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**Datasheet for the decision
of 6 July 2007**

Case Number: T 0404/05 - 3.5.03

Application Number: 97300869.1

Publication Number: 0790713

IPC: H04B 7/005

Language of the proceedings: EN

Title of invention:

An adaptive power control and coding scheme for mobile radio systems

Applicant:

LUCENT TECHNOLOGIES INC.

Opponent:

-

Headword:

Adaptive power and coding/LUCENT

Relevant legal provisions:

EPC Art. 52(1), 54, 56

EPC R. 88

RPBA Art. 11(3)

Keyword:

"Novelty - no (main request)"

"Inventive step - yes (auxiliary request)"

Decisions cited:

G 0010/93

Catchword:

-



Case Number: T 0404/05 - 3.5.03

D E C I S I O N
of the Technical Board of Appeal 3.5.03
of 6 July 2007

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 6 December 2004
refusing European application No. 97300869.1
pursuant to Article 97(1) EPC.

Composition of the Board:

Chairman: A. S. Clelland
Members: D. H. Rees
R. Menapace

Summary of Facts and Submissions

I. This is an appeal against the decision of the examining division, dispatched on 6 December 2004, to refuse patent application number 97 300 869.1, publication number 0 790 713. The reason given for the refusal was that claims 1 to 8, 10 to 19, 21 and 22 lacked an inventive step with respect to the disclosures of documents

D1: WO 95/15033 A

D2: US 5 383 219 A

D3: E. Yuen et al., "Variable Rate Speech and Channel Coding for Mobile Communication," IEEE 44th Vehicular Technology Conference, Stockholm, Sweden, 8 to 10 June 1994, IEEE, NY, US, 1994, pages 1709 to 1713.

The decision further stated that the combination of features of method claim 9 and apparatus claim 20 was neither known from, nor rendered obvious by, the available prior art.

II. Notice of appeal was filed in a letter dated 13 and received 20 January 2005. The fee was paid on 18 January 2005. A statement setting out the grounds of the appeal was filed in a letter dated 3 and received 5 March 2005 together with the claims of an auxiliary request.

The board issued, of its own motion, a summons to attend oral proceedings to be held on 6 July 2007. In the accompanying communication the board cited, in addition to D1, D2 and D3

D4: S. Abeta et al., "Adaptive Coding Rate and Processing Gain Control for Cellular DS/CDMA Systems," Gateway to the 21st. Century, Fourth IEEE International Conference on Universal Personal Communications, 6 to 10 November 1995, Tokyo, pages 241 to 245.

Document D4 was mentioned in the European search report of the application and introduced into the proceedings by the board of its own motion in accordance with Article 114(1) EPC.

The board pointed out an apparent error in the application in that the term "power" was used incorrectly for what was in fact energy. Furthermore the subject-matter specified in the independent claims appeared not to be novel with respect to the disclosure of D4, and to lack an inventive step with respect to the prior art described in the application (called the applicant admitted prior art or "AAPA" by the appellant). In addition, the appellant's arguments with respect to the main request in the grounds of appeal relating to the combination of D1 with the acknowledged prior art or D2 and/or D3 did not seem convincing. The board pointed out apparent objections under Articles 83 and 84 EPC arising from the claims of the auxiliary request but noted that if these were overcome the board would probably order the grant of a patent.

III. In a submission on 6 June 2007 the appellant's representative informed the board that the appellant would not be represented at the oral proceedings. It was requested that the procedure be continued in writing. Amended claim sets were submitted for both the main and the auxiliary request.

The appellant was informed that the oral proceedings would not be cancelled.

IV. The independent claims of the main request read as follows:

"1. A method of transmitting a signal to a receiver across a wireless communications channel, the method comprising the steps of:
encoding a first portion of the signal with a first code to generate a first encoded signal portion;
transmitting the first encoded signal portion with a first power level;
receiving parameter data representative of one or more characteristics of a received signal portion having been received by the receiver, the received signal portion having been based on the transmitted first encoded signal portion;
determining a second code and a second power level based on the received parameter data;
encoding a second portion of the signal with the second code to generate a second encoded signal portion; and
transmitting the second encoded signal portion with the second power level."

"12. A mobile radio transmitter apparatus for transmitting a signal to a receiver across a wireless communications channel, the mobile radio transmitter comprising:
means for encoding a first portion of the signal with a first code to generate a first encoded signal portion;
means for transmitting the first encoded signal portion with a first power level;

means for receiving parameter data representative of one or more characteristics of a received signal portion having been received by the receiver, the received signal portion having been based on the transmitted first encoded signal portion;
means for determining a second code and a second power level based on the received parameter data;
means for encoding a second portion of the signal with the second code to generate a second encoded signal portion; and
means for transmitting the second encoded signal portion with the second power level."

Claim 1 of the auxiliary request is a combination of claims 1, 8 and 9 of the main request. Thus it differs from claim 1 of the main request in adding the following final feature:

"wherein the step of determining the second code and the second power level comprises the step of selecting a power-code pair comprising a power level and an associated code to be used therewith, the power code pair selection being configured to reduce the total energy consumed when a signal encoded with the associated code comprised in the selected power-code pair is transmitted with the power level comprised in the selected power-code pair."

The independent apparatus claim 10 of the auxiliary request is amended similarly, thus:

"wherein the means for determining the second code and the second power level comprises means for selecting a power-code pair comprising a power level and an associated code to be used therewith, the power code pair selection being configured to reduce on [sic] the

total energy consumed when a signal encoded with the associated code comprised in the selected power-code pair is transmitted with the power level comprised in the selected power-code pair."

- V. The appellant requests that the decision under appeal be set aside and a patent be granted on the basis of:

claims

1 to 22 of the "Main Claims", or
1 to 18 of the "Auxiliary Request Claims", both sets
filed on 6 June 2007;

description

page 4A submitted on 8 April 2004, and
pages 1 to 12 as originally filed,
with the amendment to page 12 requested on 8 April 2004;

drawing sheets 1 to 3 as originally filed.

- VI. The appellant was not represented at the oral proceedings, during which the board deliberated and the chairman announced the decision taken.

Reasons for the Decision

1. The function of a board of appeal is to reach a decision on the issues presented to it, not to act as an alternative examining division (G 10/93, OJ 1995, 172, in particular Point 4).

According to Article 116(1) EPC, oral proceedings shall take place either at the instance of the European

Patent Office if it considers this to be expedient or at the request of any party to the proceedings. Oral proceedings are an effective way to discuss cases mature for decision, since the appellant is given the opportunity to present its concluding comments on the outstanding issues (Article 113(1) EPC), and a decision can be made at the end of the oral proceedings (Rule 68(1) EPC).

The need for procedural economy dictates that the board should reach its decision as quickly as possible while giving the appellant a fair chance to argue its case. In the present appeal the holding of oral proceedings was considered by the board to meet both these requirements. A summons was therefore issued. In accordance with Article 11(3) of the Rules of Procedure of the Boards of Appeal the board shall not be obliged to delay any step in the proceedings, including its decision, by reason only of the absence at the oral proceedings of any party duly summoned who may then be treated as relying on its written case. The board considered that, despite the appellant's announced intention not to attend, the twin requirements of fairness and procedural economy were still best served by holding the oral proceedings as scheduled. The appellant's implicit request that oral proceedings be cancelled was therefore refused.

The board considers that its reasons for coming to its decision do not constitute a departure from grounds or evidence previously put forward, requiring that the appellant be given a further opportunity to comment. The board concludes that Article 113(1) EPC has been satisfied and it was therefore in a position to make

its decision at the oral proceedings. The appellant's request that the procedure be continued in writing, which the board interprets as a request for a further communication before a decision is issued, is therefore also refused.

2. *The main request*

2.1 In the communication accompanying the summons to oral proceedings the board raised the objection that the subject-matter of the independent claims of the then main request appeared to lack novelty with respect to the disclosure of D4, which has both power control (Section II: Soft Power Control, page 241) and coding rate control (page 243 column 2 lines 18 to 23), based on feedback from the receiver (see also the paragraph bridging columns 1 and 2 of page 241). The independent claims of the present main request are identical to the claims objected to in the communication.

2.2 The appellant responded to this argument as follows (letter of 6 June 2007 page 3 paragraph 5):
"A review of the entirety of D4 makes clear that P_r is related to a measure of aggregate received power at a base station. Accordingly, D4 does not adjust a level of the transmitted power P_r [sic] based on parameter data associated with any particular signal, but rather simply looks to the aggregate received signal spectrum to make this power adjustment."

2.3 The board does not agree. The mathematical model of the received power P_r is defined in Equation (1) on page 241 (as acknowledged by the appellant at page 1 paragraph 3 of the letter of 6 June 2007). This depends directly on

P_t , which is the transmission power for a single subscriber (page 241 column 2 lines 12 and 13). The new transmission power P'_t is based on the value of P_r (see Equations (2) and (3) on page 242), which must therefore be fed back to the transmitter in some way. There is no indication of the received powers at or from plural subscribers being aggregated, nor would such aggregation make technical sense, since D4 is concerned with methods of compensating for fading on channels for individual subscribers, and the fading is calculated based on the comparison between P_t and P_r . If P_r related to the sum of the powers received from all the transmitters it would not be possible to calculate the fading for an individual subscriber.

2.4 Hence the board concludes that the subject-matter of the independent claims of the main request is not novel with respect to the disclosure of document D4. This request must therefore be refused.

2.5 The board notes that the appellant's attempt to rebut the board's arguments with regard to inventive step (letter of 6 June 2007 pages 3 and 4, "Points 5.2-5.3") is also unconvincing since it is based on the above, in the board's view incorrect, interpretation of D4.

3. *The auxiliary request*

3.1 Article 123(2) EPC

3.1.1 The claims of the auxiliary request are simple combinations of the original claims with the exception that where the original dependent claim 9 specified that "selecting a power-code pair is based on the total

power consumed when a signal ... is transmitted", the present independent claim 1 specifies "the power code pair selection being configured to reduce the total energy consumed when a signal ... is transmitted" and similarly *mutatis mutandis* for original dependent claim 20 and present independent claim 10. The replacement of "power consumed" by "energy consumed" is simply the correction of an error which would have been obvious to the skilled person and is allowable under Rule 88 EPC. "To reduce" is disclosed by page 3 line 28 of the published application, "reduce" and "decrease" being synonyms.

3.1.2 The incorporation of claims which were originally dependent in the present independent claims gives rise to new combinations of features in the dependent claims. However since the description does not disclose any embodiments which do not include the features of original claims 8, 9, 19 and 20, this does not lead to any added subject-matter.

3.1.3 The amendments to the description simply acknowledge prior art documents D1 to D3 and delete a "spirit and scope" statement. These amendments also do not add any new subject-matter.

3.2 Clarity

Although the claims have been amended to refer to energy consumed rather than power, there are still references to e.g. "power transmitted per information bit" in the description (page 3 line 2). However the board considers that the skilled person on reading the whole application would realise that such references

are in error and would automatically interpret them as meaning energy. The board considers therefore that no lack of clarity of the claimed subject-matter arises from this formal contradiction between description and claims. The examining division did not raise and the board does not see any further issues concerning Article 84 EPC.

3.3 Novelty and inventive step

All of the available prior art documents change the transmitted power and/or coding rate for reasons which have to do with acceptable signal quality. None of them considers the energy expended per transmitted message bit. Since the independent claims of the auxiliary request specify that the choice of power and code pair is made so as to reduce this energy the resulting method and apparatus are both novel and inventive with respect to these documents.

3.4 Outstanding minor issues

3.4.1 The board notes that the dependency of claim 9 has not been amended, i.e. it is incorrectly dependent on claim 10 rather than claim 1.

3.4.2 Independent claim 10 contains a typographical error, "to reduce on the total energy".

3.4.3 Page 4A should be amended to include an acknowledgement of document D4.

3.4.4 Since these are all issues which can conveniently be dealt with in a Rule 51(4) communication, the board

considers that the appropriate course of action is to remit the case on the basis of the auxiliary request to the department of first instance.

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 on the basis of the auxiliary request filed on 6 June 2007.

The Registrar:

The Chairman:

D. Magliano

A. S. Clelland