IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLORADO

Civil Action No. 1:12-cv-00581-WJM-CBS
JURY TRIAL DEMANDED

TELECOMMUNICATIONS RESEARCH LABORATORIES d/b/a TR LABS,
A Canadian Not For Profit Corporation, and
TR TECHNOLOGIES, INC., a Canadian Corporation,

Plaintiffs,

v.

QWEST COMMUNICATIONS COMPANY, LLC, a Delaware Corporation,
QWEST CORP., a Delaware Corporation,
WINDSTREAM CORP., a Delaware Corporation,
SPRINT NEXTEL CORP., a Kansas Corporation,
COMCAST CORP., a Pennsylvania Corporation,
COX COMMUNICATIONS, INC. a Delaware Corporation,
TW TELECOM INC., a Delaware Corporation, and
LEVEL 3 COMMUNICATIONS, INC., a Delaware Corporation,

Defendants.

SECOND AMENDED COMPLAINT

The plaintiff, Telecommunications Research Laboratories, formerly known as Alberta Telecommunications Research Centre, and doing business as TR Labs ("TR Labs"), and TR Technologies, Inc. ("TR Tech") (collectively "plaintiffs") allege in this matter as follows:

FACTUAL BACKGROUND

Plaintiffs

1. TR Labs is Canada's largest non-profit research consortium with its membership including universities, companies, and government agencies. TR Labs has offices throughout western Canada, and its principal place of business is 9107 116th Street, Edmonton, Alberta, Canada T6G 2V4.

2. Among TR Labs' members is the University of Alberta in Edmonton, Canada.

3. TR Tech is the exclusive licensee of the patents owned by TR Labs.

The TR Labs Patents

4. TR Labs is the owner by assignment of U.S. Patent No. 6,914,880, entitled *Protection of routers in a telecommunications network* ("the '880 patent"), U.S. Patent No. 6,421,349, entitled *Distributed preconfiguration of spare capacity in closed paths for network restoration* ("the '349 patent), and U.S. Patent No. 7,260,059, entitled *Evolution of a telecommunications network from ring to mesh structure* ("the '059 patent"), U.S. Patent No. 6,404,734, entitled *Scalable network restoration device* ("the '734 patent"), U.S. Patent No. 4,956,835 entitled *Method and apparatus for self-restoring and self-provisioning communication networks* ("the '835 patent"), U.S. Patent No. 5,850,505 entitled *Method for preconfiguring a network to withstand anticipated failures* ("the '505 patent"), U.S. Patent No. 6,377,543 entitled *Path restoration of networks* ("the '543 patent"), and 6,654,379 ("the '379 patent") entitled *Integrated ring-mesh network* (collectively "the TR Labs patents") (attached as Exhibits A-H).

5. The '880 patent issued on July 5, 2005 based upon an application filed on May 19, 1999. The '349 patent issued on July 16, 2002 from an application filed on July 11, 1997. The '059 patent issued on August 21, 2007 from an application filed on June 28, 2001. The '734 patent issued on June 11, 2002 from an application filed on October 6, 1998. The '835 patent issued on September 11, 1990 based upon an application filed on October 19, 1988. The '505 patent issued on December 15, 1998 based upon an application filed on November 1, 1995. The '543 patent issued on April 23, 2002 based upon an application filed on October 20, 1997. The 379 patent issued on November 25, 2003 based upon an application filed on October 7, 1999.

Dr. Wayne Grover

6. The first named inventor on the TR Labs patent is TR Labs' former Chief Scientist in Network Systems Research, Dr. Wayne D. Grover.

7. In addition to his position at TR Labs, Dr. Grover was a Professor in the Department of Electrical and Computer Engineering at the University of Alberta in Edmonton, Canada.

8. Dr. Grover is a Fellow of the Institute of Electronic and Electrical Engineers ("IEEE"), a title conferred on those engineers who have demonstrated outstanding proficiency and have achieved distinction in their profession. He is also a Fellow of the Engineering Institute of Canada, a title awarded by that organization for similar scientific achievement.

9. Among his numerous awards, in 2001-2002, the Natural Science and Engineering Research Council of Canada named Dr. Grover an E.W.R Steacie Fellow, which recognizes highly promising scientists and engineers who are faculty members of Canadian universities. Dr. Grover was awarded the IEEE's 1999 W.R.G. Baker Prize Paper award for the most outstanding paper reporting original work in an IEEE publication, and that same year was named Canada's Outstanding Engineer in Canada by the IEEE.

The Defendants

A. The Qwest Defendants

10. Defendant Qwest Communications Company, LLC is a Delaware corporation with a principal place of business at 1801 California Street, Suite 2950, Denver, Colorado 80202-2658.

11. Defendant Qwest Corporation is a Delaware corporation with a principal place of business at 100 Centurylink Drive, Monroe, Louisiana 71203-2041.

12. The Qwest defendants operate and/or employ, either directly or indirectly, mesh telecommunications networks in the United States.

13. The Qwest defendants operate and/or employ, or have operated or employed, either directly or indirectly, ring telecommunications networks that have been converted to mesh telecommunication networks in the United States.

14. The mesh telecommunications networks operated and/or employed by the Qwest defendants have deployed at least Cisco ONS 15454 Multiservice platforms, Fujitsu ROADM devices, Ciena CoreDirector Multiservice Optical Switches, and/or Cisco CRS-1 routers, in addition to other components that are connected to these devices for the purpose of transmitting voice and data traffic.

15. The mesh telecommunications networks operated and/or employed by the Qwest defendants utilize the functionality of the afore-referenced devices in a manner designed to restore the flow of voice and data traffic in the event of the failure of a node, circuit, or path during the normal operation of such networks.

16. The mesh telecommunications networks operated and/or employed by the Qwest defendants are designed to, and do, interconnect with one another for the transmission of voice and data traffic both when such networks are in normal operation mode, and when there is a failure of a node, circuit, span or path in such networks

17. The mesh telecommunications networks and networks converted from ring to mesh networks operated directly or indirectly by the Qwest defendants infringe the claims of the TR Labs patents in violation of 35 U.S.C. § 271.

B. Comcast

18. Comcast Corporation ("Comcast") is a Pennsylvania Corporation with a principal place of business at One Comcast Center, Philadelphia, Pennsylvania 19103.

19. Comcast operates and/or employs, either directly or indirectly, mesh telecommunications networks in the United States.

20. Comcast operates and/or employs, or has operated or employed, either directly or indirectly, ring telecommunications networks that have been converted to mesh telecommunication networks in the United States.

21. The mesh telecommunications networks operated and/or employed by Comcast have deployed at least Cisco ONS 15454 Multiservice platforms, Fujitsu ROADM devices, Ciena CoreDirector Multiservice Optical Switches, and/or Cisco CRS-1 routers, in addition to other components that are connected to these devices for the purpose of transmitting voice and data traffic.

22. The mesh telecommunications networks operated and/or employed by Comcast utilize the functionality of the afore-referenced devices in a manner designed to restore the flow of voice and data traffic in the event of the failure of a node, circuit, or path during the normal operation of such networks.

23. The mesh telecommunications networks operated and/or employed by Comcast are designed to, and do, interconnect with one another for the transmission of voice and data traffic both when such networks are in normal operation mode, and when there is a failure of a node, circuit, span or path in such networks

24. The mesh telecommunications networks and networks converted from ring to mesh networks operated directly or indirectly by Comcast infringe the claims of the TR Labs patents in violation of 35 U.S.C. § 271.

C. Cox

25. Defendant Cox Communications, Inc. ("Cox") is a Delaware corporation with a principal place of business at 1400 Lake Hearn Drive, Atlanta, Georgia 30319.

26. Cox operates and/or employs, either directly or indirectly, mesh telecommunications networks in the United States.

27. Cox operates and/or employs, or has operated or employed, either directly or indirectly, ring telecommunications networks that have been converted to mesh telecommunication networks in the United States.

28. The mesh telecommunications networks operated and/or employed by Cox have deployed at least Cisco ONS 15454 Multiservice platforms, Fujitsu ROADM devices, Ciena CoreDirector Multiservice Optical Switches, and/or Cisco CRS-1 routers, in addition to other components that are connected to these devices for the purpose of transmitting voice and data traffic.

29. The mesh telecommunications networks operated and/or employed by Cox utilize the functionality of the afore-referenced devices in a manner designed to restore the flow of voice and data traffic in the event of the failure of a node, circuit, or path during the normal operation of such networks.

30. The mesh telecommunications networks operated and/or employed by Cox are designed to, and do, interconnect with one another for the transmission of voice and data traffic both when

such networks are in normal operation mode, and when there is a failure of a node, circuit, span or path in such networks

31. The mesh telecommunications networks and networks converted from ring to mesh networks operated directly or indirectly by Cox infringe the claims of the TR Labs patents in violation of 35 U.S.C. § 271.

D. Sprint

32. Defendant Sprint Nextel Corporation ("Sprint") is a Kansas corporation with a principal place of business at 6200 Sprint Parkway, Overland Park, Kansas 66211.

33. Sprint operates and/or employs, either directly or indirectly, mesh telecommunications networks in the United States.

34. Sprint operates and/or employs, or has operated or employed, either directly or indirectly, ring telecommunications networks that have been converted to mesh telecommunication networks in the United States.

35. The mesh telecommunications networks operated and/or employed by Sprint have deployed at least Cisco ONS 15454 Multiservice platforms, Fujitsu ROADM devices, Ciena CoreDirector Multiservice Optical Switches, and/or Cisco CRS-1 routers, in addition to other components that are connected to these devices for the purpose of transmitting voice and data traffic.

36. The mesh telecommunications networks operated and/or employed by Sprint utilize the functionality of the afore-referenced devices in a manner designed to restore the flow of voice and data traffic in the event of the failure of a node, circuit, or path during the normal operation of such networks.

37. The mesh telecommunications networks operated and/or employed by Sprint are designed to, and do, interconnect with one another for the transmission of voice and data traffic both when such networks are in normal operation mode, and when there is a failure of a node, circuit, span or path in such networks.

38. The mesh telecommunications networks and networks converted from ring to mesh networks operated directly or indirectly by Sprint infringe the claims of the TR Labs patents in violation of 35 U.S.C. § 271.

39. TR Labs first contacted Sprint about the afore-described infringement on April 6, 2010. Despite its representation that it would provide a substantive response on the issue of such infringement, Sprint never did.

E. Windstream

40. Defendant Windstream Corporation ("Windstream") is a Delaware corporation with a principal place of business at 4001 North Rodney Parham Road, Little Rock, Arkansas 72212.

41. Windstream operates and/or employs, either directly or indirectly, mesh telecommunications networks in the United States.

42. Windstream operates and/or employs, or has operated or employed, either directly or indirectly, ring telecommunications networks that have been converted to mesh telecommunication networks in the United States.

43. The mesh telecommunications networks operated and/or employed by Windstream have deployed at least Cisco ONS 15454 Multiservice platforms, Fujitsu ROADM devices, Ciena CoreDirector Multiservice Optical Switches, and/or Cisco CRS-1 routers, in addition to other

components that are connected to these devices for the purpose of transmitting voice and data traffic.

44. The mesh telecommunications networks operated and/or employed by Windstream utilize the functionality of the afore-referenced devices in a manner designed to restore the flow of voice and data traffic in the event of the failure of a node, circuit, or path during the normal operation of such networks.

45. The mesh telecommunications networks operated and/or employed by Windstream are designed to, and do, interconnect with one another for the transmission of voice and data traffic both when such networks are in normal operation mode, and when there is a failure of a node, circuit, span or path in such networks

46. The mesh telecommunications networks and networks converted from ring to mesh networks operated directly or indirectly by Windstream infringe the claims of the TR Labs patents in violation of 35 U.S.C. § 271.

F. TW Telecom

47. Defendant TW Telecom Inc. ("TW Telecom") is a Delaware corporation with a principal place of business at 10475 Park Meadows Drive, Littleton, Colorado 80124.

48. TW Telecom operates and/or employs, either directly or indirectly, mesh telecommunications networks in the United States.

49. TW Telecom operates and/or employs, or has operated or employed, either directly or indirectly, ring telecommunications networks that have been converted to mesh telecommunication networks in the United States.

50. The mesh telecommunications networks operated and/or employed by TW Telecom have deployed at least Cisco ONS 15454 Multiservice platforms, Fujitsu ROADM devices, Ciena CoreDirector Multiservice Optical Switches, and/or Cisco CRS-1 routers, in addition to other components that are connected to these devices for the purpose of transmitting voice and data traffic.

51. The mesh telecommunications networks operated and/or employed by TW Telecom utilize the functionality of the afore-referenced devices in a manner designed to restore the flow of voice and data traffic in the event of the failure of a node, circuit, or path during the normal operation of such networks.

52. The mesh telecommunications networks operated and/or employed by TW Telecom are designed to, and do, interconnect with one another for the transmission of voice and data traffic both when such networks are in normal operation mode, and when there is a failure of a node, circuit, span or path in such networks

53. The mesh telecommunications networks and networks converted from ring to mesh networks operated directly or indirectly by TW Telecom infringe the claims of the TR Labs patents in violation of 35 U.S.C. § 271.

G. Level 3 Communications, Inc.

54. Defendant Level 3 Communications, Inc. ("Level 3") is a Delaware corporation with a principal place of business at 1025 Eldorado Blvd., Broomfield, Colorado 80021-8869.

55. Level 3 operates and/or employs, either directly or indirectly, mesh telecommunications networks in the United States.

56. Level 3 operates and/or employs, or has operated or employed, either directly or indirectly, ring telecommunications networks that have been converted to mesh telecommunication networks in the United States.

57. The mesh telecommunications networks operated and/or employed by Level 3 have deployed at least Cisco ONS 15454 Multiservice platforms, Fujitsu ROADM devices, Ciena CoreDirector Multiservice Optical Switches, and/or Cisco CRS-1 routers, in addition to other components that are connected to these devices for the purpose of transmitting voice and data traffic.

58. The mesh telecommunications networks operated and/or employed by Level 3 utilize the functionality of the afore-referenced devices in a manner designed to restore the flow of voice and data traffic in the event of the failure of a node, circuit, or path during the normal operation of such networks.

59. The mesh telecommunications networks operated and/or employed by Level 3 are designed to, and do, interconnect with one another for the transmission of voice and data traffic both when such networks are in normal operation mode, and when there is a failure of a node, circuit, span or path in such networks

60. The mesh telecommunications networks and networks converted from ring to mesh networks operated directly or indirectly by Level 3 infringe the claims of the TR Labs patents in violation of 35 U.S.C. § 271.

JURISDICTION, VENUE AND JOINDER

61. The defendants, at all relevant times, have been doing business in this Judicial District.

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

63. Venue is proper in this Judicial District pursuant to 28 U.S.C. § 1400(b).

64. Each of the defendants has an interconnect agreement with at least one other defendant, thereby making the acts accused of infringement in this matter arising out of the same transaction, occurrence, or series of transactions or occurrences, and making joinder of the parties in this matter proper pursuant to 35 U.S.C. § 299(a).

COUNT I – PATENT INFRINGEMENT

65. The plaintiffs incorporate by reference paragraphs 1-64, above.

66. The defendants have directly infringed the claims of the TR Labs patents by operating, either directly or indirectly, and either alone or in conjunction with the other defendants, mesh telecommunications networks that are covered by such claims in violation of 35 U.S.C. § 271.

67. The plaintiffs are irreparably harmed by the defendants' infringement in view of the finite patent monopoly that the plaintiffs enjoy as the owner and exclusive licensee of the TR Labs patents.

PRAYERS FOR RELIEF

WHEREFORE, the plaintiffs respectfully request that this Court:

a) Find that the defendants infringe the TR Labs patents;

b) Order the defendants to pay the plaintiffs damages equal to no less than a reasonable royalty to compensate for the infringement of the TR Labs patents pursuant to 35 U.S.C. § 284;

c) Order the defendants to pay the plaintiffs prejudgment interest;

d) Find this case to be exceptional;

e) Order the defendants to pay attorneys' fees pursuant to 35 U.S.C. § 285;

f) Enjoin the defendants from further infringement of the TR Labs patents; and

g) Award whatever additional relief the Court finds just and equitable.

Respectfully submitted,

s/ George C. Summerfield
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Attorneys for Plaintiffs
Telecommunications Research Laboratories and TR Technologies, Inc.

Date:

JURY DEMAND

TR Labs hereby demands a trial by jury on all issues so triable.

s/ George C. Summerfield
George C. Summerfield