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**Datasheet for the decision
of 13 July 2021**

Case Number: T 1870/16 - 3.5.03

Application Number: 12004151.2

Publication Number: 2496041

IPC: H04W76/02

Language of the proceedings: EN

Title of invention:

Methods for synchronizing PDCP operations after RRC connection re-establishment in a wireless communication system and related apparatuses thereof

Patent Proprietor:

HTC Corporation

Opponent:

Nokia Solutions and Networks Oy

Headword:

Synchronising PDCP operations I/HTC

Relevant legal provisions:

EPC Art. 56, 76(1), 87(1), 111(2), 112(1)(a), 116
RPBA Art. 2(1), 15a(2)
BDS TBA 2021 Art. 4(4)

Keyword:

"Mixed-mode" oral proceedings held without the consent of one party - stay of proceedings in view of G 1/21 (no)
Added subject-matter - main request (yes)
Referral to the Enlarged BoA - first auxiliary request (no):
res judicata - not the same facts
Validity of priority claim - second and third auxiliary requests (no): no "same invention"
Inventive step - second and third auxiliary requests (no)

Decisions cited:

G 0002/10, G 0003/19, G 0001/21, T 0167/93, T 2084/11,
T 1473/13, T 1666/14, T 0453/15, T 0862/16, T 2613/19

Catchword:

As to the application of the principle of *res judicata*, see point 4 of the Reasons.



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Case Number: T 1870/16 - 3.5.03

D E C I S I O N
of Technical Board of Appeal 3.5.03
of 13 July 2021

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Decision under appeal: **Interlocutory decision of the Opposition
Division of the European Patent Office posted on
13 June 2016 concerning maintenance of the
European Patent No. 2496041 in amended form.**

Composition of the Board:

Chair K. Bengi-Akyürek
Members: T. Snell
W. Sekretaruk

Summary of Facts and Submissions

- I. This case concerns the appeal of the opponent (henceforth, "appellant") against the interlocutory decision of the opposition division with regard to maintenance of the patent in amended form on the basis of the claims of the "New Second Auxiliary Request" filed at oral proceedings before the opposition division held on 18 May 2016.
- II. The appellant requests that the decision under appeal be set aside and that the patent be revoked.
- III. The patent proprietor (henceforth, "respondent") requests as their **main request** that the appeal be dismissed, i.e. that the patent be maintained on the basis of the claims of the "New Second Auxiliary Request".

As a **first auxiliary request**, the respondent requests that a question be referred to the Enlarged Board of Appeal.

As **second and third auxiliary requests**, the respondent requests that the patent be maintained in amended form on the basis of the claims of either the "Second Auxiliary Request Appeal" or the "Third Auxiliary Request Appeal", both as filed with the submission dated 7 August 2020.

- IV. In accordance with the appellant's auxiliary request, the board appointed oral proceedings to be held in a so-called "mixed-mode" format (cf. Article 15a(2) RPBA). In advance of the oral proceedings, the respondent requested that the appeal proceedings be

stayed in view of case G 1/21 pending before the Enlarged Board of Appeal and/or that the scheduled oral proceedings be postponed to a later date.

- V. Oral proceedings were held as mixed-mode proceedings on 13 July 2021. The appellant attended the proceedings via videoconference, whereas the respondent and the board were physically present.

After the proceedings were opened, the respondent questioned the recent change in the composition of the board pursuant to Article 2(1) RPBA 2020 and Article 4(4) of the Business Distribution Scheme of the Technical Boards of Appeal for the year 2021 (BDS TBA 2021), since they had not found a mention of the legally qualified member (LM) in that BDS. The respondent also doubted that the new LM would have properly been able to familiarise himself with the case within one working day. After the chair had referred to Article 4(4) BDS TBA 2021 ("If a legally qualified member cannot be replaced in accordance with paragraph 1, the Chairman shall designate a legally qualified member from another Board ...") and had explained that the LM was a member of the Legal Board of Appeal and that the LM had had three days' preparation time including the weekend, the proceedings were continued without opposition to the board's composition.

The respondent then re-submitted their request to stay the appeal proceedings in view of pending case G 1/21, and also requested, now that the oral proceedings had been opened, that they be adjourned. The requests were refused.

At the end of the oral proceedings, the chair announced the board's decision.

VI. The following documents are relevant to the board's decision:

D3: 3GPP TS 36.331 V8.4.0 (2008-12) - 3rd Generation Partnership Project; Technical Specification Group Radio Access Network; Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification (Release 8);

D4: 3GPP TS 36.323 V8.4.0 (2008-12) - 3rd Generation Partnership Project; Technical Specification Group Radio Access Network; Evolved Universal Terrestrial Radio Access (E-UTRA); Packet Data Convergence Protocol (PDCP) specification (Release 8).

VII. Claim 1 of the **main request** reads as follows:

"A communication device (350) of a wireless communication system (300) for synchronising Packet Data Convergence Protocol, PDCP, operations with another communication device (310), wherein the communication device (350) is an Evolved UMTS Terrestrial Radio Access Network, E-UTRAN, (350), and the other communication device (310) is a user equipment, UE, (310), the communication device (350) comprising:

means for initiating a Radio Resource Control, RRC, reconfiguration procedure to resume a radio bearer other than a signalling radio bearer 1, SRB1, when an RRC connection is re-established;

characterized by:

means for transmitting PDCP Service Data Units, SDUs, after resetting state variables of Next_PDCP_TX_SN and TX_HFN to 0 and the radio bearer is resumed."

VIII. The question to be referred according to the **first auxiliary request** reads as follows:

"Can a Board of Appeal find a violation of Art. 76(1) EPC in a divisional application with regard to subject matter, for which another Board of Appeal has decided in the parent application that such subject matter complies with Art. 123(2) EPC, when the original disclosure of the parent application and of the divisional application is of identical scope, considering that the test for compliance with Art. 76(1) EPC is the same as that for Art. 123(2) EPC?"

IX. Claim 1 of the **second auxiliary request** is the same as claim 1 of the main request except that the characterising part reads as follows (amendments underlined):

"means for re-transmitting a designated group of PDCP Service Data Units, SDUs, after resetting state variables of Next_PDCP_TX_SN and TX_HFN to 0 and when the radio bearer mapped on Radio Link Control, RLC, Acknowledged Mode, AM, is resumed."

X. Claim 1 of the **third auxiliary request** is the same as claim 1 of the main request except that the characterising part reads as follows (amendments underlined):

"means for re-transmitting a designated group of PDCP Service Data Units, SDUs, after resetting state variables of Next_PDCP_TX_SN and TX_HFN to 0 and when a data radio bearer, DRB, mapped on Radio Link Control, RLC, Acknowledged Mode, AM, is resumed."

Reasons for the Decision

1. *The respondent's requests to stay the appeal proceedings and to adjourn the oral proceedings before the board*
- 1.1 The board appointed oral proceedings to be held in "mixed-mode", meaning that the oral proceedings were held at the Boards of Appeal's premises in Haar, but the parties could choose to be present in person or to attend via videoconference (cf. Article 15a(2) RPBA). The mixed-mode form had been chosen by the board after the appellant, as an auxiliary measure, requested that format in view of the respondent's refusal to give consent to oral proceedings via full videoconference within the meaning of Article 15a(1) RPBA. The respondent attended the oral proceedings *in-person* in Haar, whereas the appellant attended via videoconference.
- 1.2 The respondent argued that in view of case G 1/21 pending before the Enlarged Board of Appeal, which was concerned with the issue as to whether oral proceedings via videoconference could be held *without* the consent of all parties, it would be "normal" and "proportionate" to await the outcome of this case, especially as the decision was expected soon.

- 1.3 Whether or not a case is to be stayed pending a decision of the Enlarged Board of Appeal in another case is a matter at the discretion of the board, since there are no provisions of the EPC or the Rules of Procedure of the Boards of Appeal (RPBA) in this regard (see e.g. T 1473/13, Reasons 7.2.2). According to the EPC, only Rules 14(1) and 78(1) EPC explicitly stipulate a stay of proceedings before the departments of the EPO, but these Rules have no relevance to the issue at hand.

- 1.4 In the present case, considering that the respondent was attending oral proceedings in the presence of the board in the "normal" way, the board could not see that the possibility for the respondent to present their case orally and to hear and respond to the case of the opponent was in any way negatively affected by holding mixed-mode oral proceedings when compared with "normal" oral proceedings. The respondent also did not provide any reasons except to argue that in case G 1/21 the legality of Article 15a RPBA in its totality was at issue, so that even mixed-mode oral proceedings may become "illegal" if the Enlarged Board were to so decide.

- 1.5 However, given that the respondent's right to be heard at the oral proceedings pursuant to Article 116 EPC in the physical presence of the board was fully respected (cf. Article 113(1) EPC), the need for the board to hear and decide cases during the ongoing Covid-19 pandemic outweighed any theoretical risk that the Enlarged Board may subsequently find the use of mixed-mode oral proceedings "illegal". In other words, following the general principle established in case T 1473/13 (see Reasons 7.2.2), the potential disadvantage resulting from a stay of the proceedings

(e.g. further procedural delays affecting legal certainty for both parties as well as for the public) would have been greater than that resulting from not staying the proceedings.

1.6 The board further notes that, in referral cases, the Enlarged Board of Appeal normally seeks to ensure that changes in the (established) interpretation of law (i.e. the provisions of Article 116 EPC and Article 15a RPBA) do not have a retroactive effect (cf. G 3/19, Reasons XXIX; see also recent case T 2613/19, Reasons 1). It is also noted in passing that the Order of G 1/21, which has in the meantime been issued, would apparently endorse the legality of VICO-based oral proceedings such as the present one.

1.7 Consequently, the board rejected the respondent's requests respectively to stay the appeal proceedings and to adjourn the arranged oral proceedings before the board.

2. *Technical context*

2.1 The present patent concerns generally LTE ("Long Term Evolution") systems, and more particularly the recovery process from a disconnection due to radio link failure.

2.2 For ease of comprehension, the meaning of relevant LTE-based acronyms are as follows:

E-UTRAN = evolved universal terrestrial radio access network (NB: this includes a base station)

UE = user equipment

RRC = radio resource control

PDCP = packet data convergence protocol

SDU = service data unit

SRB = signaling radio bearer

DRB = data radio bearer

Next_PDCP_TX_SN = next PDCP transmit sequence number

TX_HFN = transmit hyper frame number.

- 2.3 The technical background is set out in paragraph [0003] of the parent application as published (EP 2 139 292 A2):

"If an RRC connection is disconnected due to radio link failure, an RRC re-establishment procedure needs to be initiated to re-establish the RRC connection. During the RRC re-establishment procedure, a UE resumes a signaling radio bearer 1 (SRB1) and configures a lower layer to re-activate security (including integrity protection and ciphering) using the previously configured algorithm immediately when receiving an RRC Connection Re-establishment message from an E-UTRAN. To resume all radio bearers other than the SRB1, the E-UTRAN shall initiate an RRC Connection reconfiguration procedure after the RRC connection is re-established, wherein the RRC Connection reconfiguration procedure is to modify the RRC connection. However, it is not clearly specified how to resume SRBs and data radio bearers (DRBs) after the RRC Connection re-establishment procedure and the subsequent RRC connection reconfiguration in some scenarios. Hence, a mechanism for synchronizing PDCP operations after RRC connection re-establishment needs to be improved".

3. *Main request - claim 1 - Article 76(1) EPC*

- 3.1 The test for compliance with Article 76(1) EPC is the same as that for Article 123(2) EPC. In accordance with

the "gold standard" (see e.g. G 2/10), the subject-matter of the divisional application must only include subject-matter which is directly and unambiguously disclosed in the parent application as filed, taking account of matter which is implicit to the skilled person having regard to their common general knowledge.

3.2 With respect to compliance with Article 76(1) EPC, i.e. whether or not the subject-matter of claim 1 comprises matter extending beyond the content of the parent application as filed (henceforth "PA"), the appellant raised three main objections (points 16 to 18 of the statement of grounds of appeal):

- (i) There is no support in the PA for broadening the term "re-transmission" to "transmission".
- (ii) There is no support in the PA for broadening the expression "a designated group of PDCP SDUs" to "PDCP SDUs".
- (iii) There is no support in the PA for omitting the feature "RLC AM".

3.3 These objections are essentially the same as those decided on by this board in favour of the then opponent-respondent in decision T 862/16 concerning a "sister" divisional application (cf. Reasons 2.2, objections (iv) to (vi)). The reasons given there apply, *mutatis mutandis*, to the present case (cf. T 862/16, Reasons 2.5 and 2.6).

3.4 In their submission dated 11 June 2021 (cf. page 3, section B.6), the appellant additionally raised another objection (to be referred to in the present case as **objection (iv)**) mentioned in decision T 862/16. The

objection as formulated in T 862/16 reads as follows (cf. Reasons 2.8, objection (vii)):

"... claim 1 uses the formulation "means for performing an RRC Reconfiguration procedure to resume a data radio bearer, DRB, other than a signaling radio bearer 1, SRB1, when an RRC connection is re-established", whereas the parent application as filed uses the formulation "all radio bearers other than a signaling radio bearer 1" (cf. claim 1 and paragraph [0003], line 10 of the parent application as published). Thus, claim 1 now embraces the possibility that not all other radio bearers will be resumed, as opposed to the teaching of the parent application as filed."

The board agrees with the appellant that this objection also applies, *mutatis mutandis*, to the present case (cf. T 862/16, Reasons 2.8.3 and 2.8.4).

3.5 As regards the above objections, the respondent merely submitted at the oral proceedings before the board that the explicit reference to an E-UTRAN system in present claim 1 implied to a skilled reader that the objected-to features did not amount to a new teaching going beyond the original one. However, for the reasons set out above, the board holds that the mere use of an E-UTRAN system cannot by itself justify the objected-to claim broadening and omissions of originally disclosed features (see also points 5.4 and 5.4 below).

3.6 Consequently, in view of objections (i) to (iv), claim 1 of the main request does not comply with Article 76(1) EPC.

4. *First auxiliary request - referral of a question*

In the submission dated 7 August 2020, the respondent requested to refer the following question to the Enlarged Board of Appeal under Article 112(1) (a) EPC as their **first auxiliary request** (cf. point VIII above):

"Should the Board of Appeal be minded not to grant the above Main Request for reasons as expressed in the preliminary opinion accompanying the summons of June 30, 2020, it is requested to refer the following question to the Enlarged Board of Appeal in order to ensure uniform application of the law:

Can a Board of Appeal find a violation of Art. 76(1) EPC in a divisional application with regard to subject matter, for which another Board of Appeal has decided in the parent application that such subject matter complies with Art. 123(2) EPC, when the original disclosure of the parent application and of the divisional application is of identical scope, considering that the test for compliance with Art. 76(1) EPC is the same as that for Art. 123(2) EPC?"

- 4.1 The implication of the requested referral question in accordance with Article 112(1) (a) EPC is the need for the Enlarged Board of Appeal to decide the question as to whether or not the conclusion reached in respect of the parent patent (cf. **claim 1 of the third auxiliary request**) in case T 453/15 (cf. Reasons 6.1) as regards compliance with Article 123(2) EPC has the binding effect of *res judicata* with respect to **claim 1 of the present main request**, as these claims are said to have "identical scope".

4.2 However, a decision on this question is not required in order to decide the present case because present claim 1 and claim 1 of the third auxiliary request underlying decision T 453/15 are not of "identical scope". In this respect, present claim 1 does e.g. not comprise the limitation relating to "all PDCP SDUs" present in claim 1 of the third auxiliary request decided on in case T 453/15 (cf. objection (iv) above), so that, at least for this reason, the underlying subject-matters and thus the facts are not the same within the meaning of Article 111(2) EPC and T 167/93 (cf. Reasons 2.5(d)).

Consequently, even if, *arguendo*, after a decision on the claims of the parent application or patent, the principle of *res judicata* applied to the claims of a subsequent divisional application, i.e. in "cross-procedural proceedings" (which the present board doubts; see also T 2084/11, Reasons 1.3; T 1666/14, Reasons 2) it would not apply here.

4.3 In view of the above, the request for referral of this question to the Enlarged Board of Appeal is refused (Article 112(1) (a) EPC).

5. *Second and third auxiliary requests - claim 1 - entitlement to priority (Article 87(1) EPC)*

5.1 The "same invention" test for determining the entitlement to priority corresponds to the "gold standard" used for determining compliance with Articles 123(2) and 76(1) EPC (cf. G 2/10).

5.2 Claim 1 of each request does not concern the "same invention" as the priority document, since the priority document does not directly and unambiguously disclose

the following feature of claim 1 of each auxiliary request:

"means for re-transmitting a designated group of PDCP Service Data Units, SDUs".

- 5.3 In this respect, in accordance with "Method 1" (cf. the priority document **US 61/074,989**, page 6/9, penultimate paragraph), "the PDCP entity re-transmits all PDCP SDUs starting from the first PDCP SDU for which the successful delivery of the corresponding PDCP PDU has not been confirmed by lower layers"; in accordance with "Method 2" (cf. same page, last paragraph), "the PDCP entity re-transmits PDCP SDUs for which the successful delivery of the corresponding PDCP PDU has not been confirmed by lower layers"; in accordance with "Method 3" (page 7/9, 2nd paragraph), "[t]he transmitting side of the peer PDCP entity transmits PDCP SDUs negatively acknowledged in the PDCP status report".

Hence, the priority document in each of these methods defines the group of re-transmitted PDCP SDUs more narrowly than does claim 1 of either the second or third auxiliary requests. Therefore, even if one of "Methods 1 to 3" of the priority document were combined with "Method 6" (cf. page 8/9, 2nd paragraph), the subject-matter of claim 1 of either the second or third auxiliary requests would not directly and unambiguously result.

- 5.4 The respondent argued that it was implicit to the skilled person that an E-UTRAN comprised means for re-transmitting a designated group of PDCP SDUs, in the same way that it was implicit that a bicycle had two wheels.

The board however points out that the skilled person has known that a bicycle has two wheels for at least 150 years, whereas an E-UTRAN is a highly complex entity based on hundreds of pages of specifications (including **D3** and **D4**) which, at the patent's priority date, were not settled but in a continuous state of development, as is indeed shown by the content of the priority document itself. The respondent has moreover not provided any reference supporting the general definition "re-transmitting a designated group of PDCP SDUs", or explained why it is directly and unambiguously derivable from the priority document to combine such a general definition with "Method 6" of the priority document.

- 5.5 The board concludes that the priority claim is invalid as regards claim 1 of both the second and third auxiliary requests.
6. *Claim 1 - first and second auxiliary requests - inventive step*
- 6.1 As the priority is invalid, documents **D3** and **D4** are prior-art documents within the meaning of Article 54(2) EPC.
- 6.2 **D3** is a 3GPP specification concerning PDCP and the E-UTRAN. **D4** is a 3GPP specification concerning the Radio Resource Control (RRC) protocol for the E-UTRAN.
- 6.3 **D4**, sections 5.3.5.2 and 5.3.5.3, disclose the RRC reconfiguration procedure, whereby all radio bearers other than SRB1 are resumed. **D4** therefore essentially discloses the features of the preamble of claim 1 of either the second or third auxiliary request. **D4**

further states in section 5.3.5.3, "NOTE 1", that

"The handling of the radio bearers after the successful completion of the PDCP re-establishment, e.g. the re-transmission of unacknowledged PDCP SDUs ..., the handling of the SN and the HFN, is specified in [8]".

The reference "[8]" refers to D3.

6.4 The objective technical problem starting out from D4 can be formulated as *how to use the teaching of D3 to determine the handling of the re-transmission of unacknowledged PDCP SDUs and the handling of the SN and the HFN*.

6.5 In order to solve this problem, the skilled person would consult D3, section 5.2.1.1, where it is stated that when upper layers request a PDCP re-establishment, the UE shall *"... perform retransmission or transmission of all the PDCP SDUs ..."* (i.e. re-transmission of a designated group of PDCP SDUs). In section 5.2.1.2, it is stated that when upper layers request a PDCP re-establishment, the UE shall *"... set Next_PDCP_TX_SN, and TX_HFN to 0"*. It is further noted that the reference to "unacknowledged PDCP SDUs" in D4, section 5.3.5.3 implies the use of RLC Acknowledged Mode.

By applying the teaching of D3 to that of D4, the skilled person therefore would arrive without inventive step at the subject-matter of claim 1 of respectively the second and third auxiliary requests (Articles 52(1) and 56 EPC).

7. As there is no allowable request, it follows that the opposed patent must be revoked.

Order

For these reasons it is decided that:

1. The request for referral of a question to the Enlarged Board of Appeal is refused.
2. The decision under appeal is set aside.
3. The patent is revoked.

The Registrar:

The Chair:



B. Brückner

K. Bengi-Akyürek

Decision electronically authenticated