

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MICROSOFT CORPORATION AND AFFIRMED NETWORKS, INC.,
Petitioners,

v.

LEMKO CORPORATION
Patent Owner.

Case No. IPR2023-00531
U.S. Patent No. 7,855,988

**PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 7,855,988**

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TABLE OF ABBREVIATIONS AND CONVENTIONS

Petitioners	MICROSOFT CORPORATION AND AFFIRMED NETWORKS, INC.
Patent Owner	LEMKO CORPORATION
'988 Patent	U.S. Patent No. 7,855,988 (the patent being challenged herein)
Challenged Claims	Claims 1, 3, 4, 5, 6, 7, 8, 9, and 20
POSA	Person of Ordinary Skill in the Art

PETITIONER’S EXHIBIT LIST

Ex. No.	Brief Description
1001	U.S. Patent No. 7,855,988
1002	U.S. Patent No. 7,855,988 File History
1003	Declaration of James Proctor
1004	CV of James Proctor
1005	U.S. Patent Application Publication 2007/0021120 (“Flore”)
1006	3GPP TS 23.002 v7.1.0, “Network Architecture,” March 2006
1007	Service of Complaint for Patent Infringement served on Microsoft Corp., <i>Lemko Corp. v. Microsoft Corp. and Affirmed Networks Inc.</i> , 3:22-CV-00363-L (N.D. Texas)
1008	Service of Complaint for Patent Infringement served on Affirmed Networks Inc., <i>Lemko Corp. v. Microsoft Corp. and Affirmed Networks Inc.</i> , 3:22-CV-00363-L (N.D. Texas)
1009	RESERVED
1010	RESERVED
1011	RESERVED
1012	Declaration of Ingrid Hsieh-Yee, Ph.D, certifying the publication date of 3GPP TS 23.002 v7.1.0

I. Introduction

Petitioners request *inter partes* review (“IPR”) of claims 1, 3-9, and 20 (“Challenged Claims”) of U.S. Patent No 7,855,988 (“’988 Patent”).

The ’988 patent claims are directed to routing communications between distributed mobile architecture (“DMA”) gateways, so that a mobile device can continue to receive communications even if it leaves the service area of a first DMA gateway. The first DMA gateway is able to route the communication to a second DMA gateway that is currently serving the mobile device. The fatal flaw for the ’988 patent, however, is that the Flore reference disclosed this type of handover in UTRAN networks long before the ’988 patent by describing handover from E-UTRAN to legacy UTRAN networks to support user equipment mobility. Flore in combination with the knowledge of a person of skill in the art render the challenged claims obvious.

All challenged claims should be found unpatentable given the strength of the prior art as shown herein.

II. Requirements for *Inter Partes* Review

This Petition complies with all statutory requirements, as well as 37 C.F.R. §§ 42.104, 42.105, and 42.15, and should be accorded a filing date pursuant to 37 C.F.R. § 42.106. The required fee is being paid electronically through P-TACTS.

A. Certification

As required by 37 C.F.R. § 42.104(a), Petitioners certify that the '988 Patent “is available for *inter partes* review and that the Petitioners are not barred or estopped from requesting an *inter partes* review challenging the patent claims on the grounds identified in the petition.” Petitioners certify that this Petition is filed within one year of the date of service of the complaint—February 16, 2022. Exs. 1007, 1008. Neither Petitioners, nor any party in privity with Petitioners, have filed a civil action challenging the validity of any claim of this patent. Petitioners therefore certify that the '988 Patent is available for *inter partes* review.

B. Identification of Challenges

Under 37 C.F.R. §§ 42.104(b) and 42.22, Petitioners request that the Board institute this IPR on the Challenged Claims of the '988 Patent and cancel those claims as unpatentable on the following grounds:

Ground	Claims	Basis for Unpatentability
1	1, 3-9, and 20	Anticipated by US 2007/0021120 to Flore et al. (“Flore”)

III. The '988 Patent**A. Effective Filing Date**

The '988 Patent resulted from 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 ’988 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. Ex. 1003, ¶ 56. Additional graduate education of a POSA could substitute for professional experience, or significant experience in the field could substitute for formal education. Ex. 1003, ¶ 56. As shown by his CV (Ex. 1004) and as described in his expert declaration (Ex. 1003, ¶¶ 3-24), Mr. Proctor was qualified as a POSA at the relevant time.

C. Overview of the Challenged ’988 Patent

The ’988 Patent relates to “[m]ethods and devices for routing communications between distributed mobile architecture (DMA) servers using DMA gateways.” Ex. 1001 at Abstract. The ’988 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.*, 1:24-29.

The ’988 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., 1:37:41.

Thus the '988 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.* 1:66-2:2. To that end, the '988 Patent describes an apparatus called a distributed mobile architecture (DMA) server, such as, for example, a portable unit depicted in Figure 1 (reproduced below):

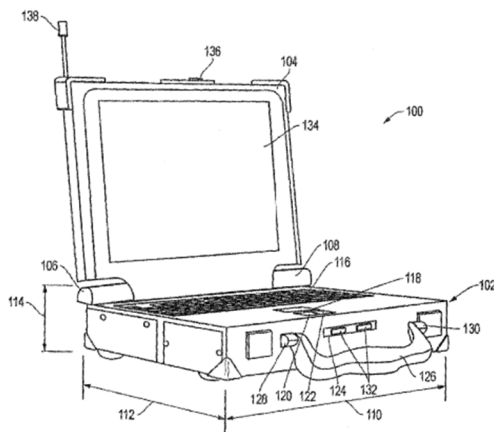


FIG. 1

Ex. 1003, ¶ 63. 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.” Ex. 1001, 4:5-9. 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.*, 7:32-35.

The '988 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 DMASes served by two different private networks. *See* Ex. 1001, Fig. 6, reproduced below, and *id.*, 10:53-56 (“[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”).

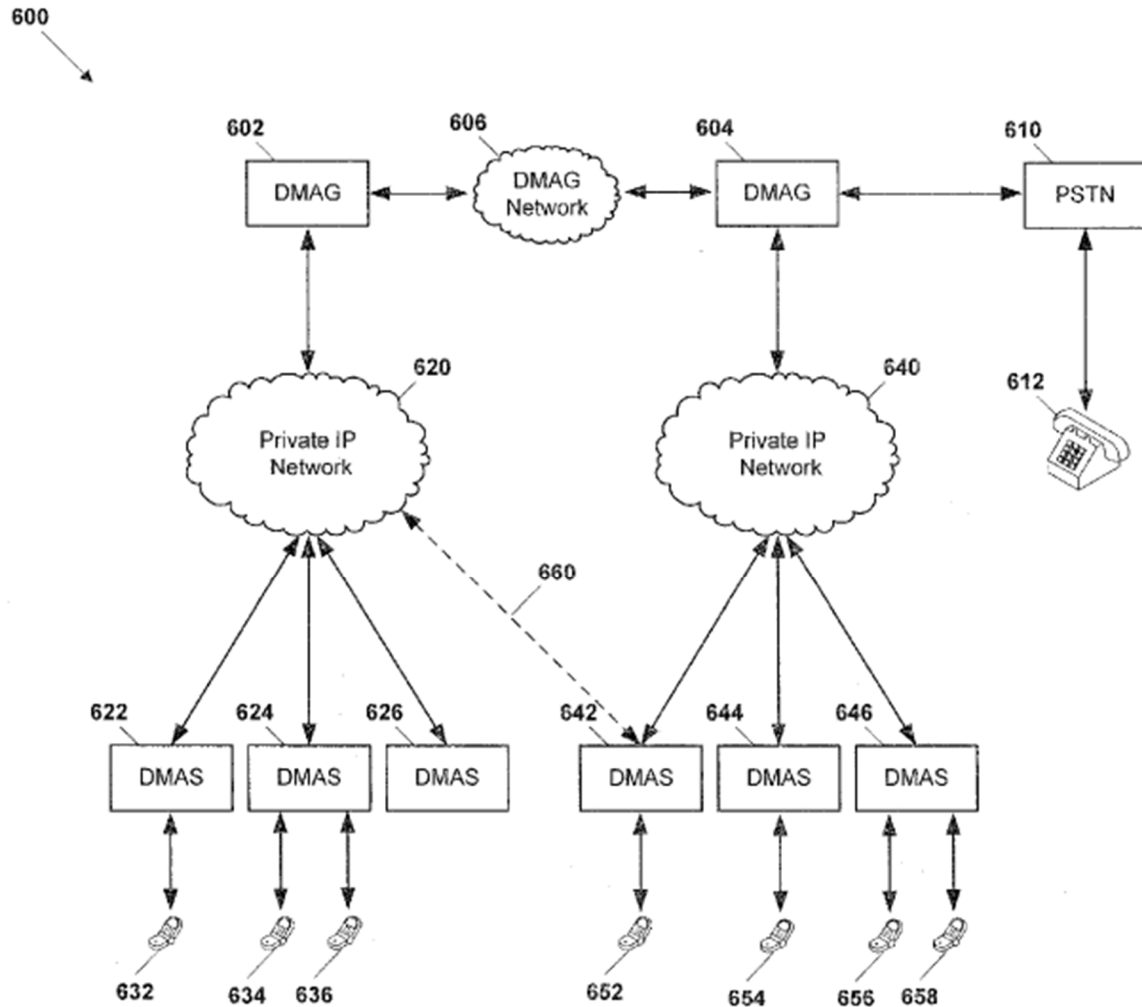


FIG. 6

“To facilitate communications between devices serviced by different networks, the DMA gateways 602 and 604 maintain information identifying the devices that each services.” Ex. 1001, 11:10-12. “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.* 14:66-15:5. 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.* 15:14-18.

A key feature of the ’988 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. Ex. 1003, ¶¶ 66-68; Ex. 1001, 10:53-63, 3:4-14, 9:4-25. The first DMA gateway routes the communication to a second DMA gateway that is currently serving the mobile device. Ex. 1003, ¶¶ 66-68; Ex. 1001, 10:53-63, 3:4-14, 9:4-25. But, as explained below, Flore disclosed this type of handover in UTRAN networks long before the ’988 Patent, describing handover from E-UTRAN to UTRAN networks to support user equipment (UE) mobility.

D. Relevant Prosecution History

The claims of the ’988 Patent received minimal examination. In the first action on the merits on May 21, 2010, the examiner issued a single prior art rejection, rejecting claim 46 as being anticipated by US 2006/0114934 to Shin. Ex. 1002 at 96.

The examiner rejected claims 22-32 and 42-45 due to lack of antecedent basis for the term “call.” The examiner also rejected claim 42 under 35 U.S.C.

Section 112 because “it is not clear what it meant by ‘send call information related the call to a DMA gateway, **the DMA gateway**’ as cited the claim” [sic]. Ex. 1002 at 95. The examiner allowed claims 1-21 and 33-41. Ex. 1002 at 97.

In its June 29, 2010 Office Action response, the applicant corrected the antecedent basis issue for claim 22 and the typographical error to claim 42. Ex. 1002 at 122-123. The applicant also canceled rejected claim 46. *Id.* On September 17, 2010, the examiner allowed claims 1-45 but did not provide a statement of reasons for allowability. Ex. 1002 at 130.

IV. Claim Construction

The Board construes claims under the same standard used in civil actions in federal district court. Petitioners submit that for the purposes of this Petition the Board does not need to explicitly construe any claim term and there are no known claim construction disputes that affect the outcome of this Petition.¹

V. Detailed Discussion of the Grounds for Unpatentability

The Challenged Claims are unpatentable based on one ground. Ground 1 establishes that claims 1, 3-9, and 20 are anticipated by Flore (Ex. 1005).

¹ This claim-construction analysis is not a concession as to the scope of any claim term in litigation, or a waiver of any argument in any proceeding that claim terms are indefinite, invalid, or unpatentable.

A. Overview of the Principal Prior Art**1. Flore (Ex. 1005)**

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

Flores 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”). Ex. 1003, ¶ 77. “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.” Ex. 1005, [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.” Ex. 1005, [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. Ex. 1003, ¶ 79.

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. Ex. 1005, [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. Ex. 1003, ¶ 80.

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. Ex. 1003, ¶ 81. “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. Ex. 1003, ¶ 81; *see* Ex. 1005, Fig. 1 (annotated):

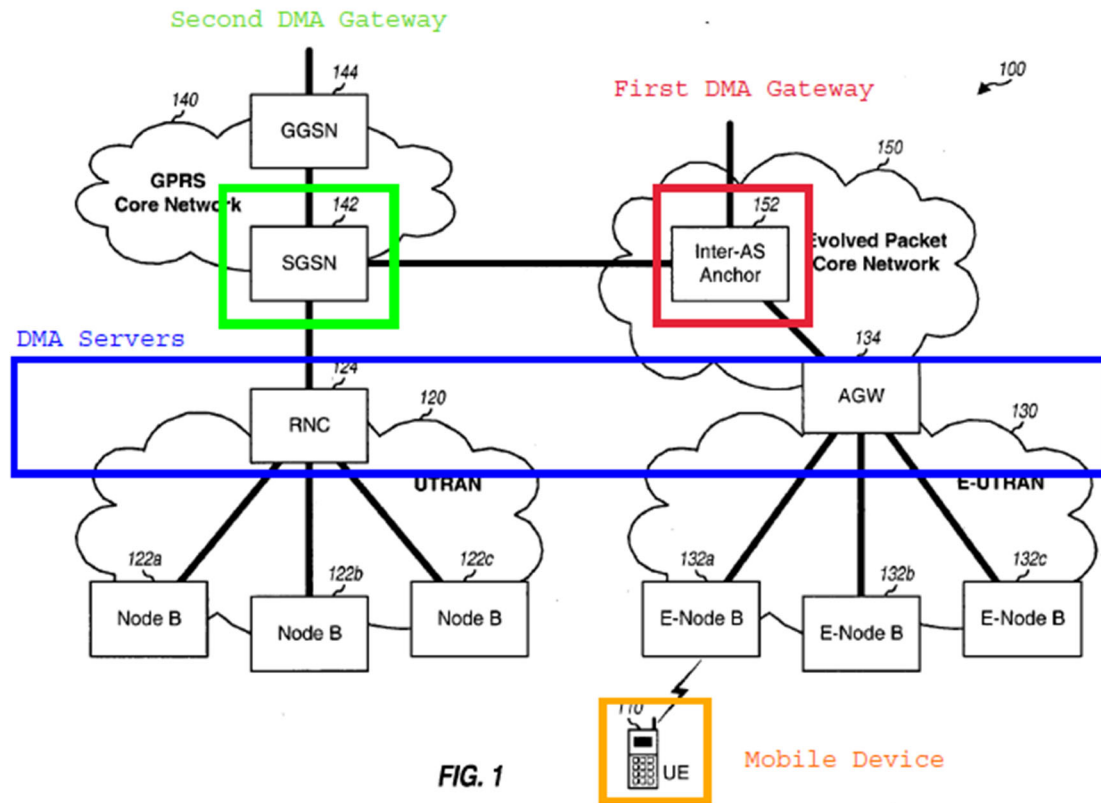


FIG. 1

B. Ground 1: Claims 1, 3-9, and 20 Are Anticipated by Flore (Ex. 1005)

1. Claim 1

a. Preamble

The preamble of claim 1 recites “*A method, comprising:*”

To the extent the Board considers the preamble a limitation, Flores discloses this limitation. *See* Ex. 1005, claim 7 (“[a] method comprising”) and [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.”). Ex. 1003, ¶ 85.

- b. *Limitation 1[b]: “receiving at a first distributed mobile architecture (DMA) gateway communications information for a communications network accessible by a second DMA gateway, the communications information indicating one or more devices accessible by one of a DMA server and a legacy communications network, wherein the first DMA gateway and the second DMA gateway participate in a DMA gateway communications network;”*

Flore discloses this limitation. Ex. 1003, ¶¶ 87-93. Flore discloses **“receiving at a first distributed mobile architecture (DMA) gateway communications information for a communications network accessible by a second DMA gateway.”** During a E-UTRAN-to-UTRAN UE handover, numerous messages including communication information are received by the Inter-AS Anchor 152 (the “first DMA gateway”). *See, e.g.* Ex. 1005, Fig. 4 at steps 1, 5, 7, 10, 11; Ex. 1003, ¶ 88.

Flore explains that as part of step 11 shown in Fig. 4, AGW 134 sends a “PDP context” to Inter-AS Anchor 152. Ex. 1005, [0046]; Ex. 1003, ¶ 89. 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.” Ex. 1005, [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** instead of AGW 134.” *Id.*, emphasis added. Thus, the PDP context includes in its routing information address of SGSN 142. Ex. 1003, ¶ 89.

This message received by the Inter-AS Anchor 152 (the “first DMA gateway”) includes information about UE 110, which following completion of the handover procedure is served by UTRAN 120, that includes SGSN 142 (the “second DMA gateway”), and thus the PDP context disclosed in Flore qualifies as “communications information for a communications network accessible by a second DMA gateway.” Ex. 1003, ¶ 90.

Flore also discloses “**the communications information indicating one or more devices accessible by one of a DMA server and a legacy communications network.**” Ex. 1003, ¶ 91. As explained above, the PDP context included in the message contains information identifying the UE 110 undergoing the handover process. *See, e.g.*, Ex. 1005, [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.”); Ex. 1003, ¶ 91. 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 indicating one or more devices accessible by one of a DMA server and a legacy communications network.” Ex. 1003, ¶ 91.

Further, Flore discloses “**wherein the first DMA gateway and the second DMA gateway participate in a DMA gateway communications network.**” Ex. 1003, ¶ 92. The SGSN 142 (the “second DMA gateway”) and Inter-AS Anchor 152 communicate via a Gn interface. *See, e.g.*, Ex. 1005, [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 (the “second DMA gateway”) and Inter-AS Anchor (the “first DMA gateway”) “participate in a DMA gateway communications network.”

c. ***Limitation 1[c]: “storing the communications information in a home DMA register of the first DMA gateway;”***

Flore discloses this limitation. Ex. 1003, ¶¶ 94-98. 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 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 (also step 11).” Ex. 1005, [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 instead of AGW 134.” *Id.*, emphasis added. After the handover is performed, Inter-AS Anchor 152 acts as a GGSN. Ex. 1003, ¶ 95; *see* Ex. 1005, [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].

Flore’s GGSN necessarily contains a location register. Ex. 1003, ¶ 96. 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.”

Ex. 1005, [0030]. This standard from 3GPP—TS 23.002 v7.1.0 (Exhibit 1006)—describes the location register function:

- The Gateway GPRS Support Node (GGSN).

3GPP

Release 7

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3GPP TS 23.002 V7.1.0 (2006-03)

The location register function in the GGSN stores subscription information and routing information (needed to tunnel packet data traffic destined for a GPRS MS to the SGSN where the MS is registered) for each subscriber for which the GGSN has at least one PDP context active.

The GGSN is needed only in a PLMN which supports GPRS.

See also Ex. 1012 (Declaration of Ingrid Hsieh-Yee, Ph.D, certifying publication date of Ex. 1006). Thus, Flore’s GGSN contains a “location register function” which “stores subscription information and routing [sic] information ... for each subscriber for which the GGSN has at least one PDP context active.” Ex. 1003, ¶ 96; Ex. 1006 at 13-14. This location register function is a “home DMA register.” Ex. 1003, ¶ 96; Ex. 1006 at 13-14. Similarly, because Inter-AS Anchor 152 emulates a GGSN, it also includes a location register function. Ex. 1003, ¶ 96.

A POSA would likewise understand the Inter-AS Anchor’s “PDP context fields for UE 110” are a “home DMA register” of the Inter-AS Anchor (the “first DMA gateway”). Ex. 1003, ¶ 97. Inter-AS Anchor 152 necessarily has a list of entries for the UEs it serves, such as UE 110. Ex. 1003, ¶ 97. 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 DMA register.” Ex. 1003, ¶ 97.

- d. *Limitation 1[d]: “receiving a communication at the first DMA gateway for a target device indicated by the communications information to be served by the second DMA gateway; and”*

Flore discloses this limitation. Ex. 1003, ¶¶ 99-101. 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 instead of AGW 134.**” Ex. 1005, [0046], emphasis added. Flore thus discloses receiving packets (*i.e.*, “a communication”) at Inter-AS Anchor 152 (*i.e.*, the “first DMA gateway”) having the IP address of UE 110 as their destination address (*i.e.*, “for a target device indicated by the communication information”). Ex. 1003, ¶ 100; *see also* Ex. 1005, [0060] (“The Inter-AS Anchor may store PDP context for the UE and forward packets for the UE in accordance with the PDP context.”)

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

Flore discloses this limitation. Ex. 1003, ¶ 102-105. As discussed above, the Inter-AS Anchor 152 routes packets addressed to UE 110 to SGSN 142 after

handover, in accordance with the updated PDP context. Ex. 1003, ¶ 103; *see* Ex. 1005, [0060], emphasis added (“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).** *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.” Ex. 1005, [0046], emphasis added. *See also id.*, [0060], emphasis added (“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.**”) Thus, Flore discloses routing packets by “relaying the communication from the first DMA gateway to the second DMA gateway via the DMA gateway communications network.” Ex. 1003, ¶ 104.

2. **Claim 3:** *“The method of claim 1, wherein the DMA server includes one of: a ground-based DMA server; and a satellite-based DMA server.”*

Flore discloses this limitation. Flore discloses a ground-based DMA server. The RNC 124 and AGW 134 are each ground-based, rather than satellite-based. *See, e.g.*, Ex. 1005, Fig. 1 and [0026-27]. Ex. 1003, ¶ 106.

3. **Claim 4:** *“The method of claim 1, wherein the communication includes at least one of: a voice communication; and a data communication.”*

Flore discloses this limitation. Ex. 1003, ¶¶ 108-110. Flore discloses that the communication can be both a voice and a data communication. Ex. 1003, ¶ 108; *see* Ex. 1005, [0046], emphasis added (“UE 110 may have established a **call** with E-UTRAN 130 by activating a Packet Data Protocol context.... 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.”) *See also id.*, [0049], emphasis added (“With procedure 400, UE 110 operates with **new protocol stacks 230 and 232 prior to step 8** and with **legacy protocol stacks 220 and 222 for step 8 and beyond.**”), *see also id.*, [0060], emphasis added (“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.”) Ex. 1003, ¶ 108.

4. **Claim 5:** *“The method of claim 1, wherein the legacy communications network includes one of: a public switched telephone network (PSTN); a wireless communications network serviced by mobile switching center (MSC); a public internet protocol (IP) network; and an American National Standards Institute 41 (ANSI-41) network.”*

Flore discloses this limitation. Ex. 1003, ¶¶ 111-113. In Flore the “legacy network” is the UTRAN 120 and GPRS core network 140. Ex. 1003, ¶ 111; Ex. 1005, [0029], emphasis added (“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 the impact to **legacy networks 120 and 140** to interoperate with new networks 130 and 150.”) The UTRAN network 120 in Flore is a “wireless communications network serviced by a mobile switching center (MSC).” See Ex. 1003, ¶ 111. 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.” Ex. 1005, [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.” Ex. 1006 at 13. A POSA would therefore understand that UTRAN 120 is a “wireless communications network serviced by a mobile switching center (MSC).” Ex. 1003, ¶¶ 112-113.

5. **Claim 6:** *“The method of claim 1, further comprising the first DMA gateway sending a notification to the second DMA gateway, the notification indicating that the communications information is stored at the first DMA gateway.”*

Flore discloses this limitation. Ex. 1003, ¶¶ 114-115. 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”). Ex. 1005, [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. Ex. 1003, ¶ 114.

6. **Claim 7:** *“The method of claim 1, further comprising, upon receiving the communications information, the first DMA gateway automatically sending at least a portion of the communications information to the second DMA gateway via the gateway communications network.”*

Flore discloses this limitation. Ex. 1003, ¶¶ 116-118. 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”). Ex. 1005, [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 sent across the Gn interface, which is a “gateway communications network.” *See* Ex. 1003, ¶ 117; Ex. 1005, [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”).

7. **Claim 8:** *“The method of claim 1, further comprising, in response to receiving a query from the second DMA gateway for the communications information, the first DMA gateway sending at least a portion of the communications information to the second DMA gateway via the gateway communications network.”*

Flore discloses this limitation. Ex. 1003, ¶¶ 119-120. Flore discloses “SGSN 142 sends an Update PDP Context Request message to Inter-AS Anchor 152.” Ex. 1005, [0046]. The SGSN (“second DMA gateway”) thus sends a query for the PDP Context to the Inter-AS Anchor (“first DMA gateway”). *See* Ex. 1003, ¶ 119. 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 is therefore sent “via the gateway communications network” as discussed above. *See* Ex. 1003, ¶ 119.

Claim 9: “*The method of claim 1, wherein the communications information includes communications register data including at least one of... a portion of home location register (HLR) data for the communications network.*”

Flore discloses this limitation. Ex. 1003, ¶¶ 121-122. Flore discloses receiving PDP Context information from AGW 134 at Inter-AS Anchor 152. *See* Ex. 1003, ¶ 121. The PDP context contains information such as the IP address of the Inter-AS Anchor. Ex. 1005, [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.”)

This information is a portion of Home Location Register (HLR) data for the communications network. *See* Ex. 1003, ¶ 121. 3GPP TS 23.002, v7.1.0 states “the Home Location Register (HLR) is the location register to which a mobile subscriber is assigned for record purposes such as subscriber information.” Ex. 1006 at 13; *See* Ex. 1003, ¶ 121. Because the Inter-AS Anchor is the acting GGSN for the subscriber (e.g., the location register for which it is assigned), the PDP

context includes “communications register data including a portion of home location register (HLR) data for the communications network.” *See* Ex. 1003, ¶ 121.

8. Claim 20: “*The method of claim 1, wherein the first DMA gateway receives the communications information from the second DMA gateway.*”

Flore discloses this limitation. Ex. 1003, ¶¶ 123-124. Flore discloses that “the inter-system handover techniques may also be used for handover from a UTRAN to an E-UTRAN.” Ex. 1005, [0053]. Flore further states, “[t]he message flow in FIG. 4 may be used for handover from the UTRAN to the E-UTRAN, albeit with AGW 134 in procedure 400 being replaced with a source RNC in the UTRAN, Inter-AS Anchor 152 being replaced by the old SGSN, target RNC 124 being replaced by AGW 134, and target SGSN 142 being replaced by Inter-AS Anchor 152.” *Id.* Thus in step 11, instead of the AGW sending a PDP context to the Inter-AS Anchor, source RNC sends the PDP context for the UE 110 to the SGSN 142, and subsequently, instead of the Inter-AS Anchor sending the Update PDP Context Response message to SGSN, the SGSN (the “second DMA gateway”) “forwards the information in an Update PDP Context Response message to” Inter-AS Anchor 152 (the “first DMA gateway”). Ex. 1005, [0046]. Ex. 1003, ¶ 123. Flore thus discloses this limitation.

C. No Secondary Considerations Exist

No secondary indicia of non-obviousness exist. Petitioners reserve the right to respond to any assertion of secondary indicia of non-obviousness advanced by Patent Owner.

VI. The Parallel District Court Proceeding Does Not Warrant a Discretionary Denial

Under the Director's interim procedure for evaluating requests for discretionary denial under 35 U.S.C. §314(a), regardless of any factors that otherwise apply, "the PTAB will not discretionarily deny institution of an IPR or PGR in view of parallel district court litigation where a petitioner stipulates not to pursue in a parallel district court proceeding the same grounds as in the petition or any grounds that could have reasonably been raised in the petition." *Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation*, 7 (USPTO Dir. June 21, 2022).

Petitioners stipulate that, should the Board institute review, Petitioners will not pursue in parallel district court proceedings the same grounds as in the Petition or any grounds that could have reasonably been raised in the petition. Thus, the Board should not exercise discretion to deny institution under §314(a).

VII. Mandatory Notices

A. Real Parties-in-Interest

Petitioners are the real parties-in-interest. No other party had access to or control over the present Petition, and no other party funded or participated in preparation of the present Petition.

B. Related Proceedings

No previous IPR or post-grant proceeding has been filed challenging the '988 Patent. The '988 Patent has been asserted by Patent Owner in the following district court litigation: *Lemko Corporation v Microsoft Corporation*, No. 3-22-cv-00363 (N.D. Tex.).

C. Lead and Backup Counsel

Petitioner's lead and backup counsel are:

Lead Counsel for Petitioner	Backup Counsel for Petitioner
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Lead Counsel for Petitioner	Backup Counsel for Petitioner
	650.858.6550 (to seek <i>pro hac vice</i> admission)

D. Electronic Service

Petitioners consents to electronic service at:

EMAIL ADDRESS: Winston-MSFT-Lemko-IPR@winston.com.

VIII. Fees

The required fee is being paid electronically through P-TACTS.

IX. Conclusion

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

Dated: February 14, 2023

Respectfully submitted,

/ Robert N. Kang /

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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 5,083 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: February 14, 2023

Respectfully submitted,

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Lead Counsel for Petitioners

CERTIFICATE OF SERVICE

Under 37 C.F.R. §§ 42.6(e) and 42.105(a), this is to certify that on ***, I caused to be served a true and correct copy of the foregoing “**PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 7,855,988**” and Exhibits 1001-1012 by Federal Express on the Patent Owner at the correspondence address of record for U.S. Patent No. 7,855,988:

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

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