

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MICROSOFT CORPORATION and AFFIRMED NETWORKS, INC.,
Petitioner,

v.

LEMKO CORPORATION,
Patent Owner.

IPR2023-00531
Patent 7,855,988 B2

Before HUBERT C. LORIN, NEIL T. POWELL, and
FRANCES L. IPPOLITO, *Administrative Patent Judges*.

LORIN, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

A. Background

Microsoft Corporation and Affirmed Networks, Inc. (collectively, “Petitioner”) filed a Petition (Paper 3, “Pet.”) requesting *inter partes* review of claims 1, 3–9, and 20 of U.S. Patent No. 7,855,988 B2 (Ex. 1001, “the ’988 patent”). Lemko Corporation (“Patent Owner”) filed a Preliminary Response (Paper 7, “Prelim. Resp.”).

We have jurisdiction under 35 U.S.C. § 6.

Upon consideration of the arguments and evidence presented by Petitioner, we are persuaded that Petitioner has demonstrated, under 35 U.S.C. § 314(a), a reasonable likelihood that it would prevail in showing the unpatentability of at least one challenged claim.

For the reasons stated below, we institute *inter partes* review as to challenged claims 1, 3–9, and 20 of the ’988 patent.

B. Related Proceeding

Petitioner indicates, and Patent Owner agrees, that the ’988 patent is asserted in *Lemko Corporation v. Microsoft Corporation*, No. 3:22-cv-00363 (N.D. Tex.). Pet. 26; Paper 4, 1.

C. The ’988 patent (Ex. 1001)

1. Disclosure

The ’988 patent, titled “System, Method, and Device for Routing Calls Using a Distributed Mobile Architecture,” relates to “routing communications between distributed mobile architecture (DMA) servers using DMA gateways.” Ex. 1001, code (54), 2:64–66.

The ’988 patent explains that “[c]urrent telephone systems are expensive to deploy,” for example, where “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” and “may require a minimum of ten thousand users in order to be economically viable.” Ex. 1001, 1:37–44. The ’988 patent recognizes that “[i]n many rural areas, the population is not large enough to support the installation of such a system.” *Id.* at 1:44–45.

Accordingly, the ’988 patent proposes a distributed and associative telecommunications system with the controlling logic distributed and decentralized. Ex. 1001, 6:63–65. An exemplary system is depicted in Figure 4, and is reproduced below.

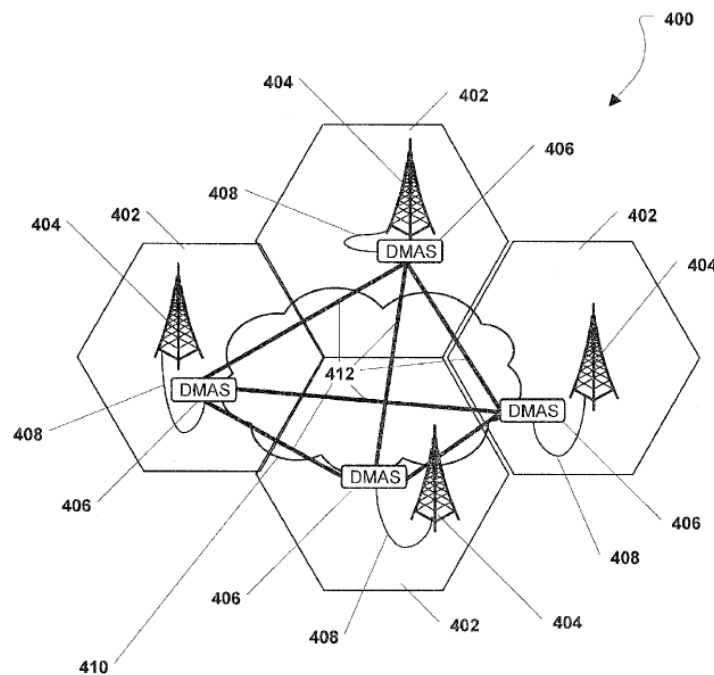


FIG. 4

Figure 4 of the ’988 patent shows a distributed and associated telecommunications system 400.

As shown in Figure 4, system 400 includes multiple coverage sites 402, each having an antenna 404 that “is connected to a transceiver belonging to a base transceiver station (BTS).” *Id.* at 6:33–37. Each antenna 404 can also be connected to a distributed mobile architecture (DMA) server 406 that “is physically and directly connected to its respective antenna 404.” *Id.* at 6:38–42. The DMA servers are connected to each other via Internet Protocol network 410 such that “there exists a peer-to-peer connection 412 between each DMA server 406 in the system 400.” *Id.* at 6:46–49.

However, “in not all cases will the DMA servers 406 be able to participate as peers in an IP network 410.” *Ex.* 1001, 9:12–14. Namely, “if one or more of the coverage sites 402 are in rural locations or other locations remote from other coverage sites 402, there may not be access to the IP network 410 in the remote coverage sites 402.” *Id.* at 9:14–17. In such cases, DMA gateways enable DMA servers to communicate with each other and enable devices in legacy networks to communicate with devices serviced by DMA servers. *Id.* at 9:17–24.

Figure 6 depicts a network with DMA gateways, and is reproduced below.

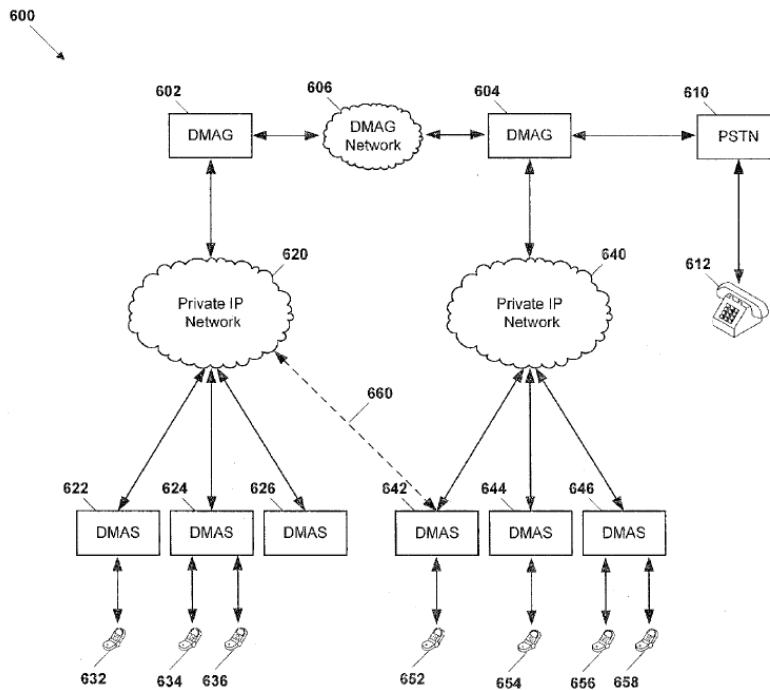


FIG. 6

Figure 6 of the '988 patent is a diagram of network 600 incorporating DMA gateways for linking DMA servers and a legacy network.

As shown in Figure 6, “a first DMA gateway . . . 602 and a second DMA gateway 604 . . . communicate with each other over a DMA gateway network 606.” Ex. 1001, 9:36–39. Second DMA gateway 604 communicates with a legacy network that may include public switched telephone network 610. *Id.* at 9:42–44. “[N]etwork 600 includes two groups of DMA servers in which the DMA servers communicate with each other over separate private IP networks,” where “the first private IP network 620 communicates with the first DMA gateway 602 and the second private IP network 640 communicates with the second DMA gateway 604.” *Id.* at 9:56–58, 10:56–59. With this arrangement, “the DMA gateways can

provide communications between wireless devices serviced by associated DMA servers and wired or wireless devices serviced by legacy networks coupled with the DMA gateways.” *Id.* at 11:6–9.

2. *Claims 1, 3–9, and 20*

Petitioner challenges claims 1, 3–9, and 20. Pet. 1. Claim 1 is the sole independent claim from which claims 3–9 and 20 depend. It is reproduced below, with the bracketing provided by Petitioner. *See id.* at 11–18.

1. [Preamble] A method, comprising:

[1b] 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;

[1c] storing the communications information in a home DMA register of the first DMA gateway;

[1d] 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

[1e] 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.

Ex. 1001, 19:30–47.

D. Asserted Reference

Petitioner relies on the following reference:

Name	Reference	Ex. No.
Flore	U.S. Patent Publication No. 2007/0021120 A1, published January 25, 2007	1005

Petitioner also relies on the Declaration of James Proctor (Ex. 1003, “Proctor Decl.”) as support for the various contentions.

Patent Owner relies on the Declaration of Todor Cooklev (Ex. 2001, “Cooklev Decl.”) as support for the various contentions.

E. Asserted Ground

Petitioner contends that claims 1, 3–9, and 20 of the ’988 patent are unpatentable under the following ground:

Ground	Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
I	1, 3–9, 20	§ 102 ¹	Flore

Pet. 2.

II. ANALYSIS

A. Principles of Law

To “demonstrate anticipation, the proponent must show ‘that the four corners of a single, prior art document describe every element of the claimed

¹ The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), amended 35 U.S.C. § 102. Because the challenged claims of the ’988 patent have an effective filing date before the effective date of the applicable AIA amendments, we refer to the pre-AIA version of 35 U.S.C. § 102 throughout this Decision.

invention.”” *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1369 (Fed. Cir. 2008) (quoting *Xerox Corp. v. 3Com Corp.*, 458 F.3d 1310, 1322 (Fed. Cir. 2006)). The prior-art document “must not only disclose all elements of the claim within the four corners of the document, but must also disclose those elements ‘arranged as in the claim.’” *Id.* (quoting *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 1548 (Fed. Cir. 1983)). Hence, a patent challenger cannot rely on portions from different, unrelated embodiments in a prior-art document to demonstrate anticipation. *See id.* at 1369, 1371.

The “disclosure of a limited number of combination possibilities” may anticipate a claim. *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 851 F.3d 1270, 1274 (Fed. Cir. 2017). Hence, a reference may anticipate “if that reference teaches that the disclosed components or functionalities may be combined and one of skill in the art would be able to implement the combination.” *Blue Calypso, LLC v. Groupon, Inc.*, 815 F.3d 1331, 1344 (Fed. Cir. 2016). The “dispositive question regarding anticipation [is] whether one skilled in the art would reasonably understand or infer from the [reference’s] teaching” that it discloses every claim element arranged as in the claim. *In re Baxter Travenol Labs.*, 952 F.2d 388, 390 (Fed. Cir. 1991); *see Dayco Prods., Inc. v. Total Containment, Inc.*, 329 F.3d 1358, 1368 (Fed. Cir. 2003).

C. Level of Ordinary Skill in the Art

Petitioner defines the person of ordinary skill in the art as follows: “As of 2008, a person of ordinary skill in the art . . . 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.” Pet. 3 (citing Ex. 1003 ¶ 56).

Petitioner also asserts that “[a]dditional graduate education . . . could substitute for professional experience, or significant experience in the field could substitute for formal education.” *Id.* Patent Owner applies Petitioner’s proposed level of ordinary skill in the art “[f]or the purpose of this preliminary response only.” Prelim. Resp. 15–16.

Petitioner’s undisputed definition of a person of ordinary skill in the art appears reasonable and is consistent with the prior art. We adopt that definition for our analysis in this decision.

Based on the complete record now before us, we adopt Petitioner’s undisputed proposal as reasonable and consistent with the prior art. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (the prior art may reflect an appropriate level of skill in the art).

D. Claim Construction

For petitions filed on or after November 13, 2018, as here, “[claims] of a patent . . . shall be construed using the same claim construction standard that would be used to construe the [claims] in a civil action under 35 U.S.C. § 282(b), including construing the [claims] in accordance with the ordinary and customary meaning of such claims as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.” 37 C.F.R. § 42.100 (2019); *see also Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–14 (Fed. Cir. 2005).

Petitioner does not submit constructions for any claim terms.

According to Petitioner, “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.” Pet. 8.

1. “DMA”

Patent Owner argues that the “Board should deny the Petition under 37 C.F.R. § 42.104(b)(3)–(4) because Petitioners did not construe the Challenged Claims or identify ‘[h]ow the construed claim is unpatentable under the statutory grounds.’” Prelim. Resp. 16 (alteration in original). Patent Owner focuses on the claim limitation “distributed mobile architecture (DMA)” which it contends Petitioner should have construed but did not. *Id.* Patent Owner asserts that:

Petitioners were obligated to take *at least* one of these paths:

6. Claim Construction: If a petitioner believes that a claim term requires an express construction, the petitioner must include a statement identifying a proposed construction of the particular term and where the intrinsic and/or extrinsic evidence supports that meaning. *On the other hand, a petitioner may include a statement that the claim terms require no express construction.*

Id. at 16–17 (quoting Patent Trial and Appeal Board Consolidated Trial Practice Guide (Nov. 2019) (“CTPG”) at 44) (emphasis added).

Patent Owner’s argument is unpersuasive because Petitioner states that 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” (Pet. 8) and thus has taken said “other” path, satisfying said asserted obligation.

That being said, Patent Owner argues that the Petition was required to “explain why Flore’s conventional, hierarchical network architecture components ‘would fall within the scope’ of the claimed DMA infrastructure.” Prelim. Resp. 18 (quoting *Samsung Elec. Co. v. Blaze Mobile, Inc.*, IPR2021-01571, Paper 15 at 14 (PTAB Apr. 4, 2022); citing 37

C.F.R § 42.104(b)(4)). According to Patent Owner, Petitioner should have “establish[ed] what DMA means to a POSITA in the context of the ’988 Patent or how the art satisfies those meanings” as a predicate to Petitioner’s analysis of the claims vis-à-vis Flore. *Id.* “There is nothing ‘distributed’ about the conventional, hierarchical networks disclosed in Flore, and Petitioners do not even attempt to explain what it is about the components of these networks that make them part of a DMA network.” *Id.* This “falls far short of its dual burdens under 37 C.F.R. § 42.104(b)(3)–(4).” *Id.*

We are unpersuaded that Petitioner was required to establish a construction for “DMA infrastructure” or “DMA network.” These phrases do not appear in the claim. Nor is it clear what these phrases are referring to. The ’988 patent specification does not disclose the phrase “DMA infrastructure” and, although the phrase “the DMA network” is disclosed, it is used to refer to the particular arrangements shown in Figures 11–13, which arrangements the claims are not limited to. Ex. 1001, claim 1, 17:2, 40.

Also, we do not see, as Patent Owner asserts, that Petitioner has “[drawn] boxes around disparate elements . . . and call[ed] them part of a *DMA infrastructure*.” Prelim. Resp. 18 (referring to Petitioner’s annotated version of Figure 1 of Flore at Pet. 11) (emphasis added). Rather, Petitioner contends that the claim elements correspond to elements described in Flore. For example, in its overview of Flore, Petitioner contends that “the RNC [Radio Network Controller] and AGW [Access Gateway] in Flore serve as the ‘**distributed mobile architecture (DMA) servers**’ of the asserted claims.” Pet. 10 (citing Ex. 1003 ¶ 80). Petitioner’s annotated version of Figure 1 of Flore illustrates this with a blue box. *Id.* at 11.

2. “DMA Server”

Patent Owner asserts that “[‘]DMA server[’] should be construed to be connected to other DMA servers through peer-to-peer [P2P] connections.” Prelim. Resp. 22. In support, Patent Owner, *inter alia*, reproduces Figure 4 and quotes 6:46–49 of the ’988 patent. *Id.* at 20–21 (citing Ex. 1001, Figure 4 (reproduced in section A.C.1.), 6:46–49 (“As illustrated in FIG. 4, each DMA server 406 is interconnected with the other DMA servers 106 via an Internet protocol network 410. As such, there exists peer-to-peer connection 412 between each DMA server 406 in the system 400.”)).

At this time, we decline to adopt a construction of the claim term “DMA server” that would limit its scope to include a P2P connection with other DMA servers.

The claims do not include a limitation calling for the “DMA server” to be connected to other DMA servers via a P2P connection. There is a single mention of “a DMA server” in the claim and its scope is not limited so as to be connected to other DMA servers via a P2P connection. *See, e.g.*, Ex. 1001, claim 1[b]: “a DMA server.”

Nor does the present record sufficiently support the view that a POSITA would have understood the claim term “DMA server” to be necessarily limited to one that it is connected to other DMA servers via a P2P connection.

Dr. Cooklev states: “I understand that each of the Challenged Claims requires a distributed mobile architecture (DMA), where individual DMA servers are connected with peer-to-peer connections. Accordingly, DMA

servers are connected by peer-to-peer connections.” Ex. 2001 ¶ 26; Prelim. Resp. 18.

Dr. Cooklev’s “understand[ing]” is based, in part, on Figure 4 of the ’988 patent. Ex. 2001 ¶ 29; Prelim. Resp. 22. However, Figure 4 “illustrates a *non-limiting, exemplary embodiment* of a distributive and associated telecommunications system generally designated 400.” Ex. 1001, 6:31–33 (emphasis added). The illustration shows interconnected DMA servers 406 via an Internet protocol 410 and “[a]s such there exists a peer-to-peer connection 412” between them. *Id.* at 6:46–49, Figure 4; Prelim. Resp. 20–21. But the ’988 patent also indicates that “in not all cases will the DMA servers 406 be able to participate as peers in an IP network 410.” Ex. 1001, 9:12–14.

Dr. Cooklev’s “understand[ing]” is also based on a “fully functional virtualized network” “where call management is distributed among the various DMAs that make up a DMA network.” Ex. 2001 ¶¶ 27–28; Prelim. Resp. 19–20. However, as previously indicated, the phrase “DMA network” does not appear in the claim, let alone a “fully functional virtualized network” “where call management is distributed among the various DMAs.” Ex. 2001 ¶¶ 27–28; Prelim. Resp. 19–20.

In explaining what the “DMA network” is referring to, Dr. Cooklev quotes the ’988 patent: “due to the interconnectivity [between DMAs] via the IP network 410” “telephony **traffic handled by [an] inoperable DMA 406 can re-routed to one of the remaining operable DMAs 406.**” Ex. 2001 ¶ 28 (quoting, with emphasis, Ex. 1001, 6:63–7:12); Prelim. Resp. 19–20. But the claimed method is not so limited. Nor does the record sufficiently show that a POSITA would have nevertheless understood the

“DMA network” of the claim *necessarily* limited to one that it is connected to other DMA servers via a P2P connection.

For these reasons, at the present time, we decline to adopt Patent Owner’s proposed construction of “DMA server” so as to limit its scope to include a P2P connection with other DMAs.

3. “*Communications Information*”

Patent Owner argues that the claim phrase “‘communications information’ must include ‘information identifying devices serviced by a home network.’” Prelim. Resp. 22 (quoting Ex. 2001 ¶ 32 (“It is my opinion that the claimed ‘communications information’ must include information identifying devices serviced by a home network.”)). In effect, Patent Owner implicitly proposes that the claim term “communications information” (1[b]–1[d], claims 6–9 and 20) be construed to include information identifying devices *served by a home network*.

To arrive at the view that the claimed “communications information” of the claim includes information identifying devices serviced by a home network, Patent Owner asserts that “the DMA gateways maintain communications information that identifies devices on the home networks that each DMA gateway services.” Prelim. Resp. 23 (citing Ex. 1001, 11:20–25). This “is provided to other DMA gateways through the exchange of register data.” *Id.* According to Patent Owner, “[t]he register data identifying ‘devices for which the networks they service are the home network’ ([Ex. 1001,] 11: 23-24) is known as home location register (HLR) information that is stored in a ‘home DMA register.’” *Id.* (citing, *inter alia*, Ex. 1001, 15:14–23, 16:63–17:12). “The HLR information includes subscriber location and user profile data, such as the user’s phone number,

which is used to determine the routing of the communication to the home network servicing the target device.” *Id.* at 24 (citing Ex. 2015; Ex. 2013, 1; Ex. 1006, 13). Patent Owner explains that “a DMA gateway accesses the HLR information stored in the home DMA register to identify the target UE serviced by a home network and routes the communication to the network serviced by the DMA gateway.” *Id.* (Ex. 2001 ¶ 35; Ex. 1001, 13:58–14:14).

A difficulty we see with this reasoning is that the claims do not require the “communications information” to identify devices on home networks that DMA gateways service. Claim 1 does not, for example, describe storing HLR information in the “home DMA register” (1[c]), only that the “communication information” which indicates “one or more devices accessible by one of a DMA server and a legacy communications network” (1[b]) and “a target device . . . to be served by the second DMA gateway” (1[d]) be stored. Nor does the record sufficiently show that a POSITA would have nevertheless understood the “communications information” to *necessarily* include information identifying devices *served by a home network*.

For the foregoing reasons, based on the present record, we decline to adopt Patent Owner’s implicit construction of “communications information” as including information identifying devices serviced by a home network.

E. Overview of the Prior Art Reference

1. Flore (Ex. 1005)

Flore relates “to techniques for performing handover between wireless communication networks using different radio access technologies.” Ex.

1005 ¶ 3. In particular, Flore observes the desirability “for a wireless user to be able to roam seamlessly between [a] new wireless network and existing wireless networks” in order “to enjoy the performance advantages of the new wireless network and the coverage benefits of the existing wireless networks.” *Id.* ¶ 7. Accordingly, Flore describes “[t]echniques for performing inter-system handover of a user equipment (UE) from a first radio access network (RAN) to a second RAN,” where “[t]he second RAN may be a Universal Terrestrial Radio Access Network (UTRAN), and the first RAN may be an Evolved UTRAN (E-UTRAN), or vice versa.” *Id.* ¶ 8.

Figure 1 of Flore depicts an exemplary deployment with a UTRAN and E-UTRAN, and is reproduced below.

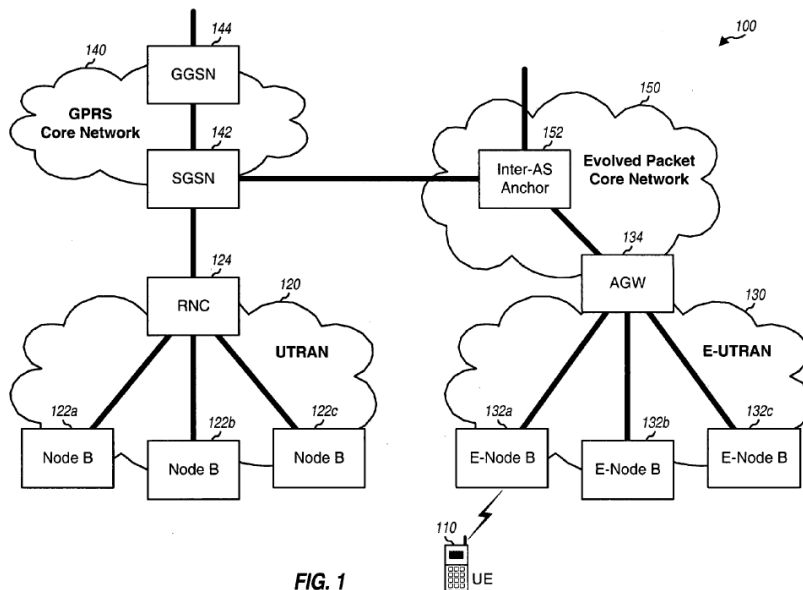


Figure 1 of Flore is an exemplary deployment 100 with a UTRAN and E-UTRAN.

As shown in Figure 1, deployment 100 includes UTRAN 120 with Node Bs coupled to radio network controllers (RNC) 124, and E-UTRAN 130 with Evolved Node Bs coupled to Access Gateway (AGW) 134. Ex. 1005 ¶¶ 26,

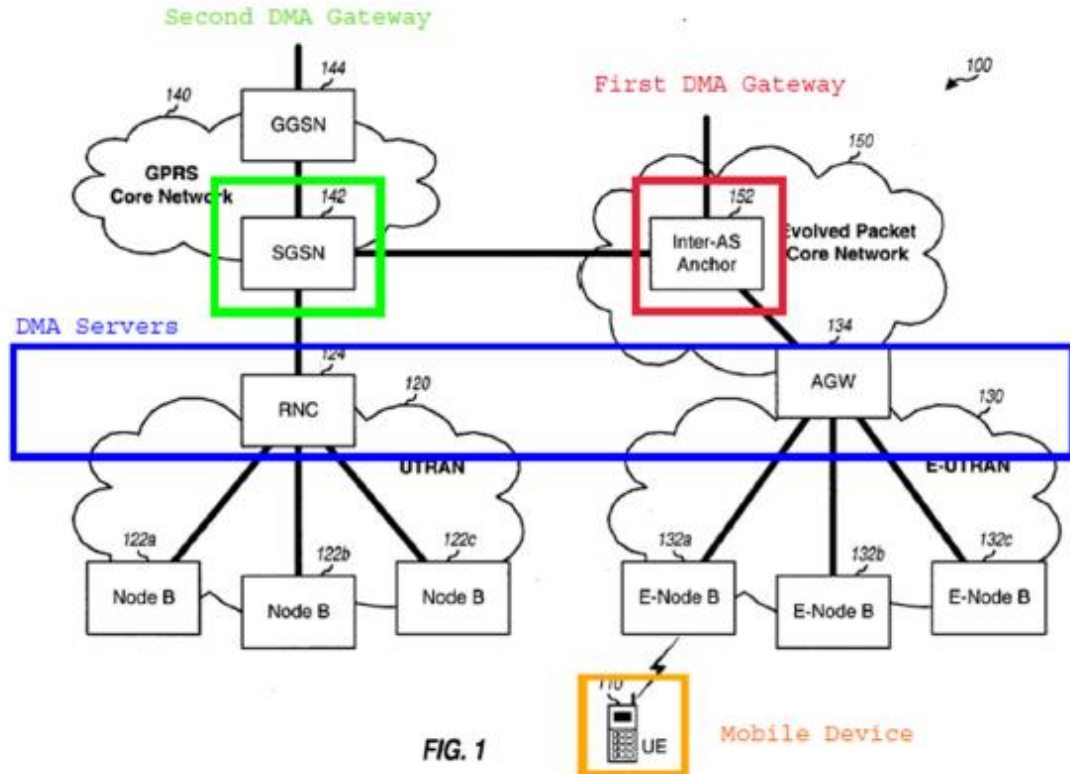
27. General Packet Radio Service (GPRS) core network 140 includes a Serving GPRS Support Node (SGSN) 142, which “interfaces with RNC 124 in UTRAN 120 and supports packet-switched services for the UEs communicating with the UTRAN.” *Id.* ¶ 28. Evolved Packet Core network 150 includes an Inter-Access System Anchor 152, which interfaces with AGW 134 in E-UTRAN 130 as well as SGSN 142 in GPRS core network 140. *Id.* ¶ 29. “Inter-AS Anchor 152 provides interoperability between E-UTRAN 130 and UTRAN 120 and GPRS core network 140.” *Id.* Accordingly, “UE 110 may be capable of communicating with UTRAN 120 and E-UTRAN 130.” *Id.* ¶ 31.

F. Ground I

Petitioner challenges claims 1, 3–9, and 20 as unpatentable under 35 U.S.C. § 102 as anticipated by Flore. Pet. 11–24.

“In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)). This burden of persuasion does not shift to Patent Owner, except in limited circumstances not present here. *See Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (discussing the burden of proof in *inter partes* review).

Petitioner provides an annotated version of Flore’s Figure 1, reproduced below, to help facilitate its contentions.



Petitioner’s annotated version of Figure 1 of Flore showing a correspondence between elements in Flores Figure 11 and elements in the claims.

Pet. 11. Petitioner contends that

- Inter-AS Anchor 152 (outlined by a red box) “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” (*id.* at 9–10 (citing Ex. 1003 ¶ 79));
- SGSN 142 (outlined by a green box) “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” (*id.* at 10–11 (citing, *inter alia*, Ex. 1003 ¶ 81));
- RNC 124 and AGW 134 (outlined by a blue box) “serve as the ‘**distributed mobile architecture (DMA) servers**’ of the asserted claims” (*id.* at 10 (citing Ex. 1003 ¶ 80));
- UE 110 (outlined in yellow) “is accessible by one or more Node Bs and ‘legacy networks 120 and 140’” (*id.* at 13).

1. *Independent claim 1*

[Preamble] “A method, comprising”

Petitioner contends that, if the preamble is limiting, Flores discloses this limitation. Pet. 11 (citing, *inter alia*, Ex. 1005, claim 7 (“[a] method comprising”)).

In our view, at this stage, given the evidence (i.e., Ex. 1005, claim 7), Petitioner sufficiently shows on this record that Flores teaches “[a] method, comprising.”

[1b] “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”

“receiving at a first distributed mobile architecture (DMA) gateway communications information for a communications network accessible by a second DMA gateway”

Petitioner contends that Flore teaches this portion of limitation 1[b]. Pet. 12–13.

Petitioner shows that Flore teaches Inter-AS Anchor 152 (the “first DMA gateway”) “receives numerous messages” during a E-UTRAN-to-UTRAN UE handover. Pet. 12 (quoting Ex. 1005, Fig. 4 at steps 1, 5, 7, 10, 11; Ex. 1003 ¶ 88). Included among the received messages is a Packet Data Protocol (PDP) context sent by AGW 134 (“DMA server”). *Id.* (citing Ex. 1005 ¶ 46; Ex. 1003 ¶ 89). According to Flore, said 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 ¶ 46 (quoted at Pet. 12).

Petitioner shows that when Inter-AS Anchor 152 (the “first DMA gateway”) receives said PDP, Inter-AS Anchor 152 responds by “updat[ing] its PDP context fields for UE 110 so that future packets for the UE are **forwarded to SGSN 142** [the ‘second DMA gateway’] instead of AGW 134 [‘DMA server’].” Pet. 12–13 (quoting Ex. 1005 ¶ 46). Mr. Proctor explains that

a POSA would have understood that the PDP context includes the address of SGSN 142 as part of its routing information. This understanding is consistent with how the '988 patent broadly describes communications information received at a DMA gateway. Ex. 1001, 16:59-62 (“as information about a communication is received, routing instructions are provided indicating through which DMA gateways the communication is to be directed from its source to its destination”).

Ex. 1003 ¶ 89.

According to Petitioner, because, *inter alia*, “the PDP context includes in its routing information [the] address of SGSN 142 [the ‘second DMA gateway’],” “the PDP context disclosed in Flore qualifies as ‘communications information for a communications network accessible by a second DMA gateway’” as this portion of limitation 1[b] requires. Pet. 13 (citing Ex. 1003 ¶¶ 89–90).

We have reviewed the evidence and find that, at this stage, Petitioner sufficiently shows on this record that Flore teaches “receiving at a first distributed mobile architecture (DMA) gateway [Inter-AS Anchor 152]

communications information [PDP context] for a communications network [UTRAN 120] accessible by a second DMA gateway [SGSN 142].”

“the communications information indicating one or more devices accessible by one of a DMA server and a legacy communications network”

Petitioner contends that Flore teaches this portion of limitation 1[b].
Pet. 13–14.

Petitioner shows that Flore’s PDP context (i.e., “communications information”) “contains information identifying the UE 110 undergoing the handover process.” Pet. 13 (citing Ex. 1005 ¶ 46; Ex. 1003 ¶ 91).

According to Mr. Proctor, this “facilitate[s] handover from the E-UTRAN 130 and Evolved Packet Network Core network 150 to the legacy UTRAN 120 and GPRS core network 140.” Ex. 1003 ¶ 91 (citing Ex. 1005 ¶ 29); Pet. 13–14. As a result, according to Mr. Proctor, the “UE 110 is accessible by one or more Node Bs and ‘legacy networks 120 and 140’.” Ex. 1003 ¶ 91 (citing Ex. 1005 ¶ 29). “A POSA would have understood that 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’,” as this portion of limitation 1[b] requires. Ex. 1003 ¶ 91; Pet. 14.

We have reviewed the evidence and find that, at this stage, Petitioner sufficiently shows on this record that Flore teaches “the communications information [PDP context] indicating one or more devices [UE 110] accessible by one of a DMA server and a legacy communications network [UTRAN 120].”

“wherein the first DMA gateway and the second DMA gateway participate in a DMA gateway communications network”

Petitioner contends that Flore teaches this portion of limitation 1[b].
Pet. 14.

Petitioner shows that Flore teaches “[t]he SGSN 142 (the ‘second DMA gateway’) and Inter-AS Anchor 152 communicate via a Gn interface.” Pet. 14 (citing Ex. 1005 ¶¶ 29, 40, 48; citing Ex. 1003 ¶ 92). Flore teaches, for example, that “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.” Ex. 1005 ¶ 29.

According to Mr. Proctor, because they communicate with each other via a Gn interface, “a POSA would have understood that the SGSN [142] (the ‘second DMA gateway’) and Inter-AS Anchor 152 (the ‘first DMA gateway’) **participate in a DMA gateway communications network.**” Ex. 1003 ¶ 92; Pet. 14.

We have reviewed the evidence and find that, at this stage, Petitioner sufficiently shows on this record that Flore teaches “wherein the first DMA gateway [Inter-AS Anchor 152] and the second DMA gateway [SGSN 142] participate in a DMA gateway communications network [via a Gn interface].”

[1c] “storing the communications information in a home DMA register of the first DMA gateway”

Petitioner contends that Flore teaches this limitation. Pet. 15 (citing, *inter alia*, Ex. 1003 ¶¶ 94–98).

Petitioner supports its contention in two ways.

First, Petitioner shows that Flore teaches that “[a]fter the handover is performed, Inter-AS Anchor 152 acts as a GGSN.” Pet. 15 (citing Ex. 1003 ¶ 95; Ex. 1005 ¶¶ 39, 46, 50).

Petitioner explains that when Inter-AS Anchor 152 acts as a GGSN, Inter-AS Anchor 152 “necessarily contains a location register” which is “‘a home DMA register’” of the first DMA gateway [Inter-AS Anchor 152]” as claimed. Pet. 15 (citing Ex. 1003 ¶ 96 (“[a] POSA would have understood that a GGSN necessarily contains a location register”); Ex. 1006, 13–14).

Mr. Proctor shows that Flore teaches that “[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. 1003 ¶ 96 (quoting Ex. 1005 ¶ 30; citing Ex. 1006); Pet. 15–16. In that document (Ex. 1006), Mr. Proctor explains, GGSN is described as having a location register function that “stores subscription information and routeing [sic] 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.” Ex. 1003 ¶ 96; Ex. 1006, 14. “Thus a 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.’” Ex. 1003 ¶ 96 (alterations in original). According to Mr. Proctor, given that Flores teaches “Inter-AS Anchor 152 emulates a GGSN, a POSA would have understood that [Inter-AS Anchor 152] also includes a location register function [like a GGSN].” *Id.* “This location register function is a ‘home DMA register.’” *Id.*

Second, relying on Mr. Proctor’s testimony, Petitioner asserts that “[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’).” Pet. 16 (citing Ex. 1003 ¶ 97). Mr. Proctor explains that “Inter-AS Anchor 152 necessarily has a list of entries for the UEs it serves, such as UE 110.” Ex. 1003 ¶ 97. “[B]y 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.’” *Id.*; Pet. 16–17.

We have reviewed the evidence and find that, at this stage, Petitioner sufficiently shows on this record that Flore teaches “storing the communications information [PDP context] in a home DMA register of the first DMA gateway [Inter-AS Anchor 152 (e.g., when acting as a GGSM)].”

[1d] “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”

Petitioner contends that Flore teaches this limitation. Pet. 17 (citing, *inter alia*, Ex. 1003 ¶¶ 99–101).

Petitioner shows that Flore teaches 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.**” Pet. 17 (quoting Ex. 1005 ¶ 46) (emphasis Petitioner’s).

According to Mr. Proctor, based on said teaching, “a POSA would have understood that Flore discloses” “receiving packets (i.e., a communication) at Inter-AS Anchor 152 (i.e., [‘]first DMA gateway[’]) that are addressed to the IP address of UE 110 as their destination address (i.e., for a target device indicated by the communication information).” Ex. 1003

¶¶ 101, 100 (quoting Ex. 1005 ¶ 60 (“The Inter-AS Anchor may store PDP context for the UE and forward packets for the UE in accordance with the PDP context.”)); Pet. 17.

We have reviewed the evidence and find that, at this stage, Petitioner sufficiently shows on this record that Flore teaches “receiving a communication at the first DMA gateway [Inter-AS Anchor 152] for a target device [UE 110] indicated by the communications information [PDP context] to be served by the second DMA gateway [SGSN 142].”

[1e] “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”

Petitioner contends that Flore teaches this limitation. Pet. 17 (citing, *inter alia*, Ex. 1003 ¶¶ 102–105).

Petitioner shows that Flore teaches “the Inter-AS Anchor 152 routes packets addressed to UE 110 to SGSN 142 after handover, in accordance with the updated PDP context.” Pet. 17–18 (citing Ex. 1005 ¶¶ 46, 60, Figure 8; Ex. 1003 ¶ 103). Flore discloses, for example, that “[t]he 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).” Ex. 1005 ¶ 60; *see also id.* at ¶ 46 (“After the PDP context is updated, Inter-AS Anchor 152 acts as a GGSN to SGSN 142.”); Pet. 18.

Petitioner also shows that Flore teaches 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.”” Pet. 18 (quoting Ex. 1005 ¶ 46, also citing ¶ 60) (emphasis Petitioner’s).

Based on said teachings, Mr. Proctor testifies that “a POSA would have understood that Flore discloses” “routing packets by ‘relaying the communication from the first DMA gateway to the second DMA gateway via the DMA gateway communications network’” as limitation 1[e] requires. Ex. 1003 ¶¶ 105, 104; Pet. 18.

We have reviewed the evidence and find that, at this stage, Petitioner sufficiently shows on this record that Flore teaches “routing the communication from the first DMA gateway [Inter-AS Anchor 152] to the target device [UE 110] by relaying the communication from the first DMA gateway [Inter-AS Anchor 152] to the second DMA gateway [SGSN 142] via the DMA gateway communications network [via a Gn interface].”

Given that we find, at this stage, that Petitioner sufficiently shows that Flore teaches every limitation in the claim, on this record, Petitioner has demonstrated a reasonable likelihood of prevailing in demonstrating that claim 1 of the ’988 patent is anticipated by Flore.

2. Patent Owner’s Arguments

a. “Flore Does Not Disclose a ‘DMA server’”

Patent Owner argues that Flore does not disclose a “DMA server” (1[b]). Prelim. Resp. 26–28.

Patent Owner’s argument rests on a construction of the claim term “DMA server” that would limit its scope to include a P2P connection with other DMA servers. *See, e.g.*, Prelim. Resp. 26 (“a DMA server is connected to other DMA servers by peer-to-peer connections, a critical component of Lemko’s claimed distributed mobile architecture network. Flore does not disclose any node that corresponds to a DMA server, as it is

based on a conventional, hierarchical network architecture that lacks peer-to-peer connections.”).

For the reasons discussed in section II.D.2., we decline to adopt said construction at this time. Accordingly, because this argument is based on a construction of “DMA server” that we have not adopted, it does not undermine Petitioner’s position at this stage.

b. “Flore Does Not Disclose a ‘Communications Network’ That is ‘Accessible by a Second DMA Gateway’”

Patent Owner argues that Flore does not disclose a “a communications network accessible by a second DMA gateway” (1[b]). Prelim. Resp. 28–32.

Patent Owner repeats that “[w]ithin the communications network, the [claimed] DMA servers are connected by a peer-to-peer DMA” to argue that the claimed “communications network” distinguishes it from that which Flore discloses. Prelim. Resp. 29.

For the reasons discussed in section II.D.2., we decline to adopt, at this time, a construction of the claim term “DMA server” that would limit its scope to include a P2P connection with other DMA servers. Because this argument is based on a construction of “DMA server” that we have not adopted, it does not undermine Petitioner’s position at this stage.

Patent Owner also argues that Flore’s UTRAN 120, which Petitioner relies upon as teaching a “legacy communications network,” “cannot be a DMA network” because “[t]he claimed communications network is one where one more devices are accessible by DMA servers (of a DMA server

network) *and* a legacy communications network, allowing communication across these different networks.” Prelim. Resp. 30; Pet. 14.

This argument does not undermine Petitioner’s position. The claim does not call for a “DMA network” where devices are accessible by both DMA servers *and* a legacy communications network or only DMA servers. Rather, the claim recites “a communications information indicating one or more devices accessible by *one of* a DMA server and a legacy communications network;” that is, it is sufficient that the device is accessible by a legacy communications network, such as UTRAN 120.

c. “Flore Does Not Disclose a ‘DMA Gateway Communications Network’”

Patent Owner argues that Flore does not disclose a “DMA gateway communications network” (1[b], 1[e]). Prelim. Resp. 32–36.

Patent Owner characterizes Petitioner’s position as: “Flore’s Gn interface is a ‘DMA gateway communications network.’” Prelim. Resp. 33 (citing Pet. 1). However, what Petitioner says is that “[t]he SGSN 142 (the ‘second DMA gateway’) and Inter-AS Anchor 152 [the ‘first DMA gateway’] communicate *via* a Gn interface.” Pet. 14 (emphasis added). In support, Petitioner quotes Flore, *inter alia*: “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*.” Ex. 1005 ¶ 40 (emphasis added). Since Petitioner has not contended that a Gn interface is a network, Patent Owner’s argument that “Flore’s conventional Gn interface is not itself a network, let alone a DMA gateway communications network” does not undermine Petitioner’s position. Prelim. Resp. 33 (citing Ex. 2001 ¶ 76).

Patent Owner also argues that “the conventional GN interface connects legacy networks, it does not connect a first DMA gateway for a DMA server network to a second DMA gateway.” Prelim. Resp. 35 (citing Ex. 2001 ¶¶ 77–78). According to Patent Owner, “the GN interface connect[s] SGSN 142 of GPRS core network 140 (e.g., 2G network) to Inter-AS Anchor of Evolved Packet core network 150 (e.g., 4G network).” *Id.* (discussing what Flore Figure 3D depicts). Patent Owner indicates that “Petitioners concede that the GPRS core network 140 corresponds to a ‘legacy communications network.’” *Id.* at 34 (citing, *inter alia*, Pet. 13). By contrast, Patent Owner argues, “the Challenged Claims distinguish a ‘legacy communications network’ from that of a DMA server network.” *Id.*

The difficulty with this argument is the breadth of the claim. We do not see that the claim calls for a “DMA server network” limited to connecting DMA servers. As we stated in the prior section, the claim recites “communications information indicating one or more devices accessible by *one of* a DMA server and a legacy communications network;” that is, it is sufficient for the device to be accessible by a legacy communications network, such as UTRAN 120. It follows that a “legacy communications network” is not excluded from the scope of the claim term “DMA gateway communications network” [1(b), 1(e)]. For this reason, Patent Owner’s argument does not undermine Petitioner’s position.

d. “Flore Does Not Disclose Communications Information Indicating a Target Device That is Served by the Second DMA Gateway”

Patent Owner argues that Flore does not disclose “communications information” indicating a target device “to be served by the second DMA gateway” (1[d]). Prelim. Resp. 36–38.

Patent Owner contends that, in contrast to Flore, “[t]he network of the Challenged Claims of the ’988 Patent depends on DMA gateway’s ‘communication information’ indicating a target device of a home network that is served by the second DMA gateway under the correct construction.” Prelim. Resp. 36. According to Patent Owner, Petitioner’s reliance on Flore’s disclosure of a PDP context to meet the claimed “communications information” is misplaced because “a PDP context field is not the claimed ‘communications information.’” *Id.* at 37; Pet. 13 (“the PDP context disclosed in Flore qualifies as ‘communications information for a communications network accessible by a second DMA gateway’”; citing Ex. 1003 ¶ 90). This is so, according to Patent Owner, because “[a] PDP context field is used to **offer a cellular communication connection** over which the UE can subsequently exchange IP packets with the network rather than identify devices served by a home network.” Prelim. Resp. 37 (citing Ex. 2016, 1; Ex. 2017, 1; Ex. 2001 ¶¶ 81–82); *see also id.* at 38 (“the PDP context does not and cannot be used to identify devices for which the networks serviced by the DMA gateway is the home network.”).

For the reasons discussed in section II.A.3, based on the present record, we decline to adopt Patent Owner’s implicit construction of “communications information” as including information identifying devices

served by a home network. Given this, we are unpersuaded by Patent Owner’s argument at this time.

e. “Flore Does Not Disclose ‘a Home DMA Register of the First DMA Gateway’”

Patent Owner argues that Flore does not disclose “a home DMA register of the first DMA gateway” (1[c]). Prelim. Resp. 38–40.

Patent Owner contends that, in contrast to Flore, the ’988 Patent describes the “home DMA register” as storing “communication information,” “which includes information identifying devices serviced by a home network.” Prelim. Resp. 38. Since we declined to adopt Patent Owner’s implicit construction of the claim phrase “communications information” as including information identifying devices serviced by a home network at this time, for the reasons discussed in section II.A.3. Patent Owner’s contention does not undermine Petitioner’s position at this stage.

Similarly, Patent Owner argues that “Petitioners incorrectly contend that Flore’s GGSN location register is a ‘home DMA register.’” Prelim. Resp. 39 (citing Pet. 15–16). “‘PDP context fields’ are stored in the GGSN location register which . . . is separate and distinct from a home DMA/HLR entity.” *Id.* at 40 (citing Ex. 1006, 13–14). According to Patent Owner, “a POSITA would not find the reference to PDP context fields to disclose a ‘home DMA register.’” *Id.* (citing Ex. 2001 ¶ 88). This is so, according to Patent Owner, because the “home DMA register” stores “communication information,” which includes information identifying devices serviced by a home network. *Id.* at 38. “This corresponds to the functionality provided by a home location register (HLR) in a conventional network, as the ’988 Patent

explains, although, in the network of the '988 Patent, the information is stored at a DMA server or DMA gateway (unlike in conventional networks).” *Id.* (citing Ex. 1001, 15:14–17 (“The communication information, in one embodiment, 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.”); Ex. 2001 ¶¶ 85–86).

We stated in section II.A.3,

. . . that the claims do not require the “communications information” to identify devices on home networks that DMA gateways service. Claim 1 does not, for example, describe storing HLR information in the “home DMA register” (1[c]), only that the “communication information” to be stored indicates “one or more devices accessible by one of a DMA server and a legacy communications network” (1[b]) and “a target device . . . to be served by the second DMA gateway” (1[d]) is stored. Nor does the record sufficiently show that a POSITA would have nevertheless understood the “communications information” to necessarily include information identifying devices serviced by a home network as broadly presented in the claim.

As a result, based on the present record, we declined to adopt Patent Owner’s implicit construction of “communications information” as including information identifying devices serviced by a home network. This, in turn, means Patent Owner’s argument that Petitioner incorrectly contends that Flore’s GGSN location register is a ‘home DMA register’ because said register does not correspond to the functionality provided by a HLR is not one that undermines Petitioner’s position at this stage.

We have considered Patent Owner’s arguments but do not find, at this stage, that they undermine our conclusion that Petitioner sufficiently shows

that Flore teaches every limitation in the claim, and that on this record Petitioner has demonstrated a reasonable likelihood of prevailing in demonstrating that claim 1 of the '988 patent is anticipated by Flore.

3. Claims 3–9 and 20

Petitioner contends that dependent claims 3–9 and 20 are anticipated by Flore. Pet. 19–24.

Along with our reasons discussed with respect to the challenge of claim 1, we are persuaded that the evidence relied upon by Petitioner sufficiently supports Petitioner's contentions regarding claims 3–9 and 20.

Patent Owner does not provide any specific arguments challenging Petitioner's patentability position as to these claims. See Prelim. Resp. 41–50.

On this record, Petitioner has demonstrated a reasonable likelihood of prevailing in demonstrating that claims 3–9 and 20 of the '988 patent are anticipated by Flore.

III. CONCLUSION

For the foregoing reasons, we determine that Petitioner has demonstrated a reasonable likelihood that it would prevail in showing the unpatentability of at least one of claims 1, 3–9, and 20 of the '988 patent. Accordingly, we grant the Petition and institute an *inter partes* review of the '988 patent.

IV. ORDER

It is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a), *inter partes* review of claims 1, 3–9, and 20 of the '988 patent is instituted with respect to the ground set forth in the Petition; and

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4(b), *inter partes* review of claims 1, 3–9, and 20 of the '988 patent shall commence on the entry date of this Order, and notice is hereby given of the institution of *inter partes* review.

FOR PETITIONER:

Robert N. Kang
Barry K. Shelton
WINSTON & STRAWN LLP
rkang@winston.com
bshelton@winston.com

FOR PATENT OWNER:

James Hannah
Aaron M. Frankel
Jeffrey H. Price
Jenna Fuller
Jeffrey Eng
KRAMER LEVIN NAFTALIS & FRANKEL LLP
jhannah@kramerlevin.com
afrankel@kramerlevin.com
jprice@kramerlevin.com
jfuller@kramerlevin.com
jeng@kramerlevin.com