that cannot provide the necessary throughput, which can lead to undesirable effects such as network buffer overflow, packet loss, and media player buffer underflow.

82. The prior art has several shortcomings that the '664 patent identifies. Specifically, existing protocols for rate control in media streaming over packet networks were not fully equipped to handle the challenges posed by wireless networks. These challenges include sudden adjustments of nominal transmission rate, packet loss, reduction of effective bandwidth, and limited capacity.

83. To address these issues, the '664 patent teaches in one embodiment an adaptive bitrate manager that monitors feedback information to estimate network conditions. The media is encoded according to the optimal bitrates and provided as encoded streams for transmission.

84. Several benefits and improvements to computer network functionality are provided by the inventions disclosed in the '664 patent. Quickly responding to changes in available network bandwidth allows maintaining consistent streaming quality. Encoding audio and video based on network estimations optimizes the media performance within constrained wireless capacity. Avoiding underflows and overflows through bitrate adaptation enables stable streaming.

85. The '664 patent solves technical problems rooted in streaming multimedia over wireless networks. Challenges like packet loss and volatile transmission rates present discrete technological issues. The '664 patent teaches specific techniques for dynamic adaptation of media encoding in response to feedback-based network estimates. This constitutes an improvement to computer network technology by addressing these streaming challenges.

86. The '664 patent family has been cited by 357 United States and international patents and patent applications as relevant prior art. Specifically, patents issued to the following companies and research institutions have cited the '664 patent family as relevant prior art:

- Alphabet Inc.
- Oracle Corporation
- AT&T Inc.
- Telefonaktiebolaget LM Ericsson
- International Business Machines Corp.
- Microsoft Corporation
- ***Cisco Systems, Inc.***
- DISH Network Corp.
- Broadcom Limited
- Amazon.com, Inc.
- Adobe Inc.
- Samsung Electronics Co., Ltd.
- Comcast Corporation
- Canon Inc.

- Technicolor S.A.
- Qualcomm, Inc.
- CommScope, Inc.
- Intel Corporation
- Meta Platforms, Inc.
- Hitachi, Ltd.
- Verizon Communications Inc.

COUNT I
INFRINGEMENT OF U.S. PATENT NO. 7,031,314

87. Plaintiff references and incorporates by reference the preceding paragraphs of this Complaint as if fully set forth herein.

88. Cisco designs, makes, uses, sells, and/or offers for sale in the United States products for providing differentiated services within a network communication system.

89. Cisco designs, makes, sells, offers to sell, imports, and/or uses the following products: Cisco Application Centric Infrastructure (ACI) (including Data Center Networking Essentials, Data Center Networking Advantage, and Data Center Networking Premier functionality) (collectively, the "Cisco '314 Product(s)").

90. One or more Cisco subsidiaries and/or affiliates use the Cisco '314 Products in regular business operations.

91. The Cisco '314 Products comprise a processing unit.

92. The Cisco '314 Products comprise a storage component, functionally connected to the processor, responsible for retaining data and instructions that, upon execution by the processor, direct the processor's operations.

93. The memory unit in the Cisco '314 Products stores data related to connections, service applications, and other system elements. In addition, the Cisco '314 Products store in memory instructions that guide the processor in classifying connections, forming connections, and redirecting data.

94. The Cisco '314 Products contain functionality for requesting a connection between the client and server to ascertain if it aligns with predefined service criteria, where the predetermined service criteria are linked to at least one of the multiple service applications.

95. The Cisco '314 Products perform differentiated services within a network communication system. Specifically, The Cisco '314 Products contain functionality for classifying a connection that has been requested between the client and the server to determine whether the connection matches predetermined service criteria. When a connection is requested, various attributes of the request are analyzed by the Cisco '314 Products. These attributes could include the source, destination, requested service type, priority, or other data associated with the connection.

96. The Cisco '314 Products compare attributes associated with a connection against predetermined service criteria. Specifically, the predetermined service criteria can include a set of rules or conditions associated with various service applications.

97. The Cisco '314 Products contain functionality for establishing an initial connection between the client and the service module, and a subsequent connection between the service module and the server when the connection aligns with the predefined service requirements.

98. The Cisco '314 Products include functionality that enables forming two connections: a first connection between the client and the service module, and a second connection between the service module and a server. The forming of a first and second connection is done by the Cisco '314 Products in response to a connection matching the predetermined service criteria.

99. The Cisco '314 Products orchestrate the formation of a connection between the client and the service module, following the protocols and parameters that relate to the classified service criteria.

100. The Cisco '314 Products establish a connection between the service module and a server.

101. The Cisco '314 Products comprise functionality that utilizes the initial and secondary connections to redirect a portion or more of the data communication between the client and a server towards the service application related to the pre-established service parameters.

102. The Cisco '314 Products comprise a service module that manages the flow of data between the client and the server, directing a portion or all of the data to specific service applications based on the matched criteria.

103. Cisco has directly infringed and continues to directly infringe the '314 patent by, among other things, making, using, offering for sale, and/or selling technology comprising a system for performing differentiated services within a network communication system, including but not limited to the Cisco '314 Products.

104. The Cisco '314 Products are available to businesses and individuals throughout the United States.

105. The Cisco '314 Products are provided to businesses and individuals located in this District.

106. By making, using, testing, offering for sale, and/or selling products and services comprising a system for performing differentiated services within a network communication system, including but not limited to the Cisco '314 Products, Cisco has injured Plaintiff and is liable to Plaintiff for directly infringing one or more claims of the '314 patent, including at least claim 27 pursuant to 35 U.S.C. § 271(a).

107. Cisco also indirectly infringes the '314 patent by actively inducing infringement under 35 U.S.C. § 271(b).

108. Cisco has had knowledge of the '314 patent since at least service of this Complaint or shortly thereafter, and Cisco knew of the '314 patent and knew of its infringement, including by way of this lawsuit.

109. Alternatively, Cisco has had knowledge of the '314 patent since at least February 16, 2010, based on its citation of the '314 patent as relevant prior art in at least 20 patents that are assigned to and owned by Cisco, including:

- U.S. Patent No. 9,584,422 (granted February 28, 2017)
- U.S. Patent No. 8,837,486 (granted September 16, 2014)
- U.S. Patent No. 9,380,008 (granted June 28, 2016)
- U.S. Patent No. 8,842,669 (granted September 23, 2014)
- U.S. Patent No. 8,312,148 (granted November 13, 2012)
- U.S. Patent No. 7,817,636 (granted October 19, 2010)
- U.S. Patent No. 7,797,406 (granted September 14, 2010)
- U.S. Patent No. 7,962,582 (granted June 14, 2011)
- U.S. Patent No. 7,827,256 (granted November 02, 2010)
- U.S. Patent No. 8,266,327 (granted September 11, 2012)
- U.S. Patent No. 8,090,839 (granted January 03, 2012)
- U.S. Patent No. 8,458,467 (granted June 04, 2013)
- U.S. Patent No. 7,698,416 (granted April 13, 2010)
- U.S. Patent No. 7,664,879 (granted February 16, 2010)
- U.S. Patent No. 8,082,304 (granted December 20, 2011)
- U.S. Patent No. 7,987,272 (granted July 26, 2011)
- U.S. Patent No. 7,996,556 (granted August 09, 2011)
- U.S. Patent No. 8,549,171 (granted October 01, 2013)
- U.S. Patent No. 7,725,934 (granted May 25, 2010)
- U.S. Patent No. 8,295,284 (granted October 23, 2012)

110. Cisco intended to induce patent infringement by third-party customers and users of the Cisco '314 Products and had knowledge that the inducing acts would cause infringement or was willfully blind to the possibility that its inducing acts would cause infringement. Cisco specifically intended and was aware that the normal and customary use of the accused products

would infringe the '314 patent. Cisco performed the acts that constitute induced infringement, and would induce actual infringement, with knowledge of the '314 patent and with the knowledge that the induced acts would constitute infringement. For example, Cisco provides the Cisco '314 Products that have the capability of operating in a manner that infringe one or more of the claims of the '314 patent, including at least claim 27, and Cisco further provides documentation and training materials that cause customers and end users of the Cisco '314 Products to utilize the products in a manner that directly infringe one or more claims of the '314 patent.[14] By providing instruction and training to customers and end-users on how to use the Cisco '314 Products in a manner that directly infringes one or more claims of the '314 patent, including at least claim 27, Cisco specifically intended to induce infringement of the '314 patent. Cisco engaged in such inducement to promote the sales of the Cisco '314 Products, e.g., through Cisco user manuals, product support, marketing materials, and training materials to actively induce the users of the accused products to infringe the '314 patent. Accordingly, Cisco has induced and continues to induce users of the accused products to use the accused products in their ordinary and customary way to infringe the '314 patent, knowing that such use constitutes infringement of the '314 patent.

[14] *See e.g., Cisco Application Policy Infrastructure Controller Data Sheet,* CISCO DOCUMENTATION (August 29, 2023), available at: https://www.cisco.com/c/en/us/products/collateral/cloud-systems-management/application-policy-infrastructure-controller-apic/datasheet-c78-739715.html; *Cisco Application Centric Infrastructure (ACI) Simulator Data Sheet*, CISCO DOCUMENTATION (September 19, 2019), available at: https://www.cisco.com/c/en/us/products/collateral/cloud-systems-management/application-centric-infrastructure-simulator/datasheet-c78-733252.html; *Cisco Application Centric Infrastructure (Cisco ACI) FAQ,* CISCO DOCUMENTATION (September 26, 2023), available at: https://www.cisco.com/c/en/us/products/collateral/networking/cloud-networking/application-centric-infrastructure-faq.html; *Cisco ACI 5.2 is here. Simplify your hybrid cloud environment with new features*, CISCO BLOGS - DATA CENTER (June 2, 2021), available at: https://blogs.cisco.com/datacenter/cisco-aci-5-2-is-here-simplify-your-hybrid-cloud-environment-with-new-features?oid=pstdnc026140; Cisco Application Centric Infrastructure Fundamentals, Release 5.2(x), Cisco Documentation (February 18, 2022); and Cisco APIC Getting Started Guide, Release 5.2(x), Cisco Documentation (June 4, 2021).

111. The '314 patent is well-known within the industry as demonstrated by multiple citations to the '314 patent in published patents and patent applications assigned to technology companies and academic institutions. Cisco is utilizing the technology claimed in the '314 patent without paying a reasonable royalty. Cisco is infringing the '314 patent in a manner best described as willful, wanton, malicious, in bad faith, deliberate, consciously wrongful, flagrant, or characteristic of a pirate.

112. To the extent applicable, the requirements of 35 U.S.C. § 287(a) have been met with respect to the '314 patent.

113. As a result of Cisco's infringement of the '314 patent, Plaintiff has suffered monetary damages, and seeks recovery in an amount adequate to compensate for Cisco's infringement, but in no event less than a reasonable royalty for the use made of the invention by Cisco together with interest and costs as fixed by the Court.

COUNT II
INFRINGEMENT OF U.S. PATENT NO. 7,099,273

114. Plaintiff references and incorporates by reference the preceding paragraphs of this Complaint as if fully set forth herein.

115. Cisco designs, makes, uses, sells, and/or offers for sale in the United States products comprising systems and methods for data transport acceleration and management within a network communication system.

116. Cisco designs, makes, sells, offers to sell, imports, and/or uses the following products: Cisco IOS XE Catalyst SD-WAN Release 17.x and later and Viptela OS and supported platforms, including the Cisco Integrated Services Routers, Cisco Integrated Services Virtual Routers, Cisco Catalyst Edge Platforms, and Cisco Catalyst Edge Software (collectively, the "Cisco '273 Product(s)").

117. One or more Cisco subsidiaries and/or affiliates use the Cisco '273 Products in regular business operations.

118. One or more of the Cisco '273 Products include technology that performs the step of establishing a data connection between a sender and receiver using a handshake process.

119. The Cisco '273 Products send a TCP packet with the SYN (Synchronize) flag set to the server. This packet contains an initial sequence number (ISN), which helps the server and client synchronize their sequence numbers. The ISN used by the Cisco '273 Products are represented as "x." Upon receiving the SYN packet, the Cisco '273 Products sends a TCP packet back with both the SYN and ACK flags set. This packet contains two pieces of information: the responsive ISN, usually represented as 'y,' and an acknowledgment number, which is the ISN plus one (x+1). The acknowledgment number is used to confirm that the sender has received the SYN packet.

120. In establishing a connection between the sender and the receiver after receiving the SYN-ACK packet, the Cisco '273 Products send another packet with the ACK flag set. This packet contains an acknowledgment number, which is the ISN plus one (y+1).

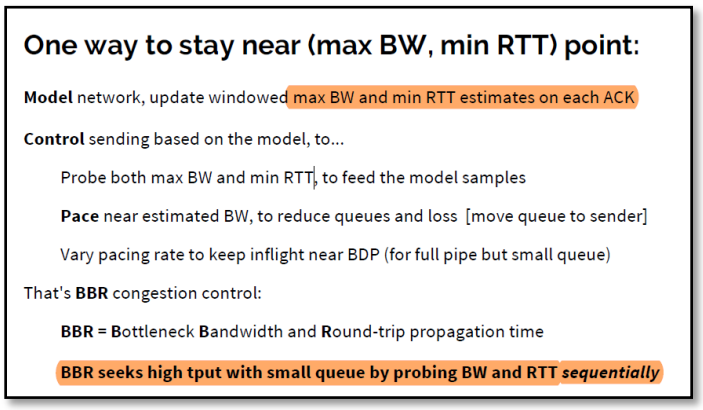
121. The Cisco '273 Products measure round trip times (RTT) of packets sent between a client and server over a network. Specifically, the Cisco '273 Products measure the round-trip propagation time (RTprop) using the minimum round-trip time (RTT) for the connection by keeping track of the lowest observed RTT in the recent past. This value represents the round-trip propagation time (RTprop) of the connection.

122. The Cisco '273 Products perform timestamping. Specifically, when a Cisco '273 Product transmits a data packet, it records the current time as a timestamp. The timestamp is stored

in the transmission control block (TCB), which maintains the state of the TCP connection, including RTT measurements and other relevant information.

123. The Cisco '273 Products perform acknowledgment processing. Specifically, the Cisco '273 Products send an acknowledgment (ACK) for a specific packet, the sender processes the ACK and identifies the corresponding packet in the TCB. By matching the ACK with the original packet, the Cisco '273 Products retrieve the original timestamp associated with that packet.

124. The Cisco '273 Products perform a round-trip time (RTT) calculation. Specifically, the Cisco '273 Products calculate the RTT for a specific packet by subtracting the original timestamp from the current time when the ACK is received. This gives an individual RTT sample for that packet as explained in the below excerpt.



Neal Cardwell, Yunchung Cheng, et al, *BBR Congestion Control*, GOOGLE IETF 97: SEOUL PRESENTATION at 9 (November 2016) (emphasis added) (describing RTT_sample = ACK_receive_time - original_timestamp).

125. The Cisco '273 Products perform the step of MinRTT estimation. Specifically, the Cisco '273 Products maintain a running estimate of the minimum RTT observed (MinRTT) over a specified time window. The MinRTT is used by the Cisco '273 Products to estimate the base round-trip propagation time without queuing delay. When a new RTT sample is calculated, the

Cisco '273 Products compare it with the current MinRTT value. If the new sample is lower than the existing MinRTT, the Cisco '273 Products update MinRTT with a new value.

126. The Cisco '273 Products perform round-trip time-based pacing. Specifically, the Cisco products use the MinRTT estimate in performing pacing rate and congestion window calculations to ensure the sending rate is adapted based on the observed network conditions. BBR's pacing rate and congestion window calculations factor in the MinRTT value to maintain a balance between efficient data transfer and minimal congestion.

> To match the packet-arrival rate to the bottleneck link's departure rate, BBR paces every data packet. BBR must match the bottleneck *rate*, which means pacing is integral to the design and fundamental to operation—pacing_rate is BBR's primary control parameter. A secondary parameter, cwnd_gain, bounds inflight to a small multiple of the BDP to handle common network and receiver pathologies (see the later section on Delayed and Stretched ACKs). Conceptually, the TCP send routine looks like the following code. (In Linux, sending uses the efficient FQ/pacing queuing discipline,[4] which gives BBR line-rate single-connection performance on multigigabit links and handles thousands of lower-rate paced connections with negligible CPU overhead.)

Neal Cardwell, Yuchung Cheng, C. Stephen Gunn, Soheil Hassas Yeganeh, Van Jacobson, *BBR: Congestion-Based Congestion Control*, ACM Queue, Sep/Oct 2016 and CACM, Feb 2017 (emphasis added).

127. The Cisco '273 Products calculate a congestion window parameter, which defines the maximum quantity of unacknowledged data packets permitted to be transmitted to the recipient.

128. The Cisco '273 Products calculate a pacing rate based on these estimates to determine how quickly it should transmit data.

129. The Cisco ‘273 Products calculate a congestion window. Specifically, the Cisco ‘273 Products calculate a cwnd value based on the estimated bottleneck bandwidth (BtlBw) and RTT to ensure the congestion window is large enough not to limit the sending rate derived from the BtlBw and RTT estimates. This is done by setting the cwnd to the product of the estimated BtlBw and RTT: cwnd = BtlBw * RTT. The calculation done by the Cisco ‘273 Products ensures that the cwnd value is large enough to accommodate the in-flight data based on the BtlBw and RTT estimates, while also accounting for potential variations in network conditions.

130. The Cisco ‘273 Products calculate a congestion window (cwnd) based on the bottleneck bandwidth (BtlBw) and round-trip time (RTT) estimates to ensure the sending rate is not constrained by the window size. The cwnd effectively sets a limit on the number of unacknowledged data packets in transit, but it is not set by a specific parameter for the maximum number of unacknowledged packets.

131. The Cisco ‘273 Products transmit additional data packets to the receiver in response to a transmit timer expiration. The period of the transmit timer is based on the round-trip time measurements and the congestion window parameter.

132. Cisco has directly infringed and continues to directly infringe the ‘273 patent by, among other things, making, using, offering for sale, and/or selling technology for transferring data from a sender to a receiver in a communication network, including but not limited to the Cisco ‘273 Products.

133. The Cisco ‘273 Products are available to businesses and individuals throughout the United States.

134. The Cisco ‘273 Products are provided to businesses and individuals located in the Eastern District of Texas.

135. By making, using, testing, offering for sale, and/or selling products and services for transferring data from a sender to a receiver in a communication network, including but not limited to the Cisco '273 Products, Cisco has injured Plaintiff and is liable to Plaintiff for directly infringing one or more claims of the '273 patent, including at least claim 1 pursuant to 35 U.S.C. § 271(a).

136. Cisco also indirectly infringes the '273 patent by actively inducing infringement under 35 U.S.C. § 271(b).

137. Cisco has had knowledge of the '273 patent since at least service of this Complaint or shortly thereafter, and Cisco knew of the '273 patent and knew of its infringement, including by way of this lawsuit.

138. Alternatively, Cisco has had knowledge of the '273 patent since at least February 2, 2010, when U.S. Patent No. 7,656,800, which is owned by Cisco and cites the '273 patent as relevant prior art, was issued. Furthermore, Cisco has cited the '273 patent family in at least 40 issued patents, including:

- U.S. Patent No. 9,584,422 (granted February 28, 2017)
- U.S. Patent No. 9,338,687 (granted May 10, 2016)
- U.S. Patent No. 8,295,284 (granted October 23, 2012)
- U.S. Patent No. 8,837,486 (granted September 16, 2014)
- U.S. Patent No. 8,842,669 (granted September 23, 2014)
- U.S. Patent No. 9,380,008 (granted June 28, 2016)
- U.S. Patent No. 9,485,186 (granted November 01, 2016)
- U.S. Patent No. 8,817,618 (granted August 26, 2014)
- U.S. Patent No. 9,100,407 (granted August 04, 2015)
- U.S. Patent No. 9,148,367 (granted September 29, 2015)
- U.S. Patent No. 10,630,749 (granted April 21, 2020)
- U.S. Patent No. 11,641,387 (granted May 02, 2023)
- U.S. Patent No. 10,044,767 (granted August 07, 2018)
- U.S. Patent No. 10,320,825 (granted June 11, 2019)

- U.S. Patent No. 10,284,484 (granted May 07, 2019)
- European Patent No. 1752014 (granted April 25, 2018)
- European Patent No. 2277283 (granted December 13, 2017)
- U.S. Patent No. 7,471,628 (granted December 30, 2008)
- U.S. Patent No. 7,304,974 (granted December 04, 2007)
- U.S. Patent No. 7,602,780 (granted October 13, 2009)
- U.S. Patent No. 7,698,416 (granted April 13, 2010)
- U.S. Patent No. 7,664,879 (granted February 16, 2010)
- U.S. Patent No. 8,458,467 (granted June 04, 2013)
- U.S. Patent No. 8,270,413 (granted September 18, 2012)
- U.S. Patent No. 8,266,327 (granted September 11, 2012)
- U.S. Patent No. 8,339,954 (granted December 25, 2012)
- U.S. Patent No. 8,312,148 (granted November 13, 2012)
- U.S. Patent No. 8,588,238 (granted November 19, 2013)
- U.S. Patent No. 8,549,171 (granted October 01, 2013)
- U.S. Patent No. 7,827,256 (granted November 02, 2010)
- U.S. Patent No. 7,817,636 (granted October 19, 2010)
- U.S. Patent No. 7,760,633 (granted July 20, 2010)
- U.S. Patent No. 7,725,934 (granted May 25, 2010)
- U.S. Patent No. 7,797,406 (granted September 14, 2010)
- U.S. Patent No. 8,090,839 (granted January 03, 2012)
- U.S. Patent No. 8,082,304 (granted December 20, 2011)
- U.S. Patent No. 7,962,582 (granted June 14, 2011)
- Chinese Patent No. 102027713 (granted July 30, 2014)
- U.S. Patent No. 7,987,272 (granted July 26, 2011)
- U.S. Patent No. 7,996,556 (granted August 09, 2011)

139. Cisco intended to induce patent infringement by third-party customers and users of the Cisco ‘273 Products and had knowledge that the inducing acts would cause infringement or was willfully blind to the possibility that its inducing acts would cause infringement. Cisco specifically intended and was aware that the normal and customary use of the accused products would infringe the ‘273 patent. Cisco performed the acts that constitute induced infringement, and would induce actual infringement, with knowledge of the ‘273 patent and with the knowledge that

the induced acts would constitute infringement. For example, Cisco provides the Cisco '273 Products that have the capability of operating in a manner that infringe one or more of the claims of the '273 patent, including at least claim 1, and Cisco further provides documentation and training materials that cause customers and end users of the Cisco '273 Products to utilize the products in a manner that directly infringe one or more claims of the '273 patent.[15] By providing instruction and training to customers and end-users on how to use the Cisco '273 Products in a manner that directly infringes one or more claims of the '273 patent, including at least claim 1, Cisco specifically intended to induce infringement of the '273 patent. Cisco engaged in such inducement to promote the sales of the Cisco '273 Products, e.g., through Cisco user manuals, product support, marketing materials, and training materials to actively induce the users of the accused products to infringe the '273 patent. Accordingly, Cisco has induced and continues to induce users of the accused products to use the accused products in their ordinary and customary way to infringe the '273 patent, knowing that such use constitutes infringement of the '273 patent.

140. The '273 patent is well-known within the industry as demonstrated by multiple citations to the '273 patent in published patents and patent applications assigned to technology companies and academic institutions. Cisco is utilizing the technology claimed in the '273 patent without paying a reasonable royalty. Cisco is infringing the '273 patent in a manner best described

[15] *See e.g., TCP Optimization: Cisco IOS XE AS-WAN Devices,* CISCO IOS XE DOCUMENTATION (2021); *IWAN to Cisco SD-WAN Migration Guide – A Customer Journey Version 1.0,* CISCO DOCUMENTATION (November 25, 2020); *Network Optimization and High Availability Configuration Guide, Cisco IOS XE SD-WAN Releases 16.11, 16.12*, CISCO DOCUMENTATION (October 4, 2019); *Cisco Catalyst SD-WAN AppQoE Configuration Guide, Cisco IOS XE Catalyst SD-WAN Release 17.x,* CISCO DOCUMENTATION (August 22, 2023); *Configure TCP Optimization Feature on Cisco IOS XE SD-WAN cEdge Routers*, CISCO DOCUMENTATION (2022); *SD-WAN Application Quality of Experience Innovations*, CISCO YOUTUBE CHANNEL (November 18, 2019), available at: https://www.youtube.com/watch?v=NRQ_JIX7hPY; *Cisco IOS XE Catalyst SD-WAN Qualified Command Reference;* CISCO DOCUMENTATION (August 22, 2023); and *Configure TCP Optimization Feature on Cisco IOS XE SD-WAN cEdge Routers,* CISCO TECH NOTES (February 20, 2020).

as willful, wanton, malicious, in bad faith, deliberate, consciously wrongful, flagrant, or characteristic of a pirate.

141. To the extent applicable, the requirements of 35 U.S.C. § 287(a) have been met with respect to the '273 patent.

142. As a result of Cisco's infringement of the '273 patent, Plaintiff has suffered monetary damages, and seeks recovery in an amount adequate to compensate for Cisco's infringement, but in no event less than a reasonable royalty for the use made of the invention by Cisco together with interest and costs as fixed by the Court.

COUNT III
INFRINGEMENT OF U.S. PATENT NO. 7,444,418

143. Plaintiff references and incorporates by reference the preceding paragraphs of this Complaint as if fully set forth herein.

144. Cisco designs, makes, uses, sells, and/or offers for sale in the United States products that transcode multimedia information within a network communication system.

145. Cisco designs, makes, sells, offers to sell, imports, and/or uses the following products: Cisco Meeting Server (including CMS 1000 and CMS 2000 platforms); Webex App (including Webex for Windows and Android); Webex Meetings; Webex Meetings Virtual Desktop App; Webex Suite; Webex Webinars (formerly Webex Events); Webex Enterprise; Webex Desk Series (including Desk Pro, Desk Mini, Desk Hub, DX80, Desk Limited Edition, and Desk); Webex Room Series (including Room 55, Room 55 Dual, Room 70, Room 70G2, Room 70 Panorama, Room Bar, Room Bar Pro, Room Kit EQ, Room Kit EQX, Room Panorama, and Room Navigator); Webex Board Series (including Board 55S, Board 70S, Board 85S, and Board Pro); Webex Control Hub; Webex Communications Platform as a Service (CPaaS); Webex Connect; Webex Cloud Connected UC; and Webex Work (collectively, the "Cisco '418 Product(s)").

146. One or more Cisco subsidiaries and/or affiliates use the Cisco '418 Products in regular business operations.

147. The Cisco '418 Products intercept digital multimedia information transmitted between a sender and a recipient, where the data is encoded at the sender using a primary transmission rate.

148. The Cisco '418 Products contain functionality that performs the step of intercepting digital multimedia information communicated between a transmitter and a receiver, with the digital multimedia information encoded at the transmitter at a first transmission rate. Specifically, the multimedia information is captured by the Cisco '418 Products as it is encoded at the transmitter side at a specific first transmission rate. This rate denotes the speed at which the data is being sent and is related to the compression methods used to make the data suitable for transmission.

149. The Cisco '418 Products calculate the accessible transmission rate for a connection on the recipient end, in which the estimation process involves determining the round-trip time for data packets exchanged between the service module and the recipient through the secondary communication channel.

150. The Cisco '418 Products contain functionality for estimating an available transmission rate of a receiver-side connection. This step is critical for dynamically adapting the multimedia stream to match the capabilities of the receiving end and the conditions of the network. The estimation process performed by the Cisco '418 Products involves measuring the trip time of data packets communicated between the service module and the receiver via the second channel. By accurately gauging the available bandwidth, the Cisco '418 Products can dynamically adapt to the multimedia stream.

151. The Cisco ‘418 Products contain functionality wherein if the initial transmission rate exceeds the transmission rate, the digital multimedia information is transcoded to adapt it to the available transmission rate, ensuring compatibility.

152. The Cisco ‘418 Products contain functionality that, if the first transmission rate is greater than the available transmission rate, transcodes the digital multimedia information to conform the digital multimedia information to the available transmission rate. Specifically, the Cisco ‘418 Products determine if there is a need for transcoding by comparing the first transmission rate (original encoding rate) with the estimated available transmission rate.

153. If the Cisco ‘418 Products determine there is a need for transcoding, the Cisco ‘418 Products convert the media data from one format and/or bitrate to another. Specifically, the Cisco ‘418 Products alter the bit rate of the media data to match the estimated available transmission rate.

154. The Cisco ‘418 Products contain functionality for performing conditional transcoding based on real-time network conditions.

155. The Cisco ‘418 Products convey transcoded multimedia data to the recipient via the receiver-end connection, utilizing a transmission rate derived from the estimated accessible transmission rate.

156. The Cisco ‘418 Products transmit transcoded multimedia information to the receiver over the receiver-side connection at a transmission rate determined from the estimated available transmission rate.

157. The Cisco ‘418 Products enable packaging multimedia information into suitable data packets for transmission.

158. The Cisco '418 Products transmit encoded data packets over a network to the receiver via transmission protocols.

159. Cisco has directly infringed and continues to directly infringe the '418 patent by, among other things, making, using, offering for sale, and/or selling technology that transcode multimedia information within a network communication system, including but not limited to the Cisco '418 Products.

160. The Cisco '418 Products are available to businesses and individuals throughout the United States.

161. The Cisco '418 Products are provided to businesses and individuals located in this District.

162. By making, using, testing, offering for sale, and/or selling products and services that transcode multimedia information within a network communication system, including but not limited to the Cisco '418 Products, Cisco has injured Plaintiff and is liable to Plaintiff for directly infringing one or more claims of the '418 patent, including at least claim 23 pursuant to 35 U.S.C. § 271(a).

163. Cisco also indirectly infringes the '418 patent by actively inducing infringement under 35 U.S.C. § 271(b).

164. Cisco has had knowledge of the '418 patent since at least service of this Complaint or shortly thereafter, and Cisco knew of the '418 patent and knew of its infringement, including by way of this lawsuit.

165. Cisco intended to induce patent infringement by third-party customers and users of the Cisco '418 Products and had knowledge that the inducing acts would cause infringement or was willfully blind to the possibility that its inducing acts would cause infringement. Cisco

specifically intended and was aware that the normal and customary use of the accused products would infringe the '418 patent. Cisco performed the acts that constitute induced infringement, and would induce actual infringement, with knowledge of the '418 patent and with the knowledge that the induced acts would constitute infringement. For example, Cisco provides the Cisco '418 Products that have the capability of operating in a manner that infringe one or more of the claims of the '418 patent, including at least claim 23, and Cisco further provides documentation and training materials that cause customers and end users of the Cisco '418 Products to utilize the products in a manner that directly infringe one or more claims of the '418 patent.[16] By providing instruction and training to customers and end-users on how to use the Cisco '418 Products in a manner that directly infringes one or more claims of the '418 patent, including at least claim 23, Cisco specifically intended to induce infringement of the '418 patent. Cisco engaged in such

[16] *See e.g., Cisco Preferred Architecture for Webex Calling Design Overview,* CISCO WHITE PAPER (August 2022); *Cisco Webex Bandwidth Management BRKCOL-2777*, CISCO LIVE PRESENTATION (January 2020); *Cisco WebEx Network Bandwidth White Paper*, CISCO DOCUMENTATION (2015); *Cisco Meeting App WebRTC User Guide,* CISCO DOCUMENTATION (June 10, 2020); *Understanding Network Security Requirements for Webex Traffic BRKCOL-2057*, CISCO LIVE PRESENTATION (2022); *Cisco Webex Control Hub Data Sheet,* CISCO DOCUMENTATION (2023); *Cisco Webex Room Kit Administrator Guide CE 9.4,* CISCO DOCUMENTATION (June 2018); *Cisco Webex Teams Security in Depth – Part One BRKCOL-2795,* CISCO LIVE PRESENTATION (January 2020); *Cisco Webex DX70 and DX80 Administrator Guide CE9.15,* CISCO DOCUMENTATION (October 2020); *Webex App For VDI Overview,* CISCO COLLABORATION TECHNICAL MARKETING YOUTUBE CHANNEL (January 26, 2022), available at: https://www.youtube.com/watch?v=UF_A8X5tZdQ; *Cisco Webex Teams – Cloud and On Premises Security Explained BRK-3201,* CISCO LIVE PRESENTATION (2020); *Cloud Security Unveiled - All aspects of Network, Data- Security, Compliance and Data Leakage Prevention in Cisco Webex Meetings and Teams TECCOL-3033*, CISCO LIVE PRESENTATION (January 2020); *Video Transport Architectures BRKSPV-2919*, CISCO LIVE PRESENTATION (January 2020); *Webex QoS and Bandwidth Management Demystified BRKCOL-2092,* CISCO LIVE PRESENTATION (2022); *Preferred Architecture for Cisco Webex Hybrid Services Cisco Validated Design (CVD) Guide,* CISCO DOCUMENTATION (May 31, 2019); *Cisco Meeting Server Release 3.6 Single Combined Server Deployment Guide*, CISCO DOCUMENTATION (March 21, 2023); *Cisco Meeting Server Release 3.7 Single Split Server Deployment Guide*, CISCO DOCUMENTATION (October 12, 2023); *Cisco Meeting Server Release 3.6 Scalability & Resilience Server Deployment Guide,* CISCO DOCUMENTATION (June 06, 2023); *Cisco Meeting Server – Design Consideration DGTL-BRKCOL-2110,* CISCO LIVE PRESENTATION (June 2020); and *Cisco Meeting Server Load Balancing Calls Across Cisco Meeting Servers - White Paper,* CISCO DOCUMENTATION (August 24, 2021).

inducement to promote the sales of the Cisco '418 Products, e.g., through Cisco user manuals, product support, marketing materials, and training materials to actively induce the users of the accused products to infringe the '418 patent. Accordingly, Cisco has induced and continues to induce users of the accused products to use the accused products in their ordinary and customary way to infringe the '418 patent, knowing that such use constitutes infringement of the '418 patent.

166. The '418 patent is well-known within the industry as demonstrated by multiple citations to the '418 patent in published patents and patent applications assigned to technology companies and academic institutions. Cisco is utilizing the technology claimed in the '418 patent without paying a reasonable royalty. Cisco is infringing the '418 patent in a manner best described as willful, wanton, malicious, in bad faith, deliberate, consciously wrongful, flagrant, or characteristic of a pirate.

167. To the extent applicable, the requirements of 35 U.S.C. § 287(a) have been met with respect to the '418 patent.

168. As a result of Cisco's infringement of the '418 patent, Plaintiff has suffered monetary damages, and seeks recovery in an amount adequate to compensate for Cisco's infringement, but in no event less than a reasonable royalty for the use made of the invention by Cisco together with interest and costs as fixed by the Court.

COUNT IV
INFRINGEMENT OF U.S. PATENT NO. 7,586,871

169. Plaintiff references and incorporates by reference the preceding paragraphs of this Complaint as if fully set forth herein.

170. Cisco designs, makes, uses, sells, and/or offers for sale in the United States products that process data communications passing through a node between a first data network and a second data network.

171. Cisco designs, makes, sells, offers to sell, imports, and/or uses the following products: Cisco Firepower 9300 Series; Cisco Firepower 4100 Series; Cisco Firepower 2100 Series; and Cisco ASA 5500-X with FirePOWER (collectively, the "Cisco '871 Product(s)").

172. One or more Cisco subsidiaries and/or affiliates use the Cisco '871 Products in regular business operations.

173. The Cisco '871 Products detect an event associated with a data communication arriving at the node from a first data network.

174. The Cisco '871 Products monitor incoming data packets at the node from a first data network.

175. The Cisco '871 Products determine whether the data communication is to be suspended for service at the node based on the detected event. Specifically, once an event associated with the data communication is detected by the Cisco '871 Products, the system evaluates the nature and severity of the event. The decision to suspend or allow the communication is based on rules and policies configured by the Cisco '871 Products.

176. The Cisco '871 Products determine (based on a detected event) whether the data communication should be suspended at the node.

177. The Cisco '871 Products process one or more suspended data communications using information in the suspended data communication. Specifically, the Cisco '871 Products isolate the suspended data communication for (at least in part) the purpose of processing the suspended data communication. Based on the analysis and processing, the Cisco '871 Products determine how to handle the suspended data communication.

178. The Cisco '871 Products detect a return data communication arriving at the node from the second data network in response to the processed data communication from the first data

network. Further, the Cisco '871 Products allow the detected return data communication to pass through the node without processing.

179. The Cisco '871 Products monitor the incoming data communication from the second data network. If the detected return data communication is associated with prior processed data communication from the first network the Cisco '871 Products determine that the return data communication does not need further processing at the node.

180. The Cisco '871 Products process a suspended data communication based on information in the data communication.

181. Cisco has directly infringed and continues to directly infringe the '871 patent by, among other things, making, using, offering for sale, and/or selling technology that process data communications passing through a node between a first data network and a second data network, including but not limited to the Cisco '871 Products.

182. The Cisco '871 Products are available to businesses and individuals throughout the United States.

183. The Cisco '871 Products are provided to businesses and individuals located in this District.

184. By making, using, testing, offering for sale, and/or selling products and services that process data communications passing through a node between a first data network and a second data network, including but not limited to the Cisco '871 Products, Cisco has injured Plaintiff and is liable to Plaintiff for directly infringing one or more claims of the '871 patent, including at least claim 1 pursuant to 35 U.S.C. § 271(a).

185. Cisco also indirectly infringes the '871 patent by actively inducing infringement under 35 U.S.C. § 271(b).

186. Cisco has had knowledge of the '871 patent since at least service of this Complaint or shortly thereafter, and Cisco knew of the '871 patent and knew of its infringement, including by way of this lawsuit.

187. Alternatively, Cisco has had knowledge of the '871 patent since at least December 07, 2010, based on its citation of the '871 patent as relevant prior art in at least 4 patents that are assigned to and owned by Cisco, including:

- U.S. Patent No. 7,849,502 (granted December 07, 2010)
- U.S. Patent No. 7,849,507 (granted December 07, 2010)
- U.S. Patent No. 8,087,082 (granted December 27, 2011)
- U.S. Patent No. 8,555,350 (granted October 08, 2013)

Further, Cisco has cited the '871 patent family in at least 10 additional patents that are assigned to and owned by Cisco, including:

- U.S. Patent No. 8,745,179 (granted June 03, 2014)
- U.S. Patent No. 9,621,520 (granted April 11, 2017)
- U.S. Patent No. 9,912,480 (granted March 06, 2018)
- U.S. Patent No. 7,720,960 (granted May 18, 2010)
- U.S. Patent No. 7,805,127 (granted September 28, 2010)
- U.S. Patent No. 7,640,023 (granted December 29, 2009)
- U.S. Patent No. 7,930,734 (granted April 19, 2011)
- U.S. Patent No. 7,995,990 (granted August 09, 2011)
- U.S. Patent No. 8,050,391 (granted November 01, 2011)
- U.S. Patent No. 8,315,170 (granted November 20, 2012)

188. Cisco intended to induce patent infringement by third-party customers and users of the Cisco '871 Products and had knowledge that the inducing acts would cause infringement or was willfully blind to the possibility that its inducing acts would cause infringement. Cisco specifically intended and was aware that the normal and customary use of the accused products would infringe the '871 patent. Cisco performed the acts that constitute induced infringement, and would induce actual infringement, with knowledge of the '871 patent and with the knowledge that

the induced acts would constitute infringement. For example, Cisco provides the Cisco '871 Products that have the capability of operating in a manner that infringe one or more of the claims of the '871 patent, including at least claim 1, and Cisco further provides documentation and training materials that cause customers and end users of the Cisco '871 Products to utilize the products in a manner that directly infringe one or more claims of the '871 patent.[17] By providing instruction and training to customers and end-users on how to use the Cisco '871 Products in a manner that directly infringes one or more claims of the '871 patent, including at least claim 1, Cisco specifically intended to induce infringement of the '871 patent. Cisco engaged in such inducement to promote the sales of the Cisco '871 Products, e.g., through Cisco user manuals, product support, marketing materials, and training materials to actively induce the users of the accused products to infringe the '871 patent. Accordingly, Cisco has induced and continues to induce users of the accused products to use the accused products in their ordinary and customary way to infringe the '871 patent, knowing that such use constitutes infringement of the '871 patent.

189. The '871 patent is well-known within the industry as demonstrated by multiple citations to the '871 patent in published patents and patent applications assigned to technology companies and academic institutions. Cisco is utilizing the technology claimed in the '871 patent without paying a reasonable royalty. Cisco is infringing the '871 patent in a manner best described

[17] *See e.g., Cisco Firepower 9300 Getting Started Guide*, CISCO DOCUMENTATION (January 1, 2023); *Cisco Firepower NGFW Data Sheet,* CISCO DOCUMENTATION (2019); *Cisco Firepower Management Center – FMC 101,* CISCO YOUTUBE CHANNEL (April 5, 2018), available at: https://www.youtube.com/watch?v=8Y2Zw2wh62k; *Cisco Firepower Platform Deep Dive BRKSEC-3035*, CISCO LIVE PRESENTATION (January 2020); *Cisco ASA with FirePower Services Data Sheet*, CISCO DOCUMENTATION (2014); *Cisco Secure Firewall ASA Upgrade Guide,* CISCO DOCUMENTATION (September 7, 2023); *Secure Firewall Management Center and Threat Defense Management Network Administration,* CISCO DOCUMENTATION (February 16, 2022); and *Firepower Management Center Configuration Guide, Version 6.0,* CISCO DOCUMENTATION (August 21, 2023).

as willful, wanton, malicious, in bad faith, deliberate, consciously wrongful, flagrant, or characteristic of a pirate.

190. To the extent applicable, the requirements of 35 U.S.C. § 287(a) have been met with respect to the '871 patent.

191. As a result of Cisco's infringement of the '871 patent, Plaintiff has suffered monetary damages, and seeks recovery in an amount adequate to compensate for Cisco's infringement, but in no event less than a reasonable royalty for the use made of the invention by Cisco together with interest and costs as fixed by the Court.

COUNT V
INFRINGEMENT OF U.S. PATENT NO. 7,987,285

192. Plaintiff references and incorporates by reference the preceding paragraphs of this Complaint as if fully set forth herein.

193. Cisco designs, makes, uses, sells, and/or offers for sale in the United States products comprising technology for adaptive bitrate management for streaming media over packet networks.

194. Cisco designs, makes, sells, offers to sell, imports, and/or uses the following products: Cisco Meeting Server (including CMS 1000 and CMS 2000 platforms); Webex App (including Webex for Windows and Android); Webex Meetings; Webex Meetings Virtual Desktop App; Webex Suite; Webex Webinars (formerly Webex Events); Webex Enterprise; Webex Desk Series (including Desk Pro, Desk Mini, Desk Hub, DX80, Desk Limited Edition, and Desk); Webex Room Series (including Room 55, Room 55 Dual, Room 70, Room 70G2, Room 70 Panorama, Room Bar, Room Bar Pro, Room Kit EQ, Room Kit EQX, Room Panorama, and Room Navigator); Webex Board Series (including Board 55S, Board 70S, Board 85S, and Board Pro);

Webex Control Hub; Webex Communications Platform as a Service (CPaaS); Webex Connect; Webex Cloud Connected UC; and Webex Work (collectively, the "Cisco '285 Product(s)").

195. One or more Cisco subsidiaries and/or affiliates use the Cisco '285 Products in regular business operations.

196. The Cisco '285 Products obtain a best-suited session bitrate.

197. The Cisco '285 Products initiate a session by leveraging an adaptive bitrate algorithm (e.g., Dynamic Adaptive Streaming over HTTP (DASH)), to fetch the optimal session bitrate. This involves network probing to converge to an optimal bitrate that maximizes Quality of Experience (QoE) while minimizing re-buffering events and latency.

198. The Cisco '285 Products allocate the optimal session bitrate among audio and video streams to yield ideal bitrates for both, with the allocation partially based on giving precedence to either the audio or video data.

199. The Cisco '285 Products partition the optimal session bitrate into audio and video components. This allocation is computed by accounting not only the intrinsic complexities of each media stream but also the current contextual priorities.

200. The Cisco '285 Products compress the audio and video content in accordance with the derived optimal audio and video bitrates.

201. The Cisco '285 Products use specialized codecs for each media type—including the AAC (Advanced Audio Codec) for audio and H.264/AVC for video. These codecs utilize entropy coding, quantization, and transform techniques to compress the raw audio and video streams according to the pre-determined optimal bitrates. The encoding process employs CABAC (Context-Adaptive Binary Arithmetic Coding) for entropy coding and employing spatial and temporal prediction for further compression.

202. The Cisco '285 Products deliver compressed audio and video information for transmission to an end device.

203. The Cisco '285 Products encapsulate the encoded audio and video streams into a container format such as MPEG-4 Part 14 (.mp4) or Matroska (.mkv). This container is then chunked and packetized for delivery.

204. Cisco has directly infringed and continues to directly infringe the '285 patent by, among other things, making, using, offering for sale, and/or selling technology for adaptive bitrate management for streaming media over packet networks, including but not limited to the Cisco '285 Products.

205. The Cisco '285 Products are available to businesses and individuals throughout the United States.

206. The Cisco '285 Products are provided to businesses and individuals located in this District.

207. By making, using, testing, offering for sale, and/or selling products and services comprising technology for adaptive bitrate management for streaming media over packet networks, including but not limited to the Cisco '285 Products, Cisco has injured Plaintiff and is liable to Plaintiff for directly infringing one or more claims of the '285 patent, including at least claim 9 pursuant to 35 U.S.C. § 271(a).

208. Cisco also indirectly infringes the '285 patent by actively inducing infringement under 35 U.S.C. § 271(b).

209. Cisco has had knowledge of the '285 patent since at least service of this Complaint or shortly thereafter, and Cisco knew of the '285 patent and knew of its infringement, including by way of this lawsuit.

210. Alternatively, Cisco has had knowledge of the '285 patent since at least April 21, 2015, based on its citation of the '285 patent as relevant prior art in at least 2 patents that are assigned to and owned by Cisco, including:

- U.S. Patent No. 9,338,212 (granted May 10, 2016)
- U.S. Patent No. 9,014,027 (granted April 21, 2015)

Moreover, Cisco has cited the '285 patent family in at least 5 additional patents assigned to and owned by Cisco, including:

- U.S. Patent No. 10,148,990 (granted December 04, 2018)
- U.S. Patent No. 10,491,964 (granted November 26, 2019)
- U.S. Patent No. 10,355,998 (granted July 16, 2019)
- U.S. Patent No. 9,516,078 (granted December 06, 2016)
- U.S. Patent No. 9,402,114 (granted July 26, 2016)

211. Cisco intended to induce patent infringement by third-party customers and users of the Cisco '285 Products and had knowledge that the inducing acts would cause infringement or was willfully blind to the possibility that its inducing acts would cause infringement. Cisco specifically intended and was aware that the normal and customary use of the accused products would infringe the '285 patent. Cisco performed the acts that constitute induced infringement, and would induce actual infringement, with knowledge of the '285 patent and with the knowledge that the induced acts would constitute infringement. For example, Cisco provides the Cisco '285 Products that have the capability of operating in a manner that infringe one or more of the claims of the '285 patent, including at least claim 9, and Cisco further provides documentation and training materials that cause customers and end users of the Cisco '285 Products to utilize the products in a manner that directly infringe one or more claims of the '285 patent.[18] By providing

[18] *See e.g., Cisco Preferred Architecture for Webex Calling Design Overview,* CISCO WHITE PAPER (August 2022); *Cisco Webex Bandwidth Management BRKCOL-2777*, CISCO LIVE PRESENTATION (January 2020); *Cisco WebEx Network Bandwidth White Paper*, CISCO DOCUMENTATION (2015);

instruction and training to customers and end-users on how to use the Cisco '285 Products in a manner that directly infringes one or more claims of the '285 patent, including at least claim 9, Cisco specifically intended to induce infringement of the '285 patent. Cisco engaged in such inducement to promote the sales of the Cisco '285 Products, e.g., through Cisco user manuals, product support, marketing materials, and training materials to actively induce the users of the accused products to infringe the '285 patent. Accordingly, Cisco has induced and continues to induce users of the accused products to use the accused products in their ordinary and customary way to infringe the '285 patent, knowing that such use constitutes infringement of the '285 patent.

212. The '285 patent is well-known within the industry as demonstrated by multiple citations to the '285 patent in published patents and patent applications assigned to technology companies and academic institutions. Cisco is utilizing the technology claimed in the '285 patent without paying a reasonable royalty. Cisco is infringing the '285 patent in a manner best described

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Cisco Meeting App WebRTC User Guide, CISCO DOCUMENTATION (June 10, 2020); *Understanding Network Security Requirements for Webex Traffic BRKCOL-2057*, CISCO LIVE PRESENTATION (2022); *Cisco Webex Control Hub Data Sheet,* CISCO DOCUMENTATION (2023); *Cisco Webex Room Kit Administrator Guide CE 9.4,* CISCO DOCUMENTATION (June 2018); *Cisco Webex Teams Security in Depth – Part One BRKCOL-2795,* CISCO LIVE PRESENTATION (January 2020); *Cisco Webex DX70 and DX80 Administrator Guide CE9.15,* CISCO DOCUMENTATION (October 2020); *Webex App For VDI Overview,* CISCO COLLABORATION TECHNICAL MARKETING YOUTUBE CHANNEL (January 26, 2022), available at: https://www.youtube.com/watch?v=UF_A8X5tZdQ; *Cisco Webex Teams – Cloud and On Premises Security Explained BRK-3201,* CISCO LIVE PRESENTATION (2020); *Cloud Security Unveiled - All aspects of Network, Data- Security, Compliance and Data Leakage Prevention in Cisco Webex Meetings and Teams TECCOL-3033*, CISCO LIVE PRESENTATION (January 2020); *Video Transport Architectures BRKSPV-2919*, CISCO LIVE PRESENTATION (January 2020); *Webex QoS and Bandwidth Management Demystified BRKCOL-2092,* CISCO LIVE PRESENTATION (2022); *Preferred Architecture for Cisco Webex Hybrid Services Cisco Validated Design (CVD) Guide,* CISCO DOCUMENTATION (May 31, 2019); *Cisco Meeting Server Release 3.6 Single Combined Server Deployment Guide*, CISCO DOCUMENTATION (March 21, 2023); *Cisco Meeting Server Release 3.7 Single Split Server Deployment Guide*, CISCO DOCUMENTATION (October 12, 2023); *Cisco Meeting Server Release 3.6 Scalability & Resilience Server Deployment Guide,* CISCO DOCUMENTATION (June 06, 2023); *Cisco Meeting Server – Design Consideration DGTL-BRKCOL-2110,* CISCO LIVE PRESENTATION (June 2020); and *Cisco Meeting Server Load Balancing Calls Across Cisco Meeting Servers - White Paper,* CISCO DOCUMENTATION (August 24, 2021).

as willful, wanton, malicious, in bad faith, deliberate, consciously wrongful, flagrant, or characteristic of a pirate.

213. To the extent applicable, the requirements of 35 U.S.C. § 287(a) have been met with respect to the '285 patent.

214. As a result of Cisco's infringement of the '285 patent, Plaintiff has suffered monetary damages, and seek recovery in an amount adequate to compensate for Cisco's infringement, but in no event less than a reasonable royalty for the use made of the invention by Cisco together with interest and costs as fixed by the Court.

COUNT VI
INFRINGEMENT OF U.S. PATENT NO. 7,991,904

215. Plaintiff references and incorporates by reference the preceding paragraphs of this Complaint as if fully set forth herein.

216. Cisco designs, makes, uses, sells, and/or offers for sale in the United States products comprising technology for adaptive bitrate management for streaming media over packet networks.

217. Cisco designs, makes, sells, offers to sell, imports, and/or uses the following products: Cisco Meeting Server (including CMS 1000 and CMS 2000 platforms); Webex App (including Webex for Windows and Android); Webex Meetings; Webex Meetings Virtual Desktop App; Webex Suite; Webex Webinars (formerly Webex Events); Webex Enterprise; Webex Desk Series (including Desk Pro, Desk Mini, Desk Hub, DX80, Desk Limited Edition, and Desk); Webex Room Series (including Room 55, Room 55 Dual, Room 70, Room 70G2, Room 70 Panorama, Room Bar, Room Bar Pro, Room Kit EQ, Room Kit EQX, Room Panorama, and Room Navigator); Webex Board Series (including Board 55S, Board 70S, Board 85S, and Board Pro);

Webex Control Hub; Webex Communications Platform as a Service (CPaaS); Webex Connect; Webex Cloud Connected UC; and Webex Work (collectively, the "Cisco '904 Product(s)").

218. One or more Cisco subsidiaries and/or affiliates use the Cisco '904 Products in regular business operations.

219. The Cisco '904 Products acquire the best-suited session bitrate guided by the feedback from a TCP acknowledgement.

220. The Cisco '904 Products divide the acquired session bitrate between audio and video channels to yield ideal bitrates for both, where the division is partially based on giving a higher weight to either the audio or video stream.

221. The Cisco '904 Products utilize specified codecs to compress audio and video streams in accordance with the determined optimal audio and video bitrates.

222. The Cisco '904 Products combine the compressed audio and video streams through a multiplexing operation.

223. The Cisco '904 Products prepare the multiplexed audio and video streams for forwarding to an end terminal.

224. The Cisco '904 Products employ a closed-loop control mechanism, where TCP acknowledgements are parsed to obtain Round-Trip Time (RTT) and packet loss metrics. These metrics are fed into a rate adaptation algorithm to ascertain an optimal session bitrate that maximizes throughput while minimizing latency.

225. The Cisco '904 Products apply a bitrate allocation mechanism subject to the constraint of the optimal session bitrate. The allocation is adaptive to contextual elements to privilege either the audio or video stream.

226. The Cisco '904 Products leverage codecs, such as ACC for audio and H.265/HEVC for video, that employ Vector Quantization, Discrete Cosine Transform (DCT), and motion compensation. The codecs used by the Cisco '904 Products are optimized for the allocated optimal bitrates.

227. The Cisco '904 Products utilize Time Division Multiplexing (TDM) and/or Statistical Time Division Multiplexing (STDM) to interleave the encoded audio and video streams. Data packets are annotated by the Cisco '904 Products with appropriate headers and timestamps to facilitate downstream de-multiplexing.

228. The Cisco '904 Products encapsulate the multiplexed audio and video streams into a transport stream.

229. Cisco has directly infringed and continues to directly infringe the '904 patent by, among other things, making, using, offering for sale, and/or selling technology for adaptive bitrate management for streaming media over packet networks, including but not limited to the Cisco '904 Products.

230. The Cisco '904 Products are available to businesses and individuals throughout the United States.

231. The Cisco '904 Products are provided to businesses and individuals located in this District.

232. By making, using, testing, offering for sale, and/or selling products and services comprising technology for adaptive bitrate management for streaming media over packet networks, including but not limited to the Cisco '904 Products, Cisco has injured Plaintiff and is liable to Plaintiff for directly infringing one or more claims of the '904 patent, including at least claim 11 pursuant to 35 U.S.C. § 271(a).

233. Cisco also indirectly infringes the '904 patent by actively inducing infringement under 35 U.S.C. § 271(b).

234. Cisco has had knowledge of the '904 patent since at least service of this Complaint or shortly thereafter, and Cisco knew of the '904 patent and knew of its infringement, including by way of this lawsuit.

235. Alternatively, Cisco has had knowledge of the '904 patent since at least April 21, 2015, based on its citation of the '904 patent as relevant prior art in at least 7 patents that are assigned to and owned by Cisco, including:

- U.S. Patent No. 10,148,990 (granted December 04, 2018)
- U.S. Patent No. 10,491,964 (granted November 26, 2019)
- U.S. Patent No. 10,355,998 (granted July 16, 2019)
- U.S. Patent No. 9,516,078 (granted December 06, 2016)
- U.S. Patent No. 9,402,114 (granted July 26, 2016)
- U.S. Patent No. 9,338,212 (granted May 10, 2016)
- U.S. Patent No. 9,014,027 (granted April 21, 2015)

236. Cisco intended to induce patent infringement by third-party customers and users of the Cisco '904 Products and had knowledge that the inducing acts would cause infringement or was willfully blind to the possibility that its inducing acts would cause infringement. Cisco specifically intended and was aware that the normal and customary use of the accused products would infringe the '904 patent. Cisco performed the acts that constitute induced infringement, and would induce actual infringement, with knowledge of the '904 patent and with the knowledge that the induced acts would constitute infringement. For example, Cisco provides the Cisco '904 Products that have the capability of operating in a manner that infringe one or more of the claims of the '904 patent, including at least claim 11, and Cisco further provides documentation and training materials that cause customers and end users of the Cisco '904 Products to utilize the

products in a manner that directly infringe one or more claims of the '904 patent.[19] By providing instruction and training to customers and end-users on how to use the Cisco '904 Products in a manner that directly infringes one or more claims of the '904 patent, including at least claim 11, Cisco specifically intended to induce infringement of the '904 patent. Cisco engaged in such inducement to promote the sales of the Cisco '904 Products, e.g., through Cisco user manuals, product support, marketing materials, and training materials to actively induce the users of the accused products to infringe the '904 patent. Accordingly, Cisco has induced and continues to induce users of the accused products to use the accused products in their ordinary and customary way to infringe the '904 patent, knowing that such use constitutes infringement of the '904 patent.

237. The '904 patent is well-known within the industry as demonstrated by multiple citations to the '904 patent in published patents and patent applications assigned to technology companies and academic institutions. Cisco is utilizing the technology claimed in the '904 patent

[19] *See e.g., Cisco Preferred Architecture for Webex Calling Design Overview,* CISCO WHITE PAPER (August 2022); *Cisco Webex Bandwidth Management BRKCOL-2777*, CISCO LIVE PRESENTATION (January 2020); *Cisco WebEx Network Bandwidth White Paper*, CISCO DOCUMENTATION (2015); *Cisco Meeting App WebRTC User Guide,* CISCO DOCUMENTATION (June 10, 2020); *Understanding Network Security Requirements for Webex Traffic BRKCOL-2057*, CISCO LIVE PRESENTATION (2022); *Cisco Webex Control Hub Data Sheet,* CISCO DOCUMENTATION (2023); *Cisco Webex Room Kit Administrator Guide CE 9.4,* CISCO DOCUMENTATION (June 2018); *Cisco Webex Teams Security in Depth – Part One BRKCOL-2795,* CISCO LIVE PRESENTATION (January 2020); *Cisco Webex DX70 and DX80 Administrator Guide CE9.15,* CISCO DOCUMENTATION (October 2020); *Webex App For VDI Overview,* CISCO COLLABORATION TECHNICAL MARKETING YOUTUBE CHANNEL (January 26, 2022), available at: https://www.youtube.com/watch?v=UF_A8X5tZdQ; *Cisco Webex Teams – Cloud and On Premises Security Explained BRK-3201,* CISCO LIVE PRESENTATION (2020); *Cloud Security Unveiled - All aspects of Network, Data- Security, Compliance and Data Leakage Prevention in Cisco Webex Meetings and Teams TECCOL-3033*, CISCO LIVE PRESENTATION (January 2020); *Video Transport Architectures BRKSPV-2919*, CISCO LIVE PRESENTATION (January 2020); *Webex QoS and Bandwidth Management Demystified BRKCOL-2092,* CISCO LIVE PRESENTATION (2022); *Preferred Architecture for Cisco Webex Hybrid Services Cisco Validated Design (CVD) Guide,* CISCO DOCUMENTATION (May 31, 2019); *Cisco Meeting Server Release 3.6 Single Combined Server Deployment Guide*, CISCO DOCUMENTATION (March 21, 2023); *Cisco Meeting Server Release 3.7 Single Split Server Deployment Guide*, CISCO DOCUMENTATION (October 12, 2023); *Cisco Meeting Server Release 3.6 Scalability & Resilience Server Deployment Guide,* CISCO DOCUMENTATION (June 06, 2023); *Cisco Meeting Server – Design Consideration DGTL-BRKCOL-2110,* CISCO LIVE PRESENTATION (June 2020); and *Cisco Meeting Server Load Balancing Calls Across Cisco Meeting Servers - White Paper,* CISCO DOCUMENTATION (August 24, 2021).

without paying a reasonable royalty. Cisco is infringing the '904 patent in a manner best described as willful, wanton, malicious, in bad faith, deliberate, consciously wrongful, flagrant, or characteristic of a pirate.

238. To the extent applicable, the requirements of 35 U.S.C. § 287(a) have been met with respect to the '904 patent.

239. As a result of Cisco's infringement of the '904 patent, Plaintiff has suffered monetary damages, and seek recovery in an amount adequate to compensate for Cisco's infringement, but in no event less than a reasonable royalty for the use made of the invention by Cisco together with interest and costs as fixed by the Court.

COUNT VII
INFRINGEMENT OF U.S. PATENT NO. 8,230,105

240. Plaintiff references and incorporates by reference the preceding paragraphs of this Complaint as if fully set forth herein.

241. Cisco designs, makes, uses, sells, and/or offers for sale in the United States products comprising streaming technology that optimizes audio-video bitrate allocation.

242. Cisco designs, makes, sells, offers to sell, imports, and/or uses the following products: Cisco Meeting Server (including CMS 1000 and CMS 2000 platforms); Webex App (including Webex for Windows and Android); Webex Meetings; Webex Meetings Virtual Desktop App; Webex Suite; Webex Webinars (formerly Webex Events); Webex Enterprise; Webex Desk Series (including Desk Pro, Desk Mini, Desk Hub, DX80, Desk Limited Edition, and Desk); Webex Room Series (including Room 55, Room 55 Dual, Room 70, Room 70G2, Room 70 Panorama, Room Bar, Room Bar Pro, Room Kit EQ, Room Kit EQX, Room Panorama, and Room Navigator); Webex Board Series (including Board 55S, Board 70S, Board 85S, and Board Pro);

Webex Control Hub; Webex Communications Platform as a Service (CPaaS); Webex Connect; Webex Cloud Connected UC; and Webex Work (collectively, the "Cisco '105 Product(s)").

243. One or more Cisco subsidiaries and/or affiliates use the Cisco '105 Products in regular business operations.

244. The Cisco '105 Products obtain an optimal session bitrate for media streaming.

245. The Cisco '105 Products receive an optimal session bitrate. Specifically, this determination is based on one or more factors including network conditions, available bandwidth, and device capabilities.

246. The Cisco '105 Products divide this optimal session bitrate between audio and video data to yield the best-suited bitrates for each.

247. The Cisco '105 Products allocate the optimal session bitrate between audio and video media data to produce an optimal audio bitrate and an optimal video bitrate, wherein allocating the optimal session bitrate between audio and video media data is based on a metric selected from a group including a predetermined allocation, a user preference, an optimal performance data, privileging one type of data over the other, and an amount of audio and video media data to be provided.

248. In accordance with MPEG-DASH standard, the Cisco '105 Products are responsible for calculating or receiving an optimal session bitrate based on network conditions and/or the client's capabilities.

249. The Cisco '105 Products base the bitrate allocation on criteria chosen from a set that includes pre-defined ratios, user settings, performance metrics, prioritizing one media type over the other, and the volume of audio and video data to be delivered.

250. The bitrate allocation used by the Cisco '105 Products is based on a metric selected from a group including a predetermined allocation, a user preference, an optimal performance data, privileging one type of data over the other, and an amount of audio and video media data to be provided.

251. The Cisco '105 Products compress the audio and video content as per the determined optimal audio and video bitrates.

252. The Cisco '105 Products encode audio and video media data according to the optimal audio bitrate and the optimal video bitrate.

253. The Cisco '105 Products make available the compressed audio and video streams for forwarding to an end device.

254. The Cisco '105 Products encode audio and video media data according to the optimal audio bitrate and the optimal video bitrate. This is achieved through utilizing encoding algorithms that are tailored to the bitrates allocated for each type of media. By compressing the media data according to these specific bitrates, the system ensures that the audio and video streams are packaged in a way that maximizes quality while adhering to the bandwidth limitations.

255. Cisco has directly infringed and continues to directly infringe the '105 patent by, among other things, making, using, offering for sale, and/or selling streaming technology that optimizes audio-video bitrate allocation, including but not limited to the Cisco '105 Products.

256. The Cisco '105 Products are available to businesses and individuals throughout the United States.

257. The Cisco '105 Products are provided to businesses and individuals located in this District.

258. By making, using, testing, offering for sale, and/or selling products and services comprising streaming technology that optimizes audio-video bitrate allocation, including but not limited to the Cisco '105 Products, Cisco has injured Plaintiff and is liable to Plaintiff for directly infringing one or more claims of the '105 patent, including at least claim 16 pursuant to 35 U.S.C. § 271(a).

259. Cisco also indirectly infringes the '105 patent by actively inducing infringement under 35 U.S.C. § 271(b).

260. Cisco has had knowledge of the '105 patent since at least service of this Complaint or shortly thereafter, and Cisco knew of the '105 patent and knew of its infringement, including by way of this lawsuit.

261. Alternatively, Cisco has had knowledge of the '105 patent since at least July 16, 2019, based on its citation of the '105 patent as relevant prior art in at least 2 patents that are assigned to and owned by Cisco, including:

- U.S. Patent No. 10,355,998 (granted July 16, 2019)
- U.S. Patent No. 10,491,964 (granted November 26, 2019)

In addition, Cisco has cited the '105 patent family in at least five additional patents and patent applications, including:

- U.S. Patent No. 10,148,990 (granted December 04, 2018)
- U.S. Patent No. 9,516,078 (granted December 06, 2016)
- U.S. Patent No. 9,402,114 (granted July 26, 2016)
- U.S. Patent No. 9,338,212 (granted May 10, 2016)
- U.S. Patent No. 9,014,027 (granted April 21, 2015)

262. Cisco intended to induce patent infringement by third-party customers and users of the Cisco '105 Products and had knowledge that the inducing acts would cause infringement or

was willfully blind to the possibility that its inducing acts would cause infringement. Cisco specifically intended and was aware that the normal and customary use of the accused products would infringe the '105 patent. Cisco performed the acts that constitute induced infringement, and would induce actual infringement, with knowledge of the '105 patent and with the knowledge that the induced acts would constitute infringement. For example, Cisco provides the Cisco '105 Products that have the capability of operating in a manner that infringe one or more of the claims of the '105 patent, including at least claim 16, and Cisco further provides documentation and training materials that cause customers and end users of the Cisco '105 Products to utilize the products in a manner that directly infringe one or more claims of the '105 patent.[20] By providing instruction and training to customers and end-users on how to use the Cisco '105 Products in a manner that directly infringes one or more claims of the '105 patent, including at least claim 16, Cisco specifically intended to induce infringement of the '105 patent. Cisco engaged in such

[20] *See e.g., Cisco Preferred Architecture for Webex Calling Design Overview,* CISCO WHITE PAPER (August 2022); *Cisco Webex Bandwidth Management BRKCOL-2777*, CISCO LIVE PRESENTATION (January 2020); *Cisco WebEx Network Bandwidth White Paper*, CISCO DOCUMENTATION (2015); *Cisco Meeting App WebRTC User Guide,* CISCO DOCUMENTATION (June 10, 2020); *Understanding Network Security Requirements for Webex Traffic BRKCOL-2057*, CISCO LIVE PRESENTATION (2022); *Cisco Webex Control Hub Data Sheet,* CISCO DOCUMENTATION (2023); *Cisco Webex Room Kit Administrator Guide CE 9.4,* CISCO DOCUMENTATION (June 2018); *Cisco Webex Teams Security in Depth – Part One BRKCOL-2795,* CISCO LIVE PRESENTATION (January 2020); *Cisco Webex DX70 and DX80 Administrator Guide CE9.15,* CISCO DOCUMENTATION (October 2020); *Webex App For VDI Overview,* CISCO COLLABORATION TECHNICAL MARKETING YOUTUBE CHANNEL (January 26, 2022), available at: https://www.youtube.com/watch?v=UF_A8X5tZdQ; *Cisco Webex Teams – Cloud and On Premises Security Explained BRK-3201,* CISCO LIVE PRESENTATION (2020); *Cloud Security Unveiled - All aspects of Network, Data- Security, Compliance and Data Leakage Prevention in Cisco Webex Meetings and Teams TECCOL-3033*, CISCO LIVE PRESENTATION (January 2020); *Video Transport Architectures BRKSPV-2919*, CISCO LIVE PRESENTATION (January 2020); *Webex QoS and Bandwidth Management Demystified BRKCOL-2092,* CISCO LIVE PRESENTATION (2022); *Preferred Architecture for Cisco Webex Hybrid Services Cisco Validated Design (CVD) Guide,* CISCO DOCUMENTATION (May 31, 2019); *Cisco Meeting Server Release 3.6 Single Combined Server Deployment Guide*, CISCO DOCUMENTATION (March 21, 2023); *Cisco Meeting Server Release 3.7 Single Split Server Deployment Guide*, CISCO DOCUMENTATION (October 12, 2023); *Cisco Meeting Server Release 3.6 Scalability & Resilience Server Deployment Guide,* CISCO DOCUMENTATION (June 06, 2023); *Cisco Meeting Server – Design Consideration DGTL-BRKCOL-2110,* CISCO LIVE PRESENTATION (June 2020); and *Cisco Meeting Server Load Balancing Calls Across Cisco Meeting Servers - White Paper,* CISCO DOCUMENTATION (August 24, 2021).

inducement to promote the sales of the Cisco '105 Products, e.g., through Cisco user manuals, product support, marketing materials, and training materials to actively induce the users of the accused products to infringe the '105 patent. Accordingly, Cisco has induced and continues to induce users of the accused products to use the accused products in their ordinary and customary way to infringe the '105 patent, knowing that such use constitutes infringement of the '105 patent.

263. The '105 patent is well-known within the industry as demonstrated by multiple citations to the '105 patent in published patents and patent applications assigned to technology companies and academic institutions. Cisco is utilizing the technology claimed in the '105 patent without paying a reasonable royalty. Cisco is infringing the '105 patent in a manner best described as willful, wanton, malicious, in bad faith, deliberate, consciously wrongful, flagrant, or characteristic of a pirate.

264. To the extent applicable, the requirements of 35 U.S.C. § 287(a) have been met with respect to the '105 patent.

265. As a result of Cisco's infringement of the '105 patent, Plaintiff has suffered monetary damages, and seek recovery in an amount adequate to compensate for Cisco's infringement, but in no event less than a reasonable royalty for the use made of the invention by Cisco together with interest and costs as fixed by the Court.

COUNT VIII
INFRINGEMENT OF U.S. PATENT NO. 8,769,141

266. Plaintiff references and incorporates by reference the preceding paragraphs of this Complaint as if fully set forth herein.

267. Cisco designs, makes, uses, sells, and/or offers for sale in the United States products comprising technology for encoding media data using optimal audio and video bitrates and multiplexing the data for transmission.

268. Cisco designs, makes, sells, offers to sell, imports, and/or uses the following products: Cisco Meeting Server (including CMS 1000 and CMS 2000 platforms); Webex App (including Webex for Windows and Android); Webex Meetings; Webex Meetings Virtual Desktop App; Webex Suite; Webex Webinars (formerly Webex Events); Webex Enterprise; Webex Desk Series (including Desk Pro, Desk Mini, Desk Hub, DX80, Desk Limited Edition, and Desk); Webex Room Series (including Room 55, Room 55 Dual, Room 70, Room 70G2, Room 70 Panorama, Room Bar, Room Bar Pro, Room Kit EQ, Room Kit EQX, Room Panorama, and Room Navigator); Webex Board Series (including Board 55S, Board 70S, Board 85S, and Board Pro); Webex Control Hub; Webex Communications Platform as a Service (CPaaS); Webex Connect; Webex Cloud Connected UC; and Webex Work (collectively, the "Cisco '141 Product(s)").

269. One or more Cisco subsidiaries and/or affiliates use the Cisco '141 Products in regular business operations.

270. The Cisco '141 Products receive both audio and video data.

271. The Cisco '141 Products receive media streams, which include both audio and video data. Specifically, the Cisco '141 Products use a manifest and segment retrieval process based on the products implementation of MPEG-DASH.

272. The Cisco '141 Products obtain an optimal session bitrate.

273. The Cisco '141 Products employ an ABR algorithm to determine an optimal session bitrate. Specifically, the Cisco '141 Products implement MPEG-DASH and an optimal session bitrate is on metadata, like bitrates and resolutions of available segments, that are used to determine the optimal session bitrate.

274. The Cisco '141 Products apportion the recommended session bitrate among audio and video streams, favoring either audio or video for a higher bitrate as needed.

275. The Cisco '141 Products partition the optimal session bitrate between audio and video components. Specifically, through incorporation of MPEG-DASH adaptive bitrate management, the Cisco '141 Products utilize a manifest that contains information on the available bitrates for both audio and video, enabling the allocation of bitrates between the audio and video data.

276. The Cisco '141 Products compress the audio stream according to its optimal bitrate.

277. The Cisco '141 Products compress the video stream using its designated optimal bitrate.

278. The Cisco '141 Products multiplex the compressed audio and video data.

279. The Cisco '141 Products prepare the multiplexed audio and video data for dispatch to a terminal device.

280. Cisco has directly infringed and continues to directly infringe the '141 patent by, among other things, making, using, offering for sale, and/or selling technology for encoding media data using optimal audio and video bitrates and multiplexing the data for transmission, including but not limited to the Cisco '141 Products.

281. The Cisco '141 Products are available to businesses and individuals throughout the United States.

282. The Cisco '141 Products are provided to businesses and individuals located in this District.

283. By making, using, testing, offering for sale, and/or selling products and services comprising technology for encoding media data using optimal audio and video bitrates and multiplexing the data for transmission, including but not limited to the Cisco '141 Products, Cisco

has injured Plaintiff and is liable to Plaintiff for directly infringing one or more claims of the '141 patent, including at least claim 20 pursuant to 35 U.S.C. § 271(a).

284. Cisco also indirectly infringes the '141 patent by actively inducing infringement under 35 U.S.C. § 271(b).

285. Cisco has had knowledge of the '141 patent since at least service of this Complaint or shortly thereafter, and Cisco knew of the '141 patent and knew of its infringement, including by way of this lawsuit.

286. Alternatively, Cisco has had knowledge of the '141 patent since at least April 21, 2015, based on its citation of the '141 patent as relevant prior art in at least 7 patents that are assigned to and owned by Cisco, including:

- U.S. Patent No. 10,148,990 (granted December 04, 2018)
- U.S. Patent No. 10,491,964 (granted November 26, 2019)
- U.S. Patent No. 10,355,998 (granted July 16, 2019)
- U.S. Patent No. 9,516,078 (granted December 06, 2016)
- U.S. Patent No. 9,402,114 (granted July 26, 2016)
- U.S. Patent No. 9,338,212 (granted May 10, 2016)
- U.S. Patent No. 9,014,027 (granted April 21, 2015)

287. Cisco intended to induce patent infringement by third-party customers and users of the Cisco '141 Products and had knowledge that the inducing acts would cause infringement or was willfully blind to the possibility that its inducing acts would cause infringement. Cisco specifically intended and was aware that the normal and customary use of the accused products would infringe the '141 patent. Cisco performed the acts that constitute induced infringement, and would induce actual infringement, with knowledge of the '141 patent and with the knowledge that the induced acts would constitute infringement. For example, Cisco provides the Cisco '141 Products that have the capability of operating in a manner that infringe one or more of the claims

of the '141 patent, including at least claim 20, and Cisco further provides documentation and training materials that cause customers and end users of the Cisco '141 Products to utilize the products in a manner that directly infringe one or more claims of the '141 patent.[21] By providing instruction and training to customers and end-users on how to use the Cisco '141 Products in a manner that directly infringes one or more claims of the '141 patent, including at least claim 20, Cisco specifically intended to induce infringement of the '141 patent. Cisco engaged in such inducement to promote the sales of the Cisco '141 Products, e.g., through Cisco user manuals, product support, marketing materials, and training materials to actively induce the users of the accused products to infringe the '141 patent. Accordingly, Cisco has induced and continues to induce users of the accused products to use the accused products in their ordinary and customary way to infringe the '141 patent, knowing that such use constitutes infringement of the '141 patent.

[21] *See e.g., Cisco Preferred Architecture for Webex Calling Design Overview,* CISCO WHITE PAPER (August 2022); *Cisco Webex Bandwidth Management BRKCOL-2777*, CISCO LIVE PRESENTATION (January 2020); *Cisco WebEx Network Bandwidth White Paper*, CISCO DOCUMENTATION (2015); *Cisco Meeting App WebRTC User Guide,* CISCO DOCUMENTATION (June 10, 2020); *Understanding Network Security Requirements for Webex Traffic BRKCOL-2057*, CISCO LIVE PRESENTATION (2022); *Cisco Webex Control Hub Data Sheet,* CISCO DOCUMENTATION (2023); *Cisco Webex Room Kit Administrator Guide CE 9.4,* CISCO DOCUMENTATION (June 2018); *Cisco Webex Teams Security in Depth – Part One BRKCOL-2795,* CISCO LIVE PRESENTATION (January 2020); *Cisco Webex DX70 and DX80 Administrator Guide CE9.15,* CISCO DOCUMENTATION (October 2020); *Webex App For VDI Overview,* CISCO COLLABORATION TECHNICAL MARKETING YOUTUBE CHANNEL (January 26, 2022), available at: https://www.youtube.com/watch?v=UF_A8X5tZdQ; *Cisco Webex Teams – Cloud and On Premises Security Explained BRK-3201,* CISCO LIVE PRESENTATION (2020); *Cloud Security Unveiled - All aspects of Network, Data- Security, Compliance and Data Leakage Prevention in Cisco Webex Meetings and Teams TECCOL-3033*, CISCO LIVE PRESENTATION (January 2020); *Video Transport Architectures BRKSPV-2919*, CISCO LIVE PRESENTATION (January 2020); *Webex QoS and Bandwidth Management Demystified BRKCOL-2092,* CISCO LIVE PRESENTATION (2022); *Preferred Architecture for Cisco Webex Hybrid Services Cisco Validated Design (CVD) Guide,* CISCO DOCUMENTATION (May 31, 2019); *Cisco Meeting Server Release 3.6 Single Combined Server Deployment Guide*, CISCO DOCUMENTATION (March 21, 2023); *Cisco Meeting Server Release 3.7 Single Split Server Deployment Guide*, CISCO DOCUMENTATION (October 12, 2023); *Cisco Meeting Server Release 3.6 Scalability & Resilience Server Deployment Guide,* CISCO DOCUMENTATION (June 06, 2023); *Cisco Meeting Server – Design Consideration DGTL-BRKCOL-2110,* CISCO LIVE PRESENTATION (June 2020); and *Cisco Meeting Server Load Balancing Calls Across Cisco Meeting Servers - White Paper,* CISCO DOCUMENTATION (August 24, 2021).

288. The '141 patent is well-known within the industry as demonstrated by multiple citations to the '141 patent in published patents and patent applications assigned to technology companies and academic institutions. Cisco is utilizing the technology claimed in the '141 patent without paying a reasonable royalty. Cisco is infringing the '141 patent in a manner best described as willful, wanton, malicious, in bad faith, deliberate, consciously wrongful, flagrant, or characteristic of a pirate.

289. To the extent applicable, the requirements of 35 U.S.C. § 287(a) have been met with respect to the '141 patent.

290. As a result of Cisco's infringement of the '141 patent, Plaintiff has suffered monetary damages, and seek recovery in an amount adequate to compensate for Cisco's infringement, but in no event less than a reasonable royalty for the use made of the invention by Cisco together with interest and costs as fixed by the Court.

COUNT IX
INFRINGEMENT OF U.S. PATENT NO. 9,191,664

291. Plaintiff references and incorporates by reference the preceding paragraphs of this Complaint as if fully set forth herein.

292. Cisco designs, makes, uses, sells, and/or offers for sale in the United States products for adaptive bitrate management.

293. Cisco designs, makes, sells, offers to sell, imports, and/or uses the following products: Cisco Meeting Server (including CMS 1000 and CMS 2000 platforms); Webex App (including Webex for Windows and Android); Webex Meetings; Webex Meetings Virtual Desktop App; Webex Suite; Webex Webinars (formerly Webex Events); Webex Enterprise; Webex Desk Series (including Desk Pro, Desk Mini, Desk Hub, DX80, Desk Limited Edition, and Desk); Webex Room Series (including Room 55, Room 55 Dual, Room 70, Room 70G2, Room 70

Panorama, Room Bar, Room Bar Pro, Room Kit EQ, Room Kit EQX, Room Panorama, and Room Navigator); Webex Board Series (including Board 55S, Board 70S, Board 85S, and Board Pro); Webex Control Hub; Webex Communications Platform as a Service (CPaaS); Webex Connect; Webex Cloud Connected UC; and Webex Work (collectively, the "Cisco '664 Product(s)").

294. One or more Cisco subsidiaries and/or affiliates use the Cisco '664 Products in regular business operations.

295. The Cisco '664 Products accept and/or gather media data, which comprises both elements of audio and video information.

296. The Cisco '664 Products perform the step of receiving media data that includes both audio media data and video media data. In this stage of the method, the computer system ingests or collects media data, which might come from various sources like a live broadcast, stored files, or a streaming service. The data is then parsed or separated into audio and video components for further processing,

297. The Cisco '664 Products take in an ideal session bitrate, which is the preferred data transfer rate for the media session.

298. The Cisco '664 Products perform the step of receiving an optimal session bitrate. This step entails obtaining a pre-calculated or pre-defined bitrate that is considered optimal for the media session. This optimal bitrate is a crucial parameter that affects the quality and efficiency of both audio and video transmission.

299. The Cisco '664 Products distribute the received ideal session bitrate between the audio and video media data, resulting in an optimal audio bitrate and an optimal video bitrate.

300. The Cisco '664 Products perform the step of allocating the optimal session bitrate between the audio media data and the video media data to produce an optimal audio bitrate and an

optimal video bitrate. In this process, the total available optimal session bitrate is divided into two portions, aligning with the requirements for audio and video quality.

301. The Cisco '664 Products transform the audio media data using the determined optimal audio bitrate through a process of encoding.

302. The Cisco '664 Products perform the step of encoding the audio media data using the optimal audio bitrate. This process involves compressing the raw audio data according to a specific encoding algorithm while adhering to the predetermined optimal audio bitrate.

303. The Cisco '664 Products transmit the video media data with the use of the optimal video bitrate through encoding.

304. The Cisco '664 Products perform the step of encoding the video media data using the optimal video bitrate. Similar to audio encoding, this step involves compressing raw video data into a specific format using the allocated optimal video bitrate.

305. The Cisco '664 Products make the encoded audio media data and the encoded video media data available for dispatch to a terminal.

306. The Cisco '664 Products perform the step of providing the encoded audio media data and the encoded video media data for transmittal to a terminal. This final step involves packaging the encoded audio and video data into a suitable transmission format and sending it to the receiving terminal, such as a user's device or a downstream processing system. The process may involve using specific transmission protocols and considering network conditions, latency requirements, and compatibility with the receiving device.

307. Cisco has directly infringed and continues to directly infringe the '664 patent by, among other things, making, using, offering for sale, and/or selling technology comprising a method of adaptive bitrate management, including but not limited to the Cisco '664 Products.

308. The Cisco '664 Products are available to businesses and individuals throughout the United States.

309. The Cisco '664 Products are provided to businesses and individuals located in this District.

310. By making, using, testing, offering for sale, and/or selling products and services comprising a method of adaptive bitrate management, including but not limited to the Cisco '664 Products, Cisco has injured Plaintiff and is liable to Plaintiff for directly infringing one or more claims of the '664 patent, including at least claim 9 pursuant to 35 U.S.C. § 271(a).

311. Cisco also indirectly infringes the '664 patent by actively inducing infringement under 35 U.S.C. § 271(b).

312. Cisco has had knowledge of the '664 patent since at least service of this Complaint or shortly thereafter, and Cisco knew of the '664 patent and knew of its infringement, including by way of this lawsuit.

313. Alternatively, Cisco has had knowledge of the '664 patent since at least November 17, 2015 as Cisco has cited the '664 patent family as relevant prior art in at least seven patents and patent applications, including:

- U.S. Patent No. 10,148,990 (granted December 04, 2018)
- U.S. Patent No. 10,491,964 (granted November 26, 2019)
- U.S. Patent No. 10,355,998 (granted July 16, 2019)
- U.S. Patent No. 9,516,078 (granted December 06, 2016)
- U.S. Patent No. 9,402,114 (granted July 26, 2016)
- U.S. Patent No. 9,338,212 (granted May 10, 2016)
- U.S. Patent No. 9,014,027 (granted April 21, 2015)

314. Cisco intended to induce patent infringement by third-party customers and users of the Cisco '664 Products and had knowledge that the inducing acts would cause infringement or

was willfully blind to the possibility that its inducing acts would cause infringement. Cisco specifically intended and was aware that the normal and customary use of the accused products would infringe the '664 patent. Cisco performed the acts that constitute induced infringement, and would induce actual infringement, with knowledge of the '664 patent and with the knowledge that the induced acts would constitute infringement. For example, Cisco provides the Cisco '664 Products that have the capability of operating in a manner that infringe one or more of the claims of the '664 patent, including at least claim 9, and Cisco further provides documentation and training materials that cause customers and end users of the Cisco '664 Products to utilize the products in a manner that directly infringe one or more claims of the '664 patent.[22] By providing instruction and training to customers and end-users on how to use the Cisco '664 Products in a manner that directly infringes one or more claims of the '664 patent, including at least claim 9, Cisco specifically intended to induce infringement of the '664 patent. Cisco engaged in such

[22] *See e.g., Cisco Preferred Architecture for Webex Calling Design Overview,* CISCO WHITE PAPER (August 2022); *Cisco Webex Bandwidth Management BRKCOL-2777*, CISCO LIVE PRESENTATION (January 2020); *Cisco WebEx Network Bandwidth White Paper*, CISCO DOCUMENTATION (2015); *Cisco Meeting App WebRTC User Guide,* CISCO DOCUMENTATION (June 10, 2020); *Understanding Network Security Requirements for Webex Traffic BRKCOL-2057*, CISCO LIVE PRESENTATION (2022); *Cisco Webex Control Hub Data Sheet,* CISCO DOCUMENTATION (2023); *Cisco Webex Room Kit Administrator Guide CE 9.4,* CISCO DOCUMENTATION (June 2018); *Cisco Webex Teams Security in Depth – Part One BRKCOL-2795,* CISCO LIVE PRESENTATION (January 2020); *Cisco Webex DX70 and DX80 Administrator Guide CE9.15,* CISCO DOCUMENTATION (October 2020); *Webex App For VDI Overview,* CISCO COLLABORATION TECHNICAL MARKETING YOUTUBE CHANNEL (January 26, 2022), available at: https://www.youtube.com/watch?v=UF_A8X5tZdQ; *Cisco Webex Teams – Cloud and On Premises Security Explained BRK-3201,* CISCO LIVE PRESENTATION (2020); *Cloud Security Unveiled - All aspects of Network, Data- Security, Compliance and Data Leakage Prevention in Cisco Webex Meetings and Teams TECCOL-3033*, CISCO LIVE PRESENTATION (January 2020); *Video Transport Architectures BRKSPV-2919*, CISCO LIVE PRESENTATION (January 2020); *Webex QoS and Bandwidth Management Demystified BRKCOL-2092,* CISCO LIVE PRESENTATION (2022); *Preferred Architecture for Cisco Webex Hybrid Services Cisco Validated Design (CVD) Guide,* CISCO DOCUMENTATION (May 31, 2019); *Cisco Meeting Server Release 3.6 Single Combined Server Deployment Guide*, CISCO DOCUMENTATION (March 21, 2023); *Cisco Meeting Server Release 3.7 Single Split Server Deployment Guide*, CISCO DOCUMENTATION (October 12, 2023); *Cisco Meeting Server Release 3.6 Scalability & Resilience Server Deployment Guide,* CISCO DOCUMENTATION (June 06, 2023); *Cisco Meeting Server – Design Consideration DGTL-BRKCOL-2110,* CISCO LIVE PRESENTATION (June 2020); and *Cisco Meeting Server Load Balancing Calls Across Cisco Meeting Servers - White Paper,* CISCO DOCUMENTATION (August 24, 2021).

inducement to promote the sales of the Cisco '664 Products, e.g., through Cisco user manuals, product support, marketing materials, and training materials to actively induce the users of the accused products to infringe the '664 patent. Accordingly, Cisco has induced and continues to induce users of the accused products to use the accused products in their ordinary and customary way to infringe the '664 patent, knowing that such use constitutes infringement of the '664 patent.

315. The '664 patent is well-known within the industry as demonstrated by multiple citations to the '664 patent in published patents and patent applications assigned to technology companies and academic institutions. Cisco is utilizing the technology claimed in the '664 patent without paying a reasonable royalty. Cisco is infringing the '664 patent in a manner best described as willful, wanton, malicious, in bad faith, deliberate, consciously wrongful, flagrant, or characteristic of a pirate.

316. To the extent applicable, the requirements of 35 U.S.C. § 287(a) have been met with respect to the '664 patent.

317. As a result of Cisco's infringement of the '664 patent, Plaintiff has suffered monetary damages, and seeks recovery in an amount adequate to compensate for Cisco's infringement, but in no event less than a reasonable royalty for the use made of the invention by Cisco together with interest and costs as fixed by the Court.

318. Cisco engaged in such inducement to promote the sales of the Cisco '081 Products, e.g., through Cisco user manuals, product support, marketing materials, and training materials to actively induce the users of the accused products to infringe the '081 patent. Accordingly, Cisco has induced and continues to induce users of the accused products to use the accused products in their ordinary and customary way to infringe the '081 patent, knowing that such use constitutes infringement of the '081 patent.

319. The ‘081 patent is well-known within the industry as demonstrated by multiple citations to the ‘081 patent in published patents and patent applications assigned to technology companies and academic institutions. Cisco is utilizing the technology claimed in the ‘081 patent without paying a reasonable royalty. Cisco is infringing the ‘081 patent in a manner best described as willful, wanton, malicious, in bad faith, deliberate, consciously wrongful, flagrant, or characteristic of a pirate.

320. To the extent applicable, the requirements of 35 U.S.C. § 287(a) have been met with respect to the ‘081 patent.

321. As a result of Cisco’s infringement of the ‘081 patent, Plaintiff has suffered monetary damages, and seek recovery in an amount adequate to compensate for Cisco’s infringement, but in no event less than a reasonable royalty for the use made of the invention by Cisco together with interest and costs as fixed by the Court.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff OptiMorphix, Inc. respectfully requests that this Court enter:

A. A judgment in favor of Plaintiff that Cisco has infringed, either literally and/or under the doctrine of equivalents, the ‘314, ‘273, ‘418, ‘871, ‘285, ‘904, ‘105, ‘141, and ‘664 patents;

B. An award of damages resulting from Cisco’s acts of infringement in accordance with 35 U.S.C. § 284;

C. A judgment and order finding that Cisco’s infringement was willful, wanton, malicious, bad-faith, deliberate, consciously wrongful, flagrant, or characteristic of a pirate within the meaning of 35 U.S.C. § 284 and awarding to Plaintiff enhanced damages.

D. A judgment and order finding that this is an exceptional case within the meaning of 35 U.S.C. § 285 and awarding to Plaintiff reasonable attorneys' fees against Cisco.

E. Any and all other relief to which Plaintiff may show themselves to be entitled.

JURY TRIAL DEMANDED

Pursuant to Rule 38 of the Federal Rules of Civil Procedure, Plaintiff OptiMorphix, Inc. requests a trial by jury of any issues so triable by right.

Dated: November 2, 2023

Respectfully submitted,

/s/ Daniel P. Hipskind

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