

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

NOKIA SOLUTIONS AND NETWORKS US LLC and
NOKIA SOLUTIONS AND NETWORKS OY,
Petitioner,

v.

HUAWEI TECHNOLOGIES CO. LTD.,
Patent Owner.

Case IPR2017-00592
Patent 8,798,575 B2

Before JENNIFER MEYER CHAGNON,
MICHELLE N. WORMMEESTER, and CHRISTA P. ZADO,
Administrative Patent Judges.

WORMMEESTER, *Administrative Patent Judge.*

DECISION
Denying Institution of *Inter Partes* Review
37 C.F.R. § 42.108

I. INTRODUCTION

Nokia Solutions and Networks US LLC as well as Nokia Solutions and Networks Oy (collectively, “Petitioner”) filed a Petition (Paper 2, “Pet.”) requesting *inter partes* review of claims 1–3, 5, 8, 9, 11, 16, 17, and 19 of U.S. Patent No. 8,798,575 B2 (Ex. 1001, “the ’575 patent”). Huawei Technologies Co. Ltd. (“Patent Owner”) filed a Preliminary Response (Paper 7, “Prelim. Resp.”). We have jurisdiction under 35 U.S.C. § 314 and 37 C.F.R. § 42.4(a). Under 35 U.S.C. § 314(a), 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.” For the reasons that follow, we decline to institute an *inter partes* review.

II. BACKGROUND

A. *Related Proceedings*

The parties identify the following federal district court case involving the ’575 patent: *Huawei Technologies Co. v. T-Mobile US, Inc.*, Case No. 2:16-cv-0055 (E.D. Tex.). Pet. 1; Paper 6, 2. The parties also identify several other related petitions for *inter partes* review. Pet. 1; Paper 6, 2.

B. *The ’575 Patent*

According to the ’575 patent, there is a wide range of available packet data services, including e-mail services, browsing services, and file transmission services. Ex. 1001, 1:19, 2:51–57. A user may access multiple services based on one activated Packet Data Protocol Context (PDP Context). *Id.* at 2:51–60.

The '575 patent notes that different charging policies may apply to different services. *Id.* at 2:61–62. For example, an e-mail service provider may charge a user according to the times of the receiving-sending events; a browsing service provider may charge the user according to the data flow using one charging rate; and a file transmission service provider may charge the user also according to the data flow but using another charging rate. *Id.* at 2:62–3:1. The '575 patent further notes that the 3rd Generation Partnership Project (3GPP) “is now discussing how to implement Flow Based Charging (FBC),” which provides for a charging system that can apply different charging policies to different services using the same PDP Context as the bearer. *Id.* at 3:1–26. According to the '575 patent,

FBC can be regarded to be implemented by filtering the IP flows for different services borne in the same PDP context through different sieve-like “filters” and then charging for different services according to the corresponding “filters”. Therefore, the “pore size” of the charging “filter” based on IP flows is much less than that based on one PDP Context. The “pore size” of the charging “filter” can be regarded as to indicate the size of a sieve hole. If the charging is based on one PDP Context, one PDP Context corresponds to one sieve hole; while if the charging is based on IP flows, one IP flow corresponds to one sieve hole and thus one PDP Context corresponds to multiple sieve holes in the FBC mode. Therefore, compared with the charging based on one PDP Context, the FBC provides more abundant charging means for operators or service providers.

Id. at 3:12–26.

Figures 2A and 2B of the '575 patent, which are reproduced below, show systematic configurations of FBC. *Id.* at 8:9–12.

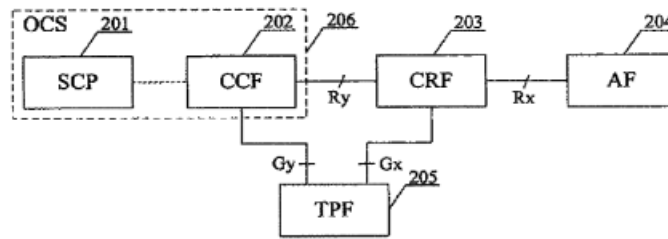


FIG. 2A

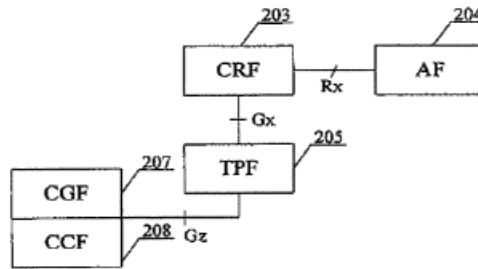


FIG. 2B

In particular, Figure 2A shows the FBC systematic configuration for online charging, while Figure 2B shows the FBC systematic configuration for offline charging. *Id.* Traffic Plane Function (TPF) 205 bears IP flow and sends a Charging Rules Request to Charging Rule Function (CRF) 203 when an IP flow bearer is established. *Id.* at 3:55–58. CRF 203 selects appropriate charging rules according to the input information provided by TPF 205 and returns to TPF 205 the selected charging rules, including the charging mechanism. *Id.* at 4:6–11. The charging mechanism may be online charging (where the user is provided with a prepaid service) or offline charging (where the user is provided with a post-paid service). *Id.* at 4:11–13, 9:9–20. CRF 203 may select the charging rules according to input from Application Function (AF) 204 or Online Charging System (OCS) 206, as well. *Id.* at 4:33–35. Credit Control Function (CCF) 202 manages and controls the user's credit and provides the related information used to determine the charging rules to CRF 203. *Id.* at 4:43–46. When the user uses a certain packet data service, CCF 202 also authenticates the user's

credit and provides TPF 205 with the available credit upon request. *Id.* at 4:48–56, 5:16–18. TPF 205 charges for IP flows according to the charging rules. *Id.* at 4:17–20.

Thus, when the bearer is established according to the 3GPP standard, the TPF requests the user’s credit from the OCS, and the OCS returns the credit to the TPF. *Id.* at 7:1–6. According to the ’575 patent, however, the means by which the TPF may address the correct OCS is not described in the 3GPP standard. *Id.* at 7:6–9. To address this problem, the invention of the ’575 patent provides a system for improving service data flow based charging where the CRF provides the TPF with the address information of the charging system. *Id.* at 7:33–36. In particular, the CRF may provide the TPF with the address information of an OCS or Offline Charging System (OFCS), so that the TPF can address the appropriate OCS and request the user’s credit information, or so that it can address the appropriate OFCS and send collected charging data information to the OFCS. *Id.* at 7:60–8:1. In this way, “the charging implementation procedure based on the FBC mechanism may be more complete and more reasonable.” *Id.* at 8:1–3.

C. Challenged Claims

Petitioner challenges claims 1–3, 5, 8, 9, 11, 16, 17, and 19 of the ’575 patent. Claim 1 is independent and illustrative of the claims under challenge:

1. A method for improving service data flow based charging in a communications network, comprising:
 - a Charging Rules Function (CRF) determining a charging method and charging rules in response to a service request or other trigger event, and

the CRF providing a Traffic Plane Function (TPF) with the charging rules and address information of a charging system.

D. Asserted Grounds of Unpatentability

Petitioner challenges claims 1–3, 5, 8, 9, 11, 16, 17, and 19 of the '575 patent on the following grounds. Pet. 3, 35–70.

References	Basis	Claims Challenged
TS 23.125 ¹ and the Tdoc list ²	§ 103	1–3, 5, 8, 9, 11, 16, 17, and 19
TS 23.125 and Tdoc '930 ³	§ 103	1–3, 5, 8, 9, 11, 16, 17, and 19

In support of its arguments, Petitioner proffers the declarations of Paul S. Min, Ph.D. (Ex. 1003) and Balazs Bertenyi (Ex. 1004). *See id.*

E. Claim Construction

We construe claims in an unexpired patent by applying the broadest reasonable interpretation in light of the specification of the patent in which they appear. *See* 37 C.F.R. § 42.100(b); *Cuozzo Speed Techs. LLC v. Lee*, 136 S. Ct. 2131, 2144–46 (2016) (upholding the use of the broadest reasonable interpretation standard). Under this standard, claim terms generally are given their ordinary and customary meaning, as would be

¹ *Overall High Level Functionality and Architecture Impacts of Flow Based Charging; Stage 2 (Release 6) (3GPP TS 23.125 V6.0.0)*, Technical Specification (3rd Generation P'ship Project), Mar. 2004 (Ex. 1006, "TS 23.125").

² *3GPP TSG SA WG2 Meeting #40, tdoc list draft 02*, Temporary Document (3rd Generation P'ship Project), May 17–21, 2004 (Ex. 1012, "Tdoc list").

³ *3GPP TSG SA WG2 Meeting #40, Tdoc S2-041930*, Temporary Document (3rd Generation P'ship Project), May 17–21, 2004 (Ex. 1013, "Tdoc '930").

understood by one of ordinary skill in the art in the context of the entire disclosure. *See In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). A “claim term will not receive its ordinary meaning if the patentee acted as his own lexicographer,” however, and clearly set forth a definition of the claim term in the specification. *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002).

Petitioner provides proposed interpretations for various limitations of the claims. Pet. 26–29. Patent Owner responds. Prelim. Resp. 10–12. For purposes of this Decision, we conclude that no term requires express construction to resolve a controversy in this proceeding. *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.”).

III. DISCUSSION

A. *Effective Filing Date for the Challenged Claims*

As a preliminary matter, we first consider the effective filing date for challenged claims 1–3, 5, 8, 9, 11, 16, 17, and 19. The ’575 patent issued from U.S. Patent Application No. 11/558,774, which has a filing date of November 10, 2006. Ex. 1001, at [21], [22]. The application for the ’575 patent is a continuation of International Patent Application No. PCT/CN2005/000665 (“PCT application”), which has a filing date of May 12, 2005. *Id.* at [63], 1:5–9. The PCT application claims priority to Chinese Application No. 200410044433.3, which has a filing date of May 12, 2004. *Id.* at [30], 1:5–9. The parties dispute whether the challenged claims of the

'575 patent are entitled to the benefit of the filing date of the Chinese application.

Under 35 U.S.C. § 119, “the claims set forth in a United States application are entitled to the benefit of a foreign priority date if the corresponding foreign application supports the claims in the manner required by section 112, ¶ 1.” *In re Gosteli*, 872 F.2d 1008, 1010 (Fed. Cir. 1989). Section 112, ¶ 1 contains a written description requirement, which is satisfied here if “the disclosure of the [foreign] application relied upon reasonably conveys to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date.” *See Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010).

Petitioner argues that the challenged claims of the '575 patent are not entitled to the benefit of the filing date of the Chinese application. Pet. 20–21. Rather, Petitioner asserts, the effective filing date for the challenged claims is the filing date of the PCT application. *Id.* According to Petitioner, the Chinese application does not disclose “determining a charging method” or “determine a charging method,” as recited in independent claims 1 and 16, respectively. *Id.* at 25. Petitioner explains that the Chinese application could not disclose these disputed limitations because it “did not disclose a CRF determining that the charging method was *offline*.” *Id.* (emphasis added). Petitioner further points out that “Patent Owner sought to cure this defect in the PCT and U.S. applications.” *Id.* at 21.

In response, Patent Owner argues that claims 1 and 16 do not require determining a charging method to be *offline*. *See* Prelim. Resp. 14–16. Patent Owner points out that “Petitioner does not explain why the [Chinese] application must disclose ‘a CRF determining that the charging method

was offline’ in order to support independent claims 1 and 16, which recite only ‘determining a charging method’ with no mention of the charging method being ‘offline.’” *Id.* at 14. Patent Owner also directs us to several portions of the Chinese application that describe a CRF determining the charging method of a packet data service to be *online*. Prelim. Resp. 14–16. For instance, Patent Owner points us to where the Chinese application discloses that “the CRF may determine that the charging method of the current packet data service is online charging method.” *Id.* at 14 (citing Ex. 1031, 19). According to Patent Owner, such disclosures “teach[] straightforward examples of ‘determining a charging method’ as recited in the challenged claims.” *Id.* at 16.

Despite arguing that claims 1 and 16 do not require determining a charging method to be offline, Patent Owner notes that the Chinese application nevertheless “plainly taught that the charging method (e.g., ‘charging mechanism’) determined (‘selected’) by the CRF may be either online or offline charging.” *Id.* As support, Patent Owner directs us to where the Chinese application discloses that “the CRF 203 selects appropriate charging rules according to the input information provided by the TPF 205 described above, and returns to the TPF 205 the selected charging rules including the charging mechanism,” where “[t]he charging mechanism may be online charging or offline charging.” *Id.* at 16 (citing Ex. 1031, 11).

Based on the record before us, we are unpersuaded by Petitioner’s argument that the challenged claims of the ’575 patent are not entitled to the benefit of the filing date of the Chinese application. As Patent Owner points out, independent claims 1 and 16 do not require determining a charging

method to be *offline*. Prelim. Resp. 14. Rather, the claims recite “determining a charging method” or “determine a charging method,” without specifying *offline* as a required charging method. Patent Owner points us to where the Chinese application discloses a CRF determining a charging method to be online, as discussed above. *See, e.g.*, Ex. 1031, 19 (cited at Prelim. Resp. 14). We find that such disclosure sufficiently describes the disputed limitations “determining a charging method” and “determine a charging method.”

Even if the claims were to require determining that a charging method is *offline*, however, Patent Owner directs us to where the Chinese application discloses that “the CRF 203 selects appropriate charging rules according to the input information provided by the TPF 205 described above, and returns to the TPF 205 the selected charging rules including the charging mechanism,” where “[t]he charging mechanism may be online charging or offline charging,” as discussed above. Prelim. Resp. 16 (citing Ex. 1031, 11). We find that this disclosure in the Chinese application describes a CRF determining a charging method to be offline, and, more broadly, a CRF determining a charging method, which is all that is required by claims 1 and 16. *See id.* at 16.

In view of the plain meaning of the claims, as well as the cited portions of the Chinese application, we find that the Chinese application provides written description support for the disputed limitations, namely “determining a charging method” and “determine a charging method.” Accordingly, we determine for purposes of this Decision that the effective filing date of challenged claims 1–3, 5, 8, 9, 11, 16, 17, and 19 of the ’575 patent is the filing date of the Chinese application, which is May 12, 2004.

B. Obviousness over TS 23.125 and Tdoc '930

Petitioner argues that claims 1–3, 5, 8, 9, 11, 16, 17, and 19 of the '575 patent would have been obvious over TS 23.125 and Tdoc '930. Pet. 66–70. For the reasons explained below, we are not persuaded that Petitioner has demonstrated a reasonable likelihood of prevailing on this asserted ground.

Tdoc '930 is a “temporary document” that contains 3GPP member “contributions for consideration by the Technical Specification Group or Working Group.” Ex. 1013; Ex. 1004 ¶ 17 (declaration testimony explaining that “Tdocs” refer to “temporary documents”). Petitioner asserts that Tdoc '930 “was publicly available as early as May 23, 2004,” the date on which Petitioner relies as the prior art date. Pet. 33. Petitioner supports this assertion with the declaration testimony of both Dr. Min (Ex. 1003) and Balazs Bertenyi (Ex. 1004). *See id.* (citing Ex. 1003 ¶ 124; Ex. 1004 ¶ 37). According to Petitioner, Tdoc '930 qualifies as prior art under 35 U.S.C. § 102(a)⁴ “because the '575 Patent is not entitled to the priority date of the [] Chinese priority document.” *Id.* As discussed above, however, we find that the challenged claims are entitled to the benefit of the filing date of the Chinese application, namely, May 12, 2004. Accordingly, Tdoc '930 does not qualify as prior art against the challenged claims of the '575 patent under 35 U.S.C. § 102(a).

⁴ Because the application for the '575 patent was filed before the enactment of the Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), the pre-AIA version of 35 U.S.C. § 102(a) applies in this proceeding.

In view of the foregoing, we determine that Petitioner has not demonstrated a reasonable likelihood of prevailing in showing that claims 1–3, 5, 8, 9, 11, 16, 17, and 19 would have been obvious over TS 23.125 and Tdoc '930.

C. Obviousness over TS 23.125 and the Tdoc List

Petitioner argues that claims 1–3, 5, 8, 9, 11, 16, 17, and 19 of the '575 patent would have been obvious over TS 23.125 and the Tdoc list. Pet. 35–66. For the reasons explained below, we are not persuaded that Petitioner has demonstrated a reasonable likelihood of prevailing on this asserted ground.

1. TS 23.125

TS 23.125 is a 3GPP technical specification that describes flow based charging. Ex. 1006, 1, 7. According to TS 23.125, there are many different services that can be used within a network, and data flows from these services can be charged in many different ways. *Id.* at 10. Charging rules are used for defining how a service data flow is to be charged. *Id.* at 11. For example, a charging rule may contain information on whether a particular service data flow, such as web service data flow, is to be charged online or offline. *Id.* at 10 (describing a web service), 12 (describing information included in charging rules). Figures 6.1 and 6.2 of TS 23.125, which are reproduced below, show the overall architectures for online and offline service data flow based charging.

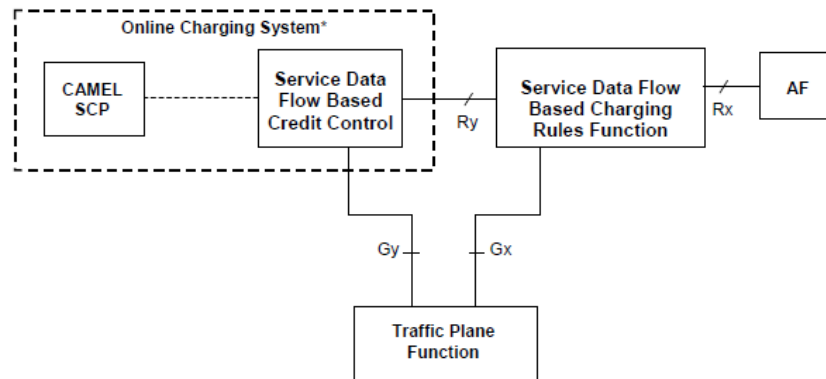


Figure 6.1: Overall architecture for service data flow based online bearer charging

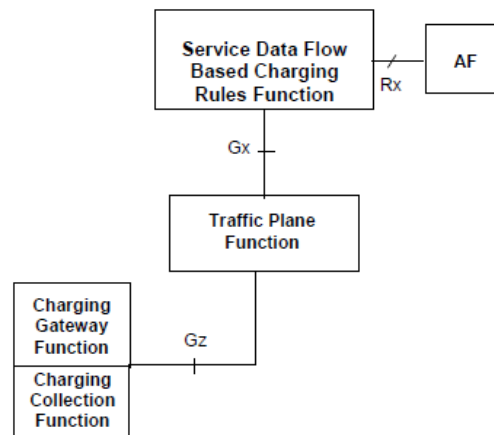


Figure 6.2: Overall architecture for service data flow based offline bearer charging

Figure 6.1 in particular shows the architecture for online service data flow based charging, while Figure 6.2 shows the architecture for offline service data flow based charging. *Id.* at 14–15. As shown in the figures, each system includes a Traffic Plane Function (TPF), a Service Data Flow Based Charging Rules Function (CRF), and a charging system that is either online (*see id.* at Fig. 6.1) or offline (*see id.* at Fig. 6.2).

Figure 7.1 of TS 23.125, which is reproduced below, shows how information flows between the different system components.

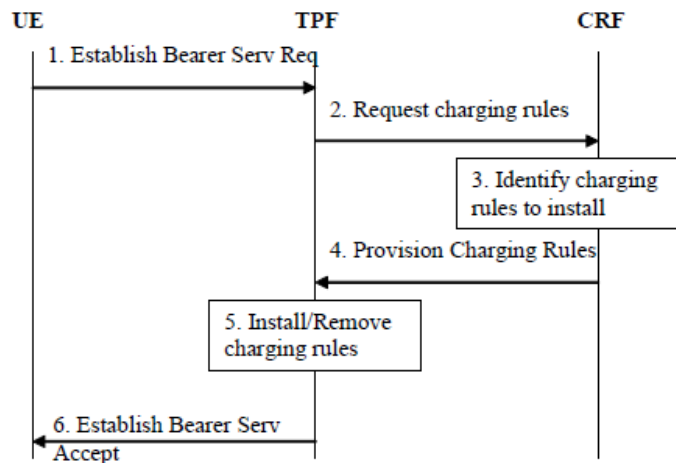


Figure 7.1: Bearer Service Establishment

Figure 7.1 shows how information flows between system components specifically in the context of bearer service establishment. *Id.* at 21. At step 1, the user sends to the TPF a request to establish a bearer service. *Id.* At step 2, the TPF sends to the CRF a request for the applicable charging rules and provides relevant input information for the charging rule decision. *Id.* The CRF determines the charging rules based on information from the TPF at step 3, and then sends to the TPF the charging rules at step 4. *Id.* The TPF installs the charging rules as indicated at step 5. *Id.* Finally, at step 6, the TPF continues with the bearer service establishment procedure. *Id.*

2. Tdoc List

The Tdoc list is a list of “temporary documents” that contain 3GPP member “contributions for consideration by the Technical Specification Group or Working Group.” Ex. 1012; Ex. 1004 ¶ 17. The Tdoc list shows that the company Huawei submitted a temporary document called “Add OCS address to charging rule” for consideration with respect to TS 23.125. Ex. 1012, at 1, 6.

3. Analysis

Independent claim 1 recites “the CRF providing a Traffic Plane Function (TPF) with . . . address information of a charging system.” Independent claim 16 similarly recites “wherein the CRF is configured . . . to provide the TPF with the . . . address information of the charging system.”

For these limitations, Petitioner points out that TS 23.125 “discloses that the TPF should use the Gy and Gz interfaces to report charging information to the charging systems.” Pet. 48 (citing Ex. 1006 ¶ 13); *see also* Ex. 1006, Figs. 6.1, 6.2. Relying on the declaration testimony of Dr. Min, Petitioner explains that, “[i]n order to report information to the charging system, a POSITA would understand that the TPF would need to know the address information of the charging system.” Pet. 48 (quoting Ex. 1003 ¶ 147). According to Dr. Min, “[a] POSITA would have further known that the address information could either be pre-configured in the TPF or provided by another node.” Ex. 1003 ¶ 157 (cited at Pet. 51). Petitioner argues that, “[i]f provided by another node, TS 23.125 [] renders it obvious that the address information should come from the CRF.” Pet. 51. In support of this argument, Petitioner explains that “[a] CRF could provide any information that would ‘define[] how [a] service data flow is to be charged.’” *Id.* (citing Ex. 1006, 11). Relying again on the declaration testimony of Dr. Min, Petitioner further explains that “[a] POSITA would understand that by providing the address information of a charging system, a charging rule could define whether the subscriber would be charged to, for example, Online Charging System #1 or Online Charging System #2,” and, therefore, “would consider the address information of a charging system to

be information that would define how a service data flow is to be charged.”
Id. (citing Ex. 1003 ¶ 149).

We are not persuaded by Petitioner’s argument. Petitioner directs us to where TS 23.125 teaches that “[c]harging rules contain information that . . . allow for defining *how the service data flow is to be charged.*” Pet. 51; Ex. 1006, 11 (emphasis added). We note that TS 23.125 further teaches that [c]harging rules contain information on . . . *[h]ow a particular service data flow is to be charged: online/offline.*” Ex. 1006, 12 (emphasis added). Thus, in the context of TS 23.125, “defining how the service data flow is to be charged” refers specifically to defining whether the service data flow is to be charged *online or offline*. See Ex. 1006, 11–12. This does not encompass defining whether the subscriber would be charged to *Online Charging System #1* or to *Online Charging System #2*, as Petitioner argues. See Pet. 51. In view of the teachings in TS 23.125, neither Petitioner nor Dr. Min explains sufficiently why it would have been “obvious that the address information [of a charging system] should come from the CRF.” See *id.* Accordingly, based on the record before us, we are not persuaded that a CRF providing a TPF with address information of a charging system would have been obvious in the context of TS 23.125.

Alternatively, Petitioner argues that, “[i]f additional disclosure is needed, [the Tdoc list] discloses or renders obvious a CRF providing a TPF with the charging rules and address information of a charging system.” Pet. 51. As support, Petitioner directs us to where the Tdoc list indicates that “Huawei disclosed that ‘Add OCS address to charging rule’ should be added to TS 23.125,” where “OCS” refers to “Online Charging System.” *Id.* at 52 (citing Ex. 1012, 6); Ex. 1006, 8. According to Petitioner, “the combination

of [the Tdoc list] and TS 23.125 [] discloses the entirety of [the disputed limitations].” Pet. 52.

In addition, Petitioner asserts that its argument “is supported by the ’575 APA [(admitted prior art⁵)], which also discloses a CRF providing a TPF with the charging rules and address information of a charging system.” Pet. 52. For instance, Petitioner points out that the ’575 APA teaches that, “when the charging method is ‘online,’ the TPF’s first step after receiving the charging rules is to send a message to the online charging system.” *Id.* at 54 (citing Ex. 1001, 5:12–24). Relying on the declaration testimony of Dr. Min, Petitioner explains that “a POSITA would have understood that the only way for a network element to contact a remote network element was with some sort of address information,” which “could either be pre-configured in the TPF or provided by another node.” *Id.* (quoting Ex. 1003 ¶ 157). As to the latter case, Petitioner notes that the CRF “was the only node connected to the TPF . . . other than the [charging system].” *Id.* at 54–55 (citing Ex. 1001, Figs. 2A, 2B); *see also* Ex. 1003 ¶ 158. Petitioner further explains that, according to Dr. Min, the TPF would not have received address information from the charging system because “the flow-based charging architecture placed the burden on the TPF to send the first message to a charging system,” and “the TPF could send this first message *only if* it had address information of a charging system.” Pet. 55 (quoting Ex. 1003

⁵ With respect to the admitted prior art, Petitioner states: “The Grounds for invalidity do not directly rely on the ’575 APA. But because Patent Owner was describing the disclosure of TS 23.125 [], each Ground notes where Patent Owner admitted that certain aspects of its purported invention were already known and described in existing 3GPP specification documents.” Pet. 31.

¶ 159). Therefore, Petitioner concludes, “it would have been obvious to a POSITA that the address information [of a charging system] could either be pre-configured or dynamically allocated [“provided”] by the CRF.” *Id.* (quoting Ex. 1003 ¶ 159).

In light of Petitioner’s arguments and evidence, including Dr. Min’s declaration testimony, we are persuaded that a person of ordinary skill in the art would have known that the address information of a charging system could have been provided by the CRF to the TPF. *See* Pet. 54; Ex. 1003 ¶ 157. We note that both TS 23.125 and the ’575 APA show that the CRF is indeed connected to the TPF. Ex. 1006, Fig. 6.1; Ex. 1001, Figs. 2A, 2B.

It is not sufficient, however, for Petitioner to demonstrate that each of the claim elements is known. *See KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007). Petitioner must also provide “some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006). In that regard, Petitioner argues that one of ordinary skill in the art would have found it obvious to combine TS 23.125 and the Tdoc list because, according to Dr. Min, “a POSITA would have followed the instructions explicitly provided by [the Tdoc list], namely include an OCS address.” Pet. 36; Ex. 1003 ¶ 131.

We are not persuaded by Petitioner’s argument. Petitioner does not explain sufficiently why one of ordinary skill in the art would have considered combining TS 23.125 and the Tdoc list to arrive at the claimed invention, namely a CRF providing a TPF with address information of a charging system. As to the case where the address information is provided to the TPF by another node (as opposed to being preconfigured in the TPF),

we note Petitioner’s explanation that the CRF is the only node that would have provided the TPF with address information because the CRF and the charging system are the only nodes connected to the TPF, and the charging system would not have provided its own address to the TPF. See Pet. 54–55; Ex. 1003 ¶¶ 158–59. However, we find this explanation to be inconsistent with the teachings in TS 23.125 and the ’575 APA.

For example, TS 23.125 teaches that “[a] TPF may be served by one or more CRF nodes,” and that “[t]he appropriate CRF is contacted based on UE identity information,” where “UE” refers to “User Equipment.” Ex. 1006, at 8, 16; see also *id.* at Fig. 7.1 (showing the UE communicating with the TPF). Similarly, the ’575 APA teaches that “the UE sends an Establish Bearer Service Request to the TPF.” Ex. 1001, 4:65–66. These teachings indicate that at least another node, namely the UE, is connected to the TPF. Accordingly, we find that these teachings also indicate that the address information of a charging system could have been provided by *the CRF or the UE* in the case where the address information is provided to the TPF by another node.

As Patent Owner points out, neither Petitioner nor Dr. Min explains why a person of ordinary skill in the art would have combined TS 23.125 and the Tdoc list to arrive specifically at a CRF providing a TPF with address information of a charging system, rather than to arrive at a UE providing a TPF with the address information or at a TPF that is already preconfigured with the address information. See Prelim. Resp. 36 (“Neither Petitioner nor its declarant articulate a reasoning with rational underpinnings as to . . . why such modification would occur specifically to the CRF element of TS 23.125.”); *id.* at 37 (“the Petitioner had a burden to show why

a POSITA in 2004 would have modified the ‘CRF’ element, in particular, of TS 23.125 to add the OCS address rather than modifying another element of TS 23.125”). Accordingly, on this record, we are not persuaded that Petitioner has provided adequately articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. *See Kahn*, 441 F.3d at 988.

Based on the record before us, we are not persuaded that a CRF providing a TPF with address information of a charging system would have been obvious over TS 23.125 and the Tdoc list. We therefore determine that Petitioner has not demonstrated a reasonable likelihood of prevailing in showing that claims 1 and 16 would have been obvious over TS 23.125 and the Tdoc list. As claims 2, 3, 5, 8, 9, 11, 17, and 19 depend from claims 1 or 16, and Petitioner has not provided separate arguments that would overcome the shortcomings with respect to claims 1 and 16, we also determine that Petitioner has not demonstrated a reasonable likelihood of prevailing in showing that these dependent claims would have been obvious over TS 23.125 and the Tdoc list.

IV. CONCLUSION

For the foregoing reasons, Petitioner has not demonstrated a reasonable likelihood that it would prevail with respect to any challenged claim of the ’575 patent.

V. ORDER

For the reasons given, it is

ORDERED that the Petition is *denied* and no trial is instituted.

IPR2017-00592
Patent 8,798,575 B2

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