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Datasheet for the decision of 11 December 2018

Case Number: T 1763/13 - 3.5.03

Application Number: 09000013.4

Publication Number: 2077691

IPC: H04W28/06

Language of the proceedings: EN

Title of invention:
Method and apparatus for performing buffer status reporting (BSR)

Patent Proprietor:
Innovative Sonic Limited

Opponent:
Telefonaktiebolaget L M Ericsson (publ)

Headword:
Buffer status reporting/INNOVATIVE SONIC

Relevant legal provisions:
EPC Art. 54, 87(1)
RPBA Art. 13(1)

Keyword:

Priority - (no)
Novelty - (no)
Late-filed auxiliary request - admitted (no)

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Beschwerdekammern

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Case Number: T 1763/13 - 3.5.03

D E C I S I O N
of Technical Board of Appeal 3.5.03
of 11 December 2018

Appellant: (Patent Proprietor)	Innovative Sonic Limited 2nd Floor, The Axis 26 Cybercity Ebene 72201 (MU)
Representative:	Grünecker Patent- und Rechtsanwälte PartG mbB Leopoldstraße 4 80802 München (DE)
Respondent: (Opponent)	Telefonaktiebolaget L M Ericsson (publ) 164 83 Stockholm (SE)
Representative:	Hoffmann Eitle Patent- und Rechtsanwälte PartmbB Arabellastraße 30 81925 München (DE)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 31 May 2013 revoking European patent No. 2077691 pursuant to Article 101(3)(b) EPC.**

Composition of the Board:

Chairman	F. van der Voort
Members:	B. Noll
	S. Fernández de Córdoba
	T. Snell
	D. Prietzel-Funk

Summary of Facts and Submissions

I. The opposition division revoked European patent No. 2077691 on the grounds that the method of claim 1 as granted and of claim 1 of each of a first and a second auxiliary request lacked novelty (Articles 52(1) and 54 EPC).

II. The patent proprietor (appellant) lodged an appeal and requested that the decision be set aside. With the statement of grounds of appeal the appellant filed claims of a third auxiliary request.

III. In the reply to the appeal, the opponent (respondent) requested that the appeal be rejected as inadmissible or be dismissed.

IV. In a communication accompanying a summons to oral proceedings, the board gave a preliminary opinion on the case. The board provisionally held that the appeal was admissible, that the patent in suit and the priority document did not relate to the same invention, and that the method of claim 1 as granted lacked novelty having regard to the disclosure of document:

E13: "E-UTRA MAC protocol specification update", 3GPP TSG-RAN2 Meeting #61, Sorrento, Italy, 11 to 15 February 2008, document R2-081389.

The board also gave a preliminary opinion on inventive step in respect of the subject-matter of claim 1 as granted and on novelty and inventive step in respect of claim 1 of each of the auxiliary requests.

V. With a letter dated 28 September 2018, the appellant filed a further set of claims of a fourth auxiliary request.

VI. Oral proceedings before the board were held on 11 December 2018.

In the course of the oral proceedings, the appellant withdrew the main request and the third auxiliary request. It requested that the decision under appeal be set aside and that the patent be maintained in amended form on the basis of the set of claims of either the first or the second auxiliary request filed with the letter dated 21 January 2013, or the set of claims of the fourth auxiliary request filed with the letter dated 28 September 2018.

The respondent requested that the appeal be dismissed.

At the end of the oral proceedings, after deliberation, the chairman announced the board's decision.

VII. Claim 1 of the first auxiliary request reads:

"A method for performing buffer status reporting in a user equipment of a wireless communication system comprising:

forming a medium access control protocol data unit, abbreviated in MAC PDU hereinafter, comprising a padding field with a size smaller than a first predefined value (401);

carrying information about a data amount of an uplink buffer of a first logic channel group with a short-format buffer status reporting, abbreviated in BSR

hereinafter, control element (404); and

carrying the short-format BSR control element with the padding field of the MAC PDU for a network of the wireless communication system (406);
characterized by
before carrying information about the data amount of the uplink buffer of the first logic channel group with the short-format BSR control element (404), selecting the first logic channel group from a plurality of logic channel groups of the user equipment according to priorities and data amounts of uplink buffers of the plurality of logic channel groups (402),

wherein the first predefined value is corresponding to a size for carrying a long-format BSR control element,

wherein the logic channel group is selected which has the highest priority and has an uplink buffer with data amount greater than 0."

VIII. Claim 1 of the second auxiliary request differs from claim 1 of the first auxiliary request in that the penultimate paragraph is replaced by the feature

"wherein the first predefined value is 4 bytes".

IX. Claim 1 of the fourth auxiliary request differs from claim 1 of the first auxiliary request in that the last paragraph is replaced by the feature

"wherein the logic channel group is selected which has the highest priority and has an uplink buffer with data amount greater than a second predefined value other than 0".

Reasons for the Decision

1. *Admissibility of the appeal*

1.1 The patent in suit was granted on 18 August 2010. According to the cover page of the patent specification the patent was assigned to Innovative Sonic Limited, Tortola (VG).

1.2 With a letter dated 21 January 2013 the proprietor indicated a change of address and indicated the new address of the patent proprietor as being:

4th Floor Unicorn Centre
18N Frère Felix de Valois Street
Port Louis, Mauritius

The same address was used by the appellant in the notice of appeal.

1.3 In the Board's view, with the letter dated 21 January 2013, the proprietor requested merely a change of address, without changing its legal identity by the transfer to Mauritius. Therefore, the notice of appeal was filed on behalf of the patent proprietor, i.e. the legal person adversely affected within the meaning of Article 107, first sentence, EPC.

1.4 All other requirements being complied with as well, the appeal is found admissible.

2. *The patent in suit*

2.1 The patent in suit relates to buffer status reporting. Reporting a buffer status is an essential element in third and subsequent generation mobile communication systems which offer new types of services to mobile users. The nature of services brings with it that the request for transmission bandwidth over the radio channel between a user equipment (UE) and the base station (eNB, E-UTRAN Node B) may be more fluctuating than for a conventional telephone call. This inherent fluctuation in instantaneous data rate requires a more sophisticated management of the allocation of radio resources to a UE, to reconcile, on the one hand, the bandwidth demand of each single user for fast network access and, on the other hand, to effectively use the available radio resources. The general principle for allocating radio resources in 3GPP is that radio resources are continuously re-allocated to a UE according to its instantaneous demand for bandwidth. For this purpose, a UE monitors the amount of data it has made ready in its buffer for transmission and a buffer reporting scheme is utilized by which the amount of data waiting for transmission is reported to the eNB. Knowing the amount of data ready by each user within the service area of an eNB allows the eNB to manage re-allocation of uplink radio resources between users. However, reporting on the buffer status consumes bandwidth itself, which has to be kept small.

2.2 The procedure on buffer status reporting is defined by the standardisation work of the 3rd Generation Partnership Project (3GPP) in the technical specification 3GPP TS.36.321.

2.3 The patent in suit is specifically about which single logical channel group is to be selected for buffer status reporting if data bandwidth available for buffer

status reporting is not sufficient for reporting on all logical channel groups.

3. *The priority document*

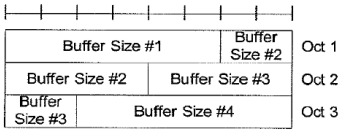
3.1 The patent in suit claims priority of US application No. 61/018,676 filed on 3 January 2008.

3.2 At pages 1 and 2, the priority document includes sections with the headings "Background" and "Problem of the prior arts". Pages 2 to 4 include a section "Description of the invention" which consists of sub-sections "1. Methods to trigger BSR", "2. BSR when only 1~3 bytes left are left after filling data in TB.", "3. Handling of four groups in BSR", "4. The indication of the related signalings for BSR", and "5. RLC status reporting_VR(MS)".

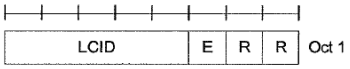
3.3 Sub-section 2, which is relevant to the subject-matter of claim 1 of the first auxiliary request, reads as follows:

2. BSR when only 1~3 bytes left are left after filling data in TB.

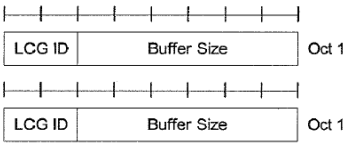
✧ If 3 bytes, no MAC sub-header related to BSR exists and the 3 bytes are directly used to indicate buffer status report.



✧ If 3 bytes, 2 bytes (short BSR) are used to indicate one group and the remaining 1 byte is implicitly used to indicate the other buffer status or is indicated by the reserved bit 'R' shown as below.

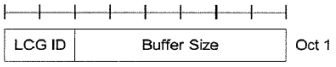


LCID/E/R/R sub-header



✧ If 2 bytes, short buffer status report is used or no MAC sub-header exists and the 2 bytes are used to indicate buffer status report for two groups.

✧ If 1 byte, no MAC sub-header of padding but directly BSR for one group is reported.



In section 5.4.5 of [4],

A Buffer Status report shall be triggered if any of the following events occur:

- [...]
- UL resources are allocated and number of padding bits is larger than or equal to the size of the [Short/Long] Buffer Status Report MAC control element;

✧ If the left bytes are less than 3 or 4 bytes, the buffer status groups are chosen to report with an order which is configured by network.

✧ If one group or a buffer status report has to be chosen,

- Depend on the latest one buffer status report. If the latest one is for four group, the highest priority or pre-configured group is chosen.
- The highest priority or pre-configured group is chosen.
- The highest priority with which the buffer is not 0 or exceeds their thresholds is chosen. If all buffer are 0, the lowest priority is chosen and 0 is reported.

Hence, this sub-section teaches different modi for buffer status reporting when a residual data field of 3 bytes, 2 bytes or 1 byte in an uplink transport block (TB) are/is available.

Accordingly, a 3 byte residual field is used for a long buffer status reporting, without however including a MAC sub-header (see the first diamond point above). Alternatively, a 3 byte field may be used for short buffer status reports BSR (see the second diamond point above). However, it is not unambiguously derivable from this paragraph whether there is a single group reported on, as argued by the appellant by referring to the wording "to indicate one group", or two groups as the skilled reader would infer from the figure in this paragraph.

The paragraph at the third diamond point above describes that, when two bytes are left, either a MAC sub-header followed by a single short BSR is inserted or a short BSR for two groups but without a MAC sub-header.

The paragraph at the fourth diamond point above describes that when a single byte is left, a single short BSR is inserted.

The paragraph at the fifth diamond point above is understood as being directed to a case in which more than one, but less than all, logical groups are selected for reporting and that the order of reporting is configured by the network. This case is not relevant to the subject-matter of claim 1 of the first auxiliary request.

The last paragraph describes the selection of a single logic channel group for buffer status reporting. Hence, this paragraph is the only part of the priority document which is relevant to the subject-matter of claim 1 of the first auxiliary request. The last sub-paragraph of this paragraph reads:

"- The highest priority with which the buffer is not 0 or exceeds their thresholds is chosen. If all buffer *[sic]* are 0, the lowest priority is chosen and 0 is reported."

3.4 The appellant argued that this sub-paragraph directly and unambiguously disclosed two alternatives, namely 1) that a group be chosen for buffer status reporting if it has the highest priority and has data in its associated buffer, and 2) that a group is chosen for buffer status reporting if it has the highest priority and the data in the buffer exceeds a defined threshold. Further, in the appellant's view, the last sentence of this sub-paragraph would be understood by the skilled reader as defining merely an option which may be selected if all buffers are zero, i.e. reporting a data amount of zero for the lowest priority group. The skilled reader would thus understand from the context that yet a further option would be that no buffer status is reported when all buffers are empty.

3.5 The board does not agree with the appellant's understanding of the sub-paragraph in question.

Firstly, the wording "or exceeds their thresholds" is ambiguous, since the priority document does not provide any definition of a threshold in relation to the selection of a logical channel group for buffer status reporting. The skilled reader can therefore only speculate about the meaning of the words "their thresholds", e.g. that the amount of data in each buffer is compared with an single threshold associated only with this buffer or that the data amount of each buffer is compared with all thresholds associated with all buffers. The expression of a buffer exceeding

"their thresholds" is therefore not understood by the skilled reader as a direct and unambiguous disclosure of features relating to the selection of a single logic channel group for buffer status reporting.

Secondly, the last sentence of the sub-paragraph does not directly and unambiguously disclose merely optional features. The last paragraph which includes this sub-paragraph describes which single logical channel group is to be selected for buffer status reporting. Since the skilled reader would understand that the outcome of the selection process is that a dedicated logical channel group is selected for reporting, an option that this selection process would end with no selection and no buffer status reporting is not directly and unambiguously derivable from the priority document. At the most this would be obvious, but this is not the same as a direct and unambiguous disclosure.

3.6 Therefore, the disclosure which can directly and unambiguously be derived from this last sub-paragraph is that either a logical channel group having the highest priority and having a non-zero buffer is selected for reporting, or the logical channel group having the lowest priority is chosen and "0" is reported when all buffers are zero. The skilled reader would appreciate this disclosure as the only self-contained teaching for the selection of a channel group for buffer status reporting.

4. *Claim 1 of the first auxiliary request - priority*

Claim 1 inter alia includes the feature that the first logic channel group is selected on the basis of priorities and data amounts of uplink buffers of the plurality of logic channel groups, "wherein the logic

channel group is selected which has the highest priority and has an uplink buffer with data amount greater than 0". These criteria for selecting a logical channel group constitute a generalisation of the disclosure of the priority document (see point 3 above) which is not directly and unambiguously derivable from the priority document, since they omit that the logical channel group having the lowest priority is chosen and "0" is reported when all buffers are zero. The method of claim 1 does not therefore relate to the same invention as disclosed in the priority document. Hence, the date of priority shall in respect of the subject-matter of claim 1 of the first auxiliary request not count as the date of filing for the purpose of Article 54(2) EPC (Articles 87(1) and 89 EPC).

5. *Claim 1 of the first auxiliary request - novelty*

5.1 E13 was available to the public before the filing date of the application and is therefore prior art pursuant to Article 54(2) EPC in respect of the subject-matter of claim 1.

5.2 E13 discloses a buffer status reporting procedure (section 5.4.5: "Buffer Status Reporting"), including a step of forming a MAC PDU (section 6.1.2: "*A MAC PDU consists of a MAC header, zero or more MAC Service Data units (MAC SDU), zero, or more MAC control elements, and optionally padding*". The MAC PDU may comprise a padding field with a size smaller than a first predefined value corresponding to a size for carrying a long-format BSR control element (section 5.4.5: "*For padding BSR: - if the number of padding bits is equal to or larger than the size of the short BSR but smaller than the size of the Long BSR, ...*"). E13 further discloses a step of carrying information about a data

amount of an uplink buffer of a first logic channel group with a short-format buffer status reporting control element and carrying the short-format BSR control element with the padding field of the MAC PDU for a network of the wireless communication system (see section 6.1.3.1: "- *Short BSR format: one LCG ID field and one corresponding BS field*"). E13 further discloses a step of selecting, before carrying information about the data amount of the uplink buffer of the first logic channel group with the short-format BSR control element, the first logic channel group from a plurality of logic channel groups of the user equipment according to priorities and data amounts of uplink buffers of the plurality of logic channel groups, the selected logic channel group having the highest priority and having an uplink buffer with a data amount greater than 0 (cf. Section 5.4.5: "*For padding BSR: ... report Short BSR of the LCG with the highest priority logical channel with buffered data*").

E13 thus discloses all steps of the method of claim 1. This was not contested by the appellant.

5.3 The method of claim 1 therefore lacks novelty (Articles 52(1) and 54 EPC). Hence, the ground for opposition pursuant to Article 100(a) EPC prejudices the maintenance of the patent in amended form on the basis of the first auxiliary request.

6. *Claim 1 of the second auxiliary request*

6.1 Claim 1 of the second auxiliary request differs from claim 1 of the first auxiliary request in that the feature:

"wherein the first predefined value is corresponding to

a size for carrying a long-format BSR control element"

has been replaced by further specifying that the first predefined value is 4 bytes (see points VII and VIII above).

6.2 For the same reasons as set out in point 4 in respect of claim 1 of the first auxiliary request, the date of priority shall in respect of the subject-matter of claim 1 of the second auxiliary request not count as the date of filing for the purpose of Article 54(2) EPC (Articles 87(1) and 89 EPC).

6.3 E13 also discloses that the first predefined value is 4 bytes. More specifically, according to E13, a long BSR has three bytes of buffer status information (Fig. 6.1.3.1-2) plus a single byte for the MAC-subheader (Fig. 6.1.2-2, including an LCID value of five-bits for signalling a Long Buffer Status Report, see the penultimate row in Table 6.2.1-2).

6.4 In view of the above and the reasons given in point 5, the method of claim 1 of the second auxiliary request lacks novelty. The ground for opposition pursuant to Article 100(a) EPC thus prejudices the maintenance of the patent in amended form on the basis of the second auxiliary request.

7. *Fourth auxiliary request - admissibility*

7.1 The fourth auxiliary request was filed with the letter dated 28 September 2018 in response to the board's communication.

7.2 The appellant argued that by adding the criterion that the uplink buffer must have a data amount "greater than

a second predefined value other than 0", the method was further limited in that a logic channel group would not be selected for buffer status reporting if it had only a small amount of data in its uplink buffer. This further limitation further distinguished the claimed method from the method of E13.

7.3 However, in the board's judgement, the feature of not selecting a channel group for buffer status reporting when its uplink buffer has only a small amount of data is not clearly expressed in the claim. In particular, the "predefined value other than zero" may be so small or even negative such that any amount of data greater than zero and stored in the uplink buffer would be greater than the "predefined value". It is therefore not apparent that this selection criterion is more than merely a linguistic difference compared to the wording used for the selection criteria in claim 1 of the first auxiliary request and thus not apparent that it would further limit the claimed method.

7.4 The board does not consider it appropriate to rule on a request filed late in the appeal proceedings if it is not clearly apparent that the claimed matter is further limited with respect to a previous request - in this case the first auxiliary request - which was found to lack novelty. Therefore, in exercising its discretion, the board did not admit the fourth auxiliary request into the appeal proceedings (Article 13(1) RPBA).

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

G. Rauh F. van der Voort

Decision electronically authenticated