IN THE UNITED STATES DISTRICT COURT FOR THE EASTERN DISTRICT OF TEXAS MARSHALL DIVISION

UNILOC 2017 LLC and UNILOC USA, INC.

Plaintiffs,

V.

S

PATENT CASE

GOOGLE LLC,

Defendant.

S

JURY TRIAL DEMANDED

ORIGINAL COMPLAINT FOR PATENT INFRINGEMENT

Plaintiffs Uniloc 2017 LLC and Uniloc USA, Inc. (together "Uniloc"), as and for their complaint against defendant Google LLC ("Google") allege as follows:

THE PARTIES

- 1. Uniloc 2017 LLC is a Delaware limited liability company having places of business at 620 Newport Center Drive, Newport Beach, California 92660 and 102 N. College Avenue, Suite 303, Tyler, Texas 75702.
- 2. Uniloc USA, Inc. is a Texas corporation having a place of business at Legacy Town Center I, Suite 380, 7160 Dallas Parkway, Plano, Texas 75024.
 - 3. Uniloc holds all substantial rights, title and interest in and to the asserted patent.
- 4. On information and belief, Google, a Delaware corporation with its principal office at 1600 Amphitheatre Parkway, Mountain View, CA 94043. Google offers its products and/or services, including those accused herein of infringement, to customers and potential customers located in Texas and in the judicial Eastern District of Texas.

JURISDICTION

5. Uniloc brings this action for patent infringement under the patent laws of the United

States, 35 U.S.C. § 271 et seq. This Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a).

- 6. This Court has personal jurisdiction over Google in this action because Google has committed acts within the Eastern District of Texas giving rise to this action and has established minimum contacts with this forum such that the exercise of jurisdiction over Google would not offend traditional notions of fair play and substantial justice. Google has committed and continues to commit acts of infringement in this District by, among other things, offering to sell and selling products and/or services that infringe the asserted patent.
- 7. Venue is proper in this Court pursuant to 28 U.S.C. §§ 1391 and 1400(b). Google is registered to do business in Texas, and upon information and belief, Google has transacted business in the Eastern District of Texas and has committed acts of direct and indirect infringement in the Eastern District of Texas. Google has a regular and established place of business in this District, as set forth below.
- 8. Google is a multinational technology company that collects, stores, organizes, and distributes data. In addition to its service model for distribution of data (e.g., movies, search results, maps, music, etc.), Google has an expansive regime that gathers data on residents of this District through the hardware devices it sells (e.g., phones, tablets, and home audio devices) and, also, through the operating systems and apps it provides. As an example, Google gathers data when a resident runs its operating systems and apps (e.g., location services). As another example, Google gather's data when a resident interacts with Google's plethora of services such as search, email, and music and movie streaming. See https://safety.google/privacy/data/ (indicating that Google

¹ See e.g., "AP Exclusive: Google tracks your movements, like it or not," https://apnews.com/828aefab64d4411bac257a07c1af0ecb/AP-Exclusive:-Google-tracks-your-movements,-like-it-or-not

gathers data from "things you search for," "Videos you watch," "Ads you view or click," "Your location," "Websites you visit," and "Apps, browsers, and devices you use to access Google services"). As yet another example, Google gathers data by listening and recoding everything a resident says within proximity of one of its products such as Google Home.² Others have reported that Google gathers "where you've been," "everything you've ever searched – and deleted," "all the apps you use," "all of your YouTube history," "which events you attended, and when," "information you deleted [on your computer]," "your workout routine," "years' worth of photos," and "every email you ever sent."³

- 9. Google takes these massive amounts of gathered data on residents of this district and monetizes them, for example, through targeted advertising. Some have reported that "creepy" advertisements for items never searched for, but only spoken out loud appeared. *See* e.g., https://www.youtube.com/watch?v=zBnDWSvaQ1I (conducting test on the term "dog toys" spoken out loud, but never searched; tester claims targeted "dog toy" advertisements only appeared after speaking the phrase out loud).
- 10. In addition to extensive data gathering of information on residents of this District, Google has a substantial presence in the District directly through the products and services Google provides residents of this District (some of which also gather data).⁴ One of Google's main

² See https://www.unilad.co.uk/technology/google-is-listening-to-everything-we-say-and-you-can-hear-it-back/ ("Tech giant and the font of all pub quiz knowledge, Google, can quietly record many of the conversations that people have in close proximity to its products.").

³ See https://www.theguardian.com/commentisfree/2018/mar/28/all-the-data-facebook-google-has-on-you-privacy.

⁴ Non-limiting examples include Google Search, Maps, Translate, Chrome Browser, YouTube, YouTube TV, Google Play Music, Chromecast, Google Play Movies and TV, Android Phones, Android Wear, Chromebooks, Android Auto, Gmail, Google Allo, Google Duo, Google+, Google Photos, Google Contacts, Google Calendar, Google Keep, Google Docs, Google Sheets, Google Slides, Google Drive, Google Voice, Google Assistant, Android operating system, Project Fi Wireless phone systems, Google Pixel, Google Home, Google Wifi, Daydream View, Chromecast Ultra.

businesses in this District is delivering information, including digital content such as movies, music, apps, and advertising.

11. Google describes itself as an "information company." Its vision is "to provide access to the world's information in one click," and its mission is "to organize the world's information and make it universally accessible and useful." Making information available to people wherever they are and as quickly as possible is critical to Google's business.

Google Global Cache (GGC)

- 12. As Google's CEO, Sundar Pichai, explains, "We want to make sure that no matter who you are or where you are or how advanced the device you are using—Google works for you."

 To meet this goal, Google developed a content delivery network that it calls the Edge Network.
- Network. Google provides web-based services, such as YouTube, YouTube TV, and Google Play, to users throughout the world. These services are in high demand. Google reports that Google Play reaches more than 1 billion Android users and that YouTube serves over 1.8 billion users per month. Studies show that YouTube alone is responsible for approximately 20% of all internet traffic. YouTube TV, which has been described as an "add-on to YouTube" allows Google to essentially become the local TV provider for residents of this District. For example, residents in this District obtain local Dallas-Fort Worth area channels such as WFAA, ABC (Channel 8); CBS

⁵ See "This Year's Founder's Letter" by Alphabet CEO, Sundar Pichai, https://blog.google/inside-google/alphabet/this-years-founders-letter/.

⁶ http://panmore.com/google-vision-statement-mission-statement.

⁷ See e.g., http://time.com/4311233/google-ceo-sundar-pichai-letter/.

⁸ See https://www.theverge.com/2018/5/3/17317274/youtube-1-8-billion-logged-in-monthly-users-brandcast-2018

⁹ See https://www.sandvine.com/hubfs/downloads/archive/2016-global-internet-phenomena-report-latin-america-and-north-america.pdf and https://testinternetspeed.org/blog/half-of-all-internet-phenomena-report-latin-america-and-north-america.pdf and https://testinternetspeed.org/blog/half-of-all-internet-traffic-goes-to-netflix-and-youtube/

11:00 AM - 12:00 PM Live with Kelly and Ryan The Wendy Williams Show Today With Kathie Lee &... NBC 5 Today at 11am 11:00 AM - 12:00 PM The View **Midday News** 10:00 AM - 11:00 AM 11:00 AM - 11:30 AM The Price Is Right **CBS11 at 11** 10:30 AM - 11:00 AM 11:00 AM - 12:00 PM 21 Who Wants to Be a... The Doctors

(Channel 11); NBC (Channel 5); and Fox (Channel 4).¹⁰

Source: https://tv.youtube.com/live (as accessed from this District).

To verify a resident should receive such local channels, Google verifies a location of such resident.

- 14. Google's Edge Network, itself, has three elements: Core Data Centers, Edge Points of Presence, and Edge Nodes. The Core Data Centers (there are eight in the United States) are used for computation and backend storage. Edge Points of Presence are the middle tier of the Edge Network and connect the Data Centers to the internet. Edge Nodes are the layer of the network closest to users. Popular content, including YouTube TV, YouTube, video advertising, music, mobile apps, and other digital content from the Google Play store, is cached on the Edge Nodes, which Google refers to as Google Global Cache or "GGC".
- 15. Google Global Cache is recognized as "one of Google's most important pieces of infrastructure," and Google uses it to conduct the business of providing access to the world's information. GGC servers in the Edge Nodes function as local data warehouses, much like a shoe manufacturer might have warehouses around the country. Instead of requiring people to obtain

¹⁰ See, e.g. https://support.google.com/youtubetv/answer/7068923?hl=en and https://support.google.com/youtubetv/answer/7370552?hl=en&ref topic=7071745.

http://blog.speedchecker.xyz/2015/11/30/demystifying-google-global-cache/.

information from distant Core Data Centers, which would introduce delay, Google stores information in the local GGC servers to provide quick access to the data.

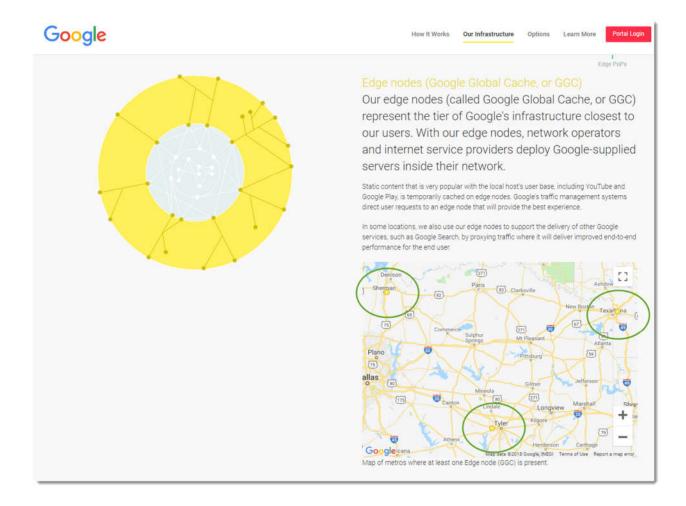
- 16. Caching and localization are vital for Google's optimization of network resources. Because hosting all content everywhere is inefficient, it makes sense to cache popular content and serve it locally. Doing so brings delivery costs down for Google, network operators, and internet service providers. Storing content locally also allows it to be delivered more quickly, which improves user experience. Serving content from the edge of the network closer to the user improves performance and user happiness. To achieve these benefits, Google has placed Edge Nodes throughout the United States, including in this District. Google describes these nodes as the workhorses of video delivery.
- 17. Just like brick-and-mortar stores, Google's GGC servers independently determine what content to cache based on local requests. The GGC servers in Google's Edge Nodes include software that Google refers to as "µstreamer." µstreamer is responsible for serving video content from YouTube and other Google services, along with other large content such as Google Play applications and Chrome downloads. It operates on a content-delivery platform at the edge of Google's network called "bandaid"; it does not run in the core (except for some internal testing purposes), unlike most of the Google services, such as search or Gmail.
- 18. Using µstreamer and bandaid, a GGC server handles requests directly from its clients, predominantly YouTube's video players. When such a request is received, if the content is stored in the node's local cache, the node will serve it to the end user, improving the user experience and saving bandwidth. If cache-eligible content is not already stored on the node, and the content is cache-eligible, the node will retrieve it from Google, serve it to the user, and store it for future requests.
 - 19. µstreamer is largely autonomous, in the sense that almost all decisions related Page 6 of 38

to serving a particular request are made locally, without coordinating with other servers. Like a brick-and-mortar store sells directly to customers from inventory and stocks that inventory based on local customer demand, µstreamer in each GGC node decides—independently from other nodes in Google's Edge Network— whether to serve requested content, whether to cache content, and whether to send requests to other servers.

- 20. Google's GGC servers are housed in spaces in the District leased by Google. Google's GGC servers are housed in spaces leased by Google from Internet Service Providers (ISPs) whose networks have substantial traffic to Google and are interested in saving bandwidth. Hosting Google servers allows ISPs to save both bandwidth and costs, as they do not incur the expense of carrying traffic across their peering and/or transit links.
- 21. When an ISP agrees to host a GGC server, the parties enter into a Global Cache Service Agreement, under which Google provides:
 - hardware and software—including GGC servers and software—to be housed in the host's facilities;
 - technical support; service management of the hardware and software; and
 - content distribution services, including content caching and video streaming.

In exchange, the host provides, among other things, a physical building, rack space where Google's computer hardware is mounted, power, and network interfaces. All ownership rights, title, and intellectual property rights in and to the equipment (i.e., the hardware and software provided by Google) remain with Google and/or its licensors.

22. Multiple ISPs hosted GGC servers are in this District. Google provides the location of its GGC servers, namely Sherman, Tyler, and Texarkana.



Source: https://peering.google.com/#/infrastructure

- 23. Suddenlink Communications, for example, is an ISP that hosts six GGC servers in Tyler, Texas.
- 24. CableOne is an ISP that hosts three GGC servers in Sherman, Texas, and three GGC servers Texarkana, Texas.
 - 25. Google caches content on these GGC servers located in this District.
- 26. Google's GGC servers located in this District cache content that includes, among other things: (i) video advertising; (ii) apps; and (iii) digital content from the Google Play store.
- 27. Google's GGC servers located in this District deliver cached content for the items in the preceding paragraph to residents in this District.
 - 28. Google generates revenue (i) by delivering video advertising, (ii) from apps, Page 8 of 38

and (iii) from digital content in the Google Play store.

- 29. Google treats its GGC servers in this District the same as it treats all its other GGC servers in the United States.
- 30. The photographs below show Google's GGC servers hosted by Suddenlink and the building where they are located at 322 North Glenwood Boulevard, Tyler, Texas 75702.



Exterior



Interior Rack Spaces



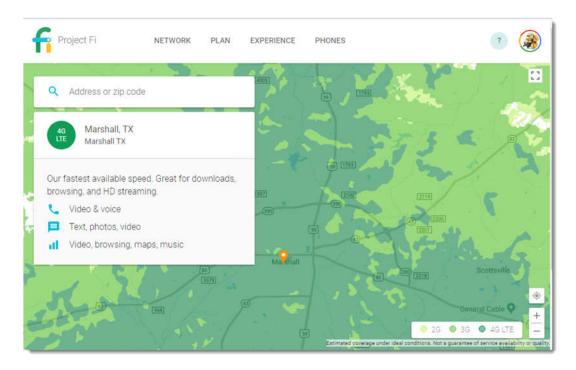
Google GGC Servers

- 31. Google not only exercises exclusive control over the digital aspects of the GGC, Google, but also exercises exclusive control over the physical server and the physical space within which the server is located and maintained.
- 32. This District has previously determined that the GGC server itself and the place of the GGC server, both independently and together, meet the statutory requirement of a "physical place." *See Seven Networks, LLC v. Google, LLC*, Case No. 2:17-cv-00442-JRG (E.D. Tex) (Jul. 19, 2018) at Page 24.
- 33. Likewise, this District has determined that GGC servers and their several locations within this District constitute "regular and established place[s] of business" within the meaning of the special patent venue statute *See Seven Networks, LLC v. Google, LLC*, Case No. 2:17-cv-00442-JRG (E.D. Tex.) (Jul. 19, 2018) at page 38.

34. Similarly, this District has determined that the GGC servers and their locations within the various ISPs within this District are "places of Google" sufficient to meet the statutory requirement of § 1400(b). *See Seven Networks, LLC v. Google, LLC*, Case No. 2:17-cv-00442-JRG (E.D. Tex.) (Jul. 19, 2018) at page 41.

Google's Cell Phone Service (aka Google Fi)

35. Google also provides phone, messaging, and data services in this District from its wireless phone services called Google Fi. Via this Google Fi service, Google provides its customers voice and high-speed data coverage (4G LTE) for cities such as Tyler and Marshall, TX.



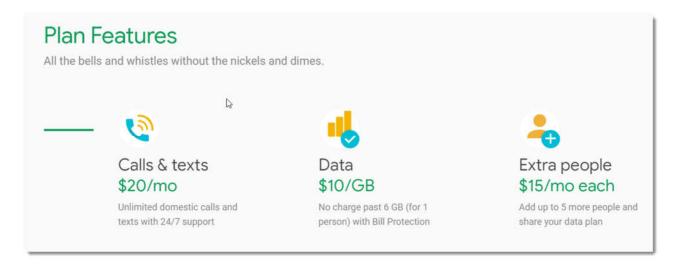
Source: https://fi.google.com/coverage?q=Marshall%2C%20TX%2C%20USA

36. The cell towers used for Google's services are fixed geographical locations. They are "regular" and "established" because they operate in a "steady, uniform, orderly, and methodical manner" and are sufficiently permanent. They are "of the defendant" because Google has contractual and/or property rights to use the cell towers to operate its business. Google also ratifies the service locations through its coverage lookup service.



Source: https://fi.google.com/coverage?

- 37. With this coverage lookup service, Google advertises its ability to provide cell coverage in this District and it selected cell towers in and near this District to provide the advertised coverage (e.g., 2G, 3G, or 4GLTE) depending on the location in the District. See https://fi.google.com/coverage?. Google is not indifferent to the location of its cell towers. It "established" and "ratified" them where they are for a specific business purpose.
- 38. Residents of this District also directly contract with and are billed by Google for these services.



Source: https://fi.google.com/about/plan

- 39. Google also determines which cell tower a particular project Fi customer will use while within the District.
 - What determines when Project Fi moves me between cellular networks?

When multiple carriers are available, Project Fi will move you to the network that our analysis shows will be fastest in your current location, whether that is 4G LTE, 3G, or 2G. We're constantly learning and improving, to account for factors such as newly-built towers or newly-available radio frequencies. And if your current network is providing weak or no coverage, we'll adjust in real time to find you a stronger connection.

Source: https://fi.google.com/about/faq/#network-and-coverage-4

Google Cloud Interconnect (GCI) and Direct Peering

- 40. Google additionally services its customers in this District (and other districts) through yet other facilities it has in this District. More particularly, Google's equipment is located in this District in Denton County Texas at two facilities referred to as "Megaport." At the Megaport facilities in this District, Google offers two services: Google Cloud Interconnect (GCI) and Direct Peering.
- 41. Google Cloud's Interconnect (GCI) is a service from Google that allows customers to connect to Google Cloud Platform directly as opposed to, for example, over the public network.



Partner Interconnect

You can also extend your data center network into your Google Cloud projects through the service providers you know and love, Partner Interconnect offers enterprise-grade connections similar to Dedicated Interconnect. This solution allows you to add connectivity from your onpremises network to your GCP VPC through one of Google Cloud's many service provider partners.

Partner Interconnect gives you bandwidth options from 50Mbps - 10Gbps allowing you to connect to your VPC and to extend your corporate data center's IP space into the Google cloud by choosing the bandwidth that works best for your needs. This allows you to work with our partners to get similar SLA options as provided by Dedicated Interconnect when you are not able to meet us at one of our dedicated interconnect locations.

Please see the Partner Interconnect documentation for details on how to create a Partner Interconnect in your GCP Project.

Source: https://cloud.google.com/interconnect/

42. Google's Direct Peering services allows its customers to exchange Internet traffic between its customers network and Google's at one of its broad-reaching Edge network locations such as the one at Megaport.

Direct Peering



Connect your business network directly to Google at any of 100+ locations in 33 countries around the world and exchange high throughput cloud traffic.

What is direct peering?

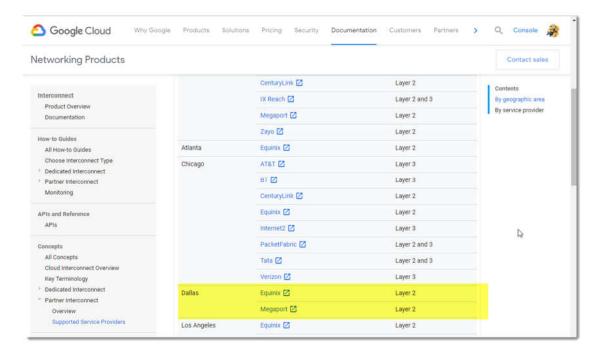
Google allows you to establish a direct peering connection between your business network and Google's. With this connection you will be able to exchange Internet traffic between your network and Google's at one of our broad-reaching Edge network locations. Visit Google's peering site to find out more information about edge locations.

Direct peering with Google is done by exchanging BGP routes between Google and the peering entity. After a direct peering connection is in place, you can use it to reach all of Google's services including the full suite of Google Cloud Platform products.

Source: https://cloud.google.com/interconnect/docs/how-to/direct-peering

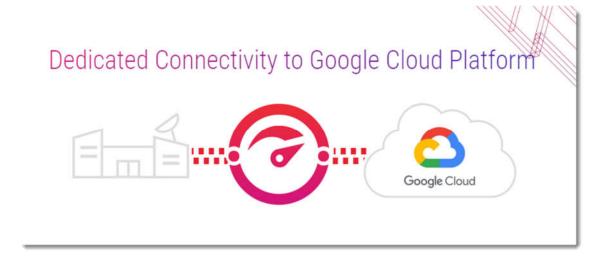
43. In establishing such a direction connection, Google provides the necessary physical

equipment at Megaport to enable such GCI or Direct Peering connections. Google advertises only two GCI facilities in Texas – the Equinix facility and Megaport facility (the latter is located in this District).



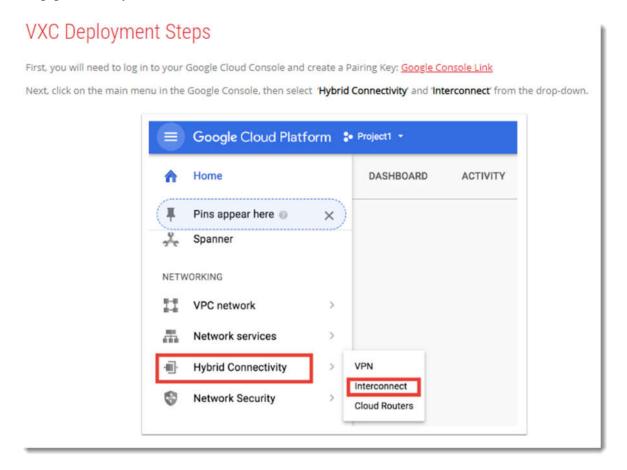
Source: https://cloud.google.com/interconnect/docs/concepts/service-providers#by-location

44. Clicking on the Megaport link from screenshot of Google's website in the preceding paragraph directs a customer as to the details of directly connecting to Google's equipment at the facility in this District to connect to Google's GCI service.



https://www.megaport.com/services/google-cloud-partner-interconnect/

45. More particularly, the Google-linked Megaport site explains how a Google customer can use the Google Cloud Platform console to enable connection to the Google equipment at the Megaport facility in this district.



Source: https://knowledgebase.megaport.com/cloud-connectivity/google-cloud/? ga=2.258056911.476938490.1538320465-1560947970.1538320465

46. Both Google's website and Megaport's website advertise the peering service and point a consumer the website, www.peeringdb.com, for details. The peering DB website lists Megaport Dallas as a Google peering facility.

Who can peer with Google?

Any Google Cloud Platform customers that meet Google's technical peering requirements specified in our peering page can be considered for the direct peering service. Google can peer at the Internet Exchanges (IXPs) and private facilities that are listed in our PeeringDB entry.

Source: https://cloud.google.com/interconnect/docs/how-to/direct-peering

Megaport - Google IX Peering Locations:

- · MegalX: Ashburn, Dallas, Los Angeles, Seattle, Singapore, Sofia, Sydney
- · AMS-IX: Chicago, New York, Bay Area

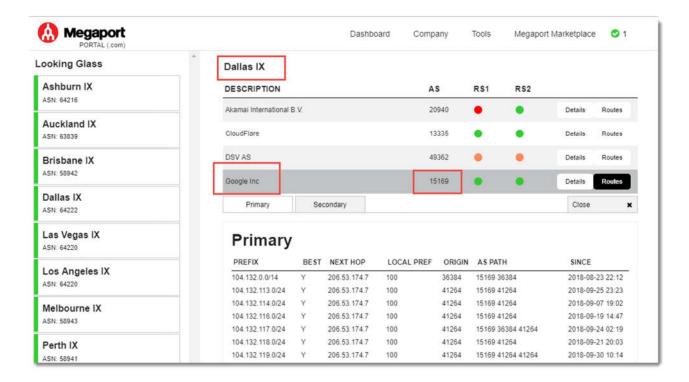
See PeeringDB for additional details.

https://knowledgebase.megaport.com/cloud-connectivity/google-cloud-platform-direct-peering/



https://www.peeringdb.com/net/433

47. Megaport's website also confirms in its "Looking Glass" tool the presence of Google at its facility – (AS No. 15169).



Source: https://portal.megaport.com/tools/looking-glass

- 48. Both of Megaport's "Dallas" locations are in the Eastern District of Texas in Denton County. The larger Megaport facility, the Carrolton facility, is located at 1649 West Frankford Rd and is the largest of its kind in the state of Texas. The smaller Megaport facility, the Lewisville facility, is located at 2501 St. State Hwy 121.
- 49. The Google equipment at Megaport's facilities which provide the GCI and Direct Peering services for Google customer are fixed geographical locations. They are "regular" and "established" because they operate in a "steady, uniform, orderly, and methodical manner" and are sufficiently permanent. They are "of the defendant" because Google holds contractual and/or property rights to use this space and to maintain this equipment. Google also ratifies the equipment through advertising of the Megaport location as authorized to provide these Google services.

¹² https://www.megaport.com/blog/cyrusone-brings-dallas-closer-cloud/

¹³ *Id*.

Other Google Presence in this District

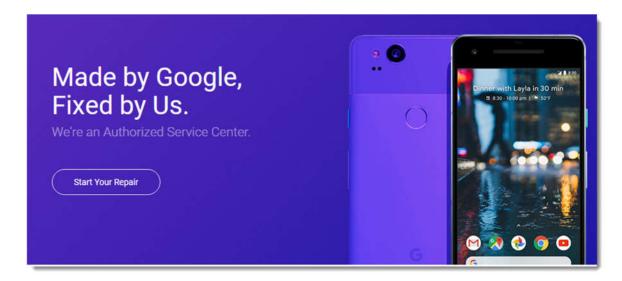
- 50. In addition to the Google presence described above, Google has other pervasive contacts in this District.
- 51. Google has multiple authorized repair centers in the Eastern District. A resident can visit Google' website to find a list of these repair centers:

United States	uBreakiFix 🗹	Pixel, Pixel XL, Pixel 2, Pixel 2 XL	Walk-in	uBreakiFix ☑ Phone: 1-877-320-2237
	Puls 🗹	Pixel, Pixel XL, Pixel 2, Pixel 2 XL	At home (Dial-in)	Puls ☑ Phone: (855) 256-3709
	Google ☑	Pixel, Pixel XL, Pixel 2, Pixel 2 XL	Mail-in	 Google Repair program currently expanding, option might not be available

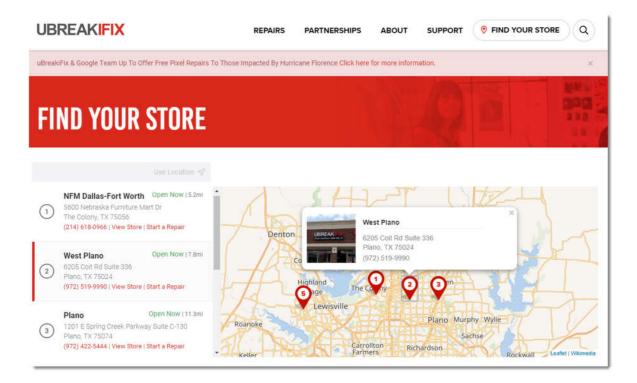
In US and Canada, replacement of parts or product service is made available for a minimum of three years after end of production for all phones through Google or its service providers.

Source: https://support.google.com/store/answer/7182296?hl=en

52. Google's only authorized walk-in repair center, uBreakiFix, lists at least four facilities in this District



Source: https://www.ubreakifix.com/google



Source: https://www.ubreakifix.com/google

- 53. Google and uBreakiFix teamed up to offer free repairs to those impacted by Hurricane Florence.¹⁴
- 54. uBreakiFix has fixed geographical location. They are "regular" and "established" because they operate in a "steady, uniform, orderly, and methodical manner" and are sufficiently permanent. These stores are "of the defendant" because Google has contractual rights with uBreakiFix -- the only authorized walk-in repair centers in the United States. Google also ratifies these facilities through its advertising of them through its website.
- 55. Google's also has a branded mail-in repair service that is contracted with a company called KMT Wireless, LLC dba Cynergy. Cynergy receives phones at its facility in Grapevine, TX.

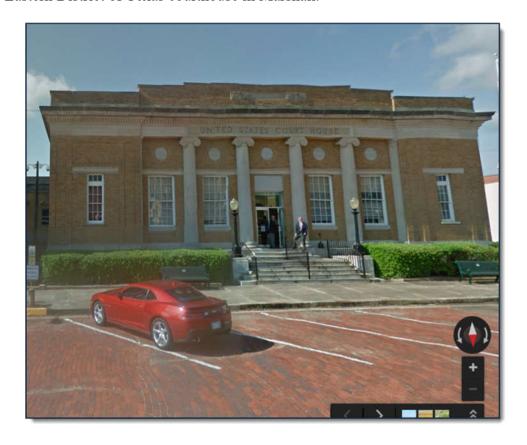
¹⁴ See https://www.ubreakifix.com/blog/hurricane-florence

United States	uBreakiFix 🗹	Pixel, Pixel XL, Pixel 2, Pixel 2 XL	Walk-in	 uBreakiFix 2 Phone: 1-877-320-2237
	Puls 🖸	Pixel, Pixel XL, Pixel 2, Pixel 2 XL	At home (Dial-in)	• Puls ☑ • Phone: (855) 256-3709
	Google 🗷	Pixel, Pixel XL, Pixel 2, Pixel 2 XL	Mail-in	Google ☑ Repair program currently expanding, option might not be available

Source: https://support.google.com/store/answer/7182296?hl=en

end of production for all phones through Google or its service providers.

56. Google has operated and is currently operating its Google Maps Street View business and services in this District. For example, the image below shows the Google Maps Street View of the Eastern District of Texas courthouse in Marshall.



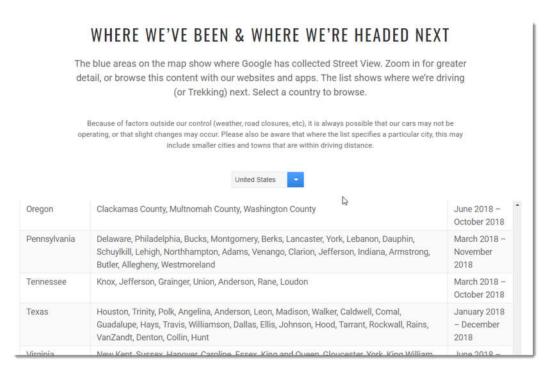
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Source: https://www.google.com/maps/@32.5447534,-94.3670371,3a,75y,170.99h,76.06t/data=!3m6!1e1!3m4!1smECZXIUFylR2yu5E-6wj2g!2e0!7i13312!8i6656

Furthermore, in the lower right-hand corner of the Google Street View above, the image is credited to Google and states that it was captured in June 2016.



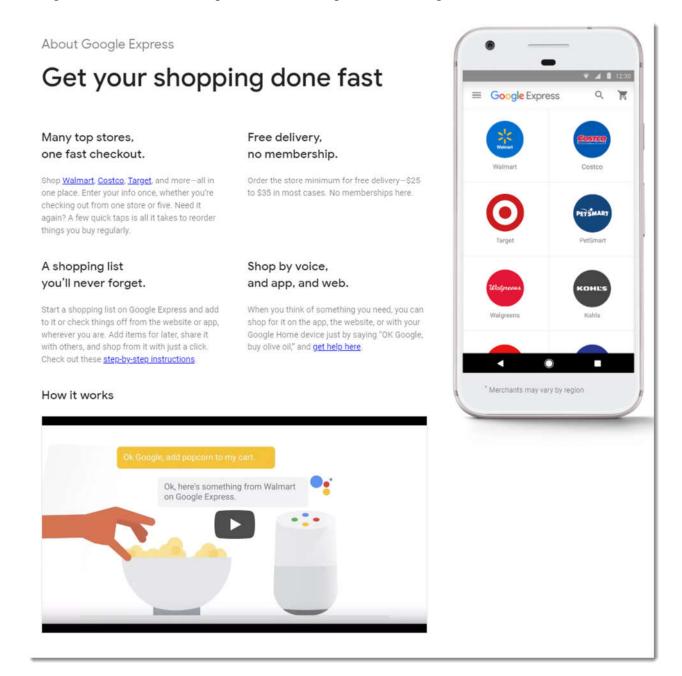
- 57. Google also operates a Street View car in and around this District in order to provide the Google Maps Street View service. 15
- 58. In addition to the above Google Street View image, Google operates and continues to operate a fleet of Google Street View vehicles in this District, including in the counties of Houston, Trinity, Polk, Angelina, Anderson, VanZandt, Denton, and Collin, as shown below.



Source: https://www.google.com/streetview/understand/

¹⁵ See https://www.google.com/streetview/understand/

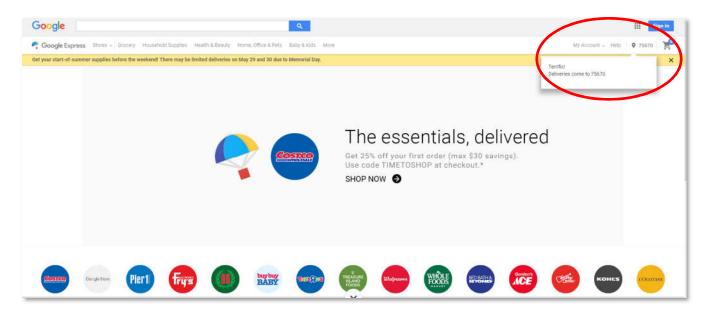
59. Google also has operated and currently operates its Google Express business and services in this District. Google Express allows residents of this District to shop – directly from Google's website – for select products with companies that Google has contracted with.



Source: https://express.google.com/u/0/about

To verify which stores a user may shop, a resident enters his or her zip code and begins shopping at the Google contracted stores. The image below shows the Google Express website showing

that its business and services are available in this District.



Source: https://www.google.com/express/

- 60. Googles provides its Google Express business and services to the residents of this District by advertising and inviting the residents of this District, then Defendant arranges for a delivery company to bring the goods and products purchased through the Google Express website to the residents of this District. This service uses fixed geographical stores in this District. They are "regular" and "established" because they operate in a "steady, uniform, orderly, and methodical manner" and are sufficiently permanent. They are "of the defendant" because Google ratifies the stores (and select products of the stores) through its website. Only information provided by Google through its service can be purchased although the store may have other items for sale.
- 61. Google previously leased office space in this District for about 50 people through its Frisco, TX office.
- 62. Google also provides services to business and schools in this District including email services, word processing software, electronic file storage services, and video conferencing

¹⁶ See https://support.google.com/express/answer/4561693?hl=en

services. Google brands such services as "G Suite" services. Non-limiting examples of such business and schools include the Frisco Independent School District, as shown below.¹⁷

How do I login?

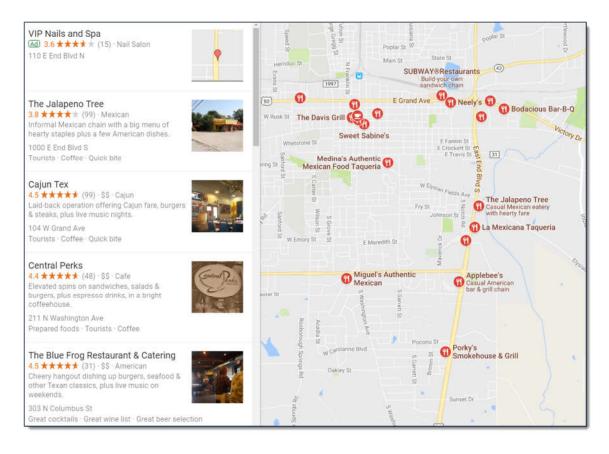
Each student in FISD has a Google login. The username is their Frisco ISD email address, which is firstname.lastname.###@k12.friscoisd.org

where the ### is the last three digits of their student id#. This address uses the full legal first name and full legal last name of the student, and does not recognize nicknames. All teachers have access to student gmail addresses and can help if you aren't sure what the username is.

The password will most likely be the student birth date in 8 digits MMDDYYYY.

Source: http://schools.friscoisd.org/ms/vandeventer/site/resources/accessing-google-applications

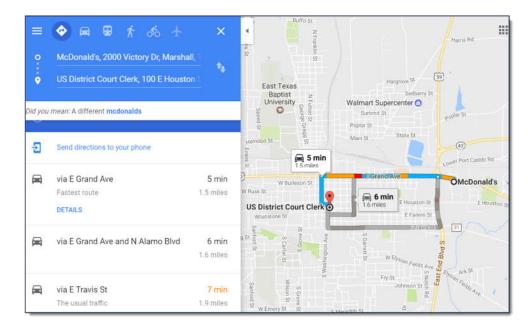
63. Google also provides advertising services to businesses in this District, including soliciting reviews of patrons that have visited a business in the Eastern District of Texas, as shown below.



¹⁷ See http://schools.friscoisd.org/ms/vandeventer/site/resources/accessing-google-applications
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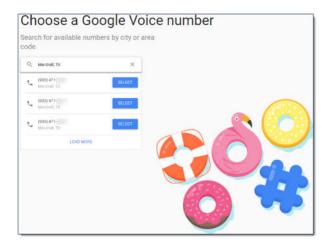
Source: product testing through www.maps.google.com

64. Google also monitors traffic conditions in this District. For example, traffic conditions between a McDonalds and the Federal Courthouse in Marshall, as shown below.



Source: Product testing at www.maps.google.com

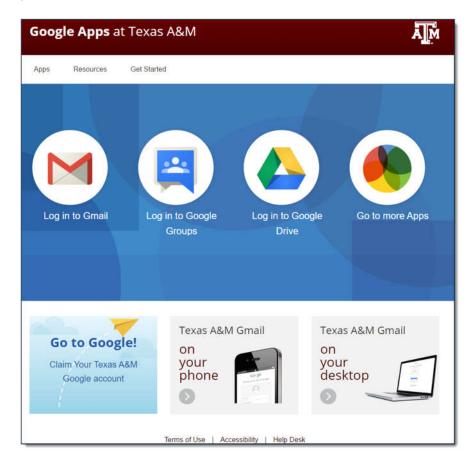
65. Separate and apart from its Google Fi mobile service, Google also provides telephone services to residents in this District through a product it calls Google Voice. A user of Google voice can select local numbers, for example, in Marshall, TX.



¹⁸ See http://www.wikihow.com/Get-a-Google-Voice-Phone-Number

Source: Product testing at https://voice.google.com/signup

66. Google provides Software-as-a-Service applications, including email and server space, to Texas public universities. Non-limiting examples of such universities are Texas A&M University (which has facilities in this District) and Texas A&M Commerce (located in this District), as shown below.



Source: http://google.tamu.edu/

Welcome Lions to your new LeoMail 2.0 found in your myLEO homepage located at myLEO.tamu-commerce.edu.

We hope you take some time to look through your new student email. As a reminder the new email is a gmail platform and share many features that a regular gmail account has.

In addition to email, you will have the ability to build your own contacts list and use the built in calendar for planning and organizing.

The most asked question has revolved around the ability to sync this email account with your mobile or smart phone device. The answer is "yes2". The Portal Implementation Team is working on getting both the email and your NEW myLEO account connected in an application that will be available in June.

Source: http://mailman.tamuc.edu/pipermail/students/2012-May/004325.html

Other Google Presence in the State

- 67. Google also has pervasive connection to the state of Texas through multiple commercial activities.
- 68. Google has purchased land in Midlothian, TX where it plans to build a half-a-billion-dollar data center.19
- 69. Since 2007, Google has employed "hundreds" of employees in Texas, including in Austin, Texas.20
- 70. Google has at least one current office located in Austin, on North MoPac Expressway,21 and additional office locations at University Park and Austin's Children Museum.22
- 71. Google has leased over 200,000 square feet of office space in Austin, Texas, at 500 West 2nd Street.23
- 72. Google has, as of September 2018, job postings for Addison, TX; Dallas, TX; Midlothian, TX; and Austin, TX (38 postings) including positions such as:²⁴

 $^{^{19} \}textit{See} \ \underline{\text{https://www.datacenterknowledge.com/google-alphabet/google-buys-property-build-datacenter-near-dallas}$

²⁰ According to Gerardo Interiano, Google's public affairs and government relations manager, in a statement. *See* http://www.statesman.com/business/google-lease-200-000-square-feet-new-downtown-austin-tower/SANZSa3du8QQ4k8ytOC2rJ/

²¹ See https://www.google.com/intl/en/about/locations/?region=north-america

²² See http://www.statesman.com/business/google-lease-200-000-square-feet-new-downtown-austin-tower/SANZSa3du8QQ4k8ytOC2rJ/

²³ See http://www.statesman.com/business/google-lease-200-000-square-feet-new-downtown-austin-tower/SANZSa3du8QQ4k8ytOC2rJ/

²⁴ See <a href="https://careers.google.com/jobs#t=sq&q=j&li=20&l=false&jl=32.7766642%3A-96.7969878999998%3ADallas%2C+TX%2C+USA%3AUS%3A%3A25.77719109274963%3ALOCALITY&jld=20&&jcoid=7c8c6665-81cf-4e11-8fc9-ec1d6a69120c&jcoid=e43afd0d-d215-45db-a154-5386c9036525&and

https://careers.google.com/jobs#t=sq&q=j&li=20&l=false&jlo=en-US&jcoid=7c8c6665-81cf-4e11-8fc9-ec1d6a69120c&jcoid=e43afd0d-d215-45db-a154-5386c9036525&jl=30.267153%3A-

- Network Transport Engineer (Midlothian)
- Project Controls Group Lead, Google Data Centers (Dallas)
- Network Engineer, Tools (Addison)
- Cluster Security Manager (Austin)
- 73. Upon information and belief, Defendant has at least eleven (11) entities registered in Texas, including:
 - GOOGLE LLC
 - GOOGLE ACQUISITION HOLDINC, INC.
 - GOOGLE COMPARE AUTO INSURANCE SERVICES INC.
 - GOOGLE COMPARE CREDIT CARDS INC.
 - GOOGLE COMPARE MORTGAGES INC.
 - GOOGLE FIBER INC.
 - GOOGLE FIBER NORTH AMERICA INC.
 - GOOGLE FIBER TEXAS, LLC
 - GOOGLE INC.
 - GOOGLE NORTH AMERICA INC.
 - GOOGLE PAYMENT CORP.
- 74. Google has provided, currently provides, and is currently offering to provide its Google Fiber services to the residents of Austin, Texas and San Antonio, Texas.²⁵
 - 75. Google has invested \$200,000,000 in the Spinning Spur wind farm project in

²⁵ See https://fiber.google.com/cities/sanantonio/

Oldham County, Texas.²⁶

76. Google has massively scanned books from Texas public universities.

FAQs about the University of Texas - Google Books Library Project

GOOGLE

Book Search

BETA

The University of Texas Libraries has partnered with Google to make selected books from the Libraries' collections searchable online. For books in the public domain, full text copies will be available at no charge through Google Book Search & Here are answers to frequently asked questions about this partnership.

Source: https://www.lib.utexas.edu/google/faqs.html

- 77. Google provides the State of Texas with aerial imagery.27
- 78. Google acquired Waze in 2013,28 and Google's Waze traffic app partners with cities and business in Texas, non-limiting examples include the Waze partnership with the city of Forth Worth to provide constant traffic data to the city.²⁹ Another non-limiting example includes the Waze partnership with the Genesis Group in Tyler, to decrease emergency response times.³⁰

(INFRINGEMENT OF U.S. PATENT NO. 6,980,522)

- 79. Uniloc incorporates the preceding paragraphs above by reference.
- 80. U.S. Patent No. 6,980,522 ("the '522 Patent"), entitled AD-HOC RADIO COMMUNICATION SYSTEM issued on March 2, 2000. The '522 lists the following inventor: Kevin R. Boyle. A true and correct copy of the '522 Patent is attached as Exhibit A hereto.
 - 81. Pursuant to 35 U.S.C. § 282, the '522 Patent is presumed valid. More than 20

²⁶ See https://www.chooseenergy.com/blog/energy-news/google-invests-200m-in-west-texas-wind-farm/

²⁷ See http://www.bisconsultants.com/affordable-imagery-for-texas-government-entities-from-google/

²⁸ See https://techcrunch.com/2013/06/11/its-official-google-buys-waze-giving-a-social-data-boost-to-its-location-and-mapping-business/

²⁹ See http://dfw.cbslocal.com/2016/12/14/forth-worth-partners-with-waze-traffic-app/

³⁰ See https://genesispulse.com/2015/10/06/the-genesis-group-joins-waze-connected-citizens-program/

references were considered in '522 Patent's examination, including references from U.S. Army, Fujitsu, Hitachi, Nortel, Motorola, Siemens, IBM, and Sony. Additionally, more than 85 references have cited the '522 Patent, including references from Sharp, Canon, Motorola, STMicroelectronics, Ericsson, Fujitsu, HP, Nintendo, Nokia, Siemens, Intel, Qualcomm, and Bose.

- 82. The '522 Patent describes inventive features that are not well-understood, routine, and conventional.
- 83. Google makes, uses, offers for sale, sells and/or imports into the United States a product referred to as "Google Wifi." Google Wifi is a mesh-capable wireless router developed by Google. It provides enhanced Wi-Fi coverage through the setup of multiple Wi-Fi devices. Google Wifi routers act as plural terminals which connect wirelessly and make a mesh network to transmit and relay data from one terminal to another as a single Wi-Fi network. Google Wifi is a home Wi-Fi system that replaces traditional router and provides seamless, reliable Wi-Fi coverage throughout the entire house. Google Wifi mesh points connect wirelessly to establish mesh network. Google implements Qualcomm's IPQ4019 Wi-Fi system on chip with self-organized network solutions inside the WiFi mesh points. With the change of the location of the WiFi mesh point and the quality of the link signal to the respective node, the master of mesh point gets changed Collectively, such a system is referred to as the "Accused Infringing Devices."
- 84. Google Wifi is a mesh-capable wireless system developed by Google which provides enhanced Wi-Fi coverage through the setup of multiple Wi-Fi points. Google Wifi points act as plural terminals which connect wirelessly and make a mesh network (ad-hoc communication system) to relay the connectivity from one terminal to another, thus acting as a single Wi-Fi network.



What Google Wifi does (and why it's cool)

- Google Wifi is a new type of home Wi-Fi system that replaces your traditional router and provides seamless, reliable Wi-Fi coverage throughout your home. You'll still need an Internet Service Provider (ISP) and modem to connect to the internet.
- You can quickly set up multiple Google Wifi devices (we call them "Wifi points") to bring the internet right
 where you want it your office, living room, garage, or basement. For a refresher on Wi-Fi terms and concepts,
 check out our Wi-Fi basics 2.
- Google Wifi is built on our mesh Wi-Fi technology. Once you set up your mesh network, the Google Wifi points
 create a high-powered connection and work together to make sure your devices stay on the clearest channel
 with the fastest bandwidth. The result is fast Wi-Fi everywhere in your house, not just right next to the router.
 You can even roam throughout the house while on a video call or while streaming a movie without the signal
 dropping.

Source: https://support.google.com/WiFi/answer/7168315?hl=en,

85. Google Wifi implements mesh network for the better coverage over a wider space without introducing ethernet cables and access points.

Google Wifi uses what's called a mesh network to provide Wi-Fi. A mesh network is a group of devices that act as a single Wi-Fi network; so there are multiple sources of Wi-Fi around your house, instead of just a single router. These Wi-Fi sources are called **Wifi points**.

Since Wi-Fi is broadcasted from each Wifi point (and not just a single router), it can provide better coverage over a wider space. The more Wifi points you have, the more you can spread them around your house for better Wi-Fi.

And all Wifi points are connected to each other wirelessly. (No need to run ethernet cables all throughout your house!) As long as they are within range, they can communicate with one another without going through a middleman (a router). This allows for faster, more efficient routing of data.

Source: https://support.google.com/WiFi/answer/7182746?hl=en

86. A Google Wifi point can connect to several other Wi-Fi points in the mesh network. The Wi-Fi point which provides the link/connection to other mesh points can act as a parent (master) for them. Google Wi-Fi points utilize Qualcomm's IPQ4019 Wi-Fi radio and control chip.

Specs

Wi-Fi Spec: 802.11ac/Dual Band Mesh

Number of Antennas/Removable: 4/No

Ports: Two 1Gbps LAN, USB-C (power)

Processor: ARM quad-core 710MHz

Memory/Storage: 512MB/4GB

WiFi Chip: Qualcomm IPQ4019

Peak 802.11ac Performance: 464.4Mbps

Range: 105 feet - router only

Size: 4.1- x 4.1- x 2.7 inches

Source: https://www.tomsguide.com/us/google-WiFi,review-4307.html,

87. Qualcomm's IPQ4019 is a Wi-Fi system-on-chip (SOC) with the 802.11ac dual band and Wi-Fi SON (self- organizing network) capabilities implemented in Google Wi-Fi mesh points.

IPQ4019 SoC

Wave-2 802.11ac SoC for Routers, Gateways and Access Points

The IPQ4019 was the industry's first single-chip Wi-Fi system-on-chip (SoC) to bring Wave-2 802.11ac features to a variety of home and enterprise networking products. The highly-integrated, single-chip design combines dual-band 11ac, advanced Wi-Fi features and network processing in a variety of configurations for high-performance, power-efficient and cost-effective network infrastructure products.

Source: https://www.qualcomm.com/products/ipq4019

Wi-Fi Features

- MU-MIMO
- TxBF
- Wi-Fi SON

Source: https://www.qualcomm.com/products/ipq4019

- 88. The Wi-Fi SON framework allows the Wi-Fi mesh points to extend the Wi-Fi range and helps the Wi-Fi mesh point for self-configuration with respect to the network topology. A mesh point can connect to the several other mesh points in the mesh network. The Wi-Fi SON enables the best optimized path connection based on the link quality (i.e., of the signal quality or signal strength).
- 89. Google Wi-Fi has the capability to change the physical location of the mesh point (i.e., local environment) using the Google Wi-Fi mobile application. The Wi-Fi point gets reconfigured by self-organization capability and connects to the mesh point (parent node/master) with the best link quality.
- 90. Each Wi-Fi mesh station connects to parent node with optimum antenna characteristics (i.e., best Wi-Fi link/connection or quality of the established link with the parent mesh point).
- 91. IPQ4019 is a Wi-Fi SOC developed by Qualcomm with the 802.11ac dual band and Wi-Fi SON capabilities, implemented in Goggle Wi-Fi.
- 92. Wi-Fi SON framework allows the Wi-Fi mesh points to extend the Wi-Fi range and helps the Wi-Fi mesh point for self-configuration with respect to the network topology. Wi-Fi SON helps to make the Wi-Fi network smart, simple and secure by implementing self-configuring, self-managing, self-healing and self-defending features to the network.

Wi-Fi SON takes care of itself. Self-Configuring Self-Managing Installing wireless routers/home gateways and adding devices and Wi-Fi range Features include automatic performance degradation detection and dynamic band extenders is easy with auto-discovery and smartphone integration. steering that serves devices across bands for optimized network capacity. Seamless roaming ensures bandwidth is available when and where it's needed. End-to-end content-aware routing makes sure each device gets the appropriate bandwidth, whether it's transferring a file, streaming 4K video or web browsing. Self-Healing Self-Defending "Mesh" networking finds alternate connection paths in multi-router networks or those A hacked lightbulb could compromise an entire network. The Wi-Fi SON framework taking advantage of range extenders. If there's a bandwidth bottleneck or a hang-up allows OEMs to offer security technology that could continuously learn and adapt to on an existing connection, the network switches access points to continue delivering user behavior in order to identify and protect against potential threats. optimal performance.

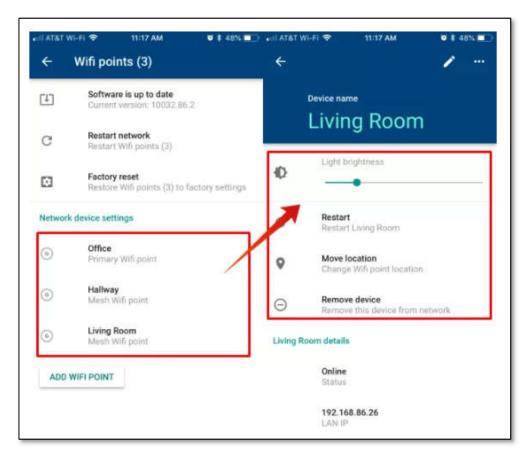
Source: https://www.qualcomm.com/solutions/networking/features/wi-fi-son

A comprehensive system doesn't have to be complicated.

Simple	Smart	Secure
With Qualcomm Wi-Fi SON, installing Wi-Fi routers/home gateways, and adding devices, and range extenders is hassle free. It also detects and rectifies performance and interference issues on its own.	The technology dynamically selects the best Wi-Fi link for each device based on application, band and context, giving each one the bandwidth it needs for optimal performance.	More connected devices means more ways to compromise a Wi-Fi network. That's why Wi-FI SON offers a framework to build security mechanisms that are designed to prevent and quarantine potential threats and alert users of the issue.

Source: https://www.qualcomm.com/solutions/networking/features/wi-fi-son

93. The mesh point can be moved from one place to another in the network and reconfigured using Google Wi-Fi mobile App. With the change of the location, the Wi-Fi mesh point can be reconfigured to the best topology based on the current location of the device (i.e., local environment) by using the self-organization capability to change the parent node according to the received signal strength.



Source: https://mashtips.com/google-WiFi-features/,

- 94. Wi-Fi SON enables the best optimized path based on the link quality (i.e., of the signal quality or signal strength) for the respective mesh point. A mesh point can be moved from one place to another in the network and reconfigured using Google Wi-Fi mobile App. With the change of the location, the Wi-Fi mesh point can be reconfigured to the best topology based on the current location of the device (i.e., local environment) which changes the parent node by self-organization capability by analyzing the received signal strength. The node providing the said mesh point with better link quality (or signal strength) would become the parent node for it (i.e. the mesh point would connect to the node providing the best connection quality).
- 95. Google has directly infringed and continues to directly infringe one or more claims of the '522 Patent in the United States during the pendency of the '522 Patent, including at least claim 1 literally and/or under the doctrine of equivalents, by or through making, using, offering for

sale and/or selling the Accused Infringing Devices that operate as described above.

- 96. Google has indirectly infringed and continues to indirectly infringe at least claim 1 of the '522 Patent in this judicial district and elsewhere in the United States by, among other things, actively inducing the using, offering for sale or sell1ing the Accused Infringing Devices. Google's customers who use such devices in accordance with Google's instructions directly infringe one or more of claims of the '522 Patent in violation of 35 U.S.C. § 271. Google directly and/or indirectly intentionally instructs its customers to infringe through training videos, demonstrations, brochures, installation and/or user guides such as those located at one or more of the following:
 - https://store.google.com/us/product/google WiFi learn?hl=en-US
 - https://support.google.com/WiFi/answer/7182746?hl=en https://security.googleblog.com/2017/02/80211s-security-and-google-WiFi.html
- 97. Google has indirectly infringed and continues to indirectly infringe at least claim 1 of the '522 Patent by, among other things, contributing to the direct infringement by others including, without limitation customers using the Accused Infringing Devices, by making, offering to sell, selling and/or importing into the United States, a component of a patented machine, manufacture or combination, or an apparatus for use in practicing a patented process, constituting a material part of the invention, knowing the same to be especially made or especially adapted for use in infringing the '522 Patent and not a staple article or commodity of commerce suitable for substantial non-infringing use.
- 98. Google will have been on notice of the '522 Patent since, at the latest, the service of this complaint upon Google. By the time of trial, Google will have known and intended (since receiving such notice) that its continued actions would actively induce and contribute to the infringement of one or more of claims of the '522 Patent.
- 99. Google may have infringed the '522 Patent through other devices, systems, and software utilizing the same or reasonably similar functionality as described above. Uniloc reserves

the right to discover and pursue all such additional infringing software and devices.

100. Uniloc has been damaged by Google's infringement of the '522 Patent.

PRAYER FOR RELIEF

Uniloc requests that the Court enter judgment against Google as follows:

- (A) declaring that Google has infringed the '522 Patent;
- (B) awarding Uniloc its damages suffered as a result of Google's infringement of the '522 Patent pursuant to 35 U.S.C. § 284;
- (C) awarding Uniloc its costs, attorneys' fees, expenses and interest; and granting Uniloc such further relief as the Court may deem just and proper.

DEMAND FOR JURY TRIAL

Uniloc hereby demands trial by jury on all issues so triable pursuant to Fed. R. Civ. P. 38.

Dated: November 17, 2018 Respectfully submitted,

By: /s/ James L. Etheridge

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