

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

VERTICAL CONNECTION TECHNOLOGIES LLC,

Plaintiff,

v.

AT&T CORPORATION,  
AT&T MOBILITY LLC, and  
AT&T INC.,

Defendants.

Case No. 17 Civ. 4990

**JURY TRIAL DEMANDED**

**COMPLAINT**

Plaintiff Vertical Connection Technologies LLC (“VCT”) files this Complaint against AT&T Corporation, AT&T Mobility, and AT&T Inc. (collectively “Defendants”) for infringement of U.S. Patent No. 7,245,917.

**THE PARTIES**

1. VCT a Nevada Limited Liability Company.
2. AT&T Corporation is a New York corporation with its principal place of business at One AT&T Way, Bedminster, New Jersey, 07921-0752.
3. AT&T Mobility LLC is a Delaware corporation with its principal place of business at 1025 Lenox Park Blvd NE, Atlanta, GA 30319.
4. AT&T Inc. is a Delaware corporation with its principal place of business at 208 S. Akard St., Dallas, TX 75202-4206.
5. AT&T Corporation, AT&T Mobility LLC, and AT&T Inc. are referred to herein as “AT&T” or “Defendants.”

**JURISDICTION AND VENUE**

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

7. 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.*

8. 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.

9. Venue is proper under 28 U.S.C. § 1400(b) because Defendant AT&T Corporation resides in New York and 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.

10. 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**

11. 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").

12. 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.

13. 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.

14. 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.

15. 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.

16. 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.

17. 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.

18. 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.

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

20. 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).

Defendants are now employing this breakthrough technology in their vertical handoff systems.

Defendants provide the following information on their website.

**Call handover**

- **Wi-Fi Calling to HD Voice:** When leaving Wi-Fi coverage, calls will transition from Wi-Fi Calling to HD Voice when HD Voice coverage is available. Calls will drop if there is no HD Voice coverage or the device is in airplane mode. 911 calls will always disconnect if you lose your Wi-Fi connection.
- **HD Voice to Wi-Fi Calling:** Calls will transition from HD Voice to Wi-Fi Calling if you are actively connected to the Wi-Fi network. Calls will drop if you are not actively connected to the Wi-Fi network.

**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:



A new way to keep the conversation going

- Wi-Fi Calling is easy to set up and use.
- Once enabled, Wi-Fi Calling works automatically.
  - o Domestic Coverage Area (U.S., Puerto Rico, and U.S. Virgin Islands): Connects when wireless network coverage is weak or unavailable.
  - o Outside of the Domestic Coverage Area: Connects anytime you connect to a Wi-Fi network.\*
- It works with your AT&T mobile number and compatible device—no new number or app required.

#### Call handover

- **Wi-Fi Calling to HD Voice:** When leaving Wi-Fi coverage, calls will transition from Wi-Fi Calling to HD Voice when HD Voice coverage is available. Calls will drop if there is no HD Voice coverage or the device is in airplane mode. 911 calls will always disconnect if you lose your Wi-Fi connection.
- **HD Voice to Wi-Fi Calling:** Calls will transition from HD Voice to Wi-Fi Calling if you are actively connected to the Wi-Fi network. Calls will drop if you are not actively connected to the Wi-Fi network.

If you are using Wi-Fi Calling in the Domestic Coverage Area and HD Voice coverage is available, your call will switch to cellular and continue without a break when your Wi-Fi connection is lost. This does not apply to 911 calls.

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.

#### Before you begin

To use AT&T Wi-Fi Calling, your device must be able to communicate with the AT&T network. In some cases in order to communicate effectively you may need to change your router settings. If you have a simple router configuration that has not been customized, you may not have to make any changes to your settings.

#### Wi-Fi Calling Fully Qualified Domain Names (FQDN)

A fully qualified domain name (FQDN) is the domain name for a computer, or other host equipment on the Internet. Wi-Fi Calling should be able to traverse the following FQDNs:

- epdg.epc.att.net

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.

### Talk and text in more places

Use Wi-Fi Calling to talk and text over an active Wi-Fi connection. Wi-Fi Calling lets you talk and text from indoor locations where it's hard even for a strong cellular signal to reach. Wi-Fi Calling can be used in the Domestic Coverage Area (U.S., Puerto Rico, and U.S. Virgin Islands) and from most international countries.

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.

### Network and Coverage

AT&T HD Voice uses our all-IP, 4G LTE network. With HD Voice, you can have crystal clear conversations while surfing the Web at 4G LTE speeds.

I'm excited to share a big network milestone with you today. Our **VoLTE network** (Voice over LTE) covers more than 295 million Americans. That includes more than 27 million active subscribers – more than any other U.S. carrier. We've set up the network so customers in covered areas who have capable devices get instant access to VoLTE as soon as the coverage is live.

You've been talking and surfing the web simultaneously on **AT&T** for years. But now VoLTE lets that happen at 4G LTE data speeds. VoLTE also lets us offer HD Voice. HD Voice produces more natural sounding audio by extending the frequency range of the audio signals, resulting in remarkably clearer calls.



33. On information and belief, Defendants' seamless handover systems comprises 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.

#### Call handover

- **Wi-Fi Calling to HD Voice:** When leaving Wi-Fi coverage, calls will transition from Wi-Fi Calling to HD Voice when HD Voice coverage is available. Calls will drop if there is no HD Voice coverage or the device is in airplane mode. 911 calls will always disconnect if you lose your Wi-Fi connection.
- **HD Voice to Wi-Fi Calling:** Calls will transition from HD Voice to Wi-Fi Calling if you are actively connected to the Wi-Fi network. Calls will drop if you are not actively connected to the Wi-Fi network.

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 thorough 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.

#### Wi-Fi Calling Fully Qualified Domain Names (FQDN)

A fully qualified domain name (FQDN) is the domain name for a computer, or other host equipment on the Internet. Wi-Fi Calling should be able to traverse the following FQDNs:

- epdg.epc.att.net

#### Call handover

- **Wi-Fi Calling to HD Voice:** When leaving Wi-Fi coverage, calls will transition from Wi-Fi Calling to HD Voice when HD Voice coverage is available. Calls will drop if there is no HD Voice coverage or the device is in airplane mode. 911 calls will always disconnect if you lose your Wi-Fi connection.
- **HD Voice to Wi-Fi Calling:** Calls will transition from HD Voice to Wi-Fi Calling if you are actively connected to the Wi-Fi network. Calls will drop if you are not actively connected to the Wi-Fi network.

### **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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