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**Datasheet for the decision
of 24 March 2022**

Case Number: T 2613/18 - 3.5.03

Application Number: 09007920.3

Publication Number: 2136592

IPC: H04W52/02

Language of the proceedings: EN

Title of invention:

Method for performing random access procedures and terminal thereof

Applicant:

Optis Cellular Technology, LLC

Headword:

Support by the description/OPTIS

Relevant legal provisions:

EPC Art. 84

RPBA 2020 Art. 13(2)

Keyword:

Support by the description - main request (no):
inconsistencies between independent claim and the description
Admittance of claim requests filed after the summons - 1st to
4th auxiliary requests (no): no clear allowability
Admittance of claim request filed during the oral proceedings
- 5th auxiliary request (no): no exceptional circumstances
justified with cogent reasons

Decisions cited:

T 0133/85, T 0409/91, T 2271/18, T 2632/18



Beschwerdekammern
Boards of Appeal
Chambres de recours

Boards of Appeal of the
European Patent Office
Richard-Reitzner-Allee 8
85540 Haar
GERMANY
Tel. +49 (0)89 2399-0
Fax +49 (0)89 2399-4465

Case Number: T 2613/18 - 3.5.03

D E C I S I O N
of Technical Board of Appeal 3.5.03
of 24 March 2022

Appellant: Optis Cellular Technology, LLC
(Applicant) P.O. Box 250649
Plano, TX 75025 (US)

Representative: Grünecker Patent- und Rechtsanwälte
PartG mbB
Leopoldstraße 4
80802 München (DE)

Decision under appeal: **Decision of the Examining Division of the
European Patent Office posted on 17 May 2018
refusing European patent application
No. 09007920.3 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chair K. Bengi-Akyürek
Members: J. Eraso Helguera
R. Romandini

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 inventive step (Article 56 EPC) with respect to claim 1 of each of a main request and an auxiliary request.

II. Oral proceedings before the board were held on 24 March 2022.

The appellant requested that the appealed decision be set aside and that a patent be granted on the basis of the claims of the **main request** subject to the appealed decision or, alternatively, of one five auxiliary requests: **auxiliary requests I to IV** filed with a response to the board's communication under Article 15(1) RPBA 2020 and **auxiliary request V** filed during the oral proceedings before the board.

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 of performing a random access procedure between a mobile terminal and a network, the method comprising:

- transmitting (S11) a RACH, abbreviated for Random Access Channel, preamble to the network;
- receiving (S12) a RACH response from the network;

- determining (S13) whether the RACH preamble was explicitly signaled by the network by using information included in the received RACH response;
- if the RACH preamble was explicitly signaled by the network, monitoring (S14) a downlink channel until a new transmission is indicated according to radio resource allocation information received from the network, wherein the downlink channel is a PDCCH, abbreviated for Physical Downlink Control CHannel; and
- if the RACH preamble was not explicitly signaled by the network, starting (S15) a contention resolution timer, wherein if the contention resolution timer expires, the downlink channel is no longer monitored as part of performing the random access procedures, and

wherein an active time during which the mobile terminal needs to monitor the downlink channel is a time period after reception of the RACH response until a radio resource allocation information is received, wherein said active time is only applied if the RACH preamble was explicitly signaled by the network."

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

"A method of performing a random access procedure between a mobile terminal and a network, the method comprising:

- transmitting (S11) a RACH, abbreviated for Random Access Channel, preamble to the network;

- receiving (S12) a RACH response from the network;
- determining (S13) whether the RACH preamble was explicitly signaled by the network by using information included in the received RACH response;
- if the RACH preamble was explicitly signaled by the network, monitoring (S14) a downlink channel until a new transmission is indicated according to radio resource allocation information received from the network, wherein the downlink channel is a PDCCH, abbreviated for Physical Downlink Control CHannel; and
- if the RACH preamble was not explicitly signaled by the network, starting (S15) a contention resolution timer and monitoring the PDCCH, wherein the downlink channel is not monitored upon expiration of the contention resolution timer and wherein the random access procedure is performed again after a back-off time, and

wherein an active time during which the mobile terminal needs to monitor the downlink channel is a time period after reception of the RACH response until a radio resource allocation information is received, wherein said active time is only applied if the RACH preamble was explicitly signaled by the network."

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

"A method of performing a random access procedure between a mobile terminal and a network, the method comprising:

- transmitting (S11) a RACH, abbreviated for Random Access Channel, preamble to the network;
- receiving (S12) a RACH response from the network;
- determining (S13) whether the RACH preamble was explicitly signaled by the network by using information included in the received RACH response;
- if the RACH preamble was explicitly signaled by the network, monitoring (S14) a downlink channel until a new transmission is indicated according to radio resource allocation information received from the network, wherein the downlink channel is a PDCCH, abbreviated for Physical Downlink Control CHannel; and
- if the RACH preamble was not explicitly signaled by the network, starting (S15) a contention resolution timer and monitoring the PDCCH, wherein the downlink channel is not monitored upon expiration of the contention resolution timer and wherein the random access procedure is performed again after a back-off time, and

wherein an active time during which the mobile terminal needs to monitor the downlink channel is a time period after reception of the RACH response until a radio resource allocation information is received, wherein said active time is only applied if the RACH preamble was explicitly signaled by the network, and

wherein the time period is not included in an active time during which the mobile terminal needs to monitor the downlink channel if the RACH preamble was not explicitly signaled by the network."

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

"A method of performing a random access procedure between a mobile terminal and a network, the method comprising:

- transmitting (S11) a RACH, abbreviated for Random Access Channel, preamble to the network;
- receiving (S12) a RACH response from the network;
- determining (S13) whether the RACH preamble was explicitly signaled by the network by using information included in the received RACH response;
- if the RACH preamble was explicitly signaled by the network, monitoring (S14) a downlink channel until a new transmission is indicated according to radio resource allocation information received from the network, wherein the downlink channel is a PDCCH, abbreviated for Physical Downlink Control CHannel; and
- if the RACH preamble was not explicitly signaled by the network, starting (S15) a contention resolution timer and monitoring the PDCCH, and

wherein an active time condition during which the mobile terminal needs to monitor the downlink channel is a time period after reception of the RACH response until a radio resource allocation information is received, wherein said active time is only applied if the RACH preamble was explicitly signaled by the network, and

wherein the downlink channel does not need to be monitored according to the active time condition upon expiration of the contention resolution timer and wherein the random access procedure is performed again after a back-off time."

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

"A method of performing a random access procedure between a mobile terminal and a network, the method comprising:

- transmitting (S11) a RACH, abbreviated for Random Access Channel, preamble to the network;
- receiving (S12) a RACH response from the network;
- determining (S13) whether the RACH preamble was explicitly signaled by the network by using information included in the received RACH response;
- if the RACH preamble was explicitly signaled by the network, monitoring (S14) a downlink channel until a new transmission is indicated according to radio resource allocation information received from the network, wherein the downlink channel is a PDCCH, abbreviated for Physical Downlink Control CHannel; and
- if the RACH preamble was not explicitly signaled by the network, starting (S15) a contention resolution timer and monitoring the PDCCH, and

wherein an active time condition during which the mobile terminal needs to monitor the downlink channel is a time period after reception of the RACH response until a radio resource allocation information is received, wherein said active time is only applied if the RACH preamble was explicitly signaled by the network, and

wherein the downlink channel does not need to be monitored according to the active time condition upon expiration of the contention resolution timer and wherein the random access procedure is performed again after a back-off time,

and

wherein the time period is not included in an active time during which the mobile terminal needs to monitor the downlink channel if the RACH preamble was not explicitly signaled by the network."

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

"A method of performing a random access procedure between a mobile terminal and a network, the method comprising:

- transmitting (S11) a RACH, abbreviated for Random Access Channel, preamble to the network;
- receiving (S12) a RACH response from the network;

- determining (S13) whether the RACH preamble was explicitly signaled by the network by using information included in the received RACH response;
- if the RACH preamble was explicitly signaled by the network, monitoring (S14) a downlink channel until a new transmission is indicated according to radio resource allocation information received from the network, wherein the downlink channel is a PDCCH, abbreviated for Physical Downlink Control CHannel; and
- if the RACH preamble was not explicitly signaled by the network, starting (S15) a contention resolution timer and monitoring the PDCCH, wherein if the radio resource allocation information is not received upon expiration of the contention resolution timer, the downlink channel is no longer monitored and wherein the PDCCH is not monitored during a back-off time and the random access procedures performed again after a back-off time, and

wherein an active time during which the mobile terminal needs to monitor the downlink channel is a time period after reception of the RACH response until a radio resource allocation information is received, wherein said active time is only applied if the RACH preamble was explicitly signaled by the network, and

wherein an active time during which the mobile terminal needs to monitor the downlink channel if the RACH preamble was not explicitly signaled by the network starts with said starting of the contention resolution timer and ends with said expiration of the contention

resolution timer if the radio resource allocation information is not received upon expiration;

wherein the radio resource allocation information is a C-RNTI, abbreviated for Radio Network Temporary Identifier."

Reasons for the Decision

1. The application

1.1 The present application relates to the random access procedure provided in an LTE system (cf. page 5, line 4 to page 9, line 27 of the description as filed). This procedure is used when there is a signalling message or user data to be transmitted via the uplink by a mobile terminal that did not receive allocation of dedicated radio resources from the network side, or may also be used when the base station instructs the mobile terminal to perform a Random Access CHannel (RACH) procedure. The random access procedure provided in the LTE system can be classified as a *contention-based* random access procedure ("contention case") and a *non-contention based* procedure ("non-contention case"), based upon whether the random access preamble is selected by the *mobile terminal* itself or selected by the *base station* (i.e. the network). In the latter case, the mobile terminal receives information about the preamble to be used through explicit signalling from the base station.

1.2 The application further explains some concepts of discontinuous reception (DRX) in LTE (cf. e.g. page 10, line 15 to page 11, line 5 of the description as filed). A mobile terminal having always to monitor the

downlink channel, e.g. the PDCCH, would result in undesirable power consumption for the mobile terminal. To resolve this issue, the mobile terminal and the base station operate according to pre-established consistent rules. As a result, the mobile terminal only needs to monitor the PDCCH at certain specified times, which reduces power consumption thereof. *Active time* denotes the time at which the mobile terminal should wake up (from its idle state) to monitor a downlink channel, namely the PDCCH. After such active time, the mobile terminal need not monitor the PDCCH. The active time may include *inter alia* a time period during which an "On-Duration" timer or a "DRX Inactivity" timer or a "DRX Retransmission" timer or a "Contention Resolution" timer operates ("condition 1") and a time period including the duration from *after* the RACH MSG 2 is transmitted up to the time *when* a Cell Radio Network Temporary Identifier (C-RNTI) or a Temporary C-RNTI is received ("condition 4").

- 1.3 The application recognises that, based upon those "active time" definitions, the downlink channel must be monitored even during a "back-off time". This back-off time is not a time period during which a "contention resolution timer" is being operated and thus the network does not allocate radio resources to the mobile terminal. Accordingly, given that the mobile terminal need not actually perform monitoring, power consumption is unnecessarily wasted during this time period (cf. page 12, lines 15-21 of the description as filed). To reduce the power consumption of the mobile terminal in the known LTE system, the application proposes that the "active time" definition according to condition 4 be applied for instances where the RACH procedure is *non-contention based*, while such condition 4 is not applied for *other* situations (cf. page 14, lines 3-6

and page 15, lines 14-18 of the description as filed).

2. MAIN REQUEST

Claim 1 of the main request comprises the following limiting features (board's outline):

- (a) A method of performing a random access procedure between a mobile terminal and a network, the method comprising:
 - (b) transmitting a RACH preamble to the network;
 - (c) receiving a RACH response from the network;
 - (d) determining whether the RACH preamble was explicitly signaled by the network
 - (d1) by using information included in the received RACH response;
 - (e) if the RACH preamble was explicitly signalled by the network, monitoring a downlink channel until a new transmission is indicated according to radio resource allocation information received from the network,
 - (f) wherein the downlink channel is a PDCCH;
 - (g) if the RACH preamble was not explicitly signalled by the network, starting a contention resolution timer,
 - (h) wherein if the contention resolution timer expires, the downlink channel is no longer monitored as part of performing the random access procedures,

(i) wherein an active time during which the mobile terminal needs to monitor the downlink channel is a time period after reception of the RACH response until a radio resource allocation information is received,

(ii) wherein said active time is only applied if the RACH preamble was explicitly signaled by the network.

2.1 *Claim 1 - support by the description (Article 84 EPC)*

2.1.1 A claim which is inconsistent with the description is not supported by the description under Article 84 EPC. The requirement of "support by the description" reflects the general legal principle that the extent of the patent monopoly, as defined by the claims, should correspond to the technical contribution to the art in order for it to be supported or justified (see e.g. T 133/85, Headnote 1; T 409/91, Reasons 3.3).

2.1.2 Present claim 1 is not supported by the description, contrary to the requirements of Article 84 EPC, for the reasons set out below.

2.1.3 The alleged advantage of the method described in Figure 10 and pages 15-19 of the description as filed is that undesired power consumption can be *reduced* in the contention case (compared with the random access procedures in the known LTE systems). The proposed method addresses a very specific problem caused by the *simultaneous* application of at least two "active time" conditions, i.e. conditions 1 and 4, in the definition of the time period during which the mobile terminal should monitor the PDCCH, i.e. the "active time", for

the "contention case". The description includes with regard to the method concerned a definition of an active time for the contention case according to, at the very least, condition 1 (cf. page 12, lines 13-14 of the description; Fig. 10: "Active time 2").

Conversely, the sole feature of claim 1 explicitly referring to an "active time", i.e. **feature (i)**, is defined as applying only to the "non-contention case". **Feature (h)** falls short of a definition of an active time for the contention case, since the wording "no longer monitored" merely implies that once the contention resolution timer has expired, the random access procedures are over. This is not the case according to the description. There, in such a case, a new attempt for random access is made after a back-off time in which no monitoring takes place (cf. Fig. 10 and page 14, line 26 to page 15, line 2 of the description as filed). Thus, the PDCCH is monitored again after this back-off time as an integral part of the overall random access procedures (cf. page 14, lines 34-36). Moreover, feature (h) does not define *when* the mobile terminal *begins* to monitor PDCCH in the contention case. Hence, the active time is not defined by claim 1 in a manner consistent with the description and drawings.

- 2.1.4 According to the appellant, the gist of the invention was the use of so-called "condition 4" only in the non-contention case and not for other cases. It was not required for the understanding of the claimed invention to define a back-off timer or when a *different* active time for the contention case begins. Those features were unrelated to the present invention and the skilled person would understand that they were part of the

standard random access procedures applied in an LTE system.

2.1.5 This is not convincing. The claim is not limited to any mobile systems in particular, much less to LTE systems in which the random access procedures involve the specific steps and active time conditions explained in the present description. Those features, hence, cannot be considered to be implicitly disclosed in the claim by the mere mention of a "random access procedure between a mobile terminal and a network" or by the occurrence of the term "PDCCH", which was notoriously introduced with LTE Release 8. The fact that the disputed features might belong to the prior art does not make them any less essential. In the case at hand, the invention cannot be reduced to the use of "condition 4" only in the non-contention case for any otherwise undefined random access procedures. Rather, the alleged technical contribution is described to appear in combination with a specific definition of the active time for the contention case which includes, at the very least, "condition 1".

2.2 It follows from the above that the main request is not allowable under Article 84 EPC.

3. FIRST TO FOURTH AUXILIARY REQUESTS

3.1 Claim 1 of the **first auxiliary request** comprises the same limiting features as claim 1 of the main request except for the following amendments (board's outline and highlighting):

(g) if the RACH preamble was not explicitly signaled by the network, starting a contention resolution timer

- (g1) and monitoring the PDCCH,
- (h) wherein the downlink channel is not monitored if upon expiration of the contention resolution timer expires, the downlink channel is no longer monitored as part of performing and wherein the random access procedures is performed again after a back-off time,

Claim 1 of the **second auxiliary request** comprises the same limiting features as claim 1 of the first auxiliary request with the addition of the following feature (board's outline and highlighting):

- (j) wherein the time period is not included in an active time during which the mobile terminal needs to monitor the downlink channel if the RACH preamble was not explicitly signaled by the network.

Claim 1 of the **third auxiliary request** comprises the same limiting features as claim 1 of the main request except for the deletion of feature (h), the following amendment of feature (i) (board's outline and highlighting):

- (i) wherein an active time condition during which the mobile terminal needs to monitor the downlink channel is a time period after reception of the RACH response until a radio resource allocation information is received,

and the addition of feature (g1) and the following feature:

(k) wherein the downlink channel does not need to be monitored according to the active time condition upon expiration of the contention resolution timer and wherein the random access procedure is performed again after a back-off time.

Claim 1 of the **fourth auxiliary request** comprises the same limiting features as claim 1 of the third auxiliary request with the addition of feature (j).

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

3.2.1 The claims of the first to fourth auxiliary requests were filed after notification of the summons to oral proceedings before the board.

3.2.2 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, in principle, not taken into account unless there are exceptional circumstances, which have been justified with cogent reasons by the party concerned. Moreover, when applying Article 13(2) RPBA 2020, the board may, in the exercise of its discretion, also rely on criteria mentioned in Article 13(1) RPBA 2020, such as clear allowability.

3.2.3 The board's communication under Article 15(1) RPBA 2020 contained, *inter alia*, the following statement as regards an objection under Article 84 EPC (original emphasis):

"4.5 Furthermore, although **feature i** is defined as applying only to the non-contention case, apparently it should *also apply* to the contention

case in the event that the radio resource allocation information is successfully received but the contention resolution timer has not yet expired (cf. Fig. 6). In other words, the *active time* for the contention case is not defined by claim 1 in a manner consistent with the description and drawings."

3.2.4 As regards the "active time" for the contention case, the underlying description as originally filed indicates the following at page 14, lines 28-34 in connection with Figures 9 and 10 (board's emphasis):

"... when the UE receives a random access response ... from the network, the contention resolution timer is operated and the downlink channel (PDCCH) is monitored. However, **if a C-RNTI is not received upon expiration of the contention resolution timer via the downlink channel being monitored**, the UE performs the random access procedure again after a back-off time is applied ..."

From the above teaching, the skilled reader understands that, in the considered "contention case", the downlink channel is to be monitored as long as the contention resolution timer has not expired and no C-RNTI, i.e. no "radio resource allocation information", has been received yet. Thus, both conditions have to be fulfilled according to the teaching of the description.

3.2.5 In its reply to the board's communication under Article 15(1) RPBA 2020, the appellant submitted the following:

"In its preliminary opinion, the Board of Appeal raises new objections under Articles 84 and 83 EPC. In view of and in response to these newly raised objections by the Board of Appeal, four additional Auxiliary Requests are submitted herewith to react to the new situation."

3.2.6 Even if it was accepted *arguendo* that this statement constitutes "cogent reasons" justifying "exceptional circumstances" (cf. point 4.2.3 below), the board does not consider any of the new claim requests clearly allowable under at least Article 84 EPC, for the following reasons:

The amendments carried out in claim 1 may arguably address the objections set out in points 4.4 ("begin to monitor the PDCCH") and 4.6 ("PDCCH monitored again as part of the random access procedures") of the board's preliminary opinion. However, it is apparent that:

- i) the amendments in claim 1 of the first auxiliary request do not address at all the objection set out in point 4.5 (i.e. the definition of "active time") of the same opinion (cf. appellant's footnotes 1 to 3 in the marked-up version);
- ii) feature (j) in claim 1 of the second and fourth auxiliary requests now links "the time period", which is defined in feature (i) as the "active time" for the non-contention case, to "an active time" defined for the contention case; thus, instead of overcoming the objection raised under Article 84 EPC of point 4.5 of the board's preliminary opinion (cf. points 3.2.3 and 3.2.4 above), this even introduces an *additional* ambiguity into the claim;

iii) similarly, feature (k) in claim 1 of the third and fourth auxiliary requests links "the time period", which is defined in feature (i) as the active time *condition* for the non-contention case, to "an active time *condition*" defined for the contention case, which is likewise ambiguous.

3.3 Accordingly, none of the first to fourth auxiliary requests were admitted into the appeal proceedings (Article 13(2) RPBA 2020).

4. FIFTH AUXILIARY REQUEST

4.1 Claim 1 of the **fifth auxiliary request** comprises the same limiting features as claim 1 of the main request except for the amendment of feature (h) (board's outline and highlighting):

(h) wherein if the radio resource allocation information is not received upon expiration of the contention resolution timer, the downlink channel is no longer monitored and wherein the PDCCH is not monitored during a back-off time and the random access procedures performed again after a back-off time,

and the addition of feature (g1) and the following features:

(l) wherein an active time during which the mobile terminal needs to monitor the downlink channel if the RACH preamble was not explicitly signaled by the network starts with said starting of the contention resolution timer and ends with said expiration of the contention resolution timer if

the radio resource allocation information is not received upon expiration;

(m) wherein the radio resource allocation information is a C-RNTI.

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

4.2.1 The claims of the fifth auxiliary request were filed during the oral proceedings before the board, i.e. at a very late stage of the appeal proceedings. Thus, Article 13(2) RPBA 2020 applies.

4.2.2 In support of admittance of this auxiliary request, the appellant submitted that it constituted an appropriate reaction to the new objections raised by the board during the oral proceedings and that such request could not have been filed earlier.

4.2.3 This is not persuasive. The objection of lack of support by the description, specifically mentioning the lack of definition of an "active time" for the contention case, had already been raised by the board in point 4.5 of its communication under Article 15(1) RPBA 2020. So, instead of seriously taking up the hint provided in that communication, i.e. that "the *active time* for the contention case is **not defined** by claim 1 in a manner consistent with the description and drawings" (cf. point 3.2.3 above) and of remedying the mentioned defect according to the teaching of the original description (cf. point 3.2.4 above, in particular the emphasised part of that teaching), the appellant chose to wait only until the hearing before the board to then concede that claim 1 might indeed not be fully consistent with the description. Such a

conduct cannot justify admittance of a late-filed claim request.

4.2.4 Notwithstanding the fact that a "new" objection raised by a board in appeal proceedings cannot *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), it is apparent that such a request could and should have been filed already before the oral proceedings in appeal proceedings, at least in response to the board's preliminary opinion. The negative opinion on allowability under Article 84 EPC of the main request and on admittance under Article 13(2) RPBA 2020 of the first to fourth auxiliary requests announced by the board during the oral proceedings does not constitute *per se* an "exceptional circumstance". Hence, it could not justify a *further* amendment to the appellant's case at such a late stage of the appeal proceedings. Moreover, the additional comments and explanations given by the board during the oral proceedings in relation to its objections raised in its preliminary opinion do not constitute "new" objections just because they are not a repetition of a written statement or because they helped the representative understand the written objection.

4.2.5 It follows that there are neither "exceptional circumstances" nor "cogent reason" which could justify the admittance of this claim request.

4.3 Consequently, the fifth auxiliary request was not admitted into the appeal proceedings (Article 13(2) RPBA 2020) either.

5. 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