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D E C I S I O N
of 12 July 2006

Case Number: T 0572/04 - 3.5.03

Application Number: 02252086.0

Publication Number: 1253724

IPC: H04B 1/707

Language of the proceedings: EN

Title of invention:

Removing Doppler shift from a spread-spectrum signal

Applicant:

LUCENT TECHNOLOGIES INC.

Opponent:

-

Headword:

Doppler shift/LUCENT

Relevant legal provisions:

EPC Art. 83, 84, 52(1)

RPBA Art. 11(3)

Keyword:

"Clarity - yes"

"Remittal for further prosecution"

Decisions cited:

G 0010/93

Catchword:

-



Case Number: T 0572/04 - 3.5.03

D E C I S I O N
of the Technical Board of Appeal 3.5.03
of 12 July 2006

Appellant: LUCENT TECHNOLOGIES INC.
600 Mountain Avenue
Murray Hill, New Jersey 07974-0636 (US)

Representative: Sarup, David Alexander
Lucent Technologies NS UK Limited
5 Mornington Road
Woodford Green, Essex IG8 0TU (GB)

Decision under appeal: Decision of the Examining Division of the
European Patent Office posted 1 December 2003
refusing European application No. 02252086.0
pursuant to Article 97(1) EPC.

Composition of the Board:

Chairman: A. S. Clelland
Members: D. H. Rees
M.-B. Tardo-Dino

Summary of Facts and Submissions

I. This is an appeal from the decision of the examining division, dispatched on 1 December 2003, to refuse patent application number 02 252 086.0, publication number 1 253 724. The reason given for the refusal was that the application did not meet the requirements of Articles 52(1), 83 and 84 EPC, because the subject-matter of claim 1 of the then valid set of claims was not novel with respect to the disclosure of document

D1: WO 00 65797 A,

claims 1, 2, 6 and 8 were not clear, and the invention defined by claim 6 was not so disclosed that the skilled person could implement it.

II. Notice of appeal was filed and the fee paid with a letter dated 22 January and received on 26 January 2004. A statement setting out the grounds of the appeal and containing a new set of claims was submitted on 29 March 2004.

III. The board issued, of its own motion, a summons to attend oral proceedings to be held on 12 July 2006. In the accompanying communication the board discussed the interpretation of the term "rake receiver" as used in the application and its implications for the appeal, and gave its preliminary opinion that the subject-matter of new claim 1 at least did not involve an inventive step with respect to the disclosure of document D1 and arguably also with respect to the disclosures of either of documents

D2: EP 0 898 379 A

D3: WO 96 10879 A

both of which had been cited in the search report.

IV. In a submission dated 31 May and received 7 June 2006 the appellant's representative informed the board that he would not attend the oral proceedings. It was requested that the oral proceedings be cancelled and that the procedure be continued in writing. Arguments and a new drawing sheet 1 and description page 4 of an auxiliary request were submitted.

V. Independent claim 1 according to both requests reads as follows:

"1. A method of removing the Doppler frequency shift in a spread spectrum communications signal received within a rake receiver of a communications receiver (10) wherein the spread spectrum communications signal has a dedicated physical channel and a common pilot channel, characterized by:

estimating the Doppler change in frequency using the common pilot channel of the received spread spectrum communications signal; and
removing the Doppler change in frequency within the dedicated physical channel of the received spread spectrum communications signal using the estimated Doppler change in frequency."

VI. The appellant's main request is that the decision under appeal be set aside and a patent be granted on the basis of:

claims 1 to 9 submitted with the statement of grounds of appeal;

description pages

1, 2, 3 and 6 to 8 as originally filed, and 2A, 4, 5, 7A, 8A and 9 filed on 29 May 2003, with the amendment to page 1 requested on 30 September 2003; and

drawing sheets 1 and 6 as originally filed, or alternatively, as an auxiliary request, on the basis of

the same text but substituting description page 4 and drawing sheet 1 as submitted with the letter dated 31 May and received 7 June 2006.

- VII. The board informed the appellant that the oral proceedings would take place as scheduled. 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 (G10/93 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. 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. 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 request to cancel the scheduled oral proceedings was therefore refused.

The board interprets the appellant's request to continue the procedure in writing as being a request not to reach a final decision in oral proceedings, but rather to issue a further communication. However, the mere choice by the appellant not to attend was not

sufficient reason to delay the board's decision. If the appellant had attended the oral proceedings, it would have had an opportunity to present its comments. The board considers that Article 113(1) EPC has been satisfied. This request is therefore also refused.

2. *Clarity and interpretation of the claims*

2.1 The examining division based its objection under Article 83 EPC and some of its objections under Article 84 EPC on the applicant's apparent unconventional use of the term "rake receiver". It pointed out that the application described "most" rake receivers as having "fingers", so that by implication some did not, and that indeed Fig. 1 was labelled "Rake Receiver" but did not show a plurality of fingers. However the term "rake receiver" was not further defined in the application. The person skilled in the art would know that conventionally a rake receiver always had a plurality of fingers, so that it would not be clear what the applicant sought protection for nor how the invention specified in some of the claims should be implemented.

2.2 The board agrees that the mentioned items in the application are at the very least misleading. However the application is not consistent as to what Fig. 1 shows - at Paragraph 0010 Fig. 1 is described as showing a rake finger structure, and Paragraph 0014 also refers to a rake finger structure in the context of Fig. 1, if somewhat ambiguously - so that the skilled person would have to decide what is actually shown. The central issue of the application, the Doppler frequency correction method, would clearly

apply to each individual finger of a conventional rake receiver without any interaction between fingers. The board considers therefore that the skilled person would conclude that Fig. 1 does not show the whole rake receiver. This conclusion is reinforced by Paragraph 0030, which refers to the omission of another feature from Figs. 1 and 3: "There is no illustrated acquisition and tracking circuit as would typically be used in a rake receiver." Instead Fig. 1, although labelled as a whole "Rake Receiver" illustrates only the part of a rake receiver essential for understanding of the invention, namely a single finger structure.

- 2.3 Further in these circumstances the skilled person would dismiss the reference to "most" rake receivers in Paragraph 0002 as simple caution on the part of the applicant; without the "most", the relevant passage in Paragraph 0002 could be interpreted as limiting the term "rake receiver" by restriction to the technical features which follow and which describe not merely the existence of fingers but also a way of using them.
- 2.4 The board concludes that despite the ambiguous formulation of the application the skilled person would understand the expression "rake receiver" as referring to the conventional definition. The board therefore does not agree with the objections of the examining division based on a lack of clarity of this expression.
- 2.5 The further objections raised by the examining division under Article 84 EPC have been overcome by the amendments to the claims submitted by the appellant.

3. *Novelty and inventive step*

3.1 The examining division considered that the subject-matter of the then valid claim 1 lacked novelty with respect to the disclosure of document D1, and the board in its preliminary assessment partially agreed, to the extent that the presently claimed subject-matter appeared at least not to involve an inventive step. However in its final submission the appellant pointed out that D1 does not actually disclose a method of correcting Doppler frequency shift, but rather concerns itself with "frequency offset", which is described as arising primarily from a difference in frequency between the oscillators in the transmitter and the receiver (D1 page 4 lines 29 to 31). The method of correction for frequency offset in D1 differs significantly from the method put forward in the present application in that the integrator in D1 integrates not over a single symbol period but rather over the whole operation period of the device - see D1 page 9 lines 20 to 29 and Figs. 6, 7 and 10. Since Doppler shifts have the characteristic of changing relatively rapidly, therefore at least the main part of the description of D1 does not disclose "a method of removing the Doppler frequency shift ..." as presently claimed, and the reasoning put forward by the examining division and the board in its preliminary assessment is not well taken.

3.2 D1 does however discuss Doppler shift at least briefly. It is characterised as a "random component" and it is clear from D1 that it is desirable also to compensate for this random component. Two methods of correction are sketched out at page 4, lines 22 to 28: "Because

the Doppler component changes rapidly and may exceed a few percent of the raw data rate, it is typically very difficult to track using a phase-locked loop. An alternative way to compensate for this random component is to use the known pilot signal to obtain an estimate of the channel's effects. This estimate is usually in the form of a complex vector which represents the rotation in phase introduced by the channel and is used to compensate for the same rotation in the data samples." The board also notes that D1 clearly envisages the correction of the random component as a follow-on to the correction of the frequency offset (D1 page 5 lines 1 to 3). The question whether, given the broad scope of the claim, the subject-matter of the present independent claim lacks novelty or does not involve an inventive step in view of the above-mentioned passages does not appear to have been considered by the examining division.

- 3.3 Although it would be within the powers of the board to decide the appeal on the basis of one of the above arguments (see Point 1 above) the appellant has successfully refuted the arguments which led to the decision to refuse the application and it would seem more appropriate, given the radical change in reasoning implied, not to decide the issue and to remit the application to the examining division in order to give the appellant a further opportunity to submit arguments and / or amendments.

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 main request.

The Registrar:

The Chairman:

D. Magliano

A. S. Clelland