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D E C I S I O N
of 20 March 2006

Case Number: T 1087/04 - 3.5.03

Application Number: 00305207.3

Publication Number: 1065796

IPC: H04B 1/707

Language of the proceedings: EN

Title of invention:
Base station system including parallel interference cancellation processor

Applicant:
LUCENT TECHNOLOGIES INC.

Opponent:
-

Headword:
Parallel interference cancellation/LUCENT

Relevant legal provisions:
EPC Art. 54

Keyword:
"Novelty (yes)"

Decisions cited:
-

Catchword:
-

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Case Number: T 1087/04 - 3.5.03

D E C I S I O N
of the Technical Board of Appeal 3.5.03
of 20 March 2006

Appellant: LUCENT TECHNOLOGIES INC.
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New Jersey 07974-0636 (US)

Representative: Sarup, David Alexander
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Decision under appeal: **Decision of the examining division of the European Patent Office posted 30 April 2004 refusing European application No. 00305207.3 pursuant to Article 97(1) EPC.**

Composition of the Board:

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

Summary of Facts and Submissions

I. This appeal is against the decision of the examining division to refuse European patent application 00 305 207.3 (publication number EP 1 065 796 A).

II. The following document was referred to in the decision:

D1: T. Suzuki et al, "Near-Decorrelating Multistage Detector for Asynchronous DS-CDMA", IEICE Transactions on Communications, Vol. E81-B, No. 3, pages 553 to 564.

III. The reason for the refusal was that the subject-matter of claim 1 as filed with letter of 29 September 2003 was not new having regard to the disclosure of D1 (Article 54 EPC).

IV. With the appeal the appellant requested that the decision be set aside and a patent granted on the basis of a set of claims as filed with the statement of grounds of appeal.

V. Claim 1 as filed with the statement of grounds of appeal reads as follows:

"A base station system comprising a controller (204) generating acquisition data for each user signal to be processed, and generating control information for said user signals to be processed, said acquisition data including identity information identifying a user signal to be processed and timing information for said user signal to be processed, said control information

including said acquisition data for at least one of said user signals to be processed; CHARACTERIZED BY:

a plurality of signal processors (202), each signal processor searching for the user signal and acquiring the user signal from input signals based on said acquisition data received thereby, and estimating symbols in said acquired user signal; and

a cancellation processor (200) receiving a plurality of received signals and performing a cancellation operation on selected received signals based on said control information to generate said input signals."

Reasons for the Decision

1. *Amendments*

1.1 Claim 1 differs from claim 1 on which the impugned decision was based in that the first characterising feature includes the wording "each signal processor searching for the user signal and acquiring the user signal" instead of "each signal processor acquiring a user signal".

1.2 The Board has doubts as to whether this amendment satisfies the requirements of Article 123(2) EPC, since the claim does not define the specific interaction between the controller and the signal processors as described in paragraphs [0016] and [0017] of the application as published and as defined in originally-filed claim 2.

1.3 However, since the impugned decision can be set aside for reasons set out at point 2 below, from which it follows that the subject-matter of both claim 1 as filed with the statement of grounds of appeal and claim 1 on which the impugned decision was based is new (Article 52(1) and 54 EPC), and since it does not appear that a full substantive examination has taken place (see point 3.1 below) for reasons of procedural economy the board refrains from an examination as to whether or not the amendment fulfils the requirements of Article 123(2) EPC.

2. *Novelty*

2.1 D1 (see page 553, left-hand column, 5th last line, and right-hand column, lines 17 and 18 and 38 to 43) discloses a multi-user receiver in a base station which includes a multi-stage detector using a detection scheme based on parallel cancellation using soft decision (PCSD). In the configuration of the PCSD scheme of Figure 3, a single received signal r, which includes the sum of all user signals (see page 555, equation (18)), is applied to a series of correlators and a delay element, the outputs of which are applied to a first cancelling stage which includes, inter alia, respreaders, a subtracting means, correlators, delay elements and a plurality of summing means.

2.2 The series of correlators together with the first cancelling stage may be considered as constituting a cancellation processor for receiving a received signal and for performing a cancellation operation on the received signal.

2.3 With respect to the feature of claim 1 according to which the cancellation processor is for receiving a **plurality** of received signals, the examining division argued that in D1, Figure 3, the received signal r is split into signals 1 to k through the above series of correlators, thereby providing a plurality of received signals to a cancellation processor which corresponds to the first cancellation stage.

2.4 Even if this argument were followed, the board notes that both present claim 1 and claim 1 underlying the impugned decision additionally require that, in operation, the cancellation processor performs a cancellation operation on **selected** received signals. This implies that the claimed system includes means for selecting received signals on which the cancellation is to be performed. This is also in line with the description, see Figures 3 to 5 which illustrate an embodiment in which selecting means are formed by a selector 308, which is part of filter block 214 of a parallel cancellation chip (PCC) 200, for selecting a signal from one of the first, second and third pairs of antennas α, β, and γ (see column 8, lines 46 to 54 of the application as published).

In Figure 3 of D1, however, **all** signals 1 to k outputted by the series of correlators are subjected to the cancellation operation, which consists in the subtraction of all reconstructed user signals from the signal r (see also page 556, right-hand column, lines 1 to 12, and page 557, equation (28)). It follows that in the configuration of D1, there are no means for selecting received signals on which the cancellation is to be performed.

2.5 The board therefore concludes that the subject-matter of claim 1 is new having regard to D1 (Article 54 EPC). Consequently, the impugned decision is to be set aside.

3. *Procedural matters*

3.1 The appellant has requested the grant of a patent. However the examining division has not yet given a reasoned opinion on the other requirements for patentability, in particular as to whether or not the above-mentioned distinguishing feature of the means for selecting contributes to an inventive step of the subject-matter of claim 1. Further, the board notes that in a communication issued by the examining division objections based on Article 84 EPC were raised in respect of claim 1. The question of whether or not the amendments made to claim 1 comply with the requirements of Article 123(2) EPC is also outstanding and may give rise to further amendment by way of addition and/or deletion.

3.2 Under these circumstances, the board considers it appropriate to remit the case to the examining division for further prosecution.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the examining division for further prosecution.

The Registrar: The Chairman:

D. Magliano A. S. Clelland