UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ONEPLUS TECHNOLOGY (SHENZHEN) CO., LTD.,

Petitioner

v.

PANTECH CORPORATION AND PANTECH WIRELESS, LLC,

Patent Owner.

PTAB Case No.
IPR 2025- 00763

Patent No. 11,212,838

PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 11,212,838

TABLE OF CONTENTS

Page

TABLE OF CONTENTS
(continued)

Page

EXHIBIT LIST

Exhibit	Reference
1001	U.S. Patent No. 11,212,838 ("'838 patent" or "'838Pat.")
1002	File History of the '838 Patent ("'838FH")
1003	Declaration of Dr. Titus Lo ("Lo") in Support of Petition
1004	Dr. Titus Lo Curriculum Vitae
1005	U.S. Patent Application Publication No. 2004/0114574 A1 ("Zeira")
1006	U.S. Patent Application Publication No. 2005/0174956 A1 ("Yi")
1007	3GPP TS 36.300 v8.0.0 (2007-03) Technical Specification Group Radio Access Network; Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); E-UTRAN overall description; Stage 2
1008	3GPP TS 25.104 V7.7.0 (2007-06) Technical Specification Group Radio Access Network; Base Station (BS) radio transmission and reception (FDD)
1009	3GPP TS 25.101 V7.8.0 (2007-06) Technical Specification Group Radio Access Network; User Equipment (UE) radio transmission and reception (FDD)
1010	https://www.qualcomm.com/content/dam/qcomm-martech/dm-assets/documents/ev-do-rev-a-and-b-wireless-broadband-for-the-masses-whitepaper.pdf, (EV-DO Rev. A and B: Wireless Broadband for the Masses)
1011	3GPP TS 25.201 V7.3.0 (2007-05) Technical Specification Group Radio Access Network; Physical layer - General description
1012	3GPP TR 25.913 V7.3.0 (2006-03) Technical Specification Group Radio Access Network; Requirements for Evolved UTRA (E-UTRA) and Evolved UTRAN (E-UTRAN)
1013	https://www.qualcomm.com/news/onq/2017/08/understanding-3gpp-starting-basics, (Understanding 3GPP – starting with the

Exhibit	Reference
	basics)
1014	https://www.ericsson.com/en/about-us/history/company/timeline-placeholder/timeline-2010-4g-arrives, (2010: 4G arrives)
1015	3GPP TS 36.932 v.12.1.0 (2013-03): Technical Specification Group Radio Access Network; Scenarios and requirements for small cell enhancements for E-UTRA and E-UTRAN
1016	3GPP TS 23.401 V1.1.0 (2007-07) Technical Specification Group Services and System Aspects; GPRS enhancements for E-UTRAN access
1017	RESERVED
1018	3GPP TS 25.331 V7.5.0 (2007-06) Technical Specification Group Radio Access Network; Radio Resource Control (RRC); Protocol specification
1019	3GPP TR 22.944 V7.0.0 (2007-06) Technical Specification Group Services and System Aspects; Report on service requirements for UE functionality split
1020	RESERVED
1021	3GPP TS 25.321 V7.5.0 (2007-06) Technical Specification Group Radio Access Network; Medium Access Control (MAC) protocol specification
1022	*Pantech Corp.et al. v. Oneplus Tech. (Shenzhen) Co., Ltd.*, 5:24-cv-00038-RWS-JBB (E.D. Tex.), Dkt. No. 1, Complaint
1023	*Pantech Corp.et al. v. Oneplus Tech. (Shenzhen) Co., Ltd.*, 5:24-cv-00038-RWS-JBB (E.D. Tex.), Dkt. No. 9, Waiver of Service
1024	*Pantech Corp.et al. v. Oneplus Tech. (Shenzhen) Co., Ltd.*, 5:24-cv-00038-RWS-JBB (E.D. Tex.), Dkt. No. 49, Joint Claim Construction and Prehearing Statement

LISTING OF CHALLENGED CLAIMS

Reference	Claim Limitation
Claim 1	
1[pre]	A wireless transmit/receive unit (WTRU) comprising:
1[a]	a receiver;
1[b]	a transmitter; and
1[c]	a processor;
1[d]	wherein the receiver and the processor are configured to receive at least one radio resource control (RRC) message indicating uplink resources for WTRU and medium access control (MAC) timer information,
1[e]	the transmitter and the processor are configured to transmit uplink data based on the indicated uplink resources,
1[f]	the processor is configured to deactivate the indicated uplink resources in response to a MAC timer expiring, and
1[g]	the MAC timer is configured based on the MAC timer information indicated by the received RRC message.
Claim 2	
2	The WTRU of claim 1 wherein the receiver and the processor are configured to receive an uplink grant associated with the indicated uplink resources and the transmitter and the processor are configured to transmit using the indicated uplink resources based on the grant.

Reference	Claim Limitation
Claim 3	
3	The WTRU of claim 2 wherein based on the receipt of the uplink grant, the WTRU does not deactivate the indicated uplink resources.
Claim 4	
4	The WTRU of claim 1 wherein the receiver and the processor are configured to receive a deactivation message and the processor is configured to deactivate the uplink resources based on the received deactivation message.
Claim 5	
5	The WTRU of claim 1 wherein the MAC timer is based on a number of frames.
Claim 6	
6[pre]	A method comprising:
6[a]	receiving, by a wireless transmit/receive unit (WTRU), at least one radio resource control (RRC) message indicating uplink resources for WTRU and medium access control (MAC) timer information;
6[b]	transmitting, by the WTRU, uplink data based on the indicated uplink resources; and
6[c]	deactivating, by the WTRU, the indicated uplink resources in response to a MAC timer expiring, wherein the MAC timer is configured based on the MAC timer information indicated by the received RRC message.
Claim 7	

Reference	Claim Limitation
7	The method of claim 6 further comprising receiving, by the WTRU, an uplink grant associated with the indicated uplink resources and transmitting, by the WTRU, using the indicated uplink resources based on the grant.
Claim 8	
8	The method of claim 7 wherein based on the receipt of the uplink grant, the WTRU does not deactivate the indicated uplink resources.
Claim 9	
9	The method of claim 7 further comprising receiving, by the WTRU, a deactivation message and deactivating, by the WTRU, the uplink resources based on the received deactivation message.
Claim 10	
10	The method of claim 7 wherein the MAC timer is based on a number of frames.

I. INTRODUCTION

OnePlus Technology (Shenzhen) Co., Ltd. ("Petitioner") request *inter partes* review ("IPR") of claims 1-10 ("Challenged Claims") of U.S. Patent No. 11,212,838 ("'838 patent," or "'838Pat"; EX1001). Petitioner has shown a reasonable likelihood of prevailing as to each Challenged Claim and respectfully requests the Board to institute trial.

II. MANDATORY NOTICES (37 C.F.R. § 42.8(A)(1))

A. Real Party in Interest (37 C.F.R. § 14.8(b)(1))

The real parties-in-interest are OnePlus Technology (Shenzhen) Co., Ltd. and Guangdong OPPO Mobile Telecommunications Corp., Ltd.

B. Notice of Related Matters (37 C.F.R. §42.8(b)(2))

To the best of Petitioner's knowledge, the '838 patent has been involved in the following matters:

- *Pantech Corporation and Pantech Wireless v. OnePlus Technology (Shenzhen) Co., Ltd.*, 5:24-cv-00038 (E.D. Tex.)

C. Counsel and Service Information (37 C.F.R. §42.8(b)(3) and (4))

Petitioner consents to electronic service. All services and communications to the attorneys listed below may be sent to:

OnePlus-Pantech-IPRService@perkinscoie.com

LEAD COUNSEL
Babak Tehranchi (Reg. No. 55,937) PERKINS COIE LLP 11452 El Camino Real, Suite 300 San Diego, CA 92130 Telephone: (858) 720-5700
BACK-UP COUNSEL
Atanas Baitchev (Reg. No. 82,414) PERKINS COIE LLP 11452 El Camino Real, Suite 300 San Diego, CA 92130-2080 Tel: (858) 720-5700 Yang-Hsien (Homer) Hsu (Reg. No. 76,043) PERKINS COIE LLP 1201 Third Avenue, Suite 4900 Seattle, WA 98101-3099 Tel: (206) 359-8000 Han Saem (Sam) Hong (Reg. No. 69,424) 1201 Third Avenue, Suite 4900 Seattle, WA 98101-3099 Tel: (206) 359-8000 Jaymin Patel (*pro hac vice forthcoming*) PERKINS COIE LLP 2525 E. Camelback Road, Suite 500 Phoenix, AZ 85016-4227 Tel: (6.02) 351-8000

D. Power of Attorney

A Power of Attorney is being filed herewith according to 37 C.F.R. §42.10(b).

III. REQUIREMENTS FOR *INTER PARTES* REVIEW

A. Grounds for Standing

This Petition is timely filed within one year of service of Pantech Corporation's and Pantech Wireless, LLC's complaint alleging infringement of the '838 patent against OnePlus Technology (Shenzhen) Co. Petitioner certifies the '838 patent is available for IPR, and Petitioner is not barred or estopped from requesting IPR. EX1022; EX1023.

B. Challenged Claims and Relief Requested

Petitioner requests that the Challenged Claims be cancelled in view of:

Prior Art
U.S. Patent Application Publication No. 2004/0114574 A1 ("Zeira"), filed May 29, 2003, published June 17, 2004; prior art under at least 35 U.S.C. §102(b)[1] (EX1005)
U.S. Patent Application Publication No. 2005/0174956 A1 ("Yi"), filed January 10, 2005, published August 11, 2005; prior art under at least 35 U.S.C. §102(b) (EX1006)

Petitioner also relies on the declaration of Dr. Titus Lo ("Lo"). EX1003; *see also* EX1004.

[1] All references to 35 U.S.C. §§102, 103 are to the pre-AIA statutes.

Ground (35 U.S.C. §103)	Claims	References
1	1-10	Zeira
2	1-10	Zeira, Yi

IV. THE '838 PATENT'S IPR ELIGIBILITY

The '838 patent was filed on May 23, 2019, as patent application no. 16/421,019 (the "'019 Application") and issued on December 28, 2021. '838pat, Cover. The '838 patent claims priority to a series of continuation and provisional applications, having an earliest priority date of September 28, 2007. *Id.*, Page 2.

V. '838 PATENT OVERVIEW

A. Specification

The '838 patent addresses an alleged problem stemming from use of a contentious channel known as the random access channel (RACH) for transmission of "data messages associated with the new non real-time data services such as internet browsing, e-mail, etc." in a Third Generation Partnership Project (3GPP) network. '838pat, 1:41-62. The '838 patent's exemplary system comprises a plurality of wireless transmit receive units (WTRUs) 210 (red), a base station 220 (brown), a CRNC 230 (purple), and an SRNC 240 (pink). *Id*., 3:38-40, Fig. 2[2].

[2] All annotations added, unless noted otherwise.

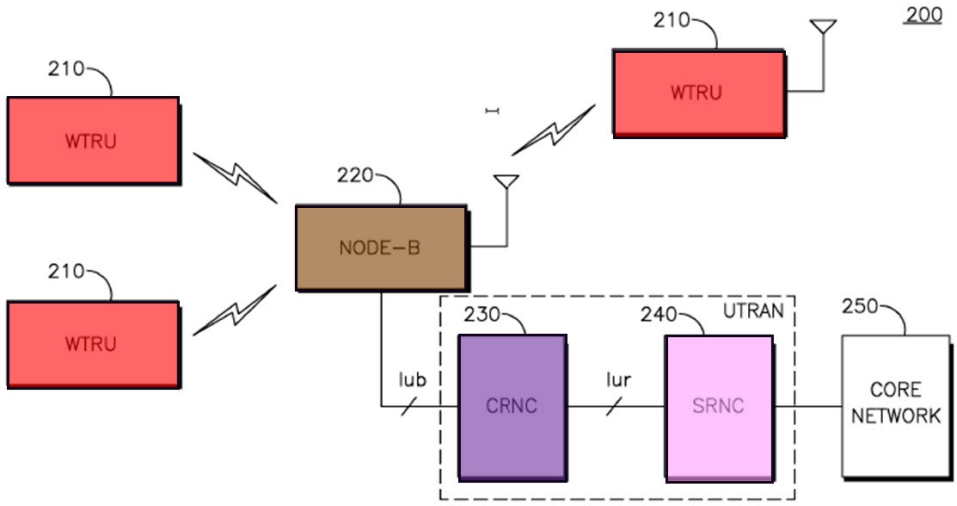


FIG. 2

The WTRU in turn comprises a receiver 216 (blue), transmitter 217 (green), and a processor 215 (orange). *Id.*, 3:54-60, Fig. 3.

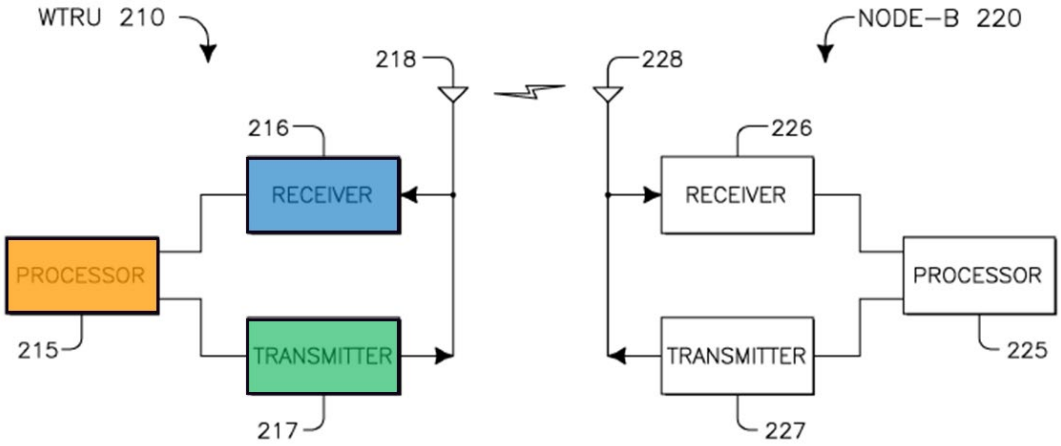


FIG. 3

The '838 patent explains that "the RACH is a shared channel, [so] in order to avoid WTRUs holding the shared radio resource for a long time, only relatively short message payloads are transmitted on the RACH; this leads to a relatively small data

rate." *Id.*, 1:50-54.

The '838 patent states that "[t]o overcome these difficulties, it was proposed to use the enhanced dedicated channel (E-DCH) in the CELL_FACH[3] state to increase the data rate of the shared channel." *Id.*, 2:2-6. The '838 patent further states that "in the current standard, there are no methods to terminate the E-RACH [enhanced RACH] message phase," *id.*, 2:21-22, and purports to provide "[a] method and an apparatus [] for terminating an E-RACH message in an E-RACH transmission…in order to release the shared E-DCH resources while in the CELL_FACH state." *Id.*, 2:29-35.

Relevant here, the '838 patent teaches "E-DCH resource allocation and de-allocation 400 using triggering for a WRTU." *Id.*, 4:5-28, Fig. 4. A WTRU "requests E-DCH resources from the network by transmitting a preamble and waiting for a response…After receiving the E-DCH resource assignment, the WTRU…may use these E-DCH resources until it receives a trigger, at which point the WTRU 210 will release the resources." *Id.*, 4:18-24. "[T]he trigger may be timer based." *Id.*, 4:25-26.

[3] The '838 patent does not define CELL_FACH, but a POSITA would have understood it to refer to the forward access channel in 3GPP. Lo, ¶39, n.1.

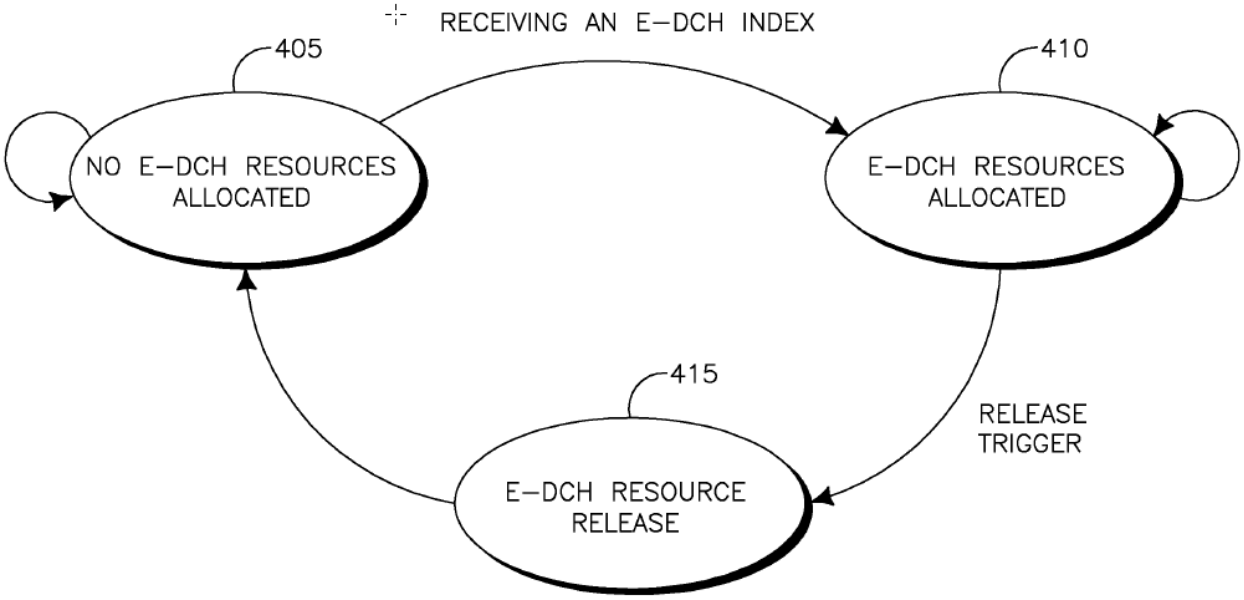


FIG. 4

'838pat, Fig. 4.

One such timer "may start as soon as the radio resource control (RRC) provides the MAC with the timer values, and after receiving the E-DCH resource index." *Id.*, 5:9-11; *see also* Lo, ¶¶40-41. Notably, the '838 patent also uses the term "duration" to describe the timer limiting the E-DCH. E.g., '838pat 4:45-47 ("this embodiment would allow the flexibility to configure smaller transmission time duration for a logical channel such as the CCCH"), 4:61-63 (Alternatively, the network may configure the transmission duration timer based on the presence or absence of an E-RNTI), 5:30-41 ("Alternatively, E-RACH message duration may be fixed…For example, the E-RACH message duration IE may be transmitted with the initial resource assignment….").

While the detailed description of the '838 patent describes various procedures including resource allocation and de-allocation, releasing resources based on the status of WTRU's buffer, and EDCH resource release when transitioning from a CELL_FACH state to a CELL_DCH state (see, e.g., Figures 4, 6, 8, and 9 and associated description), the claims of the '838 patent are directed to basic operations performed at a WTRU related to only activation and deactivation of a media access control (MAC) timer. *Id*., 11:4-12:28. As shown below, these claims were already known and described in the prior art. Lo, ¶42.

B. Prosecution History

The '838 patent issued from U.S. Application 16/421,019 ("'019 Application"). The '019 Application faced two §103 rejections based on U.S. 2008/0117891 ("Damnjanovic") and U.S. 2007/0081492 (Petrovic). After the second rejection, the Applicant amended independent claims 1 and 6 to recite that the receiver and the processor are configured to receive "at least one radio resource control (RRC) message indicating an uplink resource for WTRU and medium access control (MAC) timer information" and that the MAC timer "is ~~being~~ configured based on the MAC timer information indicated by the received RRC message." '838FH, 471, 473 (emphasis in original). The Applicant distinguished the prior art by arguing that Damnjanovic does not receive timer information via an RRC message and that Petrovic receives activation time, rather than timer information,

from a Node B. *Id.*, 475-479. The claims were then allowed. *Id.*, 275, 12. As discussed below, the Challenged claims and each of the limitations added during prosecution were known in the prior art.

C. Claim Construction

Petitioner is unaware of any "prior claim construction determination" related to the '573 patent. 37 C.F.R. §42.100(b). No formal claim constructions are necessary in this proceeding because "claim terms need only be construed 'to the extent necessary to resolve the controversy.'" *Wellman, Inc. v. Eastman Chem. Co.*, 642 F.3d 1355, 1361 (Fed. Cir. 2011). Claims should be construed "in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent." 37 C.F.R. §42.100(b); *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (*en banc*).

Petitioner notes that in the co-pending district court proceeding, the parties dispute the meaning of the term "uplink resources." EX1024, 4. Petitioner contends that "uplink resources" should be construed as "resources that include at least an indication of a spreading code." *Id.* Patent Owner ("PO") does not offer a specific construction, proposing "plain and ordinary meaning" instead. *Id.* Here, the Board need not construe "uplink resources" because, as explained below, the prior art discloses or suggests the challenged claims under either construction.

D. Priority date

The earliest provisional application (60/975,985, the "'985 Application") in the priority chain of the '838 patent was filed on September 28, 2007. '838pat, Page 2. The first non-provisional application (12/238,910, the "'910 Application") in the priority chain of the '838 patent was filed on September 26, 2008. *Id*. Without conceding that the challenged claims have actual support in the '985 Application or the '910 Application, the priority date of the challenged claims is no earlier than September 28, 2007. All the references in this Petition were published prior to September 28, 2007.

E. Level of Ordinary Skill in the Art

For the purpose of this petition, a person of ordinary skill in the art (POSITA) is a person having, as of the alleged September 2007 priority date, a bachelor's degree in electrical engineering, computer engineering, computer science, or a related field and at least two years of practical experience with design or development of telecommunication and/or wireless communications systems, or the equivalent. Additional education could substitute for industry experience and vice versa.Lo, ¶21. The level of ordinary skill remains the same if a priority date of September 26, 2008 is assumed. *Id.*

VI. SPECIFIC GROUNDS

A. Ground 1: Claims 1-10 Are Obvious Over Zeira

1. Zeira

Zeira, titled "Packet Switched Connections Using Dedicated Channels" teaches using a temporary dedicated channel assigned to a user for a set duration to support communications; "[a]fter the duration expires, the channel is automatically released to the user." EX1005 ("Zeira"), Abstract. Specifically, Zeira teaches a WTRU comprising a receiver 516 (blue), transmitter 514 (green), a radio link controller (RLC) 510, and a medium access controller (MAC) 512 (orange). *Id*., ¶29, Fig. 1. The WTRU communicates with a Node-B 502 (brown) that comprises a transmitter and receiver, which in turn communicates with a cell radio network controller (C-RNC) 506 (purple), which in turn communicates with a servicing radio network controller (S-RNC) 508 (pink).

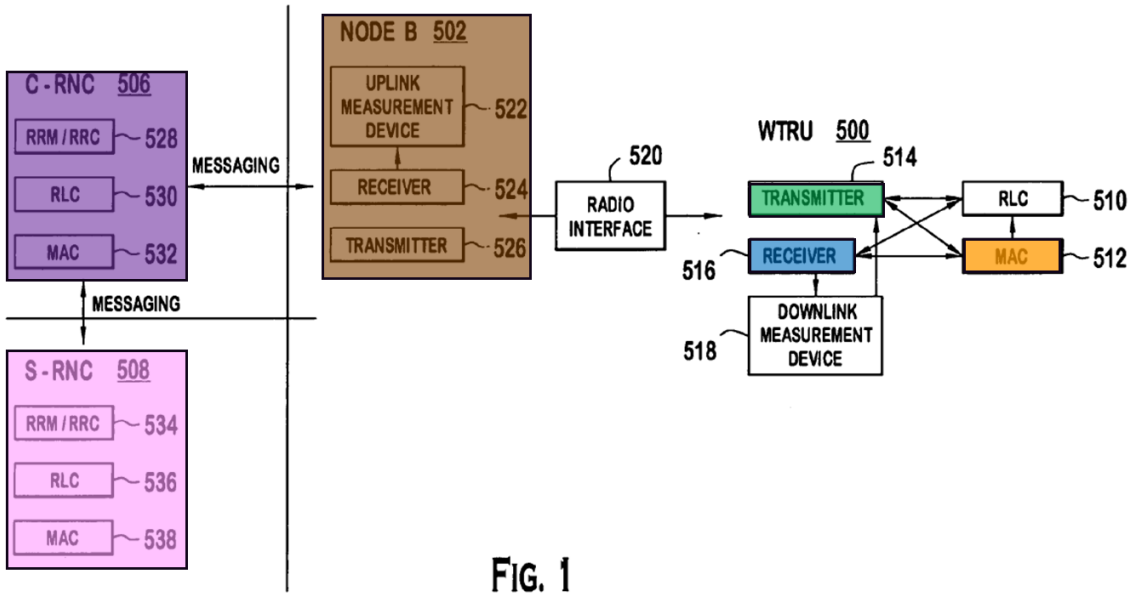


FIG. 1

The WTRU operates as part of a 3GPP system. *Id.*, ¶27. Zeira explains that "dedicated channels [DCHs] provide [the] required quality of service while maintaining efficient use of radio resources," but that for "non-real time (NRT) applications [for example for Internet web browsing], frequent periods of no transmission or reception activity exist." *Id.*, ¶¶32-33.

Zeira solves this problem by instead allocating a temporary (temp) DCH, for a predetermined duration, to the WTRU. *Id.*, ¶34. "After that duration, the DCH is automatically released and the connection is returned to common channels." *Id.* A servicing radio network controller (S-RNC) 508 "determines the duration of the temp-DCH." *Id.*, 395. The S-RNC then configures the WTRU by sending either a "Physical Channel Reconfiguration (RRC) message"[4] or a "Transport Channel Reconfiguration (RRC) message" to the WTRU that contains, *inter alia*, "timeslot information" and "frame allocation (continuous)." *Id.*, ¶¶401-412. When a WTRU receives an RRC message, it "[c]onfigure[s] the MAC layer with the new transport channel information…and the new radio bearer mapping information received in the message." *Id.*, ¶¶421, 423. *See also*, Lo, ¶¶92-94.

[4] Physical Channel Reconfiguration message and Transport Channel Reconfiguration message are two types of RRC messages that are sent to WTRU. Zeira, ¶¶402-403; Lo, ¶94, n.3.

2. Independent Claim 1

a. 1[pre]: "A wireless transmit/receive unit (WTRU) comprising:"

To the extent limiting, Zeira discloses or suggests 1[pre]. Lo, ¶95.

Zeira discloses *a wireless transmit/receive unit (WTRU)*[5] 500 (red). E.g., Zeira, ¶¶28-29, Fig. 1.

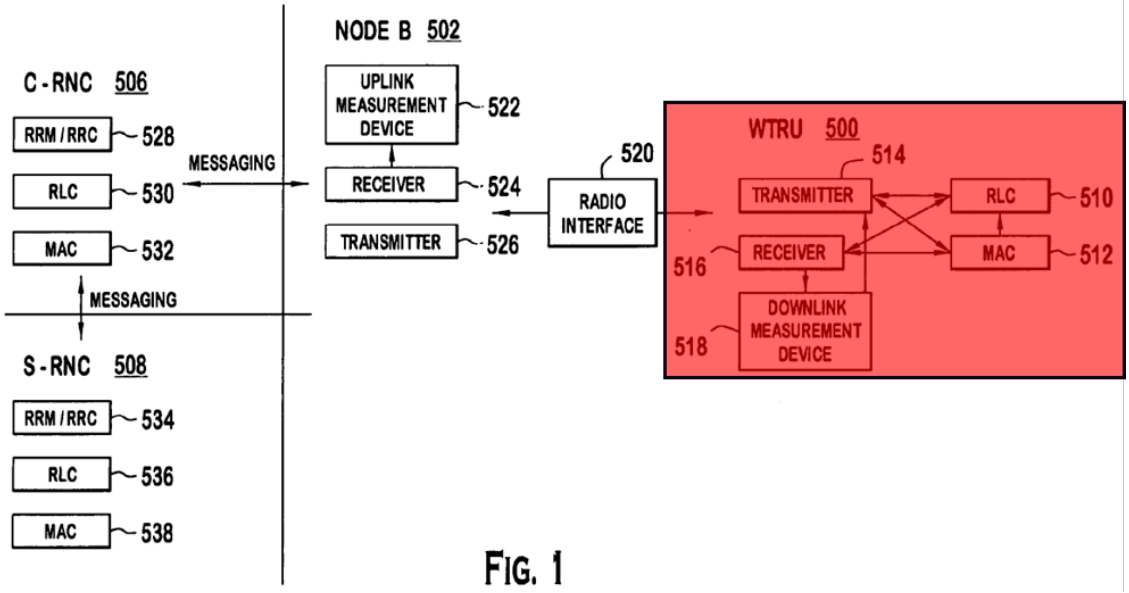


FIG. 1

b. 1[a]: "a receiver;"

Zeira discloses or suggests 1[a]. Lo, ¶96.

Zeira discloses that WTRU 500 comprises "a receiver 516 [blue] for…receiving transmissions over [a] radio interface 520." Zeira, ¶29, Fig. 1.

[5] Unless noted otherwise, *italics* indicate claim language.

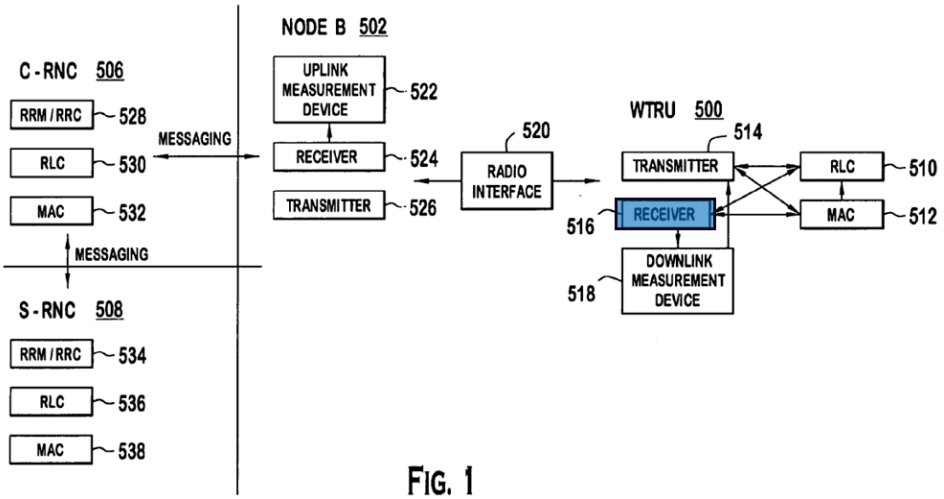


FIG. 1

c. 1[b]: "a transmitter; and"

Zeira discloses or suggests 1[b]. Lo, ¶97.

Zeira discloses that WTRU 500 comprises "a transmitter 514 [green]…for sending…transmissions over [a] radio interface 520." Zeira, ¶29, Fig. 1.

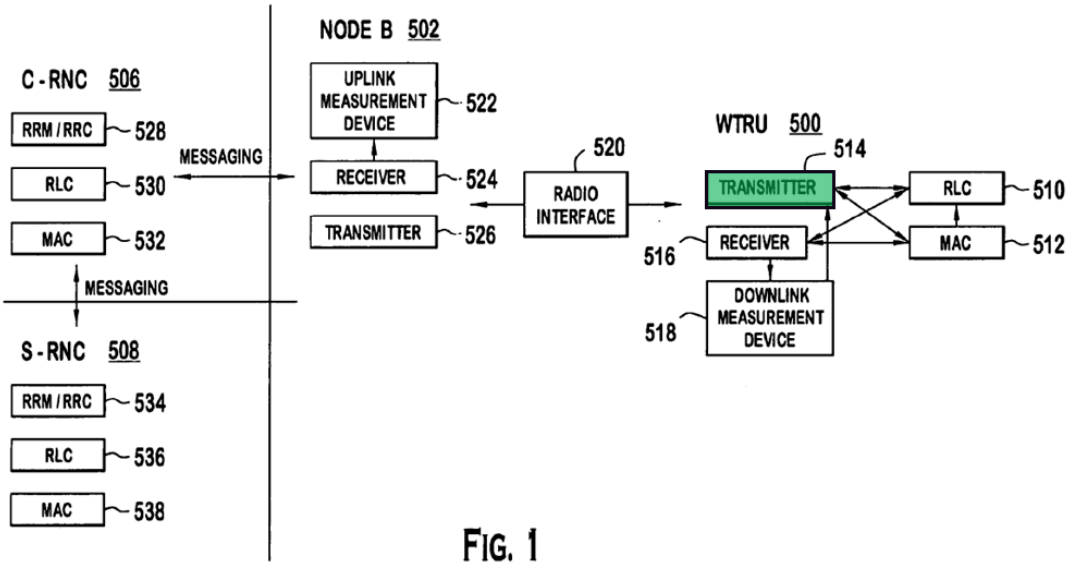


FIG. 1

d. 1[c]: "a processor;"

Zeira discloses or suggests 1[c]. Lo, ¶¶98-99.

It would have been obvious based on the knowledge of a POSITA that Zeira's WTRU includes a processor because the WTRU required some form of controller or processor to perform the signal processing operations as described. Lo, ¶¶98, *see also, id.*, ¶¶59-63. For example, Zeira describes "[i]t is desirable to maintain the WTRU connection on common channels whenever possible, since WTRU power and **processing requirements**[6] are greatly reduced." Zeira, ¶32. Therefore, a POSITA would have found it obvious that such processing requirements relate to operations that are performed by a processor. Lo, ¶98. Furthermore, the knowledge of a POSITA regarding the presence of a processor in a WTRU is corroborated by applicant admitted prior art (AAPA) in the '838 patent that describes a WTRU can be "a cellular telephone, a personal digital assistant (PDA), [or] a computer" ('838pat, 3:15-16), which are known to include a processor. Lo, ¶98.

Even if the Board or Patent Owner are still not convinced, Zeira discloses the processor because its WTRU 500 comprises "a medium access controller (MAC) 512" (orange). Zeira, ¶29 (emphasis added), Fig. 1. A POSITA would have understood that the Zeira's MAC is a "*processor*" because the MAC performs

[6] Unless otherwise noted, all emphasis is added by Petitioner.

computational operations that require a processor implementation. Lo, ¶99. Further, Zeira's MAC is a "*processor*" as described in the '838 patent because it is "used to implement a radio frequency transceiver for use in a wireless transmit receive unit (WTRU)" as described below. '838pat, 10:55-57; Lo, ¶99. For example, Zeira discloses that when the WTRU 500 receives a reconfiguration message, "the WTRU RRC . . . [c]onfigure[s] the MAC layer with [a] new transport channel information (in case of changes in transport channel information) and the new radio bearer mapping information received in the message." Zeira, ¶¶ 421-423, Figs. 1 and 8B.

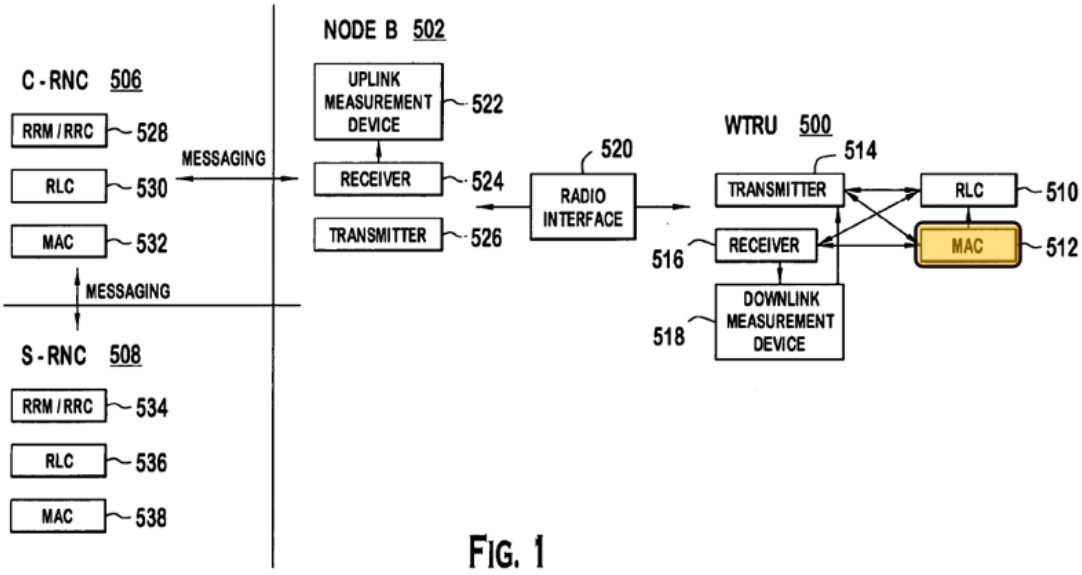


FIG. 1

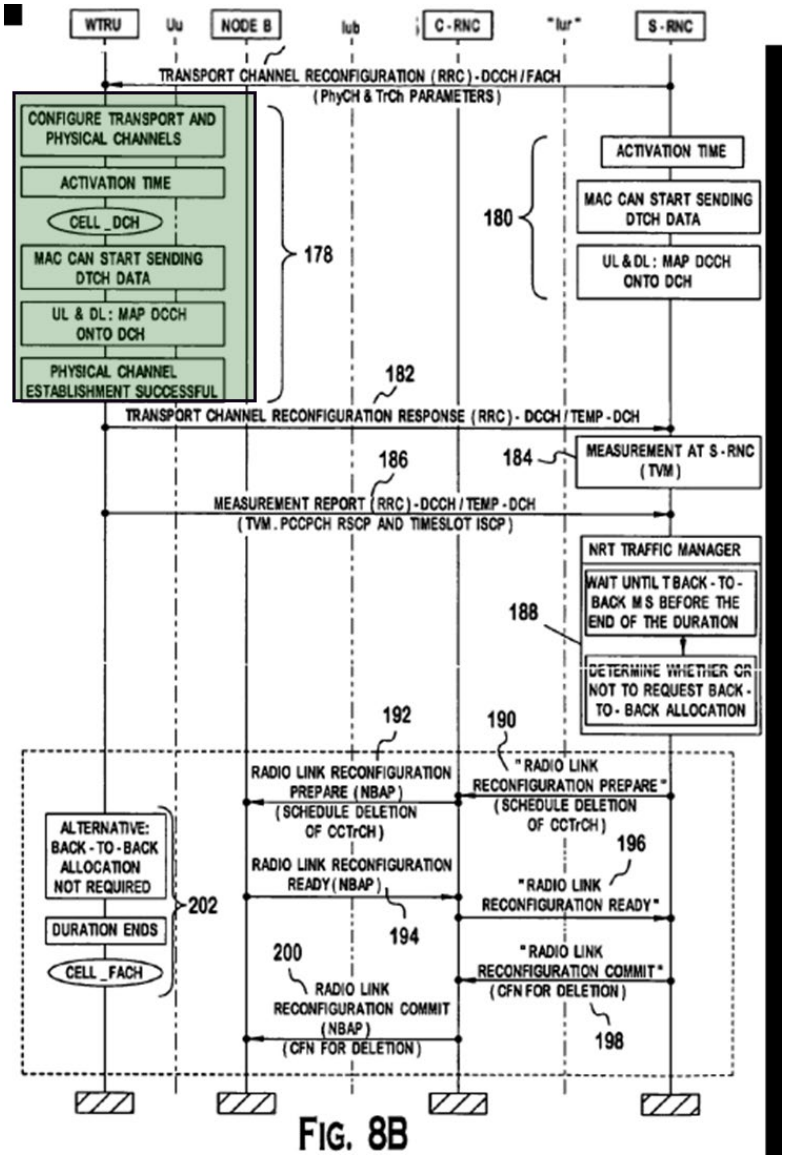


FIG. 8B

A POSITA would have recognized and understood that the function of implementing configuration changes would require a processor. Lo, ¶99, *see also*, *id.*, ¶¶59-63.

e. 1[d]: "wherein the receiver and the processor are configured to receive at least one radio resource control (RRC) message indicating uplink resources for WTRU and medium access control (MAC) timer information,"

Zeira discloses or suggests 1[d]. Lo, ¶¶100-113.

Zeira discloses a process by which a temp-DCH (temporary dedicated channel) is assigned to a WTRU in its system. E.g., Zeira, ¶36 ("the general procedure for a temp-DCH allocation"), Fig. 2, ¶326, Fig. 15 ("procedure to allocate 'Normal' temp-DCH), ¶53 ("The implementation of [temp-DCH allocation] may be similar to th[at] for call admission for real time services") ¶¶14, 107 (Fig. 8 is a messaging diagram for call admission control procedure), Fig. 8; Lo, ¶100.

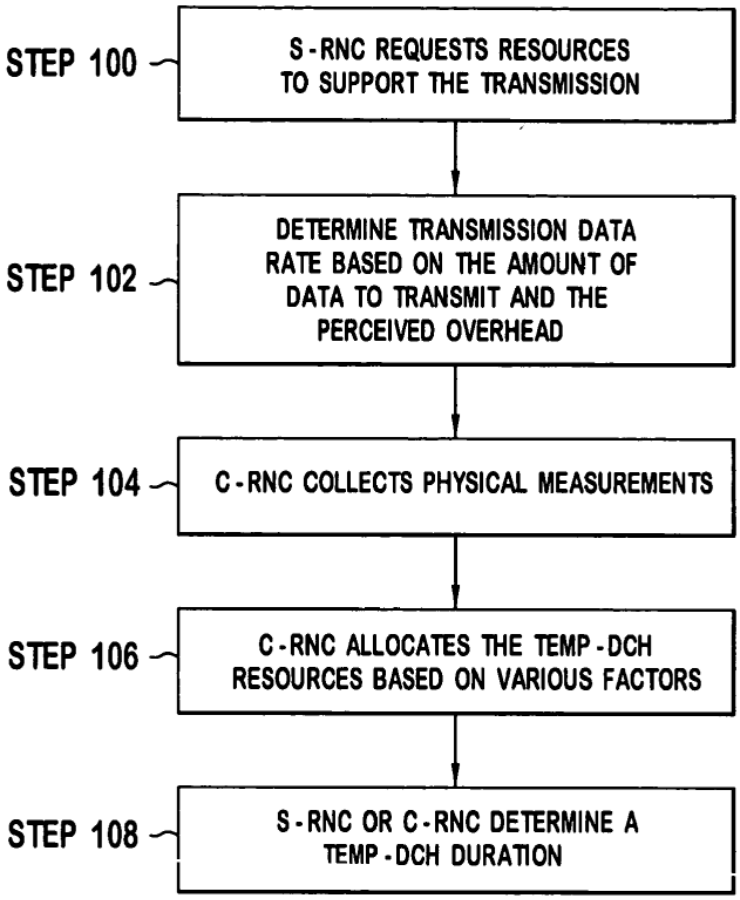


FIG. 2

Zeira, Fig. 2.

At a high level, Zeira discloses that the S-RNC requests resources to support a transmission over a temp-DCH. *Id.*, ¶36, Fig. 2. A transmission data rate is calculated, *id.*, ¶¶36-38, Fig. 2; *see also id.*, ¶¶40-50 (describing procedure for determining data rate), and a duration the temp-DCH is obtained, *id.*, Abstract, ¶6 ("[e]mbodiments of the invention relate to establishing the temp-DCH channel, determining the data rate and duration of the channel."). The C-RNC allocates the temp-DCH resources based on various factors including the data rate, *id.*, ¶¶52, 74

("After resources are granted [by the C-RNC], the S-RNC 508 computes a duration…"), 99, Fig. 2, and the S-RNC calculates the duration and transmits the channel configuration and temp-DCH duration to the WTRU, *id.*, ¶¶74, 401-403.

Radio Resource Control (RRC) Message Indicating Uplink Resources:

According to Zeira, the C-RNC performs resource allocation for the temp-DCH. *Id.*, ¶99, Fig. 2. Zeira describes the procedure for allocating resources, as part of its call admission control procedure, in its Figures 8A-8B. *Id.*, ¶107, Figs. 8A-8B; *see also, id.*, ¶326, Fig. 15. Figure 8A indicates that one of the steps for allocating resources comprises "determin[ing] required codes and their spreading factors" [cyan]. *Id.*, Fig. 8A; *see also, id.*, ¶¶326 ("The procedure to allocate 'normal' temp-DCH is as follows"), 329 ("[d]etermine the required number of codes and their spreading factors"), 338 ("[d]etermine the required number of codes and their spreading factors, 452").

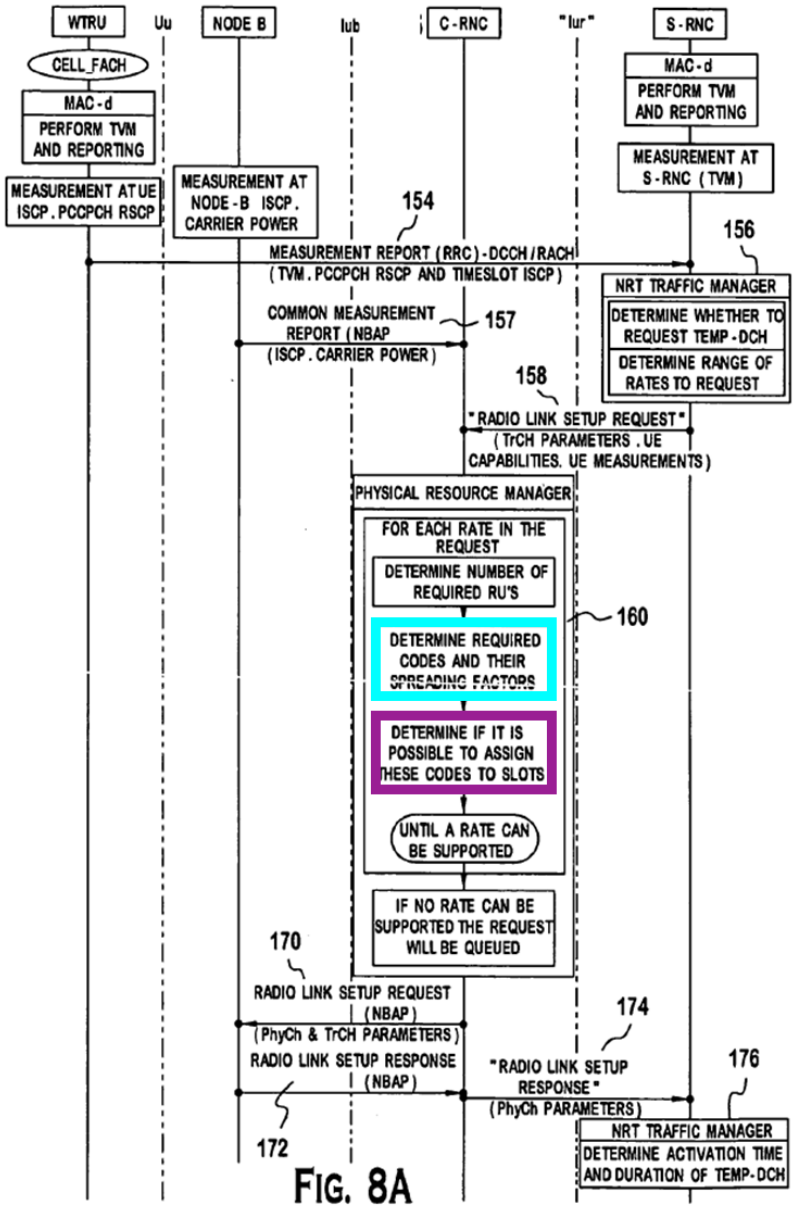


FIG. 8A

Zeira, Fig. 8A.

After the required codes and their spreading factors are determined, the C-RNC determines if it is possible to assign these codes (dark purple). *Id.* If resources are successfully assigned by the C-RNC, it sends a message to the Node-B to "reserve the necessary resources and configure the new radio link." *Id.*, ¶347. If successful,

the Node-B sends a "Radio Link Setup Response" to the C-NRC, which then "informs the S-RNC 508 of the assigned physical resources and the allocated rate…by sending a 'Radio Link Setup Response' (RNSAP)." *Id.*, ¶¶367-368. This message comprises information about the channelization codes assigned to the temp-DCH, which a POSITA would have understood to include at least an indication of the spreading factors that the C-RNC determined and assigned. *Id.*, ¶¶368, 371; Lo, ¶¶102-105. Upon receipt of the RNSAP, the S-RNC determines the duration of the temp-DCH. Zeira, ¶¶384, 393-400 (providing details on how to determine duration).

Next, the S-RNC configures the WTRU by sending either a "Physical Channel Reconfiguration (RRC) message" or a "Transport Channel Reconfiguration (RRC) message." *Id.*, ¶¶401-403. These messages contain details regarding various uplink resources, including the channelization codes for the temp-DCH. Zeira, ¶¶404-420, 411 ("channelization codes"). A POSITA would have understood that because the C-RNC determines the channelization codes and their spreading factors and then communicates that information to the S-RNC, which then sends the information to the WTRU, the spreading factors are also sent in the RRC message to the WTRU. Lo, ¶104. In other words, a POSITA would have understood that the RRC message sent to the WTRU *indicat*[es] *uplink resources* that include "at least an indication of

a spreading code."[7] *Id*.

WTRU Receiving the RRC Message: Zeira discloses that the WTRU receives the reconfiguration message. Zeira, ¶421. A POSITA would have understood and found it obvious that, specifically, the receiver 516 receives the reconfiguration message, and the processor of WTRU processes the received message to implement the reconfiguration based on the message contents. *Id.*, ¶29; Lo, ¶106. Notably, upon receipt, the WTRU "[c]onfigure[s] the MAC layer with the new transport channel information (in the case of changes in transport channel information) and the new radio bearer mapping information received in the message." Zeira, ¶¶421, 423. Because the MAC layer is configured based on information in the RRC message, a POSITA would have understood that the WTRU's processor and/or the medium access controller (*processor*) receives the RRC message. In other words, *the receiver and the processor are configured to receive at least one radio resource control message indicating uplink resources for the WTRU.* Lo, ¶106.

[7] The indication of *uplink resources* as described in Zeira that includes an indication of a spreading code necessarily satisfies a construction for the term "*uplink resources*" that does require indicating the spreading code. Lo, ¶105; *see also* §V.C, *supra*.

Timer Information: Zeira explains that the S-RNC determines the activation time and duration for the temp-DCH, and then notifies the WTRU of its determinations:

(1) "After the S-RNC 508 receives the "Radio Link Setup Response" message, **it determines the activation time and duration of the Temp-DCH**, 176." Zeira, ¶384; see also, *id*., ¶¶393-400 (explaining details of timer duration determination).

(2) "The S-RNC 508 **notifies the WTRU 500 of any changes in transport channel information and the new physical channel configuration, 177**." Zeira, ¶401[8]. The S-RNC notifies the WTRU via an RRC message. *Id.*, ¶¶402-403.

[8] Zeira's ¶401 begins with "For low-rate temp-DCH, the duration is preferably always fixed, T_{st}," but also explains that this duration is a design parameter determined based on various considerations; for example, based on the time needed to receive uplink measurements, processing requests and reconfiguration requests. *Id*., ¶63. Zeira further explains that "[t]he S-RNC 508 notifies the WTRU 500 of any changes in transport channel information and new physical channel configuration, 177." *Id.,* ¶401. At least based on the above description, a POSITA would have understood that RRC messages sent to the WTRU in ¶¶402-403 applied to both low- and normal-data rate temp-DCH scenarios to notify the WTRU of the new channel configurations. Lo, ¶107.

Notably, among the channel information, Zeira's S-RNC notifies the WTRU about the temp-DCH channel duration. Zeira, ¶74 ("S-RNC 508 computes a duration (transmission period time)…[i]f duration is computed, ***this information may be transmitted to the WTRU 500***."). A POSITA would have found it obvious that the S-RNC communicates the duration information to the WTRU via an RRC message it sends because (1) it was well known to a POSITA that RRC messages were used for sending information related to configuration of various parameters to the WTRU (Lo, ¶108, *see also*, *id.*, ¶¶76-80), and (2) Figure 8B shows an RRC message that is sent from the S-RNC to the WTRU after the S-RNC computes the duration. Lo, ¶108. This is illustrated by operation 177 (green) in Zeira, Figure 8A:

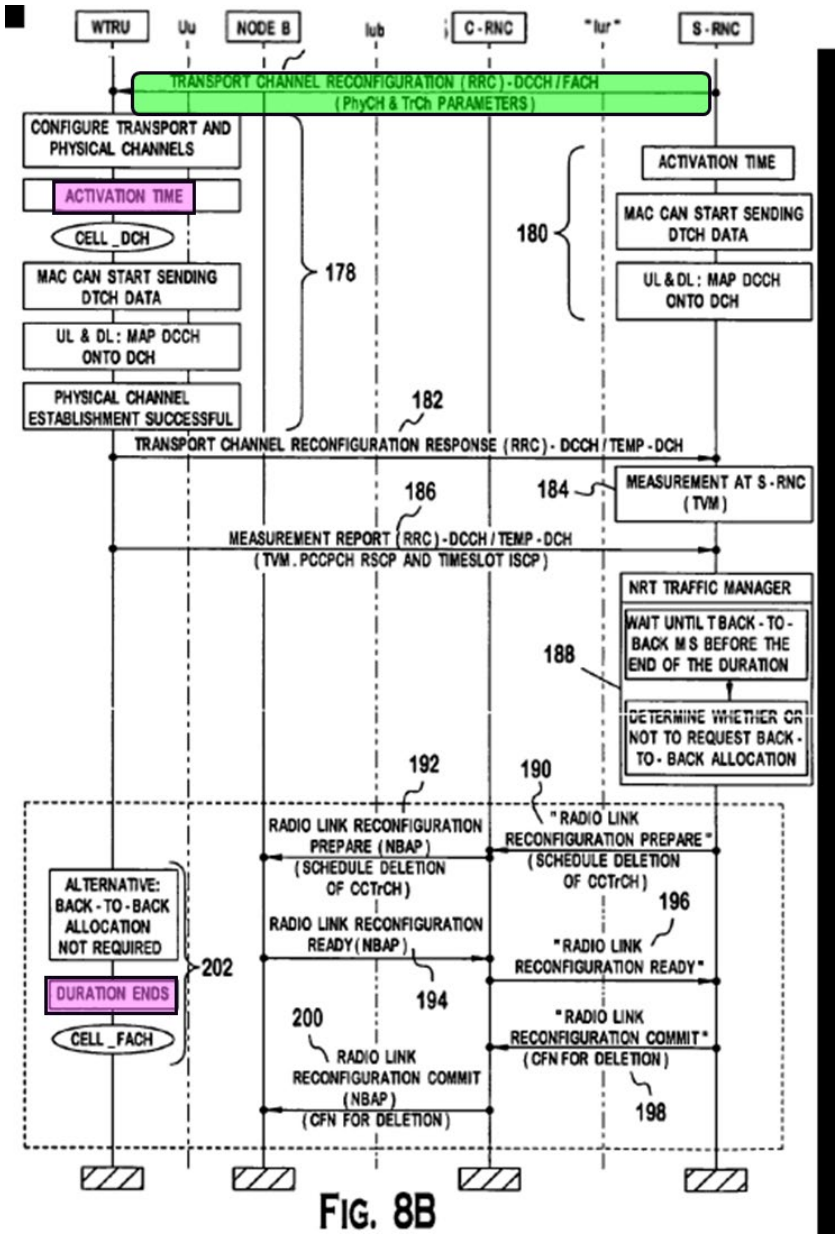


FIG. 8B

After receipt of the RRC message 177, which includes an indication of the uplink resources and the duration computed by the S-RNC as discussed above, the transport and physical channels are configured at the WTRU, and after the temp-

DCH is activated the WTRU begins tracking its duration (pink).[9] Zeira, ¶¶421-423, Fig 8B; Lo, ¶109.

MAC Timer: A POSITA would have further understood and found it obvious that the duration sent by the S-RNC to the WTRU indicates *MAC timer* information because the WTRU MAC layer is configured with this information. Zeira, ¶423; Lo, ¶¶110-113. For example, Zeira describes "…the C-RNC 506 or S-RNC 508 can **calculate the time that MAC-d will need to transmit the current buffered data** and set the duration accordingly." Zeira, ¶76.

Further, Zeira discloses that the duration of the temp-DCH is calculated as a "multiple of the longest TTI length in the TFCS of the CCTrCH." Zeira, ¶79, *see*

[9] To the extent PO may argue that Figure 8's operation 177 does not explicitly state transmission of the timer duration, this argument fails because Zeira unequivocally states that the duration information "may be transmitted to the WTRU" (Zeira, ¶74) and Applicant during the prosecution of the '838 patent, amended Element 1[d] to intentionally change the original recitation of receiving "a radio resource control (RRC) message" to "at least one" RRC message. *See* §V.B, *supra*. Thus, although it would have been obvious to transmit the timing information with the same RRC message, the limitation is satisfied even if the timer information is communicated with another RRC message. Lo, ¶109.

also, ¶¶77-78, 397. A POSITA would have understood that TTIs (transmission time intervals) are how the MAC in 3GPP controls access the physical transmission medium. Lo, ¶111, *see also*, *id.*, ¶¶81-87. Because temp-DCH duration is calculated as a multiple of TTIs, it would have been obvious that the duration communicated to and tracked by the WTRU is implemented as a *MAC timer*. *Id.*, ¶111.

Finally, regardless of the above disclosure in Zeira, it would have been obvious to implement the temp-DCH duration as a *MAC timer* at the WTRU because the MAC fundamentally controls access to the transmission medium. *Id.*, ¶112. The MAC layer would thus be the most obvious place for controlling the duration of the temp-DCH – i.e., the channel through which the WTRU accesses the transmission medium. *Id.*, ¶112.

A POSITA would have been guided by the teachings of Zeira and found it obvious that the duration information pertained to or indicated MAC timer information. *Id*.

Accordingly, Zeira discloses or suggests that the WTRU receiver and processor, e.g., medium access controller (*wherein the receiver and the processor*) receive an RRC message from the S-RNC (*are configured to receive at least one radio resource control (RRC) message*) that comprises channel information for the temp-DCH, including at least an indication of the spreading factors (*indicating uplink resources for WTRU*) and the duration for the temp-DCH, which is configured

within the MAC layer (*and medium access control (MAC) timer information*). *Id.*, ¶113.

f. 1[e]: "the transmitter and the processor are configured to transmit uplink data based on the indicated uplink resources,"

Zeira discloses or suggests 1[e]. Lo, ¶¶114-119.

As explained in 1[b] in §VI.A.2.c and shown in Figure 1, Zeira discloses that the WTRU 500 has a transmitter 514 "for sending…transmissions over the radio interface 520." Zeira, ¶29. Zeira makes clear that its procedure for establishing a temp-DCH (and subsequently transmitting data via the temp-DCH) applies to both uplink and downlink transmissions because a temp-DCH is established "[a]fter sufficient data has been collected for either **an uplink** or downlink transmission." Zeira, ¶36. Indeed, subsequent discussion of transmissions does not favor uplink vs. downlink, so a POSITA would have understood that Zeira's disclosures apply equally to both. Lo, ¶114; Zeira, ¶¶50 ("it is important to define a guaranteed bit rate for temp-DCH allocations in both uplink and downlink directions"), 76, 84-86. This understanding is further supported by Zeira's Figure 8B, which describes that the WTRU performs operations that include "CONFIGURE TRANSPORT AND PHYSICAL CHANNELS" and "MAC CAN START SENDING DTCH DATA." Zeira, Fig. 8B (annotated below).

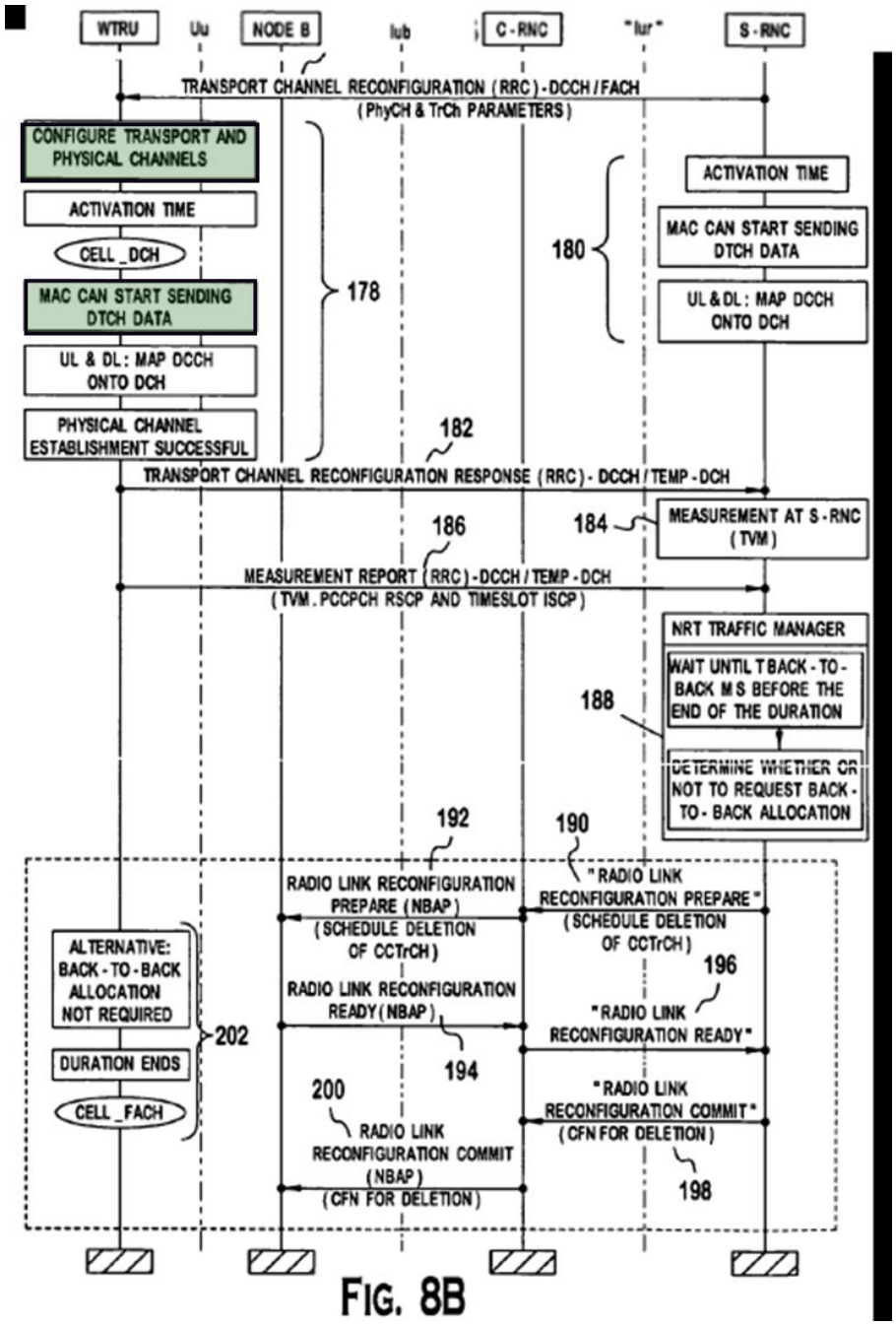


FIG. 8B

A POSITA would have found it obvious that the configuration of channels in the first highlighted operation would be based on the resources that were indicated in the received RRC message (*see* element 1[d], §VI.A.2.e; Lo, ¶115), which is followed by the use of DTCH (dedicated traffic channel) for uplink transmission of

user data. *Id*. Also, given that the highlighted operations are identified at the WTRU, it would have been obvious to a POSITA that the WTRU is configured to transmit data in the uplink.

Additionally, or alternatively, Zeira describes WTRU transmitting uplink data including measurement reports over Temp_DCH to the S-RNC as described in, for example, in operation 186 of Figure 8 (annotated below).

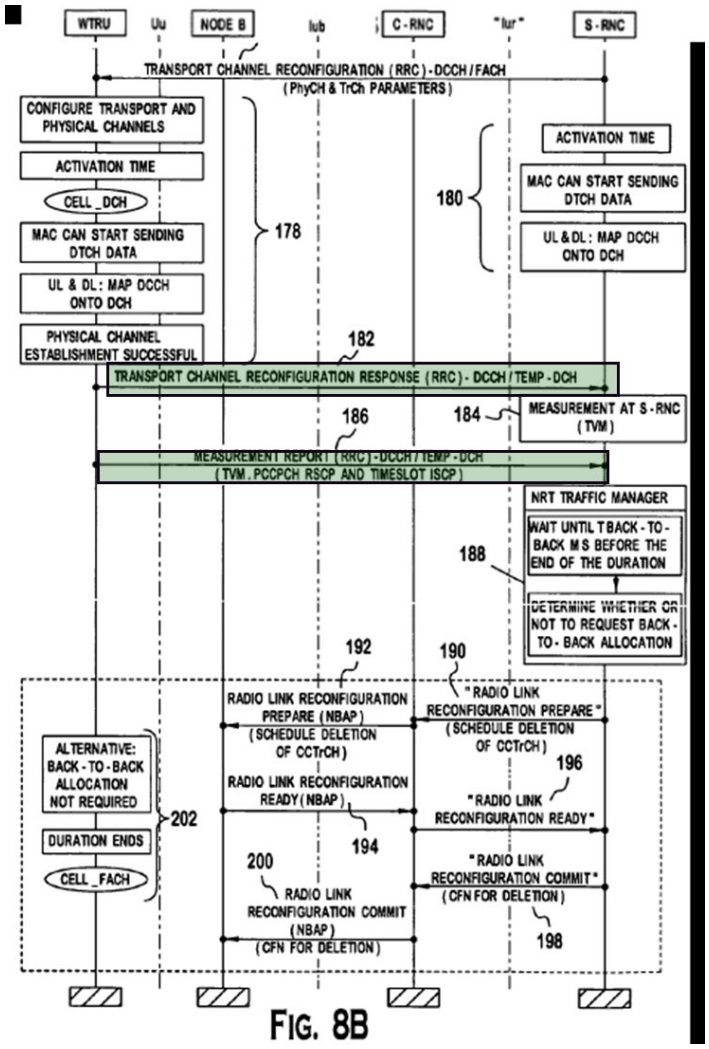


FIG. 8B

Notably, Zeira describes upon "receiving [a] reconfiguration message, the

WTRU RRC…[c]onfigure[s] the physical layer with the physical channel information and [a] new transport channel information [is] received in the message." Zeira, ¶¶421-422. The WTRU's processor then "[c]onfigure[s] the MAC layer with the new transport channel information," and "[a]fter receiving a confirmation from the physical layer that the DPCH was successfully established…[s]end[s] a '***Complete' message to the S-RNC 508 over the DCCH/Temp-DCH***, 182." Zeira, ¶¶423-425, Fig. 8B. Traffic Volume Measurements are "collected at the S-RNC 508, 188 and ***measurement reports are sent from the WTRU 500 to the SRNC 508, 186***." Zeira, ¶426, Fig. 8B.

Given that Figure 8B shows transmissions 182, 186 that originate from the WTRU, a POSITA would have found it obvious that such transmissions would be carried out by the processor and transmitter that resided in Zeira's WTRU that were responsible for processing and transmission of data. Zeira, ¶29; Lo, ¶¶116-118.

In other words, the WTRU *processor* via the *transmitter* transmits the DTCH data, a "Complete" message and/or "Measurement Reports" via the newly established temp-DCH (*are configured to transmit uplink data based on the indicated uplink resources)*. Lo, ¶119.

g. 1[f]: "the processor is configured to deactivate the indicated uplink resources in response to a MAC timer expiring, and"

Zeira discloses or suggests 1[f]. Lo, ¶¶120-121.

Zeira discloses that a "temp-DCH channel is a channel that is assigned to a user having a set duration" and "[a]fter the duration expires, the channel is automatically released by both the user and the network." Zeira, ¶6, *see also id.,* ¶34. For instance, before "the end of the temp-DCH duration, the S-RNC 508 decides if an extension of the duration will be required, 188." Zeira, ¶428. If no extension is requested by the WTRU 500, or if the duration ends, the WTRU's processor "releases the temporary dedicated physical channels." Zeira, ¶440, Fig, 8B. As explained in connection with Element 1[d], §VI.A.2.e, the duration information had been "transmitted to the WTRU 500," Zeira, ¶74, enabling the WTRU 500 to activate and monitor a MAC timer and to release (*deactivate*) the temporary dedicated uplink resources "at the end of the duration," Zeira, ¶440; *see also* annotated Fig. 8B below, illustrating activation time and duration ends operations at the WTRU. Lo, ¶120.

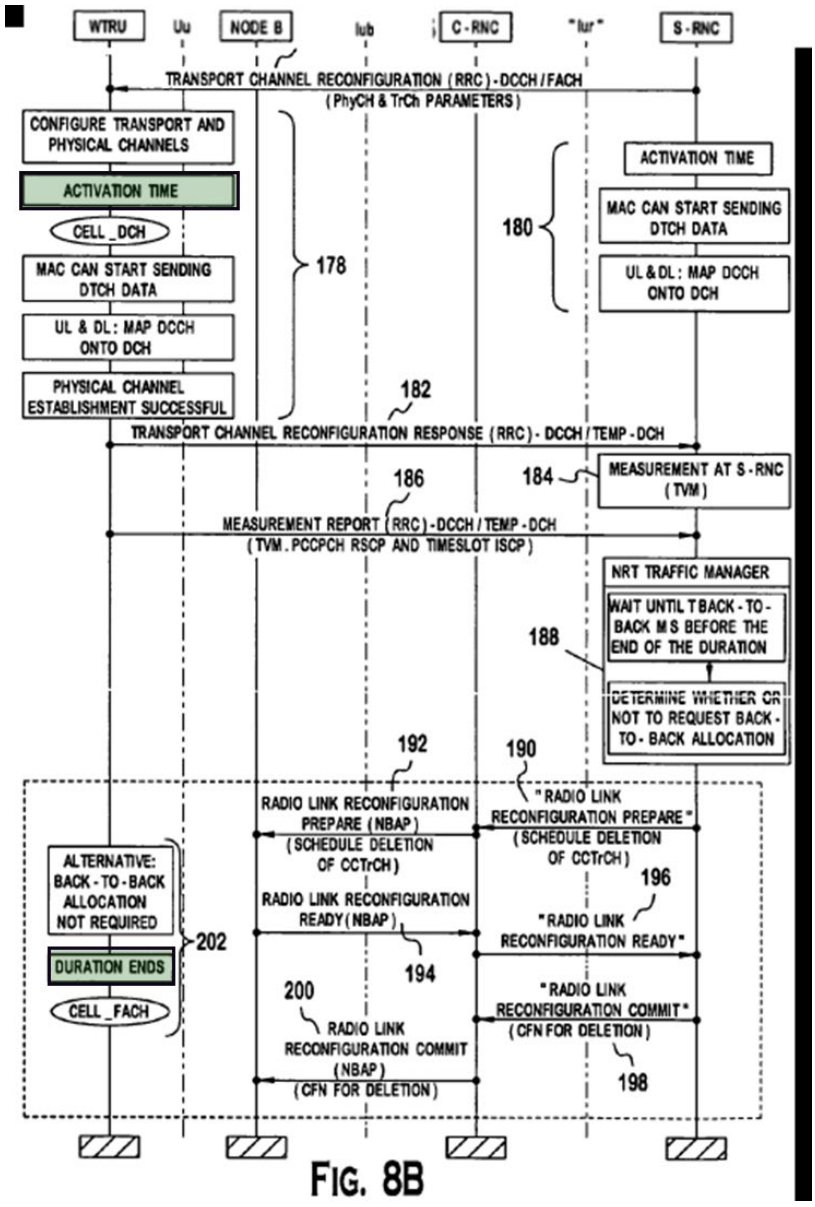


FIG. 8B

Moreover, a POSITA would have found it obvious that the timer implemented at Zeira's WTRU would be a MAC timer because, as explained in connection with Element 1[d], §VI.A.2.e, the timer information provided to the WTRU pertained to MAC timer information. Lo, ¶121.

h. 1[g]: "the MAC timer is configured based on the MAC timer information indicated by the [at least one][10] received RRC message."

Zeira discloses or suggests 1[g]. Lo, ¶¶122-124; *see also* Element 1[d] in §VI.A.2.e above explaining that it would have been obvious that at least one RRC message would include the MAC timer information. Element 1[g] appears to additionally require that the MAC timer is *configured* based on the received MAC timer information.

As explained in §VI.A.2.e, Zeira discloses that at least one RRC message is sent to the WTRU's MAC where it is used to "[c]onfigure the MAC layer with the new transport channel information…and the new radio bearer mapping information received in the message." Zeira, ¶423. As explained in §VI.A.2.e, a POSITA would have found it obvious that the duration for Zeira's temp-DCH is provided as a MAC timer via the RRC message. *Id*.; Lo, ¶123. Furthermore, as also explained

[10] The "*received message*" in 1[g] lacks proper antecedent basis. It is assumed that Element 1[g] recites "… indicated by the *at least one* received RRC message," which finds antecedent basis in Element 1[d]. As explained in Element 1[d], ether scenario would have been obvious to a POSITA: whether the timer information and configuration information were received in a single RRC message or in two RRC messages.

in connection with Elements 1[d] and 1[e] in §§VI.A.2.e, VI.A.2.f, the timer information is implemented at the WTRU because Figure 8B illustrates the activation and deactivation of the timer at the WTRU. Therefore, it would have been obvious to a POSITA that Zeira describes configuring the WTRU's MAC timer based on the MAC timer information indicated by the [at least one] received RRC message. Lo, ¶123.

In other words, the duration for the temp-DCH (*the MAC timer*) is configured by the MAC layer based on the duration information received in the RRC message (*is configured based on the MAC timer information indicated by the received RRC message*). Lo, ¶124.

3. Claim 2: "The WTRU of claim 1 wherein the receiver and the processor are configured to receive an uplink grant associated with the indicated uplink resources and the transmitter and the processor are configured to transmit using the indicated uplink resources based on the grant."

Zaira discloses or suggests the limitations of claim 2. Lo, ¶¶125-128.

As explained in element 1[e], §VI.A.2.f, Zeira's transmitter and the processor are configured to transmit uplink data based on the indicated uplink resources. It would have been obvious to a POSITA that based on normal procedures of cellular wireless systems such uplink transmissions would have been made in response to receiving an uplink grant for making such uplink transmissions. Lo, ¶125.

Further, as explained in §VI.A.2.e, Zeira's WTRU *receiver* and *processor* are configured to receive at least one RRC message comprising the uplink resources granted by the C-RNC and MAC timer information. A POSITA would have found it obvious for the RRC message to be, or include, an *uplink grant associated with the indicated uplink resources* because after the WTRU's MAC layer is configured, the WTRU in fact sends uplink data to the S-RNC, including a "Complete" message to the S-RNC over the newly established temp-DCH, and subsequent uplink data (i.e., at least the measurement report) is transmitted in the uplink. Zeira, ¶¶424-425; Lo, ¶126.

Additionally, or alternatively, Zeira describes its WTRU receiving an uplink grant and transmitting based on the uplink grant when discussing back-to-back allocations. Notably, Zeira describes granting additional time to continue the use of Temp-DCH. Zeira, ¶428 ("The extension of the duration is a new allocation at the UE side: the duration of the previously allocated temp-DCH will expire, and a new temp-DCH will be configured. This procedure is called a 'back-to-back allocation'") *see also*, *id*., ¶87. In case of back-to-back allocations, the new configurations are sent to WTRU. *Id*., ¶¶513-517; *see also id*., ¶¶85-91. Therefore, a POSITA would have understood that Zeira teaches or suggests providing additional uplink grants for transmission of additional information using the indicated uplink resources for back-to-back allocations. Lo, ¶127. In the back-

to-back allocation scenario, the mapping to Zeira to claim 1 is augmented to include the RRC messaging associated with the back-to-back configuration information as part of the "at least one" RRC message. *Id*.

Therefore, Zeira discloses or renders obvious the WTRU receiving an uplink grant or permission (e.g., via the RRC message[11]) to use the Temp-DCH for the particular duration (*configured to receive an uplink grant associated with the indicated uplink resources*), and to, e.g., send uplink data (*the transmitter and the processor are configured to transmit using the indicated uplink resources based on the grant*."). *Id.*, ¶128.

4. Claim 3: "The WTRU of claim 2 wherein based on the receipt of the uplink grant, the WTRU does not deactivate the indicated uplink resources."

Zeira discloses or suggests the additional limitations of claim 3. Lo, ¶¶129-130.

Zeira discloses that the RRC message containing the *uplink grant* (discussed in connection with claims 1[d] and 2 in §§VI.A.3; VI.A.2.e) "is sent on the DCCH/FACH." Zeira, ¶404. The WTRU receives the RRC message and

[11] Claim 2 does not require receiving an uplink grant via a separate message, and merely recites "receive an uplink grant associated with the indicated uplink resources." Lo, ¶128, n.8.

configures the MAC layer. Zeira, ¶¶421-423. "After [the WTRU receives] confirmation from the physical layer that the DPCH was successfully established…[it] send[s] a 'Complete' message to the S-RNC 508 over the DCCH/Temp-DCH, 182." Zeira, ¶¶424-425. Because the WTRU sends a "Complete" message over the DCCH/Temp-DCH, i.e., the channel established by the *uplink grant*, a POSITA would have understood that Zeira teaches *not deactivat[ing] the indicated uplink resources*. Lo, ¶129.

Additionally or alternatively, as explained in connection with claim 2, §VI.A.3, Zeira describes granting back-to-back allocations, which allows additional data to be sent over the temp-DCH. Zeira, ¶¶513-517; see also, *id*. Abstract, ¶¶85-91, Figs. 5-6, ¶100 ("For the WTRU 500, the back-to-back allocation is a new temp-DCH allocation with an activation time equal to the end of the duration of the previous temp-DCH."). Accordingly, upon an indication that a back-to-back allocation is granted, it would have been obvious to a POSITA that uplink resources would not be deactivated in order to allow transmission of additional uplink data by WTRU. Lo, ¶130.

5. Claim 4: "The WTRU of claim 1 wherein the receiver and the processor are configured to receive a deactivation message and the processor is configured to deactivate the uplink resources based on the received deactivation message."

Zeira discloses or suggests the additional limitations of claim 4. Lo, ¶¶131-

134.

Zeira discloses an embodiment that "relates to adding a start/stop function to the medium access controller which can be used in conjunction with temp-DCH as well as other applications." Zeira, ¶6. Therefore, Zeira already contemplated combining the start/stop function with the temp-DCH function and a POSITA would have been guided by the teachings of Zeira to additionally implement the start/stop functionality. Lo, ¶131. Zeira describes the start/stop functionality as beneficial because during reconfiguration, the channel may become unstable and therefore it "may be desirable that the RRC 472 configures the lower layer to stop the data transmission over the air." Zeira, ¶558. In connection with Figure 20, Zeira explains that its WTRU 500 architecture includes a start/stop function "performed by a start/stop device 476 (tan), in the MAC layer 474 (gray) [that] allows the RRC 472 (gold) in the WTRU 500 and RNC 504 to request the MAC 474 to start or stop requesting data for specific logical channel in a specific radio frame." Zeira, ¶561; *see also id*., ¶564.

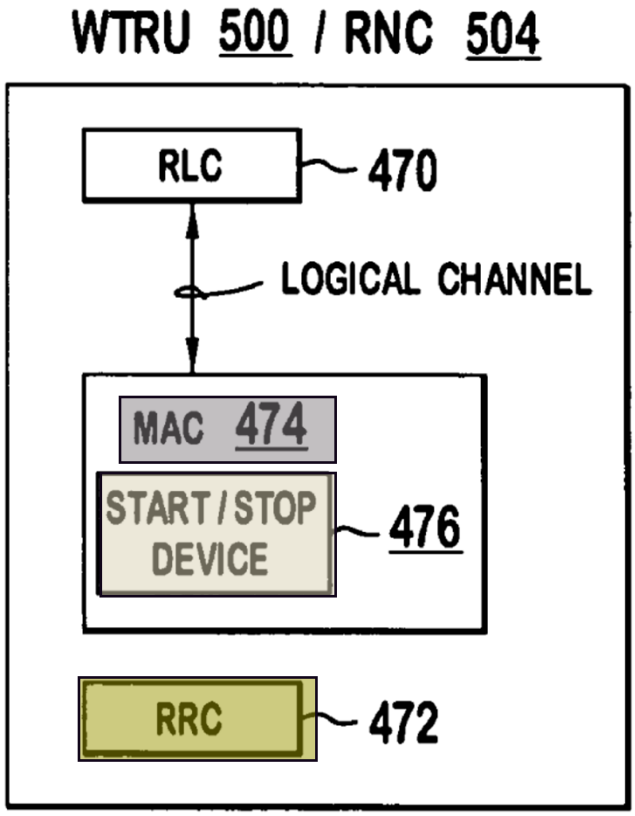


FIG. 20

Zeira further discloses that when the MAC 474 is instructed to "stop the transmission of a logical channel in a specific radio frame, the channel becomes 'inactive' at that radio frame." Zeira, ¶561; *see also* Zeira, ¶562 ("When a stop command is received, the channel becomes inactive in the specified radio frame.").

A POSTA would have understood and found it obvious that Zeira describes using these logical channels for "scheduling of data transmission in the uplink" and further states that "the RLC 470 builds and delivers PDUs (Protocol Data Units) to the MAC 474, using the logical channels." Zeira, ¶554; Lo, ¶¶132-133.

Moreover, a POSITA would have understood and found it obvious that when the start/stop functionality of Zeira is implemented, the reconfiguration message sent by the RNC (e.g., RRC message in Figure 8B) would result in the "stop" command being effectuated. Lo, ¶134. Notably, Zeira explains that "during a reconfiguration, even a synchronized reconfiguration, there is a period of time where the channel is unstable. Because of that, there are situations where it may be desirable that the RRC 472 configures the lower layer to stop the data transmission." Zeira, ¶558. Therefore, a POSITA would have found it obvious that the reconfiguration message included and/or operated as a "deactivation message" that would be received by the WTRU's receiver and processor as claim 4 recites, and would result in the channel becoming "inactive." *Id*., ¶¶561-562; Lo, ¶134.

6. Claim 5: "The WTRU of claim 1 wherein the MAC timer is based on a number of frames."

Zeira discloses or suggests the additional limitations of claim 5. Lo, ¶¶135-137.

As explained in connection with Element 1[d] in §VI.A.2.e, the S-RNC sends an RRC message to the WTRU indicating the duration of the temp-DCH. The RRC message also comprises a continuous frame allocation. Zeira, ¶¶404, 412.The MAC layer is configured with this information, such that a POSITA would understand it to be a *MAC timer*. §VI.A.2.e; Zeira, ¶¶404, 412, 423; Lo,

¶135.

As discussed in connection with claim 2 in §VI.A.3, Zeira additionally explains that its consideration for determining back-to-back allocation takes into account the frame numbers or CFNs (connection frame numbers) for its determination of the activation duration:

> After receiving the response from the C-RNC 506, if the allocation is successful, the S-RNC NRT-TM ***calculates the activation time and duration***. ***If the CFN for the activation time is greater than the CFN where the duration of the previous Temp-DCH ends, then back-to-back allocation cannot be supported***… [in contrast] If the activation time is valid, the UTRAN RRC configures the MAC layer with the new transport channel information (in case of changes in transport channel information). The sending of the new configuration to the WTRU 500 is the same as previously described, except that the messages is sent on the DCCH/Temp-DCH.

Zeira, ¶¶513-514.

Accordingly, based at least on Zeira's description in the above paragraphs, a POSITA would have found it obvious that the timer duration calculations in Zeira would be based on the number of frames in order to compare the activation time to the CFN where the duration of the previous temp-DCH ends. Lo, ¶137. In the back-to-back allocation scenario, the mapping of Zeira to claim 1 is augmented to include the RRC messaging associated with the back-to-back configuration

information as part of the "at least one" RRC message. *Id*.

7. Independent Claim 6

a. 6[pre]: "A method comprising:

To the extent limiting, Zeira discloses or suggests a *method* for establishing a temporary dedicated channel. E.g., Zeira, claims 1-8; Lo, ¶138.

b. 6[a]: "receiving, by a wireless transmit/receive unit (WTRU), at least one radio resource control (RRC) message indicating uplink resources for WTRU and medium access control (MAC) timer information;"

Zeira discloses or suggests 6[a] for the reasons discussed in §§VI.A.2.a (*WTRU)*, VI.A.2.e (*receiving…at least one radio resource control (RRC) message indicating uplink resources for the WTRU and medium access control (MAC) timer information*). Lo, ¶139.

c. 6[b]: "transmitting, by the WTRU, uplink data based on the indicated uplink resources; and"

Zeira discloses or suggests 6[b] for the reasons discussed in connection with Element 1[e]in §VI.A.2.f. Lo, ¶140.

d. 6[c]: "deactivating, by the WTRU, the indicated uplink resources in response to a MAC timer expiring, wherein the MAC timer is configured based on the MAC timer information indicated by the received RRC message."

Zeira discloses or suggests 6[c] for the reasons discussed in connection with Element 1[f] and 1[g] in §§VI.A.2.g and VI.A.2.h. Lo, ¶141.

8. Claim 7: "The method of claim 6 further comprising receiving, by the WTRU, an uplink grant associated with the indicated uplink resources and transmitting, by the WTRU, using the indicated uplink resources based on the grant."

Zeira discloses or suggests claim 7 for the reasons discussed in connection with claim 2 in §VI.A.3. Lo, ¶142.

9. Claim 8: "The method of claim 7 wherein based on the receipt of the uplink grant, the WTRU does not deactivate the indicated uplink resources."

Zeira discloses or suggests claim 8 for the reasons discussed in connection with claim 3 in §VI.A.4. Lo, ¶143.

10. Claim 9: "The method of claim 7 further comprising receiving, by the WTRU, a deactivation message and deactivating, by the WTRU, the uplink resources based on the received deactivation message."

Zeira discloses or suggests claim 9 for the reasons discussed in connection with claim 4 in §VI.A.5. Lo, ¶144.

11. Claim 10: "The method of claim 7 wherein the MAC timer is based on a number of frames."

Zeira discloses or suggests claim 10 for the reasons discussed in connection with claim 5 in §VI.A.6. Lo, ¶145.

B. Ground 2: Claims 1-10 are Obvious Over Zeira and Yi

As explained in Ground 1, it would have been obvious that Zeira's WTRU comprises a *processor*, §VI.A.2.d, that the time duration information sent to

Zeira's WTRU is *MAC timer information*, §VI.A.2.e, and that a *MAC timer is configured based on the MAC timer information*, §VI.A.2.h. To the extent that PO argues, or the Board finds, that Zeira alone does not disclose or suggest those specific features of Elements 1[c], 1[d], or 1[g] (and the corresponding limitations of claim 6), they would have been obvious based on Zeira and in view of Yi's teachings regarding those features, as further explained below. Lo, ¶146.

1. Yi

Yi, titled "Apparatus and Method of Releasing a Point-to-Multipoint Radio Bearer" generally teaches two ways in which a radio bearer (RB) between a UTRAN comprising radio network subsystems such as a Node-B, and user equipment (UE), can be terminated. EX1006 ("Yi"), ¶4. First, the RB can be explicitly released via explicit instruction to do so from the network to the UE. *Id*., Abstract, ¶58. Second, an implicit release mechanism "allows the mobile terminal itself to release the RB without receiving any explicit instructions from the network." *Id.*, Abstract.

Yi discusses its teachings in the context of a multimedia broadcast/multicast system (MBMS), which is a downlink transmission service. *Id.*, ¶15. Relevant here, Yi teaches that its "UTRAN uses a radio bearer (RB) to provide a MBMS bearer service to a terminal," *Id.*, ¶18, and that the RB comprises a dedicated channel for transport, *id.* Specifically, "[i]f a point-to-point radio bearer is to be set, the UTRAN allocates a dedicated logical channel to each terminal (UE) and sends the data of the

corresponding service." *Id.*, ¶25. This data is sent via an RRC message. *Id.*, ¶¶19-20.

In order to implicitly release RB resource, Yi teaches that timer can be operated located at the second layer of the radio protocol, such as at a MAC entity. *Id.*, ¶39. When the UE receives a data unit, it triggers the timer, and the UE releases the RB if another data unit is not received by the time the timer expires. *Id.*, ¶37; *see also*, Lo, ¶147-149.

2. Motivation to Combine

As noted above, and discussed further in connection with specific claim limitations, Yi's teachings are used in this Petition to corroborate and confirm the POSITA's understanding and obviousness conclusion regarding two items: (1) inclusion of a processor in a WTRU, (2) implementation of a timer in the MAC layer.

More specifically, to the extent Zeira does not explicitly describe a *processor*, Yi explains that its mobile terminal includes a processor. A POSITA would have been guided by the teachings of Yi and found it obvious to include a processor in Zeira's WTRU because the WTRU's processor would perform various processing operations on the data that the WTRU generated before transmitting the data to the RNC; the processor would also be needed to process the information, such as configuration messages, the WTRU received over the air

interface. Lo, ¶¶150-151.

Furthermore, to the extent Zeira does not alone disclose or suggest that the duration information sent from Zeira's S-RNC to the WTRU is *MAC timer information* and a *MAC timer is configured based on the MAC timer* information, a POSITA would found the MAC layer implementation obvious based on Yi's teachings that the timer can be implemented in the L2 layer, including at the MAC layer. Yi, ¶39; Lo, ¶152. Implementation at the MAC layer would have been no more than use of a known technique (using temp-DCH duration information in the MAC layer of a WTRU, as taught by Yi). *Id.*, ¶152.

Moreover, a POSITA would have had a reasonable expectation of success in applying Yi's teachings to Zeira's temp-DCH implementation. *Id.*, ¶153. Zeira already describes sending activation time and duration information to the WTRU, which implements a timer functionality based on the timer information. Zeira, ¶¶384, 423. Zeira further explains that its WTRU configures the MAC layer based on the received RRC messages, *id*., ¶427, and describes implementing a MAC start/stop functionality, *id*., ¶¶554-555. Given that Zeira already describes configuring the MAC layer based on information received at the WTRU and implementing stop/stop transmission control at the MAC layer, a POSITA would have found it straight-forward, and well within its skills, to implement Zeira's timer at the MAC layer, in view of Yi's explicit teachings, Yi, ¶39, with a

reasonable expectation of success. Lo, ¶153.

3. Independent Claim 1

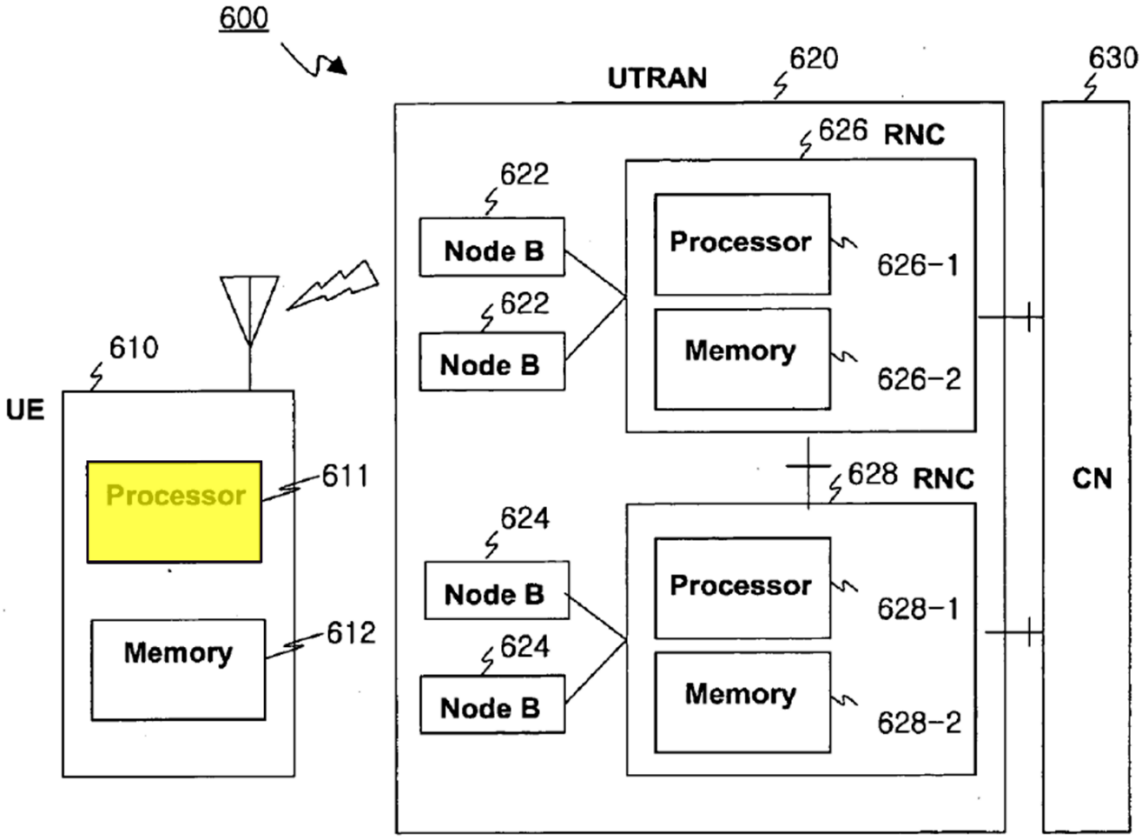
a. 1[pre]-1[b]

Zeira discloses or suggests 1[pre]-1[b] for the reasons discussed in §§VI.A.2.a-VI.A.2.c, respectively. Lo, ¶154.

b. 1[c]: "a processor;"

To the extent that the PO argues, or the Board believes, that Zeira does not alone disclose or suggest a processor in its WTRU, Zeira and Yi disclose *a processor*. Lo, ¶¶155-156. A POSITA would have found it obvious to include a processor in Zeira's WTRU based on Yi's explicit teachings that a WTRU comprises a processor (yellow). See Yi, Figure 6 (annotated below) and ¶72 ("mobile terminal…comprising…a processor connected with the antenna and the memory, the processor executing software codes for, establishing [a temp-DCH]."); Lo, ¶155.

FIG. 6



A POSITA would have found it obvious to include a processor in Zeira's WTRU because it would have enabled the WTRU to process the signals that the WTRU received, to generate and process data the WTRU generated (such as measurement reports) and to provide the processed information to WTRU's transmitter for transmission over the air. *Id*.

c. 1[d]: "wherein the receiver and the processor are configured to receive at least one radio resource control (RRC) message indicating uplink resources for WTRU and medium access control (MAC) timer information,"

To the extent that PO argues, or the Board finds, that Zeira alone does not

describe 1[d]'s "*MAC timer*" information, the combination of Zeira and Yi discloses or suggests this feature of 1[d]. Lo, ¶¶157-158.

As explained in element 1[d] in §VI.A.2.e, Zeira discloses that the WTRU receives an RRC message that contains the duration information for the temp-DCH. A POSITA would have found it obvious, based on the explicit teachings of Yi, to implement the timer at the MAC layer, and was thus a *MAC timer*. Lo, ¶158; Yi, ¶39 ("Preferably, a particular entity provided in the mobile terminal can operate a timer for the data unit of a particular MBMS service. This entity can be located in the second layer (L2) of the radio protocol, and ***may be a MAC entity***, a RLC entity, or a PDCP entity."). Notably, Yi makes it clear, and a POSITA would have understood, that implementation of the timer in the MAC layer would have been one of a limited number of entities for implementing a timer, and would have been no more than use of a known technique already suggested by Zeira, and made explicit in Yi. Lo, ¶158.

d. 1[e]-1[f]

Zeira discloses or suggests 1[e]-1[f] for the reasons discussed in §§VI.A.2.f-VI.A.2.g, respectively. Lo, ¶159.

e. 1[g]: "the MAC timer is configured based on the MAC timer information indicated by the [at least one] received RRC message."

To the extent that PO argues, or the Board finds, that Zeira alone does not

disclose or suggest 1[g]'s *MAC timer*, the combination of Zeira and Yi discloses or suggests 1[g] for the reasons discussed in §§VI.B.3.c (*MAC timer information*) and VI.A.2.h (remaining elements of 1[g]). Lo, ¶160.

4. Claim 2-10.

Zeira and Yi disclose or suggest claims 2-10 for substantially the same reasons as discussed in §§VI.A.3-VI.A.11, respectively. Lo, ¶161.

VII. CONCLUSION

The Board should institute IPR and cancel the Challenged Claims.

Dated: May 14, 2025

Respectfully submitted,

/Babak Tehranchi /

PERKINS COIE LLP
11452 El Camino Real, Suite 300
San Diego, CA 92130
Telephone: (858) 720-5700
Fax: (858) 720-5834

Lead Counsel
Babak Tehranchi, Reg. No. 55,937
Atanas Baitchev, Reg. No. 82,414
Yang-Hsien (Homer) Hsu, Reg. No. 76,043
Han Saem (Sam) Hong (Reg. No. 69,424)
Jaymin Patel, Reg. (*pro hac vice forthcoming*)

Attorneys for Petitioner

CERTIFICATE OF WORD COUNT UNDER 37 CFR §42.24(D)

Pursuant to 37 C.F.R. § 42.24(d), the undersigned hereby certifies that the word count for the foregoing Petition for Inter Partes Review of U.S. Patent No. 11,212,838 totals 8,005, excluding the parts exempted by 37 C.F.R. § 42.24(a). Accordingly, this Petition is under the word count limit of 14,000 words.

This word count was calculated by using the built-in word-count tool in Microsoft Word 2016, the software used to prepare the document.

Dated: May 14, 2025

Respectfully submitted,

/Babak Tehranchi/

PERKINS COIE LLP
11452 El Camino Real, Suite 300
San Diego, CA 92130
Telephone: (858) 720-5700
Fax: (858) 720-5834

Lead Counsel
Babak Tehranchi, Reg. No. 55,937

Attorney for Petitioner

CERTIFICATE OF SERVICE

The undersigned hereby certifies that a true copy of the foregoing **PETITION FOR INTER PARTES REVIEW OF U.S. PATENT NO. 11,212,838** and supporting materials (Exhibits 1001-1016, 1018-1019, 1021-1024 and Power of Attorney) have been served this 14th day of May, 2025, by FedEx® mail delivery service on Patent Owner at the correspondence address for the attorney of record for the '838 patent shown in USPTO Patent Center:

VOLPE KOENIG
30 South 17th Street, 18th floor
Philadelphia, PA 19103

A courtesy electronic service copy is also being sent to the following counsel in the related litigation:

MAYER BROWN LLP
Clark Bakewell - cbakewell@mayerbrown.com
Courtney Krawice - ckrawice@mayerbrown.com
James Fussell, III - jfussell@mayerbrown.com
Tiffany Miller - tmiller@mayerbrown.com

MANN, TINDEL, THOMPSON
G. Blake Thompson - Blake@TheMannFirm.com

PATTON TIDWELL & CULBERTSON
Kelly Tidwell - kbt@texarkanalaw.com
Geoffrey Culbertson - gpc@texarkanalaw.com

LEYDIG, VOIT & MAYER, LTD.
Christopher Gass - cgass@leydig.com
Paul Filbin - pfilbin@leydig.com
David Airan – dairan@leydig.com
Michael Schubert – mschubert@leydig.com
Wesley Mueller – wmueller@leydig.com

Dated: May 14, 2025

/ Kristina Grauer /
Kristina Grauer
Paralegal