

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF NEW YORK**

VERTICAL CONNECTION TECHNOLOGIES LLC,

Plaintiff,

v.

T-MOBILE US, INC., and
T-MOBILE USA, INC.,

Defendants.

Case No. 17 Civ. 4992

JURY TRIAL DEMANDED

COMPLAINT

Plaintiff Vertical Connection Technologies LLC (“VCT”) files this Complaint against T-Mobile US, Inc. and T-Mobile USA, Inc. (collectively “Defendants”) for infringement of U.S. Patent No. 7,245,917.

THE PARTIES

1. VCT a Nevada Limited Liability Company.
2. T-Mobile US, Inc. is a Delaware corporation with its principal place of business at 12920 SE 38th Street, Bellevue, Washington 98006.
3. T-Mobile USA, Inc. is a Delaware corporation with its principal place of business at 12920 SE 38th Street, Bellevue, Washington 98006.
4. T-Mobile US, Inc. and T-Mobile USA, Inc. are referred to herein as “T-Mobile” or “Defendants.”

JURISDICTION AND VENUE

5. This is an action for patent infringement under Title 35 of the United States Code.

6. Jurisdiction is proper in this Court pursuant to 28 U.S.C. §§ 1331 (federal question) and 1338(a) (patents), because this is a civil action for patent infringement arising under the United States patent statutes, 35 U.S.C. § 101 *et seq.*

7. This Court has personal jurisdiction over Defendants because Defendants have committed, and continue to commit, acts of infringement in the State of New York, including in this district, have conducted business in the State of New York, including in this district, and/or have engaged in continuous and systematic activities in the State of New York.

8. Venue is proper under 28 U.S.C. § 1400(b) because Defendants have a regular and established place of business in this judicial district and have committed acts of infringement in this district. Defendants regular and established places of business include, but are not limited to, their retail stores that sell smartphones for use on Defendants' wireless networks.

9. This Court has personal jurisdiction over Defendants because Defendants have committed, and continue to commit, acts of infringement in the state of New York, including in this District, have conducted business in the state of New York, including in this district, and/or have engaged in continuous and systematic activities in the state of New York, including in this District.

U.S. PATENT NO. 7,245,917

10. U.S. Patent No. 7,245,917 ("the '917 Patent") is owned by the Research Foundation for The State University of New York ("The Research Foundation").

11. The Research Foundation is a nonprofit, education corporation existing under the laws of the State of New York, for and on behalf of the State University of New York at Stony Brook ("SUNY Stony Brook"), with an office located at the Office of Technology Licensing and Industry Relations, N5002, Frank Melville Jr. Memorial Library, Stony Brook, New York.

12. The Research Foundation works with the academic and business leadership of the State University of New York campuses to support research and discovery through administration of sponsored projects and transfer and sharing of intellectual property for public benefit and economic growth.

13. The Research Foundation supports The State University of New York with a central infrastructure of people, technology and processes that enable faculty to:

- a. write and submit grant proposals to agencies, foundations and companies;
- b. establish contracts and manage funding that is awarded to run campus-based research projects;
- c. protect and commercialize intellectual property created within those projects, including the '917 Patent; and
- d. promote transparency and accountability throughout the process.

14. The '917 Patent is entitled "System and Method for IP Handoff." A true and correct copy of the '917 Patent is attached as Exhibit A.

15. Prof. Tzi-cker Chiueh, a Research Professor in the Department of Computer Science at SUNY Stony Brook, is listed as the inventor of the '917 Patent and was involved in research and development in the field of the invention at SUNY Stony Brook. Prof. Chiueh received his Ph.D. in Computer Science from University of California Berkeley in 1992, M.S. from Stanford University in 1988, and B.S. from National Taiwan University in 1984.

16. As set forth in the Abstract of the '917 Patent:

A seamless vertical handoff method allows the network applications and connections on a mobile node to continue without disruption as it moves within a wireless overlay network that comprises multiple possibly overlapping layers of wireless networks (e.g., a WLAN and a WWAN) with different underlying technologies, providing mobile roaming capabilities. The method comprises a WLAN access point signal strength monitor for

determining when to switch between WLAN and WWAN, and a network connection migration scheme that can move an active network connection from a wireless link of one technology to another wireless link of a different technology in a way that is transparent to the user, the remote end of the network connection, and the operator of the WWAN carrier.

17. Claim 1 of the '917 Patent is exemplar:

A vertical handoff system comprising:

a first foreign agent providing connectivity to a network, the first foreign agent broadcasting a wireless local area network signal;

a second foreign agent providing connectivity to the network via a wireless wide area network signal;

a mobile node comprising executable code for performing a vertical handoff between the first foreign agent and the second foreign agent; and

a home agent routing information to the mobile node through one of the first foreign agent and the second foreign agent according to an established connection of the mobile node.

18. The claimed technology represents an important breakthrough in the field of wireless communication.

19. The claimed technology allows, *inter alia*, a smartphone user to conduct a telephone call over a Wi-Fi connection and seamlessly switch to a cellular connection, without interruption, should the user leave the vicinity of the Wi-Fi connection (and vice versa).

20. Defendants are now employing this “next-gen” technology in their vertical handoff systems.

With next-gen Wi-Fi Calling, T-Mobile is pioneering seamless handover between our LTE network and any available Wi-Fi connection so calls don't drop between the two. Next-gen Wi-Fi Calling also features HD Voice quality, when calling another HD Voice-capable user. This means our customers can now maintain crystal clear HD Voice calls, whether connected to T-Mobile LTE or Wi-Fi connect – all using their existing T-Mobile number.

COUNT I

(INFRINGEMENT OF THE '917 PATENT)

21. Plaintiff incorporates each preceding paragraph herein by reference.

22. This cause of action arises under the patent laws of the United States, and in particular, 35 U.S.C. §§ 271, *et seq.*

23. Plaintiff is the exclusive licensee of the '917 Patent, with ownership of all substantial rights in the '917 Patent, including the right to exclude others and to enforce, sue and recover damages for past and future infringement.

24. The '917 Patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code.

25. Defendants have directly infringed the '917 Patent in violation of 35 U.S.C. § 271(a) and induced infringement of the '917 Patent in violation of 35 U.S.C. § 271(b).

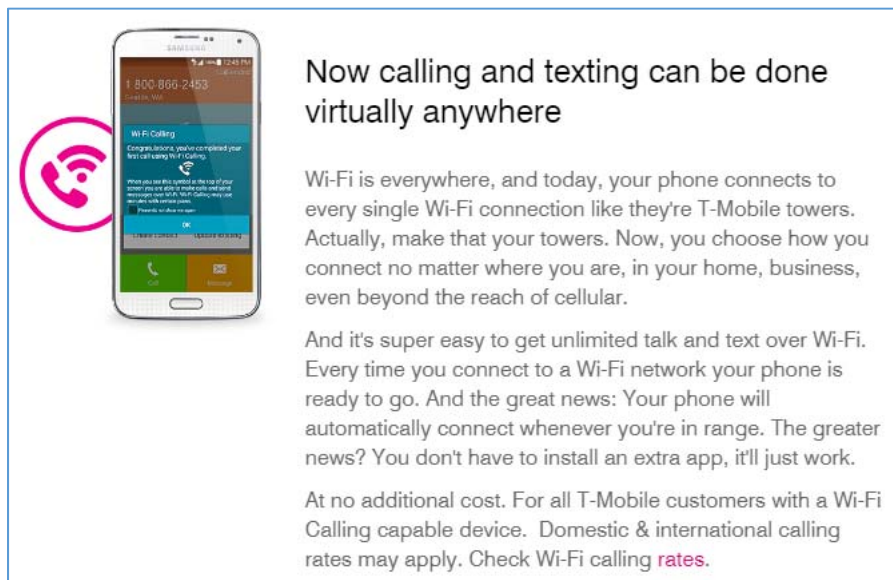
26. Plaintiff has been damaged as a result of Defendants' infringing conduct as described herein. Defendants are, thus, liable to Plaintiff in an amount that adequately compensates Plaintiff for Defendants' infringement, which by law, cannot be less than a reasonable royalty, together with interest and costs fixed by this Court pursuant to 35 U.S.C. § 284.

Direct Infringement

27. On information and belief, Defendants have and continue to directly infringe one or more claims of the '917 Patent in this judicial district and/or elsewhere in the United States, including at least claim 1, without consent or authorization of Plaintiff, by, among other things, (a) making, using, offering for sale, selling, and/or importing infringing vertical handoff systems, including Defendants' seamless handover systems, (b) practicing infringing methods by way of

Defendants' seamless handover systems, and/or (c) directing or controlling the performance of infringing methods, including by customers and/or end-users of wireless communication devices that Defendants sell and/or that operate on Defendants' networks. Defendants are thereby liable for infringement of the '917 Patent pursuant to 35 U.S.C. § 271.

28. For example, Defendants make, use, offer for sale, sell, and/or import the vertical handoff system of claim 1 of the '917 Patent, which is advertised in part as follows:



The advertisement features a smartphone on the left displaying a 'Wi-Fi Calling' notification. To the right of the phone is a pink circular icon containing a white Wi-Fi symbol and a telephone handset. The text to the right of the phone reads: 'Now calling and texting can be done virtually anywhere'. Below this, it states: 'Wi-Fi is everywhere, and today, your phone connects to every single Wi-Fi connection like they're T-Mobile towers. Actually, make that your towers. Now, you choose how you connect no matter where you are, in your home, business, even beyond the reach of cellular.' Further down, it says: 'And it's super easy to get unlimited talk and text over Wi-Fi. Every time you connect to a Wi-Fi network your phone is ready to go. And the great news: Your phone will automatically connect whenever you're in range. The greater news? You don't have to install an extra app, it'll just work.' At the bottom, it concludes: 'At no additional cost. For all T-Mobile customers with a Wi-Fi Calling capable device. Domestic & international calling rates may apply. Check Wi-Fi calling rates.'

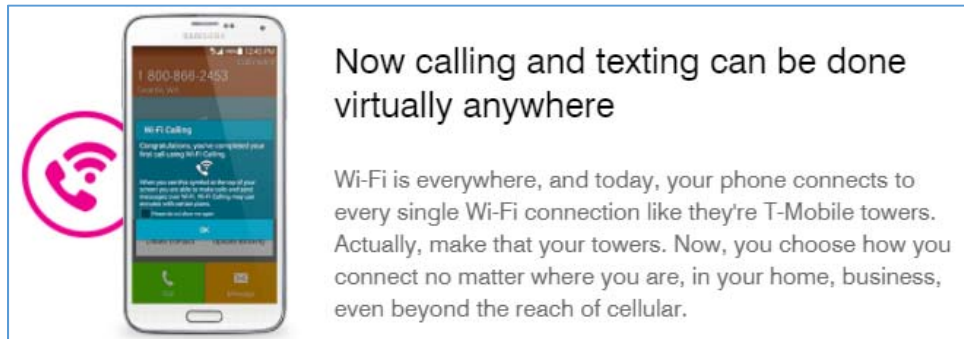
With next-gen Wi-Fi Calling, T-Mobile is pioneering seamless handover between our LTE network and any available Wi-Fi connection so calls don't drop between the two. Next-gen Wi-Fi Calling also features HD Voice quality, when calling another HD Voice-capable user. This means our customers can now maintain crystal clear HD Voice calls, whether connected to T-Mobile LTE or Wi-Fi connect – all using their existing T-Mobile number.

29. On information and belief, Defendants' seamless handover systems comprise a first foreign agent that includes an ePDG (evolved Packet Data Gateway) in communication with a Wi-Fi router, or substantial equivalents. The first foreign agent is advertised in part as shown below. Pursuant to Fed. R. Civ. P. 11(b)(3), Plaintiff will likely have additional evidentiary support for this contention after a reasonable opportunity for further discovery.

Now for the first time, thanks to our launch of next generation Wi-Fi Calling and our use of new capabilities in our evolved Packet Data Gateway (ePDG), we're providing our customers a seamless HD Voice calling experience whether they're connected to a T-Mobile tower or a Wi-Fi connection. No other major national carrier is doing this with Wi-Fi Calling today.

With ePDG and our nationwide VoLTE (with eSRVCC), customers with a capable smartphone can start a call on VoLTE and hand off to a connected Wi-Fi network or vice versa, or move onto our 4G HSPA+ or 2G network. Your call won't drop. You won't even know you've switched between networks.

30. The first foreign agent provides connectivity to Defendants' network and broadcasts a wireless local area network signal (e.g., a Wi-Fi network signal). The broadcast Wi-Fi signal is advertised in part as shown below.



31. On information and belief, Defendants' seamless handover system comprises a second foreign agent that includes a SGW (Serving Gateway) and eNode B (Evolved Node B or E-UTRAN Node B), or substantial equivalents. Pursuant to Fed. R. Civ. P. 11(b)(3), Plaintiff will likely have additional evidentiary support for this contention after a reasonable opportunity for further discovery.

32. The second foreign agent provides connectivity to Defendants' network and broadcasts a wireless wide area network signal (e.g., a LTE/VoLTE signal). The broadcast LTE/VoLTE signal is advertised in part as shown below.

Voice over LTE (VoLTE)

VoLTE (Voice over LTE) allows you to place and receive calls on our LTE data network. Phone calls are connected with a clear and rich experience. You never know when you might need to check Facebook while talking to your mom and sharing your Mobile Hotspot with your friends. All of this is possible on our amazingly fast 4G LTE network. Here's some of the highlights:

33. On information and belief, Defendants' seamless handover systems comprise a mobile node comprising executable code for performing a vertical handoff between the first foreign agent and the second foreign agent.

34. Mobile nodes (e.g., smartphones) on Defendants' network perform a vertical handoff between the first foreign agent and the second foreign agent, as advertised in part below.

With next-gen Wi-Fi Calling, T-Mobile is pioneering seamless handover between our LTE network and any available Wi-Fi connection so calls don't drop between the two. Next-gen Wi-Fi Calling also features HD Voice quality, when calling another HD Voice-capable user. This means our customers can now maintain crystal clear HD Voice calls, whether connected to T-Mobile LTE or Wi-Fi connect – all using their existing T-Mobile number.

35. On information and belief, in order to perform the vertical handoff, the mobile nodes must comprise executable code for performing the vertical handoff. Pursuant to Fed. R. Civ. P. 11(b)(3), Plaintiff will likely have additional evidentiary support for this contention after a reasonable opportunity for further discovery.

36. On information and belief, Defendants' seamless handover systems comprise a home agent that includes a PGW (P-Gateway), or substantial equivalents, routing information to the mobile node through one of the first foreign agent (including an ePDG in communication with a Wi-Fi router, or substantial equivalents) and the second foreign agent (including an SGW and eNode B, or substantial equivalents) according to an established connection of the mobile node (e.g., whether the mobile node is connected via Wi-Fi or LTE/VoLTE), as advertised in

part below. Pursuant to Fed. R. Civ. P. 11(b)(3), Plaintiff will likely have additional evidentiary support for this contention after a reasonable opportunity for further discovery.

Now for the first time, thanks to our launch of next generation Wi-Fi Calling and our use of new capabilities in our evolved Packet Data Gateway (ePDG), we're providing our customers a seamless HD Voice calling experience whether they're connected to a T-Mobile tower or a Wi-Fi connection. No other major national carrier is doing this with Wi-Fi Calling today.

With ePDG and our nationwide VoLTE (with eSRVCC), customers with a capable smartphone can start a call on VoLTE and hand off to a connected Wi-Fi network or vice versa, or move onto our 4G HSPA+ or 2G network. Your call won't drop. You won't even know you've switched between networks.

With next-gen Wi-Fi Calling, T-Mobile is pioneering seamless handover between our LTE network and any available Wi-Fi connection so calls don't drop between the two. Next-gen Wi-Fi Calling also features HD Voice quality, when calling another HD Voice-capable user. This means our customers can now maintain crystal clear HD Voice calls, whether connected to T-Mobile LTE or Wi-Fi connect – all using their existing T-Mobile number.

Indirect Infringement – Inducement

37. Based on the information presently available to Plaintiff, absent discovery, and in addition or in the alternative to direct infringement, Plaintiff contends that Defendants have and continue to indirectly infringe one or more claims of the '917 Patent, including at least claim 1, by inducing others, including customers and/or end-users of wireless communication devices that Defendants sell and/or that operate on Defendants' networks, to make, use, offer for sale, sell, and/or import seamless handover systems and/or to practice infringing methods in violation of one or more claims of the '917 Patent.

38. Defendants have been on notice of the '917 Patent since at least as early as the service of this Complaint, but have continued since that time to cause others to directly infringe the '917 Patent as alleged herein. In accordance with Fed. R. Civ. P. 11(b)(3), Plaintiff will

likely have additional evidentiary support after a reasonable opportunity for further investigation or discovery on this issue.

39. On information and belief, since Defendants have been on notice of the '917 Patent, Defendants have knowingly induced infringement of the '917 Patent, including at least claim 1, and possessed specific intent to encourage others' infringement.

40. On information and belief, since Defendants have been on notice of the '917 Patent, Defendants knew or should have known that its actions would induce actual infringement of the '917 Patent, including at least claim 1, by Defendants' customers and/or end-users of Defendants' network.

41. For example, since Defendants have been on notice of the '917 Patent, Defendants have instructed and/or encouraged customers and/or end-users to utilize their wireless communication devices and/or Defendants' seamless handover systems in a way that infringes at least claim 1 of the '917 Patent and have provided support to such customers and/or end-users.

42. Defendants have not produced or relied upon an opinion of counsel suggesting that the '917 Patent is invalid or is not infringed by Defendants' vertical handoff systems. In accordance with Fed. R. Civ. P. 11(b)(3), Plaintiff will likely have additional evidentiary support after a reasonable opportunity for discovery on this issue.

43. Defendants have not produced any evidence as to any investigation, design around or that any remedial action was taken with respect to the '917 Patent. In accordance with Fed. R. Civ. P. 11(b)(3), Plaintiff will likely have additional evidentiary support after a reasonable opportunity for discovery on this issue.

ADDITIONAL ALLEGATIONS

44. Plaintiff has been damaged as a result of Defendants' infringing conduct described herein. Defendants are thus liable to Plaintiff in an amount that adequately compensates Plaintiff for Defendants' infringement, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by the Court under 35 U.S.C. § 284.

45. Defendants' actions complained of herein will continue unless Defendants are enjoined by this Court.

46. Plaintiff has complied with 35 U.S.C. § 287.

47. Defendants' actions complained of herein are causing irreparable harm and monetary damage to Plaintiff and will continue to do so unless and until Defendants are enjoined and restrained by this Court.

PRAYER FOR RELIEF

48. Plaintiff requests that this Court find in its favor and against Defendants, and that this Court grant Plaintiff the following relief:

- A. Enter judgment for Plaintiff on this Complaint;
- B. Enter judgment that one or more claims of the '917 Patent has been infringed by Defendants;
- C. Enter judgment that Defendants account for and pay to Plaintiff all damages to, and costs incurred by, Plaintiff because of Defendants' infringing activities and other conduct complained herein;
- D. Award Plaintiff damages resulting from Defendants' infringement in accordance with 35 U.S.C. § 284;

- E. Enter a permanent injunction enjoining Defendants and their officers, directors, agents, servants, affiliates, employees, divisions, branches, subsidiaries, parents, and all others acting in active concert or participation with them, from infringing the '917 Patent or, in the alternative, judgment that Defendants account for and pay to Plaintiff a reasonable royalty and an ongoing post judgment royalty because of Defendants' past, present, and future infringing activities and other conduct complained of herein;
- F. Grant Plaintiff pre-judgment and post-judgment interest on the damages caused by Defendants' infringing activities and other conduct complained of herein;
- G. Treble the damages in accordance with the provisions of 35 U.S.C. § 284;
- H. Find the case to be exceptional under the provisions of 35 U.S.C. § 285; and
- I. Grant Plaintiff such other and further relief as the Court may deem just and proper under the circumstances.

Dated: August 23, 2017

Respectfully submitted,

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