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**Datasheet for the decision  
of 19 June 2012**

**Case Number:** T 2085/09 - 3.5.03

**Application Number:** 04732892.7

**Publication Number:** 1658747

**IPC:** H04Q 7/38

**Language of the proceedings:** EN

**Title of invention:**

Apparatus and method of timer-based registration in a mobile radio network

**Applicant:**

Research in Motion Limited

**Opponent:**

-

**Headword:**

Timer-based registration/RESEARCH IN MOTION

**Relevant legal provisions:**

EPC Art. 84, 123(2)

**Relevant legal provisions (EPC 1973):**

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**Keyword:**

"Added subject-matter - main and first to fourth auxiliary requests - yes"; fifth auxiliary request - no"

"Compliance with Article 84 EPC - fifth auxiliary request - yes"

"Remittal for further prosecution"

**Decisions cited:**

G 0001/93, T 1408/04

**Catchword:**

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Case Number: T 2085/09 - 3.5.03

**D E C I S I O N**  
of the Technical Board of Appeal 3.5.03  
of 19 June 2012

**Appellant:** Research In Motion Limited  
(Applicant) 295 Phillip Street  
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**Representative:** Fennell, Gareth Charles  
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**Decision under appeal:** Decision of the Examining Division of the  
European Patent Office posted 28 May 2009  
refusing European patent application  
No. 04732892.7 pursuant to Article 97(2) EPC.

**Composition of the Board:**

**Chairman:** A. S. Clelland  
**Members:** T. Snell  
R. Menapace

## Summary of Facts and Submissions

- I. This appeal is against the decision of the examining division refusing European patent application No. 04732892.7, with International publication number WO-A-2004/103002.

The refusal was based on the ground that independent claims 1, 8, 15 and 16 of a main request were not clear and not supported by the description (Article 84 EPC), and did not comply with Article 123(2) EPC. Similar objections were made in respect of the independent claims of first to third auxiliary requests. The refusal also mentioned that the independent claims were not in the two-part form (Rule 43(1) EPC) and that document D3 (US-B1-6385448) was not cited in the description (Rule 42(1)(b) EPC).

- II. The appellant filed a notice of appeal against the above decision. The appellant requested that the decision under appeal be set aside in its entirety and a patent granted.
- III. Together with a subsequently filed statement of grounds the appellant filed claims of first to fourth requests (ie a main and first to third auxiliary requests) said to conform to those submitted during the examining procedure. The appellant also filed a replacement page 2 of the description with a reference to document D3.

Oral proceedings were conditionally requested.

- IV. In a communication accompanying a summons to oral proceedings the board gave a preliminary opinion in which an objection under Article 123(2) EPC was raised with respect to the independent claims of the various requests.
- V. In response to the board's communication, the appellant filed claims of fifth and sixth requests (ie fourth and fifth auxiliary requests) as well as a corrected second request (first auxiliary request). The appellant indicated that it would not attend the oral proceedings.
- VI. Oral proceedings were held on 19 June 2012 in the absence of the appellant.

From the written proceedings, the appellant implicitly requested that the decision under appeal be set aside and a patent granted on the basis of the claims of the first (main) request or third or fourth requests (second or third auxiliary requests respectively) filed with the statement of grounds on 7 October 2009, or the second, fifth or sixth requests (first, fourth or fifth auxiliary requests respectively) filed on 18 May 2012.

At the end of the oral proceedings the board announced its decision.

- VII. Claim 1 of the **main request** ("first request") reads as follows:

"A method of timer-based registration provided at a mobile station, the method comprising:

at the mobile station receiving a randomization parameter over a communications network while the mobile station is registered with the network; and, initiating a timer-based re-registration of the mobile station with the communications network after expiry of a random time value bounded by a registration period with the network and a lower registration delay time limit, the lower registration delay time limit being less than the registration period and being determined from the randomization parameter."

Claim 1 of the **first auxiliary request** ("second request") reads as follows:

"A method of timer-based registration provided at a mobile station, the method comprising:  
at the mobile station receiving a randomization parameter over a communications network while the mobile station is registered with the network;  
at the mobile station, randomly selecting a random count value from a range of possible initial timer count values having an upper limit calculated by reducing a maximum registration count value based on the randomization parameter;  
assigning to a registration timer an initial count value equal to the random count value, the registration timer having a maximum expiry period equal to a registration period with the network; and,  
initiating a timer-based registration of the mobile station with the communications network after expiry of the registration timer."

Claim 1 of the **second auxiliary request** ("third request") reads as follows:

"A method of timer-based registration provided at a mobile station, the method comprising:  
over a wireless network, receiving a randomization parameter at the mobile station while the mobile station is registered with the network;  
at the mobile station, calculating a range of possible initial timer count values using a maximum registration count value "REG\_COUNT\_MAX" and the randomization parameter, the range of initial timer count values having an upper limit less than the maximum registration count value "REG\_COUNT\_MAX" by an amount based on the randomization parameter;  
assigning to a registration timer of the mobile station a random count value randomly selected from the range of possible initial timer count values, the registration timer having a maximum expiry period equal to a registration period with the network; and  
initiating a timer-based registration of the mobile station with the network after expiry of the registration timer, the registration timer expiring upon the registration timer value being at least equal to the maximum registration count value "REG\_COUNT\_MAX"."

Claim 1 of the **third auxiliary request** ("fourth request") is the same as claim 1 of the first auxiliary request except that the wording "for reducing the randomization of a registration timer" has been inserted following the wording "at the mobile station receiving a randomization parameter", and the wording "assigning to a registration timer" now reads "assigning to the registration timer".

Claim 1 of the **fourth auxiliary request** ("fifth request") reads as follows:

"A method of timer-based registration provided at a mobile station, the method comprising:  
at the mobile station receiving a randomization parameter over a communications network while the mobile station is registered with the network;  
at the mobile station, determining an initial timer count value by:  
generating a pseudorandom number,  $z_n$ , at the mobile station,  $z_n$  being generated using a modulo operation having a modulus,  $m$ ;  
calculating an upper limit that is a maximum registration count value reduced based upon the randomization parameter; and  
calculating the initial timer count value based upon the upper limit multiplied by the pseudorandom number,  $z_n$ , and divided by the modulus,  $m$ ;  
assigning to a registration timer the initial timer count value, the registration timer having a maximum expiry period equal to a registration period with the network; and,  
initiating a timer-based registration of the mobile station with the communications network after expiry of the registration timer."

Claim 1 of the **fifth auxiliary request** ("sixth request") reads as follows:

"A method of timer-based registration provided at a mobile station in which periodic packet data calls are available, the method comprising:

at the mobile station receiving a randomization parameter over a communications network while the mobile station is registered with the network, the randomization parameter corresponding to a registration lifetime field specifying a keep alive period for the periodic packet data calls;

at the mobile station, determining an initial timer count value by:

generating a pseudorandom number,  $z_n$ , at the mobile station, the pseudorandom number,  $z_n$ , being generated by applying a modulo operation having a modulus,  $m$ , to a previously generated pseudorandom number,  $z_{n-1}$ , that is multiplied by a constant,  $a$ , wherein an initial pseudorandom number,  $z_0$ , that is used to generate the pseudorandom number,  $z_n$ , is generated by applying the modulo operation to an exclusive-OR combination of an ESN value and a RANDOM\_TIME value;

calculating an upper limit that is the keep alive period subtracted from a maximum registration count value; and

calculating the initial timer count value by rounding the upper limit multiplied by the pseudorandom number,  $z_n$ , and divided by the modulus,  $m$ , to a next lowest integer value;

assigning to a registration timer the initial timer count value, the registration timer having a maximum expiry period equal to a registration period with the network; and,

initiating a timer-based registration of the mobile station with the communications network after expiry of the registration timer."



## Reasons for the Decision

1. *Decision taken at oral proceedings in the absence of the appellant*

The appellant did not attend the oral proceedings and thus chose to rely on its written case (cf. Article 15(3) RPBA). The board's reasons for not allowing the main and the first to fourth auxiliary requests concern Article 123(2) EPC. This matter had been raised in the impugned decision as well as the board's communication, and the appellant commented on it extensively. The board was therefore in a position to issue a decision at the oral proceedings complying with Article 113(1) EPC.

2. *Article 123(2) EPC*

- 2.1 All references to the description as originally filed refer to the published patent application WO-A-2004/103002.

- 2.2 *Main (first) request*

- 2.2.1 Claim 1 requires "a random time value bounded by a registration period with the network and a lower registration delay time limit, the lower registration delay time limit being less than the registration period and being determined from the randomization parameter".

- 2.2.2 The most general reference to the generation of the random time value occurs in paragraph [0008] of the description as filed, which states that this may

involve "the steps of receiving a network parameter at the mobile station, and generating the random time value based on the received network parameter". The most general reference to possible boundary conditions occurs in paragraph [0005] of the description, which states that "a timer-based registration of the mobile station with the communications network is initiated after the expiry of a random time value less than the registration period". In the board's view, this passage does not directly and unambiguously disclose the upper or the lower bound of the random time value defined in claim 1, since, in accordance with paragraph [0005], the maximum value (upper bound) is less than the registration period, ie not the registration period, as required by claim 1 and, as regards the lower bound, the description here gives no indication of a minimum value.

- 2.2.3 In the statement of grounds, the appellant refers to paragraph [0037] of the description as providing support. However, paragraph [0037] sets out a far more detailed embodiment for calculating the initial count value  $R_n$ . In this embodiment, the randomization parameter is a "keep alive period" for periodic data calls. Moreover, the initial count value is based on a specific formula set out at the end of this paragraph. Accordingly, this specific disclosure does not provide direct and unambiguous support for the general definition of claim 1, which embraces any type of randomization parameter and any formula for setting a lower limit for the random time value "less than the registration period and being determined from the randomization parameter". In other words, claim 1 includes an undisclosed "intermediate generalisation"

(ie an undisclosed combination of selected features lying somewhere between an originally broad disclosure and a more limited specific disclosure, cf. T 1408/04, point 1. of the reasons, third paragraph). In the present case, the scope of claim 1 falls between the scope of paragraphs [0008] and [0037] of the description as originally filed.

- 2.2.4 The appellant further cites G 001/93 (OJ EPO 1994, 541), in which the Enlarged Board of Appeal held that a feature that made no technical contribution but merely excluded protection for part of the subject-matter of the claimed invention as covered by the application as filed would not be contrary to Article 123(2) EPC, and argues that this is the case here. However, G001/93 deals essentially with a potential conflict between Articles 123(2) and (3) EPC and consequently an unrelated legal situation to the present case, all the more so since in the board's view there are no features of claim 1 which could be categorised as making no technical contribution but which merely exclude protection for part of the subject-matter of the claimed invention as covered by the application as filed.

Hence, the board concludes that claim 1 of the main request does not comply with Article 123(2) EPC.

### 2.3 *First auxiliary request (second request)*

- 2.3.1 Claim 1 includes the feature "randomly selecting a random count value from a range of possible initial timer count values having an upper limit calculated by reducing a maximum registration count value based on

the randomization parameter". The appellant again refers in the statement of grounds to paragraph [0037] of the description and states that "the claim amendments merely explain, in words, the operation of the algorithm depicted in para. [0037] of the application as filed". The board disagrees, because the claim language is much more general than the formula set out in paragraph [0037], both in terms of determining the range as well as in the manner of randomly selecting a count value from the range. Claim 1 therefore also includes an intermediate generalisation.

Hence, the board concludes that the subject-matter of claim 1 of this request does not comply with Article 123(2) EPC either.

#### 2.4 *Second auxiliary request (third request)*

2.4.1 Claim 1 of the third request includes the features "calculating a range of initial timer count values using a maximum registration count value "REG\_COUNT\_MAX" and the randomization parameter, the range of initial time count values having an upper limit less than the maximum registration count value "REG\_COUNT\_MAX" by an amount based on the randomization parameter" and "assigning .... a random count value randomly selected from the range of possible initial timer count values". The appellant repeats the same argument used in connection with the "second request", namely that "the claim amendments merely explain, in words, the operation of the algorithm depicted in para. [0037] of the application as filed". The board again disagrees, because the claim language is still more

general than the algorithm set out in paragraph [0037], both in terms of calculating the range as well as assigning a random count value randomly selected from the range. This claim therefore also includes an intermediate generalisation.

Hence, the board concludes that the subject-matter of claim 1 of this request does not comply with Article 123(2) EPC either.

## 2.5 *Third auxiliary request (fourth request)*

2.5.1 Claim 1 of this request differs from claim 1 of the first auxiliary request essentially in that the words "for reducing the randomization of a registration timer" are added.

This amendment has no effect on the objection raised in connection with claim 1 of the first auxiliary request. Moreover, the added expression "reducing the randomization" (the meaning of which is unclear, cf. Article 84 EPC) is not directly and unambiguously derivable from the application as filed.

Hence, the board concludes that the subject-matter of claim 1 of the "fourth request" does not comply with Article 123(2) EPC either.

## 2.6 *Fourth auxiliary request (fifth request)*

Claim 1 of the fourth auxiliary request includes the features:

"generating a pseudorandom number,  $z_n$ , at the mobile station,  $z_n$  being generated using a modulo operation having a modulus,  $m$ ;  
calculating an upper limit that is a maximum registration count value reduced based upon the randomization parameter; and  
calculating the initial timer count value based upon the upper limit multiplied by the pseudorandom number,  $z_n$ , and divided by the modulus,  $m$ ".

The appellant argues in the submission accompanying this request that "The foregoing [claimed] procedure ... unmistakably corresponds to the procedure for setting the registration timer ... that is disclosed in paragraph [0037] of the original application".

The board however disagrees, since although the claim language reflects much of the formula set out in the last three lines of paragraph [0037], the claim does not include all the mathematical steps required by this formula. For example, there is no mention of the term ESN or the requirement of rounding down to the next lowest integer value. Claim 1 therefore still relates to an intermediate generalisation not directly and unambiguously derivable from the application as filed.

Hence, the board concludes that claim 1 of this request does not comply with Article 123(2) EPC either.

## 2.7 *Fifth auxiliary request (sixth request)*

In contrast to claim 1 of the fourth auxiliary request, claim 1 of this request includes wording corresponding to the entirety of the formula set out in the last

three lines of paragraph [0037]. Claim 1 is therefore essentially based on a combination of original claim 30 and this formula. It is also stated in claim 1 that the registration timer has a maximum expiry period equal to a registration period with the network. This feature is implicit in all embodiments of the published application, see eg page 2, lines 15-17, page 12, lines 11-13, and page 19, lines 7-9, which state that the parameter KEEP\_ALIVE\_PRD may be equal to the maximum time between timer-based registrations, which when applied to the formula for computing  $R_n$  leads to a start value of  $R_n = 0$ ; the counter then counts up to the registration period REG\_COUNT\_MAX (cf. page 13, lines 8-10). It is further stated in claim 1 that the randomization parameter corresponds to a registration lifetime field specifying a keep alive period for the periodic packet data calls. This is disclosed on page 19, lines 3-5. In this respect, claim 1 is not explicitly limited to Mobile IP, but in the board's view the skilled person would understand paragraph [0037] as being applicable to any mobile packet data protocol which specifies a keep alive period.

Accordingly, in the board's view claim 1 of the fifth auxiliary request complies with Article 123(2) EPC.

3. *Article 84 EPC - fifth auxiliary request - claim 1*

3.1 In the board's view, claim 1 of the fifth auxiliary request is sufficiently clear within the meaning of Article 84 EPC. The board assumes that the term "ESN", which is not defined in the application documents, stands for "electronic serial number", which is conventional mobile phone terminology.

3.2 The examining division raised objections, referring to Article 84 EPC, that the independent claims of the various requests did not comprise all the essential features of the invention and were broader than justified by the description and drawings.

However, the board notes that claim 1 of the fifth auxiliary request has been extensively amended with respect to the claims put before the examining division. In respect of claim 1 now on file, the board is of the view that there can be no question of a lack of essential features, given that all aspects of the mathematical formula for calculating the initial timer count value set out in paragraph [0037] have been included. As such the claim is also not broader than justified by the description and drawings.

Hence, the board considers that the objections raised by the examining division under Article 84 EPC have been overcome.

4. *Independent claims 8 and 16 - fifth auxiliary request*

The above considerations apply, *mutatis mutandis*, to independent claims 8 and 16, except for the following point:

The board notes that these claims lack any feature corresponding to the following feature of claim 1:

"the registration timer having a maximum expiry period equal to a registration period with the network".



It appears that the absence of this feature may offend Article 123(2) and/or Article 84 EPC. However, the board leaves this matter to be considered by the examining division.

5. *Two-part form (Rule 43(1) EPC)*

The board is of the view that the two-part form would not lead to any improvement in the formulation of the independent claims since the expression "characterised by" would have to appear in the first line. The board accordingly agrees with the appellant that the two-part form is not required in the present case.

6. *Rule 42(1)(b) EPC*

The board notes that an amended description dealing with this issue has been filed with the statement of grounds.

7. *Remittal*

As the reasons for refusing the application have been overcome by the claims of the fifth auxiliary request, the case is remitted to the examining division for further prosecution (Article 111(1) EPC).

**Order**

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

1. The decision under appeal is set aside.
  
2. The case is remitted to the examining division for further examination on the basis of the sixth request (fifth auxiliary request) filed 18 May 2012.

The Registrar:

The Chairman:

G. Rauh

A.S. Clelland