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D E C I S I O N
of 21 March 2006

Case Number: T 1183/03 - 3.5.03

Application Number: 98307001.2

Publication Number: 0902551

IPC: H04B 7/02

Language of the proceedings: EN

Title of invention:

Soft handover system for a multiple sub-carrier communication system and method thereof

Applicant:

LUCENT TECHNOLOGIES INC.

Opponent:

-

Headword:

Soft handover/LUCENT

Relevant legal provisions:

EPC Art. 52(1), 56, 84, 113(1), 116(1)

EPC R. 68(1), 71(2), 29(1)

RPBA Art. 11(3)

Keyword:

"Inventive step - main and auxiliary requests (no)"

Decisions cited:

T 1059/04, G 0010/93, G 0004/92

Catchword:

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Case Number: T 1183/03 - 3.5.03

D E C I S I O N
of the Technical Board of Appeal 3.5.03
of 21 March 2006

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 11 July 2003
refusing European application No. 98307001.2
pursuant to Article 97(1) EPC.

Composition of the Board:

Chairman: A. S. Clelland
Members: A. Ritzka
M.-B. Tardo-Dino

Summary of Facts and Submissions

- I. This appeal is against the decision of the examining division dated 11 July 2003, refusing European patent application No. 98 307 001.2 for the reason that the subject-matter of claims 1 and 10 did not involve an inventive step having regard to the disclosure of, inter alia:
- D1: US 5 170 413 A
D3: EP 0 577 322 A.
- II. Notice of appeal was filed on 2 August 2003 and the appeal fee paid. With the statement of grounds of appeal filed on 22 October 2003 the appellant submitted new claims 1 to 9 as an auxiliary request. The appellant requested that the appealed decision be cancelled in its entirety and that a patent be granted.
- III. The board issued an invitation to oral proceedings accompanied by a communication. In the communication it was stated that grant on the basis of the claims on which the appealed decision was based was assumed to be the main request; the appellant was invited to confirm its requests. The board expressed the preliminary view that claim 1 of the main request and claims 1 and 6 of the auxiliary request did not comply with the provisions of Articles 84 and 123(2) EPC. It further stated that claims 1 and 10 of the main request and claims 1 and 6 of the auxiliary request did not appear to involve an inventive step having regard to the disclosure of D1 and D3 and the prior art admitted in the application in suit.

IV. With a letter dated 20 February 2006, in response to the communication, the appellant maintained "the main request claim set currently on file" and filed new claims 1 to 7 intended to replace the auxiliary request. It was argued that the subject-matter of the independent claims of the main and auxiliary requests was patentable.

V. In the letter of 20 February 2006 the appellant announced that it would not attend the oral proceedings set for 21 March 2006 and requested that the oral proceedings be cancelled and the procedure continued in writing. The board informed the appellant that the oral proceedings would take place as scheduled on 21 March 2006.

VI. Oral proceedings took place as scheduled on 21 March 2006. Neither the appellant nor its representative attended the hearing. After deliberation on the basis of the submissions and requests of 20 February 2006 the chairman announced the board's decision.

VII. Claim 1 according to the main request reads as follows:

"A method for providing data signals, said method being CHARACTERIZED BY the steps of:

transmitting from a first base station portions of a data signal in parallel on multiple sub-carriers as multiple sub-carrier symbols; and

transmitting from at least a second base station portions of said data signal in parallel on multiple sub-carriers as multiple sub-carrier symbols so that a

mobile unit receives said data signal from at least two base stations to achieve soft handover."

Claim 10 of the main request is directed to a system corresponding to the method of claim 1.

Claim 1 according to the auxiliary request reads as follows:

"A method for providing data signals, said method CHARACTERIZED BY the steps of:

transmitting from a first base station portions of a data signal simultaneously on multiple sub-carriers as multiple sub-carrier symbols; and

transmitting from at least a second base station portions of said data signal simultaneously on multiple sub-carriers as multiple sub-carrier symbols so that a mobile unit receives said data signal from at least two base stations to achieve soft handover,

CHARACTERIZED IN THAT

said at least first and second base stations use a same set of sub-carriers for transmitting said portions of said data signal to said mobile unit, and

said mobile unit receives said portions of said data signal on said same set of said sub-carriers and treats said portions of said data signal on said same set of sub-carriers from said at least two base stations as multipath components."

Claim 7 of the auxiliary request is directed to a system corresponding to the method of claim 1.

Reasons for the Decision

1. Requests

Despite being requested to confirm the main request the appellant has not done so. The set of claims filed with letter of 28 May 2002 and on which the appealed decision was based is understood as constituting the basis of the main request, no other main request having been made subsequently.

2. Oral proceedings

2.1 As pointed out by this board in a different composition in decision T 1059/04 (unpublished), 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 (cf. G 10/93, OJ 1995 172, in particular point 4).

2.2 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 request of any party to the proceedings. Oral proceedings are considered as an effective way to discuss cases mature for decision, because the appellant is given the opportunity to present its concluding comments on the outstanding issues (Article 113(1) EPC). A decision can be made at the end of oral proceedings based on the requests discussed during oral proceedings (Rule 68(1) EPC).

2.3 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 of these requirements. The appellant gave no reasons to support the request to cancel the oral proceedings scheduled by the board and to continue the procedure in writing. 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 request to cancel oral proceedings and to continue in writing was therefore refused.

2.4 Oral proceedings took place as scheduled on 21 March 2006 in the absence of the appellant duly summoned, for the reasons set out in points 2.1, 2.2 and 2.3 above. After deliberation on the basis of the requests and submissions presented in the appellant's letter dated 20 February 2006 the board took the view that the claimed subject-matter did not involve an inventive step.

3. Technological background

Soft handover is a technique which can be used where a mobile unit is able to communicate simultaneously with multiple base stations. In addition to facilitating handover between cells it provides diversity and may be used in direct sequence code division multiple access (CDMA) systems to increase the system capacity and reliability.

In multiple sub-carrier modulation systems a data signal is split into several lower rate signals which each represent a fraction of the data signal and which are modulated on different sub-carriers. Multiple sub-carrier transmission enables the reduction of inter-symbol interference.

According to the claimed subject-matter a wireless communication system using a multiple sub-carrier modulation is further improved by using soft handover.

4. Main request

4.1 Claim 1

4.1.1 Clarity

As indeed admitted in the discussion of the prior art in the application in suit, multiple sub-carrier communication systems were known at the priority date, see paragraphs [0003] to [0005]. Furthermore, it is stated that soft handover is a well known technique in CDMA systems, see paragraph [0002]. The skilled person would understand from paragraph [0006] that the technical problem underlying the claimed subject-matter is that of providing a soft handover system to enable enhanced performance for multiple sub-carrier communications systems. According to claim 1 this problem is solved by transmitting from a first base station portions of a data signal in parallel on multiple sub-carriers as multiple sub-carrier symbols; and transmitting from at least a second base station portions of said data signal in parallel on multiple sub-carriers as multiple sub-carrier symbols so that a

mobile unit receives said data signal from at least two base stations to achieve soft handover. The skilled person would understand that these steps correspond to the mere definition of a soft handover applied to a sub-carrier communication system. Thus, the claimed solution is in essence merely a restatement of the problem, and claims a result to be achieved. The matter for which protection is sought is therefore not clear. Thus, claim 1 fails to comply with Article 84 EPC.

4.1.2 Inventive step

Moreover, the claimed subject-matter, insofar as it can be understood, is obvious in the light of the disclosure of D3.

D3 relates to handover in cellular radio systems, see column 1, lines 1 and 2. The principles of handover are discussed, see column 1, line 50 to column 2, line 18, and soft handover, which is a feature in CDMA systems, is said to be an advantage of CDMA, see column 2, lines 19 to 23. However, column 2, lines 37 to 39 states that soft handover can also be implemented in a TDMA system. Thus, the skilled person is taught by D3 that soft handover is not restricted to CDMA systems, despite the fundamental differences in the access schemes of CDMA and TDMA, and would infer from this that soft handover can be applied independently of the access scheme used. Thus, the skilled person, faced with the problem of implementing handover in a multiple sub-carrier communication system would find it obvious in view of the teaching of D3 to use soft handover. The subject-matter of claim 1 therefore does not involve an inventive step.

4.2 Claim 10

Since independent claim 10 is directed to a multiple sub-carrier system corresponding to the method claimed in claim 1, the arguments set forth in point 4.1 as to clarity and inventive step apply mutatis mutandis to claim 10.

5. Auxiliary request

5.1 Claim 1

5.1.1 Clarity

Claim 1 includes both the term "characterized by" and "characterized in that". Rule 29(1) EPC requires that wherever appropriate claims shall contain a statement indicating the designation of the subject-matter of the invention and those features which are necessary for the definition of the claimed subject-matter but which, in combination, are part of the prior art and a characterising portion - preceded by the expression "characterised in that" or "characterised by" - stating the technical features which, in combination with the features which are part of the prior art it is desired to protect. In claim 1 it is not clear what is prior art and what forms the characterising portion. Thus, claim 1 is open to the formal objection that it fails to comply with Rule 29(1) EPC and lacks clarity, Article 84 EPC.

5.1.2 Inventive step

Claim 1 according to the auxiliary request differs from claim 1 according to the main request in that

- the data signals are transmitted "simultaneously" rather than "in parallel";
- the claim specifies that the same set of sub-carriers is used at the first and the second base station for transmitting portions of the data signal to the mobile unit and that the mobile unit treats these portions of data signals on the same set of sub-carriers from said two base stations as multipath components.

"In parallel" and "simultaneously" are considered synonymous in the framework of claim 1 of the main and auxiliary requests, respectively.

The arguments presented on claim 1 according to the main request as to inventive step apply to the common features, see point 4.1.2 above.

Moreover, D3, column 2, lines 24 to 27 discloses that during soft handover several base stations may send the same signal to a mobile station using the same code, so that the moving station receives the signals as if they were signals resulting from multipath propagation. The use of different codes is generally known in CDMA systems for distinguishing between subscribers transmitting on the same frequency carrier. Thus, the skilled person is taught to use the same combination of carrier and code in CDMA soft handover and to treat the received signals as multipath components. Moreover, the skilled person would understand that in a multiple sub-

carrier communication system a set of sub-carriers corresponds to a combination of carrier and code in a CDMA system, see paragraphs [0003] to [0005] of the application in suit. Thus, when implementing soft handover in a multiple sub-carrier communication system, it would be obvious for the skilled person to use the same set of sub-carriers at the first and the second base station for transmitting portions of the data signal to the mobile unit and to treat these portions of data signals on the same set of sub-carriers from said two base stations at the mobile unit as multipath components in accordance with the teaching of D3. The subject-matter of claim 1 therefore does not involve an inventive step.

5.2 Claim 7

Since independent claim 7 is directed to a multiple sub-carrier system corresponding to the method claimed in claim 1, the arguments set forth in point 5.1 as to clarity and inventive step apply mutatis mutandis to claim 7.

6. General procedural remark

6.1 The board came to the conclusion that the claimed subject-matter did not involve an inventive step, an objection mentioned in the communication accompanying the summons to oral proceedings, but on the basis of a somewhat different argumentation. Article 113(1) EPC states that a party must be given the opportunity to comment on relevant grounds and evidence upon which the decision will be based. According to G 04/92 (OJ EPO 1994 149), which concerns an opposition case, the right

to be heard does not extend to the arguments. Although G 04/92 states at point 1 of the reasons that the referred question relates to inter partes proceedings and has therefore no bearing on ex parte proceedings (in the language of the proceedings: "...elle concerne les procédures "inter partes". De ce fait, la présente opinion leur sera consacrée sans préjudice des procédures "ex parte."), the present board takes the view that the statement at point 10 of the reasons that new arguments do not constitute new grounds or evidence applies equally to ex parte cases. Article 113(1) EPC is accordingly met.

- 6.2 In the present case the appellant was duly summoned for oral proceedings on 21 March 2006 and chose not to attend. If it had attended the oral proceedings, it would have had an opportunity to argue its case and to present its comments on the new arguments. According to Rule 71(2) EPC the proceedings may continue without a party, if it does not appear as summoned. Moreover, in accordance with Article 11(3) RPBA 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 only on its written case. The board considers that although the arguments were not explicitly stated previously, they are based on facts cited in the communication, i.e. the description of the application in suit and document D3.
7. There being no other requests, it follows that the appeal must be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

D. Magliano

A. S. Clelland