

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.

UNILOC 2017 LLC

Patent Owner

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IPR2020-00315

U.S. PATENT NO. 7,075,917

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**PATENT OWNER'S PRELIMINARY RESPONSE**

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## **I. INTRODUCTION**

Uniloc 2017 LLC (the “Patent Owner” or “Uniloc”) submits its Patent Owner Preliminary Response to the Petition for *Inter Partes* Review (“Pet.” or “Petition”) of United States Patent No. 7,075,917 (“the ‘917 patent” or “Ex. 1001”) filed by Ericsson Inc. (“Petitioner”) in IPR2020-00315.

In view of the reasons presented herein, the Petition should be denied in its entirety as failing to meet the Petitioner’s burden of proving a reasonable likelihood of prevailing as to any challenged claim.

Uniloc addresses each ground and provides specific examples of how Petitioner failed to meet its burden of proof. As a non-limiting example described in more detail below, the Petition has failed to establish that the primary reference on the sole ground is prior art, and the Petition fails the all-elements-rule in not addressing every feature of any of the challenged claims.

## **II. THE ‘917 PATENT**

### **A. Effective Filing Date of the ‘917 Patent**

The ‘917 patent is titled “Wireless Network with a Data Exchange According to the ARQ Method.” The ‘917 Patent issued on July 11, 2006, from United States Patent Application No. 09/973,312, filed October 9, 2001, which claims priority to German Patent Application No. 100 50 117, filed October 11, 2000. The Petition does not dispute that the effective filing date of the ‘917 Patent is October 11, 2000.

**B. Overview of the '917 Patent**

The '917 Patent discloses various embodiments of a communication network intended for use in wireless communications. In general terms, the '917 Patent addresses challenges with wireless networks having a radio network controller, and terminals in communication with the radio network controller. (Ex. 1001; 1:5-7). Data transmitted between the radio network controller and the terminals is transmitted through channels predefined by the radio network controller. (Ex. 1001; 3: 57-60). The radio link from the radio network controller to the terminals is referred to as the downlink, and the radio link from the terminals to the radio network controller is referred to as the uplink. (Ex. 1001; 3:62-67).

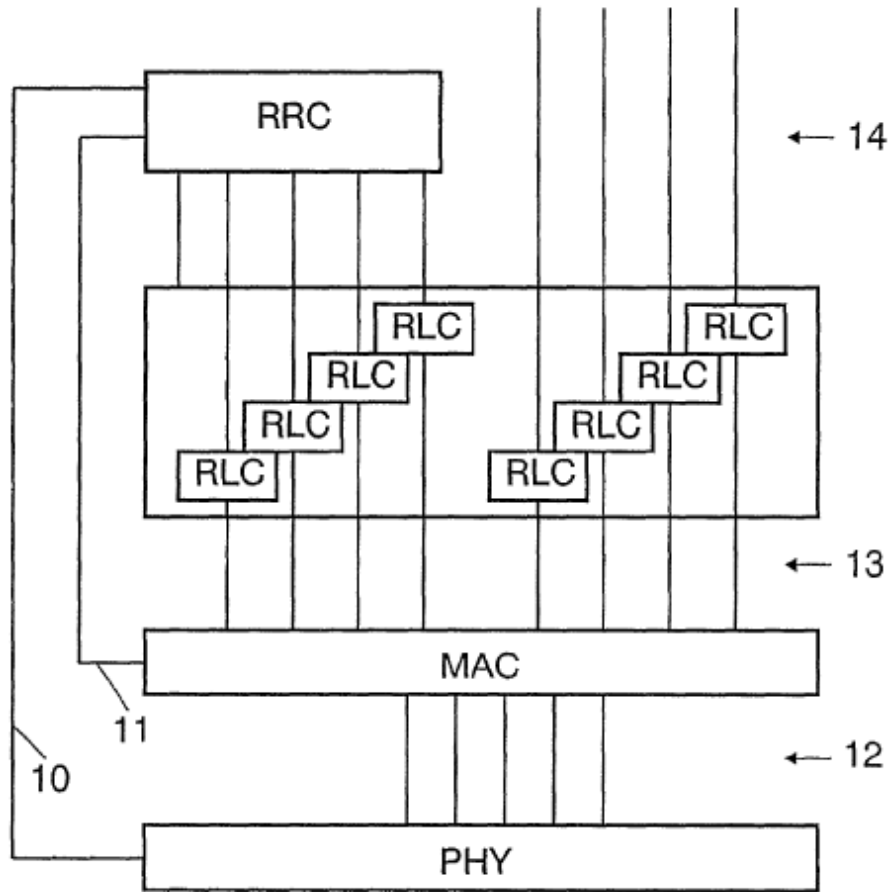


FIG. 2

The network may be operated using a layer model, or protocol architecture, in accordance with a set of standards, known as the 3<sup>rd</sup> Generation Partnership Project (3GPP); Technical Specification Group (TSG) RAN; Working Group 2 (WG2): Radio Interface Protocol Architecture: TS25.301 V3.6.0). (Ex. 1001; 6:9-16).

As explained with reference to Fig. 2 of the '917 Patent, the layer model has three protocol layers: the physical layer PHY, a data connection layer including sub-layers MAC, for Medium Access Control, and RLC, for Radio Link Control, and the

layer RRC for radio resource control. (Ex. 1001, 4:43-48). The RRC layer is responsible for signaling between the radio network controller and the mobile terminals. (Ex. 1001, 4:49-51). The sub-layer RLC controls radio links between remote terminals and radio network controllers. (Ex. 1001; 4:51-53). The layer RRC controls layers MAC and PHY via control lines 10 and 11. The layer RRC can thus control the configuration of the MAC and PHY layers. (Ex. 1001, 4:53-56). The physical layer PHY makes transport links 12 available to the MAC layer (Ex. 1001, 4:56-57). The MAC layer makes logic channels 13 available to the RLC layer. (Ex. 1001, 4:57-58). The RLC layer is available to applications via access points 14. (Ex. 1001, 4:58-59).

Packet data units for transmission are formed in the RLC layer, are packed in transport blocks in the MAC layer, and provided to the physical layer. The transport blocks are transmitted between the radio network controller and terminals by the physical layer. (Ex. 1001, 5:).

Identification of error-affected packets and retransmission of error-affected packet data units is accomplished in multiple manners. Using the hybrid Automatic Repeat Request (ARQ) method Type II or Type II, a received packet data unit affected by an error is buffered and, after additional incremental redundancy, is decoded together with the received packet data unit affected by error. In the ARQ method Type II, the incremental redundancy is useless without the buffered, and

error-affected, packet. In the ARQ method Type II the incremental redundancy can be decoded without the buffered, error-affected, packet. A message as to error-free reception is sent by the receiving device only when the receiving RLC layer establishes on the basis of an RLC sequence number that packet data units are lacking. (Ex. 1001; 1:40-43). The RLC sequence number, or packet data unit sequence number, is transmitted in parallel with the coded transport block or the incremental redundancy required afterwards, as side information, thereby permitting the receiving side to detect which coded transport block is concerned or which buffered coded transport block the additionally transmitted redundancy refers to when a coded transport block is retransmitted (Ex. 1001; 5: As a result, the packet data unit must be buffered over a long time period until an incremental redundancy is requested, and then, after successful decoding, the reception may be acknowledged as correct. (Ex. 1001; 1:43-45). The period of time that the packet data unit must be buffered is particularly long on the network side, as the physical layer and the RLC layer are usually located on different hardware components on the network side. (Ex. 1001; 1:48-50).

The '917 Patent addresses the challenge of buffering the error-affected data for a long period of time by having the receiving physical layer check whether the coded transport block has been transmitted correctly. (Ex. 1001; 6:9-11). The '917 Patent further provides for transmission of an acknowledge command over a back

channel between a physical layer of a transmitting device and the physical layer of a receiving device. (Ex. 1001; 2:30-33). This transmission of the acknowledge command provides that a correct or error-affected transmission of a transport block is provided to the transmitting side much more rapidly than previously known. (Ex. 1001; 2:33-36). As a result, a repetition of transmission with incremental redundancy may be effected rapidly. This enables the receiving side to buffer the received coded transport block affected by error for a shorter time period. (Ex. 1001;2:38-40). The memory capacity needed on average for buffering received coded transport blocks affected by error is reduced. (Ex. 1001; 2:42-44).

Referring to Fig. 3 of the '917 Patent, an example is provided.



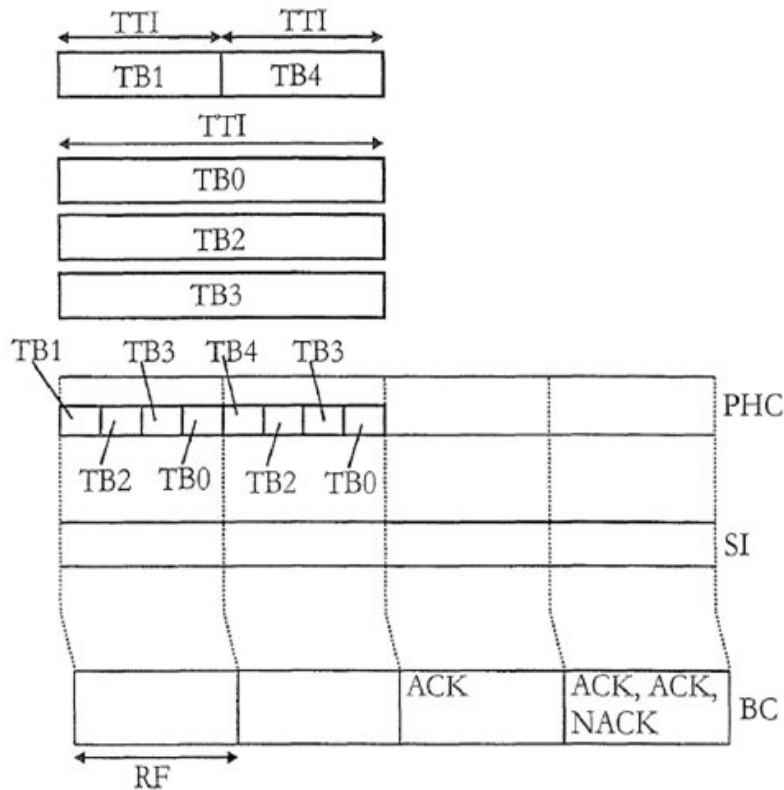


FIG. 3

Here, transport blocks TB0 to TB4, to be transmitted for a time period of two radio frames RF, each having a duration of one Transmission Time Interval (TTI) are shown. (Ex. 1001; 6:44-48). Multiple channels, including the physical channel PHC, which carries the transport blocks, the side information channel SI, which carries information about the redundancy version and the abbreviated sequence number of a transport block, and the back channel BC are shown. (See Ex. 1001; 6:27 – 7:16). As the '917 Patent explains, the correct or error-affected reception is checked in the physical layer in the radio frame RF which comes after the transmission time interval. (Ex. 1001; 6:56-58). Thus, for transport block TB1,

which is transmitted during the first radio frame of Fig. 3, error-checking is performed during the second of the four radio frames shown in Fig. 3, and the positive acknowledge command ACK is transmitted via back channel BC during the third radio frame. (Ex. 1001; 6:60-61). The transmission of transport blocks TB2, TB3 and TB4 is completed during the second of the four radio frames, and error checking is performed during the third radio frame. During the fourth radio frame, the positive acknowledgment command ACK for the transport blocks TB4 and TB2, and the negative acknowledgment command NACK for transport block TB3, are transmitted via back channel BC (Ex. 1001; 6:62-65).

Further, the '917 Patent teaches the use of abbreviated sequence numbers to reduce the extent of information that is required to be additionally transmitted for managing the transport blocks and packet data units. (Ex. 1001; 2:45-49). The '917 Patent teaches that "abbreviated sequence number is determined by the number of M coded transport blocks which, on the receiving side, can at most be buffered simultaneously." (Ex. 1001, 5:41-44). The '917 Patent goes on to state that the number of M coded transport blocks is the logarithm to the base of 2, rounded to the next higher natural number. (Ex. 1001, 5:44-44) Thus, the maximum number of coded transport blocks to be stored is the same as the maximum number of coded transport blocks that can be buffered simultaneously.

The '917 Patent issued with three independent claims, namely claims 1, 9 and 10. The text of those three independent claims is copied herein for the convenience of the Board:

1. A wireless network comprising a radio network controller and a plurality of assigned to signals, which are each provided for exchanging data according to the hybrid ARQ method an which form a receiving and/or transmitting side, in which a physical layer of a transmitting side is arranged for

storing coded transport blocks in a memory, which blocks contain at least a packet data unit which is delivered by an assigned radio link control layer and can be identified by a packet data unit sequence number,

storing abbreviated sequence numbers whose length depends on the maximum number of coded transport blocks to be stored and which can be shown unambiguously in a packet data unit sequence number, and for

transmitting coded transport blocks having at least an assigned abbreviated sequence number and

a physical layer of a receiving side is provided for testing the correct reception of the coded transport block and for sending a positive acknowledge command to the transmitting side over a back channel when there is correct reception and a negative acknowledge command when there is error-affected reception.

9. A radio network controller in a wireless network comprising a plurality of terminals, which radio network controller is provided for exchanging data with the terminals and which forms a receiving and/or transmitting side, in which a physical layer of the radio network controller arranged as a transmitting side for

storing coded transport blocks in a memory, which blocks contain at least a packet data unit which is delivered by an assigned radio link control layer and can be identified by a packet data unit sequence number,

storing abbreviated sequence numbers whose length depends on the maximum number of coded transport blocks to be stored and which can be shown unambiguously in a packet data unit a sequence number, and for

transmitting coded transport blocks having at least an assigned abbreviated sequence number and

a physical layer of the radio network controller is arranged as a receiving side for testing the correct reception of a coded transport block from a terminal and for sending a positive acknowledge command to a terminal over a back channel when there is correct reception and a negative knowledge command when there is error-affected reception.

10. A terminal in a wireless network comprising further terminals and a radio network controller, which terminal is provided for exchanging data with the terminals and which forms a receiving and/or

transmitting side, in which a physical layer of the terminal is arranged as a transmitting side for

storing coded transport blocks in a memory, which blocks contain at least a packet data unit which is delivered by an assigned radio link control layer and can be identified by a packet data unit sequence number,

storing abbreviated sequence numbers whose length depends on the maximum number of coded transport blocks to be stored and which can be shown unambiguously in a packet data unit a sequence number, and for

transmitting coded transport blocks to the radio network controller having at least an assigned abbreviated sequence number and

A physical layer of the terminal is arranged as a receiving side for testing the correct reception of a coded transport block from the radio network controller and for sending a positive acknowledge command to the radio network controller over a back channel when there is correct reception and a negative acknowledge command when there is error-affected reception.

### **C. Prosecution History of the '917 Patent**

The '917 Patent issued from U.S. Patent Application Serial No. 09/973,312, filed October 9, 2001 (the '312 Application), which claims priority to German Application No. 10050117.6, filed October 11, 2000. The '312 Application was filed with 10 claims, including 3 independent claims (Ex. 1002, pp. 13-15). Information

Disclosure Statements were filed in the '312 Application on January 8, 2002 and September 22, 2003, identifying: 3<sup>rd</sup> Generation Partnership Project, Technical Specification Group Radio Access Network, Report on Hybrid ARQ Type II/III (Release 2000), 3G TR 25.835 v0.0.0, TS-RAN Working Group 2 (Radio L2 and Radio L3, France, August 15-21, 2000).

In a first Office Action, mailed September 21, 2005, independent claims 1 and 9-10, were objected to for various informalities and dependent claims 4-8 were rejected under 35 U.S.C. 112, second paragraph. (Ex. 1002, p. 59-61). The Office Action confirmed that the Examiner considered the references cited in the Information Disclosure Statements. (Ex. 1002, pp. 63-64). The Office Action further included a list of references considered by the Examiner, namely U.S. Patent Publication No. 2001/0036169 (Ratzel), U.S. Patent Publication No. 2003/0157927 (Yi, et al.) and U. S. Patent Publication No. 204/0246917 (Cheng, et al.). (Ex. 1002, p. 65). The Ratzel reference discloses, in a digital packet radio receiver network, an automatic repeat request, or ARQ, in which a very short sequence number is utilized for space efficiency. (Ex. 1002, p. 99).

An Amendment and Response was filed on January 23, 2006. (Ex. 1002, pp. 68-75). In the Amendment, independent claims 1, 9 and 10 were amended to correct minor informalities. (Ex. 1002, pp. 69-71). Dependent claims 4, 5, 7 and 8 were amended to clarify that the recited physical layer may be of the sending side or the

transmitting side, and that an acknowledge command may be transmitted from either the sending side or the transmitting side. (Ex. 1002; p. 70).

The USPTO issued a Notice of Allowance on February 27, 2006. (Ex. 1002, p. 78). The issue fee was paid on May 24, 2006. (Ex. 1002; p.85). The application issued as the '917 Patent on July 1, 2006.

### III. RELATED PROCEEDINGS

The '917 patent is involved in the following proceedings:

Case Caption	Number	District	Filed
<i>Uniloc 2017 LLC et al v. Microsoft Corporation</i>	8-18-cv-01279	CDCA	7/24/2018
<i>Uniloc 2017 LLC et al v. Verizon Communications Inc. et al</i>	2-18-cv-00380	EDTX	8/29/2018
<i>Apple Inc. v. Uniloc 2017 LLC</i>	IPR2019-00259	PTAB	11/12/2018
<i>Uniloc 2017 LLC v. Microsoft Corporation</i>	8-18-cv-02053	CDCA	11/17/2018
<i>Uniloc 2017 LLC v. Verizon Communications Inc. et al</i>	2-18-cv-00513	EDTX	11/17/2018
<i>Uniloc 2017 LLC v. AT&amp;T Services, Inc. et al</i>	2-19-cv-00102	EDTX	3/26/2019
<i>Microsoft Corporation v. Uniloc 2017 LLC</i>	IPR2019-00973	PTAB	4/19/2019
<i>Apple Inc. v. Uniloc 2017 LLC</i>	IPR2020-00224	PTAB	12/18/2019
<i>Ericsson Inc. v. Uniloc 2017 LLC</i>	IPR2020-00315	PTAB	12/18/2019

#### **IV. THE BOARD SHOULD EXERCISE DISCRETION TO DENY INSTITUTION**

Uniloc opposes joinder to IPR2019-00973 (“Microsoft IPR”) for the reasons given in its opposition to the joinder motion. Paper 7. Should the Board deny the joinder motion, the Board should also exercise its discretion not to institute a separate trial in this proceeding, at least because it would not be an efficient use of the Board’s resources.

#### **V. LEVEL OF ORDINARY SKILL IN THE ART**

The Petition proposes a level of ordinary skill in the art of a person having a bachelor’s degree in electrical engineering, computer science, or the equivalent and three years of experience working with wireless digital communication systems including the physical layer of such systems. (Petition, p. 26). The Petition alternatively proposes that the skilled person would have had a master’s degree in electrical engineering, computer science, or the equivalent with an emphasis on wireless digital communication systems. (Petition, pp. 26-27).

Patent Owner also does not provide its own definition because, even applying the multiple and varying alternative definitions proposed by Petitioner, Petitioner has not met its burden. Moreover, the Petition cites to the hybrid ARQ methods described in the ‘917 Patent itself as support for the level of ordinary skill in the art,



but completely fails to link these particularized subject matter areas to the identified levels of education and industry experience proposed by Petitioner.

**VI. PETITIONER FAILS TO CARRY ITS BURDEN OF SHOWING A REASONABLE LIKELIHOOD OF PREVAILING AS TO ANY CHALLENGED CLAIM.**

Patent Owner demonstrates that Petitioner has failed to carry its burden of showing a reasonable likelihood of prevailing in showing that any of the challenged '917 Patent claims is unpatentable by a preponderance of the evidence. 35 U.S.C. §316(e). By not addressing additional arguments, Patent Owner in no way concedes that any argument by Petitioner is correct.

Petitioner has the burden of proof to establish entitlement to relief. 37 C.F.R. § 42.108(c). Because the Petition only presents a theory of obviousness, Petitioner must demonstrate that there is a reasonable likelihood that at least one of the claims challenged in the petition would have been obvious in view of the references cited in the Petition. Petitioner “must specify where each element of the claim is found in the prior art patents or printed publications relied upon.” 37 C.F.R. § 42.104(b)(4). The Board should reject the Petition because Petitioner fails to meet this burden for the sole ground.

The Petition is stylized as presenting the following ground:

Ground	Claim(s)	Statute	Reference(s)
1	1-3 and 9-10	103	3G TR25.835 (Ex. 1005) and U.S. Patent No.6,507,582 (Abrol) (Ex. 1007)

**A. Claim Construction Standard**

As of the filing date of the Petition, the standard for claim construction in Inter Partes Review is the standard of “ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.” 37 C.F.R. §42.100(b) (effective November 13, 2018). For all claim terms, Uniloc requests that the Board adopt the ordinary and customary meaning of the claim term as understood by one of ordinary skill in the art.

The proposed construction of “back channel” on pages 28-29 of the Petition as a “channel which is inserted directly between the receiving physical layer and the sending (or transmitting) physical layer (and not between the RLC layers) for informing the transmitting side (transmitting terminal or radio network controller) of the fact that a transport block has not been transmitted error-free”, has not been shown to constitute the ordinary and customary meaning of the phrase as understood by one of ordinary skill in the art.

**B. The Petition fails to establish that TR25.835 constitutes prior art as to the ‘917 Patent.**

The Petition fails to establish that TR25.835 constitutes prior art. First, the Petition fails to meet the Petitioner’s burden of explaining how TR25.832 allegedly qualifies as prior art under pre-AIA 35 U.S.C. 102(a) or 102 (b). Second, even if the Board were to treat the Petitioner here in the manner an Examiner treats a *pro se*

applicant and conduct a legal analysis on Petitioner's behalf, the evidence provided by the Petitioner, namely the Bishop Declaration (Ex. 1004), does not meet the Petitioner's burden here. The Bishop Declaration makes clear that the version of TR25.835 that was allegedly available on the 3GPP ftp server was not publicly accessible by virtue of indexing or cataloging, as the document bore an arbitrary title that had no information regarding its subject matter. Ex. 1004 ¶25. The Bishop Declaration does not state that TR25.835, or a notification as to the uploading of TR25.835 to the 3GPP server, was distributed by email. *See id.* Even if a notification of the uploading of the TR25.835 had been emailed, there was no way for the person of ordinary skill to subscribe to such emails, as the Bishop Declaration states that those notification emails were provided to selected representatives of 3GPP member companies, not the general public. *Id.* ¶19. Finally, the Petition does not rely on any presentation or distribution of TR25.835 at a meeting. *See* Pet. 8.

The Petition's rationale, on page 8 of the Petition, for the alleged status of TR25.835 as prior art, fails on multiple grounds. The Petition merely states that TR25.835 was published by 3GPP in 2000 and publicly available on the 3GPP file server no later than September 13, 2000. Pet. 8. The Petition does not recite any applicable standard that TR25.832 must meet to qualify as a printed publication under pre-AIA 35 U.S.C. §102(a) or 102(b), or explain how the supporting evidence allegedly demonstrates that the applicable standard is met, thus failing to meet the

minimum standards required to explain the significance of evidence, both under applicable regulations and under applicable case law.

The Petition fails to meet the requirements of 37 C.F.R. 42.22(a), which states:

Each petition or motion must be filed as a separate paper and must include:

(1) A statement of the precise relief requested; and

(2) A full statement of reasons for the relief requested, including a detailed explanation of the significance of the evidence including material facts, and the governing law, rules and precedent.

Here, the required “detailed explanation of the significance of the evidence including material facts” is completely absent from the Petition.

The regulations relating to requirements for petitions provide further detail as to the nature of the burden on the Petitioner to explain the significance of the evidence. The Petition must include:

(5) The exhibit number of the supporting evidence relied upon to support the challenge and the relevance of the evidence to the challenge raised, including *identifying specific portions of the evidence* that support the challenge. The Board may exclude or give no weight to the evidence where a party has failed to state its relevance or to *identify specific portions of the evidence that support the challenge*.

37 C.F.R. § 42.104 (emphasis added). Here, the Petitioner merely refers generally to fourteen paragraphs of the Bishop Declaration, Ex. 1004, without identifying either a specific portion, i.e., a specific paragraph, or any particular factual statement in the Bishop Declaration. *See* Pet. 8.

The Petition thus utterly lacks the required “detailed explanation of the significance of the evidence including material facts,” required by 37 C.F.R. 42.22(a), in support of Petitioner’s burden to show that TR25.835 constitutes prior art under 35 U.S.C. §102(a) or 102(b). Rather, the Petition merely alleges that the document was available on a file server as of a certain date. Pet. 8. Petitioner provides neither a recitation of an applicable legal standard, nor an analysis of how the availability of the document on a file server might satisfy that applicable legal standard. Thus, the Petition, on its face, fails to meet the requirements of 37 C.F.R. 42.22(a).

The Petition similarly fails to meet the requirements of 37 C.F.R. §42.104, as the Petition fails to identify the *specific* portions of the Bishop Declaration that allegedly support Petitioner’s contention that TR25.835 constitutes prior art. The Petition merely points generally to Paragraphs 12-24 and 25 of the Bishop Declaration, not to specific portions of the Declaration. Pet. 8. In accordance with 37 C.F.R. §42.104, as the Petition fails to identify the specific portions of the evidence that support Petitioner’s contention that TR25.835 constitutes prior art, the

Board should “exclude or give no weight to” the Bishop Declaration, and thus the Petitioner has failed to demonstrate that TR25.835 constitutes prior art.

The Court of Appeals for the Federal Circuit, like the applicable regulations, stresses the importance of the requirement that the Petition identify the particular portions of the evidence that support the Petition’s contentions, and explain the significance of that evidence:

It is of the utmost importance that petitioners in the IPR proceedings adhere to the requirement that the initial petition identify “with particularity” the “evidence that supports the grounds for the challenge to each claim.” 35 U.S.C. § 312(a)(3).

*Intelligent Bio-Systems, Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1369 (Fed. Cir. 2016). Here, the Petitioner fails to identify with particularity either the portions of the Bishop Declaration on which it relies, or the particular facts supported by the Bishop Declaration, that support its contention that TR25.385 constitutes prior art.

The Board’s case law as to the obligation of the Petitioner to explain the significance of submitted evidence reinforces that the Petition here fails to prove that TR25.385 is prior art. The failure of the Petition here to provide an explanation as to why a document allegedly constitutes prior art is on all fours with the following statement by the Board in *Dynaenergetics US, Inc v. Geodynamics, Inc.*, PGR2018-00065, Paper 8 (2018) (Routine), at 25-26 (emphasis added):

There is simply nothing in the Petition itself regarding the significance of the representations made in the Honcia declaration concerning the lecture notes presented by Dr. Honcia at the CCG workshop, nor does Petitioner explain how these representations demonstrate that Battelle was "otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter or art exercising reasonable diligence, can locate it." *Blue Calypso*, 815 F.3d at 1348 (citation omitted). Moreover, Petitioner does not explain how one of skill in the art, exercising reasonable diligence, would access Battelle. *We view Petitioner's naked assertion that Battelle is publicly available, and blanket citation to paragraphs 1 and 12 of the Honcia declaration, as an invitation to be an archeologist of the record in search of pertinent facts to satisfy the criteria for public accessibility described above.* That, however, is not our role.

Petitioner's mere statement that Battelle is publicly available, backed by a citation to the Honcia declaration, is insufficient to support a finding that it is more likely than not that Battelle was publicly accessible as of the critical date. Absent sufficient arguments and credible evidence, we determine that Battelle does not qualify as a prior art printed publication under 35 U.S.C. §§ 102 or 103.

In *Dynaenergetics US*, as in the present case, the Petition provided no more than a blanket citation to a portion of a declaration, with no explanation as to how the facts set forth in the accompanying declaration met the applicable standard. The mere invitation to be an archaeologist of the Declaration accompanying the Petition

in search of pertinent facts does not satisfy Petitioner's burden. As in *Dynaenergetics US*, the Petition here has failed to provide support for a finding that TR25.835 qualifies as prior art.

The Board's Informative Decision in *Spalding v. Hartsell*, Interference No. 104,699, Paper No. 92 (2002), further demonstrates that the Petition has failed to meet the minimum standard to show that TR25.835 qualifies as prior art. There, the Board stated:

The preliminary motion does not explain how the cited evidence supports Spalding's ultimate conclusion that the Bergamini paper constitutes a printed publication or that Bergamini distributed his paper "widely and publicly" to "individuals, organizations, and companies interested in vapor recovery systems." ***The citation to the exhibits merely invites the opponent and the decision-maker to sift through the evidence on their own initiative and to draw their own conclusions based on their own manner of harnessing, interpreting, and characterizing the evidence.***

*Spalding v. Hartsell*, Paper No. 92, at 5 (emphasis added). Here, the Petitioner has similarly invited the Patent Owner and the Board to sift through the Bishop Declaration (Ex. 1004), which, without the attached curriculum vitae of the Declarant, is 20 pages in length, on their own initiative, and to draw their own conclusions. The Board's statement in *Spalding v. Hartsell* is similarly applicable:



We decline to abandon our role as impartial and unbiased judges to take on the role of an advocate on behalf of party Spalding, to analyze the evidence in the first instance to see how it may best be harnessed, interpreted, or characterized to establish the facts required to prove Spalding's assertions to the detriment of Hartsell. That is the role of Spalding's counsel, not the board.

*Id.* at 9. Here, Petitioner's counsel has failed to provide an analysis of the evidence contained in the Bishop Declaration in the first instance to see how it may be characterized to establish that TR25.835 constitutes prior art as to the '917 Patent under 35 U.S.C. §102(a) or 102(b).

Moreover, if the Board were to consider, despite Petitioner's omissions, whether TR25.835 constitutes prior art, the Board would readily determine that this reference has not been demonstrated to constitute prior art.

The Board has summarized the approach to determining whether a given document is a printed publication as turning on public accessibility:

The determination of whether a document is a "printed publication" under 35 U.S.C. § 102 "involves a case-by-case inquiry into the facts and circumstances surrounding the reference's disclosure to members of the public." *Medtronic*, 891 F.3d at 1380 (citing *In re Klopfenstein*, 380 F.3d 1345, 1350 (Fed. Cir. 2004)). In certain situations, particularly for manuscripts or dissertations stored in libraries, courts may inquire whether a reference was sufficiently

indexed, catalogued, and shelved. *See, e.g., In re Hall*, 781 F.2d 897, 898–99 (Fed. Cir. 1986); *In re Lister*, 583 F.3d 1307, 1315 (Fed. Cir. 2009) (manuscript became publicly accessible once it was placed in a searchable database). In other situations, such as for information displayed at meetings and trade shows, courts have explained that indexing is not required if it was sufficiently disseminated. *See Medtronic*, 891 F.3d at 1381 (citing *Suffolk Techs., LLC v. AOL Inc.*, 752 F.3d 1358, 1365 (Fed. Cir. 2014)).

*Hulu, LLC, v. Sound View Innovations, LLC*, IPR2018-01039, Paper 29 at 9–10 (PTAB Dec. 20, 2019) (precedential).

The Federal Circuit has clarified the requirements for documents uploaded on a website to constitute publicly accessible information and thus prior art for purposes of pre-AIA 35 U.S.C. 102(b). *Samsung Elecs. Co., Ltd. v. Infobridge Pte. Ltd.*, 929 F.3d 1363 (Fed. Cir. 2019). Merely uploading a reference to a file server, which is all that the Petition alleges, is not sufficient to establish public accessibility. As the Court states:

When a reference is uploaded to a website or deposited in a library, the fact that the reference is indexed or cataloged in some way can indicate that it is publicly accessible. In *Acceleration Bay*, for example, the reference at issue was uploaded to a university website. 908 F.3d at 773. While this made the work technically accessible—someone could theoretically find it on the Internet—we explained that “public accessibility requires more than technical accessibility.” *Id.* (internal

quotation marks omitted). And while the website indexed references “by author and year,” we agreed with the Board that this did not mean the reference at issue had been “*meaningfully* indexed such that an interested artisan exercising reasonable diligence would have found it.” *Id.* at 774; *see also SRI*, 511 F.3d at 1196 (“[T]he FTP server did not contain an index or catalogue or other tools for customary and meaningful research.”). On this record, we affirmed the Board's finding that the reference was not publicly accessible even though it had been uploaded to a website.

*Samsung v. Infobridge*, 929 F.3d at 1369. Here, Petitioner’s evidence shows that TR25.835 was identified only as RP-000416.pdf and a date stamp in the 3GPP ftp server. Ex. 1004 ¶25. Thus, the document was clearly not meaningfully indexed such that an interested artisan exercising reasonable diligence would have found it.

Were the Board to go beyond its role, and look past the cursory argument provided on page 8 of the Petition to examine the Bishop Declaration itself, the Board would find it clear that Bishop does not establish that TR25.835 was publicly accessible based on meaningful indexing. Rather, review of the Bishop Declaration demonstrates that, given the lack of indexing, cataloging or other assistance, an interested artisan, exercising reasonable diligence, would not have been able to find TR25.835 by searching the 3GPP file server. The Federal Circuit noted in *Samsung v. Infobridge*, regarding the reference at issue, the WD4 reference, that:

The Board also found that a skilled artisan would not have been able to locate the WD4 reference on the JCT-VC website—even assuming the JCT-VC website itself was accessible—by exercising reasonable diligence. 2018 Pat. App. LEXIS 7271, at \*7. To support this conclusion, the Board walked through the steps that a person would have to go through to find the WD4 reference on the JCT-VC website. *Id.* As the Board explained, "identifying a meeting location was key to navigating the JCT-VC site." *Id.* In other words, if a person did not know to search for the WD4 reference by looking under the "Torino" folder—named for the Torino meeting—then a person would not have found the WD4 reference. *Id.* But the Board noted that there was "no evidence" anyone, outside those participating in the JCT-VC meetings, would have found "cities . . . helpful in any respect in locating a document on the site." *Id.* This difficulty was compounded by the fact that Samsung presented "no evidence that one could search for or locate [the] WD4 [reference] based on its subject matter." *Id.* The Board therefore concluded that Samsung failed to show that the WD4 reference was publicly accessible. *Id.*

*Samsung v. Infobridge*, 929 F.3d at 1370. Here, the Bishop Declaration identifies TR25.835 as having been on the relevant file server in a file with the file name of "RP-000416.pdf," (Ex. 1004, ¶25), which file name does not represent meaningful indexing that would be helpful for one of ordinary skill in the art to identify the document. Nothing in the Bishop Declaration points to meaningful indexing, cataloging, or other information on the 3GPP file server identified in the Petition

that would permit an interested artisan exercising reasonable diligence to locate TR25.835.

Careful review of the Bishop Declaration also makes it clear that Petitioner has utterly failed to prove that TR25.835 was publicly accessible based on sufficient dissemination via email notification.

First, the Petitioner has provided no testimonial evidence that email notifications were provided of an upload of TR25.835 to the 3GPP server. Bishop's Declaration discusses TR25.385 in Paragraph 25, and makes *no reference to any email notification concerning TR25.835*. Ex. 1004 ¶25. Thus, despite Bishop's claimed familiarity with 3GPP general practices, Ex. 1004 ¶¶12-24, Bishop failed to provide testimony as to an email notification following an upload of TR25.835 to the 3GPP server. The failure of Petitioner's expert to testify to the existence of such an email notification clearly weighs against the existence of such an email notification.

Second, Petitioner provided no documentary evidence of any email notification of an upload of TR25.835 to the 3GPP server, even though Petitioner provided evidence that records of such emails are maintained. Bishop testified that "3GPP maintains archives that include...emails announcing the uploading of new or additional documents to 3GPP's ftp server." Ex. 1004 ¶23. Despite this testimony, Petitioner provided no documentation from such archives of any email notification

of the uploading of TR25.835 to 3GPP's ftp server, further weighing against the existence of such an email notification.

Third, even if an email notification had been provided to the individuals delegated by 3GPP member companies to participate in 3GPP meetings, such an email distribution does not establish that an ordinarily skilled artisan could have accessed TR25.835 by the exercise of reasonable diligence. As the Court of Appeals has said, in a factual situation involving dissemination by a listserv of a reference:

[T]he Board should have considered whether Samsung's evidence established that an ordinarily skilled artisan could have accessed the WD4 reference, after exercising reasonable diligence, based on the listserv email. This might include examining *whether a person of ordinary skill, exercising reasonable diligence, would have joined the listserv.*

*Samsung v. Infobridge*, 929 F. 3d at 1374–75 (emphasis added). Here, the ordinarily skilled artisan had no opportunity to receive an email notification of the upload of TR25.835 to the 3GPP ftp server, as at most the email notifications were limited to individuals delegated by respective member companies to regularly participate in 3GPP meetings. “[A] work is not publicly accessible if the only people who know how to find it are the ones who created it.” *Samsung v. Infobridge*, 929 F.3d at 1372. 3GPP members “were part of an ongoing, collaborative effort” to further develop the 3GPP specifications. *Samsung v. Infobridge*, 929 F.3d at 1372.

Even if not authors of the specific document, accessibility by other members of 3GPP who attended the meeting does not show accessibility by the type of skilled artisans interested in the subject matter that qualify for public accessibility. “To hold otherwise would disincentivize collaboration and depart from what it means to *publish* something.” *Samsung v. Infobridge*, 929 F.3d at 1372. Thus, even with the exercise of reasonable diligence, the ordinarily skilled artisan had no opportunity to obtain the email notification.

While Bishop states in conclusory fashion that “I would expect any person implementing a cellular network, e.g., a UMTS network, to consult the corresponding specifications on the 3GPP ftp server,” Ex. 1004 ¶19, Bishop provides no indication *how* such a person would have identified documents pertaining to a particular topic on the 3GPP ftp server, given the lack of indexing of the 3GPP ftp server, and the restricted distribution of emails notifying 3GPP member representatives of uploading of documents to the ftp server.

Patent Owner also notes, for completeness, that the Petitioner has not shown that TR25.835 became publicly accessible via distribution at a 3GPP meeting. The Petition makes no mention of distribution of TR25.835 at a meeting, and thus, the Board, in accordance with the regulations and cases set forth above, should not take on the task of an archaeologist and review Petitioner’s evidence to attempt to identify indications of distribution of the document at a meeting.

Accordingly, the Petition has failed to establish that TR25.835 is prior art as to the '917 Patent.

As the sole Ground relies on TR25.835, the Board is respectfully requested to hold Claims 1-3 and 9-10 not unpatentable.

**C. No prima facie obviousness for “storing abbreviated sequence numbers whose length depends on the maximum number of coded transport blocks to be stored and which can be shown unambiguously in a packet data unit sequence number”**

The Petition fails to establish obviousness of at least the following recitation: “storing abbreviated sequence numbers whose length depends on the maximum number of coded transport blocks to be stored and which can be shown unambiguously in a packet data unit sequence number” as recited in Independent Claim 1. The Petitioner fails to establish that a POSITA, considering Abrol, which is specifically intended for use in channels of varying capacity, as a whole, would be likely to modify TR25.835 using the teachings of Abrol.

The Petitioner argues a POSITA would have been motivated to modify TR25.835 with Abrol’s abbreviated sequence numbers. Pet. 42-46. The reasons proffered by Petitioner are conclusory, and both the Petition and the supporting Declaration are defective as failing to consider whether a POSITA, considering the TR25.835 environment and Abrol as a whole, would combine TR25.835 and Abrol



as proposed by the Petitioner. As the Court of Appeals has recently reinforced in connection with challenges based on obviousness in *Inter Partes Review*:

[T]he prior art must be considered "as a whole, including portions that would lead away from the invention in suit." *Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561, 1568 (Fed. Cir. 1987).

*PGS Geophysical AS v. Iancu*, 891 F.3d 1354, 1366 (Fed. Cir. 2018). Petitioner's argument is defective, as both Petitioner and Petitioner's Declarant fail to consider the Abrol reference as a whole, including the particular challenge addressed in Abrol, namely channels of varying capacity.

Abrol is directed to improvements in transmission "through a channel whose capacity may change during transmission." Ex. 1007, Abstract. In summary, Abrol enables dividing data in a large, high rate RLP frame that was lost into small, independent RLP frames, in response to the loss of the high rate frame and following closely thereon, a decrease in channel capacity. Ex. 1007; 4:14-17. The Petition and Declaration utterly disregard both this problem of varying capacity, and Abrol's solution involving dividing large frames into small frames, thus failing to evaluate how a POSITA would consider Abrol as a whole.

Abrol discusses various proposals for providing high rate data and high-quality speech services over wireless communication channels. Ex. 1007; 1:35-49. In summary, Abrol provides a solution for adapting a wireless transmission protocol,

the RLP2 protocol, which is designed for use with fixed rate transmission channels, and thus can retransmit entire RLP frames of data within a relatively short time frame, to the proposed cdma2000 protocol, in which *the channel capacity available can vary widely and rapidly* during a call, thus making retransmission of full-rate frames unreliable. *Id.*, 2:51-3:7. Abrol provides the example of a full-rate frame, using the RLP2 protocol, that could carry as much as 750 bytes of data. *Id.*, 3:56-57. Abrol states that a successful retransmission of a single frame of 750 bytes of data would require successful retransmission of approximately 38 consecutive 9.6 kbps full-rate RLP2 retransmit segments. *Id.*, 3:61-65. Abrol notes that all retransmit segments would have the same sequence number, as sequence numbers denote frames in RLP2. *Id.*, 3:42-43 & 3:65-66. As the sequence numbers are the same, the receiver cannot negatively-acknowledge individual retransmit segments. *Id.*, 4:1-3. According to Abrol, this scenario would frequently result in lost data, upon the loss of a large high-rate RLP frame followed closely by a decrease in channel capacity. *Id.*, 4:3-11.

Abrol's solution has a number of interrelated components. First, Abrol modifies the RLP2 protocol to add a *byte sequence number* instead of a *frame sequence number*. *Id.*, 4:12-14. Second, Abrol provides for, if *both* the loss of a large, high-rate RLP frame, and following closely thereon, a decrease in channel capacity occur, dividing data in the lost frame into small, independent RLP

retransmit frames. *Id.*, 4:14-17. Thus, the use of the larger byte sequence number permits, in response to a negative acknowledgement message for a large RLP frame, the retransmission of small, independent RLP retransmit frames, which can be again retransmitted individually, if needed, after receipt of a negative acknowledgment. *Id.*, 4:17-22. Abrol provides for using a large sequence number, such as 20-bit sequence number, without adding to the average frame header size, by carefully selecting portions of the sequence number space which will go unassigned to transmitted data bytes. *Id.*, 4:40-52.

The Petition and the supporting Declaration fail to consider whether a POSITA, considering the above features of Abrol, would modify TR25.835 using Abrol. The Petition discusses modifying TR25.835 in view of Abrol at pages 42-46. The supporting Declaration (Ex. 1003) discusses modifying TR25.835 in view of Abrol at Paragraphs 81-84, in almost identical language. Neither the Petition nor the Declaration even mentions that Abrol states, repeatedly, that it is specifically intended for environments in which the channel capacity varies. *See* Ex. 1007; Abstract; 2:60-66; 3:2-3; 3:24-26; 3:52-56; 4:14-16; 4:30-32; 5:13-21; 7:24-27; 7:66-8:2. A POSITA will thus immediately, on initial review of Abrol's Abstract ("for transmitting a stream of data bytes through a channel whose capacity may change during transmission"), and throughout reviewing Abrol's specification, clearly understand Abrol to be intended for use in situations where channel capacity may

fluctuate. As the Petition and Declaration fail to consider whether a POSITA would apply Abrol to TR25.835 in view of Abrol's clear teaching that it is intended for situations where channel capacity varies, the Petitioner has failed to carry its burden of showing that a POSITA would find it obvious to combine TR25.835 with Abrol.

The Petition and Declaration further do not consider that Abrol teaches modifying the RLP2 protocol by adding byte sequence numbers rather than frame sequence numbers. TR25.835 teaches the use of sequence numbers (Ex. 1005, 10). The Petition and Declaration do not consider that a POSITA would not find it obvious to modify TR25.835 as Abrol provides for adding sequence numbers to constituents of frames. For example, the Petition and Declaration do not mention whether a POSITA would be discouraged from using Abrol in TR25.835 as adding sequence numbers to constituents of packet data units would result in unnecessary and additional data processing and transmission.

Further, the Petition and Declaration argue that Abrol's benefit of minimizing overhead dovetails nicely with TR25.835's goal of more efficient and fast hybrid ARQ techniques. Pet. 43; Ex. 1003 ¶81. However, neither the Petition nor the Declaration points to any statement in TR25.835 that overhead is a concern in error control protocols. Further, the Petition and Declaration point to Abrol's use of 8-bit RLP sequence numbers as particularly advantageous. Pet. 43; Ex. 1003 ¶81. However, neither the Petition nor the Declaration indicate the number of bits

employed in sequence numbers in TR25.835, and leave open the possibility that TR25.835 already employs 8-bit sequence numbers.

Second, the Petition and Declaration vaguely argue that TR25.835 achieves benefits by “creative use of sequence numbers,” but merely points vaguely to the use of side information using sequence numbers. Pet. 43-44; Ex. 1003 ¶82. Petitioner and its declarant fail to explain what is allegedly “creative” about TR25.835’s use of sequence numbers, or how a POSITA would be motivated by this alleged creative use to combine Abrol with TR25.835.

Third, the Petition and Declaration argue that using the techniques of Abrol would involve “a mere substitution” and a “simple operation for a POSITA.” Pet. 45-46; Ex. 1003 ¶83-84. In fact, Abrol’s techniques involve the initial transmission of entire frames of bytes using the same 8-bit RLP sequence number in most cases. Ex. 1007: 9:41-43. The Petition and Declaration do not explain whether the application of Abrol would involve the use of the same 8-bit number for numerous packet data units, for example, or in some other manner. The Petition and Declaration do not explain how Abrol’s teachings of retransmission of entire large frames using 8-bit numbers, or division into small, independent RLP frames, depending on channel capacity, Ex. 1007; 4:14-17, would be implemented in TR25.835. The use of 20-bit RLP sequence numbers is mandated in Abrol responsive to a decrease in channel capacity before NAK’d data can be

retransmitted, Ex. 1007; 9:55-57. The Petition and Declaration do not explain how selectively employing 20-bit RLP sequence numbers in response to a decrease in channel capacity would be integrated into TR25.835.

Further, the Petition alleges that the '917 Patent fails to show details as to how to implement its ARQ method with abbreviated sequence patterns. Pet. 46. This allegation is simply wrong. The '917 Patent makes clear that the number of bits of the abbreviated sequence number is determined by the number of  $M$  coded transport blocks which, on the receiving side, can at most be buffered simultaneously, and provides a specific formula. Ex. 1001; 5:41-45. Further, the '917 Patent explains that the transmitting physical layer generates an abbreviated sequence number from the RLC sequence number. Ex. 1001; 5:47-50. The '917 Patent states that the physical layer selects a non-issued abbreviated sequence number and writes the relation to the RLC sequence number in a table. Ex. 1001; 5:58-61. Further, the '917 Patent even explains that if the physical layer receives from the RLC layer a transport block containing side information, but all abbreviated sequence numbers have already been issued, the transport block is not transmitted, and the RLC layer is informed of this queue situation. Ex 1001: 5:53-58. Abrol, by contrast, does not provide this level of detail of interactions between layers in connection with its teachings of generating byte sequence numbers.

Thus, as the Petition and Declaration fail to consider the numerous foregoing matters that a POSITA, considering Abrol as a whole, would confront, the Petition has failed to demonstrate that one of ordinary skill would combine TR25.835 and Abrol as proposed.

As the sole Ground relies on an improper combination of TR25.835 and Abrol, the Board is respectfully requested to hold Claims 1-3 and 9-10 patentable over the challenges presented by the Petition.

**D. The Petition does not establish that TR25.835 teaches or renders obvious “a physical layer of a receiving side is provided for testing the correct reception of the coded transport block” as recited in Claim 1.**

The Petition fails to establish that TR25.835 teaches “a physical layer of a receiving side is provided for testing the correct reception of the coded transport block” as recited in Claim 1.

The Petition relies on Paragraphs 99-100 of Exhibit 1003 for this teaching. These Paragraphs do little more than display excerpts of TR25.835. Section 7.2 merely states that the receiver reads the sequence number and redundancy version, after which the packet is decoded. EX 1005, 27. This description of general receiver functions goes on to state that the integrity of the packet is checked and an acknowledgment is sent in the current uplink frame. *Id.* This statement of receiver

functions thus says nothing about the allocation of functions among the physical layer, MAC and RLC.

The Declaration also emphasizes that feedback information can use some of the dedicated physical control channel bits in the given slots, Ex. 1005, 27, which says nothing about whether the allocation of functions among the physical layer, MAC and RLC.

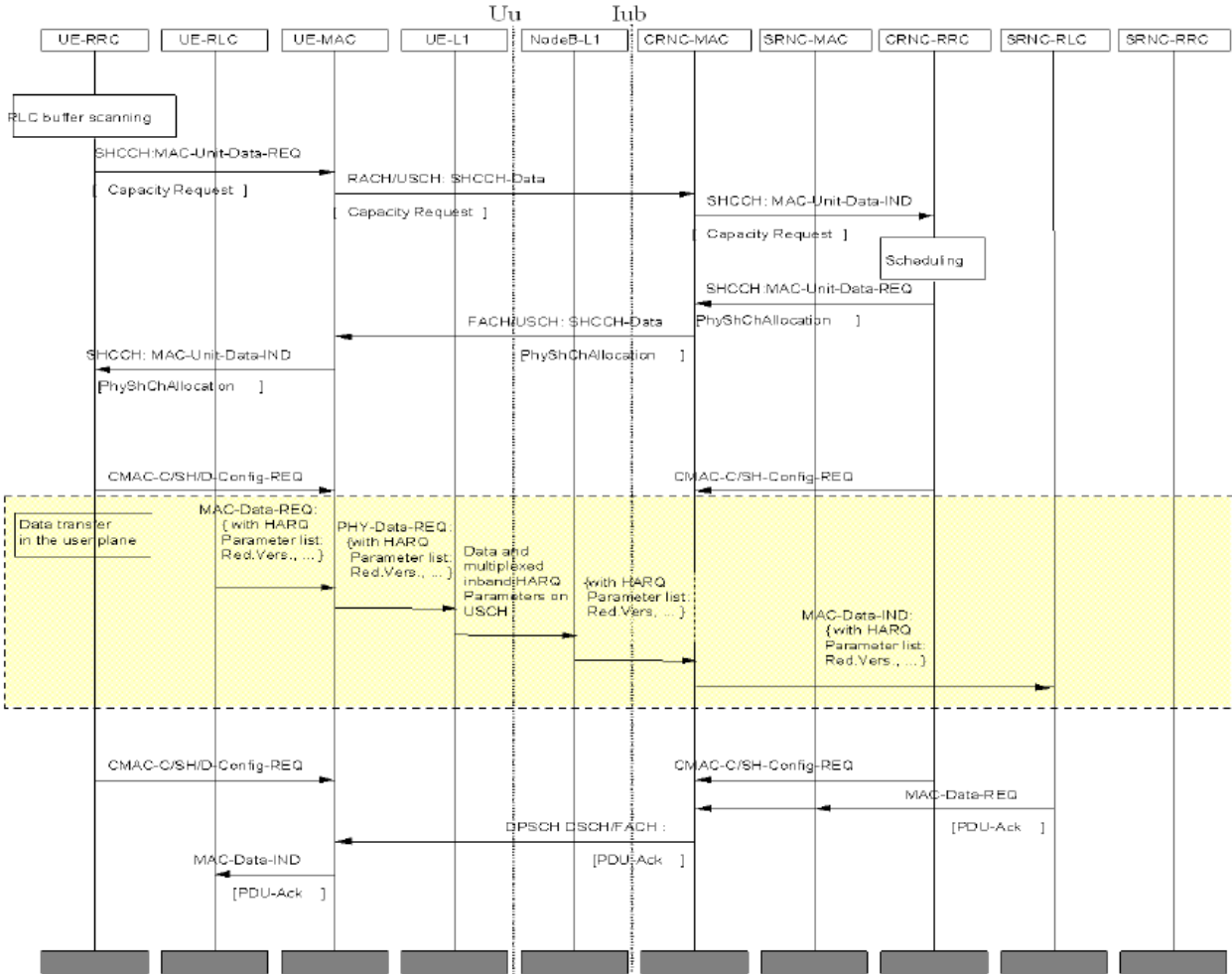
The Declaration also points to 7.31 as teaching “RX soft decision **buffering and combining.**” (emphasis added). This function is explained at Ex. 1005, page 9, as “Buffering of the received initial and retransmitted data for the combining at the receiver side.” Thus, this does not establish that the soft decision function is achieved at the physical layer, but only that received data is buffered at the physical layer.

The Declaration points to encoding/decoding, transmission and error detection on fast HARQ side information (including fast acknowledgments). Ex. 1003, p. 61. This statement merely indicates that the physical layer performs encoding and decoding, transmission and error detection on certain side information, not that the testing of correct reception of the coded transport block itself is performed at the physical layer.

Moreover, the Declaration and Petition fail to discuss Figures 2 and 3 of TR 25.835, which make it clear that acknowledgment messages, shown as “PDU-ACK,”



in both uplink and downlink, are initiated by the MAC layers, and not by the respective UE and NodeB L1 layers. Ex. 1005, 14-15.



Referring to Figure 2 of TR 25.835, reproduced above, showing uplink data transfer, the PDU-Ack acknowledgment message is returned from the CRNC-MAC, i.e., the MAC of a base unit, to the UE-MAC, i.e., the MAC layer of the remote unit. The PDU-Ack acknowledgment message is clearly not generated by the NodeB-L1 layer, i.e., physical layer of the base unit, contrary to the contentions of the Petition.



As the Declaration and Petition utterly disregard the clear teaching of generation of acknowledgment messages, and thus the testing operation, at the MAC layer in Figures 2 and 3, the Petition has failed to carry its burden here.

Accordingly, the Petitioner has failed to show that Claim 1 is unpatentable. As Claims 2-3 depend from Claim 1, and Independent Claims 9 and 10 include recitations similar to the Claim 1 recitation of “a physical layer of a receiving side is provided for testing the correct reception of the coded transport block,” Petitioner has failed to show that any of the challenged claims are unpatentable.

## VII. CONCLUSION

For the foregoing reasons, Uniloc respectfully requests that the Petition be denied in its entirety.<sup>1</sup>

Date: March 30, 2020

Respectfully submitted,

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<sup>1</sup> Patent Owner does not concede, and specifically denies, that there is any legitimacy to any arguments in the Petition that are not specifically addressed herein.

**CERTIFICATE OF COMPLIANCE**

Pursuant to 37 C.F.R. § 42.24(d), we certify that this Patent Owner's Response to Petition complies with the type-volume limitation of 37 C.F.R. § 42.24(b)(1) because it contains fewer than the limit of 14,000 words, as determined by the word-processing program used to prepare the brief, excluding the parts of the brief exempted by 37 C.F.R. § 42.24(a)(1).

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**CERTIFICATE OF SERVICE**

Pursuant to 37 C.F.R. §§ 42.6(e), we certify that we served an electronic copy of the foregoing, along with any accompanying exhibits, by email to Petitioner's counsel of record at the following address:

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