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**Datasheet for the decision of 31 May 2022**

**Case Number:** T 2572/19 - 3.5.03

**Application Number:** 16173602.0

**Publication Number:** 3104652

**IPC:** H04W72/04

**Language of the proceedings:** EN

**Title of invention:**
Method and apparatus for using a configured uplink resource in a wireless communication system

**Applicant:**
ASUSTek Computer Inc.

**Headword:**
Uplink resource configuration/ASUSTEK

**Relevant legal provisions:**
EPC Art. 54
RPBA 2020 Art. 13(2)

**Keyword:**
Novelty - main and 1st auxiliary requests (no)
Admittance of claim requests filed after the summons - 2nd and 3rd auxiliary requests (no): no exceptional circumstances

**Decisions cited:**
T 2271/18, T 2632/18

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**Case Number: T 2572/19 - 3.5.03**

# D E C I S I O N
# of Technical Board of Appeal 3.5.03
# of 31 May 2022

| | |
|---|---|
| **Appellant:** (Applicant) | ASUSTek Computer Inc.<br>No. 15, Lite Road<br>Peitou, Taipei-City 112 (TW) |
| **Representative:** | Hoefer & Partner Patentanwälte mbB<br>Pilgersheimer Straße 20<br>81543 München (DE) |
| **Decision under appeal:** | **Decision of the Examining Division of the European Patent Office posted on 5 April 2019 refusing European patent application No. 16173602.0 pursuant to Article 97(2) EPC.** |

**Composition of the Board:**

| | |
|---|---|
| **Chair** | K. Bengi-Akyürek |
| **Members:** | J. Eraso Helguera |
| | R. Winkelhofer |

## Summary of Facts and Submissions

I. The appeal was lodged against the decision of the examining division to refuse the present European patent application for lack of novelty (Article 54 EPC) with respect to the independent claims of a main request, a first auxiliary request and a second auxiliary request, and for added subject-matter (Article 123(2) EPC) with respect to the claims of the second auxiliary request.

II. During the examination proceedings, the examining division referred *inter alia* to the following prior-art document:

**D1**: Nokia Siemens Networks: "Padding BSR and Empty Transmission Buffers", R2-105318, October 2010.

III. Oral proceedings before the board were held on 31 May 2022.

The appellant requested that the appealed decision be set aside and that a patent be granted on the basis of the claims of either of the **main request** and the **first auxiliary request** subject to the appealed decision or, alternatively, of either of a **second and a third auxiliary request** filed with a response to the board's communication under Article 15(1) RPBA 2020.

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

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

"A method for using a configured uplink resource by a user equipment, in the following also referred to as UE, in a wireless communication system, the method comprising:

receiving a signaling to configure an uplink resource which is available in multiple transmission time intervals, in the following also referred to as TTIs, including a first TTI and a second TTI (1405); and

characterized by determining whether to perform a first transmission using the configured uplink resource in a TTI based on whether the TTI is used to indicate that the UE has received the signaling, wherein the UE has no data available for transmission, and the UE performs the first transmission using the configured uplink resource in the first TTI which is used to indicate that the UE has received the signaling and not in the second TTI which is not used to indicate that the UE has received the signaling (1410)."

Claim 1 of the **first auxiliary request** reads as follows:

"A method for using a configured uplink resource by a user equipment, in the following also referred to as UE, in a wireless communication system, the method comprising:

receiving a signaling to configure an uplink resource which is available in multiple transmission time intervals, in the following also referred to as TTIs, including a first TTI and a second TTI (1405); and

characterized by determining whether to perform a first transmission using the configured uplink resource in a TTI based on whether the signaling to configure the uplink resource is received corresponding to the TTI, wherein the UE has no data available for transmission, and the UE performs the first transmission using the configured uplink resource in the first TTI which is corresponding to reception of the signaling and not in the second TTI which is not corresponding to reception of the signaling (1410)."

Claim 1 of the **second auxiliary request** reads as follows (board's highlighting indicating amendments vis-à-vis claim 1 of the main request):

"A method for using a configured uplink resource by a user equipment, in the following also referred to as UE, in a wireless communication system, the method comprising:

receiving a signaling to configure an uplink resource which is available in multiple transmission time intervals, in the following also referred to as TTIs, including a first TTI and a second TTI (1405) wherein the signaling is semi-persistent scheduling, in the following also referred to as SPS, initiation or re-initiation;

characterized by determining whether to perform a first transmission using the configured uplink resource in a TTI based on whether the TTI is used to indicate that the UE has received the signaling, wherein the UE has no data available for transmission, and the UE performs the first transmission using the configured uplink resource in the first TTI which is used to indicate that the UE has received the signaling and not

in the second TTI which is not used to indicate that the UE has received the signaling (1410)."

Claim 1 of the **third auxiliary request** reads as follows (board's highlighting indicating amendments vis-à-vis claim 1 of the first auxiliary request):

"A method for using a configured uplink resource by a user equipment, in the following also referred to as UE, in a wireless communication system, the method comprising:

receiving a signaling to configure an uplink resource which is available in multiple transmission time intervals, in the following also referred to as TTIs, including a first TTI and a second TTI (1405) wherein the signaling is semi-persistent scheduling, in the following also referred to as SPS, initiation or re-initiation;

characterized by determining whether to perform a first transmission using the configured uplink resource in a TTI based on whether the signaling to configure the uplink resource is received corresponding to the TTI, wherein the UE has no data available for transmission, and the UE performs the first transmission using the configured uplink resource in the first TTI which is corresponding to reception of the signaling and not in the second TTI which is not corresponding to reception of the signaling (1410)."

## Reasons for the Decision

1. MAIN REQUEST

Claim 1 of the **main request** comprises the following limiting features (outline used as in the statement of grounds of appeal):

A method for using a configured uplink resource by a UE, in a wireless communication system, the method comprising:

i) receiving a signalling to configure an uplink resource which is available in multiple TTIs, including a first TTI and a second TTI;

ii) determining whether to perform a first transmission using the configured uplink resource in a TTI based on whether the TTI is used to indicate that the UE has received the signalling, wherein the UE has no data available for transmission,

iii) the UE performs the first transmission using the configured uplink resource in the first TTI which is used to indicate that the UE has received the signalling

iv) and not in the second TTI which is not used to indicate that the UE has received the signalling.

*1.1 Claim 1 - claim interpretation*

Feature i) requires receiving "a signalling" to configure an uplink resource which is available in at least two TTIs. The breadth of this wording does not impose any limitation with respect to the number of received signalling messages ("UL grants") constituting "a signalling" or the number of TTIs with which every received signalling message is supposed to be

associated. Not even a reading "in the light of the description", in the appellant's favour, would justify a more limited interpretation. The specific signalling messages relating to SPS are presented there as mere non-limiting illustrative embodiments (cf. e.g. paragraphs [0108] to [0114] of the application as published).

*1.2 Claim 1 - novelty (Article 54 EPC)*

1.2.1 Using the wording of claim 1, **D1** discloses:

A method for using a configured uplink resource by a UE, in a wireless communication system, the method comprising:

i) receiving a signalling (section 3, first paragraph: "PDCCH allocation (UL grant)"; section 5.4.2.1: "uplink grant was received on PDCCH"; "uplink grant was received in a Random Access Response") to configure an uplink resource which is available in multiple TTIs, including a first TTI and a second TTI (section 3, first paragraph: "... upon receiving an UL grant ..."; section 5.4.2.1, sixth paragraph: "... For each TTI, the HARQ entity shall: ... - if an uplink grant has been indicated for this TTI: ...");

ii) determining whether to perform a first transmission using the configured uplink resource in a TTI based on whether the TTI is used to indicate that the UE has received the signalling, wherein the UE has no data available for transmission (section 3, first paragraph: "... the eNB must be able to control whether the UE ... having neither user plane nor control plane data to transmit ..."; section 5.4.2.1: "... - if *prohibitGrant-Timer* is stopped, expires or has expired: ... - if the MAC PDU

contains zero MAC SDUs and does not originate from Msg3 buffer: ..."),

iii) the UE performs the first transmission using the configured uplink resource in the first TTI which is used to indicate that the UE has received the signalling (section 3, first paragraph, second bullet point: "... [the UE] should (as in Rel-8/9) transmits [*sic*] a MAC CE PDU with empty BSR ..."; section 5.4.2.1: "... - instruct the identified HARQ process to trigger a new transmission ...")

iv) and not in the second TTI which is not used to indicate that the UE has received the signalling (section 3, first paragraph, first bullet point: "... [the UE] can ignore the UL grant and avoid uplink transmission on PUSCH ...").

1.2.2 As to feature iv), the skilled reader would derive from section 5.4.2.1 of D1 that, if the MAC PDU contains zero MAC SDUs without originating from the Msg3 buffer and the *prohibitGrant-Timer* is running, the identified HARQ process will not trigger a new transmission.

1.2.3 It follows that the subject-matter of claim 1 is not new in view of document D1. The counter-arguments brought forward by the appellant are not persuasive:

1.2.4 With respect to **feature i)**, the appellant argued that "receiving a signalling" ought to be interpreted as "receiving a single signalling message" and that this formulation had not been used in claim 1 due to the lack of explicit support. According to the claimed invention, a confirmation message was sent in response to every received signalling message, regardless of the number of UL grants and TTIs specified by the single signalling message. In D1, every received signalling message in the downlink indicated, at most, an uplink

grant for a *single* TTI and was to be considered "a signalling" in the claimed sense. However, a confirmation message (i.e. the "empty BSR") was not sent for every received DL message ("UL grant").

1.2.5 However, neither the wording of claim 1 nor the description justify such a narrow understanding of feature i) (cf. point 1.1 above). The claimed *signalling* can thus well correspond to *one* or *more* of the UL grants received on PDCCH or in the Random Access Response (RAR) message mentioned in D1.

1.2.6 With respect to **feature iv)**, the appellant further submitted that, in D1, the second TTI corresponded to a second "UL grant" which was allocated through a second DL message. Yet, the board adopted an interpretation according to which both of the first TTI and the second TTI of D1, which corresponded to a first UL grant and a second UL grant, respectively, should be deemed to be used to indicate the reception of the signalling of feature i). This was contrary to the definition of the second TTI as claimed in feature iv). It was incorrect to consider that the first TTI of D1 was used to indicate the reception of the signalling while the second TTI of D1 was not used to indicate the reception of the signalling. D1 did not define two different kinds of TTIs for *one* grant. Therefore, the second TTI of D1 could not be deemed to be the same or similar TTI as the second TTI claimed in the invention.

1.2.7 This is also not convincing. According to the teaching of D1, after sending a padding BSR indicating buffer filling level 0 (i.e. empty BSR), the UE would be allowed to ignore UL grants during x TTIs (corresponding to the duration of the *prohibitGrant-Timer*) as long as it has no data to send. The

*prohibitGrant-Timer* is started upon the first transmission of a MAC PDU containing zero MAC SDUs but not originating from a Msg3 buffer. Consequently, there will be no transmission for the second and successive TTIs following the TTI in which the MAC PDU containing zero MAC SDUs was sent as long as the UE has no data to send and the *prohibitGrant-Timer* is running. This amounts to the fact that the second and successive TTIs are not used.

1.2.8 With respect to **feature ii)**, the appellant submitted that the decision of not performing an uplink transmission in the second TTI as disclosed in D1 was not made based on the condition as claimed, namely based on whether the second TTI was used to indicate that the UE had received the signalling or not. This was because the second TTI of D1, as argued by the board, was used to indicate that the UE had received the signalling as stated above, in which case, according to the teaching of the invention, an uplink transmission with zero MAC SDUs should be performed. Moreover, according to the condition adopted by D1, in a case that the *prohibitGrant-Timer* was started at the first TTI and stopped before the second TTI (the first and second TTIs need not be two contiguous TTIs), a transmission should be performed in the second TTI according to the teaching in section 5.4.2.1 of D1. According to the condition claimed, it could be guaranteed that the second TTI that was not used to indicate the reception of the UL grants had no uplink transmission when the UE had no available data during the second TTI. Thus, the condition as adopted by D1 was different from the condition as claimed.

1.2.9 This argument is not persuasive either. First, both the present application and D1 concern scenarios in which a

UE is, in principle, *allowed* to send data in a number of TTIs but it has actually *no data* to send. The gist of the application (and of D1) is that the UE makes a transmission (e.g. transmitting a padding BSR) *only* in the first TTI to let the base station know that the signalling has been correctly transmitted, even though there is no actual data to be sent. Subsequently, the UE refrains from sending further padding BSRs for a given time period, to save resources as long as there is no data to be sent. The second TTI in claim 1 is not used to indicate that the UE has received the signalling, contrary to what the appellant suggests. Only the first TTI is used for this purpose, in both claim 1 and D1, without future knowledge as to whether or not there will be data to be sent in future TTIs. The decision "not to perform a UL transmission in the second TTI" in claim 1 merely exploits this understanding to save resources, which is also the case in D1. Furthermore, the situation described by the appellant in which the first and the second TTI are not contiguous is not specifically claimed either.

1.3 If follows that the main request is not allowable under Article 54 EPC.

2. FIRST AUXILIARY REQUEST

Claim 1 of the **first auxiliary request** comprises all the limiting features of claim 1 of the main request, with the following amendments in features ii), iii) and iv):

ii) determining whether to perform a first transmission using the configured uplink resource in a TTI based on whether the signalling to configure the uplink resource is received corresponding to the TTI ~~is~~

~~used to indicate that the UE has received the signalling~~, wherein the UE has no data available for transmission,

iii) the UE performs the first transmission using the configured uplink resource in the first TTI which is ~~used~~ corresponding to ~~indicate that the UE has received~~ reception of the signalling

iv) and not in the second TTI which is not ~~used~~ corresponding to ~~indicate that the UE has received~~ reception of the signalling.

*2.1 Claim 1 - novelty (Article 54 EPC)*

2.1.1 Amended features ii), iii) and iv) are likewise disclosed by **D1** (cf. section 3, first paragraph and section 5.4.2.1).

2.1.2 With respect to **feature ii)**, the appellant submitted that, according to the teaching of D1, in the first TTI which was corresponding to the reception of the first UL grant, if the UE had no data and the prohibitGrant-Timer was not stopped (line 6 on page 3 of D1 implies this possibility), no transmission should be triggered. This was contrary to the teaching of the present invention, according to which the first transmission should be made if the UE has no data to be sent and the first TTI is corresponding to the reception of the DL signalling ("UL grants"). Therefore, the determination made for the first TTI as disclosed in D1 was not made based on the condition as claimed.

2.1.3 This is not convincing. As indicated in D1, page 2, section 4, the *prohibitGrant-Timer* is started upon the first transmission of a MAC PDU containing zero MAC SDUs but not originating from the Msg3 buffer. Hence, a

first transmission of a padding BSR is always required to start the respective *prohibitGrant-Timer.*

2.1.4 With respect to **feature iv)**, the appellant submitted that if the claimed "signalling" included multiple DL messages (i.e. multiple UL grants), the second TTI of D1, which was corresponding to the reception of the second UL grant (the second DL message), should be deemed to be corresponding to reception of the signalling since the second UL grant (the second DL message) also belonged to the signalling. In its communication, the board alleged that the first TTI was a TTI corresponding to the reception of the signalling and the second TTI was not a TTI corresponding to the reception of the signalling. Thus, the board applied double standards when judging the features regarding the first TTI and the features regarding the second TTI, respectively.

2.1.5 This argument is not convincing either. Due to its broad formulation (cf. point 1.1 above), the signalling of feature i) in claim 1 of the first auxiliary request can also be mapped onto the first UL grant received on PDCCH or in the RAR message, which is "a signalling to configure an uplink resource which is available in multiple TTIs, including a first TTI and a second TTI".

2.2 The first auxiliary request is thus likewise not allowable under Article 54 EPC.

3. SECOND AND THIRD AUXILIARY REQUESTS

Claim 1 of the **second auxiliary request** comprises all the limiting features of claim 1 of the main request and the following additional feature of claim 3 of the main request (board's outline):

v) the signalling is SPS initiation or re-initiation.

Claim 1 of the **third auxiliary request** comprises all the limiting features of claim 1 of the first auxiliary request and feature v).

*3.1 Admittance into the appeal proceedings (Article 13(2) RPBA 2020)*

3.1.1 The claims of the second and third auxiliary requests were filed after notification of the summons to oral proceedings before the board.

3.1.2 Hence, the admittance of these claim requests is governed by Article 13(2) RPBA 2020, according to which any amendment to a party's appeal case is not taken into account unless there are exceptional circumstances, which have been justified with cogent reasons by the party concerned.

3.1.3 The appellant submitted that the board had presented new arguments in its communication under Article 15(1) RPBA 2020 rather than confirming the argumentation of the examining division. In particular, the board had mapped the signalling of **feature i)** to multiple DL messages received in D1 to allocate multiple UL grants, whereas the examining division had referred in Reasons 13.1 of the appealed decision to "SPS uplink grants" and in Reasons 14.1 to "the 'UL grant' in the first paragraph of section 3, when being an [*sic*] SPS UL grant as disclosed in section 4".

3.1.4 Also insofar, the appellant's arguments are not persuasive:

The board's objection in its preliminary opinion merely took due account of the appellant's arguments in the statement of grounds of appeal. In other words, the board fundamentally agreed with the examining division's stance in the appealed decision, but considered that the specific reference to SPS in D1 was not even necessary, because the UL grants received on PDCCH or in the RAR messages in D1 already anticipated the claimed "signalling".

In addition, even if the board had raised a "new" objection, this could not *per se* amount to "exceptional circumstances" within the meaning of Article 13(2) RPBA 2020 (cf. T 2632/18, Reasons 4.3; T 2271/18, Catchword).

3.2 Accordingly, neither the second nor the third auxiliary request could be admitted into the appeal proceedings (Article 13(2) RPBA 2020).

4. Since there is no allowable claim request, the appeal must be dismissed.

**Order**

**For these reasons it is decided that:**

The appeal is dismissed.

The Registrar: The Chair:

B. Brückner K. Bengi-Akyürek

Decision electronically authenticated