

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS,
VERIZON CORPORATE SERVICES GROUP INC.,
T-MOBILE USA, INC., and AT&T SERVICES, INC.,
Petitioner,

v.

HEADWATER RESEARCH LLC,
Patent Owner.

IPR2024-01041
Patent 8,924,543 B2

Before HYUN J. JUNG, SCOTT B. HOWARD, and
STEPHEN E. BELISLE, *Administrative Patent Judges*.

JUNG, *Administrative Patent Judge*.

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

I. INTRODUCTION

A. *Background and Summary*

Cellco Partnership d/b/a Verizon Wireless, Verizon Corporate Services Group Inc., T-Mobile USA, Inc., and AT&T Services, Inc. (collectively, “Petitioner”) filed a Petition (Paper 5, “Pet.”) requesting institution of an *inter partes* review of claims 1–7, 11–13, 16, 22, 23, 30–33, 35–41, 57–66, 68–72, 80, 85, 86, 90–93, 112, and 113 of U.S. Patent No. 8,924,543 B2 (Ex. 1001, “the ’543 patent”). Headwater Research LLC (“Patent Owner”) filed a Preliminary Response. Paper 8 (“Prelim. Resp.”).

Under 35 U.S.C. § 314 (2024), an *inter partes* review may not be instituted “unless . . . there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” Upon consideration of the Petition and for the reasons explained below, we determine that Petitioner has shown a reasonable likelihood of prevailing with respect to at least one of the challenged claims.

Thus, we institute an *inter partes* review of claims 1–7, 11–13, 16, 22, 23, 30–33, 35–41, 57–66, 68–72, 80, 85, 86, 90–93, 112, and 113 of the ’543 patent on all presented challenges. 37 C.F.R. § 42.108(a) (2023) (“When instituting . . . review, the Board will authorize the review to proceed on all of the challenged claims and on all grounds of unpatentability asserted for each claim.”); *see also SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1359–60 (2018).

B. *Real Parties in Interest*

Petitioner identifies Cellco Partnership d/b/a Verizon Wireless, Verizon Corporate Services Group Inc., T-Mobile USA, Inc., AT&T Services, Inc., AT&T Mobility LLC, and AT&T Corp. as real parties in interest. Pet. 72. Petitioner also names all current defendants in related

litigation as potential real parties in interest. *Id.* n.5. Patent Owner identifies itself as the real party in interest. Paper 6, 1.

C. Related Matters

Petitioner identifies *Headwater Research LLC v. Verizon Communications Inc.*, 2:23-cv-00352-JRG-RSP (E.D. Tex.), *Headwater Research LLC v. AT&T Inc.*, 2:23-cv-00398-JRG-RSP (E.D. Tex.), and *Headwater Research LLC v. T-Mobile US, Inc.*, 2:23-cv-00379-JRG-RSP (E.D. Tex.) as related matters. Pet. 73. Patent Owner also identifies *Headwater Research LLC v. AT&T Inc.*, 2:23-cv-00397-JRG-RSP (E.D. Tex.), *Headwater Research LLC v. T-Mobile US, Inc.*, 2:23-cv-00377-JRG-RSP (E.D. Tex.), and IPR2024-1042 as related matters. Paper 6, 1.

D. The '543 Patent (Ex. 1001)

The '543 patent issued on December 30, 2014 from an application filed on September 28, 2011 that is the latest continuation-in-part of several previously filed applications. Ex. 1001, codes (22), (45), (63), 1:7–2:14, 3:9–7:32. The '543 patent also claims priority to several provisional applications, the earliest of which was filed on January 28, 2009. *Id.* at code (60), 2:14–3:8, 3:63–7:32.

According to the '543 patent, “end user devices (such as a mobile phone, tablet computer, or notebook computer) sign up for one or more mutually exclusive service plans (e.g., text messages, voice, or data) before being allowed to use an access network.” Ex. 1001, 7:38–41. The “cumbersome process” of creating a service plan for data services “makes the design of the service plan rigid, time-consuming, and prone to errors, thereby taking a long time to complete and have users begin selecting the data plan for their data services.” *Id.* at 7:55–8:2. Figure 1 of the '543 patent is below reproduced.

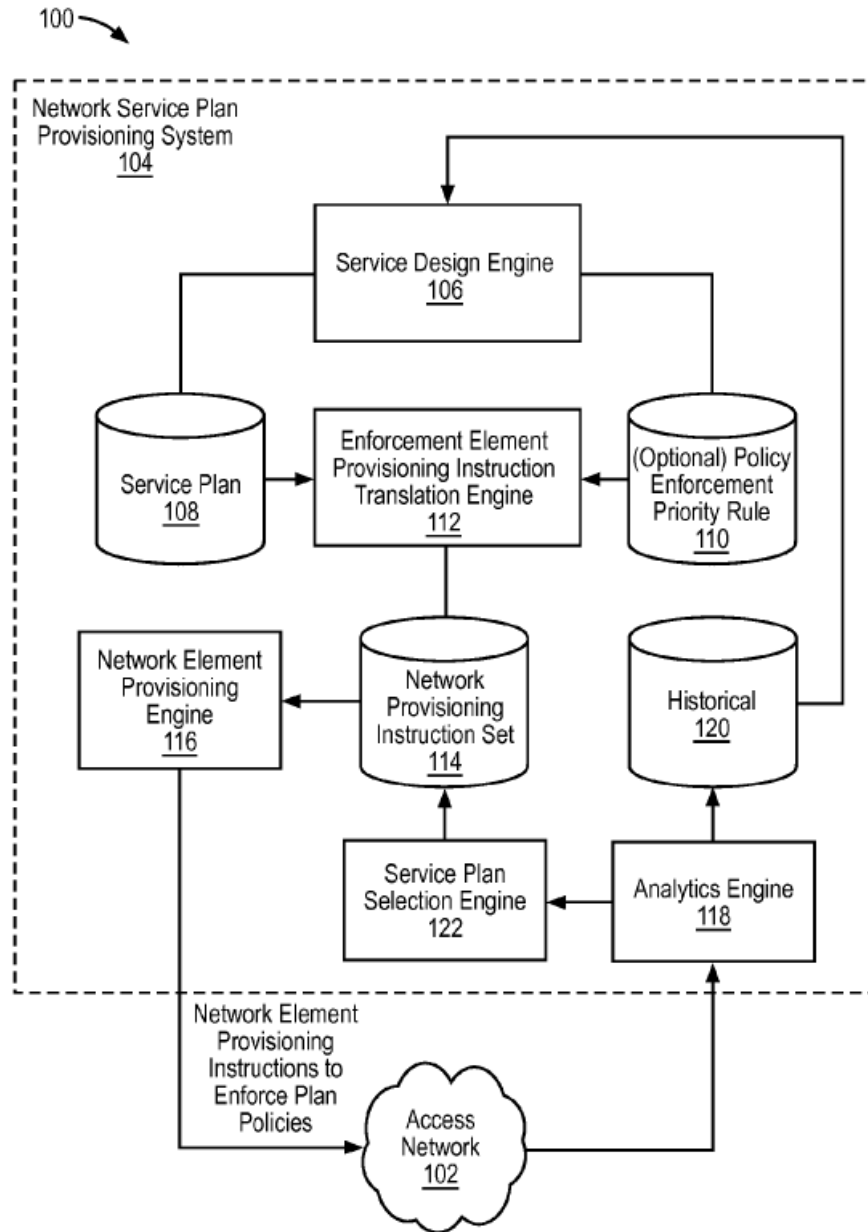


FIG. 1

Figure 1 shows “an example of a system including an access network and a network service plan provisioning system.” Ex. 1001, 8:10–11. System 100 includes access network 102 and network service plan provisioning system 104. *Id.* at 8:38–40. “[A]ccess network 102 can include a network that can provide network services to a device” and “can

include a wireless network (e.g., WiFi, cellular, or some other wireless technology) and/or a wired network (e.g., LAN or DSL).” *Id.* at 8:47–51.

“[A]ccess network 102 receives network element provisioning instructions to enforce plan policies from the network service plan provisioning system 104” that “can receive service plan selection data from the access network, and provide new instructions based upon the selection.” Ex. 1001, 8:40–46. Network service plan provisioning system 104 includes service design engine 106, service plan datastore 108, optional policy enforcement priority rule datastore 110, enforcement element provisioning instruction translation engine 112, network provisioning instruction set 114, and network element provisioning engine 116. *Id.* at 9:37–44.

Service design engine 106 inputs service plan data structures and other related data into service plan datastore 108. Ex. 1001, 9:37–47. Service design engine 106 can also input policy enforcement priority rule data structures into policy enforcement priority rule datastore 110. *Id.* at 11:14–16.

“An aspect of policy control . . . entails the superposition of a first traffic classification filter of a service plan over a second traffic classification filter of the service plan,” such as by “ordering the first and second traffic classification filter[s] such that the first traffic classification filter is applied to a traffic event before the second traffic classification filter” and “applying an explicit policy enforcement priority rule.” Ex. 1001, 11:16–19, 11:21–24, 11:27. “Because implicit policy enforcement priorities can be used, the policy enforcement priority rule datastore 110 is optional.” *Id.* at 11:28–29. “[E]xplicit policy enforcement priorities can be mandated in accordance with implementation- and/or configuration-specific parameters or a combination of implicit and explicit policy enforcement

priorities can be used.” *Id.* at 11:30–34; *see also id.* at 23:42–45 (describing that “[t]he hierarchical arrangement can be explicit (e.g., by indicating priority in a field associated with a component) or implicit in the ordering of the components”).

Enforcement element provisioning instruction translation engine 112 converts service plan data structures in service plan datastore 108 into network provisioning instruction set data structures that are stored in network provisioning instruction set datastore 114. Ex. 1001, 11:36–41. “[T]ranslation engine 112 can also convert the relevant policy enforcement priority rule data structures from the policy enforcement priority rule datastore 110, if applicable, for inclusion in the network provisioning instruction set data structures.” *Id.* at 11:41–45.

Network element provisioning engine 116 provides network element provisioning instructions to enforce plan policies on access network 102. Ex. 1001, 11:46–48. “The network element provisioning instructions are applicable to one or more devices that may or may not currently be on the access network 102” and can be “sent to the access network 102 only when the applicable one or more devices are on the access network 102.” *Id.* at 11:48–54.

E. Illustrative Claim

The ’543 patent includes 121 claims, which Petitioner challenges claims 1–7, 11–13, 16, 22, 23, 30–33, 35–41, 57–66, 68–72, 80, 85, 86, 90–93, 112, and 113 in this proceeding. Of those, claim 1, reproduced below, is the only independent claim.

1. A network service plan provisioning system communicatively coupled to a wireless end-user device over a wireless access network, the network service plan provisioning system comprising one or more network elements configured to:

obtain and store a first service plan component and a second service plan component,

the first service plan component comprising (1) information specifying a first traffic classification filter for filtering a traffic event in a network traffic inspection system, the traffic event being associated with the wireless end-user device and (2) a first network policy enforcement action that is triggered in a network policy enforcement system when the traffic event possesses a characteristic that matches the first traffic classification filter, and the second service plan component comprising (a) information specifying a second traffic classification filter for filtering the traffic event in the network traffic inspection system, and (b) a second network policy enforcement action that is triggered in the network policy enforcement system when the traffic event possesses a characteristic that matches the second traffic classification filter;

process the first service plan component and the second service plan component to create a network provisioning instruction set in accordance with a prioritization of the first traffic classification filter over the second traffic classification filter, the network provisioning instruction set comprising one or more traffic inspection provisioning instructions for the network traffic inspection system and one or more policy enforcement provisioning instructions for the network policy enforcement system, the network traffic inspection system and the network policy enforcement system implementing one or more policies applicable to the wireless end-user device;

provide the one or more traffic inspection provisioning instructions to the network traffic inspection system; and

provide the one or more policy enforcement provisioning instructions to the network policy enforcement system.

Ex. 1001, 58:64–59:34.

F. Asserted Prior Art and Proffered Testimonial Evidence

Petitioner identifies the following references as prior art in the asserted grounds of unpatentability:

Name	Reference	Exhibit
Poh	US 9,712,331 B1, issued July 18, 2017, filed Aug. 20, 2008,	1004
Maes	US 2008/0181208 A1, published July 31, 2008, filed Jan. 30, 2007	1005

Petitioner contends that the above references are prior art under §§ 102(a) and (e).¹ Pet. 18–19. Petitioner also provides a Declaration of Henry Houh, Ph.D. (Ex. 1003).

G. Asserted Grounds

Petitioner asserts that claims 1–7, 11–13, 16, 22, 23, 30–33, 35–41, 57–66, 68–72, 80, 85, 86, 90–93, 112, and 113 are unpatentable on the following grounds:

Claims Challenged	35 U.S.C. §	References/Basis
1–7, 11–13, 16, 22, 23, 30–33, 35–41, 57–66, 68–72, 80, 85, 86, 90–93, 112, 113	103	Poh
1–7, 11–13, 16, 22, 23, 30–33, 35–41, 57–66, 68–72, 80, 85, 86, 90–93, 112, 113	103	Poh, Maes

Pet. 18.

¹ The relevant sections of the Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112–29, 125 Stat. 284 (Sept. 16, 2011), took effect on March 16, 2013. Because the ’543 patent issued from an application filed before that date, our citations to 35 U.S.C. §§ 102 and 103 in this Decision are to their pre-AIA versions. *See also* Pet. 11 (stating that “[t]he ’543 Patent claims priority to a large family of over 400 applications, the earliest of which is dated January 29, 2009”).

II. PARALLEL PETITIONS

Petitioner also challenges the '543 patent in IPR2024-01042.² Paper 3, 1; Paper 6, 1. Petitioner ranks the Petition in IPR2024-01042 ahead of the present Petition. Paper 3, 2.

Petitioner's "reason for separate Petitions is the excessive number of claims that were allowed for the '543 Patent, the large number of claims being asserted in the underlying litigation, and the large number of words in those claims." Paper 3, 1.

Patent Owner responds that it "has narrowed each of the parallel cases such that it now only asserts the same **8 claims** against each Petitioner." Prelim. Resp. 1 (citing Ex. 2002 (email to counsel for Verizon and T-Mobile); Ex. 2003 (email to counsel for AT&T)). Patent Owner argues that those eight claims are challenged in IPR2024-01042. *Id.* (citing Paper 1; Ex. 2001 (Petition filed in IPR2024-01042)). Patent Owner also argues that (1) the "only still-asserted claim challenged in the instant Petition is independent claim 1," (2) "not only is same prior art combination used against claim 1 in both petitions, but 'the analysis for claim 1 is identical for both Petitions,'" and (3) the Petition for IPR2024-01042 is ranked above the present Petition. *Id.* Patent Owner, thus, argues that "because the instant Petition does not contain any unique challenge to any claim asserted in the district court litigations, and otherwise only challenges non-asserted claims, it should be denied as an unnecessary parallel petition." *Id.*

"Based on the Board's experience, one petition should be sufficient to challenge the claims of a patent in most situations." Consolidated Trial

² In IPR2024-01042, Petitioner challenges claims 1, 8–10, 15, 21, 28, 42–47, 87–89, 96, 98, 99, 120, and 121 of the '543 patent.

Practice Guide (Nov. 2019) (“CTPG”)³ 59. “Two or more petitions filed against the same patent at or about the same time (e.g., before the first preliminary response by the patent owner) may place a substantial and unnecessary burden on the Board and the patent owner and could raise fairness, timing, and efficiency concerns.” *Id.*

“Nonetheless, the Board recognizes that there may be circumstances in which more than one petition may be necessary, including, for example, when the patent owner has asserted a large number of claims in litigation or when there is a dispute about priority date requiring arguments under multiple prior art references.” CTPG 59.

Petitioner argues that “[t]he sole reason for separate Petitions is the excessive number of claims that were allowed for the ’543 Patent, the large number of claims being asserted in the underlying litigation, and the large number of words in those claims.” Paper 3, 1. At the time of filing the petition here and in the related proceeding, Patent Owner asserted a large number of claims in the underlying litigation. Ex. 1014 (“Plaintiff Headwater Research LLC’s Amended Disclosure of Asserted Claims and Infringement Contentions”), 2 (asserting claims 1–13, 15, 16, 21–23, 28, 30–33, 35–47, 57–66, 68–72, 80, 85–93, 96, 98, 99, 112, 113, 120, 121 of the ’543 patent). The CTPG expressly recognizes that “more than one petition may be necessary . . . when the patent owner has asserted a large number of claims in litigation.” CTPG 59. We, thus, agree with Petitioner that two petitions are not unreasonable in the present context. *See id.*

Patent Owner subsequently elected to limit the asserted claims to only eight claims of the ’543 patent. Prelim. Resp. 1; Ex. 2002; Ex. 2003. Patent

³ Available at <https://www.uspto.gov/TrialPracticeGuideConsolidated>.

Owner's argument that "because the instant Petition does not contain any unique challenge to any claim asserted in the district court litigations, and otherwise only challenges non-asserted claims, it should be denied as an unnecessary parallel petition" does not address sufficiently the CTPG.

Prelim. Resp. 1.

For example, Petitioner states that "the difference between the Petitions is essentially limited to the analysis of the dependent claims." Paper 3, 2. Patent Owner does not address whether Petitioner's identified difference in the Petitions is directed to an issue that is not material or not in dispute. *See* CTPG 61; Prelim. Resp. 1. Petitioner argues against the patentability of the challenged claims, and Patent Owner presumably would respond with arguments for the patentability of those challenged claims if review were instituted. Thus, at this stage and for this proceeding, the patentability of the challenged dependent claims is still at issue and in dispute, and, therefore, would require more than one petition to resolve. *See* CTPG 60–61.

As another example, Patent Owner does not "proffer[] a stipulation that certain claim limitations are not disputed" to avoid additional petitions, as stated in the CTPG. *See* CTPG 61; Prelim. Resp. 1. Therefore, for another reason, the circumstances here indicate more than one petition may be necessary. *See* CTPG 59; Prelim. Resp. 1. Moreover, we agree with Petitioner that some of the challenged claims have a large number of words. *See, e.g.,* Ex. 1001, claims 1–5, 11–13, 30–33, 35–41.

For the reasons above, after considering the parties' submissions, Petitioner shows that more than one petition is not unreasonable in view of the circumstances of this proceeding, and we do not exercise our discretion to deny the present Petition. *See* CTPG 59, 61.

III. ANALYSIS

A. Legal Standards

“In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent [claim] it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016). This burden of persuasion never shifts to Patent Owner. *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015). The Board may authorize an *inter partes* review if we determine that the information presented in the Petition shows that there is a reasonable likelihood that Petitioner will prevail with respect to at least one of the claims challenged in the petition. 35 U.S.C. § 314(a).

Petitioner contends that the challenged claims of the ’543 patent are unpatentable under § 103. Pet. 18. A claim is unpatentable under § 103 if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) where in evidence, so-called secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). When evaluating a combination of teachings, we must also “determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.” *KSR*, 550 U.S. at 418 (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)). Whether a

combination of elements produces a predictable result weighs in the ultimate determination of obviousness. *Id.* at 416–417.

B. Level of Ordinary Skill in the Art

Petitioner argues that a person of ordinary skill in the art “would have been familiar with designing rules for implementing policies for service plans for use of an access network and provisioning those rules to network elements for policy enforcement, as demonstrated by the prior art references and description in the State of the Art below” and

would have gained knowledge of these concepts through a mixture of training and work experience, such as by having a Bachelor’s degree in computer science and two years of experience; or by obtaining a Master’s degree in computer science, but having only one year of experience; or by having no formal education but experience in network service plan provisioning systems of at least four years.

Pet. 11–12 (citing Ex. 1003 ¶¶ 45, 46).

Patent Owner does not propose a level of ordinary skill in the art and does not challenge Petitioner’s proposal. *See* Prelim. Resp.

Based on the preliminary record, we adopt Petitioner’s asserted level of ordinary skill to determine whether there is a reasonable likelihood that Petitioner would prevail with respect to at least one of the claims challenged in the Petition.

C. Claim Construction

In an *inter partes* review, the claims are construed

using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. [§] 282(b), including construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.

37 C.F.R. § 42.100(b); *see Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc).

Petitioner proposes that claim terms be given their plain and ordinary meaning “because the prior art relied on in this Petition meets each of the claim terms under any reasonable construction.” Pet. 11. Patent Owner does not propose any claim interpretation. *See* Prelim. Resp.

At this preliminary stage, we determine that express claim interpretation is not necessary to determine whether Petitioner shows a reasonable likelihood of prevailing. *Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) (“The Board is required to construe ‘only those terms that . . . are in controversy, and only to the extent necessary to resolve the controversy.’”) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

D. Asserted Obviousness of Claim 1 Based on Poh and Maes

1. Poh (Ex. 1004)

Poh relates, “particularly, to systems and methods for implementing a policy intelligence rules system in a policy realization framework.” Ex. 1004, 1:9–11. Figure 1 of Poh is below reproduced.

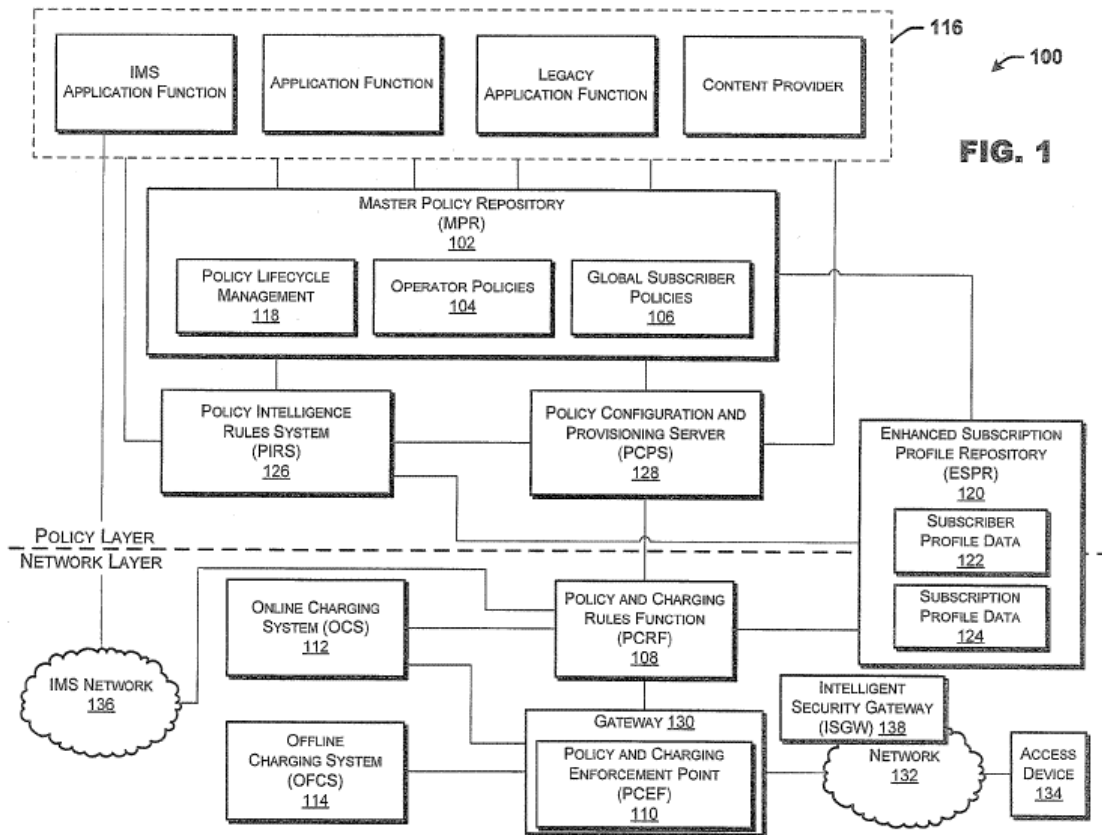


Figure 1 shows “a policy realization framework.” Ex. 1004, 10:22–23. Policy realization framework 100 “is divided into two logical layers, a policy layer and a network layer.” *Id.* at 11:12–13.

“[T]he policy layer includes application and service policy management systems and network policy management systems” and “can store, organize, determine, and apply policy rules to services requested by subscribers or other entities.” Ex. 1004, 11:14–19.

The policy layer can provide common policy rules across services and applications, and policy rule management. The policy layer can dynamically determine rules based upon operator policies, network policies, subscriber specific policies, subscription specific policies, subscriber profile data, subscription profile data, and/or subscriber preferences, for example. The policy layer can also generate instructions or

commands for driving elements in the network layer to grant, restrict, and/or deny requested services. Policy rules can be determined online or offline.

Id. at 11:20–33.

The policy layer includes master policy repository (“MPR”) 102 that “receives, retrieves, accesses, organizes, and/or manages operator policies 104 and global subscriber policies 106.” Ex. 1004, 11:53–56. Operator policies 104 can include, for example, “gating control policies, data throttling policies, packet inspection policies, . . . , and the like.” *Id.* at 11:57–64. “Operator policies 104 can be defined and approved by operator personnel.” *Id.* at 11:64–65.

In one example, operator policies include “gating control by a policy and charging rules function (PCRF) 108, a policy and charging enforcement point (PCEF) 110 . . . and/or other enforcement points that require service rules to help ensure consistent policy enforcement packet data protocol (PDP) context.” Ex. 1004, 12:1–8. “PCRF 108 is a decision point function in the network layer for control, altering of Quality of Service (QoS), where applicable, and providing dynamic or personalized charging rules at a subscriber level” based on, “for example, roaming control, usage threshold.” *Id.* at 14:17–22.

“Global subscriber policies 106 can include, but are not limited to, policies that are global to all subscribers and applied to one or more applications or services that are accessible to the operator’s subscriber base” and “can be defined for each service or application.” Ex. 1004, 12:23–28. For example, “global subscriber policy 106 can be a service aware roaming control policy that can prevent a subscriber from accessing operator-defined services or applications while roaming.” *Id.* at 12:28–31.

“MPR 102 is fed by an enhanced subscription profile repository (ESPR) 120 that can be configured to store subscriber profile data 122 and subscription profile data 124.” Ex. 1004, 12:61–64; *see also id.* at 21:50–22:3 (describing method 900 shown in Fig. 9 for operating an enhanced subscription profile repository). Subscriber profile data 122 can include “subscriber specific data” and “policy-related data,” and “subscription profile data 124 can include all available service plans offered by an operator as defined, maintained, and updated, for example, by operator service offer management personnel.” *Id.* at 13:6–27, 13:38–59.

“MPR 102 can send policies to a policy intelligence rules system (PIRS) 126” that “can be configured to request operator policies 104 and global subscriber policies 106 from the MPR 102, and subscriber profile data 122 and subscription profile data 124 from the ESPR 120.” Ex. 1004, 13:60–64. “PIRS 126 can receive the policies and determine a rule for the network to use in addressing the subscribers request.” *Id.* at 18:59–61. “PIRS 126 can identify policy conflicts, resolve conflicts, and determine applicable rules to be sent to a policy configuration and provisioning server (PCPS) 128 for configuration and provisioning to the network layer for rule decision and enforcement operations.” *Id.* at 13:64–14:2; *see also id.* at 19:19–20:54 (describing method 700 shown in Fig. 7 for operating a policy intelligence rules system).

PCPS 128 is configured to receive rules created by PIRS 126 and generate or provide the rules to policy elements in the network layer, such as, PCRF 108 and online charging system (“OCS”) 112. Ex. 1004, 14:4–7, 16:32–34; *see also id.* at 20:61–21:34 (describing method 800 shown in Fig. 8 for operating a policy configuration and provisioning system). There can be multiple PCRFs and PCEFs. *Id.* at 14:9–10. “PCPS 128 can be

configured to accept rules and policies from another policy management platform and prepare the rules for storage in the MPR 102.” *Id.* at 14:14–16. “I/O interface 304 can receive rules from the PIRS 126 and send instructions to the PCRF 108, PCEF 110, and OCS 112 in the network layer for policy rule charging decisions, charging, and enforcement, for example.” *Id.* at 16:28–31.

Intelligent security gateway (“ISGW”) 138 can monitor network traffic, recognize security threats, and send information relating to security threats directly to a policy enforcement and/or access control enforcement point, such as, PCRF 108. Ex. 1004, 23:7–20. “ISGW 138 can update information used by network elements to enforce security policies” and “network elements can update information used by the ISGW 138 to enforce security policies.” *Id.* at 23:59–63; *see also id.* at 24:10–50 (describing method 1100 shown in Fig. 11 for operating an intelligent security gateway).

Gateway 130 function can allow communication with network 132 that “can provide one or more devices 134 access to services and applications . . . via wireless access technologies.” Ex. 1004, 14:64–67. “The access device(s) 134 can include, but is not limited to, handheld devices such as an information appliance, a smartphone, a personal digital assistant (PDA), a mobile phone, a personal communicator, and a handheld game console; other mobile devices such as laptop computers; stationary devices such as desktop computers, servers, and the like; and various other telephony devices.” *Id.* at 14:67–15:7.

2. *Maes (Ex. 1005)*

Maes “particularly relate[s] to the processing and routing of traffic across a network.” Ex. 1005 ¶ 1. Maes “provide[s] for the processing of network traffic using a smart router” that “can include a message inspection

module operable to receive a message and determine identification information about that message” and “a policy enforcement module operable to dynamically determine a policy to enforce on the message, based at least in part upon the identification information obtained by the message inspection module.” *Id.* ¶ 7. “A decision as to which policy to enforce can be set by a service layer and/or an application” or “determined based on a matching algorithm.” *Id.*

“The smart router can be part of, or in communication with, at least one network server 108 operable to receive and transmit communications between the resources over at least one network 110, 112” and “is capable of analyzing messages and/or packets (or other communication protocol levels) and applying programmable policies to those messages based on various diagnostics.” Ex. 1005 ¶ 19. “Policies can be set before processing or in response to a request from the smart router by applications or other appropriate entities, such as a service layer.” *Id.* ¶ 19.

“After inspecting each message, an appropriate policy can be applied.” Ex. 1005 ¶ 22. “Policies can be used with the smart router to let pass or bounce messages, as well as to fork, broadcast, and re-route messages” and “to modify and/or process messages, as well as to hold messages pending completion of policy evaluation and enforcement.” *Id.*

Policy, as used by Maes, “refers to an ordered combination of policy rules that defines how to administer, manage, and control access to resources” and “contains a combination of conditions and actions.” Ex. 1005 ¶ 24. “An action is executed when its associated policy condition results in ‘true’ from the policy evaluation step.” *Id.* “The process of executing actions, which may be performed as a consequence of the output

of the policy evaluation process or during the policy evaluation process, is referred to as policy enforcement.” *Id.*

“The process of evaluating the policy conditions and executing the associated policy actions up to the point that the end of the policy is reached is referred to as policy evaluation.” Ex. 1005 ¶ 24. “Policy management refers to the act of describing, creating, updating, deleting, provisioning, and viewing policies.” *Id.* “Policy processing refers to policy evaluation or policy evaluation and enforcement.” *Id.* “A policy rule is a combination of a condition and actions to be performed if the condition is true.” *Id.*

A “policy workflow typically refers to the expression of a series of conditions, actions, rules, and/or policies to be executed.” Ex. 1005 ¶ 25. “For example, workflows or business processes may describe sequences in which rules are executed, or how conditions may be combined with actions to enforce the one or more policies on a communication.” *Id.* “A workflow or business process includes a logical combination of one or more conditions to be satisfied and one or more actions to be executed to enforce or evaluate the one or more policies.” *Id.*

Policies can check load balancing, check the quality of service, throttle back traffic, and check account standing and charges. Ex. 1005 ¶ 26. Policies can also determine if traffic has to be filtered or require further processing, such as “content filtering, anti-spam, antivirus, privacy/preference policies of target, etc.” *Id.* ¶ 27.

Figure 2 of Maes is below reproduced.

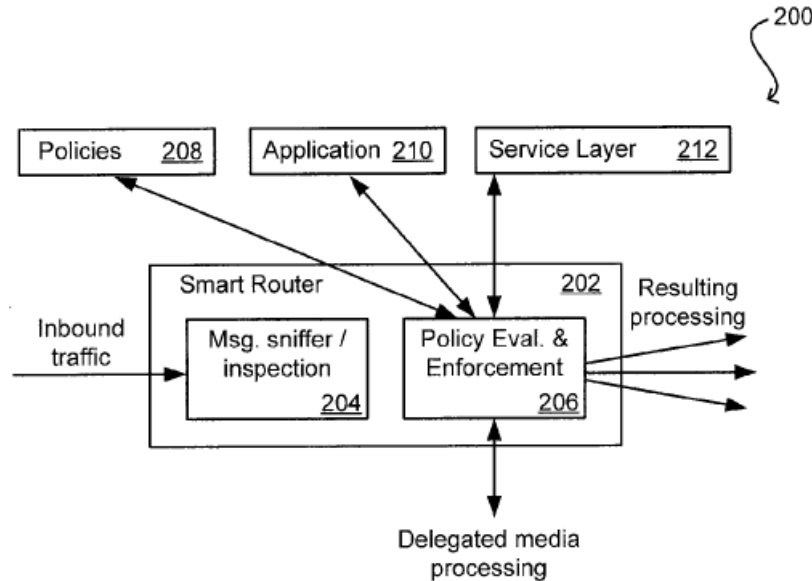


FIG. 2

Figure 2 shows “a smart router implementation.” Ex. 1005 ¶ 14. Sniffer or message inspection module 204 of smart router 202 receives inbound traffic. *Id.* ¶ 28. Policy evaluation and enforcement module 206 can receive the messages from message inspection module 204 and applies the appropriate policy or policies 208. *Id.* Module 206 can also interact with application 210 and service layer 212. *Id.*

3. *Claim 1*

- a) “A network service plan provisioning system communicatively coupled to a wireless end-user device over a wireless access network, the network service plan provisioning system comprising one or more network elements configured to:”

Petitioner argues that, to the extent the preamble is limiting, Poh’s Figure 1 shows the recited network service plan provisioning system. Pet. 33–34 (citing Ex. 1003 ¶¶ 134–135; Ex. 1004, Fig. 1).

- b) *“obtain and store a first service plan component and a second service plan component,”*

For the above-quoted limitation, Petitioner argues that Poh’s MPR 102 stores and retrieves policies. Pet. 34–36 (citing Ex. 1003 ¶¶ 137–143; Ex. 1004, 11:9–33, 11:53–55, 12:55–13:2, Fig. 1).

- c) *“the first service plan component comprising (1) information specifying a first traffic classification filter for filtering a traffic event in a network traffic inspection system, the traffic event being associated with the wireless end-user device and (2) a first network policy enforcement action that is triggered in a network policy enforcement system when the traffic event possesses a characteristic that matches the first traffic classification filter, and the second service plan component comprising (a) information specifying a second traffic classification filter for filtering the traffic event in the network traffic inspection system, and (b) a second network policy enforcement action that is triggered in the network policy enforcement system when the traffic event possesses a characteristic that matches the second traffic classification filter;”*

Petitioner argues that Poh discloses above-quoted limitations because PCRF 108 and PCEF 110 receive instructions to implement and enforce rules based on the policies stored in MPR 102. Pet. 36–41 (citing Ex. 1003 ¶¶ 145–159; Ex. 1004, 3:33–42, 8:57–63, 11:23–30, 11:44–52, 11:57–60, 12:23–29, 13:38–59, 14:17–35, 19:60–63, 20:37–54, 21:50–22:3, claims 3, 7). Petitioner also argues that one of ordinary skill in the art would have understood “characteristic” to be “a condition that triggers a rule, e.g., QoS, roaming, etc.” *Id.* at 37 (citing Ex. 1003 ¶ 147).

In Petitioner’s view, one of ordinary skill in the art would have understood that Poh discloses “traffic classification filters.” Pet. 40 (citing Ex. 1003 ¶¶ 156–157; Ex. 1006, 253; Ex. 1007, 13; Ex. 1008, 2978; Ex. 1010 §§ 4.1–4.3, 6.2.2, 6.3, 6.5). Petitioner argues that, if Patent Owner

contends that Poh does not expressly describe rules that include traffic classification filters, then Maes teaches such filters. *Id.* at 40–41 (citing Ex. 1005 ¶ 24). Petitioner also argues that one of ordinary skill in the art would have been motivated to modify Poh to include the filters of Maes. *Id.* at 40–41 (citing Pet. 30–33; Ex. 1003 ¶ 158).

- d) *“process the first service plan component and the second service plan component to create a network provisioning instruction set in accordance with a prioritization of the first traffic classification filter over the second traffic classification filter, the network provisioning instruction set comprising one or more traffic inspection provisioning instructions for the network traffic inspection system and one or more policy enforcement provisioning instructions for the network policy enforcement system, the network traffic inspection system and the network policy enforcement system implementing one or more policies applicable to the wireless end-user device;”*

Petitioner argues that Poh discloses the above-quoted limitations because Poh’s PIRS 126 prioritizes rules and Poh’s PCPS 128 converts rules to instructions. Pet. 41–46 (citing Ex. 1003 ¶¶ 161–174; Ex. 1004, 14:4–16, 16:28–34, 18:41–44, 18:59–61, 19:19–20:53, 20:61–21:34, 21:8–34, Figs. 3, 7, 8). Petitioner argues that, if Patent Owner responds that Poh’s giving precedence to one traffic classification filter over another is not a prioritization, then one of ordinary skill in the art would have been motivated to modify Poh with the traffic classification filters of Maes. *Id.* at 46 (citing Ex. 1003 ¶ 174).

- e) *“provide the one or more traffic inspection provisioning instructions to the network traffic inspection system; and”*

For the above-quoted limitation, Petitioner argues that PCPS 128 is configured to receive rules from PIRS 126 and provide instructions to its PCRF 108, PCEF 110, and ISGW 138 that are, or include, network traffic

inspection systems. Pet. 46–47 (citing Ex. 1003 ¶¶ 176–177; Ex. 1004, 14:4–10, 16:28–31, Fig. 1).

f) “provide the one or more policy enforcement provisioning instructions to the network policy enforcement system.”

For above-quoted limitation, Petitioner argues that PCRF 108, PCEF 110, and ISGW 138 are, or also include, network policy enforcement systems and receive instructions from PIRS 126. Pet. 47–48 (citing Ex. 1003 ¶¶ 179–181; Ex. 1004, 11:57–64, 14:4–10; 16:28–34, 23:7–24:11, 24:31–50, Fig. 10).

g) Petitioner’s Asserted Reason for Modifying

Petitioner argues that Poh and Maes are analogous art because they are in the same field of network communication, directed to the same problem as the ’543 patent and propose the same solution. Pet. 33 (citing Ex. 1001, claim 1; Ex. 1004, 1:8–24; Ex. 1003 ¶¶ 128, 129; Ex. 1005 ¶¶ 7, 24). Petitioner also argues that, because of their teachings, one of ordinary skill in the art would have understood that (1) “policy rules with criteria for filtering (matching) traffic (e.g., to identify traffic for quality of service, throttling, prioritized routing, etc.) and actions to be taken upon a match, and prioritization of such rules by their traffic classification filters, were well known in the art as evidenced by Maes” and (2) “the types of rules disclosed in Maes, and their prioritization, could be used by the provisioning system of Poh for provisioning Poh’s network elements, such as Poh’s PCRF, PCEF and/or ISGW network elements, to achieve Poh’s policy objectives.” *Id.* at 30–31 (citing Ex. 1003 ¶¶ 122–124; Ex. 1005 ¶ 23).

According to Petitioner, one of ordinary skill in the art would have been motivated to modify Poh with the rules of Maes “where each rule or group of rules includes a traffic classification filter and an action or actions

to be taken” and “order the rules of Poh, as suggested by Maes, in an order that gives priority to a first rule’s traffic classification filter over a second rule’s traffic classification filter.” Pet. 31–32 (citing Ex. 1003 ¶¶ 125, 126; Ex. 1004, 11:57–67, 14:17–24; Ex. 1005 ¶ 23).

Petitioner also argues that one of ordinary skill in the art would have had a reasonable expectation of success in making the proposed modification because “it is a software solution that uses known techniques—rules and logical arrangement of rules—for their intended purpose—implementing objective of policies in a network.” Pet. 30 (citing Ex. 1003 ¶¶ 120–130), 32–33 (citing Ex. 1003 ¶ 127).

h) Petitioner Shows a Reasonable Likelihood of Prevailing

Based on the preliminary record, Petitioner shows a reasonable likelihood of prevailing on its challenge that Poh alone or Poh in view of Maes teaches, suggests, or would have been understood to disclose the limitations of claim 1 and that one of ordinary skill in the art would have combined Poh and Maes in the manner asserted with a reasonable expectation of success.

Patent Owner does not provide arguments at this stage responding to Petitioner’s obviousness challenge. *See* Prelim. Resp. Because Petitioner demonstrates a reasonable likelihood of prevailing with respect to claim 1, we institute *inter partes* review.

E. Remaining Challenges

Petitioner also argues with citations to the record that claims 2–7, 11–13, 16, 22, 23, 30–33, 35–41, 57–66, 68–72, 80, 85, 86, 90–93, 112, and 113 that ultimately depend from claim 1 are unpatentable over Poh alone or Poh combined with Maes. Pet. 48–69.

For the reasons above, we preliminarily determine that Petitioner demonstrates a reasonable likelihood of prevailing with respect to its challenge to independent claim 1. We, therefore, institute review on all challenged claims on all grounds set forth in the Petition. 37 C.F.R. § 42.108(a); *see also SAS*, 138 S. Ct. at 1354.

IV. CONCLUSION

After considering the evidence and arguments presented in the Petition and the cited evidence, we determine that Petitioner has demonstrated a reasonable likelihood of prevailing in proving that at least one of claims 1–7, 11–13, 16, 22, 23, 30–33, 35–41, 57–66, 68–72, 80, 85, 86, 90–93, 112, and 113 of the '543 patent is unpatentable, and thus, we institute an *inter partes* review of all challenged claims on all presented challenges. 37 C.F.R. § 42.108(a).

At this stage of the proceeding, the Board has not made a final determination as to the patentability of any challenged claim or any underlying factual and legal issues.

V. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of claims 1–7, 11–13, 16, 22, 23, 30–33, 35–41, 57–66, 68–72, 80, 85, 86, 90–93, 112, and 113 of U.S. Patent No. 8,924,543 B2 is instituted with respect to all grounds 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 U.S. Patent No. 8,924,543 B2

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shall commence on the entry date of this Order, and notice is hereby given of the institution of a trial.

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