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Datasheet for the decision of 7 September 2007

Case Number: T 1226/05 - 3.5.03

Application Number: 99400649.2

Publication Number: 1037396

IPC: H04B 7/005

Language of the proceedings: EN

Title of invention:
A method for improving performances of a mobile radiocommunication system using a power control algorithm

Applicant:
Alcatel Lucent

Opponent:
-

Headword:
Power control/ALCATEL LUCENT

Relevant legal provisions:
EPC Art. 54, 56, 113(1), 123(2)

Keyword:
"Inventive step - (yes - after amendment)"

Decisions cited:
-

Catchword:
-

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Case Number: T 1226/05 - 3.5.03

D E C I S I O N
of the Technical Board of Appeal 3.5.03
of 7 September 2007

Appellant: Alcatel Lucent
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FR-75008 Paris (FR)

Representative: El Manouni, Josiane
Alcatel Lucent
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54 rue La Boétie
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Decision under appeal: **Decision of the Examining Division of the European Patent Office posted 14 March 2005 refusing European application No. 99400649.2 pursuant to Article 97(1) EPC.**

Composition of the Board:

Chairman: A. S. Clelland
Members: A. Ritzka
R. Moufang

Summary of Facts and Submissions

I. This appeal is against the decision of the examining division dated 14 March 2005, refusing European patent application No. 99 400 649.2 for the reasons that the subject-matter of claim 1 lacked novelty and/or inventive step having regard to the disclosure of:

D1: GB 2 314 486 A.

II. Notice of appeal was filed and the appeal fee paid on 11 May 2005. The statement of grounds of appeal was submitted on 13 July 2005. The appellant requested that the appealed decision be set aside and that a patent be granted based on the set of claims filed with the written grounds of appeal. The appellant made a conditional request for oral proceedings.

III. The board issued an invitation to oral proceedings accompanied by a communication. In the communication the board expressed the preliminary view that claims 13 to 16 did not comply with the provisions of Article 123(2) EPC and that the subject-matter of each of claims 1 to 16 lacked novelty or did not involve an inventive step having regard to the disclosure of D1.

IV. With its letter submitted 1 August 2007, in response to the communication, the appellant submitted a new set of claims 1 to 12 and announced that it would not attend the oral proceedings set for 7 September 2007. It was requested that a decision be taken based on the documents on file.

V. Oral proceedings took place as scheduled on 7 September 2007. The appellant was not represented at the hearing. After deliberation on the basis of the submissions and requests of 13 July 2005 and of 1 August 2007 the chairman announced the board's decision.

VI. Claim 1 as filed on 1 August 2007 reads as follows:

"A method for improving performances of a mobile radiocommunication system using a closed-loop power control algorithm, said method comprising:

- regularly estimating (20-24, 27) if a criterion is met as to whether said power control algorithm should better be de-activated , to improve the performances,

- de-activating (28) said power control algorithm if said criterion is met,

wherein said estimation as to whether said criterion is met is based on an estimation of a deviation value, representative of a deviation between an estimated transmission quality and a target transmission quality, and includes:

- an estimation (23) of a first deviation value, which would have been obtained if said power control algorithm had always been activated, on a given time-interval on which said deviation value is estimated,

- an estimation (24) of a second deviation value, which would have been obtained if said power control algorithm had never been activated, on said given time-interval on which said deviation value is estimated,

- a choice (25) between activation and de-activation of said algorithm depending on which of said first and second deviation values is the lowest."

Reasons for the Decision

1. *Procedural matters*

With the letter of 1 August 2007 the appellant filed a new set of claims without specifying whether the new set of claims was to replace the set of claims on file or represented an auxiliary request. However, the appellant requested that a decision be taken based on the documents on file.

As the appellant has not explicitly made an auxiliary request, the board concludes that the new set of claims was intended to replace the set of claims on file and thus forms the basis of a new main request.

The oral proceedings were held in the absence of the appellant. The decision was taken on the basis of the documents on file, as requested in the appellant's letter of 1 August 2007, in compliance with Article 113(1) EPC.

2. *Article 123(2) EPC*

Claim 1 is based on originally filed claims 1, 7 and 8 and the description at page 2, lines 39 to 41 as published. Thus, it complies with the provisions of Article 123(2) EPC.

3. *Novelty and inventive step*

D1 is the most relevant prior art document.

D1 discloses a method for controlling transmission power in a terminal device of a cellular radio system, the transmission power for the terminal device being controlled within a power range using both open-loop and closed-loop control so as to keep the power transmitted as low as possible whilst ensuring that the quality of the link achieves a certain required standard, see page 5, first paragraph, and the paragraph bridging pages 6 and 7. The quality of the link is a reflection of the performance of the system. Thus, D1 discloses a method for improving performances of a mobile radio communication system using a closed-loop power control algorithm.

Feedback information required by the closed-loop control is attached to an acknowledgement packet expressing that a certain data packet has been successfully received. If the acknowledgment packets are not available, open-loop control is used. See D1, page 5, first paragraph.

The skilled person is thus taught by D1 to check whether any acknowledgment packets with feedback information are available and, if not, to use open-loop control. Such checking constitutes a criterion as to whether or not the closed-loop power control algorithm should be activated. If this criterion is not met, open-loop control is used corresponding to de-activating the closed-loop power control algorithm and performing the open-loop power control algorithm instead.

D1 states that the validity of feedback information decreases with the passage of time from the reception of a previous acknowledgment, see page 8, second paragraph. The skilled person is thus taught that by checking whether an acknowledgment packet with the feedback information is available within a predefined time the performance can be improved.

Claim 1 differs from the disclosure of D1 in that a first deviation value which would have been obtained if a power control algorithm had always been activated is estimated on, which the board understands as for, a given time interval, a second deviation value which would have been obtained if the power control algorithm had never been activated is estimated on the given time interval and a choice between activating and de-activating the power control algorithm is made based on which of the first and second deviation values is the lowest.

The board understands the problem underlying the claimed subject-matter as being to adapt power control techniques to fast-changing environments, see page 2, lines 37 and 38. If a mobile station travels at a high speed, a situation can arise in which the power control algorithm is not able to track the signal to interference variations properly. This problem is solved by estimating and comparing the first and the second deviation values which reflect the effect of the activated or de-activated power control algorithm and deriving an indication as to whether activating the power control algorithm might improve the performance of the radio communications system.

The problem underlying D1 however is to provide for a method of power control applicable to packet data transmission in which the transmitting device has no time to receive any control message before the transmission is ended, see D1, page 3, last paragraph. D1 does not refer to the technical problem arising from a fast changing environment, i.e. a transmitting device moving at a high speed. Thus, no indication can be found in D1 as to either the problem underlying the claimed subject-matter or its solution. The board accordingly concludes that the subject-matter of claim 1 involves an inventive step having regard to the disclosure of D1. The board notes that, in the communication of 23 May 2002, the examining division indicated that prima facie the subject-matter of the then claim 7, which corresponded to claim 7 as originally filed, appeared to involve an inventive step having regard to the disclosure of the prior art.

4. *Remittal*

As not all of the dependent claims have been examined yet and the description requires to be adapted to the claims, the case is remitted to the department of first instance for further prosecution.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the department of first instance for further prosecution.

The Registrar: The Chairman:

D. Magliano A. S. Clelland