

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

AT&T SERVICES INC., T-MOBILE USA, INC., CELLS CO PARTNERSHIP
D/B/A VERIZON WIRELESS, ERICSSON INC.,
AND NOKIA OF AMERICA CORPORATION,
Petitioners

v.

ASUS TECHNOLOGY LICENSING INC.,
Patent Owner

IPR2024-00997
Patent No. 10,798,754

PATENT OWNER PRELIMINARY RESPONSE

Mail Stop “PATENT BOARD”
Patent Trial and Appeal Board
U.S. Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

TABLE OF CONTENTS

	<u>Page</u>
I. INTRODUCTION	1
II. TECHNOLOGY BACKGROUND.....	3
A. 3GPP and Cellular Standards.....	3
1. 3GPP Technical Groups	3
2. 3GPP’s Process for Developing Technical Specifications	5
3. Knowledge and Skill Level of 3GPP Participants	7
B. ’754 Patent.....	8
1. Challenged Claims	10
2. Prosecution History	12
(a) Convida Wireless Is R2-1707351.....	13
(b) Prosecution	14
(a) The Examiner Was Aware of At Least Some of the Alleged Prior Art.....	18
C. Alleged Prior Art.....	22
1. R2-1704250 (EX1005)	22
2. R2-1706381 (EX1006)	23
3. 3GPP TS 38.300 (EX1007)	23
III. CLAIM CONSTRUCTION.....	25
IV. THE CHALLENGED CLAIMS ARE NOT OBVIOUS IN VIEW OF R2-1704250 COMBINED WITH R2-1706381	26

A.	R2-1704250 And RS-1706381 Do Not Disclose “The QFI Configuration Is Always Set To A Value Indicating The QFI Field Is Present In Uplink For The Default DRB”	26
B.	A POSITA Would Not Combine R2-1704250 and R2-1706381 In The Manner Suggested	31
V.	THE CHALLENGED CLAIMS ARE NOT OBVIOUS IN VIEW OF 3GPP TS 38.300 COMBINED WITH R2-1706381	32
VI.	THE BOARD SHOULD EXERCISE DISCRETION UNDER SECTION 325(D) AND DENY INSTITUTION.....	33
A.	Ground 2 Should Be Denied Because Petitioner Advances Substantially The Same Prior Art and Arguments Considered During Prosecution.....	33
B.	Ground 1 Should Be Denied Because Petitioner Advances Substantially The Same Prior Art and Arguments Considered During Prosecution.....	39
VII.	THE BOARD SHOULD EXERCISE DISCRETION UNDER SECTION 314 AND DENY INSTITUTION	42
A.	Factor 1.....	44
B.	Factor 2.....	45
C.	Factor 3.....	48
D.	Factor 4.....	50
E.	Factor 5.....	53
F.	Factor 6.....	53
VIII.	CONCLUSION	55

TABLE OF AUTHORITIES**Page(s)****Cases**

Harmonic Inc. v. Avid Tech.,
815 F.3d 1356 (Fed. Cir. 2016) 42

Viavi Sols. Inc. v. Zhejiang Crystal-Optech Co.,
No. 2:21-CV-00378-JRG, 2022 WL 16856099 (E.D. Tex. Nov. 10,
2022) 45

Statutes

35 U.S.C. §314..... 42, 45, 48

35 U.S.C. §316..... 45

Agency Decisions

Apple Inc. v. Fintiv, Inc.,
IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020)..... 43

Apple Inc. v. Fintiv, Inc.,
IPR2020-00019, Paper 15 (PTAB May 13, 2020) 43

CommScope Techs. LLC v. Dali Wireless, Inc.,
IPR2022- 01242, Paper 23 (PTAB Feb. 27, 2023) 44, 53, 54

CrowdStrike, Inc. v. Open Text Inc.,
IPR2023-00556, Paper 9 (PTAB Sept. 12, 2023) 47

Ericsson Inc. et al v. Collison Communications, Inc.,
IPR2022-01233, Paper 12 (PTAB Jan. 19, 2023) 46

General Plastic Indus. Co., Ltd. v. Canon Kabushiki Kaisha,
IPR2016-01357, Paper 19 (PTAB Sept. 6, 2017) 46

Google LLC v. EcoFactor Inc.,
IPR2021-00454, Paper 9 (PTAB July 22, 2021)..... 51

<i>Hulu, LLC v. SITO Mobile R&D IP, LLC,</i> IPR2021-00298, Paper 11 (PTAB May 19, 2021)	47
<i>LG Elecs., Inc. v. Ancora Techs., Inc.,</i> IPR2021-00581, Paper 16 (PTAB June 10, 2021)	51, 52
<i>NetNut Ltd. v. Bright Data Ltd.,</i> IPR2021-01492, Paper 12 (PTAB Mar. 21, 2022)	47
<i>NHK Spring Co. v. Intri-Plex., Inc.,</i> IPR2018-00752, Paper 8 (PTAB Sept. 12, 2018)	42, 46
<i>OpenSky Indus., LLC v. VLSI Tech. LLC,</i> IPR2021-01064, Paper 102 (PTAB Oct. 4, 2022)	43, 54
<i>Roku, Inc. v. IOENGINE, LLC,</i> IPR2022-01554, Paper 11 (PTAB May 5, 2023)	51
<i>Samsung Electronics Co. Ltd. v. California Institute of Tech.,</i> IPR2023-00130, Paper 10 (PTAB May 4, 2023)	51, 52
<i>Sand Revolution II, LLC v. Continental Intermodal Group – Trucking</i> <i>LLC, IPR2019-01393, Paper 24 (PTAB June 16, 2020)</i>	<i>50</i>

Patent Procedures

Katherine K. Vidal, <i>Interim Procedure for Discretionary Denials in AIA</i> <i>Post-Grant Proceedings with Parallel District Court Litigation</i> (June 21, 2022)	43
---	----

LIST OF EXHIBITS

Exhibit No.	Patent Owner's Exhibits
Ex. 2001	“Understanding 3GPP – starting with the basics,” Qualcomm, Aug 1, 2017, <i>available at</i> https://www.qualcomm.com/news/onq/2017/08/understanding-3gpp-starting-basics , <i>last accessed</i> June 4, 2024.
Ex. 2002	Erik Dahlman, Stefan Parkvall, Johan Skold, <i>4G, LTE-Advanced Pro and The Road to 5G</i> , Academic Press, 2016 (“Dahlman”)
Ex. 2003	3GPP TS 36.300 Version 11.4.0 Release 11: Technical Specification for LTE; Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); Overall description; Stage 2.
Ex. 2004	3GPP TS 36.331 Version 11.2.0 Release 11: Technical Specification for LTE; Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification.
Ex. 2005	LegalMetric District Report for Texas Eastern District Court in Patent Cases (January 2019-April 2024) (“LegalMetric”)
Ex. 2006	United States District Courts—National Judicial Caseload Profile for 12-month period ending June 30, 2024; <i>available at</i> https://www.uscourts.gov/statistics-reports/analysis-reports/federal-court-management-statistics (“Judicial Caseload Statistics”)
Ex. 2007	Defendants’ P.R. 3-3 Invalidity Contentions from <i>ASUS Technology Licensing Inc. and Celerity IP, LLC v. AT&T Corp. et al.</i> , No. 2:23-cv-490 (lead), -489, -491, E.D. Tex., April 12, 2024 (“Invalidity Contentions”)

Ex. 2008	Reserved
Ex. 2009	3GPP Technical Contribution R2-1704649 (“R2-1704649”)
Ex. 2010	3GPP Technical Contribution R2-1706782 (“R2-1706782”)
Ex. 2011	3GPP Technical Contribution R2-1707351 (“R2-1707351”)
Ex. 2012	3GPP Technical Contribution R2-1708324 (“R2-1708324”)
Ex. 2013	U.S. Patent Appl. Publication No. 2019/0150023 (“Cho”)

I. INTRODUCTION

In 5G technology, the uplink channel (“UL”) may have multiple quality of service (“QoS”) flows for different data radio bearers (“DRBs”). That is, different DRBs carry different types of traffic (e.g., streaming or voice or internet) that each have different quality (QoS) requirements. However, without proper signaling, the second QoS flow can be mapped to the default DRB. This can cause issues, such as having the wrong QoS for a particular type of data, along with missing data and wasting network resources.

The inventions of the ’754 Patent solved this specific problem in 5G technology by having network nodes transmit the DRB configuration on the radio resource control (“RRC”) message. The DRB configuration is required to include a QFI (QoS Flow ID) configuration that indicates whether a QFI field is present or not in uplink. Further, the QFI configuration must always be set to a value that indicates the QFI field is present in uplink for the default DRB. At the time, the 3GPP working group had not identified this innovative approach.

The alleged prior art consists of the 3GPP TS 38.300 specification (discussed at length in the ’754 Patent and prosecution history) as well as two contemporaneous 3GPP technical contributions (R2-1704250 and R2-1706381) discussing potential improvements to 3GPP TS 38.300. While all the references discuss issues relating to the UL QoS flow, none disclose the specific solution

claimed in the '754 Patent. Both grounds 1 and 2 argue that R2-1706381 discloses the limitation “the QFI configuration is always set to a value indicating the QFI field is present in uplink for the default DRB.” This limitation is present in both independent claims 1 and 6. R2-1706381 does not require the QFI configuration is always set to a value indicating the QFI field is present in uplink for the default DRB and allows for other settings. Accordingly, the claims are patentable over the alleged prior art.

Further, the Petition should be denied under 35 U.S.C. §325(d) and *Fintiv*. For §325(d), the Examiner twice rejected and ultimately allowed the claims over prior art that summarizes functionality present in 3GPP TS 38.300. The Petitioner advances arguments based on 3GPP TS 38.300 and technical contributions that summarize functionality described in 3GPP TS 38.300. Thus, the prior art and arguments advanced by Petitioner are the same or substantially the same as the prior art and arguments considered at length by the Examiner. For *Fintiv*, trial in the related district court litigation is expected four to five months before a Final Written Decision would be expected in this IPR, and the other *Fintiv* factors also favor discretionary denial. Accordingly, the Board should exercise its discretion not to institute this IPR.

II. TECHNOLOGY BACKGROUND

A. 3GPP and Cellular Standards

The Third Generation Partnership Project (“3GPP”) is “an engineering organization that develops technical specifications.” EX2001 [Understanding 3GPP] at 5. 3GPP “was initially formed in December 1998 when the European Telecommunications Standards Institute (ETSI) partnered with other standard development organizations (SDOs) from around the world to develop new technologies (or more specifically, technology specifications) for the third generation (3G) of cellular networks.” *Id.* at 2. But 3GPP’s work continued on after 3G, extending first to 4G/LTE, and then to new radio technology for 5G. *Id.* at 2-3. After 3GPP develops technical specifications, regional telecommunications standards bodies, such as ETSI, adopt them to turn their contents into standards. *Id.* at 5.

1. 3GPP Technical Groups

3GPP consists of three technical specification groups (or TSGs), with TSG RAN (radio access network) being “responsible for the definition of functions, requirements, and interfaces of the Radio Access.” EX2002 [Dahlman] at 25.

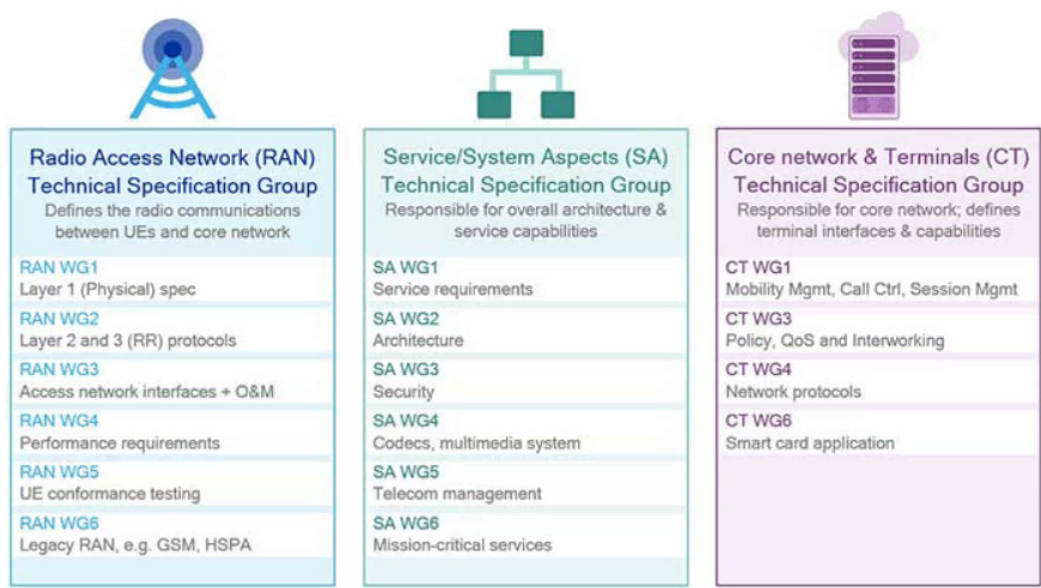


Figure 3: 3GPP distributed organization structure.

(EX2001 [Understanding-3GPP] at 7).

“Radio Access” refers to access by a mobile device (also referred to as a UE or user equipment) to the base station (Evolved-Node-B, “eNB” or “eNodeB”) through the air interface. There are a total of six RAN working groups, each responsible for different aspects of the radio interface. EX2002[Dahlman] at 25. For example, RAN WG1 (“RAN1”) is responsible for “the physical layer specification,” while RAN WG2 (“RAN2”) is responsible for “the layer 2 and layer 3 radio interface specifications.” *Id.*

The technology discussed in the ’754 Patent centers on radio access network (RAN) technology—specifically Evolved Universal Terrestrial Radio Access Network, or E-UTRAN. EX1001 [’754 Patent], 1:30-38. For this IPR, the RAN

working groups are particularly relevant because the specifications and technical contributions discussed in the '754 Patent generally involve E-UTRAN. EX1001 ['754 Patent], 2:34-58.

2. 3GPP's Process for Developing Technical Specifications

“Developing technical specifications for mobile communication is not a one-time job,” but “an ongoing process.” EX2001 [Dahlman] at 24. The process “typically includes the four phases” as illustrated below in an iterative manner, where decisions made in earlier phases such as requirements or architecture can be revised as discussions evolve. *Id.* at 24-25.

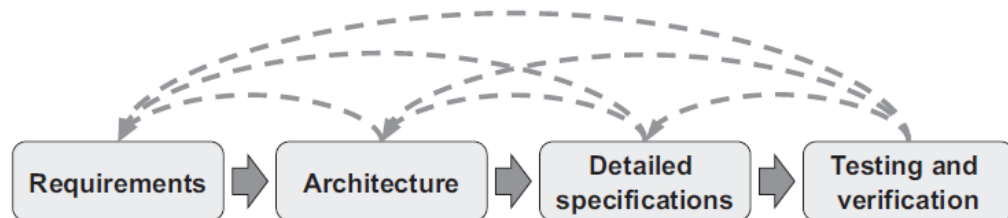


FIGURE 2.8

The standardization phases and iterative process.

3GPP members meet at least four times a year to discuss changes and updates to 3GPP technical specifications, with large working groups like RAN1 and RAN2 meeting eight times a year. EX2001 [Understanding 3GPP], 12; EX2002 [Dahlman], 25. “The 3GPP documents are divided into releases, where each release has a set of features added compared to the previous release. The

features are defined in Work Items agreed and undertaken by the TSGs.’ EX2002 [Dahlman], 25. For example, LTE (4G) started with Release 8 in 2008-2009 and progressed to Release 15 in 2017:

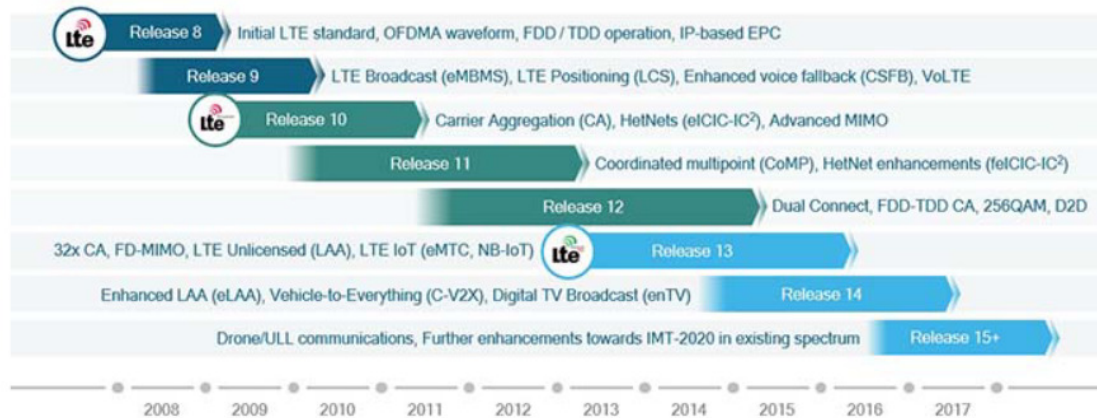


Figure 4: 4G LTE evolution by 3GPP Release.

EX2001 [Understanding 3GPP], 8. Release 15 introduced new radio (“NR”) technologies, often referenced as 5G. *Id.*

The resulting 3GPP technical specifications “are organized in multiple series and are numbered TS XX.YYY, where XX denotes the number of the specification series and YYY is the number of the specification within the series.” EX2002 [Dahlman], 26-27. The 38.YYY series cited in the documents referenced by the ’754 Patent (2:34-58) and in the Petition (*e.g.*, 3GPP TS 38.300) concern “[r]adio aspects for the next generation (5G).” EX2002 [Dahlman], 26.

3. Knowledge and Skill Level of 3GPP Participants

Petitioner provides the following definition for level of ordinary skill in the art:

A person of ordinary skill in the art (“POSITA”) in the field of the ’754 patent at the time of the alleged invention of the ’754 patent would have had the equivalent of an undergraduate degree in Electrical Engineering, Computer Science, or Computer Engineering, familiarity with the relevant 3GPP standards as of this time, and at least two years of experience in design, development, and/or testing of cellular networks. Ex-1003, ¶¶43-44. This definition is approximate, and more education may substitute for industry experience or vice versa. *Id.*

Pet., 15-16.

Participants in 3GPP were necessarily far more experienced than Petitioner’s POSITA. Engineers participating in the RAN1 and RAN2 specification drafting generally had above-average skill levels at the time of the invention and that continues to be the case.” Such above-average level skill levels are expected because a person with the 2-year experience proposed by Petitioner would not have the intimate knowledge of the existing standardized cellular system, including the pros and cons of the available techniques and control features. Without such intimate knowledge, they would not know how a proposed change would impact

the rest of the system and would not be able to make the right choice. As such, they would not be able to specify a reliable and efficient cellular network.

But even with those far above-average (and sometimes extraordinary) skill levels, engineers participating in 3GPP technical discussions would not be expected to be familiar with all relevant aspects of the specifications. Each specification is typically hundreds of pages of detailed requirements, and there are multiple specifications for different aspects of E-UTRAN. *See, e.g.*, EX2003 [TS 36.300 V11.4.0] (221 pages); EX2004 [TS 36.331 V1 1.2.0] (345 pages). Further, the various sections of the specification are developed by different teams of 3GPP participants, meaning no single engineer is involved with all aspects of the specifications.

B. '754 Patent

The '754 Patent discloses a “method and apparatus for serving quality of service (QoS) flow in a wireless communications system.” EX1001 ['754 Patent], Title, Abstract. In particular, the '754 Patent is directed to the 3GPP development efforts involving 5G technology in the 2017 time frame. EX1001 ['754 Patent], 2:34-58 (referring to and incorporating 3GPP TS 38.300 v.0.4.1, published in June 2017, and other contemporary 3GPP technical contributions).

The '754 Patent recognized an issue in 3GPP TS 38.300 v0.4.1 with UE (user equipment) initiated UL (uplink) QoS flow. EX1001 ['754 Patent], 23:33-54. When the UE initiates a second UL QoS flow, in certain instances it may be mapped to the default DRB of the PDU session and the gNB (the base station) would not be aware of this second UL QoS flow. EX1001 ['754 Patent], 23:33-45. This can cause several problems, including poor QoS for the second UL QoS flow, as well as “data missing and resources waste.” *Id.*, 23:45-54.

The '754 Patent proposes several solutions to this problem. *Id.*, 23:56-28:26. The claims (and Figs. 12-14) of the '754 Patent focus on “Alternative 5,” which the '754 Patent terms “A QoS Flow not to be Served by Default DRB Uses RRC Explicit Mapping.” *Id.*, 26:46-47; Figs. 12-14. The '754 Patent explains that “[a]nother solution could be that the gNB should use RRC explicit way to configure a QoS flow with the mapping of the QoS flow to a DRB if the DRB is a dedicated DRB i.e. the DRB is not a default DRB.” *Id.*, 26:49-53. Thus, the '754 Patent is suggesting the use of the RRC message to configure QoS flow in the UL PDU.

That is, as discussed at Figure 12, “the network node transmits a first message with a DRB configuration to a UE for establishing a default DRB for a PDU session, wherein the DRB configuration includes a QFI configuration used to

indicate whether a QFI field is present or not in uplink for the default DRB and the QFI configuration is always set to a value indicating the QFI field is present in uplink for the default DRB.” *Id.*, 27:2-9. In other words, when the network node transmits an RRC message to set up a new UL PDU session, the RRC message will include a QFI configuration and that QFI configuration is “always set to a value indicating the QFI field is present in uplink for the default DRB.” *Id.*

1. Challenged Claims

The Petition challenges claims 1-10 of the '754 Patent. Pet., 3. Independent method claim 1 is shown below.

1. A method of a network node, comprising:
transmitting a first RRC (Radio Resource Control) message with a DRB (Data Radio Bearer) configuration to a UE (User Equipment) for establishing a default DRB for a PDU (Protocol Data Unit) session, wherein the DRB configuration includes a QFI (QoS Flow Id) configuration used to indicate whether a QFI field is present or not in uplink for the default DRB and the QFI configuration is always set to a value indicating the QFI field is present in uplink for the default DRB;
establishing the default DRB with a presence of the QFI field in uplink; and
receiving a SDAP (Service Data Adaptation Protocol) PDU with the QFI field via the default DRB from the UE.

EX1001 ['754 Patent], cl. 1. Independent claim 6 claims a network node with the same functionality. *Id.*, cl. 6. Dependent claims 2-5 and 7-10 depend from claims 1 and 6, respectively.

The independent claims are directed to the embodiment disclosed at Figure 12 of the '754 Patent, wherein a first message with a DRB configuration includes a QFI configuration used to indicate whether a QFI field is present or not in uplink for the default DRB and the QFI configuration is always set to a value indicating the QFI field is present:

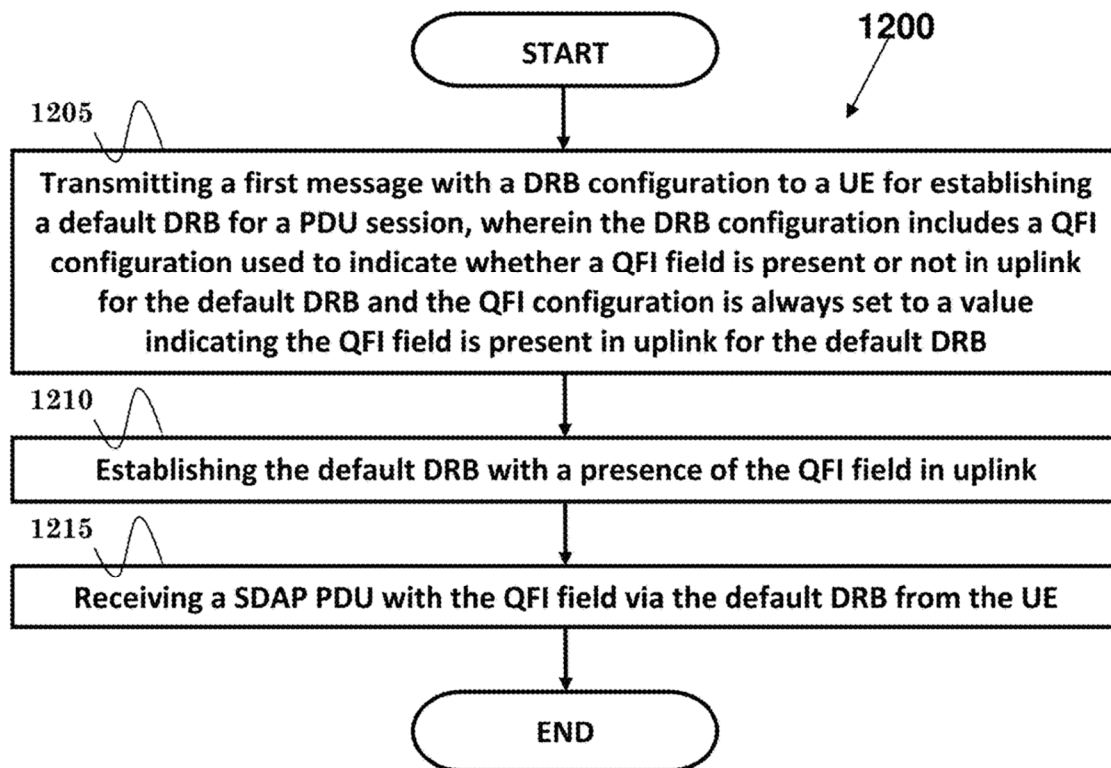


FIG. 12

EX1001 [’754 Patent], Fig. 12. That is, the claim does not allow for a message that indicates the QFI field is not present in uplink for the default DRB. *See, e.g.*, EX1001 [’754 Patent], 27:1-12.

2. Prosecution History

As the Petition notes, the claims of the ’754 Patent were allowed because the prior art of record failed to show or suggest the limitation “transmitting a first RRC (Radio Resource Control) message with a DRB (Data Radio Bearer) configuration to a UE (User Equipment) for establishing a default DRB for a PDU (Protocol Data Unit) session, wherein the DRB configuration includes a QFI (QoS Flow Id) configuration used to indicate whether a QFI field is present or not in uplink for the default DRB and the QFI configuration is always set to a value indicating the QFI field is present in uplink for the default DRB.” Pet., 14-15, EX1002 [’754 Patent FH], 38.

The application that became the ’754 Patent was filed on July 24, 2018 as U.S. Pat. Appl. No. 16/043,818. (the “’818 Application”), claiming priority to U.S. Provisional Patent Application No. 62/536,163, filed on July 24, 2017. EX1002 [’754 FH], 315-316. The as-filed claims were similar to the claims ultimately allowed, except that the claims ultimately allowed were amended to include “a first RRC (Radio Resource Control) message with.” *Id.*, 369.

As discussed below, the '818 Application was thoroughly examined. On September 6, 2019, the Examiner issued a non-final rejection rejecting pending claims 1-10. *Id.*, 104-105. Claims 1-10 were rejected over “Convida Wireless” (Rs-1707351) in view of U.S. Pat. Appl. No. 2019/0150023 (“Cho”). *Id.*, 108.

(a) Convida Wireless Is R2-1707351

The Examiner mistakenly identifies “Convida Wireless” as “‘SDAP Header Format,’ 3GPP TSG-RAN WG2 #99 TDOC R2-1708324, 29 June 2017.” EX1002 [’754 FH], 108. “Convida Wireless” is **R2-1707351**, not **R2-1708324**. R2-170351 is a technical contribution from Convida Wireless titled “SDAP Header Format” from the 3GPP TSG-RAN WG2 NR Ad Hoc meeting in Quingdao, China June 27-29, 2017. EX2011 [R2-1707351], 1. Convida Wireless (R2-1707351) is the first reference listed on the “Other Publications” section on the fact of the ’754 Patent:

OTHER PUBLICATIONS

Convida Wireless: “SDAP Header Format”, 3GPP Draft; R2-1707351 (SDAP Header Format), 3rd Generation Partnership Project (3GPP), Mobile Competence Centre; 650; Route Des Lucioles; F-06921 Sophia-Antipolis Cedex; France, vol. RAN WG2, No. Quingdao, China; Jun. 2, 2017-Jun. 29, 2017 Jun. 26, 2017 (Jun. 26, 2017), XP051301839, Retrieved from the Internet: URL: <http://www.3gpp.org/ftp/>.

(Continued)

EX1001 ['754 Patent], “Other Publications.” Further, the Examiner’s rejections cite disclosure from R2-1707351, not R2-1708324. *Compare* EX1002 ['754 FH], 86, 109 *with* EX2011 [R2-1707351].

R2-1708324 is a technical contribution from Ericsson to the same working group addressing the same Agenda Item 10.3.4.2 that is also titled “SDAP Header Format.” EX2012 [R2-1708324]. R2-1708324 is from a different meeting (Berlin, August 21-25, 2017), has slightly different disclosure than R2-1707351, and is not cited on the face of the '754 Patent. Thus, it is clear that the Examiner is discussing R2-1707351, not R2-1708324 as Convida Wireless.

(b) Prosecution

The Examiner argued Convida Wireless disclosed all limitations of the independent claims except “wherein the QFI configuration used to indicate whether a QFI field is present or not in uplink for the default DRB and the QFI configuration is always set to a value indicating the QFI field is present in uplink for the default DRB,” which was allegedly disclosed by Cho. *Id.*, 108-110.

In a reply dated September 6, 2019, the Applicant argued as followed:

First, Chapter 1 of Convida Wireless discloses the reflective packet mapping, and Chapter 2 of Convida Wireless discloses the NAS reflective QoS function. However, these chapters of Convida Wireless relate only to processes occurring **after the corresponding DRB(s) is established/initiated**. In other words, Chapters 1 and 2 of Convida Wireless do not refer to the specific claimed process of **establishing a DRB**, namely **transmitting a DRB configuration including a QFI configuration for establishing a default DRB to the UE and establishing the default DRB** as recited in the claims.

Furthermore, Convida Wireless does **not** teach **how to configure a QFI field in uplink for the default DRB**. In contrast, the claims specify that the DRB configuration includes a QFI configuration used to indicate whether a QFI field is present or not in uplink for the default DRB, which is however not disclosed in D1.

EX1002 [’754 FH], 99. Thus, the Applicant is pointing out that Convida Wireless does not relate to establishing a DRB as claimed and does not disclose how to configure a QFI field in uplink for the default DRB as required by the claims. *Id.*

For Cho, the Applicant argued as follows:

There are three main differences between Cho and the claimed invention as recited in the claims of the present application. The first difference is Cho discloses that two indications in the DL SDAP header are used to determine whether QFI field is present in downlink, while the QFI configuration recited in the claims is used to determine whether QFI field is present in uplink. The second difference is Cho discloses using two indications to determine whether QFI field is present in SDAP header or not, while one QFI configuration is used and recited in the claims. The third difference is Cho discloses these two indications may be set to values indicating the QFI field is not present, while the claims specify that the QFI configuration is always set to a value indicating the QFI field is present in uplink for the default DRB. It is clear that Cho fails to teach to use a QFI configuration and the QFI configuration is always set to a value indicating the QFI field is present in uplink for the default DRB.

EX1002 [’754 FH], 7. Thus, the Applicant identified that (1) Cho relates to the downlink instead of the uplink as claimed, (2) Cho uses two indications to determine whether the QFI field is present, rather than one QFI configuration, and (3) Cho discloses that the two indications “may be set to values indicating the QFI field is not present.” *Id.*, 7.

In response, the Examiner issued a final rejection on January 29, 2020. *Id.*, 78. The Examiner argued that Convida Wireless figures 1-4 disclosed “transmitting a DRB configuration including a QFI configuration” “for both DL and UL packets.” *Id.*, 86-87. With respect to Cho, the Examiner argued that Cho Fig. 9 and paragraphs 129 and 153 disclosed the missing limitation because “Cho implies only 'one QFI configuration' is used with steps S913-915 [of Fig. 9].” *Id.*, 87-88.

On April 14, 2020, the Applicant submitted amendments and remarks along with a Request for Continued Examination. *Id.*, 62. The Applicant amended claims 1, 2 and 6 to specify that the messages transmitted from the network node are “RRC (Radio Resource Control)” messages. *Id.*, 63-64. The Applicant distinguished Convida Wireless by discussing the 3GPP TS 38.300 technical specification (EX1007 in this IPR) that Convida Wireless refers to. EX1002 [’754 FH], 65-68. Applicant identified that 3GPP TS 38.300 is clear “that SDAP is in **User Plane Protocol Stack**, while RRC is in **Control Plane Protocol Stack**. And,

the SDAP packet (i.e., the SDAP PDU disclosed in Cho) is transmitted via DRB, while RRC message is transmitted via SRB. Thus, SDAP and RRC are different protocol layers and use different radio bearers for transmission.” *Id.*, 67 (emphasis in original). Further, Applicant identifies that “the UE has **not** established the default DRB yet before the first RRC message is received.” *Id.*, 68 (emphasis in original).

Applicant made similar arguments regarding Cho. *Id.*, 68-70 (“The concept is basically same as what disclosed in Convida Wireless. Therefore, most of the arguments against Convida Wireless are also applicable to Cho.”). Further, Applicant identified that “although the first indicator indicating whether to perform AS mapping rule update for uplink, Cho does **not** that disclose the first indicator is **always** set to a value indicating the AS mapping rule is updated for uplink on a DRB, while amended claims 1 and 6 of the present application discloses the QFI configuration is **always** set to a value indicating the QFI field is present in uplink for the default DRB.” *Id.*, 70.

On the basis of these arguments, the Examiner allowed the claims. *Id.*, 36. The Examiner stated that the “Applicants’ amendment/arguments in the outstanding response filed 04/14/20 have been fully appreciated and considered.” *Id.*, 38. The Examiner further found that “[t]he prior art of record, considered

individually or in combination, fails to fairly show or suggest the claimed network node (claim 6) and method (claim 1).” *Id*

(a) The Examiner Was Aware of At Least Some of the Alleged Prior Art

Petitioner argues that “there is no evidence that the Examiner was aware of the prior art identified in this petition.” Pet., 15. This is incorrect. The 3GPP TS 38.300 V0.4.1 Specification Petitioner uses in Ground 2 was specifically identified and incorporated by reference into the ’754 Patent. EX1001 [’754 Patent], 2:38, 2:57-58. The relevant portions of 3GPP TS 38.300 were also incorporated into and discussed in detail in the ’754 Patent. *See, e.g., id.*, 5:10-6:67, 23:7-54, Figs. 5 and 6. Similarly, Convida Wireless’ (R2-1707351) discussion of SDAP Headers is in the context of 3GPP TS 38.300 and the document repeatedly references 3GPP TS 38.300. EX2011 [R2-1707351], 1-4. Indeed, the Applicant discussed 3GPP TS 38.300 at length in its April 14, 2020 reply to the Examiner’s January 29, 2020 Office Action. *See* EX1002 [’754 FW], 66-68 (stating “Convida Wireless refers to 3GPP TS 38.300”, explaining the difference between SDAP and RRC messages in 3GPPS TS 38.300, and explaining why the difference is relevant to Convida Wireless.) The Examiner allowed the claims based on the Applicant’s arguments regarding 3GPP TS 38.300. *Id.*, 37-38.

Cho is similarly related to QoS in 3GPP LTE systems. EX2013 [Cho], [0002]-[0004]. Cho's earliest effective filing date is February 1, 2017, meaning the disclosures in Cho were implemented with respect to earlier releases than 3GPP TS 38.300 and the technical contributions relied on in the Petition. However, Cho still discusses the same general issue—namely, “[m]apping between a QoS flow and a data radio bearer.” EX2013 [Cho], [0065]. *See, e.g., id.*, [0022] (“Fig. 7 is a diagram for classification and user plane marking for QoS flows and mapping to NG-RAN resources.”). Fig. 7.

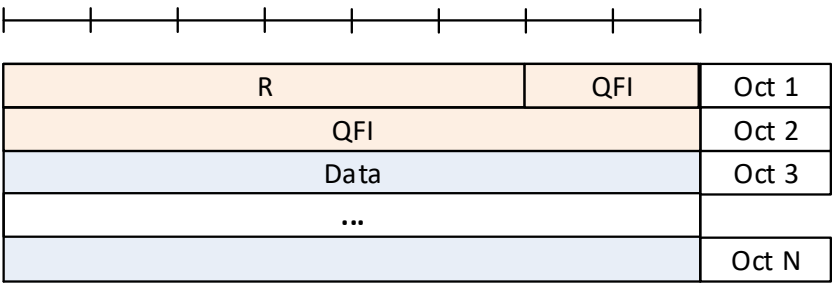
Thus, the Examiner was not only aware of 3GPP TS 38.300, they were aware of its relevant functionality and application to R2-1707351 and Cho. As discussed in the '754 Patent, the inventions of the '754 Patent are improvements on 3GPP TS 38.300 and the other standards and documents described in the '754 Patent. *Id.*, 2:34-58, 23:33-55.

Further, the Examiner was unquestionably aware of contemporaneous technical contributions to 3GPP RAN WG2 meetings involving SDAP Header Format discussions. The other alleged prior art presented by Petitioner is largely duplicative of 3GPP 38.300 and the other prior art already before the examiner. In Ground 2, the Petition uses 3GPP TS 38.300 as a substitute for R2-1704250 in Ground 1, alleging that 3GPP TS 38.300 discloses the same limitations as R2-

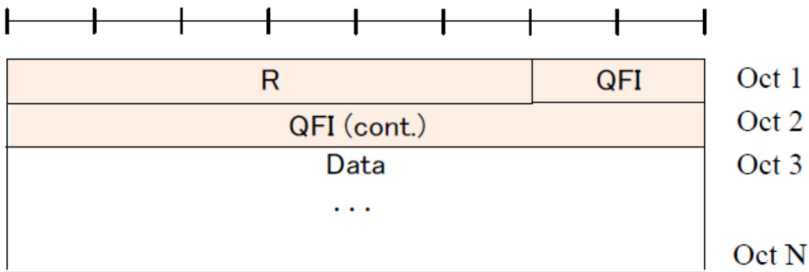
1704250 in Ground 1. *Compare* Grounds 1 and 2. R2-1704250 is directed to a “Discussion on QoS mapping” from May 2017. EX1005 [R2-1704250] at 1. The ’754 Patent discusses the “QoS architecture” and “QoS flow” in 3GPP TS 38.300 in detail. EX1001 [’754 Patent], 5:22-24, 5:36-37, 6:41-43. *See generally id.*, 5:10-6:67. 3GPP TS 38.300 was published in June 2017. Pet., 18. Thus, R2-1704250 reflects discussions in the context of the QoS architecture that were incorporated into 3GPP TS 38.300 and cited in the ’754 Patent.

R2-1706381, published June 2017, discusses “NR SDAP header format.” EX1006 [R2-1706381], 1. This is the same topic as R2-1704649 (“Discussion on the SDAP PDU form”), R2-1706782 (“SDAP Header Format”) and R2-1707351 (Convida Wireless) (“SDAP Header Format”), each of which was cited by the Examiner. EX1001 [’754 Patent], “Other Publications,” EX2009 [R2-1704649], EX2010 [R2-1706782], EX2011 [R2-1707351]. As discussed above, the Examiner’s January 29, 2020 rejection was based on R2-1707351 (Convida Wireless) in view of U.S. 2019/0150023 (“Cho”). EX1002 [’754 Patent FH], 80-87; EX2011 [R2-1707351]. Thus, the Examiner cited and discussed in detail contemporaneous technical contributions on the exact same subject as R2-1706381 from the same TSG-RAN WG2.

Further, each of the technical contributions cited by the Examiner is directed to the same Agenda Item (10.3.4.2) identified in R2-1706381. *See, e.g.*, EX2009 [R2-1704649], 1; EX2010 [R2-1706782], 1; EX2011 [R2-1707351], 1. Two are from the same June 27-29, 2017 meeting in Qingdao, China. EX2010 [R2-1706782], 1; EX2011 [R2-1707351], 1. R2-1706782 even discloses the same figure showing the UL PDU with QFI as the Petition relies on from R2-1706381:



EX2010 [R2-1706782], Fig. 6



Pet., 23, 38 (from EX1006 [R2-1706381] Fig. 2)

There is a limited universe of technical contributions to specific 3GGP working group meetings involving one specific agenda item, and there is significant overlap between these contributions. The Examiner was clearly aware

of this universe of contributions. Further, the Examiner clearly cited and discussed the contributions they felt were most relevant. Thus, the Petition uses contemporaneous technical 3GPP contributions the Examiner chose not to cite to rehash the same underlying technical arguments discussed in detail and rejected by the Examiner during prosecution.

C. Alleged Prior Art

1. R2-1704250 (EX1005)

R2-1704250 is a technical contribution to 3GPP TSG-RAN WG2 at Meeting #98, held in Hangzhou, China from May 15-19 in 2017. R2-1704250 is titled “Discussion on QoS mapping” and discusses “how to manage the mapping between QoS flow and DRB and how to carry QFI information in UL and DL.” EX1005[R2-1704250] at 1.

R2-1704250 reflects the state of technology regarding QoS mapping in ongoing 3GPP TSG-RAN WG2 as disclosed in relevant part in 3GPP TS 38.300 v0.4.1 and the '754 Patent. *Id.*, 1-2, EX1001 ['754 Patent], 23:11-54. R2-1704250 also discloses four proposals for consideration at the next WG2 meeting. EX1005[R2-1704250] at 2. Of relevance for this IPR is proposal 4, which states “the default DRB shall be configured to always include QFI in SDAP header at least in UL.” *Id.* R2-1704250 is silent on whether QFI should be in the UL SDAP

header in configurations other than the default DRB, or on whether the RRC message must have a DRB configuration that includes a QFI configuration used to indicate whether a QFI field is present or not in uplink for the default DRB.

2. R2-1706381 (EX1006)

R2-1706381 is a technical contribution to 3GPP TSG-RAN WG2 at Meeting #NR AH2 held in Qingdao, China on June 27-29, 2017. EX1006 [R2-1706381], 1. R2-1706381 is titled “NR SDAP header format,” discusses “the detailed formats of SDAP data PDU and QFI presence,” and provides several proposals. *Id.*, 1-2.

R2-1706381 proposes an “explicit UL QFI presence indicator in RRC signaling and allow carrying UL QFI even in 1-to-1 mapping.” *Id.*, 1. However, R2-1706381 discusses that this allows two “UL PDU formats: one is no any header fields and other is carrying QFI field in header.” *Id.* Thus, R2-1706381 allows the RRC signaling to be set to either indicate the QFI field is present in uplink or indicate the QFI field is not present in uplink. *See also Id.*, Figs. 1 and 2.

3. 3GPP TS 38.300 (EX1007)

3GPP TS 38.300 v0.4.1 is the 3GPP Technical Specification for the Group Radio Access Network, NR, and NG-RAN Overall Description Stage 2 Release 15. EX1007 [3GPP TS 38.300], 1. 3GPP TS 38.300 “provides an overview and

overall description of the NG-RAN [NG-Radio Access Network] and focuses on the radio interface protocol architecture of NR connected to 5GC.” The relevant portions of 3GPP TS 38.300 are discussed in the ’754 Patent, including Fig. 12-1 (the QoS architecture, relabeled Fig. 5 in the ’754 Patent) and Fig. A.6.1 (“UL packet with a new QoS flow for which a mapping does not exist in UE,” relabeled Fig. 6 in the ’754 Patent):

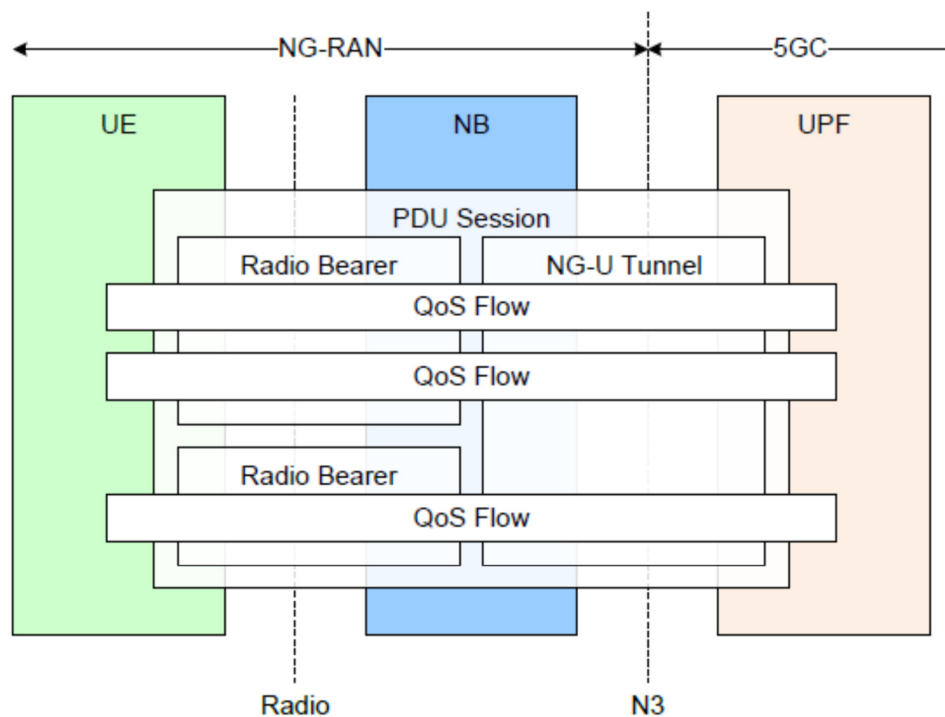


Figure 12-1: QoS architecture

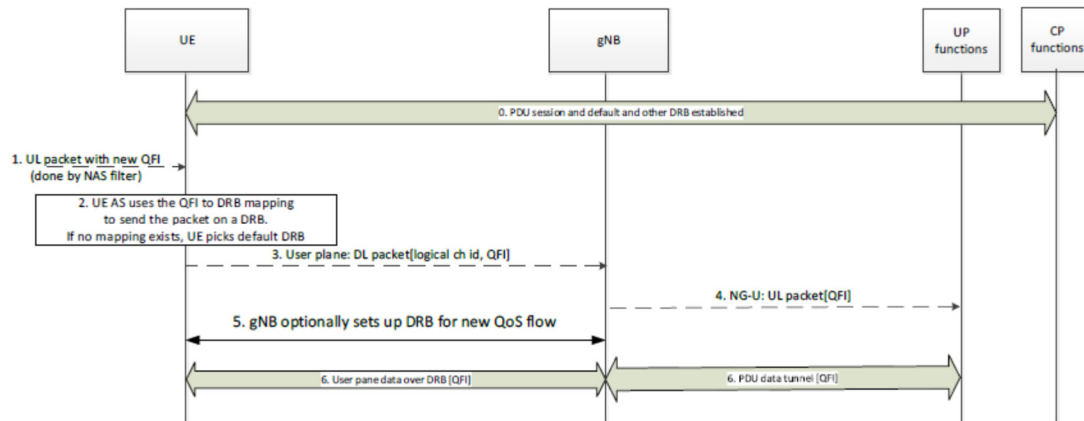


Figure A.6-1: UL packet with a new QoS flow for which a mapping does not exist in UE

The '754 Patent provides solutions to the problem identified in Fig.A.6-1—specifically, that the UL has a new QoS flow that has not been mapped. EX1001 ['754 Patent], 23:33-55. *See supra*, §II.B.

III. CLAIM CONSTRUCTION

The Petition proposes that no terms need expressly construed. Pet., 10-11. For purposes of this preliminary response, Patent Owner's position is that all terms are entitled to their plain and ordinary meaning as understood by a POSITA under the proper construction. *Supra*, §II.A.3. Patent Owner reserves the right to provide express constructions for claim terms in the '754 Patent should this IPR be instituted.

IV. THE CHALLENGED CLAIMS ARE NOT OBVIOUS IN VIEW OF R2-1704250 COMBINED WITH R2-1706381

A. R2-1704250 And RS-1706381 Do Not Disclose “The QFI Configuration Is Always Set To A Value Indicating The QFI Field Is Present In Uplink For The Default DRB”

Petitioner relies on R2-1706381 for this limitation of claims 1 and 6. Pet., 21-25. RS-1706381 discloses that “[i]t is proposed to support explicit UL QFI presence indicator in RRC signaling and allow carrying UL QFI even in 1-to-1 mapping.” EX1006 [R2-1706381], 1. The UL QFI presence indicator is the field in the UL QFI that indicates “whether a QFI field is present or not in uplink for the default DRB.” EX1001 [’754 Patent], cls. 1 and 6. But R2-1706381 does not require “the QFI configuration is always set to a value indicating the QFI field is present in uplink for the default DRB.” *Id.* That is, the claims require not only that the QFI configuration is present in the RRC message, but also that it is *always* set to a value indicating that a QFI field is also present in the uplink for the default DRB. R2-1706381 allows the UL QFI presence indicator to indicate the QFI field is not present in uplink for the default DRB. Thus, R2-1706381 does not satisfy this limitation.

Petitioner argues that “[t]he proposal also discloses that ‘the QFI configuration is always set to a value indicating the QFI field is present in uplink for the default DRB,’ as required by element 1A.” Pet., 22 (quoting EX1001 [’754

Patent], cls. 1 and 6. But the support cited by Petitioner discloses something different. Petitioner cites a passage from R2-1706381 stating that “UL PDU should always carry QFI (QoS Flow Indicator) information either by explicit header field or by implicit configuration with 1-to-1 mapping.” Pet., 22. R2-1706381 is talking about how the UL PDU (the Uplink Protocol Data Unit”) carries QFI information. The claim requires the RRC message to contain a “QFI configuration” that “is always set to a value indicating the QFI field is present in uplink.” EX1001 [’754 Patent], cls. 1 and 6. That is, the claims cover an RRC message that lets the UE know a QFI field will be present in the uplink. The UL PDU discussed in R2-1706381 is talking about how the uplink—not the RRC message, which is transmitted from the network node to the UE—can be configured to allow QFI information. The uplink—the default DRB—is a different message that follows the RRC message.

Further, R2-1706381 does not *require* an UL PDU header with QFI information. As the section cited above makes clear, the QFI information can be configured by “implicit configuration with 1-to-1 mapping.” EX1006 [R2-1706381], 1. The claims of the ’754 Patent do not have this exception.

Petitioner cites Fig. 2 of R2-1706381 (Pet., 23, 38), but Fig. 2 viewed together with R2-1706381 Fig. 1 reinforces the fact that R2-1706381 does not

require an UL PDU header with QFI information. Fig. 2 (shown below) has a header with QFI information:

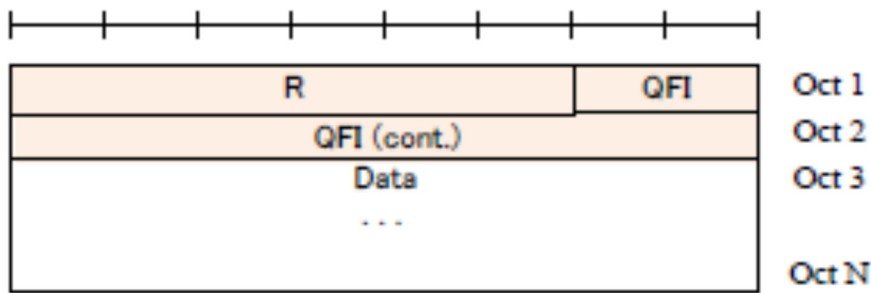


Figure 2 UL PDU with QFI

However, Fig. 1 of R2-1706381 (shown below) illustrates the option in R2-170381 not to provide QFI in the UL PDU:

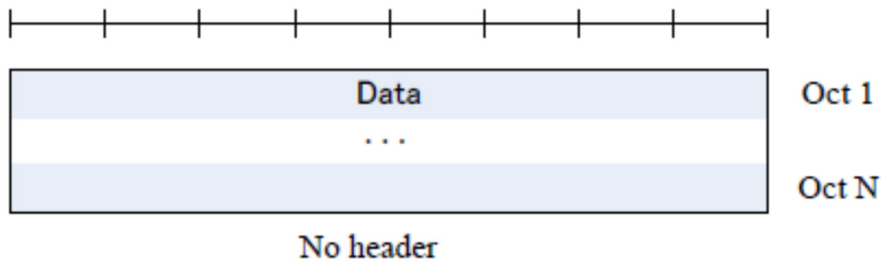


Figure 1 UL PDU without header

R2-1706381 explains with respect to Figs. 1 and 2 that it allows for two different UL PDU formats: “there are UL PDU formats: one is no any header fields and other is carrying QFI field in header.” EX1006 [R2-1706381], 1. Thus, R2-1706381 does not *require* UL PDU headers with QFI fields, let alone RCC

messages where “the QFI configuration is always set to a value indicating the QFI field is present in uplink for the default DRB” as required by the claims.

Petitioner argues that “The proposal [R2-1706381] describes a situation where, ‘when PDU session establishes, there is only one QoS flow in a DRB. Later some other QoS flow(s) activation or arrival, mapping relationship between QoS flow(s) and that DRB can be changed from 1-to-1 to many-to-1 mapping. In this case, it is an easy way that network configures UE always carrying QFI from the beginning of DRB establishment, even in 1-to-1 mapping period.’” Pet., 23 (quoting EX1006 [R2-1706381], 1). For the same reasons discussed above, this quote does not disclose the missing claim limitation. That is, the quoted language is discussing the UL PDU and does not address how the “network configur[ation]” (e.g., the RRC message) should occur.

Further, while the quote suggests that the network could configure the UE to carry QFI, it does not *require* an UL PDU header to carry QFI. Indeed, the quoted language comes is an example of the second of two different “typical cases” for the UL PDU. EX1006 [R2-1706381], 1. For the first “typical case” (“e.g. VoIP”), the UL PDU does not contain a header with QFI information but instead “always ensur[es] 1-to-1 mapping” such that a header with QFI information is not needed. *Id.*

As discussed above, the claimed QFI configuration is sent as part of an “RRC message.” R2-1706381 only discusses that “[i]t is proposed to support explicit UL QFI presence indicator in RRC carrying UL QFI even in 1-to-1 mapping.” EX1006 [R2-1706381], 1. Again, R2-1706381 *supports* but does not *require* the QFI presence indicator to be set to a value indicating the QFI field is present on the UL PDU.

The claims of the '754 Patent go further, requiring the RRC QFI configuration “is always set to a value indicating the QFI field is present in uplink.” That is, R2-1706381 proposes adding the QFI presence indicator to the RRC message, but does not require that the QFI presence indicator is always set to a value indicating the QFI field is present in uplink. The '754 Patent adds this express requirement, proposing that the QFI configuration (e.g., the QFI presence indicator field) is not only present, but is always set to indicate QFI will be present in uplink for the default DRB.

Thus, Petitioner’s statement that “the QFI configuration [in R2-1706381] is always set to a value indicating the QFI field is present” is incorrect. R2-1706381 does not require the QFI presence indicator to be set to a value indicating the QFI field is present, instead it merely “allow[s] carrying UL QFI even in 1-to-1 mapping.” EX1006 [R2-1706381], 1, 3.

B. A POSITA Would Not Combine R2-1704250 and R2-1706381 In The Manner Suggested

Given that this limitation is completely missing from R2-1706381, Petitioner's rationales for combining R2-1704250 and R2-1706381 fail. Further, Petitioner's rationales are deficient for other reasons. Petitioner does not explain why a QFI configuration would need to be present in the RRC if it is "always set to a value indicating the QFI field is present in uplink." EX1001 ['754 patent], cl. 1. That is, there is no apparent purpose for including a QFI configuration field if (as required by the claims), the QFI configuration field is always set to the same value. A POSITA interested in "reduc[ing] complexity and confusion" (Pet., 23) would simply eliminate the field from the RRC and configure the UE to always transmit QFI information on the UL PDU. This would save space on the RRC and processing at the UE and network node.

If, as argued by Petitioner, EX1006 [R2-1706381] requires the UL PDU to transmit QFI, why would a POSITA reviewing R2-1704250 incorporate a new field into the RRC signaling that merely "allow[s] carrying UL QFI"? EX1006 [R2-1706381]. RRC signaling is for transmitting control information to the UE, but if the UE already knows it must transmit a QFI field on the UL PDU, it would not be necessary to transmit such control information, and space could be saved by

removing the field. A POSITA would simply require the UE to transmit the QFI field on the UL PDU at all times.

Accordingly, Petitioner's combination is hindsight. Neither R2-1704250 nor R2-1706381 disclose or suggest the limitation of claims 1 and 6 that "the QFI configuration is always set to a value indicating the QFI field is present in uplink for the default DRB," and a POSITA would not modify the references to incorporate such functionality.

V. THE CHALLENGED CLAIMS ARE NOT OBVIOUS IN VIEW OF 3GPP TS 38.300 COMBINED WITH R2-1706381

The Petition relies on R2-1706381 for this limitation and does not allege 3GPP TS 38.300 discloses this limitation. Pet., 36. The Petition copies the arguments from ground 1 for limitation 1A with respect to R2-1706381. *Compare* Pet., 21-25 *with* Pet., 35-40. Accordingly, neither 3GPP TS 38.300 nor R2-1706381 disclose or suggest the limitation of claims 1 and 6 that "the QFI configuration is always set to a value indicating the QFI field is present in uplink for the default DRB" for the reasons discussed above (*supra*, §IV.A) and a POSITA would not modify the references to incorporate such functionality.

VI. THE BOARD SHOULD EXERCISE DISCRETION UNDER SECTION 325(D) AND DENY INSTITUTION

A. Ground 2 Should Be Denied Because Petitioner Advances Substantially The Same Prior Art and Arguments Considered During Prosecution

As discussed above at §II.B.2, during prosecution, the Examiner considered and discussed prior art and arguments that are the same or substantially the same as the arguments presented by Petitioner. Petitioner's arguments are ultimately based on 3GPP TS 38.300 and related technical contributions from 3GPP meetings held during the summer of 2017 discussing the specific issue of configuring the SDAP header format with respect to QoS information. During prosecution, the Examiner cited and discussed contributions discussing this same issue.

The six factors in *Becton Dickinson v. B. Braun Melsungen*, IPR2017-01586, Paper 8 at 17-18 (PTAB Dec. 15, 2017) (prec.) weigh in favor of the Board exercising its discretion not to consider Ground 2. Whether the “same or substantially the same prior art or arguments” were previously presented applies to factors (a), (b) and (d). *Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6 at 10 (PTAB Feb. 13, 2020) (prec.).

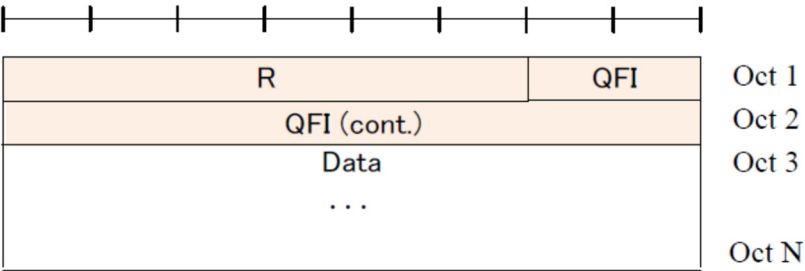
Factor (a) refers to the similarities and material differences between the asserted art and the prior art involved during examination. *Becton* at 17. As discussed above at §II.B.2, the 3GPP TS 38.300 Specification Petitioner uses in

Ground 2 is discussed in detail by the '754 Patent and cited and was discussed in detail by the Applicant during prosecution. Further, the Examiner ultimately allowed the claims based on the Applicant's discussion of 3GPP TS 38.300. *Supra*, §II.B.2, EX1002 ['754 Patent FH], 37-38. Thus, 3GPP TS 38.300 was "involved during Examination."

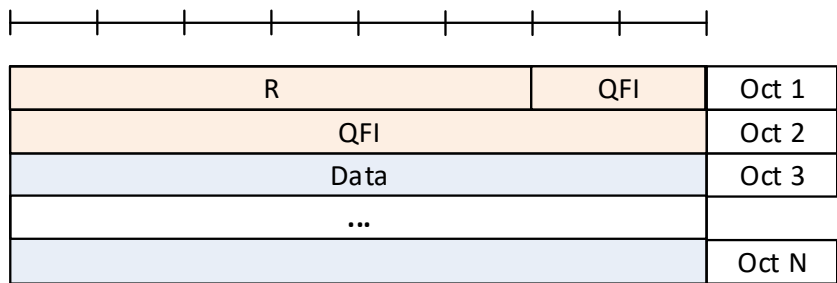
Moreover, the portions of R2-1707351 (Conviva Wireless) relied on in the Examiner's rejections are simply summarizing relevant aspects of 3GPP TS 38.300. *Supra*, §II.B.2, The Examiner's September 6, 2019 rejection cites the "Introduction" of R2-1707351 to argue R2-1707351 discloses the limitations "transmitting a first message with a Data Radio Bearer 'DRB' configuration to a UE (User Equipment) for establishing a default DRB for a Packet Data Unit 'PDU' session" and "wherein the DRB configuration includes a QoS Flow Id 'QFI' configuration; establishing the default DRB with a presence of the QFI field in uplink." EX1002 ['754 FH], 109. The "Introduction" of R2-1707351 expressly states that it is restating information from 3GPP TS 38.300. EX2011 [R2-1707351] ("As captured in 38.300 ..."), ("As also captured in 38.300"). Similarly, for the limitation "receiving a Service Data Adaptation Protocol 'SDAP' PDU with the QFI field via the default DRB from the UE," the Examiner relied on a section of R2-1707351 that begins by stating "[a]s per RAN2 previous agreement now

reflected in 38.300...”). EX1002 [’754 FH], 109, EX2011 [R2-1707351], 2. The Examiner’s January 29, 2020 Final Rejection relies on similar portions of 3GPP TS 38.300. EX1002 [’754 FH], 81-82. Thus, the Examiner was citing and relying on portions of R2-1707351 that simply restate functionality present in 3GPP TS 38.300.

The Petition relies on R2-1706381 (EX1006) for the limitation “wherein the DRB configuration includes a QFI (QoS Flow Id) configuration used to indicate whether a QFI field is present or not in uplink for the default DRB and the QFI configuration is always set to a value indicating the QFI field is present in uplink for the default DRB.” Pet., 21-25. In support, the Petition cites R2-1706381 for the statement “[i]t is proposed to support explicit UL QFI presence indicator in RRC signaling and allow carrying UL QFI even in 1-to-1 mapping.” Pet., 22 (quoting EX1006 [R2-1706381]). The Petition also incorporates Fig. 2 of R2-1706381 as showing an example of an UL PDU that supports QFI.



Pet., 23, 38 (from EX1006 [R2-1706381] Fig. 2). Again, this is duplicative of the prior art considered and cited by the Examiner. For example, R2-1707351 (Conviva Wireless) discloses that, as part of 3GPP TS 38.300, “AS-level mapping in the UE and in the NG-RAN associate UL and DL QoS Flows with DRBs.” That is, UL QoS Flows are associated with DRBs. EX2011 [R2-1707351], 1 Similarly, Fig. 6 of R2-1706782 (cited by the Examiner) discloses the same SDAP uplink header shown in R2-1706381 that allows carrying UL QFI:



EX2010 [R2-1706782], Fig. 6

Fig. 6 is titled “The SDAP header with varying size for UL (QFI is included).” EX2010 [R2-1706782], 5. R2-1706782 explains that “[f]or UL, the data format is given in Fig.6 where the QFI is always included.” *Id.*, 4. Thus, the Examiner considered and cited contemporaneous technical contributions with the same or substantially the same prior art and arguments as disclosed in R2-1706381.

Factor (b) is the cumulative nature of the asserted art and the prior art evaluated during examination. *Becton* at 17. As discussed for Factor (a) and *supra*,

§II.B.2, 3GPP TS 38.300 is the same document that was discussed by the Applicant during prosecution to convince the Examiner to allow the claims. Moreover Conviva wireless and the other technical contributions cited by Examiner have significant overlap and summarize the same features of 3GPP TS 38.300 relied on by Petitioner. Further, the technical contributions are from the same 3GPP meeting discussing the same agenda item as R2-1706381. *Supra*, §II.B.2. Accordingly, the asserted art is cumulative of the prior art evaluated during examination.

Factor (c) is the extent to which the asserted art was evaluated during examination, including whether the prior art was the basis for rejection. *Becton* at 17. Rs-1707351 (Conviva Wireless), 3GPP TS 38.300, and Cho were thoroughly evaluated during examination, including through two rejections and ultimately an allowance. Thus, Factor (c) favors discretionary denial.

Factor (d) is the extent of the overlap between the arguments made during examination and the manner in which Petitioner relies on the prior art. *Becton* at 17-18. As discussed above for factor (a) and *supra*, §II.B.2, the Examiner relied on functionality present in 3GPP TS 38.300 (as expressed in R2-1707351 and other technical contributions cited by Examiner) in rejecting the claims. Petitioner relies on 3GPP TS 38.300 to argue most claim limitations are disclosed in the prior art.

The secondary reference (R2-1706381) Petitioner relies on is a technical contribution from the same 3GPP meeting discussing the same agenda item (SDAP Header Format) as R2-1707351. *Supra*, §II.B.2. As discussed for Factor (a), Petitioner relies on disclosure from R2-1706381 that overlaps with R2-1707351 and other contributions cited by Examiner. Accordingly, Factor (d) favors discretionary denial.

Factor (e) is whether the Petitioner has pointed out sufficiently how the Examiner erred in the evaluation of the asserted prior art. *Becton* at 18. Petitioner does not allege error by Examiner. Petitioner alleges that “there is no evidence that the Examiner was aware of the prior art identified in this petition.” Pet., 15. However, as discussed above, that allegation is incorrect. *Supra*, §II.B.2. Petitioner makes the conclusory allegation that “the prior art discussed in this petition disclose and suggest precisely what the Examiner found lacking in the prior art.” Pet., 15. As discussed above, the prior art does not disclose “the QFI configuration is always set to a value indicating the QFI field is present in uplink for the default DRB.” *Supra*, §§IV, V. Moreover, the portions of the alleged prior art that Petitioner relies on as allegedly disclosing this limitation are cumulative of the references considered and cited by the Examiner. *Supra*, §II.B.2; Factor (a). Accordingly, Factor (e) favors discretionary denial.

There is no additional evidence or facts in the petition justifying reconsideration of the examination based on 3GPP TS 38.300 and R2-1706381.

Becton at 18. Factor (f) weighs against institution based on Ground 2.

B. Ground 1 Should Be Denied Because Petitioner Advances Substantially The Same Prior Art and Arguments Considered During Prosecution

Ground 1 is duplicative of Ground 2, substituting the technical contribution R2-1704250 in place of 3GPP TS 38.300 and using R2-1706381 as a secondary reference for the same limitation as Ground 2 (i.e., “[w]herein the DRB configuration ...”). Pet., 3. Petitioner relies on R2-1704250 in Ground 1 for the substantially the same functionality as 3GPP TS 38.300 in Ground 2. Thus, for the same reasons as discussed for Ground 2, the prior art and arguments in ground 1 are substantially the same as the arguments considered by the Examiner.

First, the arguments regarding R2-1706381 (including the motivations to combine) are substantially the same in the two grounds. *Compare* Pet., 21-25 (Ground 1) with Pet., 36-40 (Ground 2).

Second, R2-1704350 is cumulative to 3GPP TS 38.300. R2-1704250 is a technical contribution made to 3GPP TSG-RAN WG2 Meeting #98, which took place in Hangzhou, China, May 15-19, 2017. EX1005 [R2-1704250], 1. This meeting is the meeting of the same TSG RAN WG2 group that took place just

before the June 2017 meeting that R2-1707351 (Conviva Wireless) and R2-1706381 were submitted as contributions. EX2011 [R2-1707351], 1; EX1006 [R2-1706381], 1. R2-1704250 is directed to the related issue of QoS mapping. EX1005 [R2-1704250], 1. While R2-1704250 does not expressly mention 3GPP TS 38.300, it is discussing the same relevant functionality that is disclosed in 3GPP TS 38.300. *See, e.g., id.*, 1 (“This contribution discusses how to manage the mapping between QoS flow and DRB and how to carry QFI information in UL and DL.”).

Further, the Petition relies on R2-1704250 for the same functionality it relies on for 3GPP TS 38.300. For element 1A (“Transmitting ...”), the Petition relies on R2-1704250’s statement that “UE shall map the UL packet in the default bearer, which means that the number of QoS flow(s) over default bearer is dynamically changed and out of the control of gNB. So the default DRB shall be configured to always include QFI in SDAP header at least in UL.” Pet., 20 (quoting EX1005 [R2-1704250], 2). This is functionality that “was agreed” “in the previous RAN2 meeting.” *Id.* Thus, it is not specific to R2-1704250 and was incorporated into 3GPP TS 38.300, which was publicly available shortly after R2-1704250 in June 2017. Pet., 18.

The Petition argues that 3GPP TS 38.300 teaches this limitation because, in 3GPP TS 38.300, Fig. A.1-1, the “gNB sends a DRB set up Request message to the

UE including DRB parameters and the NAS message received at Step 1” and the “UE establishes at least default DRB associated with the new PDU session. It creates the QFI to DRB mapping.” Pet., 35-36 (quoting EX1007 [3GPP TS 38.300], 49). Thus, Petitioner is pointing to the same functionality in 3GPP TS 38.300 that discloses QFI to DRB mapping in the uplink.

Petitioner relies on similar disclosure from R2-1704250 regarding limitations 1B and 1C. Pet., 25-26. That is, Petitioner relies on R2-1704250’s statement that “the default DRB shall be configured to always include QFI in SDAP header at least in UL.” *Id.* (quoting EX1005 [R2-170450], 2). Similarly, for Ground 2, the Petition relies on 3GPP TS 38.300’s statements at page 49 regarding creating a QFI to DRB mapping. Pet., 40-41. Again, the functionality the Petition relies on in R2-1704250 is substantially similar to the functionality the Petition relies on for 3GPP TS 38.300.

Because Grounds 1 and 2 advance prior art and arguments that are the same or substantially the same as those considered by the Examiner during prosecution, the Board should exercise its discretion to deny institution based on 35 U.S.C. §325(d).

VII. THE BOARD SHOULD EXERCISE DISCRETION UNDER SECTION 314 AND DENY INSTITUTION

The Board should deny institution under 35 U.S.C. §314 because all six *Fintiv* factors favor discretionary denial. There is no requirement that the Board institute IPR. *See, e.g., Harmonic Inc. v. Avid Tech.*, 815 F.3d 1356, 1367 (Fed. Cir. 2016). “[T]he PTO is permitted, but never compelled, to institute an IPR proceeding.” *Id.* Rather, the decision to institute is delegated to the Board and is purely discretionary.

35 U.S.C. §314(a) gives the Board discretion to deny institution because of efficiency considerations stemming from parallel proceedings on the same patent. *See NHK Spring Co. v. Intri-Plex, Inc.*, IPR2018-00752, Paper 8 (PTAB Sept. 12, 2018) (precedential, designated May 7, 2019) (“*NHK Spring*”). The PTAB has set forth six factors for determining whether discretionary denial due to efficiency considerations relating to parallel proceedings is appropriate (the “*Fintiv* factors”):

1. whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted;
2. proximity of the court’s trial date to the Board’s projected statutory deadline for a final written decision;
3. investment in the parallel proceeding by the court and the parties;

4. overlap between issues raised in the petition and in the parallel proceeding;
5. whether the petitioner(s) and the defendant in the parallel proceeding are the same party; and
6. other circumstances that impact the Board's exercise of discretion, including the merits.

Apple Inc. v. Fintiv, Inc., IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020) (precedential) (“*Fintiv I*”), 6; *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 15 (PTAB May 13, 2020) (order denying institution) (informative, designated July 13, 2020) (“*Fintiv II*”), 7-8.

The Director has issued additional guidance on the application of *Fintiv*. See Katherine K. Vidal, *Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation* (June 21, 2022)¹ (“*Fintiv Memo*”). See also *OpenSky Indus., LLC v. VLSI Tech. LLC*, IPR2021-01064, Paper 102, 49–50 (PTAB Oct. 4, 2022) (precedential) (“*OpenSky*”) and

¹ Available at https://www.uspto.gov/sites/default/files/documents/interim_proc_discretionary_denials_aia_parallel_district_court_litigation_memo_20220621_.pdf

CommScope Techs. LLC v. Dali Wireless, Inc., IPR2022- 01242, Paper 23 (PTAB Feb. 27, 2023) (precedential) (“*CommScope*”). Under the interim *Fintiv* Memo, if the Board “determines that the information presented at the institution stage presents a compelling unpatentability challenge, that determination alone demonstrates that the PTAB should not discretionarily deny institution under *Fintiv*.” *Interim Fintiv* Memo, 4–5. However, *OpenSky* and *CommScope* make clear that the compelling merits standard is a significantly higher standard than the institution standard, requiring that it be “highly likely that the petitioner would prevail with respect to at least one challenged claim.” *OpenSky*, 49; *CommScope*, 3–4. Further, “compelling merits” should be considered only after a determination that the first five *Fintiv* factors favor discretionary denial. *CommScope*, 4–5.

Here, all six *Fintiv* factors weigh in favor of discretionary denial and there are no “compelling merits” or a *Sotera*-type stipulation. Accordingly, the Board should exercise its discretion and deny institution.

A. Factor 1

The first *Fintiv* factor—regarding whether a stay exists or is likely to be granted if a proceeding is instituted—weighs in favor of denial. No motion to stay pending the institution decision has been filed in the litigations. The district court has an established practice not to stay litigations pending resolution of inter partes

review prior to institution. *Viavi Sols. Inc. v. Zhejiang Crystal-Optech Co.*, No. 2:21-CV-00378-JRG, 2022 WL 16856099, at *5 (E.D. Tex. Nov. 10, 2022) (“It is the Court’s established practice to consider that motions to stay pending IPR proceedings which have not been instituted are inherently premature and should be denied as such.”).

Even post-institution, the district court judge is unlikely to stay the case absent agreement from the parties. EX2005 [LegalMetric], 3 (showing 15% win rate on contested motions to stay pending IPRs in the ED Tex). Thus, this factor weighs in favor of denial.

B. Factor 2

The second *Fintiv* factor—the proximity of the court’s trial date to the Board’s projected statutory deadline for a Final Written Decision—weighs in favor of denial. The Notice of Filing Date Accorded To Petition was mailed on June 18, 2024. Paper 7, 1. A Final Written Decision will therefore be due by December 18, 2025. *See* 35 U.S.C. §314(b); 35 U.S.C. §316(a)(11). Jury selection in the district court litigation is scheduled to begin on July 21, 2025. EX1016, 1. Thus, a final written decision will issue roughly five months after the trial.

Further, under the Interim *Fintiv* Memo, the PTAB will consider the median time from filing to disposition of the civil trial for the district in which the parallel

litigation resides. *Id.*, 4-5. The current median time to trial in the Eastern District of Texas is 21.6 months. EX2006 [Judicial Caseload Profile, June 2024], 35. The district court litigations were filed on October 19, 2023. Paper 8 [Patent Owner’s Mandatory Notices], 2. Under these statistics, trial would be expected July or August 2025. Thus, using either the actual scheduled trial date in this matter or the median time-to-trial statistics for the Eastern District of Texas, trial is expected to conclude at least four or five months before a final written decision is due in this matter.

Under *Fintiv* factor 2, this weighs heavily in favor of discretionary denial. *See Fintiv I*, 9 (“If the court’s trial date is earlier than the projected statutory deadline, the Board generally has weighed this factor in favor of exercising authority to deny institution under *NHK*.”). *See Ericsson Inc. et al v. Collison Communications, Inc.*, IPR2022-01233, Paper 12 at 12-13 (PTAB Jan. 19, 2023) (holding Factor 2 “weighs in favor of denying institution, given that we would not expect to issue a final written until at least four months” after trial). Further, granting institution here would frustrate one of the primary objectives of the AIA, which is “to provide an effective and efficient alternative” to parallel litigation. *NHK Spring*, 19-20 (quoting *General Plastic Indus. Co., Ltd. v. Canon Kabushiki Kaisha*, IPR2016-01357, Paper 19, 15-19 (PTAB Sept. 6, 2017) (precedential,

designated Oct. 18, 2017). If IPR were instituted, any potential FWD would issue well after trial concludes. Thus, instituting IPR here cannot be viewed as an “alternative” to litigation. Rather, it would simply be more litigation.

Petitioners cite *Hulu, LLC v. SITO Mobile R&D IP, LLC*, IPR2021-00298, Paper 11 at 11-18 (PTAB May 19, 2021) and *NetNut Ltd. v. Bright Data Ltd.*, IPR2021-01492, Paper 12 at 9-16 (PTAB Mar. 21, 2022) to argue that “[t]he Board has granted institution in cases where the final written decision issued a few months after the scheduled trial date when other factors favor institution.” Pet., 50. In both cases, several factors weighed in favor of institution. Here, no factors weigh in favor of institution.

Petitioners cite *CrowdStrike, Inc. v. Open Text Inc.*, IPR2023-00556, Paper 9 at 8 (PTAB Sept. 12, 2023) to argue that the Board treats factor 2 as neutral where Petitioners will have multiple trials (Pet., 50-51), but in *Crowdstrike*, the trials started “a few weeks earlier than the projected statutory deadline.” *Id.* Here, the projected statutory deadline will be roughly four or five months after the scheduled trials. Thus, *Crowdstrike* does not support Petitioners’ position. Factor 2 therefore weighs in favor of denying institution.

C. Factor 3

The third *Fintiv* factor—which relates to “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)—also favors denial. Significant amounts of work have been completed in the district court. The parties have completed their P.R. 3-1 and 3-2 disclosures (Infringement Contentions) and their P.R. 3-3 and 3-4 disclosures (Invalidity Contentions). EX1010 [Docket Control Order], 5-6. The institution decision is expected no later than December 18, 2024. *See* 35 U.S.C. §314(b). By that date, the parties will have exchanged proposed claim constructions, submitted their opening claim construction briefs, completed claim construction discovery, and submitted technical tutorials. EX1010 [Docket Control Order], 4-5. The *Markman* hearings in the district court litigations are scheduled for January 22, 2025 and February 5, 2025, respectively.² EX1010 [Docket Control

² The district court split the deadlines for the district court cases into two tracks—the “ATL cases” (including cases 2:23-cv-486, 2:23-cv- 487, and 2:23-cv-488) and the “ISL cases” (including cases 2:23-cv-489, 2:23- cv-490, and 2:23-cv-491). EX1010 [Docket Control Order], 2 n.2. The ATL schedule is roughly two weeks ahead of the ISL schedule.

Order], 3. The ordinary practice of this district court is to provide preliminary constructions at or shortly before the Markman hearing. Thus, significant substantive work will have already been completed in the district court litigation by the expected time of the institution decision. *See Fintiv II*, 14 (“based on the level of investment and effort already expended on claim construction and invalidity contentions in the District Court, this factor weighs somewhat in favor of discretionary denial in this case.”).

Petitioners argue that their “diligence in filing and the district court’s minimal investment tips this factor in favor of institution.” Pet., 66. But the Petition measures investment at the time the IPRs were filed, not (as required by *Fintiv*) at the time of the institution decision. As discussed above, by the time of the institution decision, claim construction will be nearly complete and significant discovery will have taken place.

Further, the Petition was filed on June 7, 2024. Paper 7 at 1. Infringement contentions were filed January 4, 2024. EX1016 [Docket Control Order], 6. Thus, Petitioners waited approximately five months from receiving infringement contentions to file the Petition. Indeed, Petitioners filed their own invalidity contentions on April 12, 2024 and then waited another seven weeks before filing this Petition. EX1010 [Docket Control Order], 5. These timelines show more delay

than any case Petitioner cites. Accordingly, factor 3 weighs in favor of non-institution.

D. Factor 4

The fourth *Fintiv* factor—which relates to overlap between issues raised in the petition and in the parallel proceeding—also weighs in favor of denying institution. “[I]f the petition includes the same or substantially the same claims, grounds, arguments, and evidence as presented in the parallel proceeding, this fact has favored denial.” *Fintiv* at 12. The claims at issue in the parallel litigation (claims 1-10) are a subset of the claims challenged in the Petition. EX2007 [Invalidity Contentions], 2. The alleged prior art references asserted in the Petition are identified and charted in Petitioner’s invalidity contentions. EX2007 [Invalidity Contentions], 12 (identifying R2-1704250, R2-1706381 and 3GPP TS 38.300 V0.4.1 as alleged prior art).

The Petition stipulates that “if trial is instituted, Petitioners will not pursue this IPR’s Grounds in the district court litigation.” Pet., 52. The PTAB has classified such stipulations as “*Sand Revolution*”-style stipulations after the stipulation filed in *Sand Revolution II, LLC v. Continental Intermodal Group – Trucking LLC*, IPR2019-01393, Paper 24 (PTAB June 16, 2020), where Petitioner filed a stipulation that it “will not pursue the same grounds in district court

litigation.” *Id.* at 11-12. The PTAB has routinely found similar stipulations weigh only “marginally in favor of not exercising discretion to deny institution.” *Id.*, 12; *LG Elecs., Inc. v. Ancora Techs., Inc.*, IPR2021-00581, Paper 16, 9-10 (PTAB June 10, 2021) (same); *Google LLC v. EcoFactor Inc.*, IPR2021-00454, Paper 9 (PTAB July 22, 2021) (same); *Samsung Electronics Co. Ltd. v. California Institute of Tech.*, IPR2023-00130, Paper 10, 19-20 (PTAB May 4, 2023) (same); *Roku, Inc. v. IOENGINE, LLC*, IPR2022-01554, Paper 11, 13-14 (PTAB May 5, 2023) (same).

In short, the Board routinely assigns almost no weight to *Sands Revolution* style stipulations such as the one Petitioner filed here. This is because *Sands Revolution*-style stipulations do little to eliminate overlap with the district court litigations. Petitioners’ stipulation does nothing to prevent the alleged prior art references asserted in the Petition from being re-used in substantially the same form in the litigation by combining them with different secondary references. Indeed, Petitioner’s invalidity contentions reserve the right to do so. *See, e.g.*, EX2007 [Invalidity Contentions], 14 (“Any prior art reference cited herein may be combined with any other reference to demonstrate the invalidity of any of the Asserted Claims.”). Thus, the stipulation here is almost meaningless.

Further, the Board has often denied institution in situations like the present where the other factors clearly favored non-institution, even where Petitioners offered stronger stipulations than the one offered here. For example, in *LG Elecs., Inc. v. Ancora Techs., Inc.*, No. IPR2021-00581, Paper 16, 9-10 (PTAB June 10, 2021), the Board denied institution despite Petitioner’s stipulation “it will not subsequently assert invalidity in the district court on the same grounds asserted in the IPR or on the basis of the Hellman reference, either alone or in combination with any other reference.” *Id.* Unlike Petitioner’s stipulation here, the Petitioner in *Ancora* agreed to a blanket stipulation not to assert the primary referenced Hellman under any circumstance. The Board there agreed with Patent Owner that, even with Petitioner’s stipulation, “there is significant overlap between the issues raised in the Petition and in the parallel district court proceeding.” *Id.* Similarly, in *Samsung Electronics Co., LTD. v. California Institute of Technology*, IPR2023-00130, Paper 10 (PTAB May 4, 2023), the Board denied institution notwithstanding a stipulation it characterized as “broader to some degree than the stipulation discussed in *Sand Revolution*” because “the trial in the Underlying Litigation would commence several months before the expected date of our final written decision” and there had been significant investment in the litigation. *Id.*, 16-20.

The facts here are similar to *Ankora* and *Samsung*. Accordingly, any marginal weight Petitioner’s stipulation is entitled to does not outweigh the other factors.

E. Factor 5

The fifth *Fintiv* factor—whether the petitioners and the defendant in the parallel proceedings are the same parties—weighs in favor of discretionary denial. The parties here are the same as the parties in the litigations. *Fintiv II*, 15 (“Because the petitioner and the defendant in the parallel proceeding are the same party, this factor weighs in favor of discretionary denial.”).

F. Factor 6

The sixth *Fintiv* factor—relating to other circumstances that impact the Board’s exercise of discretion, including the merits—weighs in favor of discretionary denial. As demonstrated in Section IV above, the merits of Petitioner’s arguments are weak and Petitioner has failed to show a reasonable likelihood of success for any ground, much less a high likelihood of prevailing as required to show “compelling merits.” *See Fintiv I*, 15 (“if the merits of the grounds raised in the petition are a closer call, then that fact has favored denying institution when other factors favoring denial are present”); *Commscope Technologies LLC, v. Dali Wireless, Inc.*, IPR2022-01242, Paper 23, 5 (precedential) (“Merely pointing to [] analysis under the lower institution standard

is insufficient to demonstrate that the Petition presents a compelling unpatentability challenge.”). In particular, the alleged prior art does not disclose the limitation “the QFI configuration is always set to a value indicating the QFI field is present in uplink for the default DRB.” *Supra*, §§IV, V. Merits are not compelling when no combination of asserted references discloses every limitation of the challenged claims.

Petitioner’s allegations that the Petition shows “compelling merits” (Pet., 68) are the type of unsupported attorney argument rejected by *Commscope*. Petitioner’s allegations essentially “point[] to its analysis under the lower §314 standard.” *Commscope*, IPR2022-01242, Paper 23. *See* Pet., 53 (“This Petition presents compelling merits that lead to the conclusion that at least one claim is unpatentable, and the Board should grant institution.”). Petitioner does not elaborate on why the merits here are “compelling.” Such generic allegations do not rise to the level of compelling merits. *See, e.g., OpenSky* at 49 (“a compelling-merits challenge is a higher standard than the reasonable likelihood required for the institution of an IPR under 35 U.S.C. § 314(a).”). Thus, this factor favors discretionary denial.

Accordingly, all six *Fintiv* factors weigh in favor of discretionary denial. The Board should use its discretion to deny institution of this IPR

VIII. CONCLUSION

Based on the foregoing, the Board should deny the Petition.

Dated: September 18, 2024

/ Stephen McBride /
Stephen McBride (Reg. No. 78,396)
CARMICHAEL IP, PLLC
8607 Westwood Center Drive
Suite 270
Tysons, VA 22182
Tel: (703) 646-9247
stevemcbride@carmichaelip.com

Counsel for Patent Owner

CERTIFICATE OF COMPLIANCE WITH TYPE-VOLUME LIMITS

This Patent Owner Preliminary Response consists of 10,099 words, excluding table of contents, table of authorities, certificate of service, this certificate, or table of exhibits. The Response complies with the type-volume limitation of 14,000 words as set forth in 37 C.F.R. § 42.24. In preparing this certificate, counsel has relied on the word count of the word-processing system used to prepare the paper (Microsoft Word).

Dated: September 18, 2024

/ Stephen McBride /
Stephen McBride (Reg. No. 78,396)
CARMICHAEL IP, PLLC
8607 Westwood Center Drive
Suite 270
Tysons, VA 22182
Tel: (703) 646-9247
stevemcbride@carmichaelip.com

Counsel for Patent Owner

CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6, the undersigned certifies that on September 18, 2024, a copy of the foregoing documents **PATENT OWNER PRELIMINARY RESPONSE AND EXHIBITS** were served by electronic mail, as consented to by Petitioner, upon the following:

McCOOL SMITH, P.C.

Scott W. Hejny, Reg. No. 45,882
shejny@McKoolSmith.com

Nicholas Mathews, Reg. No. 66,067
nmathews@mckoolsmith.com

Christian J. Hurt, Reg. No. 63,659
churt@mckoolsmith.com

Stuart McCommas, Reg. No. 71,834
smccomas@mcKoolsmith.com

Celerity_IPRs@mckoolsmith.com

By: /s/Stephen McBride