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Datasheet for the decision of 24 September 2020

Case Number: T 0786/16 - 3.5.03

Application Number: 07865065.2

Publication Number: 2127455

IPC: H04W4/00

Language of the proceedings: EN

Title of invention:
Acknowledgement of control messages in a wireless communication system

Applicant:
QUALCOMM Incorporated

Headword:
Linking ACK resources/QUALCOMM

Relevant legal provisions:
EPC Art. 84
RPBA 2020 Art. 13(1)

Keyword:
Clarity - main request and 1st to 5th auxiliary requests (no)
Admittance of late-filed request - "5th auxiliary request revised" (no)
Remittal to the examining division (no)

Decisions cited:
G 0001/04, T 1129/97, T 0725/08

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Case Number: T 0786/16 - 3.5.03

D E C I S I O N
of Technical Board of Appeal 3.5.03
of 24 September 2020

Appellant: (Applicant)	QUALCOMM Incorporated Attn: International IP Administration 5775 Morehouse Drive San Diego, CA 92121 (US)
Representative:	Carstens, Dirk Wilhelm Wagner & Geyer Partnerschaft mbB Patent- und Rechtsanwälte Gewürzmühlstraße 5 80538 München (DE)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 16 November 2015 refusing European patent application No. 07865065.2 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman	K. Bengi-Akyürek
Members:	T. Snell
	R. Winkelhofer

Summary of Facts and Submissions

I. The present case concerns the appeal against the decision of the examining division refusing the European patent application on the grounds that the subject-matter of claim 1 of the main request and of the first auxiliary request was not new and that the subject-matter of claim 1 of the third auxiliary request did not involve an inventive step, respectively, in the light of document

D1 = "Digital cellular telecommunications system (Phase 2+); Mobile radio interface layer 3 specification (GSM 04.08 version 7.7.1 Release 1998); ETSI EN 300 940", ETSI STANDARDS, LIS, SOPHIA ANTIPOLIS CEDEX, FRANCE, vol. 3-CN1 ;SMG2;SMG3, no. V7.7.1,1 October 2000(2000-10-01), pages 1,2,91-93.

Lastly, the second auxiliary request was not admitted.

II. Oral proceedings before the board were held on 24 September 2020.

The appellant requests that the decision under appeal be set aside and a patent granted on the basis of claims of the **main request**, or alternatively the claims of one of the **1st to 3rd auxiliary requests**, all requests as filed with the statement of grounds of appeal (these requests are said to be the same as those on which the impugned decision is based), or the claims of a **4th or 5th auxiliary request**, both as submitted on 18 August 2020, or the claims of a **"5th auxiliary request revised"** as submitted at the oral proceedings before the board. Subsidiarily, remittal of the case to the examining division is requested.

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

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

"A method (1010) for wireless communication, comprising, at a terminal:

receiving (1012) a control message on a control block of a plurality of control blocks from a base station, wherein for a first group of control blocks control messages are to be acknowledged, and wherein for a second group of control blocks control messages are not to be acknowledged;

determining (1014) acknowledgement, ACK, resources based on the control block, wherein the ACK resources being linked to the control block; and

sending (1016) an acknowledgement for the control message on the ACK resources if the control block is one of the first group of control blocks."

IV. Claim 1 of the **1st auxiliary request** reads as follows (relevant amendments emphasised by the board):

"A method (1010) for wireless communication, comprising, at a terminal:

receiving (1012) a control message on a control block of a plurality of control blocks from a base station, wherein for a first group of control blocks control messages are to be acknowledged, and wherein for a second group of control blocks control messages are not to be acknowledged, **wherein a control block is a logical resource used to send the control message and is mapped to physical resources**;

determining (1014) acknowledgement, ACK, resources based on the control block, wherein the ACK resources being linked to the control block, **wherein the ACK**

resources linked to the control block correspond to physical resources reserved for sending an acknowledgement for the control message sent on the control block; and

sending (1016) an acknowledgement for the control message on the ACK resources if the control block is one of the first group of control blocks."

V. Claim 1 of the **2nd auxiliary request** is the same as claim 1 of the main request with the following wording added to the end of the claim:

"wherein the first group of control blocks are common control blocks that are monitored by all terminals and the second group of control blocks are shared/multicast control blocks, wherein the second group of control blocks is further divided into groups, wherein each terminal is assigned to a specific group of control blocks in that group."

VI. Claim 1 of the **3rd auxiliary request** is the same as claim 1 of the 1st auxiliary request except that the middle part of the claim between the words "mapped to physical resources," and "wherein the ACK resources linked to the control block" reads as follows:

", wherein the control message is an assignment message and the first group of control blocks is a subset of the plurality of control blocks;

determining (1014) acknowledgement, ACK, resources based on the control block, wherein the ACK resources being linked to the control block **on which the assignment message was received, not linked to resources assigned by the assignment message,".**

VII. Claim 1 of the **4th auxiliary request** reads as follows:

"A method (1010) for wireless communication, comprising, at a terminal:

receiving (1012) a control message on a control block of a plurality of **T** control blocks from a base station, wherein for a first group of **L** control blocks control messages are to be acknowledged, and wherein for a second group of **T-L** control blocks control messages are not to be acknowledged, **wherein the first L control blocks 1 through L are linked to ACK resources 1 through L, respectively, and the remaining T-L control blocks are not linked to ACK resources**;

determining (1014) acknowledgement, ACK, resources based on the control block; and

sending (1016) an acknowledgement for the control message on the ACK resources if the control block is one of the first group of control blocks."

VIII. Claim 1 of **5th auxiliary request** reads as follows:

"A method (1010) for wireless communication, comprising, at a terminal:

receiving (1012) a control message on a control block of a plurality of t control blocks from a base station, wherein for a first group of **L** control blocks control messages are to be acknowledged, and wherein for a second group of **T-L** control blocks control messages are not to be acknowledged, **wherein the first L control blocks 1 through L are linked to ACK resources 1 through L, respectively, and the remaining T-L control blocks are not linked to ACK resources, wherein a control block is a logical resource used to send the control message and is mapped to physical resources, wherein the control message is an assignment message and the first group of control blocks is a subset of the plurality of control blocks**;

determining (1014) acknowledgement, ACK, resources based on the control block, wherein the ACK resources being linked to the control block **on which the assignment message was received, not linked to resources assigned by the assignment message, wherein the ACK resources linked to the control block correspond to physical resources reserved for sending an acknowledgement for the control message sent on the control block**; and

sending (1016) an acknowledgement for the control message on the ACK resources if the control block is one of the first group of control blocks."

IX. Claim 1 of the "**5th auxiliary request revised**" is the same as claim 1 of the 5th auxiliary request except that the wording "**wherein, prior to receiving the control message,**" is inserted following the wording "wherein for a second group of T-L control blocks control messages are not to be acknowledged", and in that the following wording is inserted following the wording "the first group of control blocks is a subset of the plurality of control blocks":

", **wherein the linked ACK resources are dynamically allocated and conveyed by broadcast messages sent on the forward link, by system parameters, or by signaling exchanged during call setup**".

Reasons for the Decision

1. Main request - claim 1 - clarity (Article 84 EPC)

1.1 Claim 1 includes the following features:

"**(A)** determining acknowledgement, ACK, resources based on the control block, **(B)** wherein the ACK resources being linked to the control block" (board's labelling).

1.2 The clarity of these features is here of the utmost importance, given that they are crucial to the issues of novelty and/or inventive step with respect to the disclosure of D1.

1.3 It is however unclear what is embraced by features A and B, the terms "based on" and "linked to" being vague and of indeterminate scope. In fact, feature A automatically implies a link by virtue of the phrase "based on". It is therefore not clear what is added by feature B. In any event, the scope of these features is broader than the interpretation placed on them by the appellant.

1.4 In this respect, the appellant argued that being "linked to the control block" meant that there was a dependence on a property of the control block, in particular on the pattern of resources used by the control block. Thus, any dependence on any *control message* contained in the control block was excluded. This was also clear from the wording of claim 1 since the control message was defined as a separate entity to the control block. The meaning of claim 1 was further clear in the light of Figs. 2A to 2C in combination with the description in paragraph [0037] as published.

Fig. 2A, which shows a one-to-one dependence between control blocks and acknowledgement resource blocks, was an example of what was now claimed. Fig. 2B, on the other hand, showed dependence on a resource allocation control message, and Fig. 2C showed a dedicated resource used by a mobile unit for acknowledgements. Only the embodiment of Fig. 2A was however embraced by claim 1.

1.5 In order to comply with Article 84 EPC, a claim however has to be clear for the skilled reader by itself without interpretation by the description or drawings (see e.g. G 1/04, OJ EPO 2006, 334, Reasons 6.2; T 1129/97, OJ EPO 2001, 271, Reasons 2.1.2; T 725/08, Reasons 6.5).

In the present case, the wording of claim 1 does not clearly exclude a link to the control message, since the control message is itself linked to the control block by being transported by it. In fact, in the embodiment of Fig. 2A, the control message dynamically creates the link (see also the description as published, paragraph [0031], last sentence). A dedicated single ACK resource is also linked to the control block, here by an N-to-1 rather than a one-to-one relationship. It follows that claim 1 does not clearly exclude the embodiments of Figs. 2B and 2C.

Furthermore, claim 1 embraces an unclear range of other possibilities falling within the scope of the vague terms "based on" and "linked to" the control block. In particular, it is not clear whether such a linkage is supposed to be related to the number, the type or the express identification of the respective ACK resources. In other words, the claimed linkage or dependency between the control block and the ACK resources is

defined solely as a "black box" rather than specifying the essential relationship between them.

2. In conclusion, claim 1 of the main request does not comply with Article 84 EPC.

3. 1st auxiliary request - claim 1 - clarity

3.1 Claim 1 of the 1st auxiliary request is amended to include the features:

(i) "a control block is a logical resource used to send the control message and is mapped to physical resources", and

(ii) "wherein the ACK resources linked to the control block correspond to physical resources reserved for sending an acknowledgement for the control message sent on the control block".

3.2 These features merely clarify the nature of the control block and ACK resources, but do not remove the ambiguities present in claim 1 of the main request. The observations in respect of claim 1 of the main request therefore apply, *mutatis mutandis*, to claim 1 of the 1st auxiliary request.

3.3 Claim 1 of the 1st auxiliary request therefore does not comply with Article 84 EPC either.

4. 2nd auxiliary request - claim 1 - clarity

4.1 The features added to claim 1 of the 2nd auxiliary request do not serve to clarify the claim with respect to the ambiguities noted in connection with claim 1 of the main request either. The considerations in respect

of claim 1 of the main request therefore apply, *mutatis mutandis*, to claim 1 of the 2nd auxiliary request.

4.2 Claim 1 of the 2nd auxiliary request therefore does not comply with Article 84 EPC either.

5. 3rd auxiliary request - claim 1 - clarity

5.1 Claim 1 of the 3rd auxiliary request is amended to include the features:

(i) "wherein the control message is an assignment message and the first group of control blocks is a subset of the plurality of blocks", and

(ii) "wherein the ACK resources being linked to the control block on which the assignment message was sent, not linked to resources assigned by the assignment message".

5.2 These features also do not serve to clarify claim 1. Even with the disclaimer in feature (ii), claim 1 still embraces an indefinite and unclear number of ways of establishing this link. For example, it would be possible to send a message or flag in the control block for allocating ACK resources in addition to "the assignment message".

It is further unclear whether the feature "not linked to resources assigned by the assignment message" could be taken to mean specifically "not linked to *forward link and/or reverse link resources* assigned by the assignment message", since this is actually the primary purpose of the assignment message (cf. the description, paragraph [0033]). In addition, even if the disclaimer were considered to exclude the embodiment of Fig. 2B

(cf. paragraph [0034]), the embodiment of Fig. 2C is still apparently embraced.

5.3 Claim 1 of the 3rd auxiliary request therefore does not comply with Article 84 EPC either.

6. 4th auxiliary request - claim 1 - clarity

6.1 Compared with claim 1 of the main request, claim 1 now defines that there are L first control blocks to be acknowledged, wherein the first L control blocks 1 through L are linked to ACK resources 1 through L, respectively.

6.2 This feature is unclear since it apparently embraces both ACK resources 1 through L being L sent as separate blocks, as shown in Fig. 2A, or as a single control block consisting of L fields, which for example would be consistent with an embodiment such as that of Fig. 2C, although it is apparently intended to exclude this latter embodiment. That notwithstanding, the meaning of "linked to the control block" is still unclear since, as with claim 1 of the main request, it still embraces ACK resource assignment by a control message sent on the control block (cf. Fig. 2B), and still embraces an indefinite number of other ways of providing a link.

6.3 Claim 1 of the 4th auxiliary request therefore does not comply with Article 84 EPC either.

7. 5th auxiliary request - claim 1 - admittance and clarity

7.1 The 5th auxiliary request was filed in response to the board's communication under Article 15(1) RPBA. Claim 1 of this auxiliary request incorporates the amendments

added to claim 1 of the 3rd and 4th auxiliary requests respectively.

7.2 Since the reasons given in respect of the 3rd and 4th auxiliary requests apply, *mutatis mutandis*, to claim 1 of the present auxiliary request, the 5th auxiliary request is not clearly allowable under Article 84 EPC.

7.3 Accordingly, the board has decided not to admit the 5th auxiliary request into the appeal proceedings.

8. "5th auxiliary request revised" - admittance

8.1 This auxiliary request was filed at a late stage of the oral proceedings before the board and therefore constitutes an amendment of a party's case within the meaning of Article 13(1) RPBA 2020, according to which the admittance of a claim request is at the discretion of the board.

In accordance with Article 13(1) RPBA 2020, "[the] Board shall exercise its discretion in view of, inter alia, the current state of the proceedings, the suitability of the amendment to resolve the issues which were admissibly raised by another party in the appeal proceedings or which were raised by the Board, *whether the amendment is detrimental to procedural economy*, and, in the case of an amendment to a patent application or patent, *whether the party has demonstrated that any such amendment, prima facie, overcomes the issues raised by another party in the appeal proceedings or by the Board and does not give rise to new objections*" (board's italics).

8.2 In the present case, possibly unsearched features ("wherein the linked ACK resources are dynamically

allocated and conveyed by broadcast messages sent on the forward link, by system parameters, or by signaling exchanged during call setup") have been added from the description along with the expressions "*prior to receiving the control message*" and "[linked] *directly*", neither of which are literally disclosed in the application as filed, raising doubts as to compliance with Article 123(2) EPC.

The addition of the unsearched features means further that claim 1 now includes three alternatives, each requiring separate examination. Either an extensive examination of the new features with respect to compliance with Articles 83 (especially with respect to the feature "dynamically allocated"), 84, 123(2), 54 and 56 EPC would have had to have been undertaken at the oral proceedings before the board, or the case would have had to be remitted to the examining division for further examination. Neither of these steps would have been consistent with the need for procedural economy, even less so considering the primary purpose of appeal proceedings, which is to examine the correctness of the appealed decision (cf. Article 12(2) RPBA 2020).

8.3 As a consequence, the present auxiliary request could not be admitted into the appeal proceedings either.

9. Request for remittal

In view of point 8.2 above, there are no "special reasons" within the meaning of Article 11 RPBA 2020 for remitting the case to the examining division.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

B. Brückner K. Bengi-Akyürek

Decision electronically authenticated