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Datasheet for the decision of 10 November 2008

Case Number: T 0987/07 - 3.5.03

Application Number: 99309112.3

Publication Number: 1005179

IPC: H04B 7/26

Language of the proceedings: EN

Title of invention:
Methods and apparatus for wireless communication using time division duplex time-slotted CDMA

Applicant:
Lucent Technologies Inc.

Opponent:
-

Headword:
Methods and apparatus for wireless communication/LUCENT

Relevant legal provisions:
EPC Art. 84

Keyword:
"Clarity (no)"
"Oral proceedings held in absence of appellant"

Decisions cited:
-

Catchword:
-

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Case Number: T 0987/07 - 3.5.03

D E C I S I O N
of the Technical Board of Appeal 3.5.03
of 10 November 2008

Appellant: Lucent Technologies Inc.
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Decision under appeal: **Decision of the examining division of the European Patent Office posted 16 January 2007 refusing European application No. 99309112.3 pursuant to Article 97(1) EPC 1973.**

Composition of the Board:

Chairman: A. S. Clelland
Members: F. van der Voort
M.-B. Tardo-Dino

Summary of Facts and Submissions

I. This appeal is against the decision of the examining division refusing European patent application No. 99309112.3 (publication number EP 1 005 179 A). The reasons given for the refusal were that independent claims 7 and 13 did not meet the requirements of Article 84 EPC (clarity) and Rule 29(2)(a) EPC 1973.

II. 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 replacement set of eighteen claims, intended to replace the previous set of eighteen claims. Arguments in support were also submitted.

III. In a communication annexed to summons to oral proceedings the board raised, without prejudice to the board's final decision, objections under Article 84 EPC in respect of, *inter alia*, independent claims 1, 7 and 13.

More specifically, in respect of claim 1, one of the objections was that it appeared that a comma was missing between "sector-specific spreading code" and "to separate" (claim 1, lines 12 and 13), since the sector-specific spreading code did not appear to contribute to the separation of the communications between the base station and the subscriber units within the same beam as referred to in claim 1, lines 13 and 14. This objection was raised, *mutatis mutandis*, in respect of independent apparatus claim 13.

Further, claim 13 was considered to lack clarity in that it, at least partly, specified method steps and/or

features merely relating to the use of the apparatus, in which it was unclear which constructional features of the apparatus were imposed by these steps and features. In particular, reference was made to the wordings "being operative to ..", "is assigned" and "being used ..." in claim 13 (point 4.4 of the communication).

IV. In response to the board's communication, the appellant submitted a replacement set of nine claims, intended to replace the previous set of eighteen claims. Further, the appellant informed the board that he would not attend the scheduled oral proceedings. He requested that the oral proceedings be cancelled and that the procedure be continued in writing.

In respect of the above-mentioned objections (point III) the appellant submitted the following arguments:

> "A final issue is raised with regard to an allegedly missing comma. However, the recited sector-specific spreading code does operate in conjunction with the beam-specific spreading codes to separate the communications.
>
> The recited sector-specific spreading code is a code which is specific to a particular antenna sector of the base station. Returning again to the example of FIG. 8, it was noted above that the beam 86 is approximately 40E wide, such that there may be a total of nine such beams in the cell 80-1. Moreover, the cell 80-1 as shown has three sectors, and so will include three beams per sector. Thus, for the users falling within a given sector, a corresponding code specific to that antenna sector is used, in conjunction with the beam-

specific codes that are assigned to respective users within a given antenna beam. See the base station transmitter 300 of FIG. 16 and the base station receiver 400 of FIG. 17.

The claimed invention provides improved performance in narrow-beam FWL systems by assigning beam-specific codes to particular users within a given antenna beam, and also utilizing a sector-specific spreading code for the all of the multiple antenna beams that fall within a given antenna sector of the system. In the FIG. 8 example, as described above, each sector may comprise three separate antenna beams. By assigning codes on a beam-specific and sector-specific basis, the problems with conventional FWL systems, as outlined in the specification at page 3, lines 20-28, are advantageously overcome. System capacity is increased and interference between the antenna beams of adjacent cells is reduced. See the specification at, for example, page 8, lines 6-8.

With regard to Points 4.3 and 4.4, claims 7-12 and 16-18 have been canceled."

V. 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.

VI. Oral proceedings were held on 10 November 2008 in the absence of the appellant. After deliberation, the board's decision was announced.

VII. Claim 1 reads as follows:

"A method of communicating information in a wireless cellular communication system, the method comprising the step of:

communicating information between a plurality of subscriber units of the system and a base station in a cell of the system over an uplink and a downlink, wherein communications on the uplink are separated from communications on the downlink using time division duplexing;

wherein communications between the base station and at least a subset of the plurality of subscriber units in the cell are separated using a code division multiple access technique; CHARACTERIZED IN THAT

each of the subscriber units within a given antenna beam associated with a given sector of the base station is assigned a corresponding one of a plurality of distinct beam-specific spreading codes, the beam-specific spreading codes being used in conjunction with a sector-specific spreading code to separate the communications between the base station and the subscriber units within the given antenna beam in accordance with the code division multiple access technique."

Claim 7 reads as follows:

"A wireless communication system comprising:

a base station; and

a plurality of subscriber units;

the base station being operative to communicate with the plurality of subscriber units in a cell of the system over an uplink and a downlink, wherein

communications on the uplink are separated from communications on the downlink using time division duplexing, and communications between the base station and at least a subset of the plurality of subscriber units in the cell are separated using a code division multiple access technique; CHARACTERIZED IN THAT

each of the subscriber units within a given antenna beam associated with a given sector of the base station is assigned a corresponding one of a plurality of distinct beam-specific spreading codes, the beam-specific spreading codes being used in conjunction with a sector-specific spreading code to separate the communications between the base station and the subscriber units within the given antenna beam in accordance with the code division multiple access technique."

Reasons for the Decision

1. *Procedural matters*

1.1 From the appellant's submissions the board understands that the appellant requests that the decision under appeal be set aside and a patent be granted on the basis of the claims as filed in response to the communication annexed to the summons to oral proceedings.

1.2 The present decision is based on objections under Article 84 EPC which had already been raised in the board's communication. The appellant had the opportunity to present its comments on these objections and, indeed, submitted arguments in support of the present claims. Under these circumstances, the board was in a position

to give a decision in accordance with Article 113(1) EPC.

2. *Article 84 EPC*

2.1 Present claims 1 and 7 are identical to claims 1 and 13 as filed with the statement of grounds of appeal, except that in each of these claims "over at least one of an uplink and a downlink" was replaced by "over an uplink and a downlink" and "a distinct beam-specific spreading code, the beam-specific spreading code being used ..." was replaced by "a corresponding one of a plurality of distinct beam-specific spreading codes, the beam-specific spreading codes being used ...". These amendments do not however concern the objections referred to at point III above.

2.2 The arguments submitted by the appellant, see point IV above, are not convincing for the following reasons:

According to claim 1, each of the subscriber units in the cell within a given antenna beam associated with a given sector of the base station is assigned a corresponding one of a plurality of distinct beam-specific spreading codes.

In the board's view, the base station is thereby capable of distinguishing the subscriber units within the given antenna beam, since each subscriber unit within this antenna beam is assigned a distinct spreading code. Hence, whether or not a sector-specific spreading code is additionally used in the communication between the base station and these subscriber units within this antenna beam is not relevant in order to separate the respective communications within this antenna beam.

The board agrees with the appellant that a sector-specific spreading code may operate in conjunction with the beam-specific spreading codes in order to separate the communications and that, for the users falling within a given sector, a corresponding code specific to that antenna sector may be used, in conjunction with the beam-specific codes that are assigned to respective users within a given antenna beam.

However, claim 1 specifies that the beam-specific spreading codes are used "in conjunction with a sector-specific spreading code to separate the communications between the base station and the subscriber units within the given antenna beam" in accordance with the code division multiple access technique (underlining by the board). Since a separation is already achieved on the basis of the beam-specific spreading codes, it is unclear which role the sector-specific spreading code plays in the separation of the communications between the base station and the subscriber units within the given antenna beam.

Further, whether or not the claimed method provides an improved performance or solves certain problems with conventional fixed wireless loop (FWL) systems is not relevant to the question of whether or not the claim is clear.

The above considerations applies, *mutatis mutandis*, to present claim 7.

The board further notes that the appellant did not address the clarity objection raised at point 4.4 in respect of

claim 13 (see points III and IV above). This objection however applies unrestrictedly to present claim 7, which as noted above corresponds to previous claim 13, and the board sees no reason to deviate from its preliminary view.

2.3 The board therefore concludes that at least claims 1 and 7 do not comply with the requirements pursuant to Article 84 EPC due to a lack of clarity and, hence, that the appellant's request is not allowable.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

D. Magliano A. S. Clelland