UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

COLLISION COMMUNICATIONS, INC., Plaintiff, v. TELEFONAKTIEBOLAGET LM ERICSSON and ERICSSON INC., Defendants.	)	Civil Action No. 2:21-cv-00327 **COMPLAINT FOR PATENT INFRINGEMENT** **JURY TRIAL DEMANDED**

PLAINTIFF'S COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff Collision Communications, Inc. ("Collision") hereby files this Complaint for Patent Infringement against Telefonaktiebolaget LM Ericsson ("LM Ericsson") and Ericsson Inc. ("Ericsson USA") (collectively, "Ericsson").

NATURE OF THE ACTION

1. This is a civil action for infringement under the patent laws of the United States of America, 35 U.S.C. § 1 *et seq.*

2. Collision is the owner of all rights, title, and interest in U.S. Patent Nos. 7,233,620 ("'620 Patent"); 7,593,492 ("'492 Patent"); 7,724,851 ("'851 Patent"); and 9,814,071 ("'071 Patent") (collectively, the "Asserted Patents"), which are attached as Exhibits 1-4.

PARTIES

3. Plaintiff Collision is a Delaware corporation with its principal place of business at 20 Depot Street, Suite 2A, Peterborough, NH 03458. Collision, which was formed in 2011, is a telecommunications research and development company that creates and implements proprietary methods for reducing signal interference in cellular networks.

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4. Since its formation, Collision has aimed to develop and commercialize interference mitigation and cancellation techniques and equipment that enable cellular base stations to operate at peak efficiency, and to that end has invested substantial resources in research and development efforts.

5. On information and belief, Defendant LM Ericsson is a corporation organized and existing under the laws of Sweden with its principal place of business at Torshamnsgatan 21, Kista, Stockholm, 164 83, Sweden.

6. On information and belief, Defendant Ericsson USA is a corporation organized and existing under the laws of Delaware with its principal place of business at 6300 Legacy Drive, Plano, Texas 75024. On information and belief, Ericsson USA is sometimes referred to as "Ericsson North America."

JURISDICTION AND VENUE

7. This is a civil action for infringement under the patent laws of the United States of America, 35 U.S.C. § 1 et seq. This Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a).

8. This Court has personal jurisdiction over LM Ericsson and Ericsson USA because, directly or through intermediaries, they have committed acts within Texas giving rise to this action and/or have established minimum contacts with Texas such that the exercise of jurisdiction would not offend traditional notions of fair play and substantial justice. For example, Ericsson USA is registered to do business in the State of Texas. *See* Exhibit 5. Ericsson USA is wholly-owned and controlled by LM Ericsson and acts as the agent for LM Ericsson in making sales, servicing equipment, and otherwise carrying out the operations of LM Ericsson in North America. *See, e.g.*, *Ericsson, Inc. v. Samsung Electronics Co., Ltd.*, No. 2:21-cv-00010, D.I. 2 (E.D. Tex. Jan. 19, 2021) (Ericsson disclosing that Ericsson USA is a wholly-

owned subsidiary of Ericsson Holding II Inc., which is wholly-owned by LM Ericsson); https://www.sec.gov/Archives/edgar/data/0000717826/000119312521094445/d52839d20f.htm (LM Ericsson disclosing in a Form 20-F filing that it directly or indirectly controls and has power over its subsidiaries, and that Ericsson USA is LM Ericsson's agent in the United States) (last visited Aug. 25, 2021). LM Ericsson and/or its affiliates manufacture wireless telecommunications equipment and then arrange with Ericsson USA to import those products into the United States for installation within the United States, including within this judicial district. *See, e.g.*, https://www.sec.gov/Archives/edgar/data/0000717826/000119312521094445/d52839d20f.htm#toc52839_9 (discussing LM Ericsson's investment into its Lewisville, TX smart factory) (last visited Aug. 25, 2021); https://www.ericsson.com/en/blog/2021/1/smart-factory-of-the-future (stating LM Ericsson's Lewisville, TX smart factory produces devices "that enable large-scale deployments in 4G and 5G mobile networks") (last visited Aug. 25, 2021). Upon information and belief, representatives of LM Ericsson also regularly visit this district in their supervisory capacity over Ericsson USA.

9. Ericsson maintains a presence in the State of Texas, and the Eastern District of Texas in particular. For example, Ericsson's website advertises that Ericsson USA maintains established places of business in the Eastern District of Texas, including at least (1) its U.S. headquarters in 6300 Legacy Drive, Plano, TX 75024; (2) a 5G Smart Factory in Lewisville, TX; (3) a training center in Lewisville, TX; and (4) a Research Lab in Richardson, TX. *See* https://www.ericsson.com/en/about-us/company-facts/ericsson-worldwide/united-states (last visited Aug. 25, 2021); https://www.ericsson.com/en/press-releases/6/2020/ericsson-powers-north-texas-campuses-with-5g-distributed-innovation-network (noting Ericsson's Richardson

Labs is located nine miles from its North American headquarters in Plano) (last visited Aug. 25, 2021); *see also Ericsson Inc. v. Samsung Electronics Co., Ltd.*, No. 2:21-cv-00010-JRG, D.I. 1, ¶1 (E.D. Tex. Jan. 15, 2021) (Ericsson stating "its principal place of business [is] at 6300 Legacy Drive, Plano, Texas 75024"); https://www.ericsson.com/en/about-us/company-facts/ericsson-worldwide/united-states/ericssons-training-center-of-excellence (advertising that Ericsson provides courses for radio base station installation and the "deployment and network integration for 3G, 4G and 5G technologies" at its "five regional Center of Excellence training facilities," including its Lewisville, TX facility) (last visited Aug. 25, 2021). Indeed, Ericsson's Lewisville training center is "the infrastructure vendor's largest training center in the US." https://www.lightreading.com/mobile/5g/ericsson-opens-largest-training-center-in-us-for---you-guessed-it---5g/d/d-id/749271#.YRVVLFJYVJc.link (last visited Aug. 25, 2021).

10. Ericsson also employs individuals, solicits business, engages in other persistent courses of conduct, and derives revenue from goods and methods used or consumed by, and services offered or provided to, persons and/or entities in the State of Texas and this judicial district. *See, e.g., IPCom Gmbh & Co. KG v. AT&T Inc., and Ericsson Inc., Intervenor*, No. 2:20-cv-00322-JRG, D.I. 66, ¶58 (E.D. Tex. Mar. 18, 2021) (Ericsson admitting its headquarters in Plano employs "hardware and software engineers who have been involved in the development of base stations that are interoperable with 3G and LTE technology").

11. Ericsson USA maintains additional offices in nearby locations throughout Texas, including a 5G ASIC Design Center in Austin, Texas. *See* https://www.fiercewireless.com/wireless/ericsson-opens-asic-design-center-austin (announcing the opening of the ASIC Design Center) (last visited Aug. 25, 2021). According to Ericsson, the Austin ASIC Design Center focuses on designing "microelectronics [that] are at the core of all

Ericsson Radio Systems and can be viewed as processors that are specially made for the computation needs of mobile infrastructure." https://www.ericsson.com/en/press-releases/2017/10/ericsson-opens-5g-design-site-in-austin-texas (last visited Aug. 25, 2021). Ericsson's Radio Systems are "designed to fit all site types and traffic scenarios, even as networks grow in scale and complexity, from 2G, 3G, 4G and 5G . . . ." https://www.ericsson.com/en/portfolio/networks/ericsson-radio-system (last visited Aug. 25, 2021).

12. The careers section of Ericsson's website identifies numerous job openings at its Plano headquarters, Lewisville 5G Factory, and Austin ASIC Design Center. *See, e.g.*, https://www.ericsson.com/en/careers (last visited Aug. 25, 2021); https://jobs.ericsson.com/search/?page=1&jobPipeline=careersite&utm_source=ericsson.com&utm_medium=referral&utm_campaign=search_widget&q=&locationsearch=Plano&optionsFacetsDD_shifttype (identifying at least 43 open jobs at Plano facility) (last visited Aug. 25, 2021); https://jobs.ericsson.com/search/?createNewAlert=false&q=&locationsearch=Lewisville&optionsFacetsDD_customfield1 (identifying at least 32 open jobs at Lewisville facility) (last visited Aug. 25, 2021); https://jobs.ericsson.com/search/?createNewAlert=false&q=&locationsearch=Austin&optionsFacetsDD_customfield1 (identifying at least 43 open jobs at Austin facility) (last visited Aug. 25, 2021).

13. Ericsson has deployed its 5G end-to-end distributed network in the State of Texas and this judicial district. For example, Ericsson created a multi-campus 5G network spanning its Plano Ericsson Village headquarters and its nearby Richardson Labs research facility. *See, e.g.*, https://www.rcrwireless.com/20200904/5g/ericsson-deploys-5g-network-near-texas-hq-to-run-

real-world-use-cases (last visited Aug. 25, 2021). This network employed Ericsson's non-standalone radio access network, which relies upon existing LTE base stations. *See* https://www.ericsson.com/en/press-releases/6/2020/ericsson-powers-north-texas-campuses-with-5g-distributed-innovation-network (last visited Aug. 25, 2021); https://www.ericsson.com/en/blog/2019/7/standalone-and-non-standalone-5g-nr-two-5g-tracks (explaining the characteristics of non-standalone 5G equipment) (last visited Aug. 25, 2021).

14. LM Ericsson and/or Ericsson USA operate the website www.ericsson.com, which is accessible to and directed toward citizens of the State of Texas and this judicial district. LM Ericsson and/or Ericsson USA have contracted and partnered with various entities, including but not limited to the three largest nationwide cellular carriers—Sprint/T-Mobile, Verizon, and Dallas-based AT&T—to perform services and/or deliver products nationwide, including in this judicial district.

15. During the infringing time period, LM Ericsson and/or Ericsson USA have placed one or more infringing products, including Ericsson's 3G and 4G LTE infrastructure products, into the stream of commerce via an established distribution channel with the knowledge and/or understanding that such products were being offered for sale, and/or sold to customers, and/or utilized in this judicial district. For example, LM Ericsson and/or Ericsson USA have longstanding, decades-old contracts with all three major nationwide carriers—Sprint/T-Mobile, Verizon, and Dallas-based AT&T—to supply 3G and 4G LTE infrastructure products to be used in enhancing each carrier's nationwide network. *See, e.g.*, https://www.infoworld.com/article/2661356/t-mobile-usa-picks-nokia--ericsson-for-3g.html (announcing that T-Mobile picked Ericsson as one of its major 3G equipment suppliers in article dated November 2006) (last visited Aug. 25, 2021);

https://www.computerworld.com/article/2584640/nokia--ericsson-nail-down-cingular-wireless-deals.html (announcing Ericsson will provide 3G equipment to Cingular Wireless, AT&T's predecessor in a December 2001 article) (last visited Aug. 25, 2021); *see also* https://www.t-mobile.com/news/press/t-mobile-usa-selects-infrastructure-vendors-to-support-4-billion (identifying Ericsson as one of T-Mobile's infrastructure vendors to modernize its network and deploy 4G LTE service) (last visited Aug. 25, 2021); https://www.computerworld.com/article/2520867/at-t-names-lte-suppliers-as-it-charges-into-battle-with-verizon.html ("AT&T named . . . LM Ericsson as its LTE supplier[], awarding [it] multiyear contracts that are estimated by analysts to be worth hundreds of millions of dollars.") (last visited Aug. 25, 2021); https://www.verizon.com/about/news/vzw/2011/01/pr2011-01-07g (Ericsson is "a primary infrastructure provider for Verizon Wireless' 4G LTE Mobile Broadband network" and "is developing solutions that will take advantage of the increased speed and low latency of 4G networks") (last visited Aug. 25, 2021); https://www.dallasnews.com/business/technology/2013/10/14/ericsson-s-north-american-operations-based-in-plano-are-growing-fast/ (celebrating the expansion of Ericsson's Plano headquarters and noting that "[t]he company's Plano employees work with all the big wireless providers on the continent, including AT&T, Verizon, Sprint, T-Mobile and Rogers, as well as smaller companies") (last visited Aug. 25, 2021).

Ericsson's Partnership with T-Mobile to Deploy Its Products In This Judicial District

16. LM Ericsson and/or Ericsson USA have contracted with T-Mobile for infrastructure equipment nationwide, including in this judicial district. LM Ericsson and/or Ericsson USA were one of T-Mobile's primary infrastructure vendors for its 3G network, at least as early as 2006. *See, e.g.*, https://news.cision.com/ericsson/r/ericsson-selected-by-t-mobile-usa-for-wcdma-3g-deployment,c2246879 (announcing in November 2006 that Ericsson will serve as

T-Mobile's primary radio provider for WCDMA 3G services) (last visited Aug. 25, 2021); https://www.infoworld.com/article/2661356/t-mobile-usa-picks-nokia--ericsson-for-3g.html (November 2006 article announcing T-Mobile's selection of Ericsson as a vendor) (last visited Aug. 25, 2021).

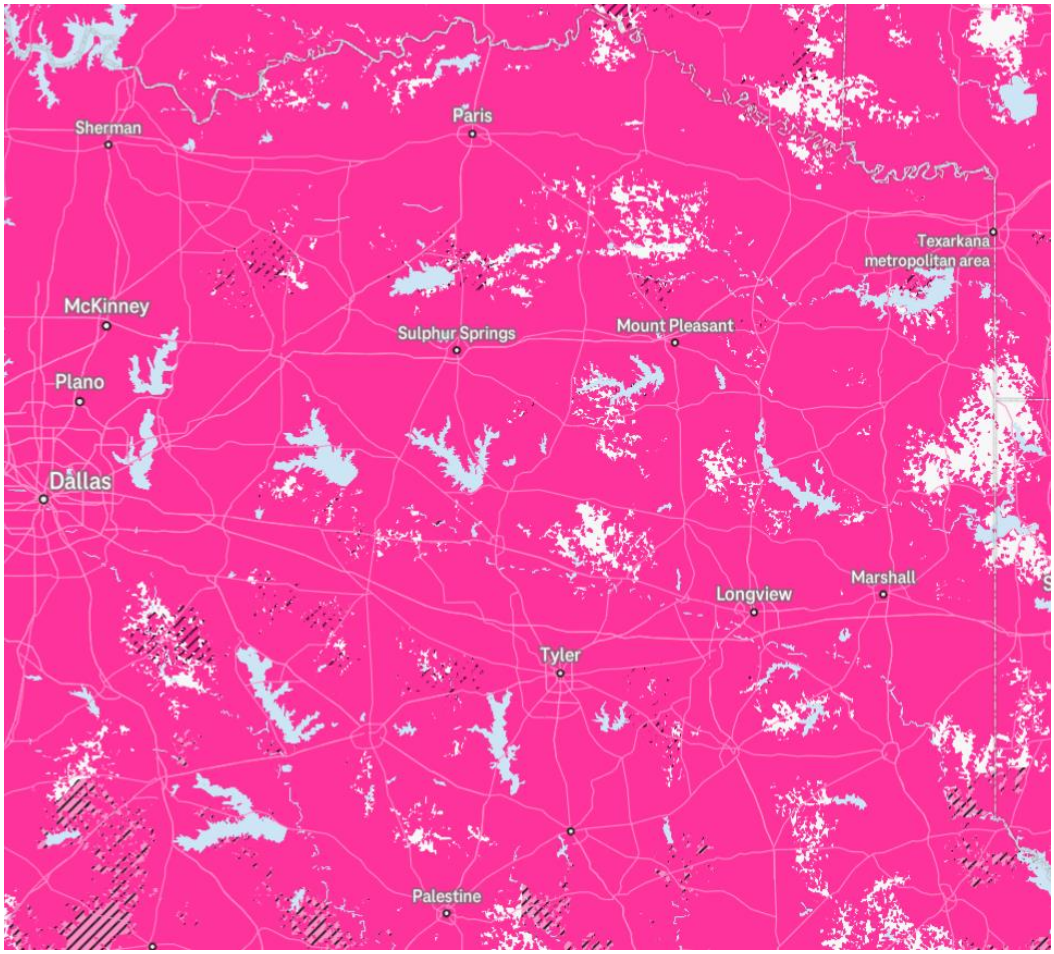
17. T-Mobile's relationship with LM Ericsson and/or Ericsson USA continued with the deployment of 4G LTE equipment. LM Ericsson and/or Ericsson USA contracted with T-Mobile to serve as one of its primary vendors for 4G LTE products. *See, e.g.*, https://www.fiercewireless.com/wireless/t-mobile-picks-ericsson-nsn-as-its-lte-vendors (last visited Aug. 25, 2021). Ericsson touts its "strong design and solution capabilities enable T-Mobile to deploy the most advance LTE networks for its subscribers as it lays the groundwork for 5G." https://www.ericsson.com/en/press-releases/2017/1/t-mobile-and-ericsson-first-in-north-america-to-demonstrate-nearly-1-gbps-lte-over-the-air-on-commercially-available-network-equipment-and-software (last visited Aug. 25, 2021); *see also* https://www.ericsson.com/en/press-releases/2017/2/ericsson-and-t-mobile-pioneering-superior-lte-network-capabilities-in-readiness-for-5g-deployments ("[Ericsson and T-Mobile] will continue to maximize the success of LTE and will prepare the network for evolution to 5G . . .") (last visited Aug. 25, 2021).

18. Ericsson regularly collaborates with T-Mobile on projects. For example, "T-Mobile partnered with Ericsson to improve quality for voice over LTE (VoLTE), mobile broadband and other advanced services." *See, e.g.*, https://www.ericsson.com/en/cases/2018/t-mobile-gains-visibility-of-volte-quality (last visited Aug. 25, 2021).

19. LM Ericsson and/or Ericsson USA also contracted with T-Mobile for a "massive . . . 5G network expansion across the United States."

https://www.ericsson.com/en/news/2021/1/t-mobile-expands-5g-nationwide (last visited Aug. 25, 2021). One contract between LM Ericsson and T-Mobile to expand T-Mobile's 5G network was valued at $3.5 billion. *See, e.g.*, https://www.ericsson.com/en/press-releases/2018/9/t-mobile-and-ericsson-sign-major-$3.5-billion-5g-agreement (LM Ericsson has "recently decided to increase our investments in the US to be closer to our leading customers and better support them with their accelerated 5G deployments.") (last visited Aug. 25, 2021). According to the September 2018 press release announcing the contract, Ericsson "expand[ed] and enhance[d] T-Mobile's 5G footprint by supplying equipment, software, and related services from the Ericsson Radio System portfolio," including 5G Standalone (SA) architecture, voice over new radio (VoNR), New Radio (NR) carrier aggregation, network slicing, and multi-user massive MIMO. *See, e.g., id.* This 5G New Radio's "hardware and software [are] compliant with 3rd Generation Partnership Project ("3GPP") standards." https://www.sec.gov/Archives/edgar/data/0001283699/000128369919000015/tmus12312018form10-k.htm (last visited Aug. 25, 2021). And Ericsson's "radios are based on state-of-the-art multi-standard technology and can operate in GSM, WCDMA, LTE, and 5G mode . . . ." https://www.ericsson.com/en/portfolio/networks/ericsson-radio-system/radio (last visited Aug. 25, 2021); *see also* https://www.ericsson.com/en/portfolio/networks/ericsson-radio-system/radio/massive-mimo/hybrid-air (last visited Aug. 25, 2021); https://www.ericsson.com/en/portfolio/networks/ericsson-radio-system/radio-system-software ("RAN Software is part of Ericsson Radio System. It enables flexibility and performance to accommodate your network and business realities, taking the best of 2G, 3G, 4G and 5G technologies.") (last visited Aug. 25, 2021).

20. T-Mobile provides 3G and 4G LTE coverage in this judicial district. *See* https://www.t-mobile.com/coverage/coverage-map (last visited Aug. 25, 2021); https://www.fiercewireless.com/operators/t-mobile-s-cdma-shutdown-already-harms-consumers-says-coalition (last visited Aug. 25, 2021). For example, the light pink color in the excerpt of T-Mobile's network coverage map reproduced below identifies 4G LTE coverage provided by T-Mobile in this judicial district:



https://www.t-mobile.com/coverage/coverage-map (last visited Aug. 25, 2021). Upon information and belief, the base stations that support LTE also support 3G communications.

21. On information and belief, LM Ericsson and/or Ericsson USA deploy their 3G and 4G LTE products to provide these T-Mobile services in this judicial district.

Ericsson's Partnership with AT&T to Deploy Its Products In This Judicial District

22. LM Ericsson and/or Ericsson USA have also contracted with Dallas-based AT&T for infrastructure equipment nationwide, including in this judicial district.

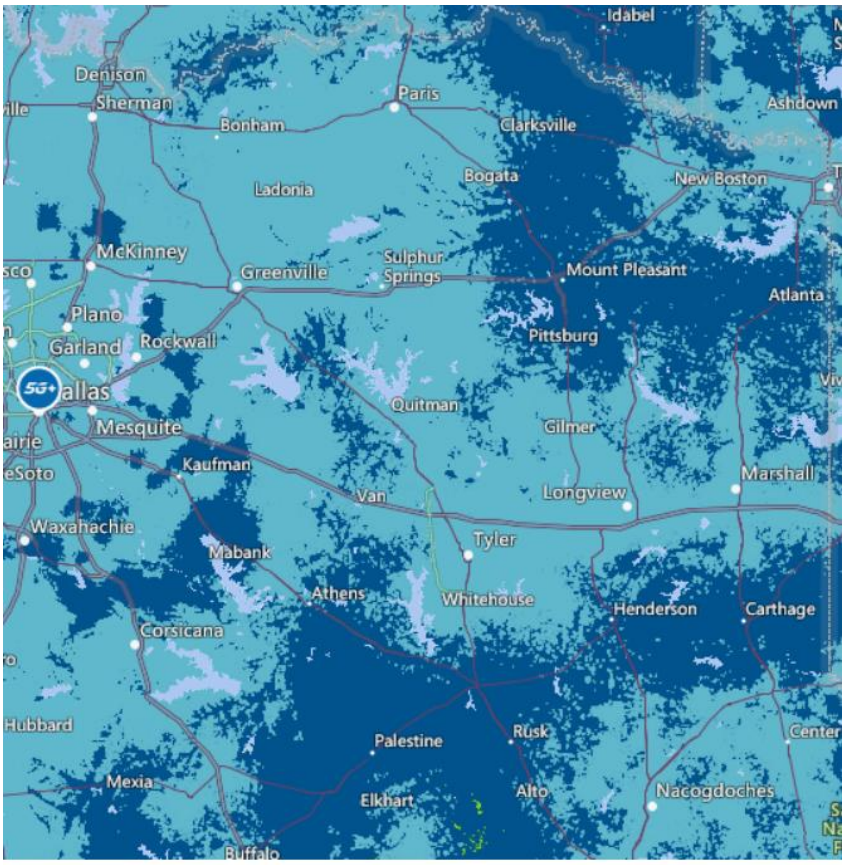
23. Ericsson was a "major supplier[] of 3G systems to AT&T," at least since 2010. https://www.dallasnews.com/business/2010/02/11/atandt-to-buy-4g-equipment-from-ericsson-and-alcatel-lucent/ (last visited Aug. 25, 2021); *see also* https://www.crn.com/news/networking/222700719/4g-forces-att-goes-with-ericsson-alcatel-lucent.htm (Ericsson provided AT&T with 3G equipment in 2010) (last visited Aug. 25, 2021).

24. LM Ericsson and/or Ericsson USA also contracted with AT&T to build out AT&T's 4G LTE wireless network. *See, e.g.*, https://www.computerworld.com/article/2520867/at-t-names-lte-suppliers-as-it-charges-into-battle-with-verizon.html ("AT&T named ... LM Ericsson as its LTE supplier[], awarding [it] multiyear contracts that are estimated by analysts to be worth hundreds of millions of dollars.") (last visited Aug. 25, 2021); https://telecoms.com/18112/ericsson-wins-lte-contract-with-att/ (identifying Ericsson as a "key supplier of LTE radio access infrastructure to US carrier AT&T") (last visited Aug. 25, 2021); https://www.crn.com/news/networking/222700719/4g-forces-att-goes-with-ericsson-alcatel-lucent.htm (announcing Ericsson's partnership with AT&T to roll out AT&T's LTE network) (last visited Aug. 25, 2021).

25. In fact, Ericsson USA has admitted that it "supplies base stations, including base transceiver stations ('BTSs' or 'eNodeB(s)'), to AT&T" and that "[t]hese base stations are interoperable with 3G, 4G LTE, and 5G." *IPCom Gmbh & Co. KG v. AT&T Inc., and Ericsson Inc., Intervenor*, 2:20-cv-00322-JRG, D.I. 61, at 1, 2-4 (E.D. Tex. Feb. 19, 2021) (Ericsson has "suppl[ied] 3G, 4G LTE, and 5G telecommunications equipment to AT&T" pursuant to an "agreement under which Ericsson supplies … network equipment.").

26. LM Ericsson and/or Ericsson USA also contracted with AT&T to build private wireless networks for enterprises based on LTE technology. *See, e.g.*, https://www.fiercewireless.com/private-wireless/at-t-teams-ericsson-for-private-wireless-networks-cbrs-spectrum (last visited Aug. 25, 2021). LM Ericsson and/or Ericsson USA further contracted to deploy Cat-M and NB-IoT software for AT&T's 4G LTE network to support a new generation of Internet of Things apps. *See, e.g.*, https://about.att.com/story/att_and_ericsson_boosts_iot.html (last visited Aug. 25, 2021).

27. AT&T offers 3G and 4G LTE coverage in this judicial district. *See, e.g.*, https://www.att.com/maps/wireless-coverage.html (last visited Aug. 25, 2021); https://www.att.com/support/article/wireless/KM1324171/ (last visited Aug. 25, 2021). The dark blue color in the excerpt of AT&T's coverage map reproduced below identifies 4G LTE coverage in this judicial district:



https://www.att.com/maps/wireless-coverage.html (last visited Aug. 25, 2021). Upon information and belief, the base stations that support LTE also support 3G communications.

28. On information and belief, LM Ericsson and/or Ericsson USA deploy their 3G and 4G LTE products to provide AT&T services in this judicial district.

Ericsson's Partnership with Verizon to Deploy Its Products In This Judicial District

29. LM Ericsson and/or Ericsson USA have contracted with Verizon wireless since at least 2011 to deploy 3G and 4G LTE infrastructure equipment nationwide, including in this judicial district. *See, e.g.*, https://www.verizon.com/about/news/vzw/2011/01/pr2011-01-07g (last visited Aug. 25, 2021). *IPCom Gmbh & Co. KG v. AT&T Inc., and Ericsson Inc., Intervenor*, 2:20-cv-00322-JRG, D.I. 62, at 2-4 (E.D. Tex. Feb. 19, 2021) (Ericsson has "suppl[ied] 3G, 4G LTE, and 5G telecommunications equipment to Verizon" pursuant to an

"agreement under which Ericsson supplies … network equipment."). For example, in at least one SEC 10-K annual report filing, Verizon declared Ericsson is one of its "primary network vendors for [its] LTE network deployments for macro sites as well as small cells." https://www.sec.gov/Archives/edgar/data/0000732712/000119312517050292/d296602d10k.htm (last visited Aug. 25, 2021); *see also* https://www.ericsson.com/en/press-releases/2018/7/verizon-and-ericsson-expand-4g-lte-partnership-prepare-for-5g-launch; https://www.fiercewireless.com/wireless/verizon-awards-new-lte-markets-to-ericsson (last visited Aug. 25, 2021).

30. "Verizon and Ericsson have partnered closely to drive the evolution of LTE by using LTE-Advanced features, enhancing capacity and speed on the Verizon 4G LTE network," and that the partnership "includes Ericsson Radio System 4G LTE equipment which . . . enabl[es] the latest advances in 4G LTE capabilities." https://www.ericsson.com/en/press-releases/2018/7/verizon-and-ericsson-expand-4g-lte-partnership-prepare-for-5g-launch (last visited Aug. 25, 2021); *see also* https://www.dallasnews.com/business/technology/2010/12/04/verizon-other-wireless-carriers-vary-on-standards-for-high-speed-4g-service/ (Ericsson has "helped Verizon build its 4G network using a standard known as LTE.") (last visited Aug. 25, 2021). In short, "Ericsson and Verizon have a long track record of partnering together." https://www.dallasnews.com/business/2021/07/16/ericsson-to-partner-with-verizon-in-83-billion-deal-to-expand-5g-coverage/ (last visited Aug. 25, 2021).

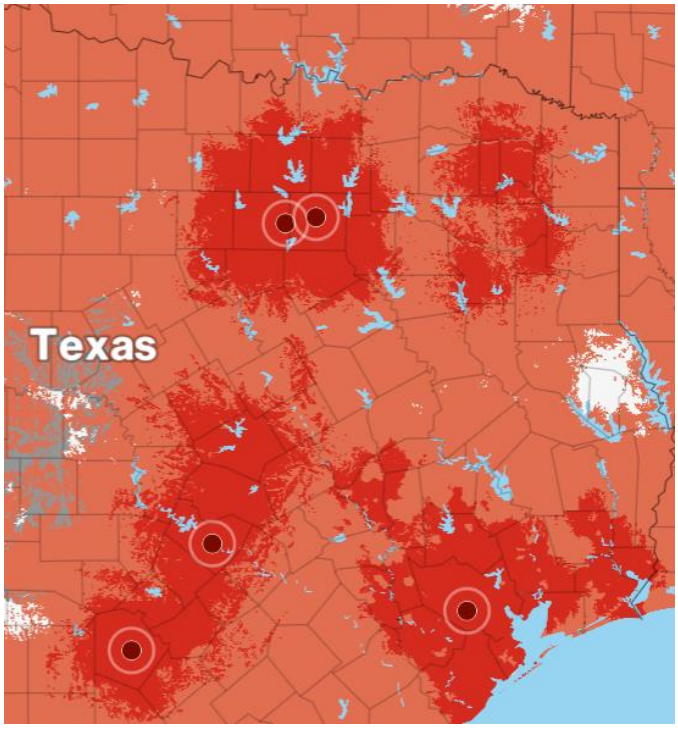
31. On at least one occasion, in a case in this district, Ericsson USA has admitted it "supplies base stations, including base transceiver stations ('BTSs' or 'eNodeB(s)'), to Verizon" and that "[t]hese base stations are interoperable with 3G, 4G LTE, and 5G." *IPCom Gmbh &*

Co. KG v. AT&T Inc., and Ericsson Inc., Intervenor, 2:20-cv-00322-JRG, D.I. 62, at 2-4 (E.D. Tex. Feb. 19, 2021) (Ericsson has "suppl[ied] 3G, 4G LTE, and 5G telecommunications equipment to Verizon" pursuant to an "agreement under which Ericsson supplies . . . network equipment.").

32. LM Ericsson and/or Ericsson USA have contracted with Verizon to provide networking equipment for Verizon's commercial 5G launch, beginning with the deployment of Ericsson's products in select markets in the second half of 2018. *See, e.g.*, https://www.ericsson.com/en/press-releases/2017/12/verizon-awards-5g-contract-to-ericsson (last visited Aug. 25, 2021). LM Ericsson and/or Ericsson USA continued to contract with Verizon to build out its 5G network, including working with Ericsson to achieve 5G peak speeds of 5.06 Gbps. *See, e.g.*, https://www.ericsson.com/en/press-releases/6/2020/verizon-ericsson-and-qualcomm-first-in-the-world-to-achieve-5g-peak-speed-of-5.06-gbps (last visited Aug. 25, 2021). LM Ericsson and/or Ericsson USA regularly publicize their "strong partnership" with Verizon, including their regular collaborations together. *See, e.g.*, https://www.ericsson.com/en/blog/2020/5/for-ericsson-and-verizon-a-strong-partnership-makes-one-plus-one-equal-three (last visited Aug. 25, 2021). Ericsson's current "radios are based on state-of-the-art multi-standard technology and can operate in GSM, WCDMA, LTE, and 5G mode . . . ." https://www.ericsson.com/en/portfolio/networks/ericsson-radio-system/radio (last visited Aug. 25, 2021); *see also* https://www.ericsson.com/en/portfolio/networks/ericsson-radio-system/radio/massive-mimo/hybrid-air (last visited Aug. 25, 2021); https://www.ericsson.com/en/portfolio/networks/ericsson-radio-system/radio-system-software ("RAN Software is part of Ericsson Radio System. It enables flexibility and performance to

accommodate your network and business realities, taking the best of 2G, 3G, 4G and 5G technologies.") (last visited Aug. 25, 2021).

33. Verizon offers 3G and 4G LTE coverage in this judicial district and the state of Texas. *See, e.g.*, https://www.verizon.com/coverage-map/ (last visited Aug. 25, 2021); https://www.verizon.com/about/news/3g-cdma-network-shut-date-set-december-31-2022 (last visited Aug. 25, 2021). Both light and dark orange indicate 4G LTE coverage:



https://www.verizon.com/coverage-map/ (last visited Aug. 25, 2021). Upon information and belief, the base stations that support LTE also support 3G communications.

34. On information and belief, LM Ericsson and/or Ericsson USA deploy their 3G and 4G LTE products to provide Verizon services in this judicial district.

* * *

35. In addition to these commercial relationships, LM Ericsson and Ericsson USA have availed themselves and/or participated in litigation in courts within the State of Texas and

this judicial district, in particular. For example, both LM Ericsson and Ericsson USA have intervened in a lawsuit against their customers/partners, AT&T, Verizon, and T-Mobile. *See, e.g.*, *IPCom Gmbh & Co. v. AT&T Inc.*, No. 2:20-cv-00322-JRG, D.I. 61 & 62 (E.D. Tex. filed Oct. 1, 2020) (Ericsson USA intervening in litigation involving AT&T and Verizon); *Huawei Techs. Co. Ltd v. T-Mobile US, Inc. et al*, 2:16-cv-00055, D.I. 96 (E.D. Tex. filed Jan. 15, 2016) (LM Ericsson and Ericsson USA intervening in litigation involving T-Mobile). LM Ericsson and Ericsson USA have also recently asserted patents in the State of Texas and this judicial district. *See, e.g.*, *Ericsson, Inc. v. Samsung Elecs., Co., Ltd.*, No. 2:21-cv-00010 (E.D. Tex. filed Jan. 15, 2021) (naming LM Ericsson and Ericsson USA as plaintiffs); *Ericsson, Inc. v. Samsung Elecs., Co., Ltd.*, No. 2:21-cv-00001 (E.D. Tex. filed Jan. 1, 2021) (naming LM Ericsson and Ericsson USA as plaintiffs); *Ericsson, Inc. v. Samsung Elecs., Co., Ltd.*, No. 2:20-cv-00380 (E.D. Tex. filed Dec. 10, 2020) (naming LM Ericsson and Ericsson USA as plaintiffs).

36. For the reasons set forth above, and because Ericsson USA has committed acts of infringement and has a regular and established place of business in this district, venue is proper for Ericsson USA under 28 U.S.C. § 1400(b).

37. Furthermore, because this Court has personal jurisdiction over LM Ericsson—a foreign corporation—venue is proper pursuant to 28 U.S.C. § 1391(c).

COLLISION'S PATENTS

38. In a telecommunications network, a cellular base station accepts signals from mobile devices and transmits those signals elsewhere, either to other mobile devices or to the core network. Base stations receive interfering signals, such as signals transmitted from other mobile devices, as noise. Noise decreases network performance and efficiency. Base stations typically tolerate noise or implement means to avoid interference, but both strategies result in suboptimal network performance. The Asserted Patents disclose interference mitigation and

cancellation systems and methods that allow base stations to, for example, disaggregate and detect multiple user signals, extract the "interfering" signals, and subtract the interfering signals from reconstructed signals. Using Collision's patented technology, a base station can receive a larger volume of signals by decreasing or mitigating the effects of interference, thereby improving network efficiency.

'620 Patent

39. The '620 Patent, titled "Bandwidth-Efficient Wireless Network Modem," was duly and lawfully issued on June 19, 2007. Collision is the owner of all right, title, and interest in the '620 Patent, including the right to sue for past infringement. A true and correct copy of the '620 Patent is attached hereto as Exhibit 1.

40. The claims of the '620 Patent are not directed to basic tools of scientific and technological work, fundamental economic practices, or the use of an abstract mathematical formula.

41. Rather, the '620 Patent addresses problems and shortcomings in the field of wireless communications, and multi-user networks in particular, and claims novel and inventive technological solutions to such problems and shortcomings. For example, the '620 Patent describes limitations in the prior art, in which wireless network management schemes employ methods to partition a network into communication channels, such as Frequency Division Multiple Access (FDMA) systems that "assign each terminal to a separate, non-overlapping frequency band" ('620 Patent at 1:48-49), Time Division Multiple Access (TDMA) systems that "assign each terminal to a separate non-overlapping time slot" ('620 Patent at 1:49-51), and Code Division Multiple Access (CDMA) schemes that "assign each terminal to a separate modulating waveform so that the cross correlation between each terminal is negligible." '620 Patent at 1:51-54.

42. The technology recited in the claims of the ’620 Patent specifies how to dynamically assign multiple users to allocated channels, enabling multiple signals to be received on the same channel—a result that overrides the routine and conventional practice of granting channel access. For example, instead of the conventional approach of ignoring the signal-to-noise ratio in order to determine whether to allow additional users to connect, the ’620 Patent discloses the novel approach of reconstructing an estimate of interfering signals and calculating noise power to determine whether there is sufficient noise margin to allow additional users to communicate over the wireless channel.

43. The claims of the ’620 Patent address technical problems arising out of the field of channel allocation in a multi-user and multi-channel network. For example, the ’620 Patent explains:

> The prior art schemes are inefficient in the sense that given sufficient signal to noise strength or coding redundancy, more communicators could use the allocated bandwidth if provided with means for detecting the excess signal margin and means for demodulating signals in the presence of interference.

’620 Patent at 3:15-20.

44. The ’620 patent solves this technological problem through the technological solution of determining the signal-to-noise ratio in a channel is sufficient to jointly demodulate additional signals on that channel and dynamically allocating channels accordingly, thereby improving the efficiency of the wireless communication system.

’492 Patent

45. The ’492 Patent, titled “Combinational Hybrid Turbo-MUD,” was duly and lawfully issued on September 22, 2009. Collision is the owner of all right, title, and interest in the ’492 Patent, including the right to sue for past infringement. A true and correct copy of the ’492 Patent is attached hereto as Exhibit 2.

46. The claims of the ’492 Patent are not directed to basic tools of scientific and technological work, fundamental economic practices, or the use of an abstract mathematical formula.

47. Rather, the ’492 Patent addresses problems and shortcomings in the field of wireless communications, and multi-user detection in particular, and claims novel and inventive technological solutions to such problems and shortcomings. For example, the ’492 Patent describes limitations in the prior art multi-user detection systems, in which complex, high fidelity multi-user detection systems “require too many computations to keep up with real-time transmissions,” but faster multi-user detection schemes cause “poor quality output when there are many or strongly correlated interferers or users.” ’492 Patent at 6:43-54.

48. The technology recited in the claims of the ’492 patent specifies a system that uses at least two multi-user detectors, and a decision unit that selects from among the multi-user detectors—a configuration that overrides the routine and conventional practice of using a single multi-user detector. For example, instead of using a single multi-user detector for all communications, the ’492 describes that allowing different multi-user detectors depending on the signals being processed, such as a faster, lower complexity multi-user detector for simpler signals, and a slower, higher-complexity MUD for more complex signals.

49. The claims of the ’492 Patent address technical problems arising out of the field of multi-user wireless communication. For example, the ’492 Patent explains how, in the art at the time, multi-user detection systems were either too slow or suffered from poor quality:

> In general, soft or hard output versions of the optimum maximum likelihood multi-user detector (Verdu, Multiuser Detection, Cambridge University Press, 1998) or an M algorithm (as described, for instance, in Schlegel, Trellis Coding, IEEE Press, 1997) with a moderate to high value of M causes the Turbo MUD to require too many computations to keep up with real time transmissions. Using a fast, but inferior, multiuser detection

> scheme such as a linear-based detector or those detailed in the text "Multiuser Detection" by Sergio Verdu causes poor quality output when there are many or strongly correlated interferers or users.

'492 Patent at 6:43-54.

50. The '492 Patent solves this technological problem through the novel technological solution of using a decision unit which selects a multi-user detector from at least two multi-user detectors. The multi-user detection decision unit decides, based on decision criteria, which multi-user detector should accept and process the received signals. The multi-user detection unit can use a variety of decision criteria, including the number of symbols, the correlation matrix between users, expected bit error rate, eigendecomposition of correlation matrix, signal-to-interference-plus-noise ratio ("SINR"), and expected SINR.

51. The system claimed in the '492 Patent therefore provides a novel way to improve the quality and spectral efficiency of wireless communications, as well as techniques for sharing limited bandwidth among high capacity users.

'851 Patent

52. The '851 Patent, titled "Receiver with Multiple Collectors in a Multiple User Detection System," was duly and lawfully issued on May 25, 2010. Collision is the owner of all right, title, and interest in the '851 Patent, including the right to sue for past infringement. A true and correct copy of the '851 Patent is attached hereto as Exhibit 3.

53. The claims of the '851 Patent are not directed to basic tools of scientific and technological work, fundamental economic practices, or the use of an abstract mathematical formula.

54. Rather, the '851 Patent addresses problems and shortcomings in the field of wireless communications, and networks utilizing multi-user detection in particular, and claims novel and inventive technological solutions to such problems and shortcomings. The '851 Patent

recognized that, as the total number of users in a telecommunications network increases, and thus as the total number of interfering signals rises, multi-user detection (MUD) systems known in the art at the time encounter computational difficulties that prevent the system from adequately and efficiently handling the volume of signals. For example, the '851 Patent explains that:

> The ability of multiuser detection procedures to perform the required processing in real time to produce reliable symbol estimates is a known drawback of multiuser detection based systems. This is due to the fact that as the total number of interfering signals goes up, the non-optimal MUD algorithms that perform short cuts in detection and estimation of symbols relative to the maximum likelihood exhaustive search MUD algorithm begin to fail. Moreover, as the number of users is increased beyond the number of dimensions (independent receiver measurements), the algorithm mathematics become ill defined and cannot be computed.

'851 Patent at 2:30-40.

55. The technology recited in the claims of the '851 Patent specifies how to collect and process multiple independent measurements of signals in order to increase the throughput of a multi-user detection-based multiple access digital communications system in which multiple user transmit signals on the same channel—a result that overrides the routine and conventional practice of decreasing the number of users on a given channel so as not to exceed the amount of interference the MUD system can handle. For example, instead of attempting to reduce interference by decreasing the number of users transmitting on a given channel, the '851 Patent provides a novel method which exploits this interference by collecting and processing the interfering signals in a specific way.

56. The claims of the '851 Patent address technical problems arising out of the field of MUD-based multiple access wireless networks. For example, the '851 Patent explains how, in the art at the time, state-of-the-art receivers and MUD algorithms would begin to suffer degraded performance under conditions of heavy interference caused by many users, a problem unique to wireless networks:

> Cellular or PCS systems provide high quality voice service in a wide-ranging geographical coverage area at relatively low cost. However, since many users transmit energy on the same communications channel, a number of inherent difficulties arise, particularly when a large number of user receivers attempt to detect the information associated with a particular user when there is heavy signal interference created by other users of the system at the same time. Typically the signal of interest cannot be received or the quality of reception is significantly degraded.
>
> One way of solving this problem is to separate the interfering transmissions at the receiver, using signal processing techniques. However, today's current state of the art receivers are not capable of detecting and decoding the information associated with each user under conditions of heavy interference.

'851 Patent at 1:27-42.

57. The '851 Patent solves this technological problem through the technological solution of utilizing a signal receiver having two or more collectors, where each collector has its own parameter estimation unit. The outputs from the multiple collectors are sent to an organizational unit, which uses time stamp information to stack digitally received signals into a vector measurement at each time stamp. The organizational unit combines the individual sets of parameter estimates into a combined set that is forwarded to the multi-user detection unit.

58. The technological solution of the '851 Patent increases the total number of users that may operate in a given channel, thereby improving bandwidth efficiency.

'071 Patent

59. The '071 Patent, titled "Media Access Control Protocol for Multiuser Detection Enabled Ad-Hoc Wireless Communications," was duly and lawfully issued on November 7, 2017. Collision is the owner of all right, title, and interest in the '071 Patent, including the right to sue for past infringement. A true and correct copy of the '071 Patent is attached hereto as Exhibit 4.

60. The claims of the ’071 Patent are not directed to basic tools of scientific and technological work, fundamental economic practices, or the use of an abstract mathematical formula.

61. Rather, the ’071 Patent addresses problems and shortcomings in the field of wireless communications, and shared, multi-user wireless networks in particular, and claims novel and inventive technological solutions to such problems and shortcomings. For example, the ’071 patent explains the following issue in the prior art:

> [I]t is typically not possible for collision detection to be used in a wireless network, since it is generally not possible for a wireless node to monitor the network while it is transmitting. Hence, it is not generally possible for a wireless node to directly detect collisions during transmission, making it impossible for a wireless network to use collision detection protocols such as CSMA/CD. Also, due to distances and intervening structures, it may not be possible for a specific node in a wireless network to detect signals from all other wireless nodes on the network. The likelihood of inadvertent collisions in wireless ad hoc networks is therefore much greater than for wired networks.

’071 Patent at 2:11-23.

62. The technology recited in the claims of the ’071 Patent specifies how to implement a system which allows multiple simultaneous transmissions to be decoded by the receiving node without attempting to avoid collisions—a result that overrides the routine and conventional practice of separating out transmissions into separate access channels. For example, instead of requiring transmitting nodes to separate their entire transmissions into separate unshared channels, the ’071 Patent provides a novel transmission protocol which allows the receiving node to decode simultaneous transmissions by separating out parameter-detecting signals into separate unshared channels while allowing data signals to be carried in shared channels.

63. The claims of the ’071 Patent address technical problems arising out of the field of multiple access wireless networking. For example, the ’071 Patent explains how, in the art at the time, shared networks avoided collisions by having only one node transmit on a channel at a time, which limited the achievable communication speed on the network, a problem unique to shared wireless networks:

> Depending on the circumstances, some or all of the above spread-spectrum technologies can be combined so as to yield a further increase in communication speed. In general, however, even when spread-spectrum technologies are employed, the communication speed of a shared ad hoc wireless network is still significantly limited due to the requirement that only one node transmit over a single communication channel at any given time, and due to the added overhead of the various protocols that are used to avoid and/or recover from packet collisions.

’071 Patent at 3:4-13.

64. The ’071 Patent solves this technological problem through the technological solution of receiving nodes in a communications network accepting parameter-estimating symbol patterns transmitted via an “unshared, dedicated, low-collision or collision-free parameter channel” provided by the receiving node in addition to the shared communication channel. ’071 Patent at 3:45-47. The parameter-estimating symbol patterns allow receiving nodes to accurately estimate multi-user detection-relevant parameters, such as amplitude, phase, relative carrier frequency offset, and rough time delay, for each of the transmitting nodes. Because the parameter-estimating symbol patterns do not require a high rate of data transmission, the use of relatively low data-rate parameter channels may conserve bandwidth.

65. The technological solution of the ’071 Patent increases the communication capacity of a wireless network by up to an order of magnitude or more.

ERICSSON'S INFRINGING PRODUCTS AND ACTIVITIES

66. On information and belief, Ericsson makes, uses, sells, and/or offers to sell in the United States, and/or imports into the United States numerous products compliant with the 3G and 4G LTE standard. On information and belief, Ericsson's base stations include Ericsson's Radio Base Station (RBS) 6000 Series (*e.g.*, RBS 6101, 6102, 6110, 6120, 6131, 6201, 6202, 6301, 6302, 6320, 6401, 6402, 6501, 6601) ("Accused Products"). The Accused Products comply with the 3GPP 3G WCDMA and 4G LTE standards. *See, e.g.*, https://www.motorolasolutions.com/content/dam/msi/docs/business/solutions/business_solutions/mission_critical_communications/lte_for_government_and_public_safety/_documents/_static_files/rbs_6000_series_product_spec_sheet_1104-1.pdf ("Ericsson is the most trusted, most proven provider of standards-compliant LTE technology") (last visited Aug. 25, 2021); https://mediabank.ericsson.net/deployedFiles/ericsson.com/193_22109-FAP130506%20RBS%206000%20and%20Baseband%20course%20flow%20Rev%20J.pdf (identifying support for both WCDMA and LTE by Ericsson's RBS 6000 series products) (last visited Aug. 25, 2021); https://www.ericsson.com/en/portfolio/networks/ericsson-radio-system/mobile-transport/router ("Ericsson Router 6000 series…delivers high-performance connectivity for LTE, LTE-advanced and 5G-applications.") (last visited Aug. 25, 2021).

FIRST CAUSE OF ACTION
(Infringement of U.S. Patent No. 7,233,620)

67. Collision realleges and incorporates by reference the allegations set forth in the foregoing paragraphs of its Complaint.

68. Ericsson makes, uses (including through testing), sells, and/or offers to sell in the United States, and/or imports into the United States, Accused Products that incorporate or make use of one or more of the inventions covered by the '620 Patent. *See* Exhibit 6.

69. By making, using, offering for sale, and/or selling Accused Products in the United States, and/or importing them into the United States, Ericsson has injured Collision and is liable to Collision for directly infringing one or more claims of the '620 Patent, including without limitation claim 1, pursuant to 35 U.S.C. § 271(a).

70. Ericsson also infringes the '620 Patent under 35 U.S.C. § 271(b) & (c).

71. Ericsson's infringement of the '620 Patent is willful, deliberate, and intentional. Upon information and belief, Ericsson knew of, or was willfully blind to, the '620 Patent before the filing of this action. For example, Collision specifically identified the '620 Patent to Ericsson in a June 2012 presentation of its technology and patent portfolio. (It was also publicly known no later than July 5, 2012 that Collision owned the '620 Patent, after Collision recorded its assignment of the '620 Patent, along with other Asserted Patents and pending applications, at the USPTO.) As another example, in January 2019, Collision provided further notice to Ericsson of Collision's portfolio of more than 100 patents that are relevant to cellular networks. In response, Ericsson requested additional information, and Collision provided a specific identification of each of its 126 issued patents, including the '620 Patent. Ericsson has also had knowledge of the '620 Patent at least by virtue of the filing of this Complaint.

72. Ericsson knowingly encourages and intends to induce infringement of the '620 Patent by making, using, offering for sale, and/or selling Accused Products in the United States, and/or importing them into the United States, with knowledge and specific intention that such products will be used by Ericsson or its customers in a network that infringes the '620 Patent. For example, Ericsson advertises that its "RAN software is part of Ericsson Radio System," which "enables flexibility and performance to accommodate your network and business realities, taking the best of 2G, 3G, 4G and 5G technologies."

https://www.ericsson.com/en/portfolio/networks/ericsson-radio-system/radio-system-software (last visited Aug. 25, 2021).

73. Ericsson also contributes to the infringement of the '620 Patent. Ericsson makes, uses, sells, and/or offers to sell Accused Products in the United States, and/or imports them into the United States, knowing that those products constitute a material part of the claimed invention, that they are especially made or adapted for use in infringing the '620 Patent, and that they are not staple articles or commodities of commerce capable of substantial non-infringing use.

74. Ericsson's infringement of the '620 Patent has been and continues to be deliberate and willful, and this is therefore an exceptional case warranting an award of enhanced damages and attorneys' fees pursuant to 35 U.S.C. §§ 284, 285.

75. To the extent applicable, Collision has complied with the marking requirements set forth in 35 U.S.C. § 287.

76. As a result of Ericsson's infringement of the '620 Patent, Collision has suffered monetary damages, and seeks recovery in an amount adequate to compensate for Ericsson's infringement, but in no event less than a reasonable royalty with interest and costs.

77. On information and belief, Ericsson's infringement in violation of the federal patent laws will continue to injure Collision unless otherwise enjoined by this Court.

SECOND CAUSE OF ACTION
(Infringement of U.S. Patent No. 7,593,492)

78. Collision realleges and incorporates by reference the allegations set forth in the foregoing paragraphs of its Complaint.

79. Ericsson makes, uses (including through testing), sells, and/or offers to sell in the United States, and/or imports into the United States, Accused Products that incorporate or make use of one or more of the inventions covered by the '492 Patent. *See* Exhibit 7.

80. By making, using, offering for sale, and/or selling Accused Products in the United States, and/or importing them into the United States, Ericsson has injured Collision and is liable to Collision for directly infringing one or more claims of the '492 Patent, including without limitation claim 1, pursuant to 35 U.S.C. § 271(a).

81. Ericsson also infringes the '492 Patent under 35 U.S.C. § 271(b) & (c).

82. Ericsson's infringement of the '492 Patent is willful, deliberate, and intentional. Upon information and belief, Ericsson knew of, or was willfully blind to, the '492 Patent before the filing of this action. The '492 Patent issued on September 22, 2009, and it was publicly known no later than July 5, 2012 that Collision owned the '492 Patent after Collision recorded its assignment of the '492 Patent, along with other Asserted Patents and pending applications, at the USPTO. In January 2019, Collision provided Ericsson with Collision's portfolio of more than 100 patents that are relevant to cellular networks. In response, Ericsson requested additional information, and Collision provided a specific identification of each of its 126 issued patents, including the '492 Patent. Ericsson has also had knowledge of the '492 Patent at least by virtue of the filing of this Complaint.

83. Ericsson knowingly encourages and intends to induce infringement of the '492 Patent by making, using, offering for sale, and/or selling Accused Products in the United States, and/or importing them into the United States, with knowledge and specific intention that such products will be used by Ericsson or its customers in a network that infringes the '492 Patent. For example, Ericsson advertises that its "RAN software is part of Ericsson Radio System,"

which "enables flexibility and performance to accommodate your network and business realities, taking the best of 2G, 3G, 4G and 5G technologies." https://www.ericsson.com/en/portfolio/networks/ericsson-radio-system/radio-system-software (last visited Aug. 25, 2021).

84. Ericsson also contributes to the infringement of the '492 Patent. Ericsson makes, uses, sells, and/or offers to sell Accused Products in the United States, and/or imports them into the United States, knowing that those products constitute a material part of the claimed invention, that they are especially made or adapted for use in infringing the '492 Patent, and that they are not staple articles or commodities of commerce capable of substantial non-infringing use.

85. Ericsson's infringement of the '492 Patent has been and continues to be deliberate and willful, and this is therefore an exceptional case warranting an award of enhanced damages and attorneys' fees pursuant to 35 U.S.C. §§ 284, 285.

86. To the extent applicable, Collision has complied with the marking requirements set forth in 35 U.S.C. § 287.

87. As a result of Ericsson's infringement of the '492 Patent, Collision has suffered monetary damages, and seeks recovery in an amount adequate to compensate for Ericsson's infringement, but in no event less than a reasonable royalty with interest and costs.

88. On information and belief, Ericsson's infringement in violation of the federal patent laws will continue to injure Collision unless otherwise enjoined by this Court.

THIRD CAUSE OF ACTION
(Infringement of U.S. Patent No. 7,724,851)

89. Collision realleges and incorporates by reference the allegations set forth in the foregoing paragraphs of its Complaint.

90. Ericsson makes, uses (including through testing), sells, and/or offers to sell in the United States, and/or imports into the United States, products that incorporate or make use of one or more of the inventions covered by the '851 Patent, including the Accused Products. *See* Exhibit 8.

91. By making, using, offering for sale, and/or selling Accused Products in the United States, and/or importing them into the United States, Ericsson has injured Collision and is liable to Collision for directly infringing one or more claims of the '851 Patent, including without limitation claim 1, pursuant to 35 U.S.C. § 271(a).

92. Ericsson also infringes the '851 Patent under 35 U.S.C. § 271(b) & (c).

93. Ericsson's infringement of the '851 Patent is willful, deliberate, and intentional. Upon information and belief, Ericsson knew of, or was willfully blind to, the '851 Patent before the filing of this action. The '851 Patent issued on May 25, 2010, and it was publicly known no later than July 5, 2012 that Collision owned the '851 Patent after Collision recorded its assignment of the '851 Patent, along with other Asserted Patents and pending applications, at the USPTO. In January 2019, Collision provided Ericsson with Collision's portfolio of more than 100 patents that are relevant to cellular networks. In response, Ericsson requested additional information, and Collision provided a specific identification of each of its 126 issued patents, including the '851 Patent. Ericsson has also had knowledge of the '851 Patent at least by virtue of the filing of this Complaint.

94. Ericsson knowingly encourages and intends to induce infringement of the '851 Patent by making, using, offering for sale, and/or selling Accused Products in the United States, and/or importing them into the United States, with knowledge and specific intention that such products will be used by Ericsson or its customers in a network that infringes the '851 Patent.

For example, Ericsson advertises that its "RAN software is part of Ericsson Radio System," which "enables flexibility and performance to accommodate your network and business realities, taking the best of 2G, 3G, 4G and 5G technologies." https://www.ericsson.com/en/portfolio/networks/ericsson-radio-system/radio-system-software (last visited Aug. 25, 2021).

95. Ericsson also contributes to the infringement of the '851 Patent. Ericsson makes, uses, sells, and/or offers to sell Accused Products in the United States, and/or imports them into the United States, knowing that those products constitute a material part of the claimed invention, that they are especially made or adapted for use in infringing the '851 Patent, and that they are not staple articles or commodities of commerce capable of substantial non-infringing use.

96. Ericsson's infringement of the '851 Patent has been and continues to be deliberate and willful, and this is therefore an exceptional case warranting an award of enhanced damages and attorneys' fees pursuant to 35 U.S.C. §§ 284, 285.

97. To the extent applicable, Collision has complied with the marking requirements set forth in 35 U.S.C. § 287.

98. As a result of Ericsson's infringement of the '851 Patent, Collision has suffered monetary damages, and seeks recovery in an amount adequate to compensate for Ericsson's infringement, but in no event less than a reasonable royalty with interest and costs.

99. On information and belief, Ericsson's infringement in violation of the federal patent laws will continue to injure Collision unless otherwise enjoined by this Court.

FOURTH CAUSE OF ACTION
(Infringement of U.S. Patent No. 9,814,071)

100. Collision realleges and incorporates by reference the allegations set forth in the foregoing paragraphs of its Complaint.

101. Ericsson makes, uses (including through testing), sells, and/or offers to sell in the United States, and/or imports into the United States, Accused Products that incorporate or make use of one or more of the inventions covered by the '071 Patent. *See* Exhibit 9.

102. By making, using, offering for sale, and/or selling Accused Products in the United States, and/or importing them into the United States, Ericsson has injured Collision and is liable to Collision for directly infringing one or more claims of the '071 Patent, including without limitation claim 1, pursuant to 35 U.S.C. § 271(a).

103. Ericsson also infringes the '071 Patent under 35 U.S.C. § 271(b) & (c).

104. Ericsson's infringement of the '071 Patent is willful, deliberate, and intentional. Upon information and belief, Ericsson knew of, or was willfully blind to, the '071 Patent before the filing of this action. The application leading to the '071 Patent published as U.S. Patent Pub. No. 2011/0051674 on March 3, 2011 and issued on November 7, 2017. And it was publicly known no later than July 5, 2012 that Collision owned the application leading to the '071 Patent after Collision recorded its assignment of the '071 Patent, along with other Asserted Patents and pending applications, at the USPTO. In January 2019, Collision provided Ericsson with Collision's portfolio of more than 100 patents that are relevant to cellular networks. In response, Ericsson requested additional information, and Collision provided a specific identification of each of its 126 issued patents, including the '071 Patent. Ericsson has also had knowledge of the '071 Patent at least by virtue of the filing of this Complaint.

105. Ericsson knowingly encourages and intends to induce infringement of the '071 Patent by making, using, offering for sale, and/or selling Accused Products in the United States, and/or importing them into the United States, with knowledge and specific intention that such products will be used by Ericsson or its customers in a network that infringes the '071 Patent. For example, Ericsson advertises that its "RAN software is part of Ericsson Radio System," which "enables flexibility and performance to accommodate your network and business realities, taking the best of 2G, 3G, 4G and 5G technologies." https://www.ericsson.com/en/portfolio/networks/ericsson-radio-system/radio-system-software (last visited Aug. 25, 2021).

106. Ericsson also contributes to the infringement of the '071 Patent. Ericsson makes, uses, sells, and/or offers to sell Accused Products in the United States, and/or imports them into the United States, knowing that those products constitute a material part of the claimed invention, that they are especially made or adapted for use in infringing the '071 Patent, and that they are not staple articles or commodities of commerce capable of substantial non-infringing use.

107. Ericsson's infringement of the '071 Patent has been and continues to be deliberate and willful, and this is therefore an exceptional case warranting an award of enhanced damages and attorneys' fees pursuant to 35 U.S.C. §§ 284,285.

108. To the extent applicable, Collision has complied with the marking requirements set forth in 35 U.S.C. § 287.

109. As a result of Ericsson's infringement of the '071 Patent, Collision has suffered monetary damages, and seeks recovery in an amount adequate to compensate for Ericsson's infringement, but in no event less than a reasonable royalty with interest and costs.

110. On information and belief, Ericsson's infringement in violation of the federal patent laws will continue to injure Collision unless otherwise enjoined by this Court.

DEMAND FOR JURY TRIAL

Collision hereby demands a trial by jury of all issues so triable in this action.

PRAYER FOR RELIEF

Collision respectfully requests this Court grant relief as follows:

A. Judgment that Ericsson has infringed one or more claims of each of the Asserted Patents in this litigation pursuant to 35 U.S.C. §§ 271(a), 271(b), and/or 271(c), and that Ericsson is liable for damages caused by such infringement;

B. Judgment requiring Ericsson to make an accounting of damages resulting from Ericsson's infringement of the Asserted Patents;

C. Judgment permanently enjoining Ericsson, its officers, agents, servants, employees, attorneys, parent and subsidiary corporations, assigns and successors in interest, and those persons in active concert or participation with them, from continued acts of infringement of the Asserted Patents;

D. Judgment awarding Collision its damages resulting from Ericsson's infringement of the Asserted Patents, and increasing such damages pursuant to 35 U.S.C. § 284 because of the willful and deliberate nature of Ericsson's conduct;

E. A judicial determination of the conditions for future infringement such as an ongoing royalty;

F. Judgment requiring Ericsson to pay Collision's costs and expenses, along with pre-judgment and post-judgment interest, for Ericsson's infringement of each of the Asserted Patents;

G. An order that this case is "exceptional" pursuant to 35 U.S.C. § 285, entitling Collision to an award of its reasonable and necessary attorneys' fees, expenses, and costs, and prejudgment interest thereon; and

H. Any such other and further relief as the Court deems just and proper.

Dated: August 27, 2021

/s/ Melissa R. Smith

Steven Pepe
(NY Bar No. 2810430)
(Eastern District of Texas Member)
Kevin J. Post
(NY Bar No. 4382214)
(Eastern District of Texas Member)
Alexander E. Middleton
(NY Bar No. 4797114)
(Eastern District of Texas Member)
Matthew R. Shapiro
(NY Bar No. 5102017)
(Eastern District of Texas Member)
Jolene L. Wang
(NY Bar No. 5462619)
(Eastern District of Texas Member)
ROPES & GRAY LLP
1211 Avenue of the Americas
New York, NY 10036
Telephone: (212) 596-9000
Facsimile: (212) 596-9090
steven.pepe@ropesgray.com
kevin.post@ropesgray.com
alexander.middleton@ropesgray.com
matthew.shapiro@ropesgray.com
jolene.wang@ropesgray.com

Samuel L. Brenner
(MA Bar No. 677812)
(Eastern District of Texas Member)
ROPES & GRAY LLP
Prudential Tower
800 Boylston Street
Boston, MA 02199-3600
Telephone: (617) 951-7000
Facsimile: (617) 951-7050
samuel.brenner@ropesgray.com

Melissa R. Smith
GILLAM & SMITH, LLP
TX State Bar No. 24001351
303 S. Washington Avenue
Marshall, Texas 75670
Telephone: (903) 934-8450
Facsimile: (903) 934-9257
melissa@gillamsmithlaw.com

James R. Batchelder
(CA Bar No. 136347)
(Eastern District of Texas Member)
Shong Yin
(CA Bar No. 319566)
(Eastern District of Texas Member)
James F. Mack
(CA Bar No. 322056)
(Eastern District of Texas Member)
ROPES & GRAY LLP
1900 University Avenue, 6th Floor
East Palo Alto, CA 94303-2284
Telephone: (650) 617-4000
Facsimile: (650) 617-4090
james.batchelder@ropesgray.com
shong.yin@ropesgray.com
james.mack@ropesgray.com

Attorneys for Plaintiff
COLLISION COMMUNICATIONS, INC.