

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MICROSOFT CORPORATION and AT&T SERVICES, INC.,
Petitioners,

v.

LEMKO CORPORATION,
Patent Owner.

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

PATENT OWNER'S PRELIMINARY RESPONSE

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PATENT OWNER'S EXHIBIT LIST

Exhibit	Description
2001	Decision Denying Institution of <i>Inter Partes</i> Review, <i>Microsoft Corp. v. Lemko Corp.</i> , IPR2023-00530, Paper 8 (P.T.A.B. Sep. 25, 2023)
2002	Petition for <i>Inter Partes</i> Review, <i>Microsoft Corp. v. Lemko Corp.</i> , IPR2023-00530, Paper 3 (P.T.A.B. Feb. 14, 2023)
2003	Patent Owner's Preliminary Response, <i>Microsoft Corp. v. Lemko Corp.</i> , IPR2023-00530, Paper 7 (P.T.A.B. June 30, 2023)
2004	Excerpts from the Complaint for Patent Infringement, <i>Lemko Corp. v. AT&T Inc.</i> , No. 25-cv-00305-JRG, Dkt. No. 1 (E.D. Tex. Mar. 17, 2025)
2005	Email between Lemko and AT&T, dated September 26, 2013
2006	Email between Lemko and AT&T, dated September 13, 2013
2007	Email between Lemko and AT&T, dated October 14, 2013 (Exhibit 23 to Complaint for Patent Infringement, <i>Lemko Corp. v. AT&T Inc.</i> , No. 25-cv-00305-JRG, Dkt. No. 1 (E.D. Tex. Mar. 17, 2025))
2008	Network Functions Virtualisation – Introductory White Paper, dated Oct. 22-24, 2012, available at https://portal.etsi.org/NFV/NFV_White_Paper.pdf
2009	Dyton, J., “Lemko solutions keep connectivity alive regardless of the circumstances,” dated July 16, 2020, available at https://connectedremag.com/das-in-building-wireless/wireless/lemko-solutions-keep-connectivity-alive-regardless-of-the-circumstances/
2010	Declaration of Todor Cooklev, Ph.D., <i>Microsoft Corp. v. Lemko Corp.</i> , IPR2023-00530, Ex. 2001, filed June 30, 2023

Exhibit	Description
2011	Lemko.com - Lemko's Fundamental Architecture, last visited June 5, 2023, available at https://www.lemkocorp.com/solutions/
2012	The Wayback Machine – InterWAVE, GSM/GPRS Products, captured Dec. 4, 2003, available at https://web.archive.org/web/20031204132701/http://iwv.com.gsm_products.html#nib
2013	“AT&T Vision Alignment Challenge Technology Survey,” AT&T Domain 2.0 Vision White Paper, dated Nov. 13, 2013
2014	Declaration of Shaowei Pan in Support of Patent Owner's Response, <i>Microsoft Corp. v. Lemko Corp.</i> , IPR2023-00529, Ex. 2023, filed December 21, 2023
2015	Order, <i>Cal. Inst. of Tech. v. Samsung Elecs. Co.</i> , Case No. 2:21-cv-00446-JRG, Dkt. No. 108 (E.D. Tex. Jan. 20, 2023)
2016	Order, <i>Resonant Sys. Inc., v. Sony Group Corp.</i> , Case No. 2:22-cv-00424-JRG, Dkt. No. 84 (E.D. Tex. July 9, 2024)
2017	Docket Navigator – Motion to Stay Pending Inter Partes Review search results, Judge Rodney Gilstrap, dated September 3, 2025
2018	First Amended Docket Control Order, <i>Lemko Corp. v. AT&T Inc.</i> , Case No. 2:25-cv-00305-JRG, Dkt. No. 46 (E.D. Tex. Aug. 4, 2025)
2019	Excerpt from U.S. District Court – National Judicial Caseload Profile Federal for the Eastern District of Texas, dated Sept. 30, 2019 through Sept. 30, 2024
2020	Appendix D-2 to Lemko's Disclosure of Asserted Claims and Infringement Contentions, <i>Lemko Corp. v. AT&T Inc.</i> , served on July 23, 2025

Exhibit	Description
2021	Qazi, Zafar, et al., “A Framework to Quantify the Benefits of Network Functions Virtualization in Cellular Networks,” dated June 21, 2014
2022	Savic, Zeljko, “LTE Design and Deployment Strategies,” Cisco, dated 2011
2023	Cisco.com, “Cisco PGW Packet Data Network Gateway,” last visited July 28, 2025, available at https://www.cisco.com/c/en/us/products/wireless/pgw-packet-data-network-gateway/index.html
2024	“The Evolution of Mobile Technologies: 1G, 2G, 3G, 4G LTE,” Qualcomm, dated June 2014
2025	Cisco.com, “ASR 5000 Installation Guide,” dated March 29, 2016, available at https://www.cisco.com/c/en/us/td/docs/wireless/asr_5000/platform/Install-ASR5K/b_ASR5K_Install/b_ASR5K_Install_chapter_0101.html
2026	U.S. Patent 8,184,603 (“Waylett”)
2027	Declaration of Todor Cooklev, Ph.D., <i>Microsoft Corp. v. Lemko Corp.</i> , IPR2023-00531, Ex. 2001, filed June 30, 2023
2028	1NCE webpage – “What is a Mobile Switching Center and How Does a MSC Function?” dated July 28, 2025, available at https://www.1nce.com/en-eu/resources/iot-knowledge-base/how-is-mobile-switching-center
2029	LTE-Advanced: A Practical Systems Approach to Understanding 3GPP LTE Releases 10 and 11 Radio Access Technologies by S. Ahmadi, Elsevier Science & Technology, 2014

Exhibit	Description
2030	Networklessons.com, Hardware – Application Specific Integrated Circuit (ASIC), available at https://notes.networklessons.com/hardware-application-specific-integrated-circuit-asic , dated July 30, 2025

I. INTRODUCTION

Lemko's U.S. Patent No. 8,310,990 is part of its series of inventions that revolutionized the way cellular networks operated. Before Lemko's inventions, cellular calls were carried from cell towers to centralized, regional call centers over highly expensive, custom hardware. Lemko conceived of a way to manage and route cellular calls using a virtualized network run primarily through software-based applications rather than physical hardware appliances, which has been instrumental in extending cellular communications networks into rural areas that lack the subscriber-base to economically justify conventional cellular network infrastructure.

The Board should deny institution because Flore, the sole reference at issue, does not anticipate the computer-readable storage medium limitation that carries out the claimed call routing steps. In denying a previous IPR filed by Petitioner Microsoft against a different Lemko patent, the Board determined that conventional hardware-based cellular network appliances like Flore do not satisfy the computer-readable storage medium limitation. Petitioner Microsoft fails to acknowledge this prior adverse determination against it, let alone explain why the Board should reach a different result here on the same issue. Without satisfying the computer-readable storage medium limitation, Flore cannot anticipate any of the Challenged Claims. As a result, the Board should deny institution.

II. STATEMENT OF THE FACTS

A. Overview of Conventional Cellular Networks

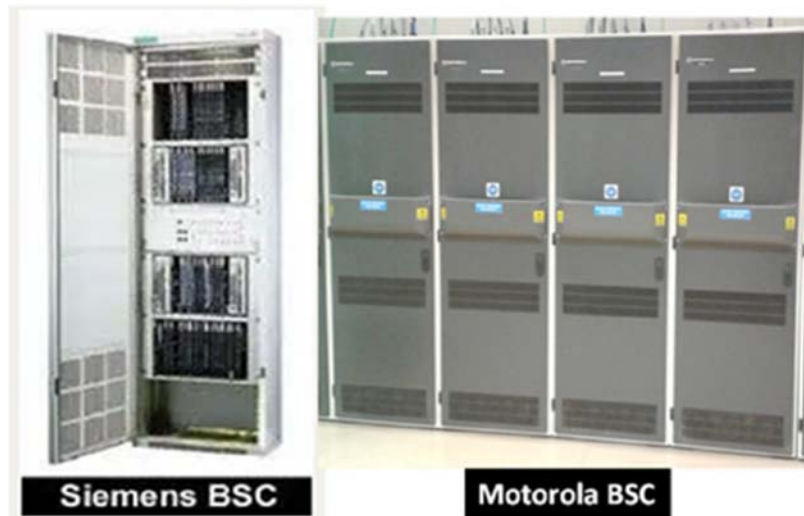
1. Conventional Cellular Networks Are Built on Hardware-Based Network Appliances

Before Lemko's groundbreaking innovations, conventional cellular networks had a centralized, hierarchical structure. All cellular calls had to be carried from cell towers to regional call centers, known as Master Switching Centers ("MSCs"), over expensive backhaul connections. These MSCs were housed at large Digital Signal Processor ("DSP") server centers, such as the one illustrated below:



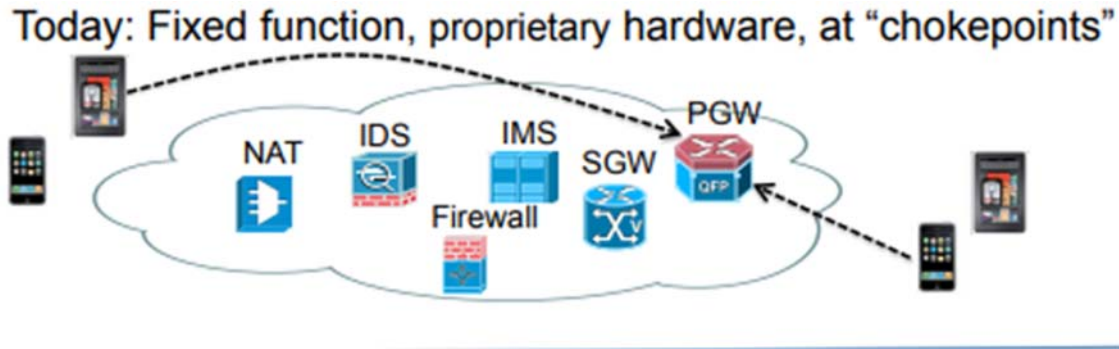
Ex. 2010, ¶ 38. The MSCs provided the call processing functionality for the network (including switching functions, call set-up, call termination, and routing) and relied on stacks of special-purpose DSP equipment servers. *Id.* Conventional cellular networks also required a Base Station Controller (BSC, shown below) connected

between a Base Transceiver Station (BTS), commonly known as a cell tower and the MSC through backhaul connections. *Id.*, ¶¶ 37, 39.



Id., ¶ 39.

The then-conventional network architecture thus depended on hardware-based appliances, such as MSCs and BSCs. '990 Patent at 1:45-58. The figure below, from an article depicting the then-conventional architecture, shows the network deployment of “expensive and inflexible hardware appliances which include both cellular-specific functions such as Serving and Packet Data Networks Gateway (S/P-GW”) . . . as well as more traditional network appliances.” Ex. 2021 at 1.



Id. at 1 (discussing the conventional 3G and 4G network communications).

2. The Industry Identified Problems with Conventional Networks

Industry members and network operators published a whitepaper in 2012 highlighting many of these long-felt problems. See Ex. 2008. Petitioner AT&T was one of the primary contributors to this whitepaper, which was entitled “Network Functions Virtualization” (the “AT&T’s NFV Paper”). AT&T’s NFV Paper proposed a network virtualization approach to solve these problems:

It involves the implementation of network functions in software that can run on a range of industry standard server hardware, and that can be moved to, or instantiated in, various locations in the network as required, without the need for installation of new equipment.

Ex. 2008 at 5; Ex. 2010, ¶¶ 43-44.

AT&T’s NFV Paper distinguished its proposed, software-based approach against the “Classical Network Appliance Approach” (the “Classical Approach”). Ex. 2008 at 5. AT&T’s NFV Paper outlined several key problems of the Classical

Approach, including that it (1) depended on “fragmented non-commodity hardware,” (2) required physical installation of appliances at every site, and (3) its hardware requirements made the networks rigid and inflexible, which constrained innovation. *Id.* AT&T's NFV Paper highlighted the distinction between the Classical Approach and its proposed Network Virtualization Approach as shown below.

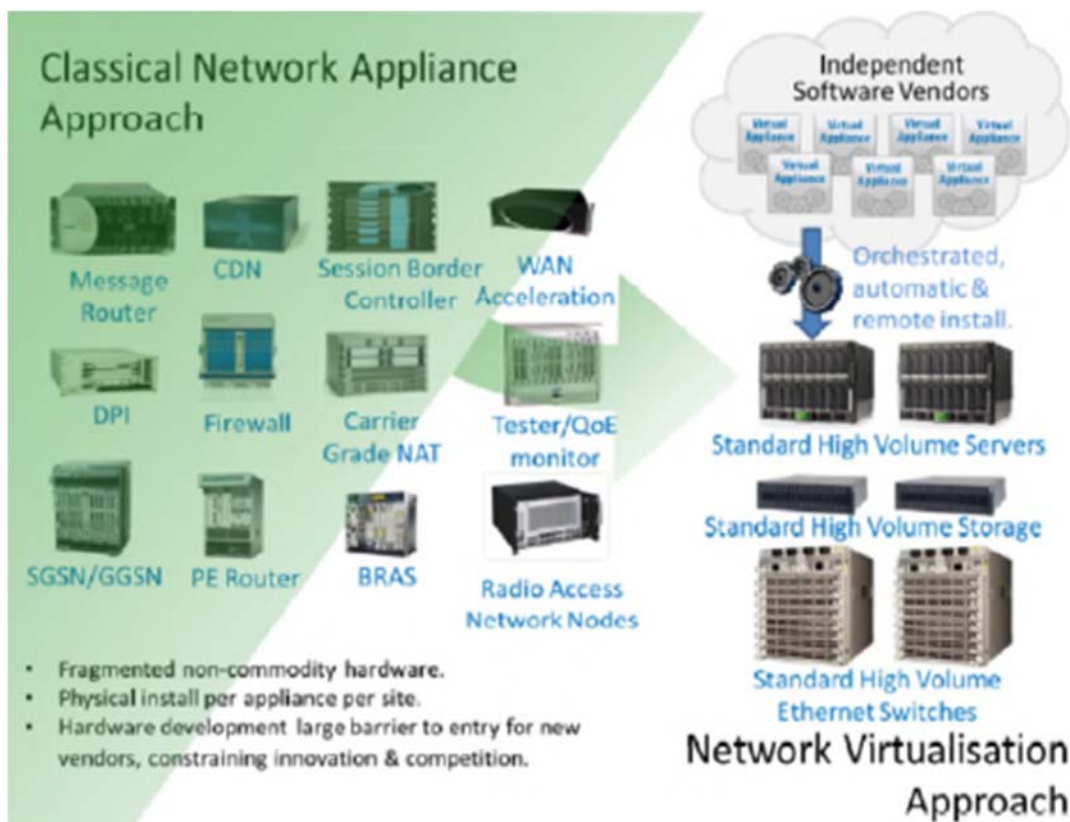


Figure 1: Vision for Network Functions Virtualisation

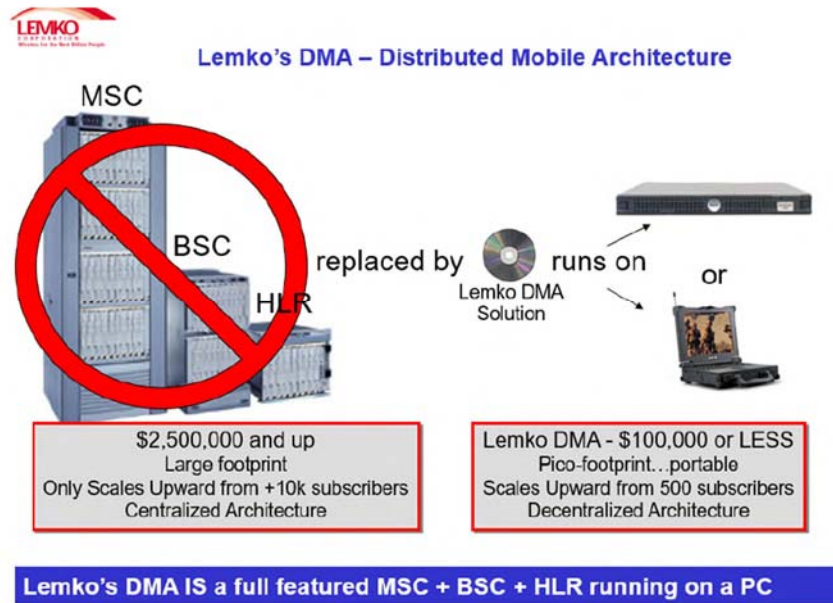
Ex. 2008 at 5.

AT&T's NFV Paper's software-based solutions belatedly mirrored Lemko's inventions from years earlier that were the subject of its '990 Patent. After the publication of AT&T's NFV Paper, Lemko reached out to AT&T's Margaret Chiosi

to inform her of their patented NFV solution. Ms. Chiosi and Lemko then set up a series of meetings, during which she reviewed Lemko's patented solution and praised it as a "radical design" that AT&T "should look at." Ex. 2005 at 1. AT&T directed several engineers to coordinate with Lemko's NFV inventions, viewing them as an opportunity for a more than seven-fold reduction in costs. *Id.* AT&T found Lemko's software-based network functionality to be a "unique differentiator." Ex. 2006 at 1-2.

B. Lemko's Innovative and Patented DMA Technology Solved the Industry's Long-Felt Need

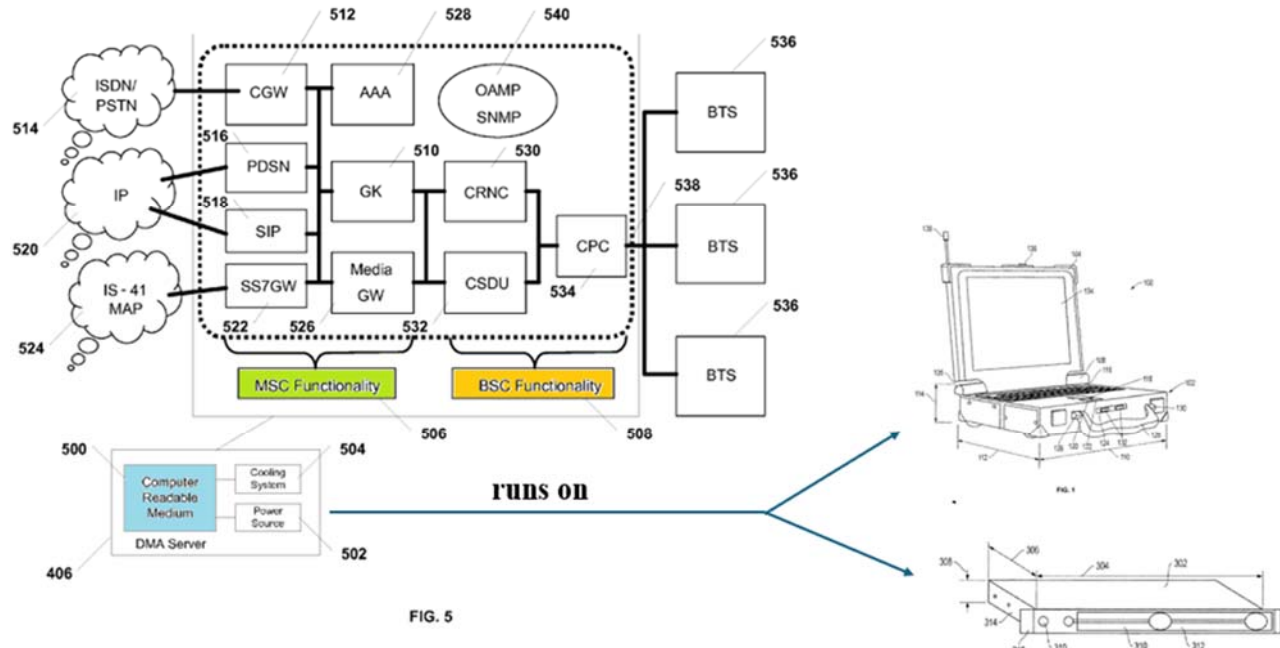
Years before AT&T's NFV White Paper and before that term was coined, Lemko developed Network Function Virtualization. Unlike in the Classical Approach, which depended on special-purpose hardware, Lemko's NFV approach implements network functionality (such as MSC and BSC functionality) on a computer readable medium that may be run on generic, common off-the-shelf ("COTS") servers:



Ex. 2010, ¶ 48 (Lemko marketing document showing its NFV solution).

The '990 Patent describes and claims Lemko's NFV solution as depending on **"computer-readable storage medium"** that runs on a distributed mobile architecture ("DMA") server, implementing network functionality in software. '990 Patent at 8:17-20 (emphasis added); *see also id.* at 8:4-20, Figs. 2-3, 5 (describing and showing DMA servers and computer-readable media running on the servers). The specification explains that the **computer-readable storage medium** contains software encoding various network functions, including **MSC**, **BSC**, **HLR**¹ and **gateway** functions, as shown in the following figure:

¹ A home location register ("HLR") is a database where cellular carriers store subscriber information, including as the subscriber's mobile number, authentication



Id. at Figs. 1, 3, 5 (showing MSC and BSC functionality implemented on computer readable medium) (annotated).

As claimed, a DMA gateway's processor executes instructions stored on a computer-readable storage medium to "receive . . . communications information associated with a communications network," which is used to verify the network the destination device is in, and "route the communication to the destination device" located in a different network. '990 Patent at Claim 1, 15:65-16:7 (describing that communications information is used to verify the network); Ex. 2028 at 3, 4

information, and the services they have subscribed to. Ex. 2027, ¶ 56 n.3. The HLR plays an important role in routing calls and messages within a network and managing customer mobility and authentication. *Id.*

(describing MSC functionality as including call routing and switching functions and uses home location register information to verify where the end device is located for call routing). Thus, the DMA gateway executes software to bridge communications between devices served by one DMA Network and devices served by another DMA Network or one or more legacy communication networks, such as the 3G cellular network or the public switched telephone network (“PSTN”):

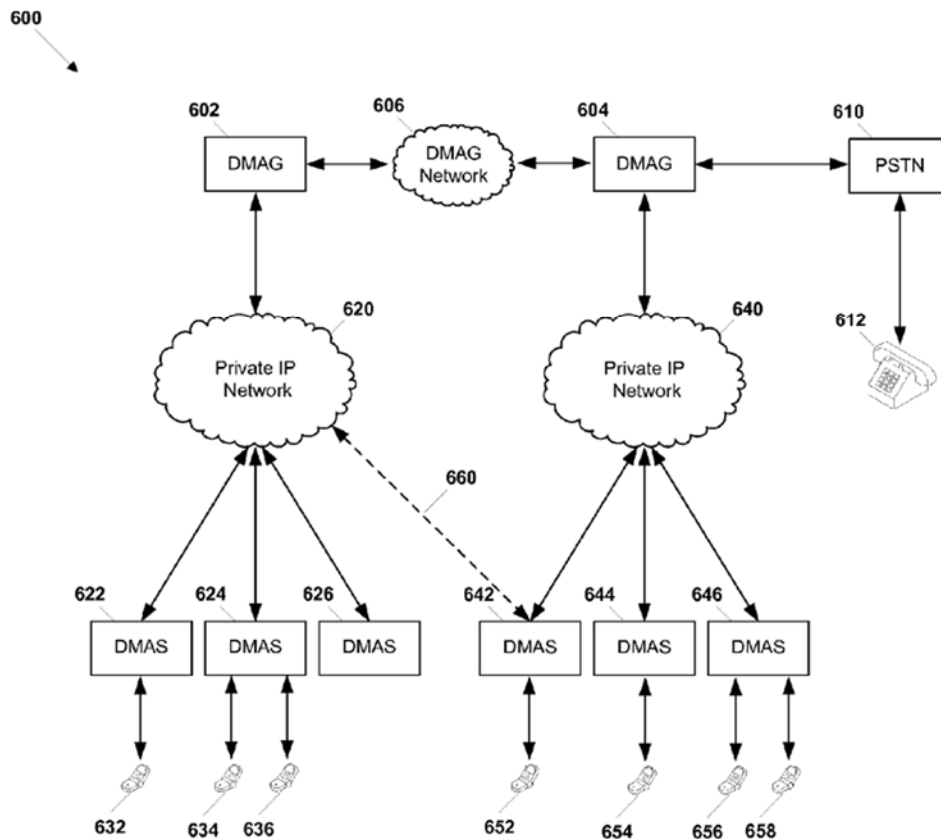


FIG. 6

'990 Patent, FIG. 6 (illustrating the routing of a call from a device on one DMA network to a device on another network using DMA gateways).

C. Flore's 3G and 4G Networks are Conventional Cellular Networks

Flore (Ex. 1005) does not disclose the use of a computer-readable storage medium running on a DMA server. Instead, it is limited to techniques for performing inter-system handovers between different generations of conventional wireless communications networks, such as managing handovers between the 3G cellular network ("UTRAN") and the 4G cellular network ("E-UTRAN"). Flore at Abstract, [0003], [0030].

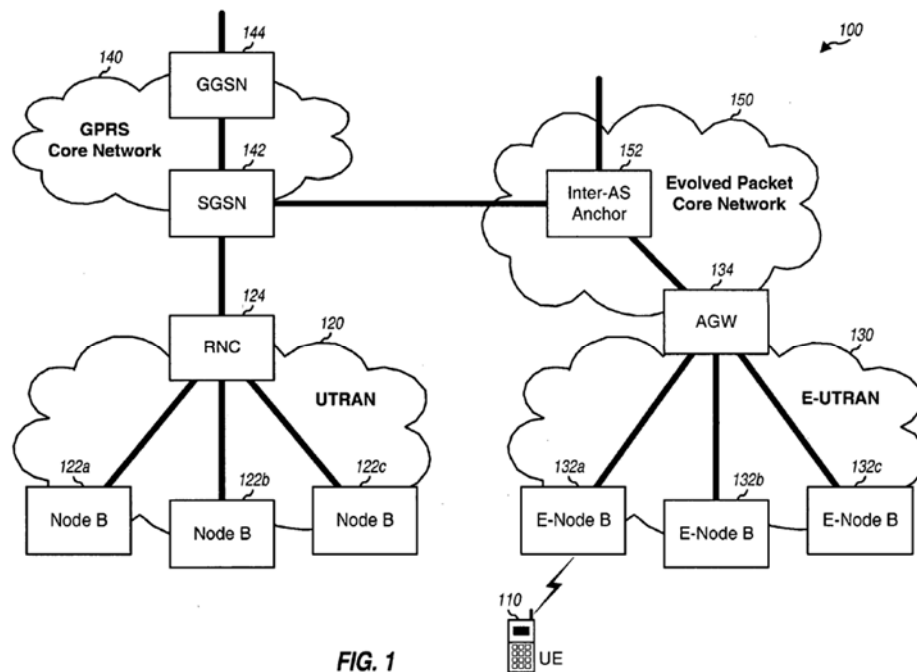
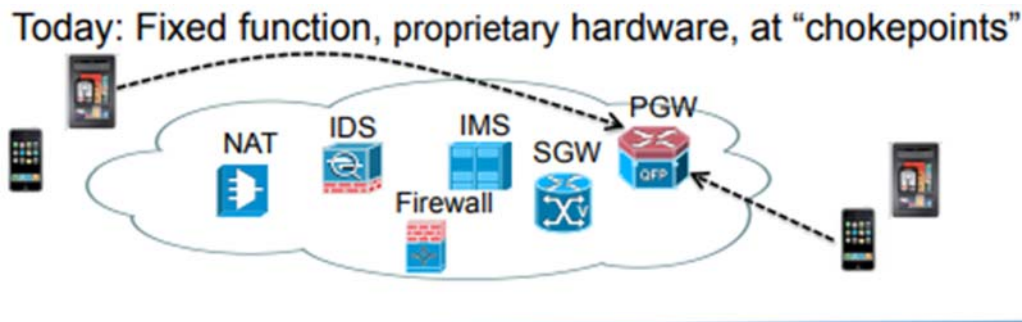


FIG. 1

Flore, FIG. 1 (showing the conventional, hierarchical wireless communication networks). When a caller, customarily referred to as user equipment ("UE 110"), moves between the service area of an E-Node B (4G) to the service area of a Node B (3G), the access gateway ("AGW"), Inter-AS Anchor, and SGSN exchange messages to register the UE with the new network. See Flore at [0030] (using the

GPRS core network (in 2G/3G network communications) and the Evolved Packet Core (EPC) (in 4G network communications)); Ex. 2024 at 28.

These familiar cellular networks take the Classical Approach and implement their networks hardware-based network appliances, including the Inter-AS Anchor, SGSN, RNC, AGW, the Node Bs, and the E-Node Bs.

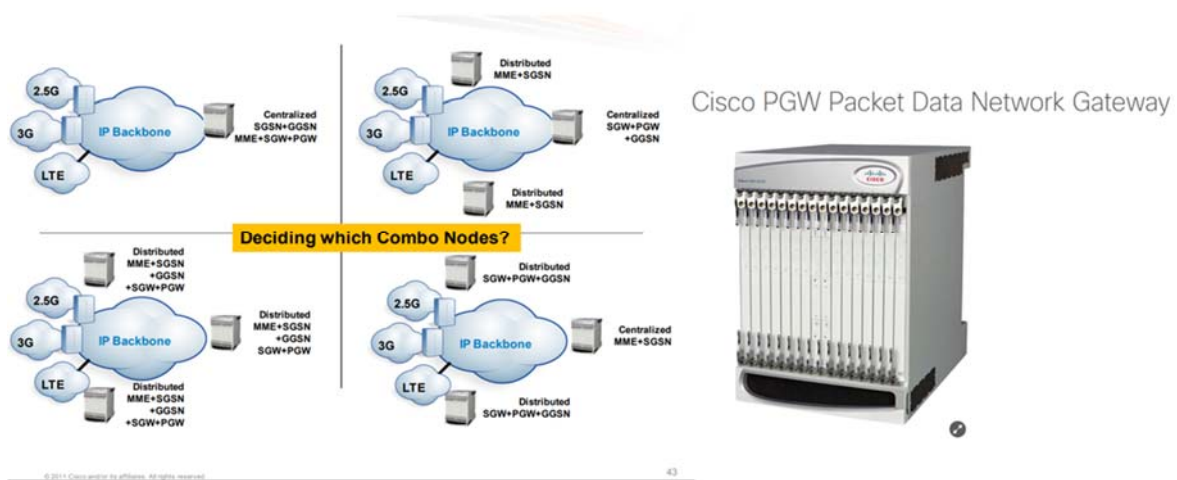


Ex. 2021 at 1 (article discussing how the then-conventional networks deploy “expensive and inflexible hardware appliances which include cellular-specific functions”).

Flore implements this Classical Approach. In Flore’s system, the hardware-based AGW routes all data from the “E-Node B” to the hardware-based “Inter-AS Anchor.” See Flore at FIG. 1, [0036]. Although the terminology shifted when the 4G standard was adopted, these devices are equivalent to the 4G server gateway (“SGW”), E-Node B, and packet data network gateway (“PGW”). See *id.* at Abstract, [0029] (“Evolved Packet Core network 150 includes an Inter Access System Anchor (IASA) 152, which may also be referred to as an Inter-AS Anchor or some other terminology.”); Ex. 2029 at 35 (explaining that the PGW “acts as the

anchor for mobility between 3GPP and non-3GPP technologies” and that the SGW “maintains data paths between eNBs and the P-GW”).

Flore’s Inter AS Anchor/**PGW**, which Petitioners liken to the claimed “DMA gateway” uses network cards to implement network functionalities, including routing data to end devices located in different networks. See Ex. 2025 at 2-3 (depicting the network cards used in the PGW appliance):



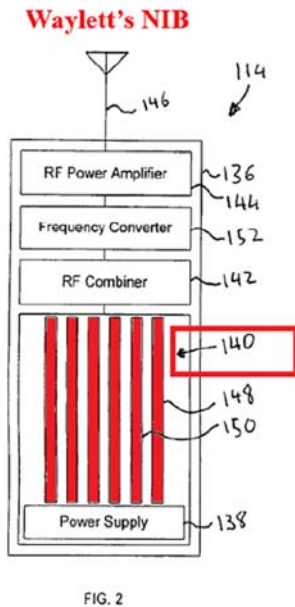
Ex. 2022 at 43 (depicting a PGW and its use of dedicated network cards); Ex. 2023 at 1-2 (annotated).

Thus, Flore’s cellular networks are Classical Approach networks, which operate on **hardware** appliances. See Ex. 2008 at 5 (illustration of exemplary hardware appliances that represent the classical approach); Ex. 2021 at 1 (similar).

D. The Board Already Determined That Hardware-Based Network Appliances Do Not Satisfy the Computer-Readable Storage Medium Limitation

The Board already determined that hardware-based network appliances, such as in *Flore*, do not execute instructions stored on a computer-readable storage medium, and it should reach the same conclusion here. Petitioner Microsoft challenged U.S. Patent No. 7,548,763 (“’763 Patent”) in IPR2023-00530. Microsoft alleged that the Waylett reference disclosed the ’763 Patent’s computer-readable storage medium limitation because Waylett’s “Network in a Box” uses software on a computer-readable storage medium. *See generally* Ex. 2002 at 13.

The Board rejected Petitioner Microsoft’s argument and agreed with Lemko that Waylett does not disclose a computer-readable storage medium “because like traditional network systems, those functions are ***implemented in hardware.***” Ex. 2001 at 19 (citing Ex. 2003, Prelim. Resp. at 25) (emphasis added); *see also* Ex. 2003 at 23 (Lemko’s argument, adopted by the Board, that Waylett “operate[d] on the classic, hardware-based network-appliance approach, with the various network functions being ***implemented using network cards . . . not software***”) (emphasis added). Petitioners do not address this prior adverse decision in their Petition.



Ex. 2003 at 24-25 (illustrating Waylett's network-card 140 design).

E. Petitioner Microsoft Challenged Lemko's Related '988 Patent

Petitioner Microsoft filed a Petition for *inter partes* review of related U.S. Patent No. 7,855,988 (the "'988 Patent") in 2023. *See* IPR2023-00531. In that IPR, Microsoft asserted that Flore anticipated the challenged claims of the '988 Patent. *See* IPR2023-00531, Pet. at 1-2. The Board found that Flore anticipated all challenged claims of the '988 Patent. *See* IPR2023-00531, Paper 31 at 2, 49 (P.T.A.B. Sept. 10, 2024). Lemko appealed the Board's determination, and that appeal is currently waiting for oral argument to be scheduled. *See* IPR2023-00531, Paper 32; *see also* Appeal No. 24-2336 (Fed. Cir. July 1, 2025).

The Challenged Claims of the '990 Patent fundamentally differ from the claims of the '988 Patent because they require the "computer readable-storage

medium” limitation not present in the Challenged claims of the '988 Patent. The arguments Lemko is asserting in this Patent Owner Preliminary Response are, therefore, different from those at issue on that appeal.

III. LEVEL OF ORDINARY SKILL IN THE ART

For purposes of this Patent Owner Preliminary Response only, Lemko uses Petitioners' position that, “[a]s of 2008 a person of ordinary skill in the art [(“POSITA”)] 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 [POSITA] could substitute for professional experience, or significant experience in the field could substitute for formal education.” Pet. at 2.

IV. CLAIM CONSTRUCTION

A. “Computer-Readable Storage Medium”

The preamble of Claim 1 is limiting. A preamble is limiting where “it states the framework of the invention . . . [that] is fundamental to the [] invention.” *On Demand Mach. Corp. v. Ingram Indus., Inc.*, 442 F.3d 1331, 1343-44 (Fed. Cir. 2006); *see also MEMS Tech. Berhad v. Int’l Trade Comm’n*, 447 F. App’x 142, 153-54 (Fed. Cir. 2011) (reading the preamble as limiting where it embodies “the essence of the invention claimed”). Here, Petitioners have taken no position on if the preamble is limiting. *See* Pet. at 13.

The “computer-readable storage medium” preamble of Independent Claim 1 provides the framework of the invention because a key part of Lemko’s innovations was the switch from hardware-based network appliances to network appliances that execute software. *See* § II.B, *supra*. The “computer-readable storage medium” limitation, therefore, embodies the essence of the claimed invention by limiting it to implementing network functions on computer readable storage medium, not special-purpose hardware.

B. It is Unnecessary for the Board to Construe the “Distributed Mobile Architecture” and “Communications Information” Terms

Petitioners submit constructions for “distributed mobile architecture (DMA)” and “communications information.” Pet. at 6-10. Because Flore does not disclose the claimed computer-readable storage medium limitation it cannot anticipate any of the Challenged Claims. Therefore, the Board does not need to decide the construction of these claims to resolve the parties’ controversy. *See Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (“[O]nly those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy.”).

V. THE PETITION SHOULD BE DENIED BECAUSE FLORE’S HARDWARE-BASED NETWORK APPLIANCES DO NOT SATISFY THE “COMPUTER READABLE MEDIA” LIMITATION

The Petition should be denied because Flore’s hardware-based network appliances do not meet the computer-readable storage medium limitation of Claim

1 and its dependent claims. Indeed, Flore's disclosure is limited to the same conventional hardware-based approach that Lemko sought to avoid. And, in rejecting Petitioner Microsoft's petition challenging another Lemko patent, the Board already found that those conventional systems are not the claimed computer readable media. In the absence of any disclosure of the required software-based approach, Petitioners rely on a generic boilerplate statement in Flore which fails to fill this gap. Thus, Flore does not anticipate the claims because it does not "describe every element of the claimed invention" within its "four corners," much less "disclose all elements of the claim" as "arranged as in the claim." *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1369 (Fed. Cir. 2008).

A. Flore Does Not Disclose the Claimed "Computer Readable Storage Medium"

Flore does not disclose a "computer-readable storage medium," as is required by all of the Challenged Claims. See '990 Patent, Claim 1. Flore only discloses hardware-based network technologies that employ traditional hardware-based network appliances arranged according to the Classical Approach architecture. See, e.g., Flore at [0030] ("GPRS core network" (2G/3G network communications) and Evolved Packet Core (EPC) (4G network communications)); Ex. 2024 at 28; §§ II.A, II.C, *supra*; see also Ex. 2008 at 5 (AT&T's NFV Paper noting that in a "classical network appliance approach" network functions are implemented in hardware as opposed to software). For example, Flore discloses methods for handing off calls

between 3G and 4G networks using conventional hardware-based components that required “expensive and inflexible **hardware** appliances [that] include cellular-specific functions.” Ex. 2021 at 1 (discussing the then-conventional network architecture) (emphasis added); *see also* Flore at [0030]. There is no disclosure in Flore, of virtualizing these network functions in software.

Flore depends on digital signal processors (DSP) and application specific integrated circuits (ASICs), which are used in specialized **network cards** (i.e., hardware) to implement network functionality. *See* Flore at [0068]. For instance, Flore’s Inter A/S Anchor/**PGW** includes a switch processor input/output card that uses a hardware-based ASIC to implement network functionality. *See, e.g.*, Ex. 2030 at 1 (discussing the “[h]ardware – Application Specific Integrated Circuit (ASIC)” and its use in network devices); Ex. 2025 at 2. Given the limitations of Flore’s disclosure, Petitioner do not argue that Flore expressly discloses the claimed computer-readable storage medium, nor could they. Instead, Petitioners rely on an erroneous inherency argument.

In rejecting Petitioner Microsoft’s prior petition against a related Lemko patent, the Board already determined that such hardware-based network appliances do not expressly or inherently include computer-readable media. Ex. 2001 at 19. The Board found that evidence that certain hardware appliances implement their network functionalities using hardware such as network cards, DSP, or ASIC, as in

Flore, is the conventional approach, not the claimed “computer readable medium.” *Id.* (denying institution: “We find that the evidence on this record weighs in favor of Patent Owner’s arguments” regarding the computer-readable storage medium limitation); Ex. 2003 at 28 (providing evidence on how ASICS are used in the network cards to implement network functionality); Ex. 2010, ¶ 69 (Lemko’s expert Dr. Cooklev providing technical reasoning and evidence to support Lemko’s argument regarding the classical approach’s use of hardware).

The Board explained that “evidence that shows Waylett’s NIB platform having network cards undercuts Petitioner’s contention that Waylett *necessarily* teaches a computer readable medium.” Ex. 2001 at 21. Accordingly, the Board agreed with Lemko that Waylett did not inherently disclose a computer-readable storage medium. *Id.* at 17 (“According to Patent Owner, ‘consistent with the then-conventional hardware-based paradigm, Waylett’s MSC and BSC are implemented in hardware network cards, not in software.’”); *Cont’l Can Co. USA, Inc. v. Monsanto Co.*, 948 F.2d 1264, 1269 (Fed. Cir. 1991) (“Inherency . . . may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.”) (citation omitted).

Thus, because Flore’s disclosure concerns hardware-based appliances, such as SGSNs that operate using network cards, Flore does not disclose, expressly or inherently, running the claimed network functionality on software stored on a

computer-readable storage medium. *See* Paper 7 at 16-17. Accordingly, institution should be denied on the Petition because Petitioners have not met their burden to show that Flore discloses all elements of the Challenged Claims. 37 C.F.R. § 42.104(b)(4).

B. Flore's Boilerplate is Insufficiently Specific to Anticipate the Claimed Inventions

Because Flore does not disclose software for executing the claimed instructions, Petitioners' anticipation argument depends entirely on a boilerplate statement at the end of Flore that "[t]he steps of a method of algorithm . . . disclosed herein may be embodied directly in hardware, in a software module executed by a processor, or a combination of the two." *See* Pet. at 14. Critically, Flore provides no disclosure of implementing any of its features in software, how one could do so, and why a POSITA would have been motivated to convert Flore's conventional hardware into a computer readable medium with the specifically claimed functionality. As explained below, this generic statement fails as a matter of law to disclose the claimed computer-readable storage medium limitation.

1. Flore's Boilerplate Does Not Disclose Implementation of Any Specific Functionality in Software

As a matter of law, Flore's non-specific, non-enabling boilerplate is insufficient to establish express or inherent disclosures of a computer readable storage medium that stores instructions to implement the claimed network

functionality. Flore does not disclose any specific network structure, topology, or mode of operation; it merely recites the possibility that some unspecified functionality could be realized in software rather than hardware. Flore at [0065]-[0070]. Such open-ended, conditional language preserves implementation flexibility, but it does not teach any definite anticipating embodiment.

Under Federal Circuit precedent, a disclosure that merely permits or contemplates every possible combination of hardware and software implementations is far too expansive to “at once envisage” the specific software-based network functionalities claimed in the ’990. *See Mylan Pharms. Inc. v. Merck Sharp & Dohme Corp.*, 50 F.4th 147, 153-54 (Fed. Cir. 2022) (singling out a particular embodiment from among a large class cannot establish anticipation); *see also BlephEx, LLC v. Myco Indus., Inc.*, 24 F.4th 1391, 1401 (Fed. Cir. 2022) (boiler plate disclosing that “any optional feature of the inventive variations described may be set forth and claimed independently, or in combination with any one or more of the features described herein” was insufficient to show anticipation because a POSITA would not “at once envisage” the claimed combination).

Flore’s actual embodiments all retain traditional network appliances, such as SGSNs, GGSNs, and PGWs, and Flore’s expansive boilerplate is neither mentions these devices specifically nor allows the POSITA to “at once envisage” what such a network would look like or how it would operate. *Id.* On the other hand, the ’990

Patent is replete with implementation details concerning the software run on each device in the network, the protocols used to exchange information between devices, and the network architecture. '990 Patent at 5:7-7:13 (disclosing various embodiments of a DMA Server); *id.* at 7:14-7:64 (disclosing a distributed mobile architecture with DMA Servers connected in a peer-to-peer IP network); *id.* at 7:65-10:19 (disclosing various software modules executable on a DMA server/gateway); *id.* at 10:20-16:62 (disclosing various embodiments of DMA gateways exchanging communications information).

In *Fromson v. Anitec Printing Plates, Inc.*, 132 F.3d 1437 (Fed. Cir. 1997), *abrogated on other grounds by Cybor Corp. v. FAS Techs., Inc.*, 138 F.3d 1448 (Fed. Cir. 1998), the Federal Circuit reversed a district court's invalidity finding where insufficiently specific boilerplate statements formed the basis for invalidity. In that case, "a boilerplate statement [indicating] that other 'suitable liquids' can be used [was] insufficiently specific to include" the claimed liquid. *Id.* at 1447. In particular, the disclosures of the reference at issue were limited to non-dissolving electrolytes and, in this context, the reference's generic statement that other liquids could be used was insufficient to disclose the claimed dissolving electrolytes.

Flore's boilerplate is similarly generic. Given that Flore's discussion and the then-conventional art was limited to hardware-based designs, a generic statement that some of its steps could be implemented in software is insufficiently specific to

disclose that the specific steps of the Challenged Claims could be implemented in software, let alone how to do so. This is particularly the case given Flore's admonition that "[w]hether such functionality is implemented as hardware or software depends upon the particular application and design constraints imposed on the overall system." Flore at [0067].

As discussed above, the 3G and 4G networks that Flore's techniques were meant to bridge had one critical design constraint in common—namely, that their underlying network appliances were hardware based, and there is no identification in Flore of any applications or design constraint indicating that a POSITA should abandon this approach and implement in software. See § II.C, *supra*. In particular, Flore does not state that any of the portions of its disclosure that Petitioners allege correspond to the '990 Patent's claims are among the algorithms amenable to a software implementation or explain how to do so. Thus, as a matter of law, Flore cannot anticipate the Challenged Claims because it does not disclose the computer-readable storage medium limitation.²

Nor can Flore's generic statements be recast as inherent disclosure of the CRM limitation. Inherency requires that the missing limitation be "necessarily

² While this Preliminary Response is focused on the dispositive CRM Limitation, Lemko disputes that Flore discloses the other limitations of Claim 1.

present” in the reference, not merely a potential variant. *In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999) (“To establish inherency [for purposes of anticipation], . . . evidence ‘must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill.’”). Flore plainly dispels the notion that its network must be implemented in software because its detailed embodiments are all hardware centric.

The cited boilerplate merely acknowledges that skilled artisans could, in principle, choose among hardware or software implementations depending on “design constraints,” which is not anticipating disclosure, it is an invitation to speculation. Flore at [0067].

2. Flore Does Not Enable Software Implementation of the Claimed Functionality

Flore’s single statement that unidentified portions of its algorithm could be implemented in software cannot anticipate the Challenged Claims because “the allegedly anticipatory disclosures cited as prior art are not enabled.” *Amgen Inc. v. Hoechst Marion Roussel, Inc.*, 314 F.3d 1313, 1354 (Fed. Cir. 2003). Under *In re Wands*, 858 F.2d 731, 737 (Fed. Cir. 1988), a reference is not enabled if it would require undue experimentation to implement, which takes into account the guidance provided by the reference and the nature of the art.

Here, Flore's disclosure is rooted in hardware-based implementations—DSPs, ASICs, and network cards. It does not provide any “direction or guidance” or “working examples” to guide a POSITA on how to depart from the conventional practice and instead implement the requisite functionality in a CRM. *Id.* at 737. Flore offers no software architecture, no source code, no design constraints, and no implementation details that would allow a POSITA to replicate the claimed CRM-based functionality.

The state of the art at the time of the invention confirms the lack of enablement. *See* § II.A, *supra*. Flore's disclosure reflects the hardware-based architecture that Lemko's invention sought to replace and which the industry was still grappling with when AT&T published its NFV Paper. AT&T's NFV Paper identified multiple challenges that would need to be overcome to implement software-based NFV implementation, including problems with “Portability/Interoperability,” “Performance Trade-off[s],” the “Migration and co-existence of legacy [networks and] compatibility with existing platforms,” “consistent management and orchestration,” “Automation,” “Security & Resilience,” “Network Stability,” “Simplification,” and “Integration.” Ex. 2008 at 10-12.

The transition from hardware-based networks to virtual networks was anything but trivial matter, but Flore does not discuss any of the problems identified

in AT&T's NFV Paper or even begin to propose any techniques to solve them. In contrast, much of Lemko's '990 Patent is directed to solving these problems. '990 Patent at 5:7-7:13 (disclosing various embodiments of a DMA Server); *id.* at 7:14-7:64 (disclosing a distributed mobile architecture with DMA Servers connected in a peer-to-peer IP network); *id.* at 7:65-10:19 (disclosing various software modules executable on a DMA server/gateway); *id.* at 10:20-16:62 (disclosing various embodiments of DMA gateways exchanging communications information).

The authors of AT&T's NFV Paper were the leading technology companies in the industry in 2012, with expertise and resources far exceeding those of a POSITA having only a bachelor's degree and two years of industry experience when Flore was filed in 2006. Their laundry list of challenges that would need to be overcome establishes the extensive "quantity of experimentation necessary" to implement the claimed cellular network function in software, confirming Flore's boilerplate sentence was not enabled and that it cannot anticipate the Challenged Claims. *In re Wands*, 858 F.2d at 737.

VI. CONCLUSION

For the reasons stated above, Lemko respectfully requests that the Board deny institution of *inter partes* review of the '990 patent.

Patent Owner's Preliminary Response
IPR2025-01142 (U.S. Patent No. 8,310,990)

Dated: October 8, 2025

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CERTIFICATE OF COMPLIANCE WITH 37 C.F.R. § 42.24

The undersigned hereby certifies that the portions of the above-captioned **PATENT OWNER'S PRELIMINARY RESPONSE** specified in 37 C.F.R. § 42.24 has 4,474 words in compliance with the 14,000 word limit set forth in 37 C.F.R. § 42.24(b)(1). This word count was prepared using the Microsoft Word word-processing system used to prepare this paper.

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CERTIFICATE OF SERVICE

The undersigned certifies, in accordance with 37 C.F.R. § 42.6(e), and pursuant to agreement by the parties that filing with the Board through the Patent Trial and Appeal Case Tracking System (P-TACTS) constitutes electronic service, that service was made on Petitioners as detailed below.

<i>Date of service</i>	October 8, 2025
<i>Manner of service</i>	Electronic Filing with the Board (sborder@winston.com; rkang@winston.com)
<i>Documents served</i>	PATENT OWNER'S PRELIMINARY RESPONSE
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