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Core Optical Technologies, LLC

UNITED STATES DISTRICT COURT

CENTRAL DISTRICT OF CALIFORNIA

WESTERN DIVISION

CORE OPTICAL TECHNOLOGIES, LLC,

Plaintiff,

v.

COMCAST CORPORATION, a Pennsylvania corporation, CENTURYTEL SERVICE GROUP, LLC, a Louisiana limited liability company, QWEST CORPORATION D/B/A CENTURYLINK QC, a Colorado corporation, BTE EQUIPMENT, LLC, a Delaware limited liability company, GOOGLE, LLC, a Delaware limited liability company, ZAYO GROUP, LLC, a Delaware limited liability company, APPLE, INC., a California corporation, COX COMMUNICATIONS, INC, a Delaware corporation, ALCATEL SUBMARINE NETWORKS SAS, a French *société par actions simplifiée*, and DOES 1-10,

Defendants.

CASE NO: 8:21-cv-00046-JAK-RAO

THIRD AMENDED COMPLAINT FOR PATENT INFRINGEMENT

JURY TRIAL DEMANDED

Plaintiff Core Optical Technologies, LLC ("Plaintiff" or "Core"), through its undersigned counsel, hereby files this Complaint against Defendants Comcast Corporation ("Comcast"), CenturyTel Service Group, LLC ("CenturyTel"), Qwest Corporation d/b/a CenturyLink QC ("Qwest"), BTE Equipment, LLC ("BTE"), Google, LLC ("Google"), Zayo Group, LLC ("Zayo"), Apple, Inc. ("Apple"), Cox Communications, Inc. ("Cox"), Alcatel Submarine Networks SAS ("ASN"), and DOES 1-10 (collectively, "Defendants"). For its complaint, Core alleges as follows:

THE PARTIES

1. Core is a limited liability company organized and existing under the laws of the state of California. Core has a principal place of business at 18792 Via Palatino, Irvine, California 92603.

2. Defendant Comcast is a corporation organized and existing under the laws of the state of Pennsylvania, with a principal place of business at 1701 JFK Boulevard, Philadelphia, PA 19103.

3. Defendant CenturyTel is a limited liability company organized and existing under the laws of Louisiana, with a principal place of business at 100 CenturyLink Drive, Monroe, LA 71203.

4. Defendant Qwest is a corporation organized and existing under the laws of the state of Colorado, with a principal place of business at 100 CenturyLink Drive, Monroe, LA 71203.

5. Defendant BTE is a limited liability company organized and existing under the laws of the state of Delaware, with a principal place of business at 100 CenturyLink Drive, Monroe, LA 71203.

6. Defendant Google is a limited liability company organized and existing under the laws of the state of Delaware, with a principal place of business at 1600 Amphitheatre Parkway, Mountain View, CA 94043.

7. Defendant Zayo is a limited liability company organized and existing

under the laws of the state of Delaware, with a principal place of business at 1821 30th Street, Unit A, Boulder, CO 80301.

8. Defendant Cox is a corporation organized and existing under the laws of the state of Delaware, with a principal place of business at 6205-B Peachtree Dunwoody Road NE, Atlanta, GA 30328.

9. ASN is a *société par actions simplifiée* existing under the laws of France, with a principal place of business at 7 Route de Villejust, 91620 Nozay, France.

10. Defendant Apple is a corporation organized and existing under the laws of the state of California, with a principal place of business at One Apple Park Way, Cupertino, CA 95014.

11. Defendants DOES 1-10 are corporate affiliates of Comcast, CenturyTel, Qwest, BTE, Google, Zayo, Cox, Apple and/or ASN, who participated in the infringing acts complained of herein. The identities of DOES 1-10 are currently unknown, because publicly-available information does not permit the identification of each affiliate who participated in the infringing acts. Core expects the identities of DOES to be revealed in discovery. Core reserves the right to amend this Complaint to name each DOE once their identities have been revealed.

JURISDICTION

12. This is an action for infringement of method claims, and *only* method claims, of U.S. Patent No. 6,782,211, entitled "Cross Polarization Interface [sic] Canceler," which was duly issued by the United States Patent and Trademark Office on August 24, 2004 ("the '211 patent"). The asserted claims in this case are *only* method claims 30, 32, 33, 35 and 37 of the '211 patent ("the Asserted Claims"). A copy of the '211 patent is attached as Exhibit 1 to this Complaint.

13. This Court has subject matter jurisdiction over this case under 28 U.S.C. §§ 1331 and 1338(a), because the claims arise under the patent laws of the United States, 35 U.S.C. §§ 1, *et seq*.

14. This Court has personal jurisdiction over each Defendant, because:

Comcast

15. This Court has general personal jurisdiction over Comcast because Comcast conducts systematic and regular business within the state of California. Comcast employs over 5,000 people in California, and provides telecommunication services to millions of customers within California. *See* https://california.comcast.com/about/#:~:text=Comcast%20is%20deeply%20committed%20to,smart%20home%E2%80%9D%20and%20phone%20service ("Comcast is deeply committed to California, where our nearly 5,000 employees serve more than 3 million customers throughout the state.") Comcast also maintains at least a dozen regular places of business within the state of California, including, on information and belief, corporate offices, service centers, and retail outlets. This systematic and regular business subjects Comcast to general personal jurisdiction in California.

16. This Court also has specific personal jurisdiction over Comcast because, on information and belief, Comcast has directly infringed the Asserted Claims by using the Accused Instrumentalities (as defined below) within California, and within this judicial district. On information and belief, Comcast has used the Accused Instrumentalities to provide telecommunication and other services to individuals and businesses within California, and within this judicial district. For the reasons set forth below, such use constitutes infringement of the Asserted Claims. Thus, Comcast is subject to specific personal jurisdiction in this district, because it has committed acts of infringement in California, and Core's claims arise out of such infringement.

The CenturyLink Defendants

17. Defendants CenturyTel, Qwest, and BTE (herein, the "CenturyLink Defendants") are all subsidiaries of CenturyLink, Inc., a Louisiana Corporation. This Court has general personal jurisdiction over the CenturyLink Defendants because they conduct regular and systematic business within the state of California. On information and belief, the CenturyLink Defendants own and operate multiple commercial data centers within California, including in Burbank, Irvine, Los Angeles, Sacramento,

San Diego, San Francisco, Santa Clara, and Sunnyvale. The CenturyLink Defendants also maintain regular and established places of business at, at least, the following locations in California: (i) 14452 Franklin Ave, Tustin, CA 92780; (ii) 7 Mason, Irvine, CA 92618; (iii) 1550 Marlborough Ave #100, Riverside, CA 92507; (iv) 2461 W La Palma Ave, Anaheim, CA 92801; (v) 818 7th St #510, Los Angeles, CA 90017; (vi) 7576 N Del Mar Ave, Fresno, CA 93711; (vii) 305 W Napa Ave, Fresno, CA 93706; (viii) 1340 Treat Blvd #100, Walnut Creek, CA 94597; (ix) 1 California St #250, San Francisco, CA 94111; (x) 23965 Connecticut St, Hayward, CA 94545; and (xi) 2953 Bunker Hill Ln #202, Santa Clara, CA 95054. The CenturyLink Defendants' regular and systematic business in California, including their operation of the foregoing places of business, subjects them to general personal jurisdiction.

18. This Court also has specific personal jurisdiction over the CenturyLink Defendants because, on information and belief, they have directly infringed the Asserted Claims by using the Accused Instrumentalities (as defined below) in California, and in this judicial district. On information and belief, the CenturyLink Defendants have used the Accused Instrumentalities to provide telecommunication and other services to persons in California, and within this judicial district, including at the facilities listed above. For the reasons set forth below, such use constitutes direct infringement of the Asserted Claims. Thus, the CenturyLink Defendants are subject to specific personal jurisdiction in this district, because they have committed acts of infringement in California, and Core's claims arise out of such infringement.

Google

19. This Court has general personal jurisdiction over Google because: (i) Google is incorporated in the state of California; and (ii) Google has its principal place of business in California, at 1600 Amphitheatre Parkway, Mountain View, CA.

20. This Court also has specific personal jurisdiction over Google because, on information and belief, Google has directly infringed the Asserted Claims by using the Accused Instrumentalities (as defined below) within California, including within

this judicial district. On information and belief, Google has used the Accused Instrumentalities to provide data and services to individuals and businesses within California, and within this judicial district. For the reasons set forth below, such use directly infringes the Asserted Claims. Thus, Google is subject to specific personal jurisdiction in this district, because it has committed acts of infringement in California, and because Core's claims arise out of such infringement.

Zayo

21. This Court has general personal jurisdiction over Zayo because Zayo conducts regular and systematic business within California. Zayo maintains regular and established places of business at, at least, the following locations within California: (i) 9606 Aero Dr #1900, San Diego, CA 92123; (ii) 12270 World Trade Dr #100, San Diego, CA 92128; (iii) 17400 Von Karman Ave, Irvine, CA 92614; (iv) 707 Wilshire Blvd # 4850, Los Angeles, CA 90017; (v) 5101 Lafayette St, Santa Clara, CA 95054; and (vi) 501 2nd St #400, San Francisco, CA 94107. Zayo's regular and systematic business in California, including its operation of the foregoing regular and established places of business, subjects it to general personal jurisdiction here.

22. This Court also has specific personal jurisdiction over Zayo because, on information and belief, Zayo has directly infringed the Asserted Claims by using the Accused Instrumentalities (as defined below) within California, including within this judicial district. On information and belief, Zayo has used the Accused Instrumentalities to provide telecommunication and other services to individuals and businesses within California, and within this judicial district, including at the facilities identified above. For the reasons set forth below, such use constitutes direct infringement of the Asserted Claims. Thus, Zayo is subject to specific personal jurisdiction in this district, because it has committed acts of infringement within California, and because Core's claims arise out of such infringement.

Cox

23. This Court has general personal jurisdiction over Cox because Cox

conducts systematic and regular business within the state of California. On information and belief, Cox provides telecommunication services to millions of customers within California. Cox also maintains at least a dozen regular and established places of business within the state of California, including, on information and belief, corporate offices, service centers, and retail outlets. This systematic and regular business subjects Cox to general personal jurisdiction in California.

24. This Court also has specific personal jurisdiction over Cox because, on information and belief, Cox has directly infringed the Asserted Claims by using the Accused Instrumentalities (as defined below) within California, including within this judicial district. On information and belief, Cox has used the Accused Instrumentalities to provide telecommunication and other services to individuals and businesses within California, and within this judicial district. For the reasons set forth below, such use constitutes infringement of the Asserted Claims. Thus, Cox is subject to specific personal jurisdiction in this district, because it has committed acts of infringement in California, and because Core's claims arise out of such infringement.

ASN

25. This Court has specific personal jurisdiction over ASN because, on information and belief, ASN has made Accused Instrumentalities within California, has sold or offered for sale Accused Instrumentalities to customers within California, has imported Accused Instrumentalities into California, has used Accused Instrumentalities within California, and/or has induced or contributed to customers' use of Accused Instrumentalities within California. As shown below, ordinary use of the Accused Instrumentalities constitutes direct infringement of the Asserted Claims. Thus, by making, selling, offering for sale, using, inducing, or contributing to use of the Accused Instrumentalities within California, ASN has directly or indirectly infringed the Asserted Claims within California. Core's claims against ASN arise out of such direct and indirect infringement of the Asserted Claims. Accordingly, this Court has specific personal jurisdiction over ASN, because ASN specifically directed

acts towards California, and because Core's claims arise out of such acts.

26. Public evidence demonstrates that ASN has committed acts of direct or indirect infringement within California. For instance, according to a September 16, 2019 article in the trade publication "Capacity," ASN recently "announced the construction of the $350 million Southern Cross NEXT cable." Ex. 2 (Capacity article, available at https://www.capacitymedia.com/articles/3824231/asn-begins-construction-of-350m-southern-cross-next-cable) at 1. Southern Cross NEXT is (or will be) a 13,700 km subsea fiberoptic cable which connects the United states with Australia, New Zealand, and several surrounding islands. *Id.* The U.S. terminus of the Southern Cross NEXT cable is (or will be) ***Los Angeles***. *Id.* On information and belief, the Los Angeles-based U.S. terminus of the Southern Cross cable uses (or will use) 1620 SOFTNODE units to perform dual-polarization optical communication along the Southern Cross NEXT cable. Thus, by entering into a contract to install 1620 SOFTNODE units in Los Angeles, ASN has sold, and offered for sale, Accused Instrumentalities for use within California. Moreover, to the extent that 1620 SOFTNODE units for Southern Cross NEXT have already been installed and operated within California, on information and belief, ASN has used such units in California (constituting direct infringement), and/or has induced the use of such units in California by its customer(s) (constituting indirect infringement). Thus, ASN's actions relating to Southern Cross NEXT constitute direct or indirect infringement of the Asserted Claims within California, which subjects ASN to personal jurisdiction.

27. Similarly, according to a January 21, 2013 article in the industry publication "Offshore Energy," starting in 2013, ASN "carr[ied] out a major upgrade of a 9,600km trans-Pacific digital submarine cable system using advanced coherent technology," which "provide[d] direct connectivity from the Japanese east coast ***to California***." Ex. 3 (Offshore Energy article, available at https://www.offshore-energy.biz/alcatel-lucent-upgrades-subsea-cable-system-between-japan-and-california/) at 1. On information and belief, this involved installing 1620 SOFTNODE

units within California. On information and belief, the installation or use of these 1620 SOFTNODE units occurred, and/or continued to occur, less than six years before the filing of this Complaint. Thus, ASN's activities relating to the 9,600km trans-Pacific cable constitute direct and/or indirect infringement of the Asserted Claims, which further subjects ASN to specific personal jurisdiction in California.

28. On information and belief, ASN has conducted further infringing acts within California, less than six years before the filing of the complaint, including selling, offering for sale, importing, making, or using other 1620 SOFTNODE units within California, and/or inducing or contributing to other customers' use of 1620 SOFTNODE units within California. Core expects to uncover evidence of such infringing acts in discovery. These additional infringing acts further subject ASN to specific personal jurisdiction in California.

Apple

29. This Court has general personal jurisdiction over Apple because Apple resides in California. Apple resides in California because: (i) it is incorporated under the laws of California; and (ii) its principal place of business is in California, at One Apple Park Way, Cupertino, CA 95014.

30. This Court also has specific personal jurisdiction over Apple because, on information and belief, Apple has directly infringed the Asserted Claims by using the Accused Instrumentalities (as defined below) within California, including within this judicial district. On information and belief, Apple has used the Accused Instrumentalities to provide data and services to individuals and businesses within California, and within this judicial district. For the reasons set forth below, such use directly infringes the Asserted Claims. Thus, Apple is subject to specific personal jurisdiction in this district, because it has committed acts of infringement in California, and because Core's claims arise out of such infringement

VENUE

31. Venue is proper over each Defendant in this judicial district under 28

U.S.C. §§ 1391 and/or 1400(b), for at least the following reasons:

Comcast

32. Comcast maintains regular and established places of business in this district, including at least its facilities at: (i) 685 East Betteravia Rd, Santa Maria, CA 93454; (ii) 1145 N H St Suite B, Lompoc, CA 93436; and (iii) 111 Universal Hollywood Dr, Los Angeles, CA 90068.

33. On information and belief, Comcast has committed acts of direct infringement within this district, including by using Accused Instrumentalities in connection with its provision of telecommunication and other services to customers in this district, and by using Accused Instrumentalities directly within this district.

34. Thus, venue is proper over Comcast under 28 U.S.C. § 1400(b), because Comcast has committed acts of infringement in this district, and because Comcast has regular and established places of business in this district.

The CenturyLink Defendants

35. The CenturyLink Defendants all maintain regular and established places of business in this district, including at least their facilities at: (i) 14452 Franklin Ave, Tustin, CA 92780; (ii) 7 Mason, Irvine, CA 92618; (iii) 2461 W La Palma Ave, Anaheim, CA 92801; and (iv) 818 7th St #510, Los Angeles, CA 90017.

36. On information and belief, the CenturyLink Defendants have committed acts of direct infringement in this district, including by using Accused Instrumentalities in connection with their provision of telecommunication, data and other services to customers within this district, and/or by using Accused Instrumentalities directly within this district.

37. Thus, venue is proper over the CenturyLink Defendants under 28 U.S.C. § 1400(b), because they have committed acts of infringement in this district, and because they have regular and established places of business in this district.

Google

38. Google maintains regular and established places of business in this

district, including at least its facilities at: (i) 19510 Jamboree Road, Irvine, CA 92612; (ii) 340 Main Street, Los Angeles, CA 90291; and (iii) 12422 W. Bluff Creek Drive, Playa Vista, CA 90094.

39. On information and belief, Google has committed acts of direct infringement in this district, including by using Accused Instrumentalities in connection with its provision of data, cloud and other services to customers in this district, and/or by using Accused Instrumentalities directly within this district.

40. Thus, venue is proper over Google under 28 U.S.C. § 1400(b), because Google has committed acts of infringement in this district, and because it has regular and established places of business in this district.

Zayo

41. Zayo maintains regular and established places of business in this district, including at least its facilities located at: (i) 17400 Von Karman Ave, Irvine, CA 92614; and (ii) 707 Wilshire Blvd # 4850, Los Angeles, CA 90017.

42. On information and belief, Zayo has committed acts of direct infringement in this district, including by using Accused Instrumentalities in connection with its provision of telecommunication, data and other services to customers within this district, and/or by using Accused Instrumentalities directly within this district.

43. Thus, venue is proper over Zayo under 28 U.S.C. § 1400(b), because Zayo has committed acts of infringement in this district, and because it has regular and established places of business in this district.

Cox

44. Cox maintains regular and established places of business in this district, including at least its facilities located at: (i) 1542 N El Camino Real, San Clemente, CA 92672; (ii) 27321 La Paz Rd Suite B, Laguna Niguel, CA 92677; (iii) 23704 El Toro Rd, Lake Forest, CA 92630; (iv) 6771 Quail Hill Pkwy, Irvine, CA 92603; (v) 6234 Irvine Blvd, Irvine, CA 92620; (vi) 27121 Towne Centre Dr, Foothill Ranch,

CA 92610; and (vii) 30652 Santa Margarita Pkwy, Rancho Santa Margarita, CA.

45. On information and belief, Cox has committed acts of direct infringement in this district, including by using Accused Instrumentalities in connection with its provision of telecommunication, data and other services to customers within this district, and/or by using Accused Instrumentalities directly within this district.

46. Thus, venue is proper over Cox under 28 U.S.C. § 1400(b), because Cox has committed acts of infringement in this district, and because it has regular and established places of business in this district.

ASN

47. Venue is proper over ASN in this district under 28 U.S.C. § 1391(c)(3), because ASN is a foreign (French) corporation.

Apple

48. Apple maintains regular and established places of business in this district. These include Apple's offices at 8777 Washington Boulevard, Culver City, CA 90232. They also include Apple's many retail stores located in this district, including the stores located at: (i) 1113 Newport Center Dr, Newport Beach, CA 92660; (ii) 930 Spectrum Center Dr, Irvine, CA 92618; (iii) 3333 Bear St, Costa Mesa, CA 92626; (iv) 936C Shops At Mission Viejo, Mission Viejo, CA 92691; (v) 242 Los Cerritos Center, Cerritos, CA 90703; (vi) 1016C Brea Mall, Brea, CA 92821; (vii) 3200 N Sepulveda Blvd, Manhattan Beach, CA 90266; (viii) 1415 3rd Street Promenade, Santa Monica, CA 90401; (ix) 10250 Santa Monica Blvd, Los Angeles, CA 90067; and (x) 8500 Beverly Blvd, Los Angeles, CA 90048.

49. On information and belief, Apple has committed direct infringement in this district, including by using Accused Instrumentalities in connection with its provision of cloud, data and other services to customers in this district, and/or by using Accused Instrumentalities directly within this district.

50. Thus, venue is proper over Apple under 28 U.S.C. § 1400(b), because

Apple has committed acts of infringement in this district, and because it has regular and established places of business in this district.

THE ASSERTED PATENT

51. Mark Core, the sole named inventor of the '211 patent, earned his Ph.D. in electrical and computer engineering from the University of California, Irvine, and is the Manager of Core Optical Technologies, LLC. The pioneering technology set forth in the '211 patent greatly increases data transmission rates in fiber optic networks, by enabling two optical signals transmitted in the same frequency band, but at generally orthogonal polarizations, to be recovered at a receiver. The patented technology that enables the recovery of these signals includes coherent optical receivers and related methods that mitigate cross-polarization interference associated with the transmission of the signals through the fiber optic network. The coherent receivers and their patented methods mitigate the effects of polarization dependent loss and dispersion effects that limit the performance of optical networks, greatly increasing the transmission distance and eliminating or reducing the need for a variety of conventional network equipment such as amplifiers, regenerators, and compensators. The patented technology set forth in the '211 patent has been adopted by Defendants in, at least, their packet-optical transport solutions described below.

52. On November 5, 1998, Mark Core filed with the United States Patent and Trademark Office ("USPTO") Provisional Patent Application No. 60/107,123 ("the '123 application") directed to his inventions. On November 4, 1999, Mark Core filed with the USPTO a non-provisional patent application, U.S. Patent Application No. 09/434,213 ("the '213 application"), claiming priority to the '123 application. On August 24, 2004, the USPTO issued the '211 patent from the '213 application. The entire right, title, and interest in and to the '211 patent, including all rights to past damages, has been assigned to Core in an assignment recorded with the USPTO.

53. The Asserted Claims of the '211 patent are all method claims. One of these is claim 33, an independent method claim. Claim 33 is reproduced below, with

parenthetical annotations to identify the different elements of the claim:

> 33. A method comprising:
>
> > (33a) receiving an optical signal over a single fiber optic transmission medium,
> >
> > > (33a1) the optical signal being at least two polarized field components independently modulated with independent information bearing waveforms; and
> >
> > (33b) mitigating cross polarization interference associated with the at least two modulated polarized field components to reconstruct the information bearing waveforms
> >
> > > (33b1) using a plurality of matrix coefficients being complex values to apply both amplitude scaling and phase shifting to the at least two modulated polarized field components.

CORE'S LAWSUIT AGAINST NOKIA

54. On November 12, 2019, Core filed a complaint against Nokia Corporation and Nokia of America Corporation (collectively, "Nokia"), asserting infringement of the Asserted Claims of the '211 patent, in the Central District of California. The case was assigned C.D. Cal. Case No. 19-v-02190 (the "*Nokia* case").

55. On February 21, 2020, Core filed a First Amended Complaint against Nokia. *See Nokia*, Dkt. 37.

56. On March 27, 2020, Core filed a Second Amended Complaint against Nokia (the "Nokia SAC"). *Nokia*, Dkt. 42. The Nokia SAC is Core's operative complaint in the *Nokia* case. A copy of the Nokia SAC is attached as Exhibit 4.

57. In the Nokia SAC, Core asserts that Nokia has infringed the Asserted Claims, directly and/or indirectly, by making, selling, using, importing, offering for sale, contributing to, and/or inducing its customers' use of certain "Fiber Optic XPIC

Devices." Ex. 4, ¶¶ 35-36, 72-110. The Fiber Optic XPIC Devices are defined as Nokia's "devices that can be configured to mitigate and/or cancel cross polarization interference in received fiber optic signals . . . [t]hese devices include, but are not limited to, the 1830 Photonic Service Switch product family (the ''1830 PSS Family'), the 1830 Photonic Service Interconnect product family (the '1830 PSI Family'), the 1620 SOFTNODE product family (the '1620 SOFTNODE Family'), and the WaveLite Metro 200 (the 'Metro 200')" (the "Accused Instrumentalities").

58. As shown in the Nokia SAC, when the Fiber Optic XPIC Devices are used in their ordinary, intended fashion, such use constitutes direct infringement of the Asserted Claims of the '211 patent. *See* Ex. 4, ¶¶ 35-66.

CUSTOMER DEFENDANTS' INFRINGING USE

59. On information and belief, Comcast, the CenturyLink Defendants, Google, Zayo, Cox, and Apple (collectively, the "Customer Defendants"), and/or their affiliates (including some or all of DOES 1-10), have directly infringed each Asserted Claim of the '211 patent, by using one or more of the Fiber Optic XPIC Devices within the United States, less than six years before the filing of this Complaint, and prior to the November 4, 2019 expiration date of the '211 patent (the "Relevant Time Period").

60. On information and belief, each Customer Defendant purchased one or more of the Fiber Optic XPIC Devices from Nokia, and used such Fiber Optic XPIC Devices within the United States, during the Relevant Time Period. For the reasons set forth in Paragraphs 35-66 of the Nokia SAC, which are incorporated herein by reference in their entirety, such use constituted direct infringement of the Asserted Claims of the '211 patent by the Customer Defendants.

61. As for Comcast, the LinkedIn page of Comcast Optical Transport Engineer Ken Tiv indicates that, while working for Comcast from 2010-Present, Mr. Tiv was "Responsible for Planning & Design, Implementation, Maintenance, Testing and Troubleshoot[ing] of end-to-end 10/100/200/400G Wavelogic4 on . . . [the]

Nokia PSS1830." https://www.linkedin.com/in/ken-tiv-14435bb/. This confirms that Comcast used the Nokia PSS 1830—one of the accused Fiber Optic XPIC Devices—within the United States during the relevant time period.

62. On information and belief, Comcast used the Fiber Optic XPIC Devices in connection with providing telecommunication, cloud computing, and data services to customers in the United States. On information and belief, Comcast used the Fiber Optic XPIC Devices in providing "Xfinity" internet, TV and telephone services to residential customers in the United States. On information and belief, Comcast also used the Fiber Optic XPIC Devices in providing Comcast Business internet, TV, and telephone services to business customers in the United States. On information and belief, Comcast also used the Fiber Optic XPIC Devices in providing cloud computing, cloud storage, and other data services to customers in the United States. On information and belief, Comcast used the Fiber Optic XPIC Devices to operate fiberoptic networks in the United States for itself and for customers.

63. As for the CenturyLink Defendants, the LinkedIn page of CenturyLink Senior Implementation Engineer Jeffrey Collins indicates that, while working for CenturyLink from 2010-Present, Mr. Collins was "[r]esponsible for deployment of nationwide Long Haul networks (Huawei, Infinera, ***Nokia***, and Ciena 6500)," including the "***Nokia 1830***." https://www.linkedin.com/in/jeffrey-collins-0676611/. This confirms that the CenturyLink Defendants used the Nokia PSS 1830—an accused Fiber Optic XPIC Device—in the U.S. during the relevant time period.

64. On information and belief, the CenturyLink Defendants used the accused Fiber Optic XPIC Devices in connection with providing telecommunication services to customers in the United States, including Internet Service Provider (ISP), telephone, and television services. On information and belief, the CenturyLink Defendants used the accused Fiber Optic XPIC Devices in connection with providing Enterprise Business, Small Business, and Residential telecommunication services to customers in the U.S. On information and belief, the CenturyLink Defendants also

used the accused Fiber Optic XPIC Devices in connection with providing fiber-to-the-premises services in the United States, including Quantum Fiber and Gigabit Fiber services. On information and belief, the CenturyLink Defendants also used the accused Fiber Optic XPIC Devices in connection with providing cloud computing and/or data center services to customers in the United States. On information and belief, the CenturyLink Defendants used the Fiber Optic XPIC Devices to operate fiberoptic networks in the United States for themselves and for customers.

65. As for Google, the LinkedIn page of Google's Transport Control Center Engineer Adrian Pigott indicates that, from June 2017-Present, the "Google Global Optical Network Infrastructure" includes "Alcatel 1830 PSS" units. https://www.linkedin.com/in/adrian-pigott-3b8759140/?originalSubdomain=ie. The 1830 PSS is one of the accused Fiber Optic XPIC Devices. On information and belief, Google has installed and used such Fiber Optic XPIC Devices, including the 1830 PSS and related devices, within the United States during the Relevant Time Period.

66. On information and belief, Google used the Fiber Optic XPIC Devices in providing telecommunication and data services to customers in the United States. On information and belief, Google used the Fiber Optic XPIC Devices in providing cloud computing and cloud storage services to customers in the United States. On information and belief, Google used the Fiber Optic XPIC Devices in providing web search and advertising services to customers in the United States. On information and belief, Google used the Fiber Optic XPIC Devices in providing Google Suite and Google Workspace products and services to customers in the United States. On information and belief, Google used the Fiber Optic XPIC Devices in providing Gmail, Google Drive, Google Docs, Google Sheets, Google Slides, Google Calendar, Google Chat, Google Contacts, and other Software as a Service (SaaS), Platform as a Service (PaaS), and Infrastructure as a Service (IaaS) products and services to customers in the United States. On information and belief, Google used the Fiber Optic XPIC Devices in providing Google App Engine and Google Compute Engine

products and services to customers in the United States. On information and belief, Google used the Fiber Optic XPIC Devices to provide Google Fiber and other telecommunication services to customers in the United States. On information and belief, Google used the Fiber Optic XPIC Devices to operate fiberoptic networks in the United States for itself and for customers.

67. As for Zayo, the LinkedIn page of Zayo's Wave Engineering engineer Charles Hogarty indicates that, while working for Zayo from 2019-Present, Mr. Hogarty performed "Circuit/Path design and turn up of . . . ***Nokia/FLEX 1830 PSS*** . . . shelves/cards/platforms/filters." https://www.linkedin.com/in/charles-hogarty/. This confirms that Zayo used the Nokia PSS 1830—one of the accused Fiber Optic XPIC Devices—within the United States during the relevant time period.

68. On information and belief, Zayo used the Fiber Optic XPIC Devices to provide telecommunication, cloud computing, and data services to customers in the United States. On information and belief, Zayo used the Fiber Optic XPIC Devices to operate fiberoptic networks for itself and for customers in the United States. On information and belief, Zayo used the Fiber Optic XPIC Devices to provide Dark Fiber, Private Dedicated Network, and Mobile Infrastructure Solutions products and services to customers in the United States. On information and belief, Zayo used the Fiber Optic XPIC Devices to operate Metro, Regional, and Long-Haul fiber-optic networks within the United States. On information and belief, Zayo used the Fiber Optic XPIC Devices to provide Internet, Ethernet, and other telecommunication services to customers in the United States. On information and belief, Zayo used the Fiber Optic XPIC Devices to provide cloud data, cloud computing, colocation, CloudLink, and data center services to customers in the United States.

69. As for Cox, a website for the SRxPerts & AON Tech Summit Americas 2016 conference (Ex. 5) indicates that, as of 2016, Cox was using a "Nokia-based business network." *Id.* at 7. On information and belief, the "Nokia-based business network" used by Cox includes accused Fiber Optic XPIC Devices. Thus, Cox has

used accused Fiber Optic XPIC Devices in the U.S. during the Relevant Time Period.

70. On information and belief, Cox used the Fiber Optic XPIC Devices to provide telecommunication, cloud computing, and data services to customers in the United States. On information and belief, Cox used the Fiber Optic XPIC Devices to provide "Contour" Internet, TV, and telephone services to residential customers in the United States. On information and belief, Cox used the Fiber Optic XPIC Devices to provide Cox Business Internet, TV, and telephone services to business customers in the United States. On information and belief, Cox used the Fiber Optic XPIC Devices to provide Gigablast services to customers in the United States. On information and belief, Cox used the Fiber Optic XPIC Devices to provide cloud computing, cloud storage, and data center services to customers in the United States. On information and belief, Cox used the Fiber Optic XPIC Devices to operate fiberoptic networks in the United States for itself and for customers.

71. As for Apple, on information and belief, Apple purchased and used accused Fiber Optic XPIC Devices in the U.S. during the relevant time period. On information and belief, Apple used the Fiber Optic XPIC Devices to operate fiberoptic networks for itself and for customers in the United States. On information and belief, Apple used the Fiber Optic XPIC Devices in connection with providing cloud computing, cloud storage, data center, telecommunication, and SaaS services to customers in the United States. On information and belief, Apple used the Fiber Optic XPIC Devices in connection with providing iCloud, App Store, Apple Arcade, Apple Pay, Apple TV, Apple News, Apple Music, CloudKit, iTunes, and other products and services to customers in the United States.

72. Accordingly, each Customer Defendant used accused Fiber Optic XPIC Devices within the United States during the Relevant Time Period. For the reasons set forth in Paragraphs 35-66 of the Nokia SAC—which are incorporated herein by reference—such use constitutes direct infringement of the Asserted Claims. Thus, each Customer Defendant has committed direct infringement of the Asserted Claims

within the Relevant Time Period.

ASN'S INFRINGEMENT

73. On information and belief, ASN has directly infringed each Asserted Claim of the '211 patent within the Relevant Time Period. Such direct infringement includes, on information and belief: (i) ASN's direct use of accused Fiber Optic XPIC Devices, including 1620 SOFTNODE devices, within the United States; (ii) ASN's direct use of accused Fiber Optic XPIC Devices, including 1620 SOFTNODE, outside the United States, but for use in telecommunication paths that pass through the United States; (iii) ASN's joint use, together with its customers or other third parties, of Fiber Optic XPIC Devices (including 1620 SOFTNODE) in the United States; and (iv) ASN's use, through contractors, agents, or other third parties under its direction or control, of Fiber Optic XPIC Devices, either within the United States, or outside it, but for use in telecommunication paths that pass through the United States.

74. On information and belief, ASN also indirectly infringed each Asserted Claim of the '211 patent, for the reasons set forth in Paragraphs 97-165 *infra*.

MARKING

75. Core has never made, sold, used, offered to sell, or imported into the United States any article that practices any claim of the '211 Patent. Core has never sold, commercially performed, or offered to commercially perform any service that practices any claim of the '211 Patent.

76. Prior to October 21, 2014, Core had never authorized, licensed, or in any way permitted any third party to practice any claim of the '211 Patent.

77. Moreover, Core alleges that Defendants infringe ***only*** method claims of the '211 patent. Core does not allege that Defendants infringe any apparatus claims of the '211 patent. The marking requirement of 35 U.S.C. § 287(a) does not apply when a patentee only asserts infringement of method claims. *See Crown Packaging Tech., Inc. v. Rexam Beverage Can Co*., 559 F.3d 1308, 1316 (Fed. Cir. 2009); *Hanson v. Alpine Valley Ski Area, Inc*., 718 F.2d 1075, 1082-83 (Fed.Cir.1983).

78. Because Core has never directly marketed any product or service that practices any of the claimed inventions of the '211 Patent, and no third party was authorized to practice any claimed inventions of the '211 patent prior to October 21, 2014, 35 U.S.C. § 287(a) cannot prevent or otherwise limit Core's entitlement to damages for acts of infringement that occurred prior to October 21, 2014.

79. Because Core alleges that Defendants infringe only method claims of the '211 patent, 35 U.S.C. § 287(a) does not apply, even for acts of infringement that occurred after October 21, 2014. Thus, 35 U.S.C. § 287(a) does not limit Core's entitlement to damages against Defendants, in any way, for any period of time.

80. In the *Nokia* case, the court has ruled that the marking requirement does not apply, because Core is asserting only method claims. *Nokia*, Dkt. 61 at 5-7.

DEFENDANTS' KNOWLEDGE OF THE '211 PATENT

81. On information and belief, and for the reasons set forth below, each Defendant knew of the existence and relevance of the '211 patent when they committed the infringing acts described in Paragraphs 59-74 above.

82. On information and belief, each Defendant knew of the '211 Patent's existence and relevance due to Core's filing of complaints for infringement of that patent in: (1) Central District of California Case No. SACV 12-1872 AG, styled *Core Optical Technologies, LLC v. Ciena Corporation, et al*. (filed October 29, 2012); (2) Central District of California Case No. SACV 16-0437 AG, styled *Core Optical Technologies, LLC v. Fujitsu Network Communications, Inc*. (filed March 7, 2016); and (3) Central District of California Case No. SACV 8:17-cv-00548AG, styled *Core Optical Technologies, LLC v. Infinera Corp*. (filed March 24, 2017).

83. On information and belief, as major participants in the optical networking industry, Defendants monitor patent lawsuits against other participants in the industry. On information and belief, through such monitoring, Defendants knew of—or were willfully blind to—the existence of the '211 Patent, due to Core's three prior lawsuits against other industry suppliers/manufacturers. Through such

monitoring, Defendants knew—or were willfully blind—that normal use of the Fiber Optic XPIC Devices infringes the '211 patent.

84. Moreover, Defendants knew of the existence and relevance of the '211 patent because: (i) the Customer Defendants are all Nokia customers for the Fiber Optic XPIC Devices; and (ii) ASN is a Nokia subsidiary involved in making, selling, using, installing, and operating the Fiber Optic XPIC Devices.

85. As shown in Paragraphs 90-99 of the Nokia SAC, which are incorporated by reference herein in their entirety, Nokia knew of the existence and relevance of the '211 patent throughout the Relevant Time Period. On information and belief, as Nokia customers and subsidiaries, the Defendants were made aware, through Nokia, of the existence and relevance of the '211 patent during the Relevant Time Period. Accordingly, on information and belief, each Defendant committed infringing acts while: (i) being aware of the '211 patent; and (ii) knowing that normal use of the Fiber Optic XPIC Devices infringes the Asserted Claims.

86. This is further shown by the statements and evidence cited in Core's Opposition to Nokia's Motion to Dismiss, *Nokia* Case Dkt. 50, which is attached as Exhibit 6 to this Complaint. As shown in pages 15-21 of Exhibit 6, which are incorporated herein by reference in their entirety, Nokia also had knowledge of the existence and relevance of the '211 patent because: (i) its in-house patent counsel, John F. McCabe and E.J. Rosenthal, had specific personal knowledge of the '211 patent due to their patent prosecution activities on behalf of Nokia; and (ii) Nokia was apprised of the existence and relevance of the '211 patent through an October 15, 2007 letter from Core's counsel to Siemens, which—on information and belief—was disseminated to Nokia through Nokia Siemens Networks. Ex. 6 at 15-21.

87. On information and belief, Nokia apprised both the Customer Defendants and ASN of the existence and relevance of the '211 patent prior to, or during, the Relevant Time Period. Thus, on information and belief, all Defendants committed infringing acts with knowledge of its existence and relevance.

JOINDER

88. Joinder of all Defendants is proper under 35 U.S.C. § 299(a).

89. Core accuses all Defendants of infringing the Asserted claims by making, selling, using, offering for sale, or importing the Fiber Optic XPIC Devices. Thus, Core's "right to relief" against all Defendants arises out of Defendants' "making, using, importing into the United States, offering for sale, or selling of the ***same accused product or process***," as required by 35 U.S.C. § 299(a)(1).

90. Moreover, "questions of fact common to all defendants . . . will arise in the action," as required by 35 U.S.C. § 299(a)(2). These include, at least: (i) questions as to whether use of the Fiber Optic XPIC Devices infringes the Asserted Claims; and (ii) questions relating to the value of the patented technology to those Devices.

91. Thus, joinder of all Defendants is proper under 35 U.S.C. § 299(a).

COUNT I – DIRECT PATENT INFRINGEMENT (ALL DEFENDANTS)

92. Core repeats and realleges each and every allegation contained in Paragraphs 1-91 above as if fully set forth herein.

93. Each Customer Defendant has committed direct infringement of each Asserted Claim of the '211 patent, in violation of 35 U.S.C. § 271(a), by performing all the steps of each Asserted Claim in the U.S., during the Relevant Time Period.

94. As set forth in Paragraphs 59-72 *supra*, each Customer Defendant used Fiber Optic XPIC Devices within the United States during the Relevant Time Period. For the reasons set forth in Paragraphs 35-66 of the Nokia SAC, which are incorporated herein by reference, such use constitutes direct infringement of each Asserted Claim of the '211 patent. Thus, each Customer Defendant has directly infringed each Asserted Claim of the '211 patent during the Relevant Time Period.

95. ASN has also committed direct infringement of each Asserted Claim of the '211 patent, in violation of 35 U.S.C. § 271(a), by performing all the steps of each Asserted Claim during the Relevant Time Period.

96. As set forth in Paragraphs 73-74 *supra*, during the Relevant Time Period,

ASN has, on information and belief: (i) directly used Fiber Optic XPIC Devices, including 1620 SOFTNODE devices, within the United States; (ii) directly used Fiber Optic XPIC Devices, including 1620 SOFTNODE devices, outside the United States, but for use in telecommunication paths that pass through the United States; (iii) jointly used, together with its customers or other third parties, Fiber Optic XPIC Devices (including 1620 SOFTNODE devices) in the United States; and (iv) used, through contractors, agents, or other third parties under its direction or control, Fiber Optic XPIC Devices (including 1620 SOFTNODE), either within the United States, or outside it, but for use in telecommunication paths that pass through the United States. For the reasons set forth in Paragraphs 35-66 of the Nokia SAC, all such uses constitute direct infringement of the Asserted Claims of the '211 patent. Thus, ASN directly infringed the Asserted Claims during the Relevant Time Period.

COUNT II – INDUCEMENT OF INFRINGEMENT (ASN)

97. Core repeats and realleges each and every allegation contained in Paragraphs 1-96 above as if fully set forth herein.

98. ASN has actively induced infringement of the Asserted Claims of the '211 patent, in violation of 35 U.S.C. § 271(b).

99. ASN has actively induced infringement of these claims by selling Fiber Optic XPIC Devices, including 1620 SOFTNODE, to customers in the U.S., along with documentation and instructions demonstrating how to use the devices to infringe the claims, and/or by providing service, maintenance, support, or other active assistance to their customers in using the Fiber Optic XPIC Devices in the United States. Those customers include, at least: (i) the customer(s) for the Southern Cross NEXT cable identified in Paragraph 26 *supra*; and (ii) the customer(s) for the 9,600km trans-Pacific digital identified in Paragraph 27 *supra*.

100. ASN does not make its product documentation available to non-customers. However, on information and belief, this product documentation specifically instructs customers on how to use the Fiber Optic XPIC Devices,

including 1620 SOFTNODE, in an infringing manner. Core expects that it will uncover such documentation through discovery in this case. Core reserves the right to amend this Complaint to identify such additional materials as they are uncovered through discovery, to the maximum extent permitted by law.

101. As shown in Paragraphs 35-66 of the Nokia SAC, when ASN's customers use the Fiber Optic XPIC Devices in the U.S., such use meets all of the elements recited in the Asserted Claims. Thus, ASN has committed affirmative acts (i.e., selling the Fiber Optic XPIC Devices, providing documentation on how to use the Fiber Optic XPIC Devices, and/or providing service, maintenance, technical support, or other active assistance to their customers) which have resulted in direct infringement of the '211 Patent by their customers in the United States.

102. Moreover, for the reasons set forth in Paragraphs 81-87 *supra*, ASN knew of the existence and relevance of the '211 Patent, or was willfully blind to its existence and relevance, when it committed these acts of inducement.

103. On information and belief, ASN further knew of the existence and relevance of the '211 Patent from Nokia of America Corporation ("Nokia US"), Nokia Corporation ("Nokia Corp."), or other Nokia entities, which knew of the '211 Patent prior to the filing of these lawsuits.

104. Nokia knew of the existence and relevance of the '211 Patent—or was willfully blind thereto—through its patent prosecution activities.

105. On December 22, 2006, Lucent Technologies, Inc. filed U.S. Patent Application No. 11/644,555 ("the '555 Application"), on behalf of its employee Ut-Va Koc. *See* Ex. 11 (Application No. 11/644,555). The attorney who signed the application was John McCabe, in-house counsel at Lucent. *Id.* at 1-2.

106. In 2006, Lucent Technologies, Inc. and Alcatel SAS of France agreed to merge, creating a combined Alcatel-Lucent. *See* Ex. 12 (article describing merger).

107. On October 27, 2008, Lucent Technologies, Inc. changed its name to "Alcatel-Lucent USA, Inc.," and two American Alcatel entities (Alcatel USA

Marketing, Inc. and Alcatel USA Sourcing, Inc.) merged into Alcatel-Lucent USA, Inc. Ex. 13 at 3-4. After the merger, ownership of the '555 Application remained with Alcatel-Lucent USA, Inc. *Id.* at 1.

108. Nokia US is the same corporate entity as Alcatel-Lucent USA, Inc. On December 22, 2017, Alcatel-Lucent USA filed a Certificate of Merger with the Delaware Secretary of State. *See* Ex. 14 (Name Change Statement) at 2. The Certificate of Merger changed the name of "Alcatel-Lucent USA" to "Nokia of America Corporation" (Nokia US), effective January 1, 2018. *Id.* Thus, Nokia US is the same corporate entity as the former "Alcatel-Lucent USA."

109. Accordingly, all rights in the '555 Application are owned by Nokia US.

110. The '555 Application is titled "Adaptive Polarization Tracking and Equalization in Coherent Optical Receivers." Ex. 11 at 5. The '555 application relates to dual-polarized optical communication. It states that, in one embodiment, "[t]he optical transmitter 12 . . . modules an independent PSK symbol stream onto ***each of the linear polarization components*** of the optical carrier. ***The later technique is known as polarization multiplexing***." *Id.* at 11. In particular, the '555 Application is directed to a "coherent optical receiver" (*id.* at 5) that corrects for "degradations" in coherent, polarization-multiplexed optical signals, including "those caused by "chromatic dispersion or polarization mode dispersion (PMD), and polarization rotations." *Id.* at 6. The '555 Application claims, *inter alia*, an "optical receiver configured to recover data PSK-modulated onto a received optical carrier," comprising a "digital signal processor . . . to equalize the [detected] digital electrical signal components." *Id.* at 28-29. Thus, the '555 Application claims a technique of using digital signal processing to equalize the two polarization components of a dual-polarized optical signal, to mitigate, *inter alia*, polarization mode dispersion and chromatic dispersion. This makes that '555 Application directly relevant to the '211 Patent and the Accused Instrumentalities.

111. On information and belief, and based on the foregoing facts, the Accused

Instrumentalities practice one or more of the inventions claimed in the '555 Application (and the patent that issued from that Application). On information and belief, and based on the clear relevance of the '555 Application to the Accused Instrumentalities, Nokia US knew, at all relevant times, that the Accused Instrumentalities practice one or more invention(s) claimed in the '555 Application.

112. On March 7, 2007, Mr. Koc assigned his rights in the '555 Application to Lucent Technologies, Inc. *See* Ex. 15 (assignment).

113. On December 10, 2007, Mr. McCabe filed a Request that the '555 Application be processed in accordance with the Patent Cooperation Treaty (PCT). *See* Ex. 16 (PCT Request for Processing). The Request was assigned PCT Application No. PCT/US2007/025214 ("PCT '214").

114. On May 14, 2008, the European Patent Office ("EPO") mailed an International Search Report ("ISR") to Lucent Technologies, Inc. in application PCT '214. *See* Ex. 17 (ISR). The ISR identified three, and only three, prior art references that the EPO deemed relevant to the patentability of the '555 Application. One of those three references ***was the '211 patent***. *Id.* at 1.

115. Mr. McCabe received, and personally reviewed, the ISR. This is confirmed by Nokia's internal files. On May 28, 2021, Nokia produced Volume 14 of its document production to Core. Much of Volume 14 consists of scanned copies of Nokia's patent prosecution files for patents related to the Accused Instrumentalities.

116. In Volume 14, Core found a scanned paper copy of the ISR. *See* Ex. 18 (scanned copy). Handwritten notes on the first page of this document demonstrate that someone reviewed the ISR, and noted that it was related to Application "Ser. No: 11/644555," i.e., the '555 Application. *Id.* at 1. On information and belief, and by comparing the handwritten notes on the scanned copy to Mr. McCabe's handwriting on publicly-available documents, these handwritten notes were made by Mr. McCabe. Thus, the scanned copy proves that Mr. McCabe personally reviewed the ISR—which lists ***only three*** relevant prior art references, one of which was the '211 patent.

117. Shortly after he received the ISR, Mr. McCabe printed, or had someone print, a copy of the '211 patent. He then reviewed the printed copy. This is evidenced by Exhibit 19. Exhibit 19 is a scanned, hand-marked copy of the '211 patent, which was located within Mr. McCabe's paper prosecution files (Nokia Volume 14). On the first page of Exhibit 19, Mr. McCabe added handwritten annotations, identifying the '211 patent as document "AC," and noting that it related to the '555 Application. Ex. 19 at 1. Thus, Mr. McCabe received and reviewed the '211 patent in May 2008.

118. Subsequently, on May 23, 2008—just nine days after the issuance of the ISR—Mr. McCabe filed an Information Disclosure Statement ("IDS") at the USPTO in the prosecution of the '555 Application. *See* Ex. 20 (5/23/2008 IDS). The IDS submitted the three references that had been cited in the ISR, including the '211 patent. *Id.* at 2. The IDS listed the '211 patent as document "AC," corresponding to Mr. McCabe's handwritten annotation in Exhibit 19, identifying the '211 patent as document "AC." *Id.* This confirms that Mr. McCabe reviewed the paper copy of the '211 patent in connection with preparing the May 23, 2008 IDS.

119. Subsequently, on July 24, 2008, the EPO issued a Written Opinion ("WO") on the patentability of the '555 Application. *See* Ex. 21. In the WO, the EPO determined that the claims of the '555 Application were not patentable, because they lacked novelty and inventive step. *Id.* at 3. The EPO relied on only three prior art references in making this determination: the '211 patent was one of them. *Id.* at 4.

120. A scanned copy of the WO was found within Mr. McCabe's prosecution files at pages NOACCORE00728426-728431. Ex. 22. This confirms that Mr. McCabe personally received and reviewed the WO.

121. That Mr. McCabe reviewed the WO is confirmed by Exhibit 23, Lucent's Response to the WO at the EPO. Lucent's Response was signed by Mr. McCabe. *Id.* at 1, 5. In the Response, Mr. McCabe amended the claims of PCT '214, and argued that the amended claims were patentable over the cited references. *Id.* at 6-15. Because Mr. McCabe personally prepared the response to the WO, he must

have reviewed the references cited in the WO, including the '211 patent.

122. On March 24, 2009, the European Patent Office issued an International Preliminary Report on Patentability ("IPRP") in the PCT '214 application. *See* Ex. 24. The IPRP stated the EPO's conclusion that, despite Mr. McCabe's Response, the claims of PCT '214 remained unpatentable. *Id.* at 3. Once again, only three references were cited to reject the claims, one of which was the '211 patent. *Id.* at 4. Since Mr. McCabe personally prepared the Response to the WO, on information and belief, he also reviewed the IPRP. This further advised him that the '211 patent was relevant to the technology described and claimed in the '555 Application.

123. According to LinkedIn, John McCabe has been in-house counsel at Lucent Technologies (from 2000-2006), Alcatel-Lucent USA, Inc. (from 2007-2016), and Nokia US (after the name change) from 2017 to the present. Ex. 25 at 1. Accordingly, Mr. McCabe has been at Nokia US for the entire relevant time period for this case (i.e., six years prior to the filing of the original complaint).

124. In the U.S., the '555 Application issued as U.S. Pat. No. 7,747,169 ("the '169 patent") on June 29, 2010. *See* Ex. 26. The '211 patent is listed as a "Reference Cited" on the face of the '169 patent. *Id.* at 1. The '169 patent is owned by Nokia US.

125. On May 13, 2010, Mr. McCabe filed Application No. 12/779,448 ("the '448 Application") as a divisional application of the '555 Application. *See* Ex. 27 ("'448 Application"). The '448 Application issued as U.S. Pat. No. 8,023,834 ('the '834 Patent") on September 20, 2011. Ex. 28 at 1. The '448 Application and the '834 Patent are assigned to "Nokia US Holdings Inc." which, on information and belief, is an intellectual property holding company controlled by Nokia US. Ex. 29 at 1.

126. The specifications of the '834 Patent and '448 Application are essentially the same as the specifications of the '169 Patent and '555 Application. Accordingly, for the same reasons discussed above as to the '555 Application, the '834 Patent and '448 Application are directly relevant to the Accused Instrumentalities.

127. Along with the '448 Application, on May 13, 2010, Mr. McCabe

submitted an IDS. Ex. 30 at 23-26. The IDS listed three "U.S. Patents" as being material to the invention. One of them was the '211 patent—the second patent listed in the IDS. *Id.* at 23. This confirms that, in May 2010, Mr. McCabe remained aware of the '211 patent, and remained aware that it was relevant to the technology disclosed and claimed in the '448 Application.

128. On June 23, 2006, Lucent Technologies filed U.S. Patent Application No. 11/426,191 ("the '191 Application"), titled "System and Method for Receiving Coherent, Polarization-Multiplexed Optical Signals." The inventors were Lucent employees Noriaki Kaneda and Andreas Leven. *See* Ex. 31 ('191 Application). The '191 Application subsequently issued as U.S. Pat. No. 7,809,284 (Ex. 32). The '191 Application and '284 Patent are assigned to "Alcatel-Lucent USA, Inc.," i.e., to Nokia US. Ex. 33 (assignment record) at 1.

129. The '191 Application is clearly relevant to the Accused Instrumentalities. As stated in the title, this application is directed to methods for "receiving coherent, polarization-multiplexed optical signals," just like the Accused Instrumentalities. Ex. 31 at 2. Thus, on information and belief, Nokia US knew, at all relevant times, that the '191 Application is related to the Accused Instrumentalities.

130. The '191 Application was filed by David H. Hitt of Hitt Gaines P.C. *Id.* at 1. However, on information and belief, Mr. McCabe was involved in the preparation and prosecution of the '191 Application. That is confirmed by his internal paper files. Mr. McCabe's paper files include a hand-marked copy of the '191 Application, with the annotations being written (on information and belief) by Mr. McCabe. *See* Ex. 34 (hand-marked copy) at 1. Thus, Mr. McCabe was aware of, and (on information and belief) was involved in, prosecution of the '191 Application.

131. On June 3, 2010, the Examiner issued a Notice of Allowance in the '191 Application, which included a "Notice of References Cited." Ex. 35. The Notice listed the '211 patent as a relevant reference to the '191 Application. *Id.* at 11. On information and belief, the Notice of Allowance and Notice of References Cited were

communicated to Nokia US, including Mr. McCabe. Accordingly, the Notice further advised Nokia US that the '211 patent is relevant to the Accused Instrumentalities.

132. On May 9, 2008, Lucent Technologies, Inc. filed U.S. Patent Application No. 12/151,927 ("the '927 Application"). Ex. 36 ('927 Application). The '927 Application was signed by Eugene J. Rosenthal, in-house counsel at Lucent. *Id.* at 1. According to LinkedIn, Mr. Rosenthal was Senior Corporate Intellectual Property Counsel at Alcatel-Lucent in New Jersey from October 2008 to July 2015. Ex. 37 at 1-2. Thus, Mr. Rosenthal was at Alcatel-Lucent (i.e., Nokia US) during the relevant time period for this case (i.e., six years prior to the filing of the original complaint).

133. The '927 Application is directly related to the Accused Instrumentalities. The '927 Application is titled "Reconstruction and Restoration of Two Polarization Components of an Optical Signal Field." Ex. 36 at 5. Thus, the '927 Application does exactly what the Accused Instrumentalities do—i.e., it attempts to reconstruct the two originally-transmitted dual-polarization signals. This is done in order to correct "linear effects [that] distort optical signals," including "CD [and] PMD"—just like the Accused Instrumentalities, and the '211 Patent. *Id.* at 6. Thus, due to the clear relevance of the '927 Application to the Accused Instrumentalities, and on information and belief, Nokia US knew at all relevant times that the '927 Application relates to the Accused Instrumentalities.

134. On June 24, 2010, the USPTO issued a Notice of Allowance and Examiner Interview Summary in the '927 Application. Ex. 38. The Summary indicates that the examiner held a telephone interview with Mr. Rosenthal on June 16, 2010, in which they discussed the allowability of the claims. *Id.* at 4-5. The Examiner also provided a Notice of References Cited, listing references relevant to the patentability of the '927 Application. *Id.* at 12-13. That list included the '211 patent. *Id.* at 12. When the '927 Application issued as U.S. Pat. No. 7,822,350 ("the '350 patent"), the '211 Patent was listed on its face as a "Reference Cited" by the Examiner. Ex. 39 at 1. The '927 Application and the '350 Patent are assigned to

"Alcatel-Lucent USA, Inc.", i.e., to Nokia US. Ex. 40 at 1.

135. On information and belief, Nokia US personnel, including at least Mr. Rosenthal, reviewed the citation of the '211 Patent both in the Notice of References Cited, and on the face of the '350 Patent. This further notified Nokia US that the '211 patent was relevant to the Accused Instrumentalities.

136. On June 29, 2009, Alcatel-Lucent USA filed U.S. Patent Application No. 12/493,337 ("the '337 Application"), titled "Symbol Timing Recovery in Polarization Division Multiplexed Coherent Optical Transmission System." Ex. 41. The '337 Application issued as U.S. Pat. No. 8,655,191 ("the '191 Patent") on February 18, 2014. Ex. 42 at 1. The inventors were Alcatel-Lucent employees Noriaki Kaneda, Andreas Leven, and Stefan Weisser. *Id.* The '337 Application was assigned to Alcatel-Lucent USA, Inc. (i.e., Nokia US) and Alcatel-Lucent Deutschland. Ex. 43 ('337 Application assignment record) at 2-3.

137. The '337 Application and the '191 Patent are directly relevant to the Accused Instrumentalities. The '191 Patent claims, *inter alia*, a method for recovering a "polarization division multiplexed (PDM) signal" which uses a matrix multiplication to reconstruct the originally transmitted signals. Ex. 42 at 15 (claim 1). Thus, the '337 Application and '191 Patent are directly related to the Accused Instrumentalities, and to the '211 Patent.

138. On May 14, 2012, the Examiner issued a Final Rejection in the '337 Application. Ex. 44. In the Final Rejection, the Examiner provided a Notice of References Cited, which listed number of references relevant to the '337 Application. *Id.* at 12-13. The very first patent listed is the '211 patent. *Id.* at 12. Moreover, when the '191 Patent issued, the '211 patent was listed on its face as the second "Reference Cited" by the Examiner. Ex. 42 at 1. On information and belief, Nokia US personnel, including at least Mr. McCabe, reviewed the citations of the '211 patent in the Notice of References Cited and on the face of the '191 Patent. This further advised Nokia US that the '211 Patent was relevant to the Accused Instrumentalities.

139. On March 17, 2005, Siemens Corporation filed U.S. Patent Application No. 10/528,313 ("the '313 Application"). *See* Ex. 45. The application was titled "Method for Transmitting Optical Polarization Multiplex Signals," and the inventors were Stefano Calabro, Erich Gottwald, Nancy Hecker, Georg Sebald, and Bernhard Spinnler. *Id.* at 1. The application was submitted by John P. Musone, in-house counsel at Siemens Corporation. *Id.* at 2.

140. The '313 Application is directly related to the Accused Instrumentalities. The '313 Application was directed to systems for "polarization multiplex transmission," with improved handling of "PMD and chromatic dispersion." *Id.* at 6. The '313 Application describes a "multidimensional filter" in the receiver, which "render[s] the polarization controller superfluous and additionally enabl[es] compensation of the signal distortions." *Id.* at 7. The "multidimensional filter" reconstructs the original signals by performing a complex "coefficient matrix" computation, just like the Accused Instrumentalities. *Id.* at 13. Thus, the '313 Application is directly related to the Accused Instrumentalities and the '211 Patent.

141. The '313 Application was originally assigned to Siemens Aktiengesellschaft. Ex. 46 at 3-4. However, on January 7, 2008, the '313 Application was assigned by Siemens to "Nokia Siemens Networks GmbH & Co KG." *Id.* at 3. Nokia Siemens Networks GmbH ("Nokia Siemens Networks") was a joint venture of Nokia Corp. and Siemens, formed in 2006-2007. Ex. 47 (6/19/2006 article, covering the announcement of the joint venture). In August 2013, Nokia Corp. acquired all of Siemens's stock in Nokia Siemens, and converted the joint venture to a wholly-owned subsidiary of Nokia Corp. Ex. 48 (8/7/2013 ComputerWorld article on acquisition) at 1-2. After it completed the acquisition, Nokia rebranded Nokia Siemens Networks as "Nokia Solutions and Networks, or NSN" (herein, "NSN"). *Id.* at 1.

142. The '313 Application published in the United States on December 29, 2005, as U.S. Pat. App. Pub. No. 2005/0286904 (Ex. 49) ("the '904 publication"). Some time after publication, patent prosecution counsel for Core, William Schaal,

saw the '904 publication, and noticed that it was for substantially similar subject matter as the '211 Patent. Accordingly, on October 15, 2007, Mr. Schaal sent a letter to Mr. Musone, notifying him of the '211 Patent. Ex. 50. In the letter, Mr. Schaal notified Mr. Musone that Core had recently learned of the publication of the '904 Publication. *Id*. at 1. Mr. Schaal notified Siemens that the '904 publication was "for identical technology as covered by U.S. Patent No. 6,782,211" – i.e., the Patent-in-Suit. *Id.* Mr. Schaal directed Siemens to, "at a minimum," submit the '211 patent to the USPTO as a prior art reference during prosecution of the '904 publication. *Id.* Mr. Schaal also stated that "[i]f Siemens is interested in obtaining a license of the technology" of the '211 patent, "we can discuss any proposed arrangement with our client [Core]." *Id.* Thus, the letter clearly notified Siemens that the '211 patent was directly relevant to the "Optical Polarization Multiplex" technology which Siemens was apparently pursuing, and attempting to patent, in the '904 publication.

143. Shortly after Mr. Schaal sent his letter to Siemens, on January 7, 2008, Siemens assigned the '313 Application to Nokia Siemens Networks. Ex. 46 at 2.

144. On October 10, 2008, counsel for Nokia Siemens Networks submitted an IDS in the prosecution of the '313 Application. Ex. 51. The IDS listed one, and only one, reference as being relevant to the '313 Application: the '211 patent. *Id.* at 3. Given the timing of the IDS, which was submitted after Mr. Schaal's letter, it is clear that the filing of the IDS was induced by Mr. Schaal's letter. Accordingly, knowledge of Mr. Schaal's letter (and of the '211 patent) must have passed from Siemens to Nokia Siemens Networks. Since Nokia later wholly absorbed Nokia Siemens Networks, that information must have passed to Nokia as well. And since the information related to a ***U.S.*** patent that could be infringed by Nokia US's sales of dual-polarization products in the United States, on information and belief, knowledge of the '211 patent and of Mr. Schaal's letter passed to Nokia US as well.

145. At the time of Nokia's acquisition of Siemens's stake in Nokia Siemens Networks, the CEO of Nokia Siemens Networks was Rajeev Suri. *Id.* Mr. Suri

remained the CEO of this entity after its acquisition and rebranding as NSN. *Id.* Mr. Suri is now the CEO of Nokia Corp. *See* https://www.nokia.com/about-us/what-we-do/group-leadership-team/rajeev-suri-president-and-chief-executive-officer-ceo/.

146. In 2014, Nokia "phased out" the name "Nokia Solutions and Networks," and rebranded this business as "Nokia Networks." *See* Ex. 52 at 1. Subsequently, on information and belief, Nokia dissolved any separate corporate existence for "Nokia Networks," and converted this business into a mere ***division*** of Nokia Corp. *See, e.g.,* Ex. 53 (excerpt from 2015 Nokia Annual Report, indicating that "in 2015," Nokia had "two main businesses (Nokia Networks and Nokia Technologies)," but that "[i]n 2016," there was no longer a specific "Nokia Networks" business); Ex. 54 (excerpt from 2016 Nokia Annual Report, identifying Nokia Networks as "[o]ur former business focused on mobile network infrastructure software, hardware and services.") This confirms that the former Nokia Siemens Networks business was fully absorbed into Nokia proper, and thus, that knowledge of the '211 Patent (and of Mr. Schaal's letter) passed to Nokia proper, including Nokia US.

147. The '313 Application issued on March 24, 2009 as U.S. Pat. No. 7,509,054 ("the '054 Patent"). Ex. 55. The '211 patent is listed on the face of the '054 Patent as a Reference Cited. *Id.* at 1. On information and belief, Nokia US personnel (including Mr. McCabe and/or Mr. Rosenthal) reviewed the '054 Patent after it issued, and saw that the '211 Patent was listed as a Reference Cited. This further advised Nokia US that the '211 Patent was relevant to the Accused Instrumentalities.

148. As shown in Paragraphs 104-147 *supra*, the '211 Patent was cited as relevant prior art against ***six separate*** Nokia patents related to the Accused Instrumentalities. There is evidence that Nokia personnel, including Mr. McCabe, specifically reviewed the '211 Patent in connection with the prosecution of those patents. The fact that the '211 Patent kept turning up as relevant prior art to Nokia's patents on the Accused Instrumentalities must have notified Nokia that the '211 Patent posed an infringement risk as to the Accused Instrumentalities. Any reasonable

party in Nokia's position would have investigated the '211 Patent after it was cited ***six separate times*** against patents on the Accused Instrumentalities. On information and belief, Nokia did conduct such an investigation. However, if it did not, then Nokia was willfully blind to the infringement risk posed by the '211 Patent.

149. Nokia was further notified of the relevance of the '211 Patent on July 16, 2018. On May 28, 2021, Nokia US admitted, in an interrogatory response, that on July 16, 2018, it was served with a subpoena in the *Infinera* case. Nokia did not provide a copy of the subpoena with its Interrogatory Response. However, Core knows that it did not serve such a subpoena on Nokia US. Thus, the subpoena must have been sent by Infinera to Nokia US, possibly to seek relevant prior art.

150. Since Nokia US received a subpoena in the *Infinera* case on July 16, 2018, it clearly knew of the existence and relevance of the '211 Patent as of that date. The subpoena would have identified the '211 Patent, and identified the types of products at issue in the *Infinera* case—i.e., Infinera's dual-polarization optical products. Nokia, a sophisticated company, clearly would have known that if Core alleged Infinera's dual-polarization products infringed the '211 Patent, Core could also allege that Nokia's dual-polarization products infringe the '211 Patent, because all of these products work in essentially the same way. Accordingly, on information and belief, when Nokia received the subpoena in *Infinera*—particularly in view of the ***six prior times*** the '211 Patent was cited as prior art against Nokia's patents on the Accused Instrumentalities—Nokia investigated the '211 Patent, and determined that the Accused Instrumentalities likely infringe the '211 Patent. If Nokia did not conduct such an investigation, despite all of the evidence cited above, then Nokia was willfully blind to the likelihood that the '211 Patent posed an infringement risk.

151. On information and belief, there are only two companies within the Nokia family that make, sell, use, or import dual-polarization products in the United States: Nokia US (for the 1830 PSS, 1830 PSI, and WaveLite Platforms), and ASN (for the 1620 SOFTNODE Platform). On information and belief, since Nokia and

Nokia US knew of the existence and relevance of the '211 Patent to the Accused Instrumentalities before the filing of the complaint, Nokia US (or another Nokia entity) notified ASN that its sales, offers for sale, use, making, or importation of 1620 SOFTNODE products in the United States likely infringed the '211 Patent.

152. Because ASN and Nokia US are sister entities within the same corporate family, on information and belief, Nokia US personnel (or personnel of other Nokia entities) knew that ASN was selling 1620 SOFTNODE products in the United States, and knew that those products used dual-polarization communication. Because Nokia US knew (from the foregoing) that all dual-polarization products likely infringe the '211 patent, and knew that ASN was selling dual-polarization products in the United States, on information and belief, Nokia US personnel (or personnel of other Nokia entities) notified ASN personnel that ASN's sales, uses, offering for sale, making, or importation of 1620 SOFTNODE products likely infringed the '211 Patent.

153. Accordingly, prior to the expiration of the '211 Patent, and prior to the filing of the complaints in these cases, ASN knew of the '211 Patent, and knew that the 1620 SOFTNODE dual-polarization products likely infringe that patent.

154. Because ASN was aware of the '211 patent's relevance and existence, it knew that its customers' use of 1620 SOFTNODE products constituted infringement of that patent. Thus, when ASN sold 1620 SOFTNODE products to U.S. customers, and/or provided service, maintenance, technical support, or other active assistance to such customers, it did so with the specific intent to encourage the customers to directly infringe of the '211 Patent. ASN's decision to continue marketing the 1620 SOFTNODE products to U.S. customers, and to continue to actively assist its customers in using those products—despite knowing that such customers' use would constitute direct infringement—evidences that ASN had a specific intent to encourage direct infringement of the '211 patent by its customers.

155. Therefore, ASN has unlawfully induced infringement of the '211 Patent, in violation of 35 U.S.C. § 271(b).

COUNT III – CONTRIBUTORY INFRINGEMENT (ASN)

156. Core repeats and realleges each and every allegation contained in Paragraphs 1-155 *supra*, as if fully set forth herein.

157. ASN has committed contributory infringement of the Asserted Claims of the '211 Patent, in violation of 35 U.S.C. § 271(c).

158. ASN has committed contributory infringement by selling, offering to sell and/or importing into the United States the Fiber Optic XPIC Devices, including SOFTNODE 1620. As shown in Paragraphs 35-66 of the Nokia SAC, the Fiber Optic XPIC Devices contain components which, as configured, perform cross-polarization interference mitigation on polarization-multiplexed optical signals. These components, when used as configured during normal operation, practice the inventions claimed in the Asserted Claims.

159. The components of the Fiber Optic XPIC Devices that perform cross-polarization interference mitigation practice a material part of the Asserted Claims, because they perform one of the key inventive functions of the '211 Patent – i.e., they mitigate the effects of cross-polarization interference, using matrix operations, to reconstruct the original polarization-division-multiplexed signals.

160. On information and belief, prior to the filing of the Complaint, ASN had actual knowledge, or was willfully blind, that these components of the Fiber Optic XPIC Devices (including 1620 SOFTNODE) were especially made or adapted for use in a manner that infringes the Asserted Claims of the '211 Patent. As shown in Paragraphs 81-87 and 103-153 *supra*, ASN knew, or was willfully blind, that the Fiber Optic XPIC Devices are configured to infringe the '211 Patent upon use, at least because of: (i) Core's prior litigations against others in the optical networking industry; (ii) Nokia's six separate patents in which the '211 Patent was cited as prior art; (iii) the July 2018 subpoena in the *Infinera* case; and (iv) the October 2007 notice letter to Siemens. For the reasons set forth in Paragraphs 81-87 and 103-153, and on information and belief, ASN knew, or was willfully blind, that normal use of the

Fiber Optic XPIC Devices infringes the Asserted Claims of the '211 Patent. Despite that knowledge (or willful blindness), ASN actively sold the Fiber Optic XPIC Devices in the United States, knowing that their customers would use the Fiber Optic XPIC Devices in the United States, and knowing (or being willfully blind) that such use would constitute direct infringement of the Asserted Claims.

161. The components of the Fiber Optic XPIC Devices that are configured to perform cross-polarization interference mitigation are not staple articles of commerce, and—as configured to perform cross-polarization interference mitigation during normal operation—are not capable of substantial noninfringing use. To the contrary, these components, as configured, are ***especially adapted*** to perform the claimed cross-polarization interference mitigation methods, during normal use.

162. For example, the Fiber Optic XPIC Devices include the D5X500 Subsea line card. Ex. 7 at 2. On information and belief, the D5X500 Subsea can be used with the 1620 SOFTNODE to create an optical transport network. *Id*. According to the D5X500 Datasheet, the D5X500 Subsea can "us[e] six different multi-modulation formats." *Id.* These formats are summarized in the following table (Ex. 4 at 3):

Line capacity (per port)	250G	DP-16QAM
	200G	DP-16QAM
	200G	DP-8QAM
	100G	DP-QPSK
	100G	SP-DP-QPSK (set partition)
	50G	DP-BPSK

163. As seen above, ***all six*** of the available modulation formats for the D5X500 Subsea use "DP" – i.e., ***dual polarization*** modulation. Thus, the D5X500 Subsea card, as configured, ***always*** uses dual polarization modulation. As discussed above, when a card uses dual polarization modulation, it necessarily infringes the Asserted Claims. Thus, the D5X500 Subsea card has no non-infringing use: in ***every*** mode of operation, it practices the asserted claims. Accordingly, at least when they are used with the D5X500 Subsea card (as configured), the Fiber Optic XPIC Devices (including 1620 SOFTNODE) are not capable of substantial non-infringing use.

164. On information and belief, there are additional line cards, interface cards, transceivers, and other components within the Fiber Optic XPIC Devices that lack substantial non-infringing uses. Core expects that much of the information about these components is non-public. Core expects that, through discovery, it may uncover additional evidence regarding components of the Fiber Optic XPIC Devices that, as configured, are incapable of substantial non-infringing use. Core reserves the right to amend this Complaint to identify such additional components as they are uncovered in discovery, to the maximum extent permitted by law.

165. Accordingly, ASN has unlawfully contributed to infringement of the '211 Patent, in violation of 35 U.S.C. § 271(c).

REMEDIES, ENHANCED DAMAGES, EXCEPTIONAL CASE

166. Core repeats and realleges each and every allegation contained in Paragraphs 1-165 *supra*, as if fully set forth herein.

167. Defendants' direct infringement (Count I), induced infringement (Count II), and contributory infringement (Count III) of the '211 patent has caused, and will continue to cause, significant damage to Core. As a result, Core is entitled to an award of damages adequate to compensate it for Defendants' infringement, but in no event less than a reasonable royalty pursuant to 35 U.S.C. § 284. Core is also entitled to recover prejudgment interest, post-judgment interest, and costs.

168. For at least the reasons set forth in Paragraphs 81-87 and 103-153 *supra*, prior to the filing of this Complaint, Defendants knew (or were willfully blind) that the Fiber Optic XPIC Devices are configured to infringe the Asserted Claims of the '211 Patent during normal use. Despite this known, objectively-high risk that their actions constituted direct and indirect infringement, Defendants continued to directly and indirectly infringe the '211 patent, up to the filing of this Complaint. Accordingly, Defendants' infringement has been (and is) willful.

169. In addition to being willful, Defendants' conduct has been egregious.

170. As set forth in Paragraphs 81-87 and 103-105 *supra*, despite knowing of

(or being willfully blind to) their infringement, Defendants continued to infringe, on a large scale, until the '211 patent expired. Defendants are large companies with hundreds of millions, or billions, of dollars in annual revenue. Meanwhile, Plaintiff is a small company, owned by an individual inventor. On information and belief, Defendants persisted in their willful infringement, at least in part, because they believed they could use their superior resources to overwhelm Plaintiff in litigation. If proven, this would constitute "egregious" conduct, warranting enhanced damages.

171. Moreover, the validity of the '211 patent has been thrice confirmed by the Patent Trial and Appeal Board ("PTAB"), in: (i) IPR2016-01618, filed by Fujitsu Network Communications, Inc.; (ii) IPR2018-01259, filed by Infinera Corporation; and (iii) IPR2020-01664, filed by Nokia and Juniper. In all three *Inter Partes* Review proceedings, the Petitioners—who were defendants in litigation—cited numerous prior art references, to attempt to establish that claims of the '211 patent, including the Asserted Claims, were invalid. Yet, in all three cases, the PTAB ***denied*** institution, finding that the Petitioners had failed to establish a "reasonable likelihood" that ***any*** claim of the '211 patent was invalid. *See* Ex. 8 (decision denying review in IPR2016-01618); Ex. 9 (decision denying review in IPR2018-01259); Ex. 10 (decision denying review in IPR2020-01664). Because the PTAB has already rejected three extensive invalidity challenges to the '211 patent—including one filed by Nokia itself—Defendants cannot reasonably believe that they have a viable invalidity defense. Defendants' decision to persist in known, clearly-infringing conduct, despite the lack of any viable invalidity defense, is further evidence of "egregiousness," warranting an award of enhanced damages.

172. For at least the foregoing reasons, Defendants' conduct has been willful and egregious. Accordingly, under 35 U.S.C. § 284, the Court should enhance Core's damages in this case by up to three times the amount found or assessed.

173. For at least the foregoing reasons, this case is an "exceptional" case within the meaning of 35 U.S.C. § 285. Accordingly, Core is entitled to an award of

attorneys' fees and costs, and the Court should award such fees and costs.

PRAYER FOR RELIEF

WHEREFORE, Core prays for relief as follows:

1. That judgment be entered in favor of Core, and against Defendants;

2. That Core be awarded damages adequate to compensate it for Defendants' infringement of the Asserted Claims of the '211 Patent, in an amount to be determined at trial, as well as interest thereon;

3. That Core be awarded the costs of suit;

4. That Defendants' infringement be declared willful and egregious;

5. That the Court increase Core's damages up to three times the amount assessed under 35 U.S.C. § 284;

6. That the Court declare this an exceptional case under 35 U.S.C. § 285, and award Core its attorneys' fees and costs incurred in this action; and

7. That the Court grant such further relief as it deems just and proper.

JURY TRIAL DEMAND

Core demands a jury trial on all issues so triable.

DATED: July 6, 2021

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