

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MICROSOFT CORPORATION AND AT&T SERVICES, INC.,
Petitioner,

v.

LEMKO CORPORATION
Patent Owner.

Case No. IPR2025-01142
U.S. Patent No. 8,310,990

**PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 8,310,990**

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PETITIONER’S EXHIBIT LIST

Exhibit	Brief Description
Ex1001	U.S. Patent No. 8,310,990
Ex1002	U.S. Patent No. 8,310,990 File History
Ex1003	Declaration of James Proctor
Ex1004	CV of James Proctor
Ex1005	U.S. Patent Application Publication 2007/0021120 (“Flore”)
Ex1006	3GPP TS 23.002 v7.1.0, “Network Architecture,” March 2006
Ex1007	<i>Microsoft Corp. et al. v. Lemko Corp.</i> , IPR2023-00531, Paper No. 31, (PTAB Sept. 10, 2024) (“988 FWD”).
Ex1008	<i>Microsoft Corp. et al. v. Lemko Corp.</i> , IPR2023-00531, Paper No. 15, Patent Owner’s Response (Dec. 21, 2023).
Ex1009	<i>Lemko Corp., v. Microsoft Corp. et al.</i> , No. 24-2336 (Fed. Cir.), Dkt. 13, Opening Brief of Appellant Lemko Corp. (Jan. 29, 2025)
Ex1010	<i>Lemko Corp., v. Microsoft Corp. et al.</i> , No. 24-2336 (Fed. Cir.), Dkt. 17, Reply Brief of Appellant Lemko Corp. (Jan. 29, 2025)
Ex1011	RESERVED
Ex1012	Declaration of Ingrid Hsieh-Yee, Ph.D, certifying the publication date of 3GPP TS 23.002 v7.1.0

I. Introduction

Petitioner requests *inter partes* review (“IPR”) of claims 1, 3-9 (“Challenged Claims”) of U.S. Patent No. 8,310,990 (“990 Patent”). The 990 Patent is a continuation of U.S. Patent No. 7,855,988 (“988 Patent”). The 988 Patent was previously the subject of an IPR where the Board determined that claims 1, 3-9, and 20 were anticipated based on U.S. Publication No. 2007/0021120 A1 to Flore. (“Flore” or Ex1005). See *Microsoft Corp. et al v. Lemko Corp.*, IPR2023-0051, Paper No. 31, (PTAB Sept. 10, 2024) (“988 FWD”).

II. Requirements for *Inter Partes* Review

A. Certification (37 C.F.R. § 42.104(a))

Petitioner certifies that the 990 Patent is available for *inter partes* review and that Petitioner is not barred or estopped from requesting an *inter partes* review challenging the patent claims on the grounds identified in the petition. Neither Petitioner, nor any party in privity with Petitioner, has filed a civil action challenging the validity of any claim of this patent.

B. Challenged Claims

Ground	35 U.S.C.	Claims	Basis for Unpatentability
1	§ 102	1, 3-9	Anticipated by US 2007/0021120 to Flore et al. (“Flore”)

III. The 990 Patent

A. Effective Filing Date

The 990 Patent claims priority to Application No. 12/172,639, filed July 14, 2008. For purposes of this Petition, Petitioners assume that the Challenged Claims are entitled to a priority date no earlier than **July 14, 2008**.

B. Level of Ordinary Skill in the Art

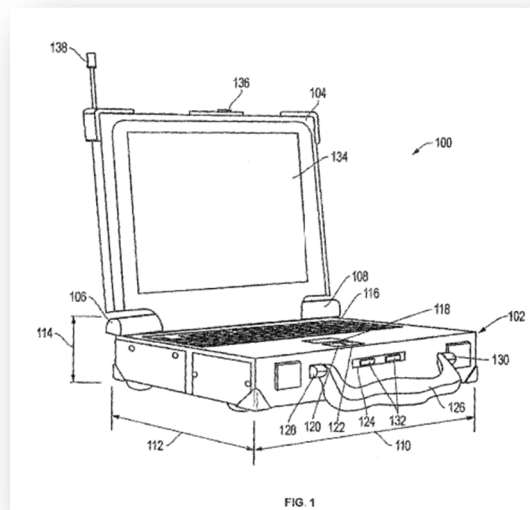
As of 2008 a person of ordinary skill in the art (“POSA”) in the field of the 990 Patent’s field would have had a bachelor’s degree in electrical engineering, computer engineering or an equivalent, as well as two years of industry experience related to telecommunications networks. Additional graduate education of a POSA could substitute for professional experience, or significant experience in the field could substitute for formal education. Mr. Proctor was qualified as a POSA at the relevant time. Ex1003, ¶27.

C. Overview of the 990 Patent

The 990 Patent relates to “[m]ethods and devices for routing communications between distributed mobile architecture (DMA) servers using DMA gateways.” Ex1001, Abstract. The 990 Patent states “the last decade of the telecommunications boom has not alleviated the disparities between urban and rural communities,” citing that “[t]he average imbalance, in terms of telephone penetration, in Asia, for example, is over ten to one and is often as high as twenty to one.” *Id.*, 1:32-36.

The 990 Patent continues that “[c]urrent telephone systems are expensive to deploy” and provides an example of a “typical cellular system that includes a mobile switching center (MSC), a base station controller (BSC) and a home location register/visitor location register (HLR/VLR) can cost over \$2.0 million.” *Id.*, 1:46-49.

Thus the 990 Patent purports to satisfy the “need for an improved communications system that is relatively inexpensive to deploy and relatively inexpensive to operate, as well as able to integrate different communications systems.” *Id.*, 2:5-9. To that end, the 990 Patent describes an apparatus called a distributed mobile architecture (DMA) server, such as, for example, a portable unit depicted in Figure 1 (reproduced below):



The “DMA server enables the deployment or expansion of a communications network to... rural areas where remoteness of the area to be served or a relatively small customer base to be served make the installation of a conventional telephone system impractical or otherwise undesirable.” Ex1001, 4:56-60. The DMA server (abbreviated as “DMAS”) “may include a mobile switching center (MSC) module 506 and a base station controller (BSC) module 508 embedded within [a] computer readable medium.” *Id.*, 8:17-20.

The 990 Patent describes enabling communications of wireless devices connected to different DMASes through a private IP network, and bridging communications between disparate private IP networks with a “Distributed Mobile Architecture Gateway” (DMAG) and DMAG Network, enabling hand-off for a mobile device traveling between two DMAS served by two different private networks. *See* Ex1001, Fig. 6, reproduced below, and *id.*, 11:36-39 (“[e]mbodiments of the present disclosure enable devices on separate networks to communicate with each other via DMA gateways that bridge separate network and communication systems.” *Id.*, 11:36-39.

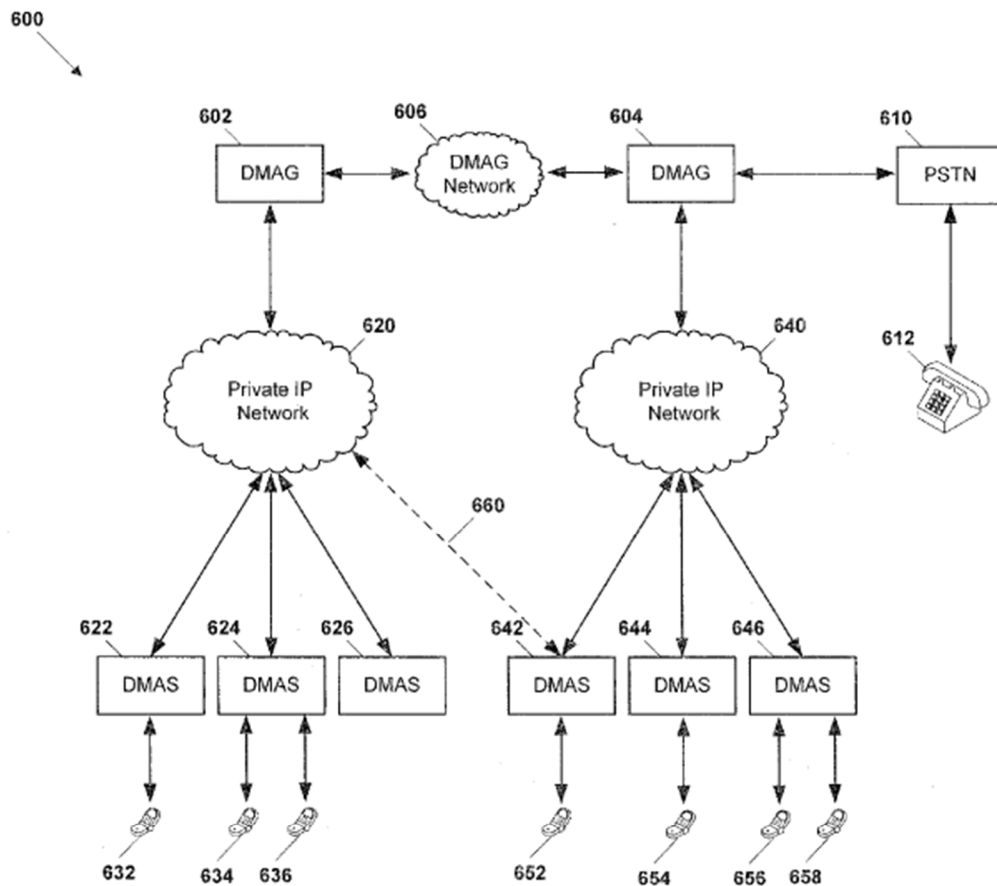


FIG. 6

“To facilitate communications between devices serviced by different networks, the DMA gateways 602 and 604 maintain information identifying the devices that each services.” Ex1001, 11:60-62. “When a DMA gateway detects that it is in communications range with one or more DMA servers, the DMA gateway sends communications information from the DMA servers or other communications networks to one or more other DMA gateways or to a central database.” *Id.*, 15:50-

55. The communications information “includes register information, such as home location register (HLR) information and visitor location register (VLR) information maintained by the DMA servers or other communications networks.” *Id.*, 15:66-16:2.

A key feature of the 990 Patent is the ability to route communications between DMA gateways, so that a mobile device can continue to receive communications even if it leaves the service area of a first DMA gateway. Ex1001, 11:36-46, 3:10-22, 9:55-10:8. The first DMA gateway routes the communication to a second DMA gateway that is currently serving the mobile device. Ex1001, 11:36-46, 3:10-22-22, 9:55-10:8. But, as explained below, Flore disclosed this type of handover in UTRAN networks long before the 990 Patent, describing handover from E-UTRAN to UTRAN networks to support user equipment (UE) mobility.

IV. Claim Construction

A. “distributed mobile architecture (dma)”

The Board previously construed “*distributed mobile architecture (dma)*” in IPR2023-00531 to be its plain and ordinary meaning, 988 FWD, at 13-14, and not to include Patent Owner’s proposed negative limitation—i.e., that a DMA server excludes a legacy communication network. 988 FWD, at 20-21. The Board should apply that understanding to this proceeding as well. *Omega Eng’g Inc v. Raytek Corp.*, 334 F.3d 1314, 1334 (Fed. Cir. 2003) (“[W]e presume, unless otherwise

compelled, that the same claim term in the same patent or related patents carries the same construed meaning”).

In its appeal of the Board’s FWD of the 988 patent, Patent Owner Lemko (“Lemko”) argued that the “Board committed legal error by failing to construe the word ‘distributed’ in the term ‘distributed mobile architecture.’” Ex1010 at 20; *see also* Ex1009 at 46. During the IPR proceedings on the parent 988 patent, Lemko argued “‘distributed mobile architecture’ should be construed as ‘(1) a network architecture where DMA servers have distributed call-routing functionality and (2) are connected with other DMA servers through peer-to-peer connections, and (3) that is not a legacy communications networks [sic].’” *See* Ex1008, IPR2023-00531, Paper No. 15 at 29. On appeal, Lemko abandoned the peer-to-peer requirement of its construction, arguing only that “DMA requires a mobile architecture with distributed organization and functionality” (Ex1009 at 51), and “that the plain meaning of ‘distributed’ excludes mobile architectures that rely on centralized hubs for call routing.” *Id.* at 56. Taking these two remaining arguments together, Lemko appears to argue that the term “*distributed mobile architecture*” requires: (1) “distributed organization”; (2) distributed functionality of some sort; and (3) to the extent a system has call routing functionality, such functionality must be distributed.

The Board rejected the argument that DMAs have distributed call functionality. The Board held that Lemko provided no explanation as to why

distributed call routing functionality should be read into “every instance where ‘DMA’ is used as a prefix or qualifier for other terms, explaining that Lemko’s citations to the patent regarding “switch and route call[] functionality’ ... do not limit the claim.” 988 FWD, at 10-11. The Board further found that “[t]here is no disclaimer or lexicography in the specification that” supports Lemko’s attempt to rewrite the claims as such. 988 FWD, at 11. Indeed, the Board provided 13 pages of detailed analysis considering and rejecting Lemko’s arguments, including specifically rejecting Lemko’s argument regarding the testimony of Microsoft’s expert. 988 FWD, at 7-20, *id.*, 13 (“[E]ven if Mr. Porter’s [sic] testimony somehow implies that all call routing functionality must be distributed in the claims, this would contradict the permissive, non-limiting language of the specification”). Thus, there is no reason for the Board to depart from its previous findings.

In addition, because a POSITA would find the challenged claims unpatentable under any interpretation consistent with their plain and ordinary meaning in the context of the 990 Patent, the Board need not expressly construe the claim terms. *See Vivid Techs., Inc. v. Am. Sci. & Eng. ’g. Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999).

B. “communications information”

The Board did not explicitly construe “communications information” in the IPR of the 988 patent. On appeal, Lemko argues that limitation “for a target device

indicated by the communications information *to be served* by the second DMA gateway” in the ’988 patent requires “that the communications information indicate a target device that is *accessed by* the second DMA gateway.” Ex1009 at 36-37. To the extent that Lemko argues the limitation “*with a destination device that is indicated by the communications information to be served by the second DMA gateway*” in claim 1 imposes the same requirement, the Board should reject this interpretation.

This construction improperly attempts to rewrite the claim language of indicating a target device “*to be served by the second DMA gateway*” into indicating a target device “*accessed by the second DMA gateway.*” Lemko has no support for proposing this change to the plain claim language. Lemko proposed this construction in the 988 IPR, except it used “*served by*” instead of “*accessed by*” as it did on appeal. This distinction is without a difference—Lemko still attempts to change the future tense, “to be served” with the past tense “served” or its synonym “accessed.” But the specification distinguishes between “to be served” (Ex1001, 3:14-17) with “devices *served by* the satellite-based DMA server” and “*serviced by* a second ground-based DMA.” Ex1001, 14:30-32. Lemko attempted to attribute the language in the later limitation, “*receiving a communication for a target device indicated by the communications information to be served by the second DMA gateway*” to mean that “the communications

information already indicated that the target device is *being served* by the second DMA gateway.” Ex1010 at 9. Lemko again attempted to rewrite the claim—the plain language does not preclude the receipt of communications information for a target device where that information indicates that the device is undergoing handover and *will* be served by the new gateway.

Lemko also argued on appeal that the limitation “*communications information for a communications network accessible by a second DMA gateway*” means “communications information *identifying* a communications network accessible by a second DMA gateway.” To the extent that Lemko argues the limitation of claim 1, “*communications information associated with a communications network that is accessible by a second DMA gateway*” requires identification of the network, the Board should reject such a construction.

The plain claim language does not support Lemko’s proposal; there is no claim requirement that the “*communications information*” *identify* a communication network. The patent applicant drafted its claims more broadly and Lemko has no support for narrowing the scope now, much less reading in limitations from the specification that require specific information identifying the network. 988 FWD, at 29.

V. Overview of the Principal Prior Art

A. Flore (Ex1005)

Flore was published on January 25, 2007, and is therefore prior art under at least 35 U.S.C. § 102(b).

Flore discloses an exemplary network in Figure 1 consisting of a UTRAN radio access network 120 and an E-UTRAN radio access network 130.

The E-UTRAN radio access network connects various E-Node Bs 132a-c to an AGW (“Access Gateway”). “E-Node Bs 132 provide radio communication for UEs within their coverage and may perform radio resource management. AGW 134 provides control for E-Node Bs 132.” Ex1005, [0027].

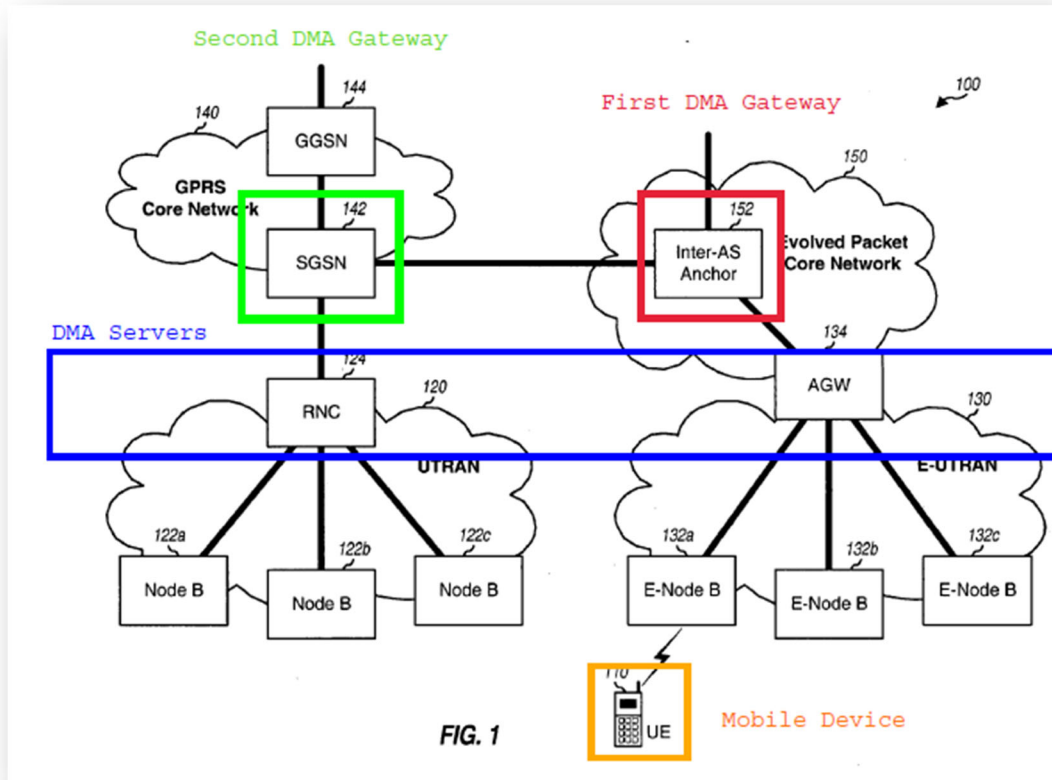
The AGW 134 is in communication with Evolved Packet Core network 150, which “includes an Inter Access System Anchor (IASA) 152.” IASA 152 “interfaces with AGW 134 and also with SGSN 142 in the GPRS core network 140.” Ex1005, [0029]. “Inter-AS Anchor 152 may communicate with SGSN 142 via a Gn interface, which is a legacy interface between SGSNs and GGSNs within a GPRS core network. The use of the Gn interface allows SGSN 142 to communicate with Inter-AS Anchor 152 in the same manner as with another SGSN, which minimizes impact to legacy networks 120 and 140 to interoperate with new networks 130 and 150.” *Id.* The Inter-AS Anchor 152 operates as the

“first DMA gateway” of the claims during a handover process as a UE moves out of the coverage of UTRAN to the E-UTRAN.

As shown in Flore’s Figure 1, the UTRAN 120 connects various radio towers (Node B 122a-c) through an RNC 124 to an SGSN 142. Ex1005, [0026] (“UTRAN 120 includes Node Bs coupled to Radio Network Controllers (RNCs).” The “Node Bs 122 provide radio communication for UEs [user equipment] within their coverage.” *Id.* The “RNC 124 provides control for Node Bs 122 and perform radio resource management, some mobility management functions, and other functions to support communication between the UEs and the UTRAN.” *Id.* Thus the RNC and AGW in Flore serve as the **“distributed mobile architecture (DMA) servers”** of the asserted claims.

The SGSN (“Serving GPRS Support Node”) 142 is in communication with a GPRS Core Network 140, which further communicates with one or more GGSN (“Gateway GPRS Support Nodes”) 144. “SGSN 142 facilitates exchanges of packets between RANs and GGSN 144 and also performs mobility management for UEs. GGSN 144 performs routing function and exchanges packets with external data networks. SGSN 142 interfaces with RNC 124 in UTRAN 120 and supports packet-switches services for the UEs communicating with the UTRAN.” *Id.*, [0028]. The SGSN operates as the **“second DMA gateway”** of the claims during a handover

process as a UE moves out of the coverage of UTRAN to the E-UTRAN. *see* Ex1005, Fig. 1 (annotated):



VI. Detailed Discussion of the Grounds for Unpatentability

The Challenged Claims are unpatentable based on one ground. Ground 1 establishes that claims 1, 3-9 are anticipated by Flore (Ex1005).

A. Ground 1: Claims 1, 3-9 are Anticipated by Flore (Ex1005)**1. Claim 1**

- a. Preamble 1[a]: “A non-transitory computer-readable storage medium comprising instructions that, when executed by a processor, cause the processor to:”**

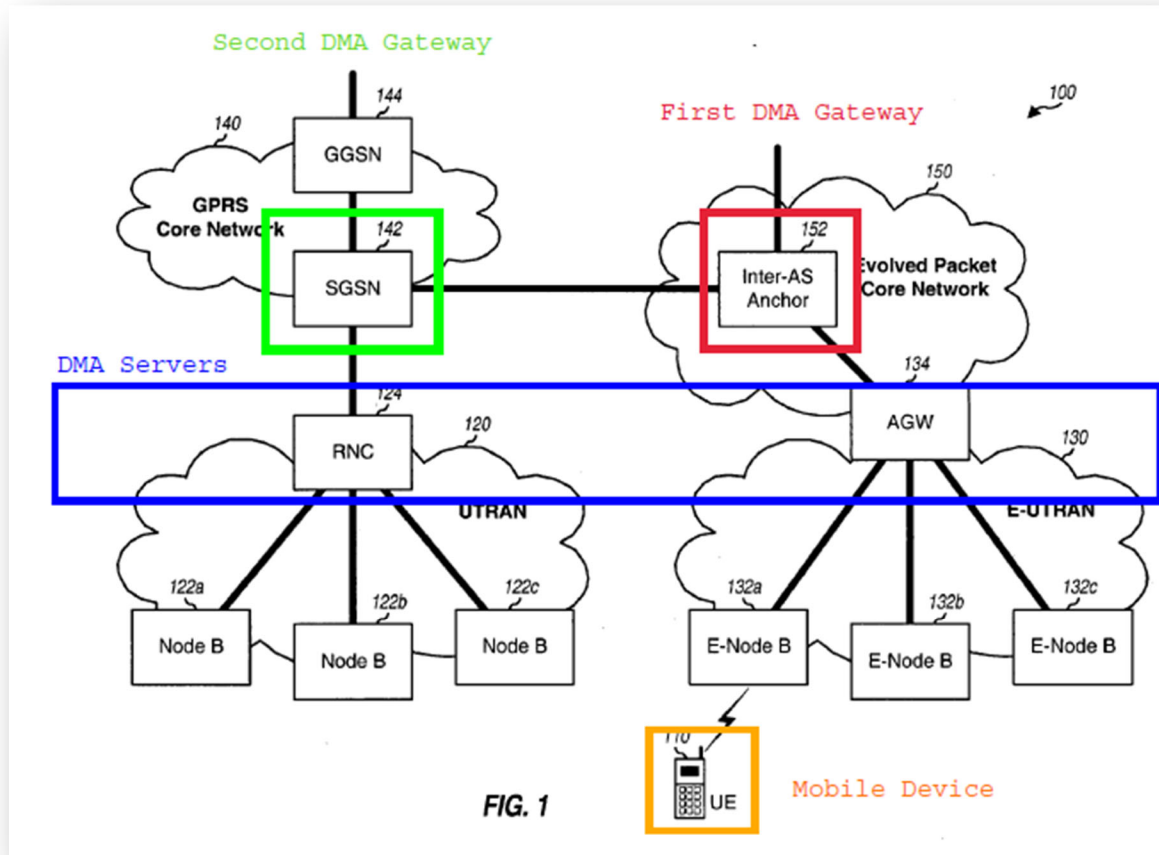
Flores discloses this limitation, to the extent it is limiting. *E.g.*, Ex1005, [0069] (“[t]he steps of a method or algorithm described in connection with the embodiments disclosed herein may be embodied directly in hardware, in a software module executed by a processor, or a combination of the two.”)

See also 988 FWD, at 23.

- b. 1[b]: “receive, at a first distributed mobile architecture (DMA) gateway of a DMA gateway communications network, communications information associated with a communications network that is accessible by a second DMA gateway of the DMA gateway communications network;”**

Flores explains that during a E-UTRAN-to-UTRAN UE handover, numerous messages including communication information are received by the Inter-AS Anchor 152 (“a first [] (DMA) gateway”). *See* Fig. 4 at steps 1, 5, 7, 10, 11. Flore explains that as part of step 11 shown in Figure 4, AGW 134 sends a “PDP context” to Inter-AS Anchor 152. Ex1005, [0046]. A “Packet Data Protocol (PDP) context... contains various parameters such as routing information for IP packets (*e.g.*, the IP addresses of UE 110 and Inter-AS Anchor 152), QoS profiles, and so on.” Ex1005, [0046]. In response, the “Inter-AS Anchor 152 updates its

PDP context fields for UE 110 so that future packets for the UE are **forwarded to SGSN 142** [“a second DMA gateway”] instead of AGW 134.” *Id.*, emphasis added. See also Ex1005 Fig. 1 (annotated):



Thus, the PDP context includes in its routing information address of SGSN 142.

This message received by the Inter-AS Anchor 152 (“a first [] (DMA) gateway”) includes information about UE 110, which following completion of the handover procedure is served by UTRAN 120, that includes SGSN 142 (“a second DMA gateway”), and thus the PDP context disclosed in Flore discloses

“communications information associated with a communications network that is accessible by a second DMA gateway”

Further, Flore disclose that its “*first [] (DMA) gateway*” and “*second DMA gateway*” are each “*of a DMA gateway communications network.*” In particular, the SGSN 142 (“*second DMA gateway*”) and Inter-AS Anchor 152 (“*first [] (DMA) gateway*”) communicate via a Gn interface (“*of a DMA gateway communications network*”). *See, e.g.,* Ex1005, [0029] (“Inter-AS Anchor 152 may communicate with SGSN 142 via a Gn interface, which is a legacy interface between SGSNs and GGSNs within a GPRS core network.”), [0040] (“Inter-AS Anchor 152 communicates with SGSN 142 via the Gn interface and emulates (or appears as) another SGSN to SGSN 142”), [0048] (“Inter-AS Anchor 152 communicates with SGSN 142 via the Gn interface and using messages described in 3GPP TS 29.060, entitled ‘GPRS Tunnelling Protocol (GTP) across Gn and Gp interface,’ June 2006”). Thus, the SGSN (“*second DMA gateway*”) and Inter-AS Anchor (“*first [] (DMA) gateway*”) participate in or are “*of a DMA gateway communications network.*”

See also 988 FWD, at 23-27.

c. *1[c]: “store the communications information at a memory of the first DMA gateway;”*

During handover, “UE 110 may have established a call with E-UTRAN 130 by activating a Packet Data Protocol (PDP) context... **AGW 134 stores the PDP**

context for UE 110 [*“the communications information”*] during the call and, in response to the request from SGSN 142, forwards the PDP context to Inter-AS Anchor 152 [*“of the first DMA gateway”*], which forwards the information in an Update PDP Context Response message to SGSN 142 (also step 11).” Ex1005, [0046]. In response, the **“Inter-AS Anchor 152 updates its PDP context fields for UE 110** [*“store the communications information at a memory of the first DMA gateway”*] so that future packets for the UE are forwarded to SGSN 142 instead of AGW 134.” *Id.* (emphasis added). Flore further explains that the Inter-AS Anchor (*“the first DMA gateway”*) would be comprised of “at least one processor **and a memory.**” Ex1005, [011] (emphasis added); *see also* Claim 30 (“The apparatus of claim 25, wherein the **memory stores Packet Data Protocol (PDP) context** for the UE . . .”).

Dr. Proctor explains that a POSITA would understand the Inter-AS Anchor’s “PDP context fields for UE 110” are a home DMA register or, more generally, a “*memory*” of the Inter-AS Anchor (the *“first DMA gateway”*). Ex1003, ¶49. Inter-AS Anchor 152 necessarily has a list of entries for the UEs it serves, such as UE 110—thus, by updating the PDP Context information with the address of SGSN 142 instead of AGW 134, the Inter-AS Anchor stores the communications information included in the Update PDP Context Response message in “*memory.*” Ex1003, ¶49.

See also 988 FWD, at 37-41.

- d. *1[d]: “receive a communication associated with a destination device that is indicated by the communications information to be served by the second DMA gateway; and”*

Flore discloses that the Inter-AS Anchor 152 (“*the first DMA gateway*”) “updates its PDP context fields for UE 110 so that **future packets for the UE are forwarded to SGSN 142** [*“receive a communication associated with a destination device that is indicated by the communications information to be served by the second DMA gateway”*] instead of AGW 134.” Ex1005, [0046] (emphasis added). Flore thus discloses receiving packets (“*receive a communication*”) at Inter-AS Anchor 152 having the IP address of UE 110 as their destination address (“*associated with a destination device that is indicated by the communications information to be served by the second DMA gateway*”). Ex1005, [0060] (“The Inter-AS Anchor may store PDP context for the UE and forward packets for the UE in accordance with the PDP context.”)

See also 988 FWD, at 41.

- e. *1[e]: “route the communication to the destination device by relaying the communication from the first DMA gateway to the second DMA gateway via the DMA gateway communications network.”*

As demonstrated above, the Inter-AS Anchor 152 (“*the first DMA gateway*”) routes packets addressed to UE 110 (“*route the communication to the destination*

device”) to SGSN 142 (“*the second DMA gateway*”) after handover, in accordance with the updated PDP context (“*by relaying the communication from the first DMA gateway to the second DMA gateway via the DMA gateway communications network.*”) Ex1005, [0060] (“The Inter-AS Anchor may emulate a GGSN after the handover to the second RAN and **may exchange packets for the UE with the SGSN (block 818)**”) (emphasis added). *See also id.*, [0046] (“In the first phase of the handover procedure and until the PDP context is updated in step 11, SGSN 142 communicates with Inter-AS Anchor 152, which acts as a source SGSN to SGSN 142. After the PDP context is updated, Inter-AS Anchor 152 acts as a GGSN to SGSN 142.”), Fig. 8.

Flore further discloses that “Inter-AS Anchor 152 updates its PDP context fields for UE 110 **so that future packets for the UE are forwarded to SGSN 142** instead of AGW 134.” Ex1005, [0046] (emphasis added). *See also id.*, [0060], (“The Inter-AS Anchor may emulate a GGSN after the handover to the second RAN and **may exchange packets for the UE with the SGSN ... [t]he Inter-AS Anchor may store PDP context for the UE and **forward packets for the UE** in accordance with the PDP context.**”) (emphasis added).

Additionally, as demonstrated above for Element [1b], the SGSN 142 (“*second DMA gateway*”) and Inter-AS Anchor 152 (“*first [] (DMA) gateway*”)

communicate via a Gn interface (“*of a DMA gateway communications network*”).

See, e.g., Ex1005, [0029], [0040], [0048].

See also 988 FWD, at 42.

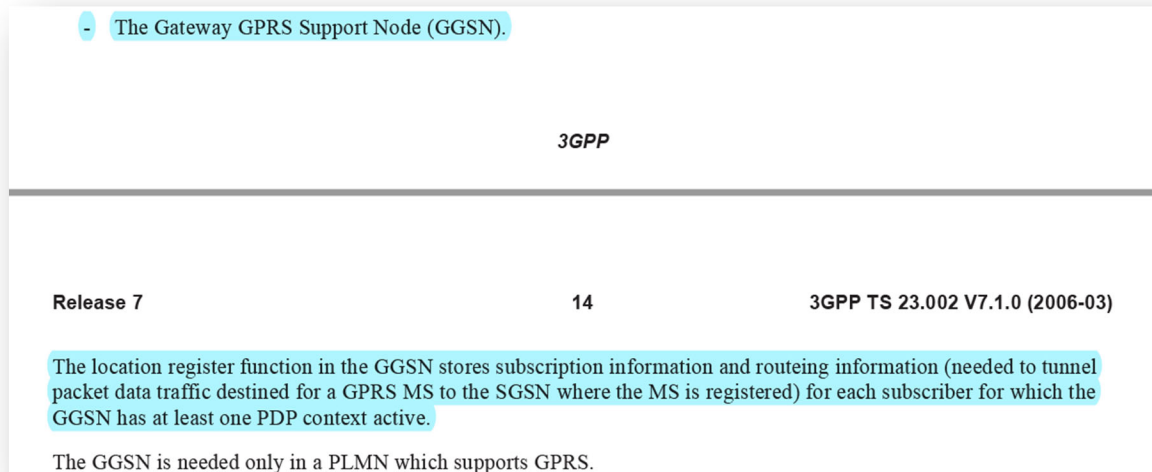
2. Claim 3: “*The non-transitory computer-readable storage medium of claim 1, wherein the communications information is stored in a home location register, and wherein the communications information indicates one or more devices that are accessible by a DMA server.*”

As demonstrated above, *see* claim element 1[c], Flores discloses “*stor[ing] the communications information at a memory of the first DMA gateway.*” For the reasons explained below, that “*memory of the first DMA gateway*” includes a “*home location register*” for the storage of “*communication information.*”

In Flores, after the handover is performed, Inter-AS Anchor 152 acts as a GGSN. Ex1005, [0039] (“FIG. 3D shows UE 110 communicating with UTRAN 120 after completing the inter-system handover. User data is exchanged between UE 110 and SGSN 142, which forwards the data to via [sic] Inter-AS Anchor 152 acting as the GGSN”), *id.*, [0046] (“After the PDP context is updated, Inter-AS Anchor 152 acts as a GGSN to SGSN 142.”). Inter-AS Anchor 152 “emulates a virtual SGSN and a virtual GGSN... Inter-AS Anchor 152 behaves... as a GGSN after updating the PDP context.” *Id.*, [0050].

Dr. Proctor explains that Flore’s GGSN necessarily contains a location register. Ex1003, ¶48. Flore states “[t]he network entities in UTRAN 120 and

GPRS core network 140 are described in 3GPP TS 23.002, entitled ‘Network architecture,’ March 2006.” Ex1005, [0030]. This standard from 3GPP—TS 23.002 v7.1.0—describes the location register function:



Ex1006, at 13-14 (annotated). Thus, Flore’s GGSN contains a “**location register function**” which “stores subscription information and routeing [sic] information ... for each subscriber for which the GGSN has at least one PDP context active.”

Ex1006, at 13-14. This “location register function” is a “*home location register*.” Similarly, because Inter-AS Anchor 152 (“*first DMA gateway*”) emulates a GGSN, it also includes a location register function (“*home location register*.”) Ex1003, ¶48.

Additionally, Dr. Proctor explains that a POSITA would understand the Inter-AS Anchor’s “PDP context fields for UE 110” are a “*home location register*” of the Inter-AS Anchor (i.e., the “*first DMA gateway*”). Ex1003, ¶49. Inter-AS

Anchor 152 necessarily has a list of entries for the UEs it serves, such as UE 110—thus, by updating the PDP Context information with the address of SGSN 142 instead of AGW 134, the Inter-AS Anchor stores the communications information included in the Update PDP Context Response message to its “*home location register*.” Ex1003, ¶49.

Flore also discloses “*wherein the communications information indicates one or more devices that are accessible by a DMA server*” because it contemplates multiple UE devices. The PDP context (“*communication information*”) included in the message contains information identifying **the UE 110** undergoing the handover process. *See, e.g.*, Ex1005, [0046], emphasis added (“Packet Data Protocol (PDP) context... contains various parameters such as routing information for IP packets (e.g., the **IP addresses of UE 110** and Inter-AS Anchor 152), QoS profiles, and so on.”); The UE 110 is accessible by one or more Node Bs and “legacy networks 120 and 140,” and the message above is meant to facilitate handover from the E-UTRAN 130 and Evolved Packet Network Core network 150 to the legacy UTRAN 120 and GPRS core network 140. *Id.*, [0029]. Thus, the message including the PDP context is a “*communications information indicates one or more devices that are accessible by a DMA server*.”

See also 988 FWD, at 30-33, 37-41.

3. **Claim 4:** “*The non-transitory computer-readable storage medium of claim 3, wherein the DMA server includes one of a ground-based DMA server and a satellite-based DMA server.*”

Flore discloses a ground-based DMA server. The RNC 124 and AGW 134 are each ground-based, rather than satellite-based. *See, e.g.*, Ex1005, Fig. 1 and [0026]-[0027].

See also 988 FWD, at 42-43 (claim 3).

4. **Claim 5:** “*The non-transitory computer-readable storage medium of claim 1, wherein the communications information indicates one or more devices that are accessible by a legacy communications network.*”

Flore explains that [t]he use of the Gn interface allows SGSN 142 to communicate with Inter-AS Anchor 152 in the same manner as with another SGSN, which minimizes impact to legacy networks [UTRAN] 120 and 140 [GRPRS core network] 140 to interoperate with new networks 130 and 150.” Ex1005, [0029]; *see also* [0049], Figure 1. In addition, see additional details in claim 6, below, related to Flore’s disclosure of a “*legacy communications network.*”

See also 988 FWD, at 24-27.

5. **Claim 6:** *“The non-transitory computer-readable storage medium of claim 5, wherein the legacy communications network includes one of a public switched telephone network (PSTN), a wireless communication network serviced by a mobile switching center (MSC), a public internet protocol (IP) network, and an American National Standards Institute 41 (ANSI-41) network.”*

In Flore, the “*legacy communication network*” includes the UTRAN 120 and GPRS core network 140. Ex1005, [0029]. Flore also states “[t]he network entities in UTRAN 120 and GPRS core network 140 are described in 3GPP TS 23.002, entitled ‘Network architecture,’ March 2006.” Ex1005, [0030]. This 3GPP standard states in 3.3.1, “The CS domain refers to the set of all the CN entities... The entities specific to the CS domain are: **MSC**, GMSC, VLR.” Ex1006 at 13. Thus, Dr. Proctor explains that a POSITA would therefore understand that UTRAN 120 is a “*wireless communications network serviced by a mobile switching center (MSC)*.” Ex1003, ¶50.

See also 988 FWD, at 42-43 (claim 5).

6. **Claim 7:** *“The non-transitory computer-readable storage medium of claim 1, further comprising instructions that, when executed by the processor, cause the processor to send a notification from the first DMA gateway to the second DMA gateway, wherein the notification indicates that the communications information is stored at the first DMA gateway.”*

Flore discloses that, in step 11, “AGW 134 stores the PDP context for UE 110 during the call and ... forwards the PDP context to Inter-AS Anchor 152” (the

“first DMA gateway”). Ex1005, [0046]. The first DMA gateway then “forwards the information in an Update PDP Context Response message to SGSN 142” (the “second DMA gateway”). *Id.* The Update PDP Context Response message is a notification to the SGSN that both contains the communications information, and indicates that the communications information is stored at the Inter-AS Anchor. *See also, E.g.,* Ex1005, [0069] (“[t]he steps of a method or algorithm described in connection with the embodiments disclosed herein may be embodied directly in hardware, in a software module executed by a processor, or a combination of the two.”) .

See also 988 FWD, at 42-43 (claim 6).

7. **Claim 8:** “*The non-transitory computer-readable storage medium of claim 1, further comprising instructions that, when executed by the processor, cause the processor to automatically send at least a portion of the communications information from the first DMA gateway to the second DMA gateway via the DMA gateway communications network in response to the first DMA gateway receiving the communications information.*”

Flore discloses that, in step 11, “AGW 134 stores the PDP context for UE 110 during the call and ... forwards the PDP context [*“automatically send at least a portion of the communications information”*] to Inter-AS Anchor 152” (the “*the first DMA gateway*”). Ex1005, [0046]. The “*first DMA gateway*” then “forwards the information in an Update PDP Context Response message to SGSN 142” (“*the*

second DMA gateway . . . in response to the first DMA gateway receiving the communications information.”) Id.

The Update PDP Context Response message is sent across the Gn interface, which is a “*DMA gateway communications network.*” Ex1005, [0029] (“Inter-AS Anchor 152 may communicate with SGSN 142 via a Gn interface, which is a legacy interface between SGSNs and GGSNs within a GPRS core network.”), [0040] (“Inter-AS Anchor 152 communicates with SGSN 142 via the Gn interface and emulates (or appears as) another SGSN to SGSN 142”), [0048] (“Inter-AS Anchor 152 communicates with SGSN 142 via the Gn interface and using messages described in 3GPP TS 29.060, entitled ‘GPRS Tunnelling Protocol (GTP) across Gn and Gp interface,’ June 2006”). *See also, e.g.,* Ex1005, [0069] (“[t]he steps of a method or algorithm described in connection with the embodiments disclosed herein may be embodied directly in hardware, in a software module executed by a processor, or a combination of the two.”)

See also 988 FWD, at 42-44 (claim 7).

8. **Claim 9:** *“The non-transitory computer-readable storage medium of claim 1, further comprising instructions that, when executed by the processor, cause the processor to send at least a portion of the communications information from the first DMA gateway to the second DMA gateway via the DMA gateway communications network in response to the first DMA gateway receiving a query from the second DMA gateway for the communications information.”*

Flore discloses “SGSN 142 sends an Update PDP Context Request message to Inter-AS Anchor 152.” Ex1005, [0046]. The SGSN (“*the second DMA gateway*”) thus sends a “*query*” for the PDP Context (“*communications information*”) to the Inter-AS Anchor (“*the first DMA gateway*”). Flore further states “AGW 134 stores the PDP context for UE 110 during the call and, **in response to the request from SGSN 142**, forwards the PDP context to Inter-AS Anchor 152, **which forwards the information in an Update PDP Context response message to SGSN 142**.” *Id.* (emphasis added). Thus, “*the first DMA gateway*” “*sends... the communications information to the second DMA gateway.*” This message is sent via the Gn interface and in response to the above “*query*,” and is therefore sent “*via the gateway communications network in response to the first DMA gateway receiving a query from the second DMA gateway for the communications information*” as discussed above. *See also* Ex1005, [0069].

See also 988 FWD, at 42-43 (claim 8).

VII. Mandatory Notices

A. Real Parties-in-Interest

Petitioners are Microsoft and AT&T Services, Inc. (and related entities). Moreover, out of an abundance of caution, Petitioners identify all current defendants in the below identified case as potential real parties in interest only for the purpose of this proceeding and only to the extent that Patent Owner contends that these separate legal entities should be named real parties in interest in this IPR. Petitioners do so to avoid the potential expenditure of resources to resolve such a challenge. Petitioners also acknowledge that each petitioner has a number of affiliates. No unnamed entity is funding, controlling, or otherwise has an opportunity to control or direct this Petition or Petitioner's participation in any resulting IPR. Petitioners are also not aware of any affiliate that would be barred from filing this Petition under 35 U.S.C. § 315(e).

B. Related Proceedings

The 990 Patent has been asserted by Patent Owner against AT&T in the following district court litigation: *Lemko Corporation v AT&T Corporation* et. al, No. 2-25-cv-00305 (E.D. Tex.).

C. Lead and Backup Counsel

Petitioner's lead and backup counsel are:

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D. Electronic Service

Petitioners consents to electronic service at the email above.

VIII. Conclusion

Petitioner respectfully requests that the Board institute IPR and enter a final written decision finding the Challenged Claims unpatentable.

Dated: June 20, 2025

Respectfully submitted,

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CERTIFICATE OF COMPLIANCE

This Petition complies with the word count limits set forth in 37 C.F.R. § 42.24(a)(1)(i), because this Petition contains 5,171 words, excluding the parts of the Petition exempted by 37 C.F.R. § 42.24(a)(1), determined using the word count provided by Microsoft Word, which was used to prepare this Petition.

Dated: June 20, 2025

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CERTIFICATE OF SERVICE

Under 37 C.F.R. §§ 42.6(e) and 42.105(a), this is to certify that on June 20, 2025, I caused to be served a true and correct copy of the foregoing “**PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 8,310,990**” and Exhibits 1001-1012 by Federal Express on the Patent Owner at the correspondence address of record for U.S. Patent No. 8,310,990:

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A courtesy copy of this Petition and supporting material was also served by email on litigation counsel for Patent Owner via email:

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