

**UNITED STATES PATENT AND TRADEMARK OFFICE**

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**BEFORE THE PATENT TRIAL AND APPEAL BOARD**

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ONEPLUS TECHNOLOGY (SHENZHEN) CO., LTD.,  
Petitioner,

v.

PANTECH WIRELESS, LLC,  
Patent Owner.

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U.S. Patent No. 10,764,803  
Filed: August 6, 2019  
Issued: September 1, 2020  
Inventors: Stephen G. Dick, et al.

TITLE: ENHANCED UPLINK OPERATION IN SOFT HANDOVER

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*Inter Partes* Review No. IPR2025-00756

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**PETITION FOR *INTER PARTES* REVIEW**

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**EXHIBITS**

<b>Exhibit</b>	<b>Description</b>
1001	U.S. Patent No. 10,764,803 (“the ’803 Patent”)
1002	File History of the ’803 Patent
1003	Declaration of Apostolos K. Kakaes, Ph.D.
1004	Declaration of Friedhelm Rodermund
1005	Publication “R2-020088 – Mobility examples when the UE has an HS-PDSCH assignment” (“Ericsson”)
1006	3GPP Technical Specification 25.331, v5.5.0 (“TS 25.331”)
1007	International Application Publication No. WO2003034766A2 to Sebire et al. (“Sebire”)
1008	3GPP Technical Specification 36.300, v10.6.0 (“TS36.300”)
1009	3GPP Technical Specification 36.321, v10.6.0 (“TS36.321”)
1010	3GPP Technical Specification 36.331, v10.6.0 (“TS36.331”)
1011	Shu Lin and Daniel Costello, Jr.; Error Control Coding: Fundamentals and Applications; (Excerpts) Prentice Hall, 1983 (“Lin”)
1012	Michel Mouly and Marie-Bernadette Pautet; The GSM System for Mobile Communications; 1992 (“Mouly”)
1013	Dimitri Bertsekas and Robert Gallager; Data Networks; Second Edition (Excerpts) Prentice Hall 1992 (“Bertsekas”)
1014	Regis J. “Bud” Bates; GPRS; General Packet Radio Service; (Excerpts); McGraw-Hill 2002 (“Bates”)
1015	Jhong Sam Lee and Leonard E. Miller; CDMA Systems Engineering Handbook; Artech House Publishers 1998 (“Lee”)

<b>Exhibit</b>	<b>Description</b>
1016	Harri Holma and Antti Toskala; WCDMA for UMTS; Radio Access For Third Generation Mobile Communications; John Wiley, 2000
1017	U.S. Patent No. 8,023,463 (the “463 patent”)
1018	U.S. Patent No. 9,438,381 (the “381 patent”)
1019	U.S. Patent No. 10,390,279 (the “279 patent”)
1020	Plaintiff’s Infringement Contentions for the ’803 Patent from <i>Pantech Corp. v. Oneplus Tech. (Shenzhen) Co., Ltd.</i> , 5:24-cv-00038-RWS-JBB (E.D. Tex.)
1021	RESERVED
1022	<i>Pantech Corp. v. Oneplus Tech. (Shenzhen) Co., Ltd.</i> , 5:24-cv-00038-RWS-JBB (E.D. Tex.), Dkt. No. 49, Joint Claim Construction Chart and Prehearing Statement

OnePlus Technology (Shenzhen) Co., Ltd. (“Petitioner”) request *inter partes* review (“IPR”) of claims 1, 2, 5-8, 11, and 12 of U.S. Patent No. 10,764,803 (“the ’803 patent”) (EX1001), assigned to Pantech Wireless, LLC (“Patent Owner”).

## I. INTRODUCTION

The ’803 patent issued from a long chain of prior patents. They were directed to handover in a third-generation (3G) mobile telecommunication system, which is what the ’803 patent specification discloses.

The ’803 patent claims were first presented—together with a new Abstract—about 15 years after the initial patent application in the chain was filed. Patent Owner seeks to now apply the claims to the later developed concept of carrier aggregation according to the LTE-advanced (LTE-A) Standard, which is not described in any of the priority patent applications. Because the challenged claims lack any effective filing date earlier than August 6, 2019, the infringement contentions made by Patent Owner in related litigation *Pantech Corp. v. OnePlus Tech. (Shenzhen) Co., Ltd.*, 5:24-cv-00038-RWS-JBB (E.D. Tex.) (the “Related Litigation”) (*see* EX1020), which rely on documentation of the LTE-A Standard from years earlier, show they are unpatentable.

Even if the challenged claims obtain the benefit of the parent patents, however, they would have been obvious in view of prior art, including Publication

“R2-020088 – Mobility examples when the UE has an HS-PDSCH assignment”  
(EX1005) and 3GPP Technical Specification 25.331, v5.5.0 (EX1006).

This Petition relies on prior art and expert testimony that were not available during examination and were not previously considered by the USPTO.

Accordingly, Petitioner respectfully requests the Board to institute *inter partes* review and to cancel claims 1, 2, 5-8, 11, and 12 of the ’803 patent as unpatentable in view of the Grounds presented in this Petition.

## **II. COMPLIANCE WITH REQUIREMENTS FOR IPR**

### **A. Grounds for Standing (§ 42.104(a))**

Pursuant to 37 C.F.R. § 42.104(a), Petitioner certifies that the ’803 patent is available for IPR and that Petitioner is not barred or estopped from requesting IPR based on the Grounds identified in this petition.

### **B. Identification of Challenge and Statement of Precise Relief Requested**

Petitioner challenges claims 1, 2, 5-8, 11, and 12 of the ’803 patent and requests that these claims be found unpatentable and cancelled in view of the following references:

- (1) EX1005 – Publication “R2-020088 – Mobility examples when the UE has an HS-PDSCH assignment” (“Ericsson”);
- (2) EX1006 – 3GPP Technical Specification TS 25.331, v5.5.0 (“TS 25.331”);

- (3) EX1007 – International Application Publication No. WO2003034766A2 to Sebire et al. (“Sebire”);
- (7) EX1008 – 3GPP Technical Specification TS 36.300, v10.6.0 (“TS36.300”);
- (8) EX1009 – 3GPP Technical Specification TS 36.321, v10.6.0 (“TS36.321”);
- (9) EX1010 – 3GPP Technical Specification TS 36.331, v10.6.0 (“TS36.331”).

Petitioner asserts the following Grounds of unpatentability under 35 U.S.C.

§ 103:

<u>Ground</u>	<u>References</u>	<u>Statutory Basis</u>	<u>Challenged Claims</u>
Ground I	TS36.300, TS36.321, TS36.331	§ 103	1, 5-7, 11, and 12
Ground II	Ericsson, TS 25.331	§ 103	1, 2, 5-8, 11 and 12
Ground III	Ericsson, TS 25.331, Sebire	§ 103	5-6 and 11-12

Petitioner relies on the exhibits identified herein, including the prior art noted above and the declaration of Apostolos K. Kakaes, Ph.D. (EX1003)—an expert in the communication engineering industry and the field of wireless communications with over 40 years of experience in the industry. EX1003, ¶¶ 6-19, App’x A.

### **III. FEES FOR IPR REVIEW (§ 42.15(A))**

This Petition is accompanied by the fees set forth in 37 C.F.R. § 42.15(a). Please charge or credit Deposit Account No. 12-1216 with any shortage or overpayment of fees associated with this Petition and any other fees incurred in connection with this IPR.

### **IV. MANDATORY NOTICES**

#### **A. Real Party-In-Interest (§ 42.8(b)(1))**

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

#### **B. Related Matters (§ 42.8(b)(2))**

The '803 patent is asserted in the following pending action: *Pantech Corp. v. OnePlus Technology (Shenzhen) Co., Ltd.*, No. 5:24-cv-00038-RWS-JBB (E.D. Tex.).

#### **C. Lead and Back-Up Counsel (§ 42.8(b)(3))**

Petitioner designates the following counsel:

Lead Counsel: Wesley O. Mueller (USPTO Reg. No. 33,976)  
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Backup Counsel: Christopher J. Gass (USPTO Reg. No. 69,265)  
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Pursuant to 37 C.F.R. § 42.10(b), Petitioner has filed a power of attorney with the above designation of counsel.

**D. Service Information (§ 42.8(b)(4))**

Petitioner provides the following service information for designated counsel.

Petitioner consents to electronic service at [OneplusLitigation@leydig.com](mailto:OneplusLitigation@leydig.com) as well as the email addresses of the counsel provided below.

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**V. THE '803 PATENT**

The '803 patent, titled “Enhanced Uplink Operation in Soft Handover,” was filed on August 6, 2019, issued on September 1, 2020, and expired in August 2024. EX1001, at 1. The '803 patent is a continuation of U.S. Patent No. 8,023,463 (the “463 patent,” EX1017), which is a continuation of U.S. Patent No. 9,438,381 (the “381 patent,” EX1018), which is a continuation of U.S. Patent No. 10,390,279 (the “279 patent,” EX1019). The '803 patent claims priority to five U.S. Provisional Patent Applications: 60/497,747, filed August 25, 2003; 60/507,554,

filed October 1, 2003; 60/508,797, filed October 3, 2003; 60/520,207, filed November 14, 2003; and 60/585,174, filed July 2, 2004.

**A. Patent Family**

The three patents from which the '803 patent claims priority share the same Abstract, which indicates that the disclosure relates to: (i) “enhanced uplink (EU) operation in a wireless communication system during soft handover,” (ii) in which the “system comprises a wireless transmit/receive unit (WTRU), at least two Node-Bs,” (iii) and in which the system comprises “a radio network controller (RNC).” *Compare* EX1017, Abstract; EX1018, Abstract; and EX1019, Abstract. The Abstract of the '803 patent, by contrast, makes no mention of an “enhanced uplink” or of a “handover” (“soft” or otherwise), or of “two Node-Bs”, or of an “RNC.” *See* EX1001, Abstract; EX1003, ¶87. Similarly, the challenged '803 patent claims do not mention “enhanced uplink,” “handover” (“soft” or otherwise), “two Node-Bs”, or an “RNC.” *See* EX1001, Claims; EX1003, ¶88.

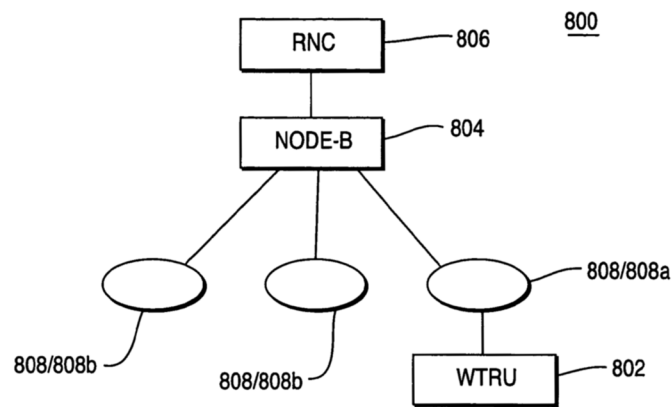
**B. Brief Description**

The '803 specification relates to “an enhanced uplink (EU) operation during a soft [or softer] handover.” EX1001, 1:20–25. It defines a protocol for transferring specific information of a wireless transmit/receive unit (WTRU) and other EU related information among a radio network controller (RNC), a Node-B, and a WTRU to allow the Node-B to schedule radio resources and EU connections

during soft or softer handover. EX1001, 2:57-62. To do so, the specification teaches a primary Node-B controlling EU operation during handover. EX1001, 3:5-10.

The specification explains that soft handover occurs when a “WTRU is connected to two or more Node-Bs simultaneously, on the same frequency” and one Node-B hands over services to the other connected Node-B. EX1001, 1:42-43. Softer handover is a special case of soft handover in which a WTRU is connected to “two or more cells belonging to the same Node-B” and services are handed over between cells. EX1001, 1:50-55.

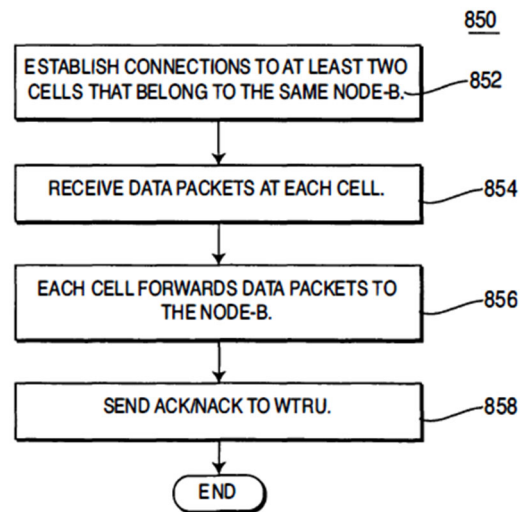
The patent shows such a softer handover in FIGS. 8A and 8B. EX1001, 8:42-44.



**'803 Patent-FIG. 8A**

Here, a single Node-B 804 is associated with multiple cells 808. EX1001, 8:42-52.

A single cell is designated as a primary cell 808a and the remaining cells are designated as non-primary cells 808b. EX1001, 9:4-6.



**'803 Patent-FIG. 8B**

As shown in FIG. 8B above, “during softer handover, the WTRU 802 establishes connections with more than one cell 808” that are controlled by the “same Node-B 804 (step 852).” EX1001, 8:44-46. Each cell 808 receives data transmissions from the WTRU 802 independently (step 854), and forwards those transmissions to the Node-B 804 controlling these cells (step 856). EX1001, 8:46-52.

In the downlink, the Node-B 802 sends acknowledgement/non-acknowledgement (ACK/NACK) signals, as part of the HARQ process, to the WTRU 802 “via all involved cells 808 (step 858).” EX1001, 8:64-66.

Specifically, the “primary cell 808a sends a message on any of the downlink shared channels allocated to the WTRU 802,” where the “message carries a shared channel indicator for non-primary cells 808b.” EX1001, 9:4-9. Subsequently, the “non-primary cells 808b send messages on the channel indicated by the shared channel indicator” to the WTRU 802. EX1001, 9:9-10.

### **C. Prosecution History of the '803 Patent**

The application leading to the '803 patent was filed on August 6, 2019, as a continuation in a chain of applications dating back to 2003. EX1002, 176-177. The originally presented claims were rejected based on prior art including U.S. Patent No. 7,606,205 to Ranta-Aho et al. (“Ranta-Aho”), and U.S. Patent Publication No. 2003/0147370 to Wu (“Wu”). EX1002, 146-156. To obtain their allowance, Applicant amended the claims to require, “while a primary cell is associated with a wireless network node and one or more non-primary cells are associated with the wireless network node.” EX1002, 49-67.

### **D. Priority Date of the Challenged Claims**

The challenged '803 patent claims lack written description in any of the applications to which priority is claimed. They are not entitled to the benefit of the filing date to any of those applications. *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010). Because the claims cover subject matter not disclosed in any of the '803 patent's priority applications, the “complete and final

invention with all of its claimed limitations” was not described until the filing of the ’320 application on August 6, 2019. *Id* at 1353.

Specifically, claim 1 of the ’803 patent recites “a primary cell is associated with a wireless network node and one or more non-primary cells are associated with the wireless network node,” and causing a WTRU to “receive configuration information for the primary cells and the one or more non-primary cells.” These limitations were included in the original claims of the ’320 application and in the Abstract in 2019. They were not presented in the parent priority applications. Nor do any of the parent applications describe the later-developed concept of carrier aggregation in LTE networks, on which Patent Owner now reads the ’803 patent claims to cover in the Related Litigation. EX1003, ¶113; EX1020, 1-45. Instead, the parent applications describe handover and softer handover methods. They do not describe receiving configuration information for primary and non-primary cells. EX1003, ¶113.

The implementation of carrier aggregation requires additional data fields and processes, which are not described in the parent applications (or in the ’803 patent specification). EX1003, ¶114. Patent Owner in its infringement contentions of the ’803 patent (EX1020) from the Related Litigation alleges that the relevant feature of claim 1 is met by a particular message from the Series 36 Technical Specification TS 36.331 (EX1010), namely the *RRConnectionReconfiguration*

message. See EX1020, 11-17. As described in TS 36.331, the

*RRCConnectionReconfiguration* message:

is the command to modify an RRC connection. It may convey information for measurement configuration, mobility control, radio resource configuration (including RBs, MAC main configuration and physical channel configuration) including any associated dedicated NAS information and security configuration.

EX1010, 128. At no point does the specification of the '803 patent, or any of its parent priority applications, describe or demonstrate to a POSITA that applicant had possession of any such message similar to the above described

*RRCConnectionReconfiguration*. EX1003, ¶114.

The teachings of the '803 patent specification and its parent priority applications do not describe a mobile device receiving “configuration information for the primary cells and the one or more non-primary cells,” as required by claim 1 of the '803 patent. Indeed, the '803 patent specification discloses:

During softer handover, the WTRU 802 establishes connections with more than one cell 808 which are controlled by the same Node-B 804 (step 852). EU transmissions from the WTRU 802 are processed by each cell 808 independently (step 854), and each cell 808 transmissions received from the WTRU 802 are processed by the Node-B 804 controlling these cells (step 856).

EX1001, 8:44-50. Nowhere in this passage, or elsewhere in the '803 patent specification or its parent priority patent applications, does it describe a WTRU

receiving configuration information for the primary and non-primary cells, much less any structure containing information that would be required consistent with the *RRCCConnectionReconfiguration* message, described above. EX1003, ¶¶115-116. While the above quoted passage from the '803 patent specification and its parent priority patent applications arguably teaches that a WTRU establishes a connection with more than one cell, there is no description of a WTRU “receiving configuration information” for the more than one cell, as recited in claim 1 of the '803 patent. EX1003, ¶¶116.

The earliest date in the '803 patent family history that the claim requirement of “receiving of configuration information” for primary cells and non-primary cells is the filing of the '320 application, namely August 6, 2019. The specification does not describe carrier aggregation. A POSITA therefore would have concluded that the inventors were not in possession of the claimed invention, with all of its claim limitations, prior to the August 6, 2019, filing date. EX1003, ¶117; *Ariad*, 598 F.3d at 1353. Accordingly, the effective filing date of at least the challenged claims is no earlier than August 6, 2019. EX1003, ¶117.

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

A person of ordinary skill in the art (“POSITA”) at the time of the relevant filing date for the challenged claims would have had a B.S. in Electrical Engineering or a related field with at least three years of experience designing,

developing, and/or testing telecommunication systems. EX1003, ¶127. A POSITA would also have familiarity with the wireless standards and well-known protocols for accessing wireless networks existing at the relevant time. EX1003, ¶127. More education may supplement practical experience or vice versa.

## **VII. HOW THE CHALLENGED CLAIMS ARE TO BE CONSTRUED**

In an *inter partes* review, the Board gives claims their ordinary and customary meaning, as would have been understood by a POSITA at the time of the invention and in the context of the entire patent disclosure. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312-13 (Fed. Cir. 2005) (en banc); 37 C.F.R. § 42.100(b). The prior art relied upon in this Petition renders the subject matter of the challenged claims of the '803 patent unpatentable under any reasonable claim interpretation, including the plain and ordinary meaning of the recited terms.<sup>1</sup>

## **VIII. PATENT OWNER'S INFRINGEMENT CONTENTIONS**

Infringement allegations are “probative” of whether Patent Owner is taking “inconsistent positions” between this proceeding and district court litigation and are “relevant to the credibility” of Patent Owner’s “characterization of the

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<sup>1</sup> Petitioner proposes that no claim terms need to be construed. In the related district court litigation, Petitioner proposed constructions for “wireless network node,” “primary cell,” “one or more non-primary cells,” and “downlink shared channel transmission,” in the context of the patent disclosure, as referring to handover in a 3G network. Such constructions would not change the outcome of this proceeding. EX1022, 10-17.

[asserted] Patent in this proceeding.” *Ericsson Inc. v. Intellectual Ventures II LLC*, IPR2014-00919, 2015 WL 8634628 at 9-10 (PTAB Dec. 7, 2015); *Square, Inc. v. Unwired Planet LLC*, IPR2014-01164, 2015 WL 7428544 at 37-38 (PTAB Nov. 19, 2015). Accordingly, Petitioner includes Patent Owner’s infringement contentions for the ’803 patent from the Related Litigation (EX1020), which rely on a “plain and ordinary” meaning for the terms in the challenged claims. As explained below, Patent Owner’s infringement contentions operate to render the challenged claims unpatentable because they rely on documentation for the LTE-A Standard that is earlier than the effective filing date for the challenged claims.

## **IX. THE PRIOR ART**

Except for Ground 1, this Petition assumes that the priority date of the challenged claims is August 25, 2003, the filing date of U.S. Provisional Patent Application No. 60/497,747.

### **A. Ericsson**

Ericsson (EX1005) is a 3GPP Technical Document R2-020088 that was uploaded and made available via the 3GPP FTP server to 3GPP delegates and the general public by January 4, 2002. EX1004, ¶¶ 21, 56-65. Ericsson qualifies as prior art to the ’803 patent claims under pre-AIA 35 U.S.C. §§ 102(a) and 102(b) (pre-AIA).

Ericsson discloses mobility procedures for High-Speed Downlink Shared Channel (HS-DSCH) assignments in a mobile network. EX1005, 1. Ericsson is directed to a UMTS network, as in 3GPP TS 25.303 and/or 3GPP TS 25.308, which are cited by Ericsson. *Id.*, 1, 10; EX1003, 131.

Ericsson discloses managing changes to an HS-DSCH service cell. EX1005, 1; EX1003, ¶¶131-132. For example, Ericsson changes a serving HS-DSCH cell without changing an active set of assignments. *Id.*, 4; EX1003, ¶133. Specifically, Ericsson discloses:

an intra-Node B serving HS-DSCH cell change while keeping the dedicated physical channel configuration and the active set, using the Physical channel reconfiguration procedure. The transition from source to target HS-DSCH cell is performed synchronised, i.e. at a given activation time.

EX1005, p. 4. As part of this process, “[t]he SRNC then sends a PHYSICAL CHANNEL RECONFIGURATION message, which indicates the target HS-DSCH cell and the activation time to the UE.” EX1005, p. 4.

Ericsson illustrates the process in Figure 3 (reproduced below).

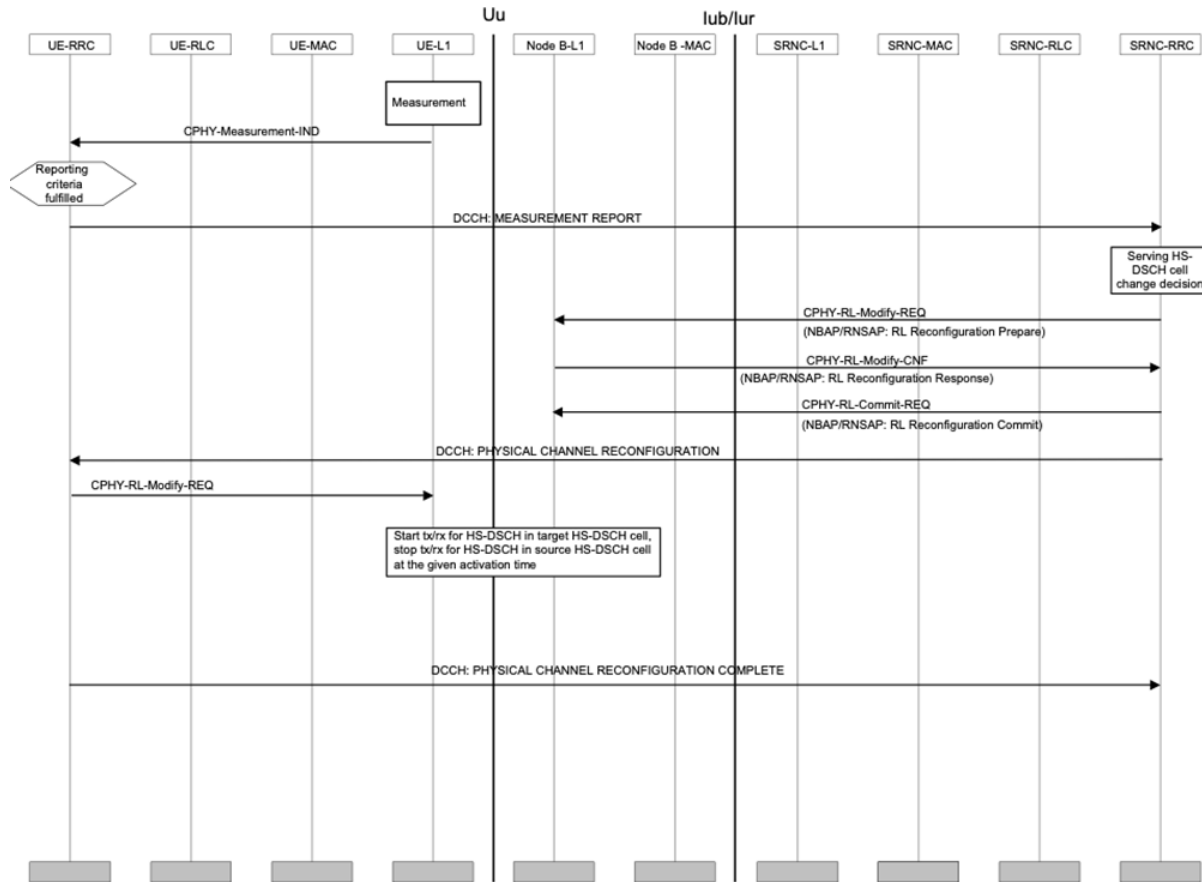


Figure 3: Intra-Node B synchronised serving HS-DSCH cell change

EX1005, p. 5. With respect to Figure 3, Ericsson teaches:

the UE transmits a MEASUREMENT REPORT message containing intra-frequency measurement results, here assumed to be triggered by the event 1D “change of best cell”. When the SRNC has performed the handover decision, the Node B is prepared for the serving HS-DSCH cell change at an activation time indicated with CPHY-RL-Commit-REQ primitive. The SRNC then sends a PHYSICAL CHANNEL RECONFIGURATION message, which indicates the target HS-DSCH cell and the activation time to the UE. Since the same Node B controls both the source and target HS-DSCH cells we assume there is no need to reset the MAC-hs entities. When the UE has completed the

serving HS-DSCH cell change it transmits a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message to the network.

EX1005, p. 4. Thus, Ericsson discloses “Intra-Node B... cell change” for changing from a source HS-DSCH cell to a target HS-DSCH cell while both are associated with the same Node-B. *Id.*; EX1003, ¶137.

### **B. TS 25.331**

TS 25.331 (EX1006) is a Technical Specification (TS) 25.331 V5.5.0 published by 3GPP, which was publicly accessible as of June 24, 2003. EX1004, ¶¶ 22, 66-80. TS 25.331 qualifies as prior art to the '803 patent under at least pre-AIA 35 U.S.C. § 102(a) (pre-AIA).

TS 25.331 “specifies the Radio Resource Control protocol for the UE-UTRAN radio interface.” EX1006, 27. This includes many message types and the details of those message types within the UE-UTRAN radio interface. EX1003, ¶¶140-142. TS 25.331 is a required technical specification for implementing a UMTS radio communication system. EX1003, ¶140. As such, a POSITA would understand TS 25.331 and would rely on its teachings to implement such a UMTS radio communication system. EX1003, ¶143.

The Radio Resource Control (RRC) protocol specifies all the procedures and related messages that are relevant to the communication between a UE and the UMTS network, particularly a Node-B of the UMTS network. EX1003, ¶141. TS

25.331 specifies approximately 100 messages that relate to the RRC protocol. EX1003, ¶142. The PHYSICAL CHANNEL RECONFIGURATION message specifies how the network informs a UE of changes in an organization of radio resources used for communication with the UMTS network. EX1003, ¶¶142-143.

### **C. Sebire**

Sebire (EX1007) is a WIPO international publication of PCT application PCT/IB02/04293. Sebire published in English on April 24, 2003, and is prior art under 35 U.S.C. § 102(a) (pre-AIA).

Sebire discloses handover in a GPRS system, based on GSM communication system. EX1007, 2; EX1003, ¶145. The GPRS system provided data communication capabilities beyond those in the original GSM system. *Id.* While Sebire's focus is on handover, similar to the '803 patent, it discloses additional aspects that are relevant to the operation of a wireless communications system, such as the UMTS system. *Id.*

### **D. TS 36.300**

TS 36.300 (EX1008) is a technical specification TS 36.300 V10.6.0 published by 3GPP and publicly accessible as of December 20, 2011. EX1004, ¶23, 81-95. TS 36.300 qualifies as prior art to at least the challenged claims of the '803 patent under at least 35 U.S.C. § 102(a)(1) (AIA), because those claims do not have an effective filing date earlier than August 6, 2019. EX1003, 112-117.

TS 36.300 is directed to E-UTRAN radio interface implementing Carrier Aggregation (CA) for a LTE-A radio communication system. EX1008, 13; EX1003, ¶147. TS 36.300 “shows . . . deployment scenarios for CA.” EX1008, 184. Patent Owner relied on TS 36.300 to contend that claims 1, 5, and 6 of the ’803 patent cover products that implement the LTE Standard in the Related Litigation. EX1003, ¶147; *see* EX1020, 1.

**E. TS 36.321**

TS 36.321 (EX1009) is a technical specification TS 36.321 V10.6.0 published by 3GPP and publicly accessible as of September 21, 2012. EX1004, ¶24, 96-110. TS 36.321 qualifies as prior art to at least the challenged claims of the ’803 patent under at least 35 U.S.C. § 102(a)(1) (AIA), because those claims do not have an effective filing date earlier than August 6, 2019. EX1003, ¶112-117.

TS 36.321 is directed to E-UTRA MAC protocol for a Long-Term-Evolution-Advanced (LTE-A) radio communication system. EX1003, ¶149; EX1009, 6. TS36.321 teaches “[i]f the UE is configured with one or more SCells, there are multiple DL-SCH and there may be multiple UL-SCH per UE; one DL-SCH and UL-SCH on the PCell, one DL-SCH and zero or one UL-SCH for each SCell.” EX1009, 9. Patent Owner relied on TS 36.321 to contend that claims 1, 5, and 6 of the ’803 patent cover products that implement the LTE Standard in the Related Litigation. EX1003, ¶149; *see* EX1020, 1.

**F. TS 36.331**

TS36.331 (EX1010) is a technical specification TS 36.331 V10.6.0 published by 3GPP and publicly accessible as of July 3, 2012. EX1004, ¶¶25, 111-125. Thus, TS36.331 qualifies as prior art to at least the challenged claims of the '803 patent under at least 35 U.S.C. § 102(a)(1) (AIA), because those claims do not have an effective filing date earlier than August 6, 2019. EX1003, ¶¶112-117.

TS 36.331 “specifies the Radio Resource Control protocol for the radio interface between UE and E-UTRAN.” EX1003, ¶151; EX1010, 14. In relevant part, TS 36.331 teaches that “the PCell can be changed using an *RRCCONNECTIONRECONFIGURATION* message including the *MOBILITYCONTROLINFO* (handover), whereas the SCell(s) can be changed using the *RRCCONNECTIONRECONFIGURATION* message either with or without the *MOBILITYCONTROLINFO*.” EX1003, ¶151; EX1010, 35. Patent Owner relied on TS 36.331 to contend that claims 1, 5, and 6 of the '803 patent cover products that implement the LTE Standard in the Related Litigation. EX1003, ¶151; *See* EX1020, 1.

**X. DETAILED EXPLANATION OF GROUNDS FOR CHALLENGE**

Pursuant to 37 C.F.R. § 42.104(b), the cited prior art renders obvious the challenged claims of the '803 patent. The primary references disclose each and

every limitation of claims 1, 2, 5-8, 11, and 12 of the '803 patent and are readily combinable with one another. *See* Grounds I-III below.

**A. Ground I: TS 36.300, TS 36.321 and TS 36.331 Render Claims 1, 5-7, 11, and 12 Obvious**

In its Infringement Contentions from the Related Litigation, Patent Owner contends that claims 1, 5, and 6 of the '803 patent cover products that implement the LTE Standard, as disclosed in technical specifications TS 36.300, TS 36.321 and TS 36.331. *See* EX1020, 1. The '803 patent claims lack written description in the priority applications of the '803 patent. *See* Section V.D. Because the effective filing date for these claims is no earlier than August 2019, each of TS 36.300, TS 36.321 and TS 36.331 is prior art to the '803 patent claims. Based on Patent Owner's own contentions in its Infringement Contentions regarding the '803 patent (EX1020), the elements of claims 1, 5, and 6 are disclosed in TS 36.300, TS 36.321 and TS 36.331. Accordingly, claims 1, 5 and 6 would have been obvious to a POSITA under Section 103 in view of TS 36.300, TS 36.321 and TS 36.331, as shown in Patent Owner's Infringement Contentions regarding infringement of the '803 patent. *See* EX1020.

**1. Motivation to Combine TS36 Documents**

It would have been obvious to a POSITA prior to the effective filing date of '803 patent claims 1, 5-7, 11, and 12 (*i.e.*, August 6, 2019) to combine TS 36.300, TS 36.321 and TS 36.331. EX1003, ¶152. A POSITA would have been motivated

to combine these technical specifications because they are directed to aspects of a 3GPP standard that governs cellular radio telecommunications, namely, to aspects of the radio interface between UE (“user equipment”) and E-UTRAN according to the LTE (or 4G) Standard. EX1003, ¶153. The three documents cross-reference and incorporate each other. *E.g.*, EX1010, 14 (“The following documents...constitute provisions of the present document. ... [6] 3GPP TS 36.321 ... [9] 3GPP TS 36.300...”). EX1003, ¶153. A POSITA would have combined the teachings of these documents to understand and implement the LTE telecommunications standard, and would have had a reasonable expectation of success in doing so, as evidenced by the many companies that adhere to such standard in providing their telecommunications technologies. EX1003, ¶154.

## **2. Independent Claim 1**

Patent Owner’s Infringement Contentions in the related litigation (*see* EX1020) demonstrate that TS36.300, TS36.321 and TS36.331 (together “the TS36 combination”) discloses every element of claim 1.

### **(a) [1pre] A wireless transmit/receive unit (WTRU)**

TS36.300, TS36.321 and TS36.331 relate to communications with UE, which is a wireless transmit/receive unit. *See, e.g.*, EX1020, 1-2. Accordingly, consistent with Patent Owner’s contentions, the TS36 combination discloses element [1pre].

**(b) [1a] a transceiver; and [1b] a processor**

TS36.300, TS36.321 and TS36.331 relate to communications with a UE, which includes a transceiver (or combination of transmitter and receiver equivalent to a transceiver), and a processor. *See, e.g.*, EX1020, 2.

Accordingly, consistent with Patent Owner's contentions, the TS36 combination discloses elements [1a] and [1b].

**(c) [1c] wherein the transceiver and the processor are configured to cause the WTRU to, while a primary cell is associated with a wireless network node and one or more non-primary cells are associated with the wireless network node**

The TS36 combination discloses configuring a processor and transceiver to cause a WTRU to perform claim elements [1d]-[1f] while a primary cell is associated with a wireless network node and one or more non-primary cells are associated with the wireless network node. *See* EX1020, 2-11.

The TS36 combination discloses operation of the UE (i.e., the WTRU) with a wireless network node (i.e., eNB) associated with a primary cell and one or more non-primary cells. EX1020, 2-11. TS36.331 discloses an RRC\_CONNECTED state where "the network decides when the UE shall connect to which E-UTRA cell(s), or inter-RAT cell." EX1010, 35. TS 36.331 specifies that a "source eNB selects the target PCell . . . [and provides] a list of best cells" to a target eNB. *Id.*

TS 36.300 discloses carrier aggregation, where “two or more Component Carriers (CCs) are aggregated in order to support wider transmission bandwidths.” EX1008, 45. In carrier aggregation, the “UE only has one RRC connection with the network” with “one serving cell provid[ing] the security input” that “is referred to as the Primary Cell (PCell).” EX1008, 56. Additionally, TS 36.300 specifies that “Secondary Cells (SCells) can be configured to form together with the PCell a set of serving cells.” *Id.* Under this structure, TS 36.300 specifies “Deployment Scenarios” where the involved cells may be collocated or overlaid in various manners. *See* EX1008, 184.

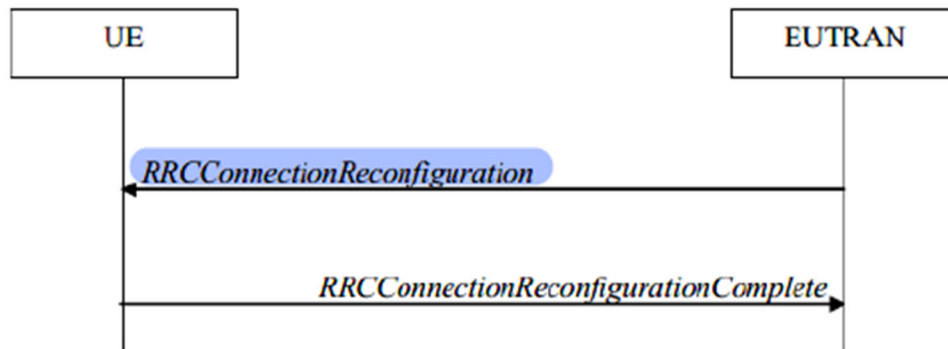
Accordingly, consistent with Patent Owner’s allegations, the TS36 combination discloses element [1c]. EX1020, 2-11.

**(d) [1d] receive configuration information for the primary cell and the one or more non-primary cells**

The TS36 combination discloses the transceiver and processor configured to receive configuration information for the primary cell and the one or more non-primary cells. *See* EX1020, 11-25.

TS36.331 teaches an RRC\_CONNECTED state where “the network decides when the UE shall connect to which E-UTRA cell(s), or inter-RAT cell” using an *RRCConnectionReconfiguration* message for changing a PCell and SCell(s). EX1010, 35. The *RRCConnectionReconfiguration* message is sent from the

network and received by the UE, as shown in annotated Figure 5.3.5.1-1 reproduced below for ease of reference.



**Annotated Figure 5.3.5.1-1: RRC connection reconfiguration, successful**

EX1010, 46. TS 36.331 discloses that this *RRCConnectionReconfiguration* message “includes the *mobilityControlInfo* and the UE is able to comply with the configuration included in the message” for both a PCell and SCell(s). EX1010, 47.

TS 36.300 teaches carrier aggregation, where “two or more Component Carriers (CCs) are aggregated in order to support wider transmission bandwidths.” EX1008, 45. In carrier aggregation, the “UE only has one RRC connection with the network” with “one serving cell provid[ing] the security input” that “is referred to as the Primary Cell (PCell).” EX1008, 56. Additionally, TS36.300 specifies that “Secondary Cells (SCells) can be configured to form together with the PCell a set of serving cells.” *Id.* Under this structure, TS36.300 specifies “Deployment Scenarios” where the involved cells may be collocated or overlaid in various manners. *See* EX1008, 184.

Accordingly, consistent with Patent Owner's allegations, the TS36 combination discloses element [1d]. EX1020, 11-25.

- (e) **[1e] receive a message on the primary cell, the received message including an indication of at least one of the one or more non-primary cells from which the WTRU is to receive a downlink shared channel transmission**

TS36 discloses the transceiver and processor configured to receive a message on the primary cell, the received message including an indication of at least one of the one or more non-primary cells from which the WTRU is to receive a downlink shared channel transmission. *See* EX1020, 25-35.

In a first scenario, TS 36.321 teaches a "UE receiv[ing] an Activation/Deactivation MAC control element" that "activat[es] the SCell." EX1009, 33. The Activation/Deactivation MAC control element is received on a PCell because "[t]he PCell is always activated" for receiving such messages, particularly for "PDCCH monitoring on the SCell." *Id.* TS36.300 discloses the activation/deactivation mechanism indicating a particular SCell where it teaches "[t]o enable reasonable UE battery consumption when CA is configured, an activation/deactivation mechanism of SCells is supported." EX1008, 90.

In a second scenario, TS36.331 teaches a *CrossCarrierSchedulingConfig* message that "is used to specify the configuration when the cross carrier scheduling is used in a cell." EX1010, 169. TS36.331 further teaches that the

*CrossCarrierSchedulingConfig* message includes a *schedulingCellID* field that “[i]ndicates which cell signals the downlink allocations and uplink grants, if applicable, for the concerned SCell.” *Id.*

TS36.331 further specifies a *ServCellIndex* message that contains an index between 0 to 7, “used to identify a serving cell (i.e. the PCell or an SCell),” where a “[v]alue 0 applies for the PCell, while the *SCellIndex* that has previously been assigned applies for SCells.” EX1010, 213.

Accordingly, consistent with Patent Owner’s allegations, the TS36 combination discloses element [1e]. EX1020, 25-35.

**(f) [1f] in response to the received message, receive and process the downlink shared channel transmission from the indicated at least one of the one or more non-primary cells.**

The TS36 combination discloses the transceiver and processor configured to, in response to the received message, receive and process the downlink shared channel transmission from the indicated at least one of the one or more non-primary cells. *See* EX1020, 35-39.

TS36.300 discloses the activation/deactivation mechanism indicating a particular SCell where it teaches “[t]o enable reasonable UE battery consumption when CA is configured, an activation/deactivation mechanism of SCells is supported.” EX1008, 90. Upon activation of the SCell, typical downlink shared

channel (DL-SCH) data transmissions may be accomplished utilizing the activated SCell, as described in TS36.321. EX1009, 18.

Accordingly, consistent with Patent Owner's allegations, the TS36 combination discloses Element [1f]. EX1020, 35-39.

Because it would have been obvious to a POSITA to combine TS36.300, TS36.321 and TS36.331 to arrive at the subject matter of claim 1, and a POSITA would have had a reasonable expectation of success in doing so, claim 1 is unpatentable for obviousness, in accordance with Patent Owner's own contentions at EX1020.

### **3. Dependent Claim 5**

Claim 5 is obvious based on the TS36 combination.

#### **(a) [5a] The WTRU of claim 1**

*See* Section X.A.2 above.

#### **(b) [5b] wherein the transceiver and the processor are further configured to cause the WTRU to receive a grant for an uplink transmission from the primary cell and to transmit the uplink transmission based on the received grant.**

The TS36 combination discloses the transceiver and processor further configured as recited in claim 5. EX1020, 39-43.

TS 36.321 addresses uplink grant reception, where it teaches "[i]n order to transmit on the UL-SCH the UE must have a valid uplink grant." EX1009, 21. In

certain situations, TS 36.321 specifies that the “Serving Cell is the PCell and if an uplink grant for this TTI has been received for the PCell on the PDCCH of the PCells for the UE’s Semi-Persistent Scheduling C-RNTI . . . the uplink grant and the associated HARQ information” is delivered to “the HARQ entity.” *Id.* With respect to the HARQ entity, TS 36.321 teaches “one HARQ entity at the UE for each Serving Cell with configured uplink,” which specifies transmission of the uplink based on the HARQ entity triggered based on the uplink grant. EX1009, 22-23.

Accordingly, consistent with Patent Owner’s allegations, the TS36 combination discloses elements [5a] and [5b].

Because it would have been obvious to a POSITA to combine TS 36.300, TS 36.321 and TS 36.331 to arrive at the subject matter of claim 5, and a POSITA would have had a reasonable expectation of success in doing so, claim 5 should be found unpatentable for obviousness, in accordance with Patent Owner’s infringement contentions at EX1020.

**4. Dependent Claim 6**

**(a) [6a] The WTRU of claim 5**

*See* sections X.A.2 and X.A.3 above.

**(b) [6b] wherein the transceiver and the processor are further configured to cause the WTRU to process an acknowledgement/negative acknowledgement to the**

**uplink transmission received only from the primary cell.**

The TS36 combination discloses the transceiver and processor further configured as recited in claim 6. EX1020, 43-45.

With respect to uplink and downlink shared channels for the MAC entity, TS 36.321 specifies, “[i]f the UE is configured with one or more SCells, there are multiple DL-SCH and there may be multiple UL-SCH per UE; one DL-SCH and UL-SCH on the PCell, one DL-SCH and zero or one UL-SCH for each SCell.” EX1009, 8-9. Patent Owner contends (at EX1020) that, in a particular scenario, there is one UL-SCH for the PCell and no UL-SCH for SCells for a UE. *See* EX1020, 43-45.

TS36.321 further specifies a “HARQ process is associated with a HARQ buffer.” EX1009, 23-24. The “HARQ process shall maintain a state variable CURRENT\_TX\_NB, which indicates the number of transmissions that have taken place for the MAC PDU currently in the buffer.” *Id.* Patent Owner contends (at EX1020) that, in the scenario where there is only a single UL-SCH for the PCell and none for the SCells, a HARQ process will dictate that the acknowledgement/negative acknowledgement to the uplink transmission on that UL-SCH will only be from the PCell. *See* EX1020, 43-45.

Accordingly, consistent with Patent Owner's contentions, the TS36 combination discloses element [6b]. EX1020, 43-45.

Because it would have been obvious to a POSITA to combine TS36.300, TS36.321 and TS36.331 to arrive at the subject matter of claim 6, and a POSITA would have had a reasonable expectation of success in doing so, claim 6 is unpatentable, in accordance with Patent Owner's infringement contentions at EX1020.

## 5. Independent Claim 7

Independent claim 7 of the '803 patent is directed to a method for receiving information by a WRTU, and has elements that are substantially similar to those in independent claim 1 discussed above. TS36 renders claim 7 unpatentable for obviousness for the same reasons as applicable to claim 1. *See* EX1020, 1-39.

### (a) [7pre] A method comprising

The TS36 combination discloses such a method. *See* EX1020, 1-45.

### (b) [7a] receiving, by a wireless transmit/receive unit (WTRU), configuration information for a primary cell and one or more non-primary cells, wherein the primary cell is associated with a wireless network node and the one or more non-primary cells are associated with the wireless network node

The TS36 combination discloses element [7a], which is substantially similar to [1pre], [1c] and [1d]. *See* Sections X.A.2.(a), X.A.2.(c), and X.A.2.(d).

According to Patent Owner's contentions, the TS36 combination teaches [7a].

- (c) **[7b] receiving, by the WTRU, a message on the primary cell, the received message including indication of at least one of the one or more non-primary cells from which the WTRU is to receive a downlink shared channel transmission**

The TS36 combination teaches element [7b], which is substantially similar to [1e]. *See* Section X.A.2.(e).

According Patent Owner's contentions, the TS36 combination teaches [7b].

- (d) **[7c] in response to the received message, receiving and processing, by the WTRU, the downlink shared channel transmission from the indicated at least one of the one or more non-primary cells**

The TS36 combination teaches element [7c], which is substantially similar to [1f]. *See* Section X.A.2.(f).

According to Patent Owner's contentions, the TS36 combination teaches [7c].

Thus, the TS36 combination renders claim 7 unpatentable for obviousness for the same reasons as applicable to claim 1. *See* Section X.A.2.

## **6. Dependent Claim 11**

Claim 11 of the '803 patent is substantially similar to claim 5 discussed above.

- (a) The method of claim 7 further comprising receiving, by the WTRU, a grant for an uplink transmission from the primary cell and transmitting, by the WTRU, the uplink transmission based on the received grant**

The TS36 combination discloses the requirements of dependent claim 11, which is substantially similar to elements [5a], [5b], and [5c]. *See* Section X.A.3.

Thus, based on Patent Owner's contentions (*see* EX1020), the TS36 combination renders claim 11 unpatentable for obviousness for the same reasons as applicable to claim 5. *See* Section X.A.3.

#### **7. Dependent Claim 12**

Claim 12 of the '803 patent is substantially similar to claim 6 discussed above.

- (a) The method of claim 11 further comprising processing, by the WTRU, an acknowledgement/negative acknowledgement to the uplink transmission received only from the primary cell.**

The TS36 combination teaches dependent claim 12, which is substantially similar to features [6a] and [6b]. *See* Section X.A.4.

Thus, based on Patent Owner's contentions (*see* EX1020), the TS36 combination renders claim 12 unpatentable for obviousness for the same reasons as applicable to claim 6. *See* Section X.A.4.

**B. Ground II: Ericsson in View of TS 25.331 and Knowledge of a POSITA Render Claims 1, 2, 5, 6, 7, 8, 11, and 12 Obvious**

Claims 1, 2, 7 and 8 would have been obvious over Ericsson in view of TS 25.331, and claims 5, 6, 11, and 12 would have been obvious under Section 103 over Ericsson (EX1005) in view of TS 25.331 (EX1006) in further view of knowledge of a POSITA.

**1. Motivation to Combine Ericsson and TS 25.331**

A POSITA would have been motivated to combine Ericsson and TS 25.331 because they are directed to similar technologies and a skilled artisan would have understood the benefits of combining these two references. EX1003, ¶¶156-157. A POSITA would have understood that there was a high likelihood of success in making the combination. *Id.*

Ericsson and TS 25.331 are analogous art with respect to the '803 patent. *See Circuit Check Inc. v. QXQ Inc.*, 795 F.3d 1331, 1335 (Fed. Cir. 2015). Ericsson and TS 25.331 are both in the same field of endeavor as the challenged claims of the '803 patent and are both reasonably pertinent to the problem faced by the inventor, namely protocols for handover in a telecommunications system. EX1003, ¶158.

Ericsson and TS 25.331 are readily combinable because both references are directed to protocols for a radio interface between user equipment and base stations

(UMTS). EX1003, ¶160. It therefore would have been obvious to a POSITA to apply advantageous teachings of Ericsson within TS 25.331's specification. *Id.*

A POSITA would have been motivated to use and configure the process described in Ericsson in the manner defined in TS 25.331. Ericsson specifies event 1D based triggering of a Measurement Report being sent from a User Equipment (UE) to a Node B during an “intra-Node B serving HS-DSCH cell change.”

EX1005, 4. TS 25.331 is a UMTS standards specification defining such event 1D based triggering. EX1006, 190-194 and 314-328; EX1003, ¶164. A POSITA would naturally be motivated to refer to TS 25.331 when implementing the event 1D based triggering disclosed in Ericsson. EX1003, ¶164.

A POSITA would have combined Ericsson and TS 25.331, and would have had a reasonable expectation of success in doing so as the concept of an Intra-Node B serving HS-DSCH cell change was known in the art, as was acknowledged in the '803 specification. EX1001, 1:42-49.; EX1003, ¶¶165-166. When the prior art identifies a problem and provides express guidance on how to fix the problem as in Ericsson, a skilled artisan would have had a reasonable expectation of success in combining the prior art. *See, e.g., In re Inland Steel Co.*, 265 F.3d 1354, 1364 (Fed. Cir. 2001). Because the combination of Ericsson and TS 25.331 involves the predictable use of interchangeable prior art elements according to their established functions, it supports a finding of obviousness. *See KSR Int'l Co. v. Teleflex Inc.*,

550 U.S. 398, 416 (2007). This combination is not of innovation but of ordinary skill and common sense. *Id.* at 421; EX1003, ¶166.

The combination of Ericsson and TS 25.331 would have yielded predictable results and required nothing more than routine engineering. EX1003, ¶167.

Ericsson teaches an intra-Node B serving HS-DSCH cell change triggered by an event 1D change of best cell event, and TS 25.331 teaches the structure and function of such an event 1D change of best cell event. Thus, a POSITA with the knowledge of Ericsson would have referenced TS 25.331 on event 1D change of best cell events to implement the stated intra-Node B serving HS-DSCH cell change. EX1003, ¶167. Such a combination of references was well within the capabilities of a POSITA prior to the earliest possible effective priority date of the '803 patent. EX1003, ¶167. Indeed, Ericsson suggests such a combination by disclosing that intra-frequency measurement results for the Measurement Report that triggers the intra-Node B cell change are triggered by event 1D change of best cell events. EX1005, 4. A POSITA would have understood that this modification was intended by Ericsson's teachings, and would have had a high likelihood of success. EX1003, ¶168.

A POSITA would further have been motivated to combine Ericsson with TS 25.331 because Ericsson was written to update standards documents such as TS 25.331. EX1003, ¶168. 3GPP is organized into Technical Solutions Groups

(TSGs) and each TSG is organized into working groups (WGs). The TSG Radio Access Network (RAN) WGs are responsible for the Technical Specification TS 25.331, of which one such WG submitted Ericsson for consideration for addition to the TS 25.331 standard. EX1003, ¶¶169-171. A POSITA would have known that Ericsson was written by a group of peers to provide recommendations to modify TS 25.331 in subsequent iterations of the specification, and therefore Ericsson and TS 25.331 include “self-executing” reasons to combine that have been carefully scrutinized to confirm the suitability of modifying TS 25.311, as proposed in Ericsson. EX1003, ¶173.

The combination of TS 25.331 and Ericsson would have yielded predictable results and required nothing more than routine engineering. EX1003, ¶174. TS 25.331 teaches the structure of RRC messages and their use, while Ericsson teaches specific details about mobility examples, which include handovers, as shown by its title, “Mobility examples when the UE has an HS-PDSCH assignment” disclosing a number of mobility procedures. EX1005, 1; EX1003, ¶174. A POSITA, in order to incorporate Ericsson’s teachings into TS 25.331’s specification, would have added teachings from Ericsson into the TS 25.331 specification for use of the RRC. *Id.* A POSITA would have understood that this modification was vetted by the “Primary responsible group” for the continued development of TS 25.331, had a high likelihood of success, and was obvious. *Id.*

## 2. Independent Claim 1

The combination of Ericsson and TS 25.331 renders claim 1 obvious under Section 103. EX1003, ¶175.

### (a) [1pre] A wireless transmit/receive unit (WTRU)

Ericsson is titled “Mobility examples when the UE has an HS-PDSCH assignment,” where the term “UE” refers to a “user equipment.” EX1005, 1. Ericsson refers to “UE” as a mobile device within the context of the relevant telecommunications standards being discussed throughout Ericsson’s disclosure. *See* EX1005, 1-5. The term “User Equipment,” or “UE,” is standard terminology used by a POSITA in the telecommunications industry and is synonymous with WTRU and mobile station, which are abbreviations or other names for a cellular phone/device. EX1003, ¶¶176-177.

Ericsson thus discloses Element [1pre].

### (b) [1a] a transceiver; and [1b] a processor

As discussed above in section X.B.2.(a) Ericsson teaches a “UE.” Both a transceiver and a processor are common elements within a “UE.” EX1003, ¶¶181, 185.

A POSITA would understand a “transceiver” as shorthand for transmitter/receiver, which are fundamental components of a UE used to transmit and receive information for communication with a base station (i.e., Node B of

Ericsson referenced repeatedly at pp. 1-5). EX1003, ¶181. As but one example of communication between a UE and a base station, Ericsson teaches “[i]ntra-Node B synchronized serving HS-DSCH cell change.” EX1005, 1. In this process, the UE changes a “serving HS-DSCH cell ... without change of the active set,” where “[t]he same Node B controls source and target HS-DSCH cells.” *Id.*

A POSITA would further understand a “processor” is a fundamental component of a UE, as disclosed in Ericsson. EX1003, ¶185. The “processor” of Ericsson is used to process data for transmission from the transceiver or process data received from the transceiver. *Id.* In Ericsson, data sent from the UE or received at the UE would be processed by the “processor” within the UE. *Id.*

The introduction of Ericsson states “a categorisation of mobility related concepts and procedures have been proposed. This contribution illustrates a selection of these procedures as signalling message sequence examples.” Ex1005 at 1. Figure 3 shows that the UE includes functions labeled “UE-L1”, “UE-MAC”, “UE-RLC” and “UE-RRC”. *Id.*, 5. A POSITA would have understood that these refer to functions performed by “Layer 1”, those performed by the MAC sublayer of Layer 2, those performed by the RLC sublayer of Layer 2 and those performed by the RRC Layer (a Layer 3 protocol) respectively. EX1003, ¶186. A POSITA would understand that these functions are performed by a processor. *Id.* Thus, a

POSITA would understand that mobility related signaling in Ericsson uses a processor. *Id.*

Accordingly, Ericsson discloses Elements [1a] and [1b].

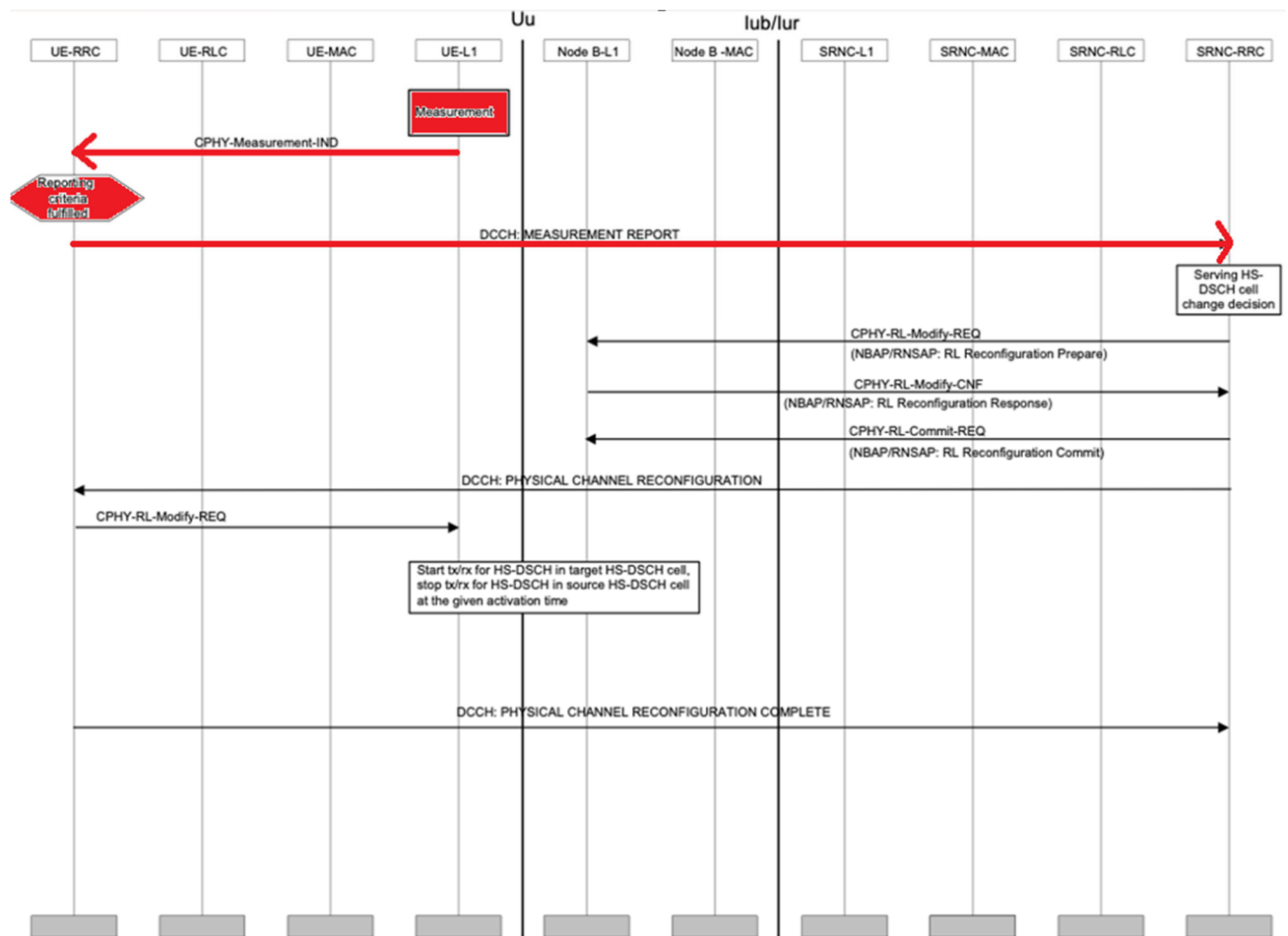
- (c) **[1c] wherein the transceiver and the processor are configured to cause the WTRU to, while a primary cell is associated with a wireless network node and one or more non-primary cells are associated with the wireless network node**

Ericsson teaches an “[i]ntra-Node B synchronized serving HS-DSCH cell change” procedure. EX1005, 1. In this procedure, “[t]he serving HS-DSCH cell is changed without change of the active set,” where “[t]he same Node B controls source and target HS-DSCH cells” of the “active set.” EX1005, 1. In this context, Ericsson’s “active set” refers to a set of cells controlled by and associated with the Node B. EX1003, ¶190. Accordingly, Ericsson teaches a UE, which includes a transceiver and processor (see *supra* X.B.2.(a)-(b)), undergoing a serving cell change where the source cell (i.e., primary cell) is changed to a target cell (i.e., one or more non-primary cells), both of which are included in a “active set” of cells controlled by the same Node B (i.e., wireless network node). EX1005, 1, 4-5; EX1003, ¶193.

Accordingly, Ericsson discloses Element [1c].

**(d) [1d] receive configuration information for the primary cell and the one or more non-primary cells**

Section 3 of Ericsson discloses details of an “[i]ntra-Node B synchronized serving HS-DSCH cell change.” EX1005, 4. This section includes a “Figure 3 [that] illustrates an intra-Node B serving HS-DSCH cell change while keeping the dedicated physical channel configuration and the active set, using the Physical channel reconfiguration procedure.” *Id.*



**Annotated Figure 3 of Ericsson Showing Intra-Node B serving cell change**

Shown above is an annotated Figure 3 of Ericsson highlighting a UE measurement and reporting process. EX1003, ¶198. Highlighted in red, “the UE transmits a MEASUREMENT REPORT message containing intra-frequency measurement results, here assumed to be triggered by the event 1D ‘change of best cell.’”

EX1005, 4. To accomplish this, the UE layer 1 collects measurement results of each cell in the “active set,” bundles those measurements and transmits them to the Node B from the UE Radio Resource Control layer. EX1005, 4 and Figure 3; EX1003, ¶198.

Ericsson discloses that “the UE transmits a MEASUREMENT REPORT message containing intra-frequency measurement results, here assumed to be **triggered by the event 1D ‘change of best cell’**” (emphasis added). EX1005, 4. A POSITA would have understood this disclosure to mean that configuration information is received at the UE. EX1003, ¶199. A POSITA would further have understood from the “1D ‘change of best cell’” event that previous “configuration information” had been received at the UE in order to trigger the taking of measurement information for the Measurement Report of Ericsson. EX1003, ¶199.

In the same field of endeavor (i.e., intra-Node B synchronized cell change), TS 25.331 expressly discloses the UE will “receive configuration information for the primary cell and the one or more non-primary cells,” as required by Element 1[d]. EX1003, ¶200. For example, in response to “Reception of an RRC

CONNECTION SETUP message by the UE” the UE “shall:... initiate the radio bearer, transport channel and physical channel configuration in accordance with the received radio bearer, transport channel and physical channel information elements.” EX1006, 69. Thus, the RRC CONNECTION SETUP message corresponds to the claimed “configuration information for the primary cell.” *Id.*; *see also* EX1003, ¶201.

Furthermore, TS 25.331 discloses that the network transmits and the UE receives the claimed configuration information for the non-primary cell via the “Reconfiguration procedures” discussed in section 8.2.2. One example is shown in Figure 8.2.2-9, reproduced:

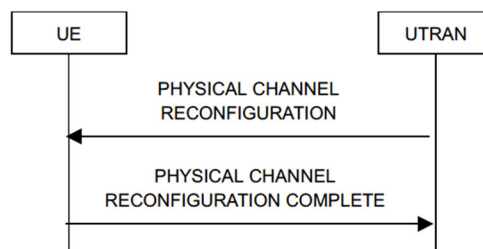


Figure 8.2.2-9: Physical channel reconfiguration, normal flow

EX1006, 110-111.

TS 25.331 explains that reconfiguration procedures include “the physical channel reconfiguration procedure” and, referring to this procedure (among others), the UE “may perform a hard handover... and/or an HS-DSCH cell change.” EX1006, 111.

With respect to measurement reporting criteria, TS 25.331 teaches that “Intra-frequency measurement reporting criteria” includes “Event 1d: Change of best cell” for triggering “event-triggered reporting for an intra-frequency measurement.” EX1006, 254. For these triggered UE measurements, a “UTRAN may control a measurement in the UE ... by transmitting a MEASUREMENT CONTROL message.” EX1006, 191. The transmission of this message is shown in TS 25.331 in Figure 8.4.1-1 reproduced below. EX1006, 193; EX1003, ¶204.



**Figure 8.4.1-1: Measurement Control, normal case**

UTRAN refers to UMTS Terrestrial Radio Access Network, which is the radio access network used in 3G UMTS networks. It comprises base stations (NodeBs) and Radio Network Controllers (RNCs) that connect mobile devices to the core network. EX1003, ¶205; EX1006, 31. As such, TS 25.331 teaches a measurement control message being sent to a UE via the Node B for controlling the UE to take measurements for triggering “event-triggered reporting for an intra-frequency measurement.” EX1006, 191-193, 554; EX1003, ¶205.

TS 25.331 specifies “different types of measurements” being controlled by the measurement control message. EX1006, 192. For instance, TS 25.331 shows

“Intra-frequency measurements: measurements on downlink physical channels at the same frequency as the active set.” *Id.* TS 25.331 specifies that information on such measurements is “found in subclause 14.1” of TS 25.331. *Id.*

Subclause 14.1 (specifically 14.1.2.4) reveals “Reporting event 1D: Change of best cell,” as specified in Ericsson. EX1006, 314. TS 25.331 here teaches that “send[ing] a measurement report,” as disclosed by Ericsson, with “intra-frequency measurement event results” occurs when certain criteria that are part of the event 1D triggering are satisfied. EX1006, 314-315. Specifically, TS 25.331 teaches that the “Event 1d: Change of best cell” measurements in the active set are triggered based on the following equations:

Equation 1 (Triggering condition for pathloss)

$$10 \cdot \text{Log}M_{NotBest} + CIO_{NotBest} \leq 10 \cdot \text{Log}M_{Best} + CIO_{Best} - H_{1d} / 2,$$

Equation 2 (Triggering condition for all the other measurement quantities)

$$10 \cdot \text{Log}M_{NotBest} + CIO_{NotBest} \geq 10 \cdot \text{Log}M_{Best} + CIO_{Best} + H_{1d} / 2,$$

The variables in the formula are defined as follows:

$M_{NotBest}$  is the measurement result of a cell not stored in "best cell" in the variable BEST\_CELL\_1D\_EVENT.

$CIO_{NotBest}$  is the cell individual offset of a cell not stored in "best cell" in the variable BEST\_CELL\_1D\_EVENT.

$M_{Best}$  is the measurement result of the cell stored in "best cell" in variable BEST\_CELL\_1D\_EVENT.

$CIO_{Best}$  is the cell individual offset of a cell stored in "best cell" in the variable BEST\_CELL\_1D\_EVENT.

$H_{1d}$  is the hysteresis parameter for the event 1d.

If the measurement results are pathloss or CPICH-Ec/No then  $M_{Not\ Best}$  and  $M_{Best}$  are expressed as ratios.

If the measurement result is CPICH-RSCP then  $M_{Not\ Best}$  and  $M_{Best}$  are expressed in mW.

EX1006, 314-315. When a UE's current state satisfies one or both of the above equations, the UE is triggered to take cell measurements, as discussed in Ericsson above. EX1003, ¶¶208-209.

The equations include two types of variables. The first type are measurement results  $M_{Best}$  taken from the cell stored in "best cell" and  $M_{NotBest}$  taken from a cell not stored in "best cell." EX1006, 315; EX1003, ¶210. The second type are cell parameters  $CIO_{NotBest}$ ,  $CIO_{Best}$ , and  $H_{1d}$  previously communicated to the UE. EX1006, 315; EX1003, ¶210. Each of the measurement results variables and the cell parameters is associated with a "Best" cell or a "NotBest" cell. See EX1006, 315. In relevance to the claim element [1d], the "Best" cell satisfies the "primary cell" and the "NotBest" cell satisfies the "one or more non-primary cells," such that these parameters constitute information of primary and non-primary cells. EX1003, ¶211.

The  $CIO_{NotBest}$  and  $CIO_{Best}$  parameters are cell individual offsets for a cell not stored as the "best cell" and a cell stored as the "best cell," respectively, and  $H_{1d}$  is a "hysteresis parameter for the event 1d." EX1006, 315; EX1003, ¶210.

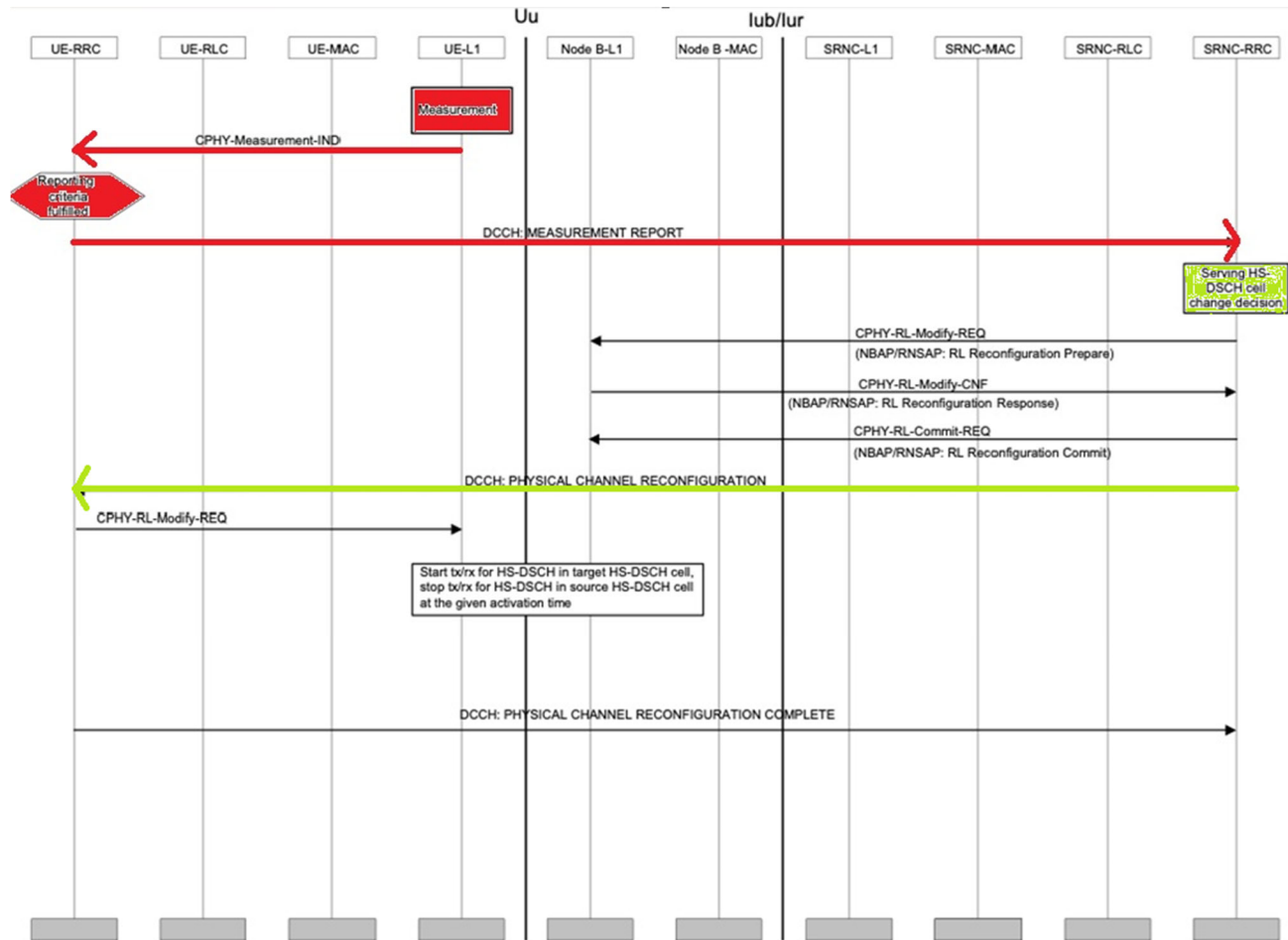
Each of the hysteresis and cell individual offsets are reported to the UE in the above discussed “Measurement Control message.” EX1006, 326, 328.

Ericsson teaches a UE sending a measurement report comprising cell measurements of the active set based on satisfying event 1D triggering. EX1003, ¶212. TS 25.331 teaches a Measurement Control message, including at least a hysteresis parameter and cell individual offsets related to the cells of the active set, being sent to the UE from the UTRAN through the Node B in order to control the event 1D triggering the measurements.

Accordingly, Ericsson in view of TS 25.331 teaches element [1d] of the '803 patent.

- (e) **[1e] receive a message on the primary cell, the received message including an indication of at least one of the one or more non-primary cells from which the WTRU is to receive a downlink shared channel transmission**

Ericsson discloses a “PHYSICAL CHANNEL RECONFIGURATION message, which indicates the target HS-DSCH cell and the activation time to the UE.” EX1005, 4. This message is shown in green in the annotated version of Figure 3 of Ericsson below.



**Annotated Figure 3 of Ericsson Showing Intra-Node B serving cell change**

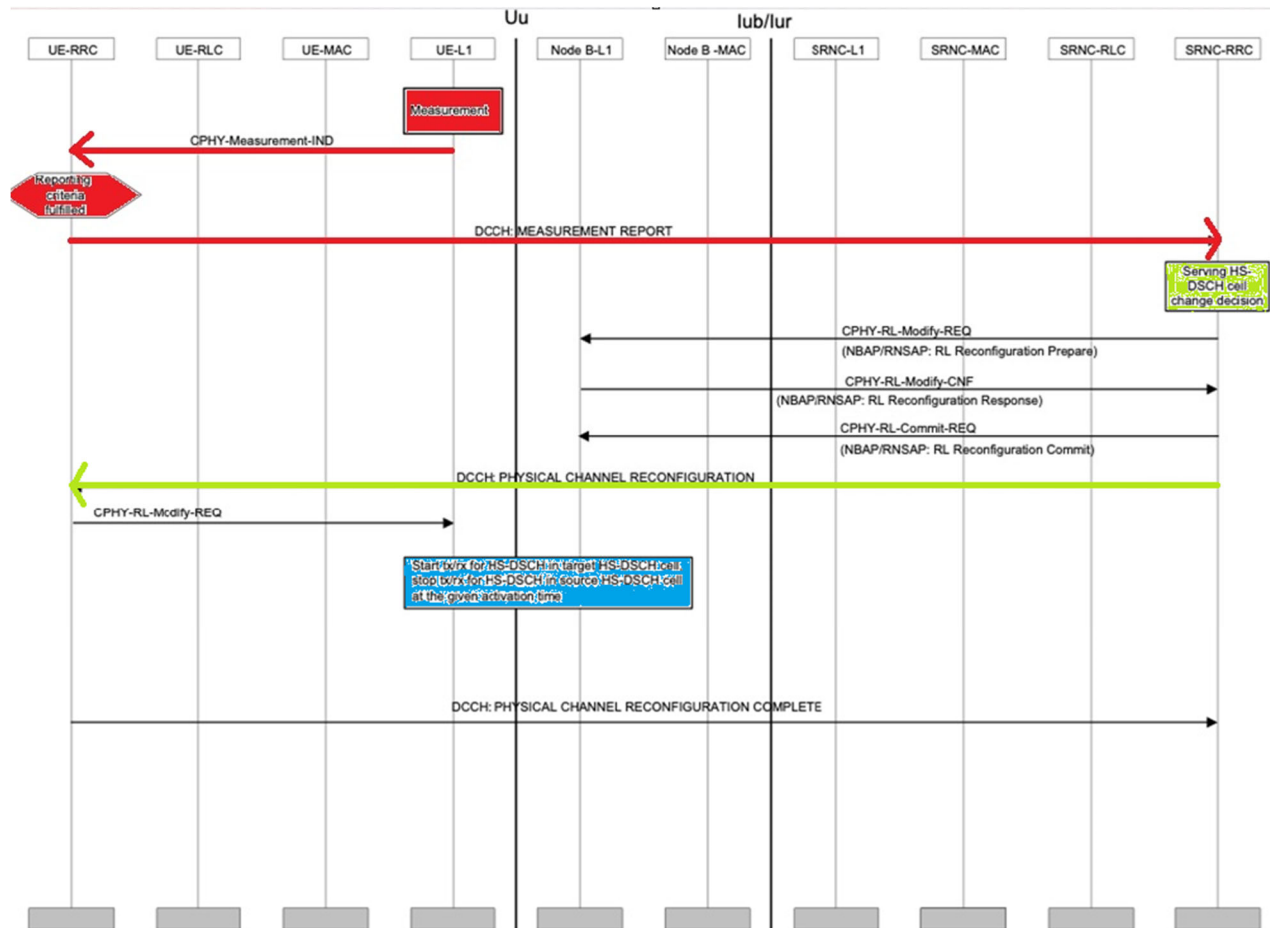
As specified in Ericsson, the Physical Channel Reconfiguration message is sent by the Node B to the UE specifying a target cell and activation time for the cell change. EX1005, 4. Because the Physical Channel Reconfiguration message only specifies a target cell and an activation time, it must be sent to and received by the UE over the primary cell, as the cell change would not take effect until the UE receives the new target cell and time to switch to the new cell communicated in the Physical Channel Reconfiguration message. EX1003, ¶219. The new target

cell is a non-primary cell from which the UE is expected to receive a downlink shared channel transmission. *Id.*

Accordingly, Ericsson discloses Element [1e].

- (f) [1f] in response to the received message, receive and process the downlink shared channel transmission from the indicated at least one of the one or more non-primary cells.**

Ericsson teaches “[s]tart tx/rx for HS-DSCH in target HS-DSCH cell, stop tx/rx for HS-DSCH in source HS-DSCH cell at the given activation time” in Figure 3 subsequent the Node B sending the Physical Channel Reconfiguration message. EX1005, 4-5.



**Annotated Figure 3 of Ericsson Showing Intra-Node B serving cell change**

In the annotated Figure 3 of Ericsson above, the blue highlighting indicates where Ericsson teaches “[s]tart tx/rx for HS-DSCH in target HS-DSCH cell, stop tx/rx for HS-DSCH in source HS-DSCH cell at the given activation time.” EX1005, 5. In this context, the target HS-DSCH cell is the non-primary cell that service was switched to as a result of the previously received Physical Channel Reconfiguration message. EX1003, ¶227. Therefore, Ericsson teaches receiving

and processing downlink shared channel transmissions from the indicated non-primary cell (i.e., target HS-DSCH cell). *Id.*

Accordingly, Ericsson discloses Element [1f].

Because it would have been obvious to a POSITA to combine Ericsson with TS 25.331 to arrive at the subject matter of claim 1, and a POSITA would have had a reasonable expectation of success in doing so, claim 1 should be found unpatentable for obviousness.

### **3. Dependent Claim 2**

Claim 2 is obvious in view of Ericsson and TS 25.331.

#### **(a) [2a] The WTRU of claim 1**

*See* Section X.B.2 above.

#### **(b) [2b] wherein there is a time delay between the downlink shared channel transmission and the receipt of the message by the WTRU.**

Ericsson discloses the downlink shared channel transmission being received from the non-primary cell in response to receiving the message, as explained above. In this regard, Ericsson teaches that “a PHYSICAL CHANNEL RECONFIGURATION message” (i.e., the claimed “message” of the ’803 patent) is received by the UE and includes “the target HS-DSCH cell and the activation time to the UE.” EX1005, 4; EX1003, 231. Ericsson also teaches that the “transition from source to target HS-DSCH cell” (i.e., the claimed “receive. . .the

downlink shared channel transmission from the . . .one or more non-primary cells” of the ’803 patent) “is performed synchronized, i.e., at a given activation time.” EX1005, 4, EX1003, 231. The activation time is therefore a delay in time between when the PHYSICAL CHANNEL RECONFIGURATION MESSAGE is received and when the target HS-DSCH is utilized for reception by the UE. *Id.* Accordingly, Ericsson teaches the claimed “time delay” of dependent claim 2. *Id.* at ¶232.

Therefore, dependent claim 2 is unpatentable for obviousness over Ericsson in view of TS 25.331.

#### **4. Dependent Claim 5**

Claim 5 is obvious in view of Ericsson, TS 25.331 and a POSITA’s knowledge.

##### **(a) [5a] The WTRU of claim 1**

*See* Section X.B.2 above.

##### **(b) [5b] wherein the transceiver and the processor are further configured to cause the WTRU to receive a grant for an uplink transmission from the primary cell**

Ericsson discloses the transceiver and the processor elements, and the configuration of the wireless transmit/receive unit (WTRU), explained above at Section X.B.2.(a)-(b). To the extent that Ericsson does not expressly disclose receiving a grant for uplink transmission from the primary cell, this limitation was

well known by a POSITA at least as early as the priority date of the '803 patent.

EX1003, ¶241.

It was well understood that a dedicated channel is provided to the mobile stations only on demand and for the duration of the call, under the control of the infrastructure. EX1012 (Mouly & Pautet, “*The GSM System for Mobile Communications*” (1992)), 5. A POSITA would have understood that network infrastructure, such as a base station, provides a channel for communication on demand by the mobile device, where that provision of resources would function as the claimed grant for uplink transmission. EX1003, ¶¶242-244.

Moreover, in UMTS systems, a mobile device communicates with the base station through a single cell, which would have been understood to be the claimed primary cell, because it is the only cell over which the mobile device would communicate. EX1003, ¶239. Claim 5 requires that the transceiver and processor are “*configured to*” receive the grant for uplink transmission from the primary cell. This configuration may occur at any time, such as either before or after a handover to a new cell. Ericsson in view of TS 25.331 in further view of the knowledge of a POSITA teaches this limitation because the grant for uplink transmission may occur prior to the handover and still satisfy Element [5b]. EX1003, ¶235.

Accordingly, receiving a grant for an uplink transmission from the infrastructure of the network using the cell with which a mobile device is communicating, i.e., a primary cell, was well within a POSITA's knowledge.

Thus, Element [5b] would have been known based on a POSITA's knowledge.

**(c) [5c] and to transmit the uplink transmission based on the received grant.**

A POSITA would have also understood that a grant of radio resources to a UE is for the UE to use for an uplink transmission based on those resources. EX1003, ¶246; *see also* EX1012, 7 (Once it has received an initial assignment indication, the addressed mobile station modifies its reception and transmission configuration to adapt it to the frequency and time characteristics of the new channel.”). A POSITA would have known that a mobile device modifies its transmission to the base station (i.e., uplink) based on a received “initial assignment indication” (i.e., grant). EX1003, ¶¶246-248.

Therefore, the subject matter of claim 5 would have been obvious based on Ericsson, TS 25.331 and a POSITA's knowledge.

**5. Dependent Claim 6**

**(a) [6a] The WTRU of claim 5**

*See* section X.B.4 above.

- (b) **[6b] wherein the transceiver and the processor are further configured to cause the WTRU to process an acknowledgement/negative acknowledgement to the uplink transmission received only from the primary cell.**

Regarding the transceiver and processor elements, and WTRU configuration, Ericsson discloses these components, as explained above in section X.B.2.

Use of acknowledgements/negative acknowledgements in mobile communications was well within the knowledge of a POSITA at the time of invention of the '803 patent. EX1003, ¶254. EX1012 is a background reference that refers to three protocols used in transmissions in GSM and explains that all three protocols “use HDLC-like mechanisms for backward error correction, with a choice between two modes” one of these modes being “the acknowledged mode, ensuring correction of erroneous frames by repetition.” EX1012, 3. HDLC stand for “High level Data Link Control,” and “HDLC-like” refers to the fact that the protocols used in GSM are very similar to HDLC. EX1003, ¶255. A POSITA would have understood that repeating a previously transmitted frame that was received in error (i.e., an “erroneous frame”) would be caused by having received a negative acknowledgment. EX1003, ¶256. Similarly, a correctly received frame would be acknowledged by receiving an acknowledgment. *Id.*

A POSITA's general knowledge of receiving acknowledgements/negative acknowledgements for previous transmissions is also confirmed by "Data Networks," Second Edition, by Dimitri Bertsekas and Robert Gallager, Prentice Hall, 1992 ("Bertsekas", EX1013). Bertsekas explains that the "basic idea of ARQ [automatic repeat request] for data on a link from A to B is to accept out-of-order packets and to request retransmissions from A only for those packets that are not correctly received." EX1013, 22. To the extent that Bertsekas (EX1013) does not explicitly use the term acknowledgements/negative acknowledgements, a POSITA would have found it obvious to inform transmitter A that a given transmission was successfully received by transmitting an acknowledgement or was not successfully received by transmitting a negative acknowledgement. EX1003, ¶¶257-258.

A POSITA would have understood that a WTRU in communication with one cell, the primary cell before a handover is initiated, would be *configured to* receive acknowledgement/negative acknowledgement only from the cell with which it is communicating, i.e., the primary cell. *Id.* Also, because claim 6 requires the transceiver and processor be "configured to," there is no temporal requirement regarding the functions in the claim being performed. EX1003, ¶252. Therefore, acknowledgements/negative acknowledgements would be received only over the primary cell before any handover to another cell.

Therefore, the combination of Ericsson, TS 25.331 and a POSITA's knowledge renders Claim 6 obvious.

**6. Independent Claim 7**

**(a) [7pre] A method comprising**

The preamble of claim 7 of the '803 patent specifies that the claim is a method claim. To the extent Patent Owner argues this is limiting, Ericsson and TS 25.331 include teachings and suggestions of performing a method comprising all of the teachings of those references. EX1003, ¶260.

Accordingly, Ericsson in view of TS 25.331 teaches [7pre].

**(b) [7a] receiving, by a wireless transmit/receive unit (WTRU), configuration information for a primary cell and one or more non-primary cells, wherein the primary cell is associated with a wireless network node and the one or more non-primary cells are associated with the wireless network node**

Ericsson in view of TS 25.331 teaches [7a], which is substantially similar to [1pre], [1c] and [1d]. *See* Sections X.B.2(a), X.B.2(c), and X.B.2(d).

Accordingly, Ericsson in view of TS 25.331 teaches [7a].

**(c) [7b] receiving, by the WTRU, a message on the primary cell, the received message including indication of at least one of the one or more non-primary cells from which the WTRU is to receive a downlink shared channel transmission**

Ericsson discloses [7b], which is substantially similar to [1e]. *See* Section X.B.2.(e).

Accordingly, Ericsson in view of TS 25.331 teaches [7b].

- (d) [7c] in response to the received message, receiving and processing, by the WTRU, the downlink shared channel transmission from the indicated at least one of the one or more non-primary cells**

Ericsson discloses [7c], which is substantially similar to [1f]. *See* Section X.B.2.(f).

Accordingly, Ericsson in view of TS 25.331 teaches [7c]. Because it would have been obvious to combine Ericsson with TS 25.331 to arrive at the subject matter of claim 7, and a POSITA would have had a reasonable expectation of success in doing so, claim 7 should be found unpatentable for obviousness. *See* Section X.B.2.

#### **7. Dependent Claim 8**

- (a) The method of claim 7 wherein there is a time delay between the downlink shared channel transmission and the receipt of the message by the WTRU.**

Ericsson in view of TS 25.331 teaches all the limitations of dependent claim 8, which is substantially similar to features [2a] and [2b] from dependent claim 2. *See* X.B.3 (discussing claim 2).

Thus, the Ericsson and TS 25.331 render dependent claim 8 unpatentable for obviousness. *See* Section X.B.3.

**8. Dependent Claim 11**

- (a) The method of claim 7 further comprising receiving, by the WTRU, a grant for an uplink transmission from the primary cell and transmitting, by the WTRU, the uplink transmission based on the received grant**

Ericsson, TS 25.331 and a POSITA's knowledge render dependent claim 11 obvious, which contains substantially similar features as [5a], [5b], and [5c]. *See* X.B.4 (discussing claim 5).

For the reasons, the combination of Ericsson, TS 25.331 and a POSITA's knowledge renders claim 11 unpatentable for obviousness. *See* Section X.B.4.

**9. Dependent Claim 12**

- (a) The method of claim 11 further comprising processing, by the WTRU, an acknowledgement/negative acknowledgement to the uplink transmission received only from the primary cell.**

Ericsson, TS 25.331 and POSITA's knowledge render unpatentable dependent claim 12, which contains features substantially similar to Elements [6a] and [6b]. *See* X.B.5 (discussing claim 6).

Thus, the combination of Ericsson, TS 25.331 and a POSITA's knowledge renders obvious claim 12. *See* Section X.B.5.

**C. Ground III: Ericsson, TS 25.331 and Sebire Render Claims 5, 6, 11, and 12 Obvious**

Claims 5, 6, 11, and 12 would have been obvious to a POSITA under Section 103 in view of Ericsson, TS 25.331 and Sebire.

**1. Motivation to Combine Ericsson-TS 25.331-Sebire**

It would have been obvious to combine Ericsson with TS 25.331, as discussed above in Section X.B.1. It would have further been obvious to combine Sebire with Ericsson and TS 25.331 to arrive at the subject matter of claims 5, 6, 11, and 12, even if those claims are entitled to their earliest effective filing date. EX1003, ¶¶275.

A POSITA would have been motivated to combine Sebire with Ericsson/TS 25.331 because they are directed to similar technologies. EX1003, ¶¶276. A skilled artisan would have understood the benefits of combining these three references, and that there was a high likelihood of success in making the combination. *Id.*

Each of Ericsson, TS 25.331 and Sebire are analogous to the subject matter of the '803 patent. *See Circuit Check*, 795 F.3d at 1335. Ericsson, TS 25.331 and Sebire are in the same field of endeavor as the challenged '803 patent claims and are reasonably pertinent to the problem faced by the patentee, namely communication protocols and handovers in particular. EX1003, ¶277.

Ericsson, TS 25.331 and Sebire are readily combinable because they are directed to protocols for a radio interface between user equipment and base stations. It therefore would have been obvious to a POSITA to apply advantageous teachings of Sebire to the teachings of Ericsson- TS 25.331 to enhance operation of a wireless system, including handover procedures. EX1003, ¶278.

Sebire relates to “a method of handover.” EX1007, 2. Sebire discloses that “the present invention relates to a method of handing over user equipment, for example, a mobile station from one cell to another cell of a cellular communications network,” and “[t]he mobile station may send and/or receive packets of data.” *Id.* Sebire performs handover using a Temporary Block Flow (TBF) initiated by a source cell to provide a grant for uplink transmission to the UE. EX1007, 4. Given that Ericsson and TS 25.331 address handover procedures and TS 25.331 defines the RRC protocol, which is the set of messages, rules, and the like regarding allocation and usage of the Radio Resources for sending and receiving data, a POSITA would have considered Sebire’s teachings in solving the problems identified in the ’803 patent. EX1003, ¶280. Incorporation of Sebire’s teachings would have enhanced the data communication between the network and the UE. *Id.* As Sebire explains, “the mobile does not have to listen to broadcast messages but gets this information during the ongoing TBF in the source cell. With this mechanism, the mobile station can set up the TBF link in the target cell

without having any delay caused by the mobile station listening to information broadcast by the base station of the new cell”. EX1007, 5; EX1003, ¶280.

Sebire’s teachings relate to the development of GSM (a 2G technology) and GPRS in particular, which is known as “2.5G” technology. EX1003, ¶281. A POSITA considering development of 3G would consider knowledge developed in the context of 2G and 2.5G. *Id.*

A skilled artisan would have combined Ericsson, TS 25.331 and Sebire, and would have had a reasonable expectation of success in doing so as the concept of a handover was known in the art and was acknowledged as such in the ’803 patent specification. EX1001, 1:29-55; EX1003, ¶282. When the prior art identifies a problem and provides express guidance on how to fix the problem, as in Sebire, a skilled artisan would have had a reasonable expectation of success in combining the prior art. *See, e.g., In re Inland Steel*, 265 F.3d at 1364. Because the combination of Ericsson, TS 25.331 and Sebire involves the predictable use of interchangeable prior art elements according to their established functions, it supports a finding of obviousness. *See KSR*, 550 U.S. at 416. This combination is not of innovation but of ordinary skill and common sense. EX1003, ¶282; *Id.* at 421. Accordingly, the combination of Ericsson, TS 25.331 and Sebire renders claims 5, 6, 11, and 12 of the ’803 patent obvious.

## 2. Dependent Claim 5

The combination of Ericsson, TS 25.331 and Sebire renders claim 5 obvious under Section 103. EX1003, ¶¶292.

### (a) [5a] The WTRU of claim 1

See Section X.B.2 above, which explains that the combination of Ericsson and TS 25.331 discloses element [5a].

### (b) [5b] wherein the transceiver and the processor are further configured to cause the WTRU to receive a grant for an uplink transmission from the primary cell

TS 25.331 discloses this limitation. See section X.B.4. Additionally, Sebire discloses an “ongoing TBF (Temporary Block Flow) via the source cell.” EX1007, 4. A POSITA would have understood a TBF to include grants for an uplink transmission. EX1003, ¶285. For example, Bates is a text directed to GPRS that explains the understanding of TBF mechanisms by a POSITA in the relevant timeframe. EX1003, ¶285; EX1014 (Bates, “GPRS General Packet Radio Service,” (2002)) (“Bates”). Bates explains, under the section heading “Temporary Block Flow—Uplink (UL) Data Transfer,” that this procedure “is an example of message sequence for the uplink data transfer with one resource reallocation and possible RLC data blocks retransmissions (we assume that the transfer mode is ACK).” EX1014, 7. Bates also explains under the heading “Temporary Block Flow (TBF) for Dynamic Allocation” that “[w]hen a mobile station decodes its

USF on one radio block DL, it is allowed to transmit on the next radio block UL.”

EX1014, 4-5. In an “ongoing TBF,” as disclosed by Sebire, the WTRU is configured to receive a grant for an uplink transmission from the primary cell.

EX1003, ¶¶285-286.

Moreover, claim 5 requires that the transceiver and processor are “*configured to*” receive the grant for uplink transmission from the primary cell. There is no requirement for when this configuration is to occur, such as after a handover to a new cell. Accordingly, Ericsson in view of TS 25.331 in further view of Sebire teach this limitation because the grant for uplink transmission could occur any time, e.g., either before or after the handover, and still meet Element [5b]. EX1003, ¶235.

Accordingly, Ericsson, TS 25.331 and Sebire disclose Element [5b].

**(c) [5c] and to transmit the uplink transmission based on the received grant.**

As discussed above, a POSITA would have understood Sebire’s “ongoing TBF” to include both the grant for an uplink transmission and the transmission itself. EX1003, ¶289. Sebire teaches that when “the mobile station has been assigned uplink TBF and it has valid timing advance information the mobile station may continue normal operation and send RLC/MAC data and/or control blocks in the uplink blocks indicated with USF or RRB [Relative Reserved Block

Period] fields or using fixed allocation.” EX1007, 11. Sebire teaches transmitting the uplink transmission based on the received grant, because according to Sebire, once an “ongoing TBF” is assigned, the mobile device continues normal operation of sending RLC/MAC data or control blocks in the uplink. EX1003, ¶290.

Accordingly, the combination of Ericsson, TS 25.331 and Sebire discloses Element [5c].

Because it would have been obvious to combine Ericsson with TS 25.331 and Sebire to arrive at the subject matter of claim 5, and a POSITA would have had a reasonable expectation of success in doing so, claim 5 should be found unpatentable for obviousness.

### **3. Dependent Claim 6**

Ericsson, TS 25.331, and Sebire renders claim 6 unpatentable for obviousness. EX1003, ¶299.

#### **(a) The WTRU of claim 5**

*See* Section X.C.2 above, regarding obviousness of claim 5 based on Ericsson, TS 25.331, and Sebire.

#### **(b) wherein the transceiver and the processor are further configured to cause the WTRU to process an acknowledgement/negative acknowledgement to the**

**uplink transmission received only from the primary cell.**

Ericsson discloses the transceiver and processor elements (Elements [1a] and [1b]). *See* Section X.B.2.(b) above.

Sebire discloses a one-bit field called “RLC\_MODE” that “indicates the RLC mode of the requested TBF,” where “0” indicates “RLC acknowledged mode.” EX1007, 18. As discussed above in connection with Element [5b], Bates explains under the section heading “Temporary Block Flow—Uplink (UL) Data Transfer” that this procedure “is an example of message sequence for the uplink data transfer with one resource reallocation and possible RLC data blocks retransmissions (we assume that the transfer mode is ACK).” EX1014, 7. Bates shows the knowledge of the POSITA with respect to “RLC acknowledged mode,” indicating the transmission of acknowledgments and negative acknowledgments. EX1014, 7; EX1003, ¶297 (Bates indicates that an assumption that the “transfer mode is ACK” in this condition).

In UMTS systems, as disclosed in Ericsson and TS 25.331, a mobile device communicates with the base station through a single cell, which would have been understood to be a primary cell, because it is the only cell over which the mobile device would communicate. EX1003, ¶298. Claim 6 requires that the transceiver and processor are “*configured to*” cause the WTRU to process and

acknowledgement/negative acknowledgement to the uplink transmission received only from the primary cell. There is no requirement for when this configuration is to occur, such as after a handover to a new cell. Accordingly, Ericsson in view of TS 25.331 in further view of the knowledge of a POSITA teaches this limitation because the grant for uplink transmission could occur prior to the handover and still meet the claim limitation requiring the grant to be received over the primary cell. EX1003, ¶252.

Accordingly, Sebire teaches Element [6b]. Because it would have been obvious to a POSITA to combine Ericsson, TS 25.331, and Sebire to arrive at the subject matter of claim 6, and a POSITA would have had a reasonable expectation of success in doing so, claim 6 is unpatentable for obviousness.

#### **4. Dependent Claim 11**

- (a) The method of claim 7 further comprising receiving, by the WTRU, a grant for an uplink transmission from the primary cell and transmitting, by the WTRU, the uplink transmission based on the received grant**

Dependent claim 11 has substantially similar features as Elements [5a] and [5b]. Because it would have been obvious to combine Ericsson and TS 25.331 with Sebire to arrive at the subject matter of claim 5, and a POSITA would have had a reasonable expectation of success in doing so, claim 11 is also unpatentable for obviousness. *See* Section X.C.2.

**5. Dependent Claim 12**

- (a) **The method of claim 11 further comprising processing, by the WTRU, an acknowledgement/negative acknowledgement to the uplink transmission received only from the primary cell.**

Dependent claim 12 contains substantially similar features as claim 6.

Because it would have been obvious to combine Ericsson, TS 25.331, and Sebire, with the knowledge of a POSITA to arrive at the subject matter of claim 6, and a POSITA would have had a reasonable expectation of success in doing so, claim 12 is also unpatentable for obviousness. *See* Section X.C.3.

**XI. CONCLUSION**

Based on the foregoing, Petitioner respectfully requests that a Trial be instituted and that claims 1, 2, 5-8, 11, and 12 of the '803 patent be canceled.

Respectfully submitted,

**Leydig**

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## CERTIFICATE OF WORD COUNT COMPLIANCE

Pursuant to 37 C.F.R. § 42.24 (d), I hereby certify that this Petition complies with the type-volume limits of 37 C.F.R. § 42.24 (a)(1)(i). As calculated by the word count feature of the word-processing system used to prepare this Petition, it contains 12,889 words, excluding the parts of this Petition that are exempted by 37 C.F.R. § 42.24 (a) (including a table of contents, a table of authorities, mandatory notices under 37 C.F.R. § 42.8, a certificate of service or word count, and appendix of exhibits or claim listing).

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## CERTIFICATE OF SERVICE

I hereby certify that, on May 18, 2025, a true and correct copy of this Petition for *Inter Partes* Review of U.S. Patent No. 10,764,803 under 35 U.S.C. §§ 311-319 and 37 C.F.R. § 42.100 *et Seq.*, including all exhibits thereto, was served in its entirety via Federal Express and/or additionally by electronic mail, upon the following attorney of record as listed on USPTO Patent Center and the listed attorneys of record for Plaintiffs in the concurrent litigation matter:

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