UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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ERICSSON INC.

Petitioner

v.

KONINKLIJKE KPN N.V.

Patent Owner

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Case IPR2023-00524

U.S. Patent 9,372,098

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PATENT OWNER'S PRELIMINARY RESPONSE

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EXHIBIT LIST

Exhibit No.	Description
2001	Expert Declaration of Radostin Pachamanov, PhD.
2002	*Curriculum Vitae* of Radostin Pachamanov, PhD.
2003	3GPP TR 21.905 v.8.6.0
2004	ITU-R V.662-3
2005	Excerpts from Webster's New World College Dictionary (4th Ed. 1999)
2006	Excerpts from The Oxford American Desk Dictionary (1998)
2007	Excerpts from The American Heritage Dictionary (2nd College Ed. 1982)
2008	U.S. Patent No. 9,277,384
2009	U.S. Patent No. 10,419,899
2010	First Amended Docket Control Order, *Koninklijke KPN N.V. v. Telefonaktiebolaget LM Ericsson et al.*, No. 2:22-CV-282-JRG, Doc. 101 (E.D. Tex. May 24, 2023)
2011	Administrative Office District Court Statistics, March 31, 2023, available at https://www.uscourts.gov/file/71612/download (fcms_na_distprofile0331.2023.pdf)
2012	Docket Navigator Time to Trial, Eastern District of Texas (Jan. 1, 2018-June 9, 2023)
2013	Docket Navigator Time to Trial, Judge Gilstrap (Jan. 1, 2018-June 9, 2023)
2014	Docket Report, *Koninklijke KPN N.V. v. Telefonaktiebolaget LM Ericsson et al.*, No. 2:22-CV-282-JRG, Doc. 101 (E.D. Tex.) (June 8, 2023)

Exhibit No.	Description
2015	Ericsson's P.R. 3-3 Invalidity Contentions (served Mar. 16, 2023) (confidential information redacted)
2016	KPN's P.R. 3-1 Infringement Contentions Cover Pleadings (served Jan. 5, 2023)
2017	Unopposed Motion for Issuance of Letter of Request for International Judicial Assistance, *Koninklijke KPN N.V. v. Telefonaktiebolaget LM Ericsson et al.*, No. 2:22-CV-282-JRG, Doc. 99 (E.D. Tex. May 19, 2023)
2018	Plaintiff's First Set of Requests for Admission (served Jan. 19, 2023)
2019	Plaintiff's First Set of Interrogatories (served Jan. 19, 2023)
2020	Defendants' First Set of Interrogatories (served Feb. 3, 2023)
2021	Defendants' Second Set of Interrogatories (served May 15, 2023)

I. INTRODUCTION

Institution should be denied because the Petition fails to demonstrate a reasonable likelihood that at least one claim is unpatentable. First, Krco's "secondary data" is not "***non**-signalling* application data generated for a machine-to-machine function." *Infra* Section IV.A.1. Nor would it have been obvious to "substitute" or "supplement" the secondary data with the M2M measurement data transmitted in Benaouda's SMS messages. *Infra* Section IV.A.2. Second, Krco does not disclose a communication module configured to *both* generate "non-signalling application data" and transmit that data in a "wireless signalling message." *Infra* Section IV.B.

Even beyond the lack of substantive merit, the Petition should be denied for other reasons. For one, the Petition fails to identify with particularity the combination of proposed prior art making up each asserted ground. *Infra* Section III. Additionally, the *Fintiv* factors heavily favor discretionary denial, particularly given that trial in the parallel litigation will occur nearly six months before any projected final written decision deadline and the parties have already expended significant resources in that proceeding. *Infra* Section V.

II. LEVEL OF ORDINARY SKILL IN THE ART

For purposes of this Preliminary Response only, Patent Owner does not dispute the qualifications of a person having ordinary skill in the art ("POSITA")

proposed by Petitioner. Petition, 14. All references to a POSITA herein are made pursuant to that definition. Patent Owner reserves the right to propose its own qualifications should the Board decide to institute trial. Patent Owner's expert, Dr. Radostin Pachamanov, far exceeds the qualifications of a POSITA. *See* Ex. 2001 ¶¶ 2-11, 43-44.

III. THE PETITION SHOULD BE DENIED FOR LACK OF PARTICULARITY

35 U.S.C. § 312(a)(3) requires an IPR petition to identify "with particularity, each claim challenged, the grounds on which the challenge to each claim is based, and the evidence that supports the grounds for the challenge to each claim." The particularity requirement takes on heightened importance given (1) the requirement that the Board institute on all grounds or not at all and (2) the prohibition against instituting review "based on a combination of prior art references not advanced" in the petition. *SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1355 (2018); *Koninklijke Philips N.V. v. Google LLC*, 948 F.3d 1330, 1335 (Fed. Cir. 2020).

Petitioner purports to assert two combinations of prior art:

Ground	Claims	Prior Art
1	1-2, 9-25	*Krco* in view of *Benaouda*
2	2-6	*Krco* in view of *Benaouda* and TS 24.008

Petition, 6. Yet, the Petition expressly states that another reference, Ananthanarayanan, is also being combined in the Krco-Benaouda combination:

> If Patent Owner contends that the "secondary data" in Krco is not "nonsignaling application data generated for a machine-to-machine function," it would have nevertheless been obvious to a POSITA to include such data in Krco's Location Updating Request message in light of Benaouda ***and Ananthanarayanan***.

Petition, 39.[1] Compounding the confusion, Petitioner repeatedly references Ananthanarayanan in the obviousness arguments of Ground 1 as if it were intended to form part of the proposed combinations. *See, e.g.*, Petition, 24-25, 27, 39, 41.[2] Like Krco, Benaouda, and TS 24.008, Ananthanarayanan is also discussed extensively in in Section IV.C ("Prior Art," p. 5), Section VIII ("Prior Art Summary," pp. 21-22), and Section VI ("Institution is Proper Under § 325(D)," pp. 7-8) as if it makes up the asserted combinations of art. In fact, Ananthanarayanan is the only reference not listed in the above grounds that Petitioner argues is not the "same or substantially the same art" previously before the Examiner. Petition, 7-8. Thus, on one hand the Petition purports to assert only two combinations of art—

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[1] All emphasis herein has been added unless indicated otherwise.

[2] Petitioner also vaguely alleges "[s]uch a modification would have been obvious in light of the knowledge of a POSITA." Petition, 24.

neither of which includes Ananthanarayanan—and on the other hand argues obviousness as if Ananthanarayanan is part of the asserted combinations.

Denial of institution is warranted because it is unclear whether Ananthanarayanan is being asserted in the proposed combinations, making it impossible for the Board to institute while complying with both *SAS Institute* and *Koninklijke Philips.* If the Board institutes review, not only must it institute on all grounds, but it also can institute only based on grounds asserted in the petition. That means that for the Board to comply with both requirements, it necessarily must *know* the precise combinations being asserted by Petitioner. Given the clear inconsistencies above—e.g., the explicit listing of grounds that omits Ananthanarayanan versus the explicit statement that Ananthanarayanan is part of the obviousness combinations—both the Board and Patent Owner are left to guess as to whether the Petition is asserting only the grounds listed in the table above or additional grounds that include Ananthanarayanan.

As such, it is impossible for the Board to confidently institute on "all" grounds or confidently know that the Board is avoiding institution on grounds "based on a combination of prior art references not advanced." It is not asking much of Petitioner to clearly convey the combination of art asserted in each ground, and neither the Board nor Patent Owner should be left to guess as to whether Ananthanarayanan makes up the proposed combinations. For these reasons, the Petition should be

denied for failure to comply with the particularity requirement.

IV. THE PETITION SHOULD BE DENIED ON THE MERITS

A. All grounds fail because Krco's "secondary data" is not "non-signalling application data" and it would not have been obvious to include such data as "secondary data."

Independent claims 1, 15, and 17 require a "wireless signalling message having inserted in it ***non-signalling*** application data," while independent claim 21 requires "encapsulating said ***non-signalling*** application data in one or more signalling messages." Thus, all claims recite a signalling message that includes non-signalling application data.

Petitioner alleges that Krco's "secondary data" is "non-signalling application data" that is embedded in a Location Update Request/Routing Area Update message (alleged "signalling message") of the UE 10. Petition, 36. Petitioner also argues that if the "secondary data" is not non-signalling application data, "it would have nevertheless been obvious to a POSITA to include such data in *Krco*'s Location Updating Request message in light of Benaouda and Ananthanarayanan." Petition, 39. Petitioner is mistaken on both counts.

1. *Krco's "secondary data" is not "non-signalling" data.*

"Signalling" is a term of art that refers to "[t]he exchange of information specifically concerned with the establishment and control of connections, and with management, in a telecommunications network." Ex. 2001 ¶ 48 (citing Ex. 2003, 25). A POSITA would thus understand "***non***-signalling data" to refer to data that is ***not*** specifically concerned with the establishment and control of connections, and with management, in a telecommunications network. *Id.* ¶ 49.[3] This is consistent with Petitioner's assertion that data that "affects the connection between" two devices in a network is "considered 'signalling data.'" *Id.* (citing Petition, 20-21).

The secondary data of Krco is **not** "non-signalling" data because it **<u>is</u>** specifically concerned with the establishment, control, and management of the connection between the second entity/network and the M2M service provider. Ex. 2001 ¶ 50. More specifically, the secondary data "about the properties" of the second

[3] "Telecommunications network" broadly refers to a network of devices that communication through electric or electronic means. *See* Ex. 2001 ¶ 48 (citing Ex. 2004, 11 (defining "telecommunications network" as "[a]ll the means of providing telecommunication services between a number of locations where equipment provides access to these services."); Ex. 2005, 9; Ex. 2006, 7; Ex. 2007, 8 (various dictionary definitions of "telecommunication")).

entity/network (Ex. 1009, 4:44-47) is signalling data for the second entity, just like the data "about properties of the UE" (Ex. 1009, 4:39-40) is signalling data for the UE. *Id.*

As Krco explains, the UE 10 generates a first message 21 (e.g., Location Update Request) to inform the cellular network (e.g., third entity 13, 14) "about the location and properties of the UE," including "availability information" that informs the network if the UE is present. Ex. 1009, 4:16-53.[4] A POSITA would recognize that the data "about the location and properties of the UE 10" is signalling data because it is used by the network to establish, control and manage the connection of the UE 10 in the telecommunications network. Ex. 2001 ¶ 51.

For example, the Location Update Request/Routing Area Update message contains information on the location of the user terminal, which is used by the network to establish and manage the connection of the user terminal regardless of its present location. *Id.* ¶ 52 (citing Ex. 1009, 5:10 (listing "location area identification" within the information element of Location Update Request). The Location Update Request/Routing Area Update message also contains information

[4] Krco lists the various information elements ("IE") that make up the signalling data of the Location Update Request and allow "a network to monitor the location and availability of UEs attached to the network." *Id.* at 5:1-14.

about the properties of the user terminal that is used by the network to establish and manage the user terminal's connection. *Id.* (citing Ex. 1009, 5:12 (listing "mobile identity" as one piece of information in a Location Update Request)). As one example, the identity (an identifier) of the user terminal is included, which is used to authenticate and allow the user terminal to register with the network. *Id.* ¶ 53 (citing Ex. 1009, 5:12 (listing "mobile identity" as one of the pieces of information in a Location Update Request information element). Other signalling information within these messages includes, but is not limited to, other properties and capabilities of the UE such as its availability. *Id.* (citing Ex. 1009, 5:29 (listing "TMSI status" as one of the pieces of information in a Routing Area Update Request message)). A POSITA would understand that all of this information is used to establish, manage, and control the connection of the user terminal within the network. *Id.* ¶ 54.

Krco focuses on the concept of the UE providing signalling information to the cellular network and expands that concept to a separate second entity/network that has been connected to the UE. *Id.* ¶ 55. As Krco explains, the problem with connecting new separate devices to a UE is that the M2M provider is unaware of the new devices "existence, location and availability." Ex. 1009, 1:60-2:2. Krco's solution is to embed signalling information of the second entity/network into the signalling message of the UE:

In order to enable the provisions for distributing information ***about the***

> ***second network 15 or the second entity 16*** in the primary cellular network, the method according to the present invention comprises a further step, see FIG. 2. In this step the UE 10 sends 30 secondary data in the first message to the third entity 13,14. The secondary data comprises ***information about the properties of the second network or entity***.

Ex. 2001 ¶ 56 (quoting Ex. 1009, 4:41-47). Thus, just as the UE 10 generates signalling data "about the location and properties of the UE," the second network 15 and/or second entity 16 also generates signalling data "about the properties of the second network or entity" that is needed to establish, manage and control the connection between the second entity/network and M2M provider. *Id.* (citing Ex. 1009, 1:59-2:24); *see also* Petition, 15 ("***In order for the service provider to be aware of the M2M sensors' 'existence, location, and availability,'*** the UE sends 'secondary data'—information about the M2M sensors' properties—to the M2M service provider.").

The secondary data is then used by the M2M service provider to establish, manage and/or control the connection to the secondary entity/network. Ex. 2001 ¶ 57 (citing Ex. 1009, 2:6-10 ("The object of the present invention is therefore to provide a way of improving the communication between the UE and the service provider when connecting a new functionality to the UE, ***so that the service provider can <u>make use</u> of the services of the functionality***."). Indeed, the sole purpose of the service provider being made aware of the properties and availability of the second

network or entity is so the M2M service provider can establish and manage its connection with second network/entity. *Id.* ¶ 57.

In fact, Krco expressly teaches that the secondary data is "***signalling*** information." *Id.* ¶ 58. Krco specifically teaches that its goal is to "enhance the possibility to build 3rd party services" by "providing a standardized interface for ***external*** **entities** **to reach** ***signalling*** **information**." Ex. 1009, 3:14-16. The "external entity" referenced is the M2M service provider 17. Ex. 2001 ¶ 58 (citing Ex. 1009, 6:57-60 ("The role of the fourth entity is to enable **the *service provider as an external* entity to reach *the secondary data***.")). And the only information that Krco teaches the M2M service provider 17 "**reaching**" is the secondary data. *Id.* (citing Ex. 1009, 3:14-16). Thus, the referenced "***signalling*** information" is in direct reference to the secondary data, which includes information about properties of the second entity/network that is used to establish, control, and manage its connection with the M2M service provider. *Id.*

Krco's claims only confirm that the "secondary data" is the same type of signalling information (location, properties, availability) that is being transmitted by the UE 10. For example, independent claim 1 recites "M2M ***properties*** … ***indicating an existence, location, and/or availability of the one or more M2M type networks or entities***" and "send[ing] the M2M properties to a core network of the cellular network that is configured to forward those M2M properties to the M2M type service

provider, by embedding the M2M properties within ***a message that indicates a location and/or availability of the UE*** and sending that message to the core network ***as part of a process to update the core network about the location and/or availability of the UE***." Thus, even the claims of Krco teach that the same type of signalling information being conveyed for the UE is also being conveyed for the second entity/network. Ex. 2001 ¶ 59.

A comparison of Krco's secondary data's information elements ("IE") with that of Location Update Request and/or Routing Area Update Request reaffirms that the secondary data is a form of signalling data. Ex.1009, 4:64-5:63. For instance, as shown below the "secondary data" IE contains the same types of information as the Location Update Request IE:

IE of Secondary Data (Ex. 1009, 5:55-63)	IE of Location Update Request (Ex. 1009, 5:4-14)
ID (4 bits)	Mobile identity
Type (2 bytes)	Update type
Location (4 bytes)	Location area identification

Ex. 2001 ¶ 60. Thus, just as the UE generates a Location Update Request that provides information about the properties of the UE for purposes of managing, establishing and/or controlling the UE's connection with the network, the secondary entity/network generates secondary data that provides information about its properties to the service provider for the purpose of managing, establishing and/or

controlling the secondary entity/network's connection with the M2M service provider. *Id.*

Petitioner erroneously asserts that "a POSITA would have understood that *Krco*'s secondary data (i.e., M2M sensor data) is 'non-signalling' data because it is data about the M2M sensors, not signals." Petition, 37. Petitioner thus appears to interpret "signalling data" to mean "data about a signal" (to the exclusion of data "about a device") so that Petitioner can identify the "secondary data" of Krco as non-signalling data. For one, Petitioner's assertion here contradicts its earlier argument that signalling data is simply data that "affects the connection" between two devices, which would include data "about a device" such as location, availability and status information used by the network to establish/mange connections. Petition, 20-21.

Additionally, the term at issue is "signalling data"—not "signal data." As explained above, the term "signalling" has an established meaning in the art. It refers to exchanging any information "concerned with" the establishment, control, and management of connections in a telecommunications network. This includes both information "about signals" (e.g., message type) and "about devices" (e.g., mobile identity, location), so long as that information is used to establish, control and/or manage connections in a telecommunication network. Ex. 2001 ¶ 61. For example, the "Location Area Update Request message type (Message type)" field in the IE of a Location Update Request is information about a signal, while the "Mobile identity"

field is about the properties of the UE. *Id.* ¶ 62. Nevertheless, both are "signalling data" because they are both used to establish, control and/or manage the connection of the UE with the network. *Id.*

The only evidence provided by Petitioner to support its position that "signalling data" is limited to data "about a signal" is Dr. Olivier's declaration. However, he merely parrots back the same unsubstantiated statement. *Compare* Ex. 1003 ¶ 129, *with* Petition, 37; *See Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper 9 at 15 (PTAB Aug. 24, 2022) (precedential) (holding declaration is entitled to little weight when it contains an exact restatement of the petition's arguments without any additional supporting evidence or reasoning). Both Petitioner and Dr. Olivier disregard the established meaning of "signalling" in the field, which is found within the Vocabulary for 3GPP Specifications (Ex. 2003, 25)—the very specifications cited repeatedly throughout the '098 Patent and included as part of Petitioner's exhibits. Ex. 1001, 2:48-51, 5:64-67, 7:57-61, 9:19-25; Ex. 1011 (3GPP TS 24.008 v8.3.0); Ex. 1020 (3GPP TS 23.040 v6.9.0).

Petitioner's interpretation of "signalling data" is also inconsistent with the usage of "signalling" in Krco. As discussed above, Krco teaches that "providing a standardized interface for <u>external entities</u> to **<u>reach</u>** ***signalling*** information, enhance[s] the possibility to build 3rd party services." Ex. 1009, 3:14-17. The "<u>external entity</u>" in Krco is the M2M provider 17. *Id.* at 6:57-60. And the only

information that the M2M provider "**reaches**" in Krco is the secondary data (i.e., the location and properties of the second entity/network) provided by the fourth entity. *Id.* Thus, the "***signalling*** information" is in direct reference to the "secondary data"—which is "about the second entity/network" and not "about a signal." Ex. 2001 ¶ 63. Krco's use of "signalling" is thus consistent with its established meaning in the field of the invention. *Id.*

Petitioner also references the prosecution history, apparently to suggest that it somehow supports a narrow interpretation of "signalling data" to mean data "about a signal." Petition, 37-38. But Petitioner only vaguely refers to arguments made during prosecution, failing to provide any arguments or evidence showing a "clear and unmistakable" disclaimer of claim scope or usage of the term "signalling … data" inconsistent with its ordinary meaning. *Cont'l Circuits LLC v. Intel Corp.*, 915 F.3d 788, 1389 (Fed. Cir. 2019).

In fact, the portion cited by Petitioner supports the meaning of "signalling data" offered by Patent Owner:

> Domm discloses (paragraph 0034) a serving GPRS support node (SGSN) 303 that receives a particular type of signalling message, namely an attach request message from a mobile station (MS) 301. Further Domm discloses extracting four types of data from the attach request message, namely an International Mobile Security Identity (IMSI), a Temporary Mobile Packet Subscriber Identity (PTMSI) for a packet network, a Temporary Logical Link Identity (TLLI), and a

> Routing Area Id (RAI). As explained in Applicants' Response filed February 4, 2014, ***Domm expressly teaches that these data are "parameters that may be associated with a particular subscriber's connection."*** Applicants therefore submit that the signalling message of Domm, like that of Johan, also ***does not have "inserted in it non-signalling application data generated for a machine-to-machine function by the communication module***."

Ex. 1002, 64. As shown, Patent Owner argued that information about a device (e.g., International Mobile Security Identity) and about a signal (e.g., Temporary Logical Link Identity[5]) did ***not*** constitute "non-signalling application data." Ex. 2001 ¶ 64. Thus, contrary to Petitioner's veiled suggestion that the prosecution history supports a narrow interpretation of "signalling data," the prosecution history shows that Patent Owner used the term "signalling data" in accordance with its industry meaning.

Finally, Petitioner argues that Krco teaches that embedding secondary data into already-existing signalling in a cellular network enhances efficiency, similar to the '098 Patent's objective of allowing "for efficient and fast communications of limited amounts of data in a machine-to-machine environment." Petition, 38. Even

[5] A Temporary Logical Link Identifier ("TLLI") provides the signaling address used for communication between user equipment and the SGSN (Serving GPRS Support Node) and is specified in the 3GPP specification 23.003. Ex. 2001 ¶ 64.

if this argument is accepted as true, it is irrelevant to whether the "secondary data" of Krco constitutes the "non-signalling application data" required by all claims. Indeed, the argument may have relevance to some hypothetical theory of obviousness, but it has no relevance as to whether this limitation is expressly or implicitly taught by Krco.

2. *It would not have been obvious to include Benaouda's M2M measurement data as the "secondary data" of Krco.*

Given that Krco fails to teach including any non-signalling application data (such as M2M measurement data) in the "secondary data," Petitioner argues that it would have been obvious to substitute or supplement Krco's secondary data with Benaouda's M2M measurement data. Petitioner's invalidity theory is fundamentally flawed for the following reasons.

a) Benaouda does not transmit M2M measurement data in a "signalling message."

Petitioner's obviousness theory incorrectly assumes that "a POSITA would have understood *Benaouda's* SMS message to be a 'signalling message' because it contains signalling data." Petition, 23. Based on this false premise, Petitioner argues that because Benaouda allegedly teaches transmitting M2M measurement data in a "signalling message," it would have been obvious to include such data in Krco's Location Update Request or Routing Area Update messages. The problem with this

theory is that an SMS message is not a signalling message as claimed. Ex. 2001 ¶ 66.

Petitioner ignores that all independent claims require a signalling message "of a *message type* ***specified for*** *carrying* ***signalling*** *data for managing connections* in the telecommunications network." Ex. 1001, Cls. 1, 15, 17, 21. While SMS messages are transmitted over signalling *channels*,[6] an SMS message is not itself *of a message type* ***specified for*** *carrying* ***signalling*** *data for managing connections*. Ex. 2001 ¶¶ 66-67 (citing Ex. 2005, 7 (defining "specify" as "to include as an item in a set of specifications"); Ex. 2006, 5 (defining "specify" as "include in specifications"); Ex. 2007, 6 (defining "specify" as "to include in a specification"); Ex. 1001, 5:64-67 (explaining how the communication module transmits a location updating request "**as specified** in subclause 9.2.15 of 3GPP TS 24.008 V8.3.0")).

SMS was designed to exploit underutilized signalling channels by allowing ***user*** data (SMS messages) to be transmitted during periods of low signalling traffic. *Id*. ¶ 68 (citing Ex. 2008, 11:17-34; Ex. 2009, 3:1-15). As Petitioner's own exhibit explains:

> Since signaling ***channels*** are physically present but mostly unused during an active user connection, it is obvious to use them also **for the**

[6] A "channel" is the frequency band assigned for transmission of data, not the underlying message transmitted over a channel. Ex. 2001 ¶ 67, n. 3.

transmission of certain *user* data. In ISDN, packet-switched data communication is therefore permitted on the D channel, i.e. the physical D channel carries multiplexed traffic of signaling data (s-data) and user (payload) data (p- data). The same possibility also exists in GSM. **Data transmission without allocation of a dedicated traffic channel is used for SMS by using free capacities on signaling *channels***. For this purpose, a separate SDCCH is allocated or, if a traffic connection exists, **the SMS protocol data units are multiplexed onto the signaling data stream of the SACCH (Figure 5.2).**

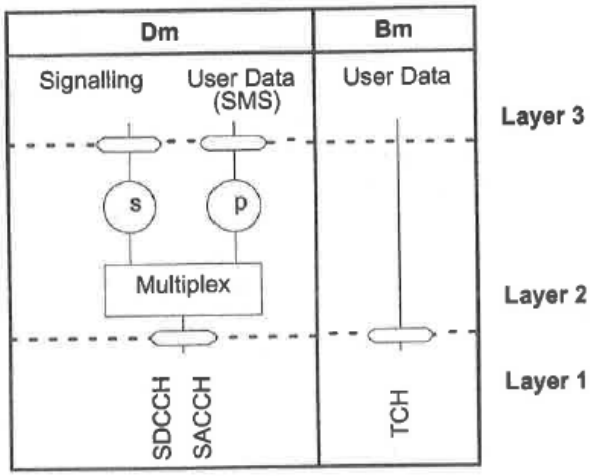


Figure 5.2 User data and control at the air interface.

The control (*signaling*) and *user* plane can be defined and implemented *separately*, ignoring for the moment that control and user data have to be transmitted across the same physical medium at the air interface and that signaling procedures initiate and control activities in the user plane. **Therefore, for each plane there exists a corresponding separate protocol architecture within the GSM system: the *user* data protocol architecture (section 5.2) and the *signaling* protocol architecture (section 5.3), with an additional**

> **separate protocol architecture for the transmission of p-data on the control (signaling) plane (section 5.3.2).**

Ex. 1008, 129-130. In other words, SMS is transmitted ***over*** unused signalling ***channels*** (i.e., the physical medium or "signaling resources") but the SMS itself is of the message type ***specified for*** carrying ***user*** data. Such data would be included in the "TP-User-Data" field (e.g., the text "hello"). Ex. 2001 ¶ 68 (citing Ex. 1020, 47). A POSITA thus would understand an SMS message to be of the type ***specified for*** carrying ***user*** data, not signalling data for managing connections in a network. *Id.*

Petitioner disregards that the "signalling message" must be of *a message type specified for carrying signalling data*, instead arguing that an SMS (e.g., SMS-Submit) qualifies because it contains data (e.g., TP-Message-Type-Indicator, TP-Destination-Address, TP-Reply-Path elements) that allegedly "affects the connection between the mobile station transmitting the SMS message and the short message entity receiving the SMS message." Petition, 20-21. But under Petitioner's theory *any* message of *any* type transmitted in *any* telecommunications network would be a "signalling message." Ex. 2001 ¶ 69. That is because any message transmitted over a network will contain data designed to ensure that the message reaches its intended destination (e.g., destination address, error checking data). *Id.* For example, an IP packet includes a "header" and "payload" as shown:

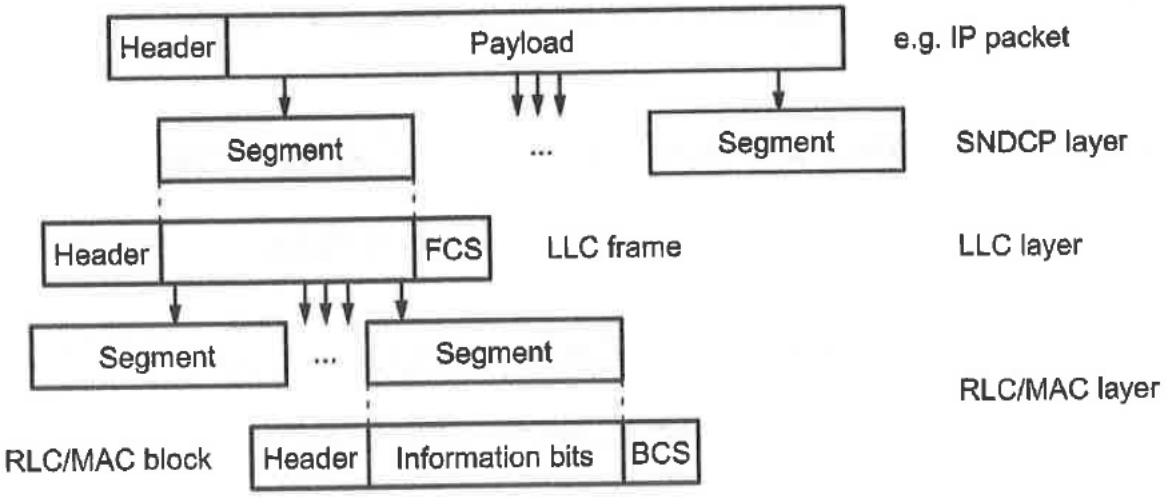


Figure 8.8 Data flow and segmentation between the protocol layers in the MS.

Id. ¶ 70 (citing Ex. 1008-2, 253). The payload contains the user data, while "header" contains, among other things, a "Destination IP Address" field (equivalent to TP-Destination Address in an SMS-Submit) and "Type-of-Service" field (comparable to TP-Message-Type-Indicator). *Id.* Thus, under Petitioner's misplaced theory any IP packet transmitted over the internet would qualify as a "signalling message" simply because it includes a destination address. *Id.*

Petitioner also suggests that because SMS "can be used for user data or signaling" it is a "signalling message ***specified for*** carrying ***signalling*** data for managing connections in the telecommunications network." Petition, 18-19. But the fact that an SMS can theoretically be used to transmit signalling data (if a user elects to do so in the TP-User-Data field for a specific user-application) does not mean it is "specified for" that use. Ex. 2001 ¶ 71. Consequently, SMS is "specified for" sending *user* data (e.g., in the 3GPP Technical Standard), not *signalling* data. *Id.*

Petitioner also cites a published patent application (Ex. 1021) teaching that "SMS service *can* involve the exchange of signalling information," but that does not mean SMS messages are *specified for* carrying *signalling* data for the same reasons discussed above. *Id.* ¶ 72. Likewise, Petitioner quotes Benaouda's teaching that SMS communications "use out-of-band signalling ***resources***" to disingenuously suggest that the SMS messages themselves are the referenced "signalling resources." That is false. The "signalling resources" simply refers to the available signalling *channels* that are used to transmit the SMS message. *Id.* ¶ 73 (citing Ex. 1008, 129-130). Indeed, the adjective "out-of-band" is in reference to *frequency* making up the channel. *Id.*

Ultimately, neither Petitioner nor its expert identify any specification (e.g., 3GPP TS) where SMS is ***specified*** for sending *signalling* data. *Id.* ¶ 72. They instead interpret the claim as if the "specified for" language does not exist. Yet, the Examiner expressly suggested adding that language in the notice of allowance, demonstrating that the Examiner recognized that *specified for* has meaning. Ex. 1002, 12-17.

b) The rationales to combine are fundamentally flawed.

Even if an SMS message could qualify as the claimed "signalling message" (it cannot) and a POSITA would have been motivated to apply the teachings of

Benaouda to Krco (a POSITA would not), the combination would still fail to render any independent claims obvious.

Krco teaches embedding data about the properties of a second entity/network into a signalling message (e.g., Location Update Request) so that an M2M provider is made aware of the "availability, location and existence" of the second entity/network. *See, e.g.*, Ex. 1009, 1:61-64, 4:24-52. In stark contrast, Benaouda embeds M2M measurement data in a *different type* of message—a Short Message Service ("SMS") text message. Ex. 1010, Abstract, ¶¶ [0014], [0023]. Benaouda goes on to tout the effectiveness of transmitting M2M measurement data in an SMS message:

> Use of the SMS technology ***meets the small data bandwidth and real-time transmission requirements for M2M communications***, and ***it offers increased capacity over the prior wireless methodologies***. Employing SMS also provides a wireless data solution by design. By default, it takes advantage of a nationwide SMS network infrastructure that is fully integrated, already exists and is built upon industry-standard digital wireless technology.

Id. ¶ [0006].

Thus, even if it were obvious to combine Benaouda with Krco, at most the combination would result in modifying Krco to rely on SMS to transmit M2M ***measurement*** data, while still relying on the Location Update Request / Routing Area Update message ("signalling message") for transmitting the M2M ***signalling***

data ("secondary data"). Ex. 2001 ¶ 75. Such a combination would not render any claims obvious because the combination would still lack the inclusion of M2M measurement data (the alleged "non-signalling application data") in Krco's Location Update Request / Routing Area Update message. *Id.*

In an effort to bridge this gap, Petitioner argues that it would have been obvious to include Benaouda's M2M measurement data in Krco's Location Update Request / Routing Area Update message because it "would have involved simple ***substitution* of one known element for another** to obtain predictable results." Petitioner, 23. But "substitution" means *replacing* one thing with a *different thing*. Ex. 2005, 8; Ex. 2006, 6. Thus, Petitioner is proposing ***replacing*** the "existence, location and availability" data of Krco with the M2M measurement data of Benaouda.

Such a modification cannot be supported under the "simple substitution" rationale because the modification would fundamentally destroy the sole stated purpose of Krco—i.e., to inform the M2M provider about the existence, availability and location of a second entity/network that has been newly connected to the UE. Ex. 2001 ¶ 76 (citing Ex. 1009, 1:59-63). Indeed, if the M2M properties data of Krco were substituted for the M2M measurement data of Benaouda, the M2M provider could not be informed of the existence, availability, or location of the newly connected second entity/network as taught. *Id*. This would render Krco inoperable

for its intended purpose, which shows that Petitioner's modification is not obvious. *Id.*; *see Plas-Pak Indus. v. Sulzer Mixpac AG*, 600 Fed. Appx. 755, 759-760 (Fed. Cir. 2015) (affirming Board finding that substitution of prior art spray nozzle was not obvious because it would render the prior art "inoperable for its intended purpose," which was "repeatedly cited" in the prior art).

Recognizing that "simple ***substitution***" is not a viable theory, Petitioner resorts to sleight of hand by arguing that "[s]uch a modification would have involved simply substituting, ***or supplementing***, Krco's M2M sensor data with Benaouda's M2M measurement data." Petition, 24. In other words, Petitioner's "simple substitution" theory suddenly transforms into a "supplementing" theory. But to prove that it would have been obvious to supplement (rather than substitute) with Benaouda's M2M measurement data, Petitioner must provide an "articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *KSR*, 550 U.S. at 418. While Petitioner offers several arguments to support a finding of obviousness, all are based on hindsight and do not rise to the level of articulated reasoning supported by a rational underpinning.

Petitioner first argues that Krco discloses embedding M2M sensor properties (e.g., identity, type, location) in a "ExtDeviceInfo" information element of a Location Update Request signalling message, and that a POSITA would have understood that data sent in this way "was not restricted, and that any data, including

the M2M measurement data discussed in *Benauda*, ***could be*** included in the ExtDeviceInfo information element." Petition 23. Petitioner also argues that the name ExtDeviceInfo "indicates that it ***could be*** extended to include any sort of device information." Petition, 24. Even when accepting these statements as true, the reasoning "seems to say no more than that a skilled artisan, once presented with the two references, would have understood that they *could be* combined. And that is not enough: it does not imply a motivation to pick out those two references and combine them to arrive at the claimed invention." *PersonalWeb Techs., LLC v. Apple, Inc.*, 848 F.3d 987, 994 (Fed. Cir. 2017) (emphasis in original) (citing *Belden Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1073 (Fed. Cir. 2015) ("[O]bviousness concerns whether a skilled artisan not only *could have made* but would have been motivated to make the combinations or modifications of prior art to arrive at the claimed invention." (emphasis in original))); Ex. 2001 ¶ 78.

Even beyond this deficiency, Petitioner's reasoning is objectively wrong. Petitioner argues that "ExtDevice***Info***" indicates that it could include "any sort of device ***information***." Petition, 24. But Benaouda's M2M measurement data is not "device ***info***" because measurement data is not information *about the* device. Ex. 2001 ¶ 79. Indeed, Krco does not teach or suggest including M2M measurement data as its "secondary data," and in fact teaches that the M2M measurement data is transmitted over the cellular network by means *other* than a signalling message. *Id.*

(citing *e.g.*, Ex. 1009, claim 1 (distinguishing the transmission of "M2M data" (e.g., sensor or alarming data) over the "cellular network" from "M2M properties" (i.e., secondary data) transmitted over a "core network" as part of a signalling message), 1:23-28 (explaining that UEs transmit data over the internet)). Thus, there is no logical basis for viewing "ExtDevice***Info***" to suggest that could include M2M measurement data.

Petitioner also represents "the name of this information element—ExtDeviceInfo—indicates that it could be ***extended*** to include any sort of device information." Petition, 24. In doing so, Petitioner disingenuously suggests that a POSITA would understand "Ext" to mean "extended" so that it can justify including any type of data as "secondary data." Yet, a POSITA would recognize and understand "Ext" to mean "external," because the secondary data is information about an *external* device/network (i.e., the second entity or network). Ex. 2001 ¶80. Indeed, the information element "ExtDeviceInfo" includes the "identity of an ***external*** device" and "location of the ***external*** device relative to the UE position." Ex. 2009, 5:59-63. Krco never even uses the word "extended" (or any of its variants). Consequently, the notion that "ExtDeviceInfo" indicates that it can be "extended" to include any type of data, such as M2M measurement data, has no actual support. Ex. 2001 ¶ 80.

Petitioner also argues that Ananthanarayanan is "***an example of why it would be obvious*** to include Benaouda's M2M measurement data in Krco's Location Update Request signaling message," that "Ananthanarayanan's disclosure of bundling application-layer data in the access channel signaling message therefore ***suggests to a POSITA why it would be obvious*** to include data like Benaouda's M2M measurement data," and that a POSITA "would have found it obvious to transmit M2M measurement data via the Location Update Request message, at least because a POSITA ***would have been aware of similar teachings***, such as those disclosed by Ananthanarayanan." Petition, 24-25, 41.[7] Petitioner's arguments amount to a mere conclusory assertion that because Ananthanarayanan allegedly teaches transmitting application data in a signalling message, it would have been obvious to do the same in Krco. But the mere fact that a POSITA "would have been aware" of Ananthanarayanan's teachings, or that those teachings allegedly provide an "example" of a missing claim feature, does not mean that it would have been obvious to combine those teachings with Krco. Ex. 2001 ¶ 81. The law of

[7] As discussed in Section III above, discretionary denial is warranted based on Petitioner's ambiguous use of Ananthanarayanan throughout the Petition, making it impossible to confidently discern whether that reference makes up the asserted grounds.

obviousness demands more than the mere existence of claim features in disparate references—there must be an articulated rationale with reasonable underpinnings for combining Ananthanarayanan with Krco precisely as claimed.

Petitioner provides none here, but argues that the mere fact that Ananthanarayanan allegedly teaches the missing claim feature automatically means it would be obvious in view of Krco. Indeed, Petitioner provides no discussion or explanation for why a POSITA would be motivated based on Ananthanarayanan, which is designed for a different purpose (i.e., improving "Push-to-talk (PTT)," a walkie-talkie type function having nothing to do with M2M) and involves a different type of application data (e.g., "a PTT call request") transmitted in a different type of message. Ex. 2001 ¶ 82 (citing Ex. 1012 ¶¶ [0006]-[0007], [0032], [0034], [0037], [0038], [0044], [0048]). Petitioner does not even bother to explain *why* Ananthanarayanan is including application-layer data in its message, and how the purpose of including that application-layer data in Ananthanarayanan in anyway relates, applies, or would improve the fundamentally different system of Krco. In short, Petitioner provides no articulated rationale for *why* a POSITA would be motivated to modify Krco based on Ananthanarayanan.

Ultimately, the only rationale offered by Petitioner comes in a single-sentence paragraph:

> A POSITA would have recognized that applying such a basic technique, bundling M2M measurement data into a signaling message from a UE, would have yielded predictable results and an improved system, such as a UE that can more efficiently transfer M2M measurement data by bundling this data in a Location Update Request message.

Petition, 25 (citing Ex. 1003 ¶102). This is just a conclusory statement; it is neither "articulated" nor supported by "reasonable underpinnings." The cited expert declaration fairs no better, as it merely parrots back the same conclusory assertion. *See Apple Inc. v. MPH Techs. Oy*, 28 F.4th 254, 263 (Fed. Cir. 2022) (affirming Board decision that testimony of petitioner's expert "amounted to an argument about 'what *could* be combined' and a conclusory statement that the combination would have been obvious.").

Petitioner does not explain *how* including M2M measurement data in Krco's signalling message would somehow allow for "more efficiently" transferring M2M measurement data. Indeed, Petitioner does not even discuss or address *how* Krco transmits its M2M measurement data, so it is impossible for Petitioner to show that its proposed modification is an "improvement" over Krco. Ex. 2001 ¶ 83. For example, Krco teaches that UEs leverage the standard transmission services provided by a cellular network (a CS or PS connection) to transmit data. *See* Ex. 1009, 1:24-27 (explaining that UEs access internet, MMS and other services to transmit data), Claim 1 (describing forward the M2M data, via the cellular network,"

which a POSITA would understand to include packet-switched and circuit-switched connection). A POSITA would have thus understood that the M2M measurement data of Krco would have been transmitted using a conventional CS or PS connection at the time, while the secondary data is being transmitted via a signalling message. Ex. 2001 ¶ 83.

For example, it was well-known that a UE could establish a PDP Context session in the PS domain, and could then leverage the internet to transmit user data to entities external to the cellular network such as the M2M service provider. *Id.* ¶ 84. Petitioner does not explain how transmitting M2M sensor data in a signalling message is somehow "more efficient" than doing so via any of these well-known transmission means. Indeed, Petitioner provides no baseline whatsoever for comparison, making it impossible for Petitioner to demonstrate that its proposed combination would provide for "more" efficient transmission. *Id.* More efficient than what exactly? Petitioner does not say.

The single-sentence paragraph also provides no evidence that a POSITA would have "recognized" this unexplained improvement. Petition, 25. Petitioner cites no evidence (including any portions of the prior art) supporting the notion that a POSITA would have recognized that including M2M sensor measurements into a Location Update Request would have yielded *any* improvements, never mind "improved efficiency." As discussed above, Benaouda transmits M2M measurement

data in an SMS message and explains that SMS transmission "meets the … requirements for M2M communication, and it offers increased capacity over the prior wireless methodologies." Ex. 1010 ¶ [0006]. To the extent a POSITA would have "recognized" any potential improvements to Krco based on Benaouda, it would have been that the M2M measurement data of Krco could be transmitted via SMS to achieve the explicit benefits discussed in Benaouda. Ex. 2001 ¶ 85.

In summary, Petitioner fails to demonstrate that it would have been obvious to supplement or substitute Krco's signalling message with the M2M sensor measurement data of Benaouda. Substituting M2M sensor measurement data for Krco's M2M properties data would fundamentally destroy Krco's only stated goal of informing the M2M provider of the existence, location and/or availability of newly connected M2M devices or networks. With respect to the proposed "supplementation," Petitioner fails to provide an articulated rationale with reasonable underpinnings to support such a theory. Even if Krco "could be" modified as proposed, that alone cannot satisfy the requirements of obviousness. Likewise, that Ananthanarayanan allegedly teaches transmitting application-layer data bundled together with signaling messages says nothing about whether it would have been obvious to include M2M measurement data in the signaling message of Krco. In the end, the only rationale offered by Petitioner is that a POSITA would have recognized that the proposed combination would result in "improved

transmission" of M2M sensor data. But Petitioner fails to provide the necessary articulation with reasonable underpinnings to prove that statement is actually true. *See I/P Engine Inc. v. AOL Inc.*, 576 Fed. Appx. 982, 998 (Fed. Cir. 2014) ("We may not find a patent invalid for obviousness on the basis of 'mere conclusory statements'") (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)).[8]

c) Petitioner fails to demonstrate a reasonable expectation of success.

Petitioner argues that a POSITA would have had a reasonable expectation of success of inserting Benaouda's M2M measurement data into Krco's Location Update Request because (1) the "ExtDeviceInfo" information element is allegedly not limited to any unique formatting or data type and (2) Benaouda and Ananthanarayanan both allegedly teach transmitting application-layer data (M2M measurement data in the case of Benaouda) in a signalling message. Petition, 27.

[8] Petitioner's other obviousness arguments for Krco and Benaouda do not relate to the "non-signalling application data" limitation. *See* Petition, 25-26 (arguing that it would have been obvious for the M2M provider to be implemented *on a server* and that it would have been obvious to include M2M *address information* in a signalling message).

Even if the Board accepts both (1) and (2) as true, Petitioner still fails to show a reasonable expectation of success.

Petitioner's arguments amount to a blanket statement that because one reference (e.g., Benaouda or Ananthanarayanan) allegedly includes non-signalling application data in its *particular type of* signalling message, a POSITA would automatically find a reasonable expectation of success in adding that non-signalling application data ***in the specific type*** of signalling messages in Krco. That is simply false. Ex. 2001 ¶ 86.

The signalling message of the claims is "of a type specified for carrying signalling data for managing connections in the telecommunications network." This is precisely why Petitioner relies on Krco as its primary reference—this is the only identified prior art reference that transmits *anything* relating to M2M in such a signalling message. The purpose, function, and capabilities of the signalling message of Krco is fundamentally different than purpose, function, and capabilities of the SMS messages of Benaouda, which are designed to carry ***user*** data (e.g., M2M measurement data). *Id.* ¶87. In other words, while Benaouda teaches that its SMS message is suitable for transmitting M2M measurement data, that does not mean that a Location Area Update or Routing Area request would be suitable for the transmission of that same data. *Id.* According to Petitioner's flawed logic, based on Benaouda and Ananthanarayanan all user data could apparently be transmitted using

signalling messages with a reasonable expectation of success, even though a POSITA would recognize that signalling messages have wildly varying data structures (or formats), very finite data transmission capabilities, and are transmitted less frequently and usually in specific situations (e.g., to register). *Id.* Petitioner provides no discussion or evidence that a POSITA would have recognized that a Location Update Request or Routing Area Request would be capable of transmitting M2M ***measurement*** data, which would be expected to be more voluminous and to be transmitted on a more frequent basis than the M2M signalling information in Krco. *Id.*

B. All grounds fail because Krco does not teach or disclose the claimed "communication module."

1. *The plain claim language requires a "communication module" that (1) generates "non-signalling application data" and (2) transmits said data in a "signalling message."*

Each independent claim requires a communication module/apparatus/device[9]

[9] For purposes of the preliminary response only, Patent Owner does not dispute Petitioner's assertion that "communication module" would be understood to be the same as a "communication apparatus" or "communication device." Petitioner 32, 60. Thus, references to "communication module" herein should be viewed as equivalent to "communication apparatus" and "communication device."

configured to do two things:

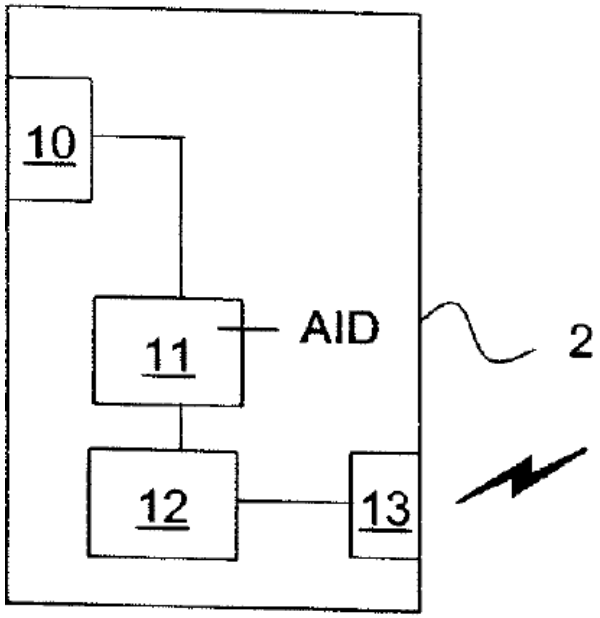
(1) generate "non-signalling application data." *See* Cls. 1, 15, 17 ("non-signalling application data ***generated*** … ***by the communication [apparatus/module]***,"); Cl. 21 ("***communication device*** comprising … a processor" for "***generating*** non-signalling application data"); and

(2) transmit a "wireless signalling message" containing the "non-signalling application data" to a telecommunications node. *See* Cl. 21 ("**communication device** comprising a transmitter" for "**transmitting** … said signaling messages … to a signalling termination node …."), Cls. 1, 15, 17 (reciting "***receiving*** a wireless signalling message ***from said communication [module/apparatus]*** … at the signalling termination node," which necessarily means that the communication module/apparatus is capable of transmitting the signalling message.).

Thus, based on the plain claim language, the communication module must be configured to (1) generate "non-signalling application data" that is inserted into the signalling message and (2) transmit the "signalling message" to a telecommunications node. Ex. 2001 ¶ 88. This mirrors the preferred embodiment of the '098 patent.

The specification discloses a communication module 2 that "**comprises**" a sensor 10, processor 11, encapsulation module 12, and transmitter 13. Ex. 1001, 4:34-52. The sensor 10 generates "user data U," which is processed and inserted into "signalling message S" and then transmitted to a telecommunications network 1 by the transmitter. *Id.* A POSITA would understand that "comprises" means that the

sensor is part of the communication module 2, not an external sensor. Ex. 2001 ¶ 89; *Cias, Inc. v. Alliance Gaming Corp.*, 504 F.3d 1356, 1360 (Fed. Cir. 2007) (explaining that "'comprising' is well understood to mean '**including** but not limited to'"). Indeed, Figure 1 clearly depicts the sensor 10 as a component of the communication device 2.



Excerpt from Figure 1, '098 Patent

Thus, the communication module 2 is a device that both (1) generates non-signalling application data (via sensor 10) that is embedded into a signalling message (via encapsulation module 12) and (2) transmits the signalling message (via transmitter 13). Ex. 2001 ¶¶ 90-91.

2. *Krco does not teach a communication module that satisfies both requirements (1) and (2)*

Contrary to Petitioner's assertion, Krco does not teach or suggest a

communication module that meets the requirements of both (1) and (2). Petitioner first identifies the UE 10 as the alleged communication module (Petition, 31-32),[10] the Location Update Request / Routing Area Update message (the "first message") as the signalling message (Petitioner, 34-35), and the second entity/network's location and properties data (the "secondary data") as the non-signalling application data (Petition 36-39). But these do not satisfy the requirements of (1) and (2) because it is indisputable that the UE does not generate the secondary data (alleged "non-signalling application data"). *See, e.g.*, Ex. 1009, Abstract ("At least one second network or at least one second entity is **using a User Equipment (UE) for forwarding** information between the second network or entity and a service provider, wherein **the second network or entity provides the UE with information about its properties**."), 2:13-17, 2:27-32, 2:46-50, 3:55-59. Indeed, Petitioner does not contend that the secondary data is generated by the UE, but concedes that "the UE **forwards data from the** M2M sensors to an M2M service provider." Petition, 15; *see also id.* 31 (citing Ex. 1009, 3:52-4:16). Because the plain

[10] Petitioner later mischaracterizes the sensor and UE as a "combined UE-sensor device (*i.e.*, the *'communication module'*)." Petition, 38. As explained in Section IV.B.3 below, Petitioner's characterization of the sensor ("second entity 16") and UE 10 as a "combined" device is simply wrong.

claim language requires that the communication module both (1) generate the non-signalling application data and (2) transmit the signalling message, Krco fails to teach or suggest the claimed communication module. Ex. 2001 ¶ 92.

Further, other distinctions exist. Krco is fundamentally premised on an ***external*** entity/network (i.e., the "second entity" / "second network") generating the secondary data and then providing this secondary data to the UE, which the UE then embeds into the first message for transmission to the core network. *Id.* ¶ 93. As Krco explains, "[t]he role of the UE is changing, and there is now the possibility to connect ***new*** functionality, for instance in form of a ***separate*** unit, to the phone." Ex. 1009, 1:29-31, 1:43-59 (discussing a sensor using short range wireless communication (e.g., Bluetooth) to communicate via an UE "to the rest of the world"). Krco then describes the problem that such newly connected devices can present:

> As we go towards the future internet, more and more such devices will be introduced (Internet of Things). The only way to inform the backend service providers about ***the existence, location and availability*** of such sensors is by using a purposely built user application on an UE. The above problem is not only apparent in mobile phones, but also other devices whole sole intention is to provide sensor communication, such as M2M devices for AMR (Automatic Meter Reading) or security applications that have to depend on ***purposely built availability schemes*** built on for instance SMS etc.

Id. at 1:60-2:2. Krco immediately follows this problem with the statement: "***The***

object of the present invention is therefore to provide a way of improving the communication between the UE and the service provider ***when connecting a new functionality to the UE***, so that the service provider can make use of the services of the functionality." *Id.* at 2:6-10. In other words, Krco expressly teaches that its goal is to inform a M2M provider of the "existence, location or availability" of ***separate***, ***new*** devices/networks connected to a UE. Ex. 2001 ¶ 94.

Krco is thus premised on having two separate communication devices—i.e., a secondary entity 16 that generates the "secondary data" and a separate UE 10 that receives the "secondary data" from the secondary entity, inserts it into a "first message," and transmits it to the core network. *Id.* ¶ 95 (citing Ex.1009, 2:13-19). If the second entity/network and UE were part of the same device, it would be wholly inconsistent with the stated purpose of Krco's invention—to inform a backend M2M server about the "existence, location and availability" of a ***separate*** and ***new*** communications device (e.g., a sensor) that has been connected to the UE. *Id.*

3. *Petitioner disregards the plain teachings and context of Krco.*

Aware of the fundamental problem that Krco's teachings present, Petitioner offers several meritless (and often conflicting) arguments to try to transform the separate second entity/network and UE into a single device. Petitioner first argues that "Krco explains that its UE may be connected with a sensor (or network of sensors) 'through a wireless or wired connection,' which a POSITA would have

understood to mean that the UE and the sensor(s) ***could be considered* to be a *single, integrated* device**." Petition, 31; *see also id.* at 38 (referring to an imaginary "***combined***-UE sensor device" of Krco). Petitioner then contradicts this argument by citing obviousness case law (*id.* at 31) and arguing "[a]s discussed above with reference to Claim Element [17p], a POSITA would have understood that the UE and the sensors to which the UE is connected ***could be implemented*** as a single device." *Id.* at 38. Thus, on one hand, Petitioner appears to suggest that Krco expressly teaches (e.g., "could be ***considered***") a communication module that both (1) generates non-signalling application data and (2) transmits a signalling message containing that data, while on the other hand offering a vague "obviousness" theory (e.g., "could be ***implemented***") where the UE and second entity/network are hypothetically combined into a single device. Both arguments lack merit.

Petitioner and its expert's "understanding" that the second entity/network and UE could be "considered a single, integrated device" disregards common sense and the plain teachings of Krco. As discussed above, Krco teaches that the purpose of the invention is to inform a M2M server about "the existence, location and availability" of "***separate units***" that are connected to UEs to provide "***new***" functionality. Ex. 1009, 1:29-33. Thus, combining the second entity/network and UE into a single device would destroy Krco's stated goal. Ex. 2001 ¶ 97.

Consistent with Krco's stated objective, Figure 1 (reproduced below) clearly

depicts the second network 15 and second entity 16 as separate and distinct devices connected to the UE 10 via a "wireless or wired connection" 11:

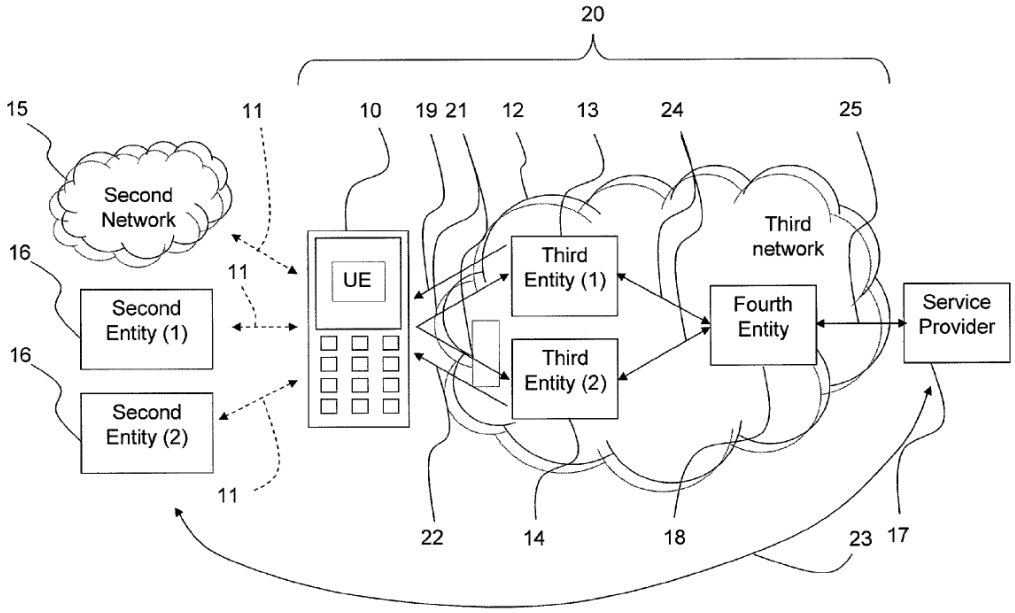


FIG 1

Ex. 1009, 3:57-59. Even beyond the clear depiction above, a POSITA would recognize the second entity/network and UE are separate and distinct communication entities for other reasons. Ex. 2001 ¶ 98. For one, by definition an "entity" is an independent unit. Ex. 2001 ¶ 99 (citing Ex. 2006, 4 (defining "entity" as "thing with *distinct* existence"); Ex. 2007, 5 (defining "entity" as "something that exists as a particular and ***discrete*** unit")). A POSITA would also understand that elements 15 and 16 are called "second" networks or entities precisely because they are ***not*** part of UE 10 (i.e., the "first entity"). *Id.*

Moreover, each of the second entity, second network and UE is independently capable of communication with an external device. *Id.* ¶ 100; *see also* Petition, 31

(arguing *Krco*'s UE is a communication apparatus "at least because ***it is capable of wireless communication***."). More specifically, the UE is capable of receiving data from the external second entity/network and transmitting data to the external third entity 13. Ex. 2001 ¶ 100. Similarly, the second entity/network is independently capable of transmitting data to the external UE. *Id*.

Further, Krco teaches that the secondary data generated by the second entity/network is stored in a field named "***Ext***DeviceInfo." Ex. 1009, 5:41-64. ("The secondary data preferably consists in an information element in the first message, which may be called ExtDeviceInfo."). A POSITA would understand ExtDeviceInfo to be shorthand for "***External*** Device Info," which means the second entity is ***external*** (i.e., not part of) the UE 10. Ex. 2001 ¶ 101 (citing Ex. 1009, 5:58-62 (referencing "external device" multiple times as part of the "ExtDeviceInfo" information element)). This reflects Krco's teaching that the secondary data includes information about the "Location of the ***external*** device [i.e., "second entity"] relative to the UE position." *Id.* (citing Ex. 1009, 5:45-63). There would be no need for location information about the second entity/network if they were part of the UE. *Id.*

Further, while the UE is described as being "part of the primary cellular network 20," the second entity/network is not as clearly shown in Figure 1. Ex. 1009, 4:15-16 ("The UE 10 and the third network 12 are part of the primary cellular network 20.").

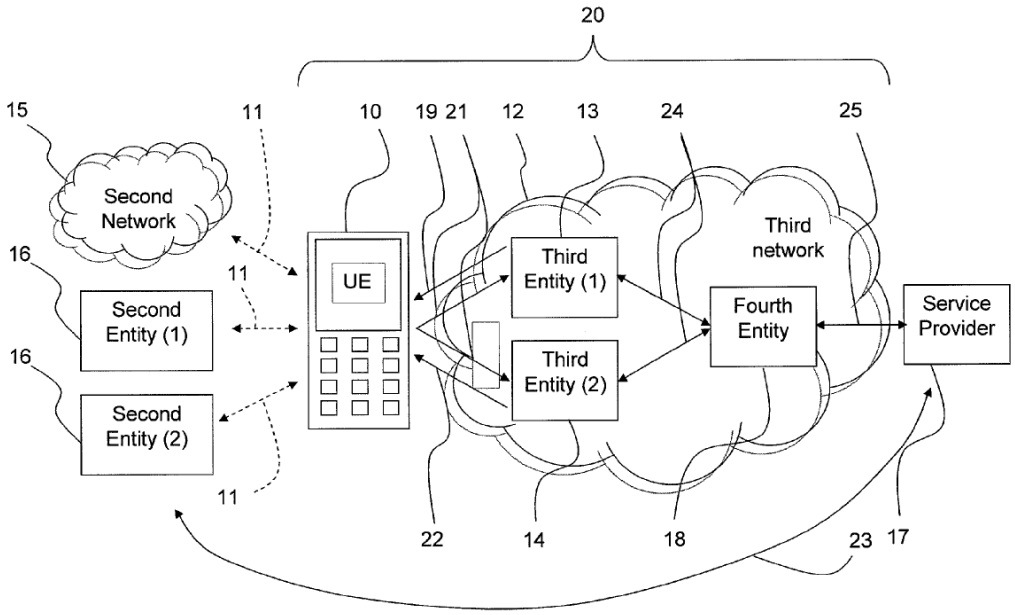


FIG 1

If the UE and second entity/network were a "single" device as alleged by Petitioner, then the second entity/network would be "part of" the cellular network 20 as well. Ex. 2001 ¶ 102. But it is not—it is a completely separate device from the UE.

Without providing any evidence or support, Petitioner and its expert simply state in a conclusory fashion that the statement about a "wireless or wired connection" somehow conveys the notion of a single, fully integrated communication module. Petition, 31. The opposite is true—the fact that the second entity/network communicates with the UE "through a wireless or wired connection 11" only further confirms that the UE and second entity/network are external to one another. Common sense dictates that the only reason a "wireless or wired connection" would be needed is because two devices are *not* a single or integrated device. Ex. 2001 ¶ 103. For example, a router and laptop can be connected by a

"wireless or wired connection," but nobody would interpret that to mean the router and laptop are collectively a "single" or "integrated" device. It would also be illogical for a component to be "wirelessly" connected to another component within the *same* device. *Id*.

A POSITA would also recognize that Figure 1 depicts connection 11 in a similar manner as the communication links 24 and 25, which involve the transmission of information between two separate devices (e.g., the third entity and fourth entity). Ex. 2001 ¶ 104. The claims of Krco also confirm that the second entity/network are external to the UE. *Id.* For example, all of the independent claims require a UE that is in "**short range wireless communication** with one or more machine-to-machine (M2M) type networks or entities [i.e., the "second network" or "second entity"]." Ex. 1009, claims 1 and 12.

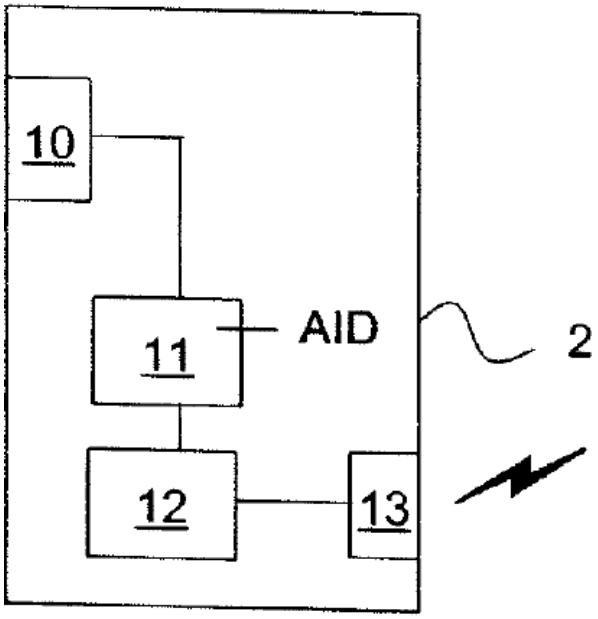
While Petitioner relies on Dr. Olivier to support its "single, integrated device" theory, he merely parrots back the same conclusory, unexplained statements and citations from the Petition. *Compare* Ex. 1003 ¶ 116 *with* Petition, 31-32. Such testimony is entitled to no weight. *See Xerox Corp.*, IPR2022-00624, Paper 9 at 15 (precedential). Indeed, neither Petitioner nor Dr. Olivier explain how the statement about a "wireless or wired connection" would be understood to mean that the UE and second entity/network "could be" a single integrated device. Nor do they explain why a POSITA would consider combining the UE and second entity/network when

their separate existence is fundamental to the only stated goal of Krco.

Petitioner also cites Exhibit 1017—an entirely unrelated patent application publication—for the purported teaching that a "remote station" can have "integrated sensors." Petition, 31. Petitioner fails to explain how this somehow means the separate and distinct second entity/network and UE ***of Krco*** constitute a "single, integrated device." Indeed, the design of the unique "remote station" (a term never used in Krco) is completely irrelevant to the structure and arrangement of the UE and second entity/network of Krco. Ex. 2001 ¶ 105. The only relevance of Exhibit 1017 is that it uses the language "wired or wireless" in reference to the connection between *separate* devices "application server 106" and "remote stations 102"—exactly as "wired or wireless" in Krco refers to the connection between *separate* devices (the UE and second entity/network). *Id.* (citing Ex. 1017 ¶ [0045] (explaining for Figure 1, "[c]ommunications between an application server 106 and its remote stations 102 are normalized by the communications server 108 so that the need for a variety of **wired and wireless** protocols remains transparent to the application server 106.")).

Petitioner also asserts (again without explanation) that its "single, integrated device" theory is consistent with the following statement from the '098 specification: "As illustrated in FIG. 1, a communication module 2 comprises or is communicatively connected to a sensor 10." Ex. 1001, 4:34-35 (cited by Petition,

31-32). Dr. Olivier merely parrots this conclusory statement and citation. Ex. 1003 ¶ 116. This argument just another attempt at misdirection, because Figure 2 (reproduced below) clearly depicts sensor 10 **as part of** the communication module 2, which follows the teaching that "communication module 2 **comprises** … a sensor 10" and the claim requirement that the non-signalling application data must be **generated by** the communication module (e.g., a sensor within the communication module) rather than a sensor external to the communication module:



Excerpt from Figure 1, '098 Patent

Ex. 2001 ¶ 106. To the extent Petitioner is inferring that "communicatively connected" means that a sensor external to the communication module 2 could be considered part of the communication module, Petitioner is wrong. While a communication module connected to an external sensor via a wireless or wired

connection would be "communicatively connected" to the external sensor, such an embodiment is not within the scope of the claims because the claims require that the communication module (not an external sensor) generates the non-signalling application data. *Id.* ¶ 107.

Recognizing that none of the cited evidence supports the "single, integrated device" theory, Petitioner cites *In re Larson* for the holding that "that the use of a one piece construction instead of the structure disclosed in [the prior art] would be merely a matter of ***obvious*** engineering choice." Petition, 31.[11] But "rejections on obviousness cannot be sustained with mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *KSR Int'l*, 550 U.S. 398, 418, (quoting *In re Kahn*, 442 F.3d 997, 988 (Fed. Cir. 2006)).

Neither Petitioner nor Dr. Olivier provide any *reason* a POSITA would integrate Krco's second entity/network into UE. As discussed extensively above, integrating the second entity/network into the UE would destroy the purpose of Krco's invention—i.e., making an M2M server aware of the existence, location, or availability of a *separate* and *new* device connected to the UE. Ex. 2001 ¶ 109 (citing

[11] In citing *In re Larson*, Petitioner admits that Krco does not teach or suggest that the second entity/network and UE could be a "single, integrated device."

Ex. 1009, 1:29-31 (explaining that "[t]he role of the UE is changing, and there is now the possibility to connect ***new*** functionality, for instance in form of a ***separate*** unit, to the phone")).

In re Larson is irrelevant in any event. For one, it is a 1965 C.C.P.A. case that predates *Phillips*, *KSR* and many other precedential Federal Circuit cases by several decades. That Petitioner chooses to rely on this outdated case speaks volumes about the strength of its "single, integrated device" theory. Moreover, the issue in *In re Larson* was whether it would be obvious take a prior art brake disc and clamp comprised of several parts that were "rigidly secured together ***as a single unit***" and make the clamp a "one piece construction." *In re Larson*, 340 F.2d 965, 968, 144 USPQ 347, 349 (C.C.P.A. 1965). Thus, all the parts were already part of "a single unit"—and the only issue was whether it would have been obvious to form them all from a ***single piece*** of material. In contrast, Krco's second entity/network is clearly *separate* and *external* to the UE, which is the foundation for the problem that Krco seeks to solve.

Moreover, the device at issue in *In re Larson* was a relatively simple mechanical device (not complex telecommunications technology) and the issue was not about whether it would have been obvious to combine two entirely separate and distinct communication devices performing distinct functions. While integrating two devices together as one may be obvious under certain facts, Petitioner provides no

evidence or arguments to support that conclusion under ***these*** facts. Nor does Petitioner explain why it would be obvious to do so when Krco depends on the second entity/network being ***new*** and **separate** connected functionality. Petitioner instead ignores the context of Krco's teachings to reach its desired outcome.

In summary, Petitioner fails to demonstrate that Krco discloses a communication module that both (1) generates non-signalling application data and (2) transmits a signalling message containing said data, as required by all independent claims. Petitioner's contention that a POSITA would understand that the UE and second network/entity "could be considered" a "single, integrated device" ignores the plain teachings of Krco, which depict and describe those devices as separate and explain that their separateness is fundamental to the purpose of Krco. Ex. 2001 ¶ 110. Petitioner also provides no "articulated reasoning with some rational underpinning" to support its conclusory obviousness assertion. No such reasoning exists, because Krco depends on the second entity/network being "separate" and "new" devices connected to an existing UE. *Id.* Petitioner does not attempt to remedy this defect with any other art or ground, and thus fails to carry its burden of demonstrating a reasonable likelihood that at least one claim is unpatentable.

C. Krco does not teach "avoiding to establish a complete circuit-switched or packet-switched connection" (claims 13, 20, 25).

Dependent claims 13, 20, and 25 require transferring the non-signalling

application data to the telecommunications network "while ***avoiding to establish*** a complete circuit-switched or packet-switched connection between said communication [module/apparatus/device] and said telecommunications network." The '098 patent teaches that network resources are preserved when user data is transmitted while avoiding the establishment of a circuit-switched ("CS") connection or packet-switched ("PS") connection between the communication module and the telecommunications network. Ex. 1001, Abstract, 2:8-16, 3:3-20. Thus, in addition to recognizing that signalling messages could be used to "rapidly" transmit "limited amounts" of non-signalling M2M data (e.g., sensor measurements, alarms), the '098 patent also recognized that the CS or PS connection ordinarily required for the transmission of such data can be avoided to preserve resources. Ex. 2001 ¶ 112.

Figures 2 and 3 of the '098 patent provide examples of avoiding the establishment of a complete CS/PS connection. Ex. 2001 ¶ 113. Figures 2A and 2B are flow charts directed towards "circuit-switched methods," while Figures 3A and 3B are flow charts directed towards "packet-switched methods." Ex. 1001, 3:62-67. In each of these embodiments, the communication module generates the user data ("U"), embeds it into an IMSI attach (for CS) or GPRS attach request (for PS), and then transmits it to the core network as part of a signalling message ("S"). *See id.* at 5:52-7:9 (discussing steps of Fig. 2A), 7:9-44 (discussing steps of Fig. 2B), 7:45-

8:45 (discussing steps of Fig. 3A), 8:46-14 (discussing steps of Figure 3B). However, the method of Figures 2A/3A differs from the method of Figures 2B/3B with respect to their later steps. Ex. 2001 ¶ 113.

As shown in each of Figures 2A and 3A (annotated below), the attach request is initially accepted (step 4). By accepting the attach request "a confirmation [e.g., a delivery report as in step 5d] may be received that the user data has been delivered to the data processing centre, thereby e.g. allowing the communication module to return to a sleep mode, to refrain from attempting to transmit the same user data again or to delete the user data." Ex. 1001, 2:59-63.

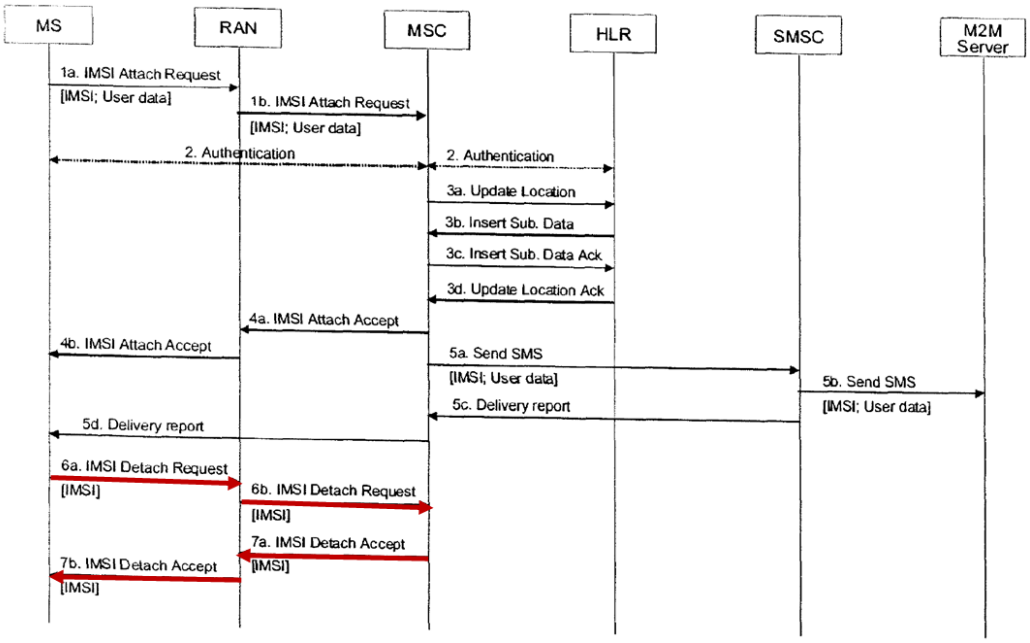


FIG. 2A

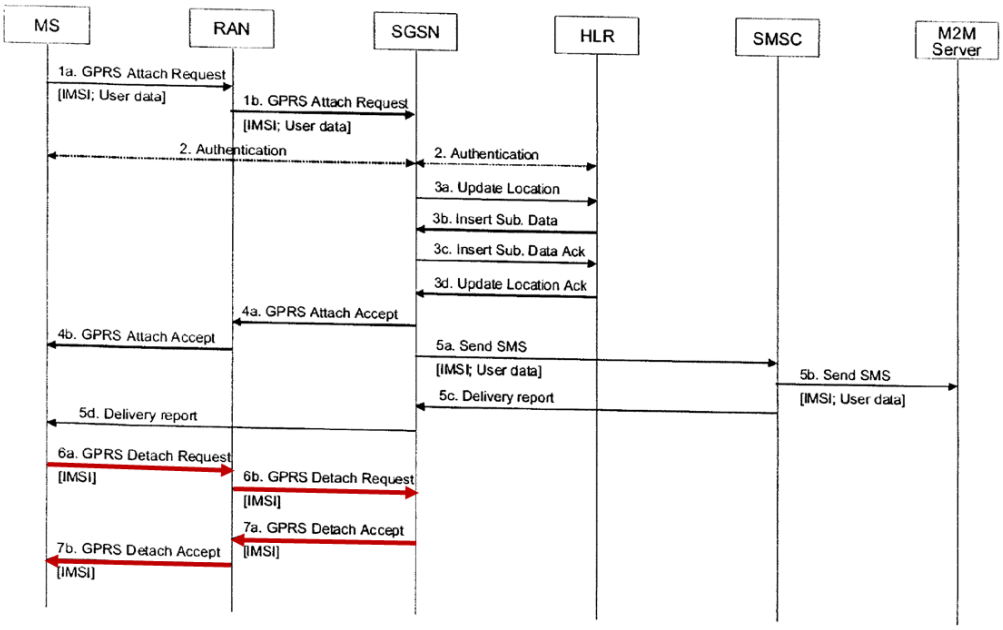


FIG. 3A

However, after receiving the delivery report, the communication module transmits a detach request (step 6) that is ultimately accepted (step 7). *Id.* at 5:53-56, 6:45-54 (discussing detach in Fig. 2A), 7:45-49, 8:33-42 (discussing detach in Fig. 3A).

A POSITA would understand that accepting the IMSI/GPRS detach request avoids establishment of a complete CS/PS connection. Ex. 2001 ¶ 116. For example, in a GPRS system the UE must be attached to the network for a PDP Context (a complete PS connection as asserted by Petitioner) to be established. *Id.* ¶ 117; *see also* Petition, 48 (acknowledging that "the PDP context establishment procedure occurs *after* the UE is attached (i.e., registered) with the network") (emphasis in original)). This is shown below in Petitioner's annotated version of Figure 6.138 of Exhibit 1016:

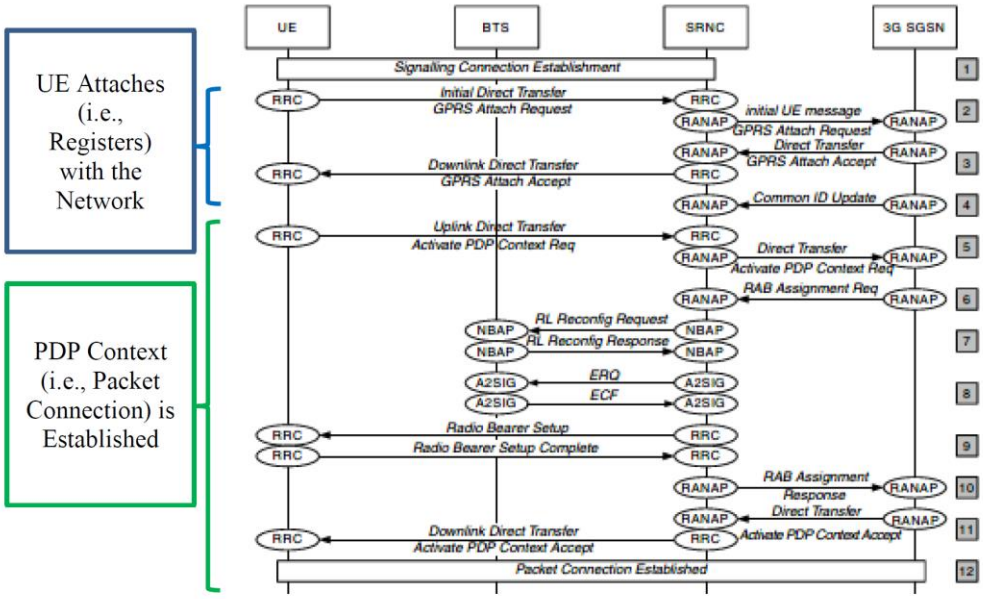


Figure 6.138 Packet connection establishment

Ex. 2001 ¶ 117 (citing Ex. 1016, 413).

Likewise, in the CS domain of the mobile network, an MS can call or be called, or otherwise utilize network services, only if it has registered with (attached to) the mobile network. *Id.* ¶ 118. As shown below, for performing an outgoing call in the CS domain of a GSM network, the MS needs to register with the network before the "Setup indication" message for initiating the establishment of a CS call can be sent:

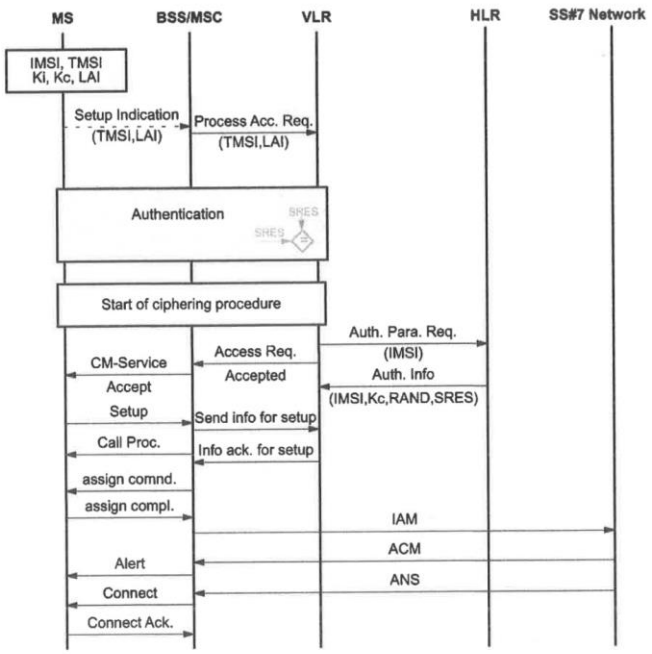


Figure 6.8 Overview of an outgoing call setup.

Id. (citing Ex. 1008-2, 200). Data (e.g., M2M measurement data) can then be transmitted over the call connection. Thus, in the embodiments of Figures 2A and 3A, the detach request transmitted after receiving the delivery report means no complete CS or PS connection is present or established. *Id.*

The embodiments of Figures 2B and 3B take a different but simpler approach. Rather than attaching and then detaching the UE from the network, the UE simply rejects the attach request (step 4) as shown below.

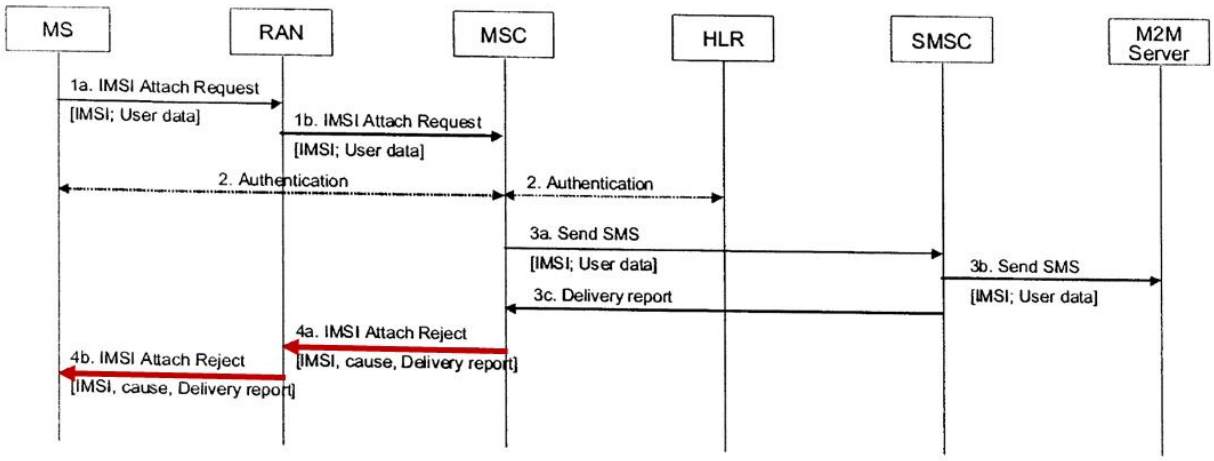


FIG. 2B

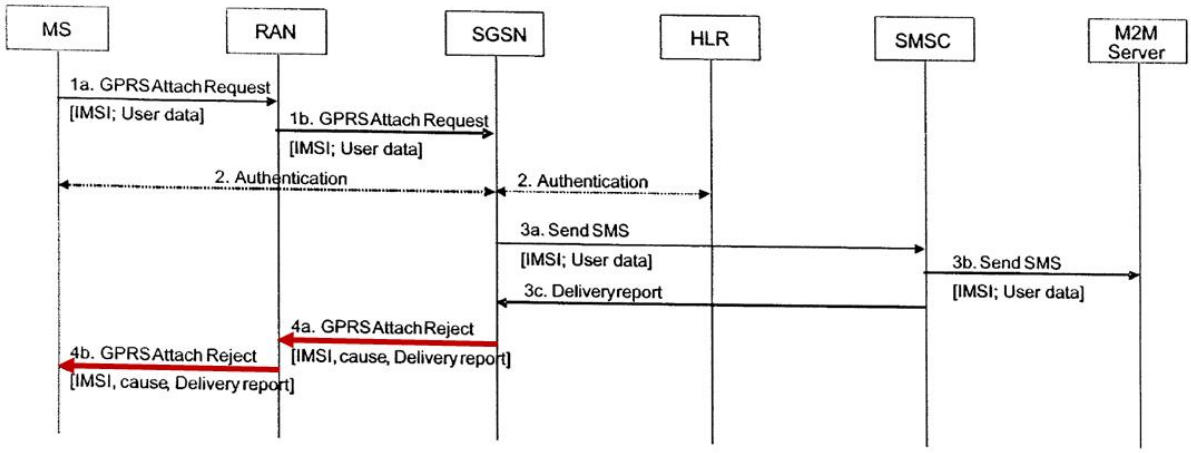


FIG. 3B

Ex. 1001, 7:9-17, 7:36-45 (discussing Fig. 2B), 8:46-54, 9:6-14 (discussing Fig. 3B). Because the UE attach request was outright rejected, the UE does not register with the network. Ex. 2001 ¶ 119. This also precludes the establishment of a complete PS/CS connection as explained above. *Id.* (citing Ex. 1001, 3:3-6 ("the attach request message from the communication module is rejected by the network, thereby ***excluding that a circuit switched or a packet switched connection can be***

established.”)). Thus, the embodiments of Figures 2A/3A and 2B/3B provide examples of “avoiding to establish a complete circuit-switched or packet-switched connection between said communication [module/apparatus/device] and said telecommunications network.” Ex. 2001 ¶ 120; *See* Ex. 2005, 4 (defining “avoid” to mean “to keep away from; evade; shun”), 6 (defining “establish” to mean “to cause to be or happen; bring about”); Ex. 2006, 3 (defining “avoid” to mean “refrain or keep away from” or “escape; evade”); Ex. 2007, 4 (defining “avoid” to mean “to keep away from; shun”).

Petitioner argues that Krco avoids establishing a complete CS or PS connection because registration of the UE 10 “does not ***result in*** a ‘*complete circuit-switched connection or packet-switched connection*’ between the UE and the telecommunications network, and that establishing such a connection “***requires a separate procedure*** for establishing a communication session.” Petition, 46-47. Petitioner is mistaken for several reasons.

Petitioner disregards the plain and ordinary meaning of “avoiding to establish” in the claims. In contrast to the claimed invention, Krco does not teach, suggest, or otherwise imply that a complete CS or PS connection is avoided. To the contrary, the UE of Krco initiates the “registration procedure,” which a POSITA would understand is a required first step in establishing a complete PS or CS connection. Ex. 2001 ¶¶ 122-123 (citing Ex. 1009, 4:24-40; Ex. 1008-2, 192, 245);

Petition, 47-48 (acknowledging that registration is required to establish a complete PS or CS connection). For example, Petitioner's own cited signalling diagram (Petition, 48)—Figure 6.138 of Exhibit 1016—is entitled "Packet connection establishment" and shows the UE attach procedure as part of that procedure:

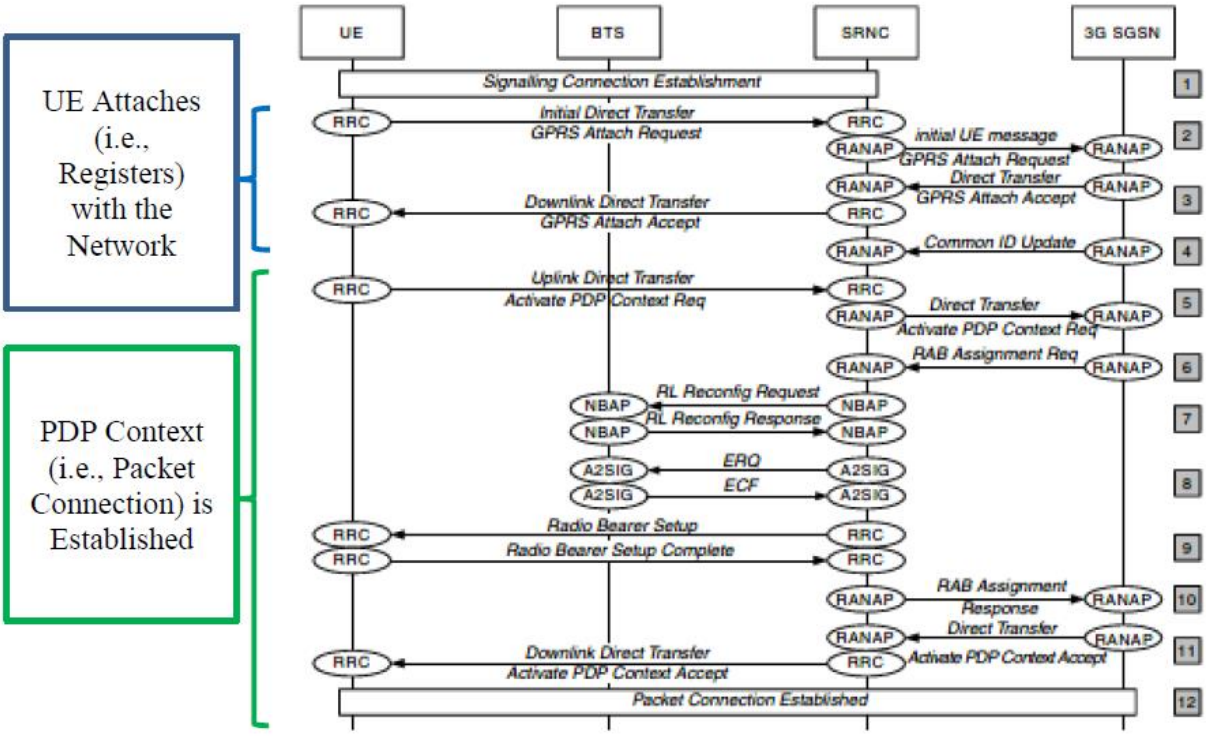


Figure 6.138 Packet connection establishment

Ex. 2001 ¶ 123 (citing Ex. 1016, 413 (describing the five-step process for establishing a PDP Context, including a "GPRS attach request" in step 2)).

Thus, Krco teaches the first step toward establishing a CS or PS connection, without any teaching or suggestion that such a connection is ultimately avoided. *Id.* ¶ 124. A POSITA would not understand taking the first step toward establishing a

complete CS or PS connection to somehow equate to "avoiding" such a connection. *Id.* Nor does Petitioner explain how taking the first step towards establishing a CS or PS connection (by initializing the registration procedure) somehow amounts to "avoiding" the establishment of a complete CS or PS connection.

Moreover, a POSITA would understand that the next logical step after Krco's UE 10 is attached to the network (registered) is to establish a communication session and start using the services that the network can offer to transmit data. Ex. 2001 ¶ 125. While the main focus of Krco is on transmitting M2M signalling information (i.e., "secondary data") in a signalling message, Krco makes clear that the UE is also transmitting other user data (e.g., M2M measurement data) via another path in the cell network. Ex. 2001 ¶ 125. Krco explains that "UEs in today's networks are considered as devices that end users use to access services that the network provides. Such services are voice calls, SMS and MMS and in the high speed 3G networks also services that relates to data access, for instance to email and internet." Ex. 1009, 1:24-28. Krco further teaches that "[t]he main purpose of the UE is to provide information or data ***collected by*** the second network 15 or entity 16 to the service provider 17" (*id.* at 3:64-67) and that "various types of **sensors** will use short range wireless communication (such as Bluetooth) ***to communicate via a UE to the rest of the world***" (*id.* at 1:53-58). Furthermore, Krco's independent claims distinguish (1) "M2M data ***collected by***" M2M type entities that is forwarded "via the cellular

network" from (2) the "M2M properties" of the M2M type entities (the "secondary data") that is transmitted as part of a signalling message.

A POSITA would thus understand that while the UE of Krco transmits M2M signalling data ("secondary data") using the UE's signalling message (e.g., Location Update Request), the UE is also transmitting M2M data collected by the second entity/network (e.g., sensor measurements) via another established communication path over the cellular network. Ex. 2001 ¶ 126. A POSITA would thus naturally expect a CS or PS connection to be established after the network registration procedure so that the collected M2M data can be transmitted to the M2M provider by the UE. *Id.*

Distilled to its essence, Petitioner's position is that the "avoiding" limitation is satisfied because Krco does not discuss the steps after the registration procedure is initiated. Petition, 49 (arguing that "neither Krco nor Benaouda disclose any procedures for establishing a complete circuit-switched or packet-switched connection"). But the exact opposite is true—Krco's silence on what occurs after initiating registration for the UE necessarily means that Krco cannot disclose the "avoiding" limitation. Ex. 2001 ¶ 127.

Recognizing that Krco's silence is problematic, Petitioner falsely represents that registering the UE "does not result in" a complete CS or PS connection. But as explained above, establishing a complete CS or PS connection *always* requires first

initiating the registration process. That necessarily means that any complete CS or PS connection results from the registration process. *Id.* ¶ 128. It appears then that Petitioner's misleading statement is premised on the unsubstantiated assumption that Krco takes another (undisclosed) step to prevent such a connection from being established, in which case the registration would not "result in" a complete CS or PS connection. *Id.* Aside from the conclusory, parroting statement of Dr. Olivier, Petitioner provides no evidence to support its assumption that a CS or PS connection does not result from Krco's registration process. *Compare* Ex. 1003 ¶ 152 *with* Petition, 47.

Petitioner also argues that Krco discloses the "avoiding" limitation because "[e]stablishing a complete circuit-switched or packet-switched connection requires a separate procedure [from the registering procedure] for establishing a communication session," and Krco only discloses the use of an attach/registration request message and "not a session establishment request message." Petition, 49. But as discussed above, the registration procedure is the first (and required) step in establishing such a session, and nothing in Krco teaches or suggests avoiding the "separate procedure" for establishing such a session. Ex. 2001 ¶ 129.

Finally, Petitioner's position that Krco satisfies the "avoiding limitation" conflicts with the disclosures of Krco. As explained above, a POSITA would naturally expect the UE to establish a CS or PS connection after initiating the

registration procedure so that the collected M2M data can be transmitted to the M2M provider. *Id.* ¶ 130. For example, a POSITA would expect Krco to establish a PDP Context, which would allow the M2M measurement data to be transmitted over the internet as expressly taught by Krco at column 1, lines 24 to 28. *Id.*

V. DISCRETIONARY DENIAL IS WARRANTED UNDER *FINTIV*

The Board should deny institution because the six factors set forth in *Apple Inc. v. Fintiv, Inc.* weigh in favor of discretionary denial. IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020) (precedential) ("*Fintiv I*"). Petitioner has not offered any form of stipulation. The parallel litigation between Patent Owner and Petitioner is in an advanced state, with a trial date firmly set for April 1, 2024—*i.e.*, nearly *six months before* the projected statutory deadline for a final written decision in these proceedings. Petitioner has presented virtually identical invalidity issues in the litigation, and the parties have already invested substantial resources in the underlying litigation. By the time the Board issues its institution decision, the investment of the parties and the Court will be much greater. And finally, the merits of the Petition are weak, which further tips the balance of the *Fintiv* factors toward the exercise of discretionary denial.

<u>Factor 1</u>: Whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted.

No motion to stay has been filed and there is no specific indication from Judge

Gilstrap that a stay is likely. This factor is thus neutral as acknowledged by Petitioner. Petition at 7 (citing *HP Inc. v. Slingshot Printing LLC*, IPR2020-01084, Paper 13 at 9 (P.T.A.B. Jan. 14, 2021)).

<u>Factor 2</u>: Proximity of the court's trial date to the Board's projected statutory deadline for a final written decision.

Trial in the parallel litigation is set to start on April 1, 2024. Exhibit 2010, 1. There is no evidence that this date would change or be postponed, and should therefore be taken at face value. *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 15 at 13 (PTAB May 13, 2020) (informative) ("*Fintiv II*"); *Samsung Elecs. Co., Ltd. v. Ancora Techs., Inc.*, IPR2020-01184, Paper 11 at 13 (PTAB Jan. 5, 2021)). ("Petitioner fails to provide sufficient evidence to show that the trial date has been changed or will be postponed ...."). Based on the filing date of this preliminary response, the statutory deadline for a final written decision in this proceeding (if instituted) is projected to be September 16, 2024. This is nearly six months after the jury trial.

In addition, recent guidance from Director Vidal directs the Board to "consider the median time from filing to disposition" in the district court. Interim Procedure, 3. For the period of March 31, 2018 to March 31, 2023, the average median time in all civil cases from filing to trial in the Eastern District of Texas is about 19 months. Ex. 2011, 35. The median time for only patent cases, as well as

patent cases before Judge Gilstrap, was even shorter, at only 18 months. Exs. 2012, 2013. As the case was filed on July 25, 2022 (Ex. 2014, 7), this would result in a trial in January or February 2024, even before the scheduled trial date. Thus, there is no reason to expect the scheduled trial date to slip, and this factor weighs heavily in favor of discretionary denial. *See Fintiv II* at 13 (finding factor favored denial when the trial would take place only two months before the final written decision).

<u>Factor 3</u>: Investment in the parallel proceeding by the court and the parties.

This factor considers "the amount and type of work already completed in the parallel litigation by the court and the parties at the time of the institution decision." *Fintiv I* at 9. This includes, among other things, whether the court in the parallel proceeding will have issued substantive and/or claim construction orders. *Id.* at 9-10. This factor "is related to the trial date factor, in that more work completed by the parties and court in the parallel proceeding tends to support the arguments that the parallel proceeding is more advanced, a stay may be less likely, and instituting would lead to duplicative costs." *Id.* at 10. This factor weighs heavily towards denial.

The litigation was filed in July 2022 and is at an advanced stage. Ex. 2014, 7-15. As of this filing, the parties have exchanged infringement and invalidity contentions, and both sides have collectively served and responded to multiple interrogatories and requests for admission. *See* Exhibits 2015, 2016, 2018-2021.

Petitioner has also deposed Patent Owner's Chief Intellectual Property Officer. The parties have collectively produced over 90,000 documents, and Patent Owner has performed several hundred hours of code review. Petitioner has also requested, and the Court has issued, a letter request for international judicial assistance to the judicial authority of the Netherlands, seeking extensive discovery (including individual and corporate depositions and document requests) from a third party. Exhibit 2017; Exhibit 2014, 14. By the projected institution deadline, the parties will have completed claim construction briefing, and a *Markman* hearing is scheduled for October 3, 2023, around two weeks after the projected institution deadline. Exhibit 2010, 4.

Based on the level of investment and effort that will have been expended on claim construction briefing, infringement and invalidity contentions, document production, written discovery, and source code review, this factor weighs in favor of discretionary denial. *See Fintiv II* at 14.

<u>Factor 4</u>: Overlap between issues raised in the petition and in the parallel proceeding.

This factor addresses concerns of inefficiency and the possibility of conflicting decisions between the Board and the district court; if the petition includes the same or substantially the same claims, grounds, arguments, and evidence as presented in the parallel proceeding, this factor favors denial. *Fintiv I* at 12; *Fintiv*

II at 14-15. Petitioner's invalidity contentions include the same primary references asserted here. Exhibit 2015, 12-13 (identifying Krco and Benaouda). While TS 24.008 is not listed, it is only relied upon against claims 2 through 6 in this proceeding, none of which are asserted in the litigation. Moreover, Petitioner challenges all claims asserted by Patent Owner in the district court. *See* Ex. 2016, 1. This near total overlap of issues weighs against institution.

<u>Factor 5</u>: Whether petitioner and the defendant in the parallel proceeding are the same party.

Petitioner is a party to the parallel litigation. Accordingly, this factor favors exercising discretion to deny institution. *See Samsung Electronics Co. v. Cal. Inst. of Tech.*, IPR2023-00133, Paper 10 at 18 (PTAB May 4, 2023); *Supercell Oy v. Gree, Inc.*, PGR2020-00039, Paper 14 at 18 (PTAB Sept. 14, 2020).

<u>Factor 6:</u> Other circumstances that impact the Board's exercise of discretion, including the merits.

Where, as here, the balance of the first five *Fintiv* factors favor exercising discretion to deny of institution, the Board considers whether there are compelling merits that would nevertheless justify institution. *See CommScope Techs. LLC v. Dali Wireless, Inc.*, IPR2022-01242, Paper 23 at 4-5 (PTAB Feb. 27, 2023) (precedential). This is a higher standard than the standard for institution, and requires a determination that the Petition presents challenges "in which the evidence if unrebutted at trial, would plainly lead to a conclusion that one or more claims are

unpatentable by a preponderance of the evidence." *Id.* at 3-4 (citing Interim Procedure at 4). To meet this standard, it must be "highly likely that the petitioner would prevail with respect to at least one challenged claim). *Id.* (citing *OpenSky Indus., LLC v. VLSI Tech. LLC*, IPR2021-01064, Paper 102, 49 (PTAB Oct. 4, 2022) (precedential)).

As discussed in Section IV, Petitioner's challenges here do not even rise to the lower standard for institution. The Petition thus fails to present compelling evidence of unpatentability, warranting discretionary denial.

Holistic Balancing of the Factors

As shown, Factor 1 is neutral. Factors 2 and 3 weigh heavily in favor of discretionary denial, and Factors 4 and 5 weigh at least slightly in favor of discretionary denial. Petitioner has not submitted a *Sotera* stipulation that would make discretionary denial inappropriate. Likewise, the Petition does not provide compelling evidence of unpatentability under factor 6.

Moreover, one more consideration impacts the concerns of efficiency and integrity important when considering discretionary denial. In the parallel district court proceeding, Patent Owner has asserted that Petitioner infringes multiple claims of five patents, including the patent at issue here. Exhibit 2016, 1. Petitioner has also filed petitions requesting review of the other asserted patents, which are pending under the following case numbers: IPR2023-00525, IPR2023-00581, and IPR2023-

00583. In only two of the five total proceedings[12] has Petitioner offered any stipulation that it will not pursue the same grounds as those raised in the underlying litigation. Both stipulations were narrowly crafted under *Sand Revolution.* Based on their accorded filing dates, all these proceedings will reach a final written decision around the same time as this proceeding (if instituted)—that is, around six months after trial. Rather than a series of IPR proceedings that will conclude many months behind the single trial, all of the validity issues presented in those proceedings could be handled sooner and more efficiently in a single trial before the district court. Accordingly, the Board should exercise its discretion to deny the Petition under § 314(a).

VI. CONCLUSION

For the reasons above, Patent Owner respectfully requests that the Board deny institution of *inter partes* review.

[12] IPR2023-00582 and IPR2023-00583.

Dated: June 16, 2023

Respectfully submitted,

/*Stephen D. Zinda*/
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Counsel for Patent Owner

CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. §§ 42.6(e)(4), the undersigned certifies that on June 16, 2023, a copy of the foregoing document (*Patent Owner's Preliminary Response*, including all Exhibits), was served via electronic mail on the following attorneys of record at the indicated e-mail address(es):

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CERTIFICATE OF COMPLIANCE

The undersigned certifies that this document complies with the type-volume limitations set forth in 37 C.F.R. § 42.24 *et seq.* This document, excluding those portions excluded pursuant to § 42.24(a)(1), contains 13,985 words as calculated by the "Word Count" feature of Microsoft Word for Office 365, the program used in creating it.

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