Datasheet for the decision of 23 September 2014

Case Number: T 0409/12 – 3.5.05
Application Number: 99119366.5
Publication Number: 0993148
IPC: H04L12/28, H04L29/06, H04Q7/38
Language of the proceedings: EN
Title of invention:
Method for branching data in mobile communication terminal
Patent Proprietor:
LG Electronics, Inc.
Opponent:
Telefonaktiebolaget LM Ericsson (publ)
Headword:
MAC-layer processing in a terminal/LG
Relevant legal provisions:
EPC 1973 Art. 56
RPBA Art. 12(4), 13(1), 13(3)
Keyword:
Admission of main and first auxiliary requests - (yes)
Inventive step - main and first auxiliary requests (no)
Admission of late-filed second auxiliary request - (no)
Decisions cited:
R 0016/09, T 0484/11
Catchword:
Case Number: T 0409/12 - 3.5.05

DECISION
of Technical Board of Appeal 3.5.05
of 23 September 2014

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Composition of the Board:
Chair A. Ritzka
Members: K. Bengi-Akyuerek
G. Weiss
Summary of Facts and Submissions

I. The appeal is against the interlocutory decision of the opposition division, posted on 12 December 2011, to maintain European patent No. 0993148 as amended according to the claims of a main request, in view of the invoked opposition grounds of lack of novelty and inventive step (Article 100(a) EPC in conjunction with Articles 54 and 56 EPC), insufficiency of disclosure (Article 100(b) EPC in conjunction with Article 83 EPC), and added subject-matter (Article 100(c) EPC in conjunction with Article 123(2) EPC).

II. The following documents were inter alia cited by the opponent in the opposition proceedings and mentioned in the decision under appeal:


III. Notice of appeal was received on 13 February 2012. The appeal fee was paid on the same day. With the statement setting out the grounds of appeal, received on 20 April 2012, the appellant (opponent) filed three new documents (A7 to A9) as support for its objections regarding the lack of novelty and inventive step of the claimed subject-matter. It requested that the decision under appeal be set aside and that the patent be revoked in its entirety on the grounds of added subject-matter (Article 123(2) EPC), insufficiency of disclosure (Article 83 EPC), lack of clarity (Article 84 EPC), lack of novelty (Article 54 EPC), and lack of inventive step (Article 56 EPC) with respect to
the main request as maintained by the opposition division. Furthermore, it provided arguments and references to the relevant case law in support of its arguments.

IV. With a response letter dated 30 August 2012, the respondent (patent proprietor) filed amended claims according to a first, second, and third auxiliary request together with adapted description pages, and submitted two new documents (A10 and A11) as evidence of the skilled person's common general knowledge in the respective field. It requested that the appeal be dismissed as its main request or that the patent be maintained on the basis of one of its auxiliary requests. Furthermore, it requested that late-filed documents A7, A8, and A9 not be admitted into the appeal proceedings, and submitted counter-arguments and the relevant case law in support of those arguments.

V. A summons to oral proceedings was issued on 20 February 2014. In a communication dated 13 March 2014, the board gave its preliminary opinion on the appeal pursuant to Article 15(1) RPBA. In particular, it raised objections under Article 123(2) EPC and/or Articles 83 and 84 EPC 1973 with respect to the main request. Furthermore, observations were made as regards the admissibility of documents A7 to A9 as well as the second and third auxiliary requests, and on the question of novelty and inventive step (Articles 54 and 56 EPC 1973) having regard to documents A1 and A5 with respect to the first auxiliary request.

VI. By letter dated 21 August 2014, the appellant expanded on its arguments as regards the grounds of added subject-matter, insufficiency of disclosure, lack of clarity, lack of novelty and inventive step, and the
admissibility of the auxiliary requests. Furthermore, it stated that it did not consent to the admission of late-filed documents A10 and A11 into the appeal proceedings.

VII. With a letter dated 22 August 2014, the respondent filed amended claims according to new first and second auxiliary requests and provided its observations on the board's communication under Article 15(1) RPBA. It requested that the opposed patent be maintained on the basis of the claims of the previous first auxiliary request as a main request or on the basis of either of the new auxiliary requests.

VIII. Oral proceedings were held as scheduled on 23 September 2014, during which the admissibility and allowability of all pending requests were discussed.

The appellant's final request was that the decision under appeal be set aside and that the opposed patent be revoked.

The patent proprietor's final request was that the decision under appeal be set aside and that the patent be maintained in amended form based on the claims of the main request or auxiliary requests I or II as specified in the letter dated 22 August 2014.

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

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

"A method of processing data in a medium access control (MAC) layer of a sending entity in a mobile communications system, comprising the steps of:
- receiving upper layer data through a plurality of logical channels respectively, from a radio link control (RLC) layer;
  characterized by:
- generating a plurality of medium access control protocol data units by attaching medium access control headers to the upper layer data respectively, each of the medium access control headers including a type of a logical channel through which the upper layer data is transferred; and
- transferring the plurality of medium access control protocol data units to a physical layer through a transport channel to which the plurality of logical channels are mapped,
  wherein the plurality of logical channels are mapped into first service access points in interfaces between the RLC layer and the MAC layer, and the transport channel is mapped into a second service access point in an interface between the MAC layer and the physical layer."

Claim 1 of the first auxiliary request ("Auxiliary Request I") comprises all the features of claim 1 of the main request, and at the end of the generating step adds:

"wherein for each of the plurality of the logical channels a corresponding type is attached".

Claim 1 of the second auxiliary request ("Auxiliary Request II") comprises all the features of claim 1 of the main request with the difference that its last paragraph is replaced by

"wherein the plurality of logical channels are located between the RLC layer and the MAC layer,
and the transport channel is located between the MAC layer and the physical layer",

and that, at the end of the generating step, it adds:

"wherein for each of the plurality of the logical channels a corresponding type is attached which is such that it allows determining a logical channel in a receiving entity, into which the corresponding medium access control protocol data unit is to be demultiplexed".

**Reasons for the Decision**

1. The appeal is admissible.

2. **MAIN REQUEST**

Claim 1 of the patent as maintained by the opposition division in amended form according to the then main request comprised the following features (based on the labelling used in the statement setting out the grounds of appeal):

1) a method of processing data in a MAC layer of a sending entity in a mobile communications system, comprising the steps of:

2) receiving upper-layer data through a plurality of logical channels respectively, from an RLC layer;

3) generating a plurality of MAC protocol data units (PDUs) by attaching MAC headers to the upper-layer data respectively, each of the MAC headers including a type of a logical channel through which the upper-layer data is transferred;
4) transferring the plurality of MAC PDUs to a physical layer through a transport channel to which the plurality of logical channels are mapped,

5) wherein the plurality of logical channels are located between the RLC layer and the MAC layer, and the transport channel is located between the MAC layer and the physical layer.

Claim 1 of the present main request differs from the main request as maintained by the opposition division basically in that feature 5) has been replaced by the feature that

6) the plurality of logical channels are mapped into first SAPs in interfaces between the RLC layer and the MAC layer, and the transport channel is mapped into a second SAP in an interface between the MAC layer and the physical layer.

The amendment according to feature 6) was made in response to the objection raised by the board under Article 123(2) EPC (cf. board's communication under Article 15(1) RPBA, section 3.1). Feature 6) is supported by page 6, lines 8-10 and page 7, lines 19-21 in conjunction with Figs. 1A and 1B of the application as filed and thus complies with Article 123(2) EPC.

2.1 Admission into the appeal proceedings

2.1.1 The claims of the present main request were submitted for the first time with the letter of reply to the statement setting out the grounds of appeal (as "Auxiliary Request I"). The admissibility of requests filed with the reply to the statement setting out the grounds of appeal is subject to Article 12 RPBA.
Pursuant to Article 12(4) RPBA, in appeal proceedings, a board has the discretionary power "to hold inadmissible facts, evidence or requests which could have been presented or were not admitted in the first instance proceedings".

2.1.2 Exercising that discretionary power, the board has decided to admit the main request into the appeal proceedings in view of the following facts:

a) the claims of this request correspond to the claims of the auxiliary request filed on 27 September 2011 during the oral proceedings before the opposition division (cf. minutes of the first-instance oral proceedings, page 5, section "11h20"; respondent's letter of reply dated 22 August 2014, page 2, section 2);

b) feature 6) had essentially been introduced into the independent claims of the auxiliary request filed in preparation for the first-instance oral proceedings (cf. proprietor's letter dated 24 August 2011);

c) the admissibility and/or allowability of the claims of this request were not discussed or examined by the opposition division, since the then pending main request was held to meet the requirements of the EPC (cf. minutes of the first-instance oral proceedings, page 13, last paragraph).

It follows directly from facts a) and b) that the claims of the main request had already been presented in the first-instance proceedings, whilst fact c) implies that the opposition division did not take any decision on the admissibility of the then auxiliary
request merely because this was not necessary due to the allowability of the former main request.

2.1.3 In view of the above, the board admitted the main request into the appeal proceedings under Article 12(4) RPBA.

2.2 Article 52(1) EPC: Novelty and inventive step

In the board's judgment, claim 1 of this request does not meet the requirements of Article 52(1) EPC in conjunction with Article 56 EPC 1973, for the following reasons:

2.2.1 The board regards document A5 as the closest prior art for the subject-matter of claim 1 since it is, like the present invention, related to the transfer of several logical channels over one or more physical channels (see A5, sections 4 and 5). More specifically, the board understands A5 to provide the following teaching:

A5 is related to a mobile communication system ("GPRS system") for data communications between a sending entity (e.g. "mobile station MS") and a receiving entity (e.g. "network") based on a reference layering model (see A5, page 17, section 6.3 in conjunction with Fig. 3). The reference layering model comprises inter alia an RLC part and a MAC part which are supposed to process communications data and are obviously separated by a dotted line in Fig. 3 of A5. In analogy to the physical layer, which is separated into two distinct physical sub-layers by a dotted line (see Fig. 3 in conjunction with section 6.3, second paragraph), the RLC/MAC layer according to A5 likewise consists of an RLC sub-layer and a MAC sub-layer. Hence, feature 1) is considered to be disclosed in A5.
According to the structure of the messages to be transferred at the physical layer, the upper-layer packet data ("LLC-PDUs"; see e.g. A5, page 35, section 6.6.2, second paragraph), received at the MAC sub-layer from the RLC sub-layer, is accommodated in the "RLC Data Block" (see page 20, Fig. 4, upper message). Consequently, feature 2) of claim 1 is likewise deemed to be disclosed in A5.

Furthermore, it is apparent from A5 that the RLC data block is then supplemented by a "MAC Header" at the MAC sub-layer (see page 20, Fig. 4, upper message), thereby inherently generating a MAC PDU. In addition, different logical channels may be used for transferring the respective packet data (see A5, section 4). That means that the data carried by those channels must be inserted into the RLC data block of the messages to be transmitted, before the channels are mapped to one or more physical channels to be actually transmitted (see A5, section 5). Moreover, to be able to differentiate between the data of those logical channels accommodated in the RLC data block, the corresponding message type is indicated in the MAC header (see in particular page 13, sections 5.5 and 5.6, first paragraphs). For example, an "Uplink State Flag (USF)" may be used to denote the use of the logical channel "PRACH" (see e.g. page 13, section 5.6, last sentence in conjunction with page 20, Fig. 4). Thus, feature 3) is also found to be anticipated by A5.

Finally, the respective logical channels may be multiplexed onto a physical channel such as the "Packet Data Channel PDCH" over the downlink/uplink paths for enabling data transport (see page 13, sections 5.5 and 5.6, first sentences), in accordance with feature 4) of
claim 1. In conclusion, A5 is found to disclose features 1) to 4) of claim 1 of the main request.

2.2.2 The respondent argued in the written and oral proceedings before the board that A5 did not disclose features 2) to 4) (see e.g. respondent's reply letter dated 22 August 2014, section 2.1):

As to feature 2), the respondent submitted that A5 disclosed that the data to be transferred originated from the LLC layer rather than from the RLC layer and that therefore it was transferred from the LLC layer to the MAC layer according to page 35, section 6.6.2, second paragraph of A5. Moreover, A5 did not mention "logical channels at the RLC layer" at all. However, the board agrees with the appellant that, firstly, the upper-layer data must inherently pass through the RLC layer by virtue of the underlying layer model (see e.g. A5, Fig. 3) and, secondly, that claim 1 does not in fact mention "logical channels at the RLC layer" but rather refers to logical channels through which upper-layer data is received and transferred according to features 2) and 3) of claim 1. Defining logical channels only at the RLC layer would, moreover, not make technical sense, since organisation of data to be transferred into logical channels must typically be executed and sustained at all layers involved, from the highest to the lowest layer used at a mobile device. Hence, the argument of the respondent that A5 was silent as to the actual location of the logical channels with respect to the individual layers of the system cannot succeed for the same reasons.

As to feature 3), in the respondent's view, A5 did not disclose the generation of a plurality of MAC PDUs resulting from data segmentation and did not teach that
a MAC header included a type of logical channel at the RLC layer. In this regard, the board notes, apart from the fact that claim 1 does not provide any limitation to "logical channels at the RLC layer", that the messages consisting of a "MAC Header" and the "RLC Data Block" in Fig. 4 of A5 inherently represent "MAC PDUs", while the MAC header clearly indicates - at the MAC layer - the type of a logical channel to be multiplexed/demultiplexed via the flag "USF" or the block type indicator "T". Furthermore, in the absence of any concrete indication as to segmentation of data in the present claims and description, the board subscribes to the appellant's view that no other meaning can be attributed to the phrase "a plurality of medium access control protocol data units" used in feature 3).

Lastly, as to feature 4), the respondent contended that the "physical channel" of A5 did not correspond to the "transport channel" as claimed. Referring to paragraphs [0020] and [0021] of the opposed patent, a physical channel was a channel used to physically transfer data between mobile units, whereas a transport channel represented a channel used between the MAC and the physical layer. This argument also must fail, basically for two reasons. Firstly, the board notes that paragraph [0020] of the opposed patent reads:

"The transport channels are mapped into physical (referred to hereinafter as PHY)-SAPs in interfaces between the MAC sublayer and PHY layers, respectively"

while paragraph [0021] of the patent additionally indicates that transport channels may generally be classified into so-called SCH, BCH, PCH, FACH, RACH,
DSCH, and DCH channels. From this the board can at most
derive that transport channels are to be distinguished
from service access points at the physical layer (i.e.
"PHY-SAPs") rather than that transport channels and
physical channels refer to different telecommunication
means or objects, as asserted by the respondent.
Secondly, the board understands A5 to utilise physical
channels such as the "PDCH" channel for the purpose of
data transport (see A5, page 13, sections 5.5. and 5.6,
first sentences). Consequently, those physical channels
can indeed be read onto a transport channel according
to feature 4) of claim 1.

2.2.3 However, the board judges that the newly introduced
feature 6) of claim 1 is not directly and unambiguously
anticipated by A5 and therefore distinguishes claim 1
from the disclosure of A5. Hence, the difference
between the subject-matter of claim 1 and the teaching
of A5 is seen as being that the logical channels and
the transport channel are mapped into first and second
SAPs in the respective interfaces between the
respective layers.

Accordingly, the subject-matter of claim 1 of the main
request is considered to be novel over document A5
(Article 54 EPC 1973).

2.2.4 It was common ground that the above-identified
distinguishing feature has the technical effect of
enabling communication between the corresponding
telecommunication layers. The objective problem to be
solved by claim 1 may therefore be formulated as "how
to implement inter-layer communications in the mobile
communications system of A5".
2.2.5 The board finds that, starting out from the teaching of A5, the person skilled in the field of mobile telecommunication systems would be well aware that the corresponding input and output parameters have to be communicated between the RLC and the MAC layer and between the MAC and the physical layer. The skilled person would also know from his common general knowledge that for that purpose so-called service access points (SAPs) are commonly utilised at the corresponding telecommunication protocol layers, to provide well-defined services to the respective upper and lower layers. This common general knowledge is, for example, illustrated by the textbook A1 (see e.g. page 22, section 1.3.3 in conjunction with Fig. 1-12). Accordingly, the board sees no reason why the skilled person would not apply the standardised and well-known conceptual objects of service access points at the layers involved to enforce such inter-layer communication and to service different logical channels. Nor could the respondent provide any good reason.

2.2.6 The respondent merely argued that the combination of documents A5 and A1 did not render feature 6) obvious, since A1 mentioned neither "logical channels" nor a "transport channel" as claimed (cf. respondent's letter of reply dated 22 August 2014, section 2.2), and submitted at the oral proceedings before the board that document A1 provided only for one-directional rather than bi-directional inter-layer communication. In this respect, the board notes however that A1 is only considered as evidence and an example of the general use of SAPs between layers of any layer model such as that depicted in Fig. 3 of A5, and that any telecommunications layer model, by its very nature, must cover bi-directional communications as much as
one-directional communication between telecommunication senders and receivers (as demonstrated e.g. by the double arrows used between the individual protocol layers in Figs. 1-9 and 1-16 of A1).

2.2.7 In view of the above, the subject-matter of claim 1 of this request does not involve an inventive step having regard to A5 and the skilled person's common general knowledge as evidenced by A1.

2.3 In conclusion, this request is not allowable under Article 56 EPC 1973.

3. FIRST AUXILIARY REQUEST

This request differs from the present main request essentially in that claim 1 as amended further specifies that

7) a corresponding type is attached for each of the plurality of logical channels.

This amendment is based in particular on page 11, lines 5-23 of the application as filed and therefore complies with Article 123(2) EPC. The board is also satisfied that it is occasioned by a ground for opposition under Article 100(a) EPC and thus is compliant with Rule 80 EPC.

3.1 Admission into the appeal proceedings

3.1.1 The claims of the first auxiliary request were submitted for the first time with the respondent's letter of reply to the summons to oral proceedings before the board (cf. point VII above). The admissibility of requests filed after the respective
party has filed its statement setting out the grounds of appeal or the reply thereto and after a board has arranged oral proceedings is subject to Article 13(1) and (3) RPBA.

By virtue of Article 13(1) RPBA, a board's discretion in admitting any amendment to a party's case "shall be exercised in view of inter alia the complexity of the new subject-matter submitted, the current state of the proceedings and the need for procedural economy". Thus, the board has discretion to decide which of those criteria take precedence according to the circumstances of the case such that the importance of one of them may outweigh the others (see e.g. R 16/09 of 19 May 2010, point 2.2.11). Pursuant to Article 13(3) RPBA, amendments shall not be admitted "if they raise issues which the Board or the other party or parties cannot reasonably be expected to deal with without adjournment of the oral proceedings".

3.1.2 The board has decided to admit the first auxiliary request into the appeal proceedings in the light of the following facts:

d) the added feature 7), taken from the description, was already included in "Auxiliary Request II" filed in reply to the statement setting out the grounds of appeal (cf. respondent's letter dated 30 August 2012, page 28, fourth paragraph);
e) the amendment according to feature 7) was made to further limit the underlying subject-matter in a convergent way (cf. respondent's letter dated 30 August 2012, page 28, fifth paragraph).

The board concludes from the above facts that the amendments made in this auxiliary request do not entail
a fresh case or a shift of focus which would
necessitate an additional search and/or remittal to the
first-instance department and thus do not add complex
issues to the assessment of novelty and inventive step.
Hence, the board and the appellant could reasonably be
expected to deal with that amended request without
having to adjourn the oral proceedings before the
board.

3.2 In view of the above, the board admitted the first
auxiliary request into the appeal proceedings under
Article 13(1) and (3) RPBA.

3.3 Article 52(1) EPC: Novelty and inventive step

3.3.1 The feature analysis and observations set out in
points 2.2.1 and 2.2.2 above concerning claim 1 of the
main request apply mutatis mutandis to claim 1 of the
first auxiliary request.

3.3.2 Moreover, the board judges that feature 7) merely
emphasises the function of indicating the type of all
the logical channels to be transferred, and also
considers it to be anticipated by A5 (see sections 5.5
and 5.6, first paragraph: "Different packet data
logical channels can be multiplexed ... The type of
message ... allows differentiation between the logical
channels ..."), which implies that a corresponding type
is attached for each of the plurality of logical
channels. As a result, the observations concerning the
main request set out in points 2.2.3 to 2.2.6 above
with regard to the distinguishing feature, the
objective problem, and the argumentation on obviousness
apply mutatis mutandis to claim 1 of this auxiliary
request.
3.3.3 In view of the above, the subject-matter of claim 1 of this request likewise does not involve an inventive step.

3.4 In summary, the first auxiliary request is also not allowable under Article 56 EPC 1973.

4. SECOND AUXILIARY REQUEST

This request differs from the first auxiliary request basically in that, in claim 1 as amended, feature 6) has been replaced by feature 5), and in that claim 1 further specifies that

8) the type of the logical channel is such that it allows determining a logical channel in a receiving entity into which the corresponding MAC PDU is to be demultiplexed.

This amendment is supported e.g. by page 8, lines 16-22 of the application as filed and thus complies with Article 123(2) EPC. The board is also satisfied that it is occasioned by a ground for opposition under Article 100(a) EPC and therefore fulfils the requirement of Rule 80 EPC.

4.1 Admission into the appeal proceedings

4.1.1 The claims of this request were submitted for the very first time with the respondent's letter of reply to the summons to oral proceedings before the board (cf. point VII above). Hence, the admissibility of this request is also subject to Article 13(1) and (3) RPBA (cf. point 3.1.1 above). The board notes that the list of criteria set out in Article 13(1) RPBA is not exhaustive ("... in view of inter alia ..."). Thus,
other well-established criteria relevant to the admissibility issue may also be taken into account, such as the question whether a request is likely to overcome the objections in response to which it has been filed or whether it is clearly allowable (see e.g. T 484/11 of 8 November 2013, point 4.1.2).

4.1.2 The board has decided not to admit the second auxiliary request into the appeal proceedings, in view of the following observations:

f) this request was filed at a very late stage of the appeal proceedings;

g) the amendment relating to feature 5) *prima facie* gives rise to additional objections under Article 123(2) EPC (cf. board's communication under Article 15(1) RPBA, section 3.1);
h) the amendment according to feature 8) arises from the description and *prima facie* indicates merely the purpose of conveying the type of a logical channel to be transferred (which is moreover already anticipated by A5; see e.g. sections 5.5 and 5.6, first paragraphs).

The board concludes in particular from observations g) and h) that the amendments in this auxiliary request do not *prima facie* overcome the objections under Article 56 EPC 1973 raised by the board prior to and during the oral proceedings before the board. Hence, this auxiliary request cannot be considered clearly allowable.

4.1.3 The respondent submitted at the oral proceedings before the board that feature 5) had been re-introduced into claim 1 of the second auxiliary request by mistake, and that it had instead been intended to recite feature 6)
in claim 1. The board finds, as already indicated at
the oral proceedings, that even if feature 5) was
replaced by feature 6) as allegedly intended by the
respondent, the amendment according to feature 8) would
still not render claim 1 of this request clearly

4.2 For the above reasons, the board declined to admit the
second auxiliary request into the appeal proceedings
under Article 13(1) and (3) RPBA.

5. The pending claim requests not being allowable or
admissible, the opposed patent has to be revoked.

6. Admission of A7 to A11 into the appeal proceedings

Since the patent has to be revoked having regard to the
prior-art documents on file, the board finds that it is
neither necessary nor appropriate to decide on the
admissibility of late-filed documents A7 to A9 filed by
the appellant (cf. point III above) as well as A10 and
A11 submitted by the respondent (cf. point IV above).
Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The patent is revoked.

The Registrar: The Chair:

K. Götz-Wein A. Ritzka

Decision electronically authenticated