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**Datasheet for the decision
of 3 April 2008**

Case Number: T 0104/07 - 3.5.03

Application Number: 05255127.2

Publication Number: 1630974

IPC: H04B 7/005

Language of the proceedings: EN

Title of invention:

Outer loop power control for high speed data transmissions

Applicant:

Lucent Technologies Inc.

Opponent:

-

Headword:

Outer loop power control/LUCENT

Relevant legal provisions:

EPC Art. 56, 113(1), 123(2)

EPC R. 115(2)

Relevant legal provisions (EPC 1973):

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Keyword:

"Oral proceedings held in absence of appellant"

"Added subject-matter (yes)"

"Inventive step (no)"

Decisions cited:

-

Catchword:

-



Case Number: T 0104/07 - 3.5.03

D E C I S I O N
of the Technical Board of Appeal 3.5.03
of 3 April 2008

Appellant: Lucent Technologies Inc.
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Representative: Sarup, David Alexander
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Decision under appeal: Decision of the examining division of the
European Patent Office posted 29 August 2006
refusing European application No. 05255127.2
pursuant to Article 97(1) EPC 1973.

Composition of the Board:

Chairman: A. S. Clelland
Members: F. van der Voort
R. Menapace

Summary of Facts and Submissions

- I. This appeal is against the decision of the examining division refusing European patent application No. 05255127.2, publication number EP 1 630 974 A.
- II. The following document was referred to in the decision under appeal and is relevant to the present decision:

D1: WO 2004/002007 A.
- III. In the notice of appeal the appellant requested that the decision be set aside and a patent be granted. With the statement of grounds of appeal the appellant filed a set of claims, intended to replace the claims on file, and submitted arguments in support.
- IV. In a communication accompanying a summons to oral proceedings the board gave a preliminary opinion in which objections under Article 123(2) EPC and Article 52(1) EPC in combination with Articles 54 and 56 EPC were raised.
- V. In response to the board's communication, the appellant filed new claims, intended to replace the previous set of claims on file. Arguments in support were also submitted. The appellant further informed the board that it would not attend the oral proceedings and requested that the oral proceedings be cancelled and that the procedure be continued in writing.
- VI. In a subsequent communication the board informed the appellant that the request that the oral proceedings be cancelled could not be granted and that the date fixed

for the oral proceedings was maintained. Reasons were given.

VII. Oral proceedings were held on 3 April 2008 in the absence of the appellant. The board understood from the appellant's written submissions that the appellant requested that the decision be set aside and a patent be granted on the basis of the claims as filed in response to the summons to oral proceedings. After deliberation, the board's decision was announced at the end of the oral proceedings.

VIII. Claim 1 of the main request reads as follows:

"A method for controlling a traffic-to-pilot ratio for a reverse link communications channel (125) from a mobile unit (120) to a base station (110), the method comprising:

transmitting a subpacket associated with a first encoded packet over the reverse link communications channel (125);

receiving a non-acknowledgement message in response to transmitting the subpacket;

determining, in response to receiving the non-acknowledgement message, whether a selected number of non-acknowledgement messages have been received in response to transmitting subpackets formed from the first encoded packet, the selected number being larger than one; and

increasing the traffic-to-pilot ratio for transmission of a subpacket formed from a second encoded packet over the reverse link communications channel (125) when the selected number of non-acknowledgement messages have been received."

Reasons for the Decision

1. *Procedural matters*

1.1 The board considered it to be expedient to hold oral proceedings for reasons of procedural economy (Article 116(1) EPC). Having verified that the appellant was duly summoned the board decided to continue the oral proceedings in the absence of the appellant (Rule 115(2) EPC and Article 15(3) RPBA).

1.2 In the communication accompanying the summons, objections under Article 123(2) EPC and Article 52(1) EPC in combination with Articles 54 and 56 EPC were raised in respect of claim 1 as pending at the time and the appellant was informed that at the oral proceedings these objections would be discussed. Consequently, the appellant could reasonably have expected the board to consider at the oral proceedings these objections not only in respect of claim 1 pending at the time but also in respect of the amended version of claim 1, which was filed by the appellant in response to the summons to oral proceedings. In deciding not to attend the oral proceedings the appellant chose not to make use of the opportunity to comment at the oral proceedings on any of these objections but, instead, chose to rely on the arguments as set out in the written submissions, which the board duly considered below.

1.3 In view of the above and for the reasons set out below, the board was in a position to give at the oral proceedings a decision which complied with the requirements of Article 113(1) EPC.

2. *Article 123(2) EPC - amendments*

2.1 Claim 1 of the application as originally filed included the step of "adjusting the traffic-to-pilot ratio for the communications channel in response to receiving a signal indicating whether the information was successfully received" (see also the application as published, paragraph [0007], the summary of the invention). The board interprets this step such that the traffic-to-pilot ratio (TPR) is adjusted in response to receiving a signal which indicates whether or not the information was successfully received, which implies that by means of the received signal it is determined whether the information was successfully received or not. This step is no longer included in the current claim 1.

2.2 The appellant argued that support for the amendments could be found at page 7, line 22, to page 9, line 10, and Fig. 3 of the application as filed (see the application as published, paragraphs [0019] to [0023] and Fig. 3). The board does not agree for the following reasons.

2.3 The passage the appellant refers to relates to the only embodiment disclosed. After the mobile unit 120 (Fig. 1) transmits a subpacket to the base station (see Fig. 3, block 306), it waits for an acknowledgement signal from the base station and, at decision block 308, it determines whether it has received a positive acknowledgement (ACK) signal or a negative acknowledgement (NACK) signal. In response to receiving an ACK or a NACK signal, the traffic-to-pilot (TPR) is adjusted accordingly (see the application as published, paragraphs [0019] to [0022]).

2.4 Present claim 1 does not however cover the adjustment of the TPR in response to receiving an ACK signal; the claim only specifies the step of "receiving a non-acknowledgement message", i.e. a NACK signal. Nor is a determination of the signal type (ACK or NACK), as in Fig. 3, implied. In terms of the flow chart of Fig. 3, this omission corresponds to an alternative embodiment in which the decision block 308 is replaced by, e.g., a NACK signal detector. The passage referred to does not provide a basis for such an alternative embodiment. Nor was the board able to find a basis in any of the other parts of the application as originally filed.

2.5 The board therefore concludes that the amendments to claim 1 add subject-matter which extends beyond the content of the application as filed. Claim 1 does not therefore comply with the requirements of Article 123(2) EPC.

3. *Inventive step*

3.1 If, for the sake of argument, the above-mentioned step (see point 2.1) were considered to be implicit in claim 1, the claimed subject-matter would lack an inventive step for the following reasons:

3.2 D1 discloses, using the language of present claim 1 of the application in suit, a method for controlling a traffic-to-pilot ratio for a reverse link communications channel between a mobile unit 108 (Fig. 1) and a base station 106 by means of an adaptive algorithm for a gain control function in the mobile unit (see the abstract, paragraphs [0012] and [0013], and Figs 2 and 3). Various algorithms

can be implemented by the gain control depending on the particular application and overall design requirements (D1, page 9, lines 23 and 24). Further, although various aspects of the power control techniques are described in the context of a code division multiple access (CDMA) communications system, the techniques are said to be equally applicable to other communications environments (D1, paragraphs [0002] and [0018]).

According to an exemplary algorithm illustrated in Fig. 3, the method includes a step of transmitting a first frame repeat associated with a first encoded packet, e.g. data packet or data frame 1 (Fig. 4), over the reverse link communications channel, in which data frame 1 is one of a group of data frames 1 to 7 queued to be released over the reverse link communications channel (page 6, lines 16 to 19, and page 7, last three lines, to page 8, line 3). At the mobile unit, in response to receiving an ACK or a NACK signal, the traffic-to-pilot ratio (TPR) is accordingly adjusted for the transmission of a second frame repeat formed from a second encoded packet, e.g. data frame 3 (Fig. 4), over the reverse link communications channel (see paragraphs [0028] to [0031]). In the example illustrated in Fig. 4, because of the reception of a NACK signal in response to the retransmission of data frame 1, the traffic-to-pilot ratio (TPR) and, hence, the transmission power for the retransmission of data frame 3 are increased.

As further described in D1, interference for other users caused by the retransmissions of the data frames is minimized by using a lower transmission power for the retransmissions. This is possible, whilst maintaining the desired quality of service, due to the fact that the base

station combines the information from a previously unsuccessfully decoded, corrupted data packet with that of the frame repeat (see D1, page 4, lines 21 to 24, page 6, lines 9 to 12, and page 8, lines 22 to 30, and Fig. 4). Only in the case of a negative acknowledgement (NACK) in response to a retransmission will the TPR and, hence, the transmission power for the subsequent retransmission be slightly increased again, as illustrated in Fig. 4 for the retransmission of data frame 3.

- 3.3 The board notes that, since the application in suit does not give the term "subpacket" as used in claim 1 a special meaning, the above-mentioned frame repeats, which are associated with and formed from the respective encoded packets or frames, also qualify as subpackets.

The subject-matter of claim 1 therefore differs from the method of D1 in that, according to claim 1, the TPR is increased only after a selected number (more than one) of NACK signals have been received in response to the (re-)transmissions of the first data packet. In other words, when a NACK signal is received in response to a retransmission of the first packet, the TPR and the transmission power is not immediately increased, as in D1 for the subsequent frame repeat, but may be kept at the lower value, until a further NACK signal in response to a further retransmission of the first data packet is received. The technical effect is therefore that, even in the case of a retransmission in response to receiving a NACK signal, an increase in interference for other users is avoided.

- 3.4 The technical problem underlying the subject-matter of claim 1, when starting out from the disclosure of D1, may

therefore be seen in improving the method of D1 such that interference for other users is further minimized in relation to retransmissions in response to NACK signals.

The formulation of this problem does not contribute to an inventive step, since it was well-known at the priority date that in the case of CDMA the capacity of the system is limited by communications interference, i.e. transmissions by other users who simultaneously occupy the same frequency band, and that, for this reason, interference and, hence, the transmission power used, should preferably be as low as possible under all circumstances (see also D1, paragraphs [0003] and [0017]), i.e. including interference in relation to retransmissions in response to NACK signals.

3.5 In the board's view, the skilled person seeking to minimise interference in a CDMA communications system, such as the exemplary system of D1, would appreciate that the interference due to a retransmission could be minimised by maintaining the power level for the retransmissions at the lower value, since by avoiding a transmission power increase the capacity of the system is not compromised. Only if the channel remains bad, i.e. a further NACK signal is received in relation to a further retransmission of the data packet, would an increase in power eventually be necessary in order to successfully transmit the data packets.

3.6 Hence, when faced with the above-mentioned technical problem in the specific context of a CDMA communications system, it would have been obvious to the person skilled in the art, using his/her common general knowledge, to adapt the exemplary algorithm of D1 such that initially

a retransmission of a data packet (data packet 3 in Fig. 4) is carried out at the same, low transmission power as used for the retransmission of the previous data packet (data packet 1 in Fig. 4) and that, only after a further retransmission of the first data packet turns out to be unsuccessful, subsequent retransmissions are carried out at an increased transmission power by increasing the TPR.

In doing so, the skilled person would, merely by using his/her common general knowledge, i.e. without exercising inventive skill, have arrived at a method of controlling a traffic-to-pilot ratio which includes all the features of claim 1.

3.7 The board therefore concludes that the subject-matter of claim 1, when interpreted as set out at point 3.1 above, lacks an inventive step, Articles 52(1) and 56 EPC.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

D. Magliano

A. S. Clelland