

**IN THE UNITED STATES DISTRICT COURT  
FOR THE WESTERN DISTRICT OF TEXAS  
WACO DIVISION**

COMMWORKS SOLUTIONS, LLC,

Plaintiff

-against-

COMCAST CABLE COMMUNICATIONS,  
LLC d/b/a XFINITY, COMCAST CORP.,  
and COMCAST CABLE  
COMMUNICATIONS MANAGEMENT,  
LLC.,

Defendants.

Civil Action No.: 6:21-cv-00366

**Jury Trial Demanded**

**COMPLAINT FOR PATENT INFRINGEMENT**

Plaintiff CommWorks Solutions, LLC (“CommWorks” or “Plaintiff”), by way of this Complaint against Defendants Comcast Cable Communications, LLC d/b/a Xfinity, Comcast Corp., and Comcast Cable Communications Management, LLC (collectively “Comcast” or “Defendants”), alleges as follows:

**PARTIES**

1. Plaintiff CommWorks Solutions, LLC is a limited liability company organized and existing under the laws of the State of Georgia, having its principal place of business at 44 Milton Avenue, Suite 254, Alpharetta, GA 30009.
2. On information and belief, Defendant Comcast Cable Communications, LLC is a limited liability company organized and existing under the laws of the State of Delaware, having its principal place of business at 1701 John F. Kennedy Blvd., Philadelphia, Pennsylvania 19103. Comcast Cable Communications, LLC may be served through its registered agent Comcast

Capital Corporation, 1201 N. Market Street, Suite 1000, Wilmington, Delaware 19801.

3. On information and belief, Defendant Comcast Corp. is a corporation organized and existing under the laws of the State of Pennsylvania, having its principal place of business at 1701 John F. Kennedy Blvd., Philadelphia, Pennsylvania 19103. Comcast Corp. may be served through its registered agent CT Corporation System, at 1999 Bryan St., Suite 900, Dallas, TX 75201. On information and belief, Comcast Corporation is registered to do business in the State of Texas and has been since at least November 30, 2018.

4. On information and belief, Defendant Comcast Cable Communications Management, LLC is a limited liability company organized and existing under the laws of the State of Delaware, having its principal place of business at 1701 John F. Kennedy Blvd., Philadelphia, Pennsylvania 19103. Comcast Cable Communications Management, LLC may be served through its registered agent CT Corporation System, at 1999 Bryan St., Suite 900, Dallas, TX 75201. On information and belief, Comcast Cable Communications Management, LLC is registered to do business in the State of Texas and has been since at least November 10, 2011.

### **JURISDICTION AND VENUE**

5. This is an action under the patent laws of the United States, 35 U.S.C. §§ 1, *et seq.*, for infringement by Comcast of claims of U.S. Patent No. 6,832,249; U.S. Patent No. 7,027,465; U.S. Patent No. 7,177,285; U.S. Patent No. 7,760,664; U.S. Patent No. 8,923,846; and U.S. Patent No. RE42,883. (collectively “the Patents-in-Suit”).

6. This Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a).

7. Comcast is subject to personal jurisdiction of this Court because, *inter alia*, on information and belief, (i) Comcast maintains a regular and established place of business in Texas in this Judicial District in its Comcast Innovation Center at 6200 Bridge Point Parkway,

Austin, Texas 78730; (ii) Comcast sells products and services to customers in this Judicial District; and (iii) the patent infringement claims arise directly from Comcast's continuous and systematic activity in this Judicial District.

8. Venue is proper as to Comcast in this Judicial District under 28 U.S.C. § 1400(b) because, *inter alia*, on information and belief, Comcast has a regular and established place of business in this Judicial District in its Comcast Innovation Center located at 6200 Bridge Point Parkway, Austin, Texas 78730, and has committed acts of patent infringement in this Judicial District and/or has contributed to or induced acts of patent infringement by others in this District.

### **BACKGROUND**

9. On December 14, 2004, the United States Patent and Trademark Office duly and lawfully issued U.S. Patent No. 6,832,249 ("the '249 Patent"), entitled "Globally Accessible Computer Network-Based Broadband Communication System With User-Controllable Quality of Information Delivery and Flow Priority." A true and correct copy of the '249 Patent is attached hereto as Exhibit A.

10. At the time of the invention, millions of Internet users being online simultaneously, causing congestion (too many users) and latency (long pauses and delays), presented a difficult bandwidth load management challenge. Exhibit A at col. 1:32-34, 2:34-36. No conventional routing system existed that avoided the congestion and best effort delivery methods then used by the Internet. *Id.* at col. 2:8-10. Conventional routing systems relating to multiple OSI layers also did not consistently ensure quality of service. *Id.* at col. 6:53-63.

11. The invention of the '249 Patent improved upon the conventional services delivery systems by enabling quality of service control by content providers, Application Service Providers (ASPs), ISPs, and, by extension, their customers. *Id.* at col. 3:60-63. Additional

improvements over the conventional services delivery systems afforded by the invention of the '249 Patent included bridging the gaps between the layers of the OSI reference model; ensuring more control by users over the priority of their information flow; more control by network administrators over the congestion of their networks; and more control by content providers over costs and the experiences they provide to their users. *Id.* at col. 3:65-4:2, 6:53-63.

12. On April 11, 2006, the United States Patent and Trademark Office duly and lawfully issued U.S. Patent No. 7,027,465 (“the '465 Patent”), entitled “Method for Contention Free Traffic Detection.” A true and correct copy of the '465 Patent is attached hereto as Exhibit B.

13. At the time of the invention, “conventionally ... transmission differentiation based on priority was not conducted at all.” Exhibit B at col. 2:9-10. Obtaining priority information for traffic transmitted through an Access Point (AP) required searching all fields in all frames for indications of the priority state of the actual data frame, resulting in all fields in all frames being checked and all headers being analyzed, starting from the outer most headers, until the right field in the header had been found. *Id.* at col. 1:53-59. This measure was very complex, took a long time, and required a large amount of processing, especially for complex tunneling protocols. *Id.* at col. 1:62-65. All the frame headers and protocols which can be included in the data frames transmitted via the network had to be known, hence, the amount of information needed for identifying the data was huge. *Id.* at col. 1:66-2:4. Such a huge amount of information was typically too heavy to handle in small and low price equipment like WLAN access points (AP). *Id.* Further, then existing systems according to the IEEE 802.11 standard did not separate traffic based on priority. *Id.* at col. 2:11-15.

14. The invention of the '465 Patent improved upon conventional network traffic routing systems by providing methods by which priority traffic can easily be distinguished from normal

traffic without the need of complex processing making it possible to execute in a low cost and possibly low performance AP. *Id.* at col. 2:19-23, 2:60-62, 3:43. The methods of the invention of the '465 Patent further improved upon conventional network traffic routing systems by easily finding higher priority traffic from the stream of MAC layer frames without necessarily requiring knowledge of the upper layer protocols. *Id.* at col. 2:53-56. The methods of the invention of the '465 Patent further improved upon conventional network traffic routing systems by being protocol-independent and flexible such that their configuration may be done in an external configuration program; with the Access Point not needing to know anything about the processed traffic; further alleviating the need of complex structure of the device. *Id.* at col. 2:63-66, Col. 3:5-11. A further advantage over conventional network traffic routing systems is that installation of new software or hardware in the network element would not be required when new protocols or modified protocols are introduced in the network. *Id.* at col. 3:12-21.

15. On February 13, 2007, the United States Patent and Trademark Office duly and lawfully issued U.S. Patent No. 7,177,285 (“the '285 Patent”), entitled “Time Based Wireless Access Provisioning.” A true and correct copy of the '285 Patent is attached hereto as Exhibit C.

16. At the time of the invention, wireless access to data networks was not yet conventional. Then existent systems for provisioning access to a network were impractical, such as for wireless devices which lacked a user interface configured for communicating provisioning information, or for simple home-based intranets, such as a wireless picture frame device lacking a control interface to read or extract identification information, such as a MAC address, to facilitate wireless access provisioning. Exhibit C at col. 3:13-26. Further, wireless devices that did have a dedicated user interface were incapable of, or cumbersome in, communicating device identification and exchanging provisioning information, still requiring a user to be technically

proficient to properly initiate and complete a provisioning process. *Id.* at col. 3:27-36.

17. The invention of the '285 Patent improved upon existent network provisioning systems by enabling provisioning without requiring a user interface for the initiation of a provisioning process—"a major technological advance." *Id.* at col. 3:37-41. The invention of the '285 Patent further improved upon existent provisioning systems by providing a wireless access provisioning structure and process with minimal device requirements and/or user proficiency, whereby a wireless device is readily provisioned by the provisioning system, and whereby other unauthorized devices within an access region are prevented from being provisioned by the provisioning system. *Id.* at col. 3:42-49. The invention of the '285 Patent further improved upon existent provisioning systems by providing a time-based wireless access provisioning system integrated with easily monitored parameters of a wireless device, such as the time monitoring of power on and/or start of signal transmission, for provisioning secure encrypted communication. *Id.* at col. 3:50-58.

18. On July 20, 2010, the United States Patent and Trademark Office duly and lawfully issued U.S. Patent No. 7,760,664 ("the '664 Patent"), entitled "Determining and Provisioning Paths in a Network." A true and correct copy of the '664 Patent is attached hereto as Exhibit D.

19. At the time of the invention, graphical systems for provisioning network paths were not yet conventional. Prior art systems for provisioning network paths typically modeled every port of every network element as a node on a graph and modeled every physical link that interconnected these ports to one another as links that interconnected the nodes of the graph. Exhibit D at col. 1:27-36. This resulted in very large, complex, and inefficient model graphs that did not adapt well to diverse network elements and large networks and created performance and scalability issues due to the demanding processing requirements associated with such graphs. *Id.*

at col. 2:30-40.

20. The invention of the '664 Patent improved upon existent systems for provisioning network paths by enabling management of links instead of nodes in a graphical interface, reducing route processing, resulting in a corresponding reduction in overhead and resources required to route network traffic from one node to another. *Id.* at col. 3:32-35. The invention of the '664 Patent further improved upon existent systems by reducing the number of nodes necessary to consider in routing network traffic from one point to another, greatly reducing the processing overhead and timeliness associated with making routing decisions. *Id.* at col. 4:53-65. The invention of the '664 Patent further improved upon existent systems by adding considerable flexibility in designing and maintaining routing graphs. *Id.*

21. On December 30, 2014, the United States Patent and Trademark Office duly and lawfully issued U.S. Patent No. 8,923,846 (“the '846 Patent”), entitled “Recovery Techniques in Mobile Networks.” A true and correct copy of the '846 Patent is attached hereto as Exhibit E.

22. At the time of the invention, IP mobile networks failed to include any protection of subscribers' transport addresses or location information in the case of a reset situation of a Call State Control Function (CSCF) network element. Exhibit E at col. 1:41-50. The '846 Patent improved upon existent mobile networks by providing a technique for protecting and recovering location information of a subscriber in a mobile network. *Id.* at Fig. 4A, 4B; col 1:54-62.

23. On November 1, 2011, the United States Patent and Trademark Office duly and lawfully issued U.S. Patent No. RE42,883 (“the '883 Patent”), entitled “Enhanced Phone-Based Collaboration.” A true and correct copy of the '883 Patent is attached hereto as Exhibit F.

24. At the time of the invention, there was no conventional way to add other forms of interpersonal real-time two-way communication, such as video conferencing, instant messaging, PC-

based application sharing, desktop display sharing, whiteboard sharing, networked gaming, and co-browsing, to a currently existing phone call. Exhibit F at col. 1:53-65. Enhancing phone calls was cumbersome and not practical since it required the use of separate software solutions lacking features for ad-hoc spontaneous call enhancement. *See id. See also id.* at 2:48-51. Further, the collaboration setup process involved many manual steps, such as performing session signaling twice—first using phones and phone numbers, then using PC based collaboration application and its proprietary session signaling and addressing. *Id.* at 2:51-58. These drawbacks diminished both usefulness and accessibility of an enhanced phone-based collaboration. *Id.* at 2:48-62.

25. The invention of the '883 Patent provides end users with an easy and convenient way to augment phone conversions with other forms of communication and collaboration. *Id.* at 1:39-41, 2:67-3:3. Further, the invention of the '883 patent provides telephone service providers with an opportunity to expand their offering of value added services. *Id.* at 3:3-5.

26. CommWorks is the assignee and owner of the right, title, and interest in and to the Patents-in-Suit, including the right to assert all causes of action arising under said patents and the right to any remedies for infringement of them.

### **NOTICE**

27. By letter and email dated February 21, 2020, CommWorks notified Comcast of the existence of the Patents-in-Suit and invited Comcast to hold a licensing discussion.

28. By letter and email dated April 17, 2020, CommWorks notified Comcast that it infringes at least the '249 Patent, '465 Patent, '285 Patent, and '664 Patent, identified exemplary infringed claims and infringing Comcast products and services, and invited Comcast to hold a licensing discussion with CommWorks.

29. By letter dated April 22, 2020, Comcast requested additional information as to the CommWorks patents.



30. By email dated April 27, 2020, CommWorks again sent its April 17, 2020 letter to Comcast.

31. By letter and email dated May 8, 2020, CommWorks notified Comcast that it infringes at least the '846 Patent and the '883 Patent, identified exemplary infringed claims and infringing Comcast products and services, and again invited Comcast to hold a licensing discussion with CommWorks.

32. By letter dated June 10, 2020, Comcast requested additional information as to patents described in CommWorks' April 17, 2020 and May 8, 2020 letters.

33. By email dated August 26, 2020, CommWorks supplied Comcast with exemplary claim charts for each of the Patents-in-Suit.

**COUNT I: INFRINGEMENT OF THE '249 PATENT BY COMCAST**

34. Plaintiff incorporates the preceding paragraphs as if fully set forth herein.

35. On information and belief, Comcast has infringed the '249 Patent, pursuant to 35 U.S.C. § 271(a), literally or under the doctrine of equivalents, by providing services to its customers that make, use, offer to sell, sell in the United States or import into the United States the Ciena devices that run Service Aware Operating System (SAOS), as well as Juniper devices running Junos OS, and other equipment utilizing substantially similar methods of providing broadband communications over a multi-layered network used by Comcast to provide services to its customers ("Accused Products and Services").

36. For example, on information and belief, Comcast has infringed and continues to infringe at least claim 11 of the '249 Patent by making, using, offering to sell, selling, and/or importing the Accused Products and Services, which perform a method for providing broadband communications over a multi-layered network having a plurality of Open System Interconnection (OSI) reference model layers functioning therein. *See* Ex. 1 (showing "Comcast

is using equipment from ... Juniper Networks and Ciena” including “Juniper’s T Series Core Routers, MX Series Universal Edge Routers and EX Series Ethernet Switches, as well as Ciena’s LE-311v”); Ex. 2 (showing Comcast Business is a partner of Ciena); Ex. 3 (showing “Comcast deployed Juniper Networks(R) T Series Core Routers, MX Series Universal Edge Routers and EX Series Ethernet Switches ...”); Exs. 4-6 (showing that Ciena devices running Service-Aware Operating Systems (SAOS), including the Ciena LE-311v and Ciena 6500 platform, facilitate broadband communications over an OSI model multi-layered network, e.g., a network having at least OSI model layers 2 and 3, and have MPLS Fast Reroute functionality as standardized in IETF RFC 4090); Ex. 7 (showing that Juniper devices running Junos OS facilitate broadband communications over an OSI model multi-layered network, e.g., a network having at least OSI model layers 2 and 3, and have MPLS Fast Reroute functionality as standardized in IETF RFC 4090). The method of providing broadband communications over a multi-layered network of each of the Accused Products and Services comprises monitoring at least one OSI reference model layer functioning in the multi-layered network. *See* Ex. 8 (showing that Ciena devices and Junos OS devices with MPLS Fast Reroute monitor and detect a failure of a node and/or link associated with the Internet Protocol (IP) layer, *i.e.*, OSI model layer 3, in the communications network). The method of providing broadband communications over a multi-layered network of each of the Accused Products and Services further comprises determining that a quality of service event has occurred in the multi-layered network. *See* Ex. 8 (showing that Ciena devices and Junos OS devices with MPLS Fast Reroute determine the occurrence of a quality of service event, *i.e.*, a failure condition, such as packet loss and/or latency, of a node and/or link associated with an IP address, thereby affecting network quality of service with particular effect on the quality of real time application services). The method of providing broadband communications

over a multi-layered network of each of the Accused Products and Services further comprises determining that the quality of service event occurred at a layer N in the OSI reference model. *See Ex. 8* (showing that Ciena devices and Junos OS devices with MPLS Fast Reroute determine that a node and/or link associated with an IP address has failed in OSI model layer 3 thereby affecting network quality of service). The method of providing broadband communications over a multi-layered network of each of the Accused Products and Services further comprises responding to the quality of service event in the multi-layered network by changing network provisioning at a layer less than N. *See Ex. 8* (showing that Ciena devices and Junos OS devices with MPLS Fast Reroute respond to the quality of service event by changing the provisioning of the data traffic path at OSI model layer 2 which is less than OSI model layer 3 by switching the routing of packets to a pre-established backup LSP detour using a one-to-one backup method and/or backup LSP tunnel using a facility backup method). The method of providing broadband communications over a multi-layered network of each of the Accused Products and Services further comprises signaling that the network provisioning at the layer less than N has been changed. *See Ex. 8* (showing that Ciena devices and Junos OS devices with MPLS Fast Reroute send messages and/or notifications signaling that the data traffic path has changed to the backup LSP tunnel at OSI model layer 2).

37. On information and belief, Comcast has induced infringement of the '249 Patent pursuant to 35 U.S.C. § 271(b), by actively and knowingly inducing, directing, causing, and encouraging others, including, but not limited to, its partners, customers, and end users, to use, sell, and/or offer to sell in the United States, and/or import into the United States, the Accused Products and Services by, among other things, providing the Accused Products and Services, specifications, instructions, manuals, advertisements, marketing materials, and technical assistance relating to

the installation, set up, use, operation, and maintenance of said products. *See* ¶ 26 above (explaining that CommWorks notified Comcast of infringement by notice letter dated April 17, 2020); Ex. 1 (showing “Comcast is using equipment from ... Juniper Networks and Ciena” including “Juniper’s T Series Core Routers, MX Series Universal Edge Routers and EX Series Ethernet Switches, as well as Ciena’s LE-311v”); Ex. 2 (showing Comcast Business is a partner of Ciena); Ex. 3 (showing “Comcast deployed Juniper Networks(R) T Series Core Routers, MX Series Universal Edge Routers and EX Series Ethernet Switches ...”); Exs. 4-6 (showing that Ciena devices running Service-Aware Operating Systems (SAOS), including the Ciena LE-311v and Ciena 6500 platform, facilitate broadband communications over an OSI model multi-layered network, e.g., a network having at least OSI model layers 2 and 3, and have MPLS Fast Reroute functionality as standardized in IETF RFC 4090); Ex. 7 (showing that Juniper devices running Junos OS facilitate broadband communications over an OSI model multi-layered network, e.g., a network having at least OSI model layers 2 and 3, and have MPLS Fast Reroute functionality as standardized in IETF RFC 4090).

38. On information and belief, Comcast has committed the foregoing infringing activities without a license.

39. On information and belief, Comcast knew the ’249 Patent existed and knew of exemplary infringing Comcast products and services while committing the foregoing infringing acts thereby willfully, wantonly and deliberately infringing the ’249 Patent.

#### **COUNT II: INFRINGEMENT OF THE ’465 PATENT BY COMCAST**

40. Plaintiff incorporates the preceding paragraphs as if fully set forth herein.

41. On information and belief, Comcast has infringed the ’465 Patent pursuant to 35 U.S.C. § 271(a), literally or under the doctrine of equivalents, by making, using, offering for sale, selling, and/or importing into the United States Wi-Fi enabled modems and routers and Wi-Fi services,

such as, for example, the Xfinity xFi Fiber Gateway (included in the “Accused Products and Services”).

42. For example, on information and belief, Comcast has infringed at least claim 1 of the '465 Patent by making, using, offering to sell, selling, and/or importing the Accused Products and Services, which perform a method for detecting priority of data frames in a network. *See* Ex. 9 (showing that “Xfinity Internet customer[s] ... have the option to rent an Xfinity xFi Gateway”); Ex. 10 (showing the routers Comcast offers to its subscribers including the Xfinity xFi Fiber Gateway (“Model Numbers: Arris X5001”)); Ex. 11 (showing the Arris X5001 router (Xfinity xFi Fiber Gateway) supports Wi-Fi Multimedia (“WMM”)); Ex. 12 (showing that Comcast’s WMM compatible Access Points, such as the exemplary Xfinity xFi Fiber Gateway, detect the priority of data frames in a network by mapping to the Access Category (“AC”) of the Enhanced Distributed Channel Access (“EDCA”) mechanism); *see also* Ex. 13 (showing another example in which Comcast’s 802.11-2007+ compliant Access Points detect priority data frames in a network by mapping the AC of the EDCA mechanism). The method for detecting priority of data frames comprises the step of extracting a bit pattern from a predetermined position in a frame. *See* Ex. 12 (showing, for example, that in Wi-Fi enabled modems and routers, Comcast’s WMM compatible Access Points extract a bit pattern from a predetermined position in a data frame, such as in the QoS Control field); Ex. 13 (showing, for example, that in Wi-Fi enabled modems and routers, Comcast’s 802.11-2007+ compatible Access Points extract a bit pattern from a predetermined position in a data frame, such as in the QoS Control field). The method for detecting priority of data frames further comprises the step of comparing said extracted bit pattern with a search pattern. *See* Ex. 12 (showing, for example, that Comcast’s WMM compatible Access Points compare the extracted UP bit pattern with a search pattern, such as the

Access Category (“AC”)); Ex. 13 (showing, for example, that Comcast’s 802.11-2007+ compatible Access Points compare the extracted TID bit pattern User Priority (“UP”) with the Access Category (“AC”) search pattern). The method for detecting priority of data frames further comprises the step of identifying a received frame as a priority frame in case said extracted bit pattern matches with said search pattern. *See* Ex. 12 (showing, for example, that Comcast’s WMM compatible Access Points identify the priority Access Category (“AC”) of the WMM Data frame if the UP of said frame matches an AC search pattern); Ex. 13 (showing, for example, that Comcast’s 802.11-2007+ compatible Access Points identify the priority Access Category (“AC”) of the data frame if the TID UP bit pattern matches an AC search pattern). In the method for detecting priority of data frames, the predetermined position in said frame is defined by the offset of said bit pattern in said frame. *See* Ex. 12 (showing, for example, Comcast’s WMM compatible Access Points predetermine the position of the bit pattern by inspecting the Frame Control field to anticipate which non-minimal field has data present in the frame MAC Header so the offset of the UP bit pattern can be determined); Ex. 13 (showing, for example, Comcast’s 802.11-2007+ compatible Access Points predetermine the position of the bit pattern by inspecting the Frame Control field to anticipate which non-minimal field has data present in the frame MAC Header so the offset of the TID bit pattern can be determined).

43. On information and belief, Comcast has induced infringement of the ’465 Patent pursuant to 35 U.S.C. § 271(b), by actively and knowingly inducing, directing, causing, and encouraging others, including, but not limited to, its partners, customers, and end users, to use, sell, and/or offer to sell in the United States, and/or import into the United States, the Accused Products and Services by, among other things, providing the Accused Products and Services, specifications, instructions, manuals, advertisements, marketing materials, and technical assistance relating to

the installation, set up, use, operation, and maintenance of said products. *See* ¶ 26 above (explaining that CommWorks notified Comcast of infringement by notice letter dated April 17, 2020); Ex. 9 (showing that “Xfinity Internet customer[s] ... have the option to rent an Xfinity xFi Gateway”); Ex. 10 (showing the routers Comcast offers to its subscribers including the Xfinity xFi Fiber Gateway (“Model Numbers: Arris X5001”)); Ex. 11 (showing the Arris X5001 router (Xfinity xFi Fiber Gateway) supports Wi-Fi Multimedia (“WMM”)).

44. On information and belief, Comcast has committed the foregoing infringing activities without a license.

45. On information and belief, Comcast knew the ’465 Patent existed and knew of exemplary infringing Comcast products and services while committing the foregoing infringing acts thereby willfully, wantonly and deliberately infringing the ’465 Patent.

**COUNT III: INFRINGEMENT OF THE ’285 PATENT BY COMCAST**

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

47. On information and belief, Comcast has infringed the ’285 Patent pursuant to 35 U.S.C. § 271(a), literally or under the doctrine of equivalents, by making, using, offering for sale, selling, and/or importing into the United States Wi-Fi enabled modems and routers and Wi-Fi services, such as, for example, the Xfinity xFi Wireless Gateway (included in the “Accused Products and Services”).

48. For example, on information and belief, Comcast has infringed and continues to infringe at least claim 1 of the ’285 Patent by making, using, offering to sell, selling, and/or importing the Accused Products and Services, which perform a process for provisioning between a wireless device and a network. *See* Ex. 9 (showing that “Xfinity Internet customer[s] ... have the option to rent an Xfinity xFi Gateway”); Ex. 10 (showing the routers Comcast offers to its subscribers including the Xfinity xFi Gateway (“Model Numbers: ... TG1682G”)); Ex. 14 (showing the

Xfinity xFi Gateway supports “WPS (WiFi Protected Setup)”); Ex. 15 (showing the Xfinity TG1682 (Xfinity xFi Gateway) has a “WPS button”); Ex. 16 (showing that Comcast’s WPS access points perform a process for provisioning between a wireless device and a network, such as a WLAN). The process for provisioning comprises the step of tracking an operating parameter of the wireless device within a service area, wherein the operating parameter of the wireless device comprises an onset of a signal transmission of the wireless device. *See* Ex. 16 (showing that, for example, WPS access points monitors Probe Request {WSC IE, PBC}, wherein said Probe Requests include an onset of a signal transmission and PBC operating parameter in the onset signal Probe Request {WSC IE PBC} transmitted from an in range wireless device (enrollee) seeking access to the network). The process for provisioning further comprises the step of initiating provisioning of the wireless device if the tracked operating parameter occurs within a time interval. *See* Ex. 16 (showing that, for example, WPS access points initiate provisioning of the wireless device if the tracked operating parameter (transmission of signal seeking access) occurs within the 120-second time period (“Walk Time”).

49. On information and belief, Comcast has induced infringement of the ’285 Patent pursuant to 35 U.S.C. § 271(b), by actively and knowingly inducing, directing, causing, and encouraging others, including, but not limited to, its partners, customers, and end users, to use, sell, and/or offer to sell in the United States, and/or import into the United States, the Accused Products and Services by, among other things, providing the Accused Products and Services, specifications, instructions, manuals, advertisements, marketing materials, and technical assistance relating to the installation, set up, use, operation, and maintenance of said products. *See* ¶ 26 above (explaining that CommWorks notified Comcast of infringement by notice letter dated April 17,



2020); Ex. 9 (showing that “Xfinity Internet customer[s] ... have the option to rent an Xfinity xFi Gateway”); Ex. 10 (showing the routers Comcast offers to its subscribers including the Xfinity xFi Gateway (“Model Numbers: ... TG1682G”)); Ex. 14 (showing the Xfinity xFi Gateway supports “WPS (WiFi Protected Setup)”); Ex. 15 (showing the Xfinity TG1682 (Xfinity xFi Gateway) has a “WPS button”).

50. On information and belief, Comcast has committed the foregoing infringing activities without a license.

51. On information and belief, Comcast knew the ’285 Patent existed and knew of exemplary infringing Comcast products and services while committing the foregoing infringing acts thereby willfully, wantonly and deliberately infringing the ’285 Patent.

**COUNT IV: INFRINGEMENT OF THE ’664 PATENT BY COMCAST**

52. Plaintiff incorporates the preceding paragraphs as if fully set forth herein.

53. On information and belief, Comcast has infringed the ’664 Patent pursuant to 35 U.S.C. § 271(a), literally or under the doctrine of equivalents, by providing services to its customers that make, use, offer to sell, sell in the United States or import into the United States the Ciena Blue Planet Manage, Control and Plan platform, as well as the Juniper Contrail platform, and all other equipment utilizing substantially similar methods of routing traffic used by Comcast to provide services to its customers (“Accused Products and Services”).

54. For example, on information and belief, Comcast has infringed and continues to infringe at least claim 7 of the ’664 Patent by making, using, offering to sell, selling, and/or importing the Accused Products and Services, which perform a method for routing network traffic between a first network and a second network, each of the of the networks comprising a plurality of network elements. *See* Ex. 1 (showing “Comcast is using equipment from ... Juniper Networks and Ciena” including “Juniper’s T Series Core Routers, MX Series Universal Edge Routers and

EX Series Ethernet Switches, as well as Ciena's LE-311v"); Ex. 2 (showing Comcast Business is a partner of Ciena); Ex. 3 (showing "Comcast deployed Juniper Networks(R) T Series Core Routers, MX Series Universal Edge Routers and EX Series Ethernet Switches ..."); Ex. 17 (showing that Ciena's Blue Planet Manage, Control and Plan (MCP) network configuration management system routes network traffic between two networks wherein each network comprises a plurality of network elements that are connected by a digital cross connect, such as an Multiprotocol Label Switching (MPLS) Tunnel and/or an Ethernet [Virtual] Private Line (EPL/EVPL) Service); Exs. 18-21 (showing that Juniper Contrail Network configures and monitors network traffic between networks and network elements using a digital cross connection, e.g., VXLAN). The plurality of network elements of the Accused Products and Services are connected by a digital cross connect. *See* Exs. 17-21. The method for routing network traffic of each of the Accused Products and Services comprises the step of determining, with a network configuration management system, the interconnections created by said digital cross connect between at least two network elements in said plurality of network elements. *See* Ex. 17 (showing that Ciena's Blue Planet MCP network configuration management system configures MPLS Tunnels-and/or EPL/EVPL Services between at least two network elements, e.g., Ciena 5150, 8700, and/or 3930 devices, which includes determining the interconnections between the network elements); Exs. 20-21 (showing that Juniper Contrail determines and/or configures digital cross connections between network elements in different networks using VXLAN tunneling). The method for routing network traffic of each of the Accused Products and Services further comprises representing each of said interconnections as a link between said at least two network elements. *See* Ex. 17 (showing that Ciena's Blue Planet represents the MPLS tunnel as a link between network elements, for example, the Ciena 8700-1 device on the

first network and the Ciena 8700-3 device on the second network); Exs. 20 and 22 (showing that Juniper Contrail represents the interconnections between the network elements as a link (VXLAN tunnel)). The method for routing network traffic of each of the Accused Products and Services further comprises storing a status of each of said interconnections in a cross connection status database, wherein the status indicates whether a cross-connection using said digital cross connect was successfully provisioned. *See* Ex. 17 (showing that Ciena's Blue Planet stores and displays the status, e.g., operational status, of the MPLS tunnel and/or EPL/EVPL service including whether the cross connection was successfully provisioned); Ex. 22 (showing that Juniper Contrail stores the status, e.g., connection status, the VXLAN tunnel between networking elements in different networks).

55. On information and belief, Comcast has induced infringement of the '664 Patent pursuant to 35 U.S.C. § 271(b), by actively and knowingly inducing, directing, causing, and encouraging others, including, but not limited to, its partners, customers, and end users, to use, sell, and/or offer to sell in the United States, and/or import into the United States, the Accused Products and Services by, among other things, providing the Accused Products and Services, specifications, instructions, manuals, advertisements, marketing materials, and technical assistance relating to the installation, set up, use, operation, and maintenance of said products. *See* ¶ 26 above (explaining that CommWorks notified Comcast of infringement by notice letter dated April 17, 2020); Ex. 1 (showing "Comcast is using equipment from ... Juniper Networks and Ciena" including "Juniper's T Series Core Routers, MX Series Universal Edge Routers and EX Series Ethernet Switches, as well as Ciena's LE-311v"); Ex. 2 (showing Comcast Business is a partner of Ciena); Ex. 3 (showing "Comcast deployed Juniper Networks(R) T Series Core Routers, MX Series Universal Edge Routers and EX Series Ethernet Switches ..."); Ex. 17 (showing that

Ciena's Blue Planet Manage, Control and Plan (MCP) network configuration management system routes network traffic between two networks wherein each network comprises a plurality of network elements that are connected by a digital cross connect, such as an Multiprotocol Label Switching (MPLS) Tunnel and/or an Ethernet [Virtual] Private Line (EPL/EVPL Service); Exs. 18-21 (showing that Juniper Contrail Network configures and monitors network traffic between networks and network elements using a digital cross connection, e.g., VXLAN).

56. On information and belief, Comcast has committed the foregoing infringing activities without a license.

57. On information and belief, Comcast knew the '664 Patent existed and knew of exemplary infringing Comcast products and services while committing the foregoing infringing acts thereby willfully, wantonly and deliberately infringing the '664 Patent.

**COUNT V: INFRINGEMENT OF THE '846 PATENT BY COMCAST**

58. Plaintiff incorporates the preceding paragraphs as if fully set forth herein.

59. On information and belief, Comcast has infringed the '846 Patent pursuant to 35 U.S.C. § 271(a), literally or under the doctrine of equivalents, by providing services to its customers that make, use, offer to sell, sell in the United States or import into the United States equipment utilizing methods for recovering location information of a subscriber in a mobile network used by Comcast to provide services to its customers ("Accused Products and Services").

60. For example, on information and belief, Comcast has infringed at least claim 1 of the '846 Patent by making, using, offering to sell, selling, and/or importing the Accused Products and Services, which perform a method comprising receiving, from a first server at a second server, a transport address and an address of the first server. *See* Ex. 23 (showing Comcast, under the Xfinity Mobile brand, provides 4G LTE mobile broadband Internet access services to its customers); Exs. 24-29 (showing Comcast receives a Cx-Put/Cx-Pull message and/or S-CSCF

Restoration Information message containing a User Equipment's (UE) Public User Identity which contains a transport address, *e.g.*, SIP URL address, tel URL address, and/or Contact Address, and the Serving Call Session Control Function (S-CSCF) name/address from the S-CSCF at a Home Subscriber Server (HSS)). Comcast further receives, at the second server, a request from the first server to restore the transport address. *See* Exs. 25-27 and 29-30 (showing Comcast receives at the HSS from the S-CSCF a request, *e.g.*, a SAR message, to restore the user data, including the UE's SIP URL or tel URL, after a S-CSCF restart). Comcast, in response to the request from the first server to restore the transport address, communicates the transport address to the first server from the second server. *See* Ex. 25-27 and 29-30 (showing Comcast sends to the S-CSCF from the HSS the subscriber UE's user data, including the user's transport address, *e.g.*, SIP URL or tel URL).

61. On information and belief, Comcast has induced infringement of the '846 Patent pursuant to 35 U.S.C. § 271(b), by actively and knowingly inducing, directing, causing, and encouraging others, including, but not limited to, its partners, customers, and end users, to use, sell, and/or offer to sell in the United States, and/or import into the United States, the Accused Products and Services by, among other things, providing the Accused Products and Services, specifications, instructions, manuals, advertisements, marketing materials, and technical assistance relating to the installation, set up, use, operation, and maintenance of said products. *See* ¶¶ 28 and 31 above (explaining that CommWorks notified Comcast of infringement by notice letters dated April 17, 2020, and May 8, 2020); Ex. 23 (showing Comcast, under the Xfinity Mobile brand, provides 4G LTE mobile broadband Internet access services to its customers).

62. On information and belief, Comcast has committed the foregoing infringing activities without a license.

63. On information and belief, Comcast knew the '846 Patent existed and knew of exemplary infringing Comcast products and services while committing the foregoing infringing acts thereby willfully, wantonly and deliberately infringing the '846 Patent.

**COUNT VI: INFRINGEMENT OF THE '883 PATENT BY COMCAST**

64. Plaintiff incorporates the preceding paragraphs as if fully set forth herein.

65. On information and belief, Comcast has infringed the '883 Patent pursuant to 35 U.S.C. § 271(a), literally or under the doctrine of equivalents, by providing services to its customers that make, use, offer to sell, sell in the United States or import into the United States equipment utilizing methods for transitioning from an existing telephone call to a real-time collaboration session in a system including a telephone network for establishing connections between users and a data network for establishing data sharing sessions between said users used by Comcast to provide services to its customers (“Accused Products and Services”).

66. For example, on information and belief, Comcast has infringed and continues to infringe at least claim 1 of the '883 Patent by making, using, offering to sell, selling, and/or importing the Accused Products and Services, which perform a method for transitioning from an existing telephone call to a real-time collaboration session in a system including a telephone network for establishing connections between users and a data network for establishing data sharing sessions between said users, each of said users having an associated user access and presentation device, said data network including an enhanced phone based collaboration (EPC) application, and at least one of said users subscribing to said enhanced phone based collaboration application. *See* Ex. 23 (showing Comcast, under the Xfinity Mobile brand, provides 4G LTE mobile broadband Internet access services to its customers); Ex. 31 (showing Xfinity Mobile support Voice over LTE (VoLTE)); Ex. 32 (showing Xfinity Mobile supports video calling on at least Android devices); Exs. 33-34 (showing a control button to add video to an existing telephone call). The

method comprises, responsive to said one user on an existing telephone call clicking on a control button on said user's associated device, a server in a telephone network invoking the operation of said EPC application to cause said enhanced phone based collaboration to add the collaboration session to the existing telephone call between said users without the users exchanging collaboration session identifiers. *See* Ex. 23 (showing Comcast, under the Xfinity Mobile brand, provides 4G LTE mobile broadband Internet access services to its customers); Ex. 31 (showing Xfinity Mobile support Voice over LTE (VoLTE)); Ex. 32 (showing Xfinity Mobile supports video calling on at least Android devices); Exs. 33-34 (showing a control button to add video to an existing telephone call); Ex. 35 (showing the multimedia session flow of adding another media type to the already existing voice call session); Ex. 36 (showing the Session Description Protocol (SDP) messages use the already established voice call session ID).

67. On information and belief, Comcast has induced infringement of the '883 Patent pursuant to 35 U.S.C. § 271(b), by actively and knowingly inducing, directing, causing, and encouraging others, including, but not limited to, its partners, customers, and end users, to use, sell, and/or offer to sell in the United States, and/or import into the United States, the Accused Products and Services by, among other things, providing the Accused Products and Services, specifications, instructions, manuals, advertisements, marketing materials, and technical assistance relating to the installation, set up, use, operation, and maintenance of said products. *See* ¶¶ 28 and 31 above (explaining that CommWorks notified Comcast of infringement by notice letters dated April 17, 2020, and May 8, 2020); Ex. 23 (showing Comcast, under the Xfinity Mobile brand, provides 4G LTE mobile broadband Internet access services to its customers); Ex. 31 (showing Xfinity Mobile support Voice over LTE (VoLTE)); Ex. 32 (showing Xfinity Mobile supports video calling on at least Android devices); Exs. 33-34 (showing an active telephone call can be

converted into a video call with the click of a button).

68. On information and belief, Comcast has committed the foregoing infringing activities without a license.

69. On information and belief, Comcast knew the '883 Patent existed and knew of exemplary infringing Comcast products and services while committing the foregoing infringing acts thereby willfully, wantonly and deliberately infringing the '883 Patent.

**PRAYER FOR RELIEF**

WHEREFORE, CommWorks prays for judgment in its favor against Comcast for the following relief:

- A. Entry of judgment in favor of CommWorks against Comcast on all counts;
- B. Entry of judgment that Comcast has infringed the Patents-in-Suit;
- C. Entry of judgment that Comcast's infringement of the Patents-in-Suit has been willful;
- D. An order permanently enjoining Comcast from infringing the Patents-in-Suit;
- E. Award of compensatory damages adequate to compensate CommWorks for Comcast's infringement of the Patents-in-Suit, in no event less than a reasonable royalty trebled as provided by 35 U.S.C. § 284;
- F. Award of reasonable attorneys' fees and expenses against Comcast pursuant to 35 U.S.C. § 285;
- G. CommWorks' costs;
- H. Pre-judgment and post-judgment interest on CommWorks' award; and
- I. All such other and further relief as the Court deems just or equitable.



**DEMAND FOR JURY TRIAL**

Pursuant to Rule 38 of the Fed. R. Civ. Proc., Plaintiff hereby demands trial by jury in this action of all claims so triable.

Dated: April 15, 2021

Respectfully submitted,

/s/ Stafford Davis

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