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D E C I S I O N
of 24 November 2005

Case Number: T 0303/03 - 3.5.03

Application Number: 01302240.5

Publication Number: 1187410

IPC: H04L 25/03

Language of the proceedings: EN

Title of invention:

Training sequences for low-latency LMS implementation

Applicant:

LUCENT TECHNOLOGIES INC.

Opponent:

-

Headword:

Training sequences/LUCENT

Relevant legal provisions:

EPC Art. 84, 83

Keyword:

"Claims - support by description - (no) "

Decisions cited:

-

Catchword:

-



Case Number: T 0303/03 - 3.5.03

D E C I S I O N
of the Technical Board of Appeal 3.5.03
of 24 November 2005

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 31 October 2002
refusing European application No. 01302240.5
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 31 October 2002, to refuse the European patent application number 01 302 240.5, publication number 1 187 410. Various reasons were given for the refusal. The claims were held not to be clear, in contravention of Article 84 EPC. The application was also said to contravene Article 83 EPC, in that the skilled person could not implement it, and the subject-matter of claims 1, 4 and 6 was further said not to involve an inventive step with respect to the teachings of documents

D1: E.H. Dinan et al., "Spreading Codes for Direct Sequence CDMA and Wideband CDMA Cellular Networks," IEEE Communications Magazine, vol. 36 no. 9, September 1998, Piscataway, US, pages 48 to 54; and

D3: T.C. Liau et al., "Orthogonal LMS Algorithms for Fast Line Echo Canceller Training," IEEE Southeastcon, 11-14 April 1996, Conference Proceedings, pages 444 to 446.

II. Notice of appeal was filed and the fee paid on 20 December 2002. A statement setting out the grounds of the appeal was received on 13 February 2003 with a letter dated 11 February 2003.

III. The board issued, of its own motion, a summons to attend oral proceedings to be held on 24 November 2005. In the accompanying communication the board gave its preliminary opinion that the application failed to

satisfy the requirements of Article 84, the claims lacking clarity and support, of Article 83, the application not disclosing the invention claimed in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art, and of Articles 52(1), 54 and 56, the subject-matter of various claims apparently lacking novelty and/or an inventive step.

IV. In a submission on 17 October 2005 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. If this were not possible a written decision "based on the papers" was requested. A new set of claims 1 to 8 was submitted to replace the previous set of claims.

V. Claims 1 and 5 of the only request read as follows:

"1. An electromagnetic signal embodying an orthogonal sequence for training a receiver that receives signals from a channel, said channel being describable as a finite impulse response (FIR) filter having a length M_{new} , said channel introducing noise and intersymbol interference in said signals, the sequence embodied in said electromagnetic signal having been developed according to a method characterized by the steps of: selecting first and second orthogonal sequences $old1$ and $old2$ for at least two channels that have respective lengths M_{old1} and M_{old2} , the product of M_{old1} and M_{old2} being equal to M_{new} , wherein M_{old1} and M_{old2} have no common prime number factor;

repeating the sequence old1 M_{old2} number of times to form a first concatenated sequence;
repeating the sequence old2 M_{old1} number of times to form a second concatenated sequence;
multiplying each term in said first concatenated sequence by the like located term in said second concatenated sequence;
forming a resulting orthogonal sequence by placing each product produced in said multiplying step into a respective like-ordered location of said resulting orthogonal sequence; and
converting said resulting orthogonal sequence into an electromagnetic signal representative of the information within said resulting orthogonal sequence.

5. The method [sic] as defined in claim 1 wherein first and second orthogonal sequences each have a length that has no common prime number factor with the other."

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

claims 1 to 8 submitted on 17 October 2005;

description pages

3 to 7 and 9 as originally filed,

1a, 2 and 8 as received on 7 February 2002 with the letter dated 5 February 2002,

1 as received on 26 September 2002 with the letter dated 24 September 2002,

with page 3 line 2 to page 4 line 15 deleted according to the request submitted on 17 October 2005;

drawing sheet 1 as originally filed.

- VII. Oral proceedings took place as scheduled on 24 November 2005, the board having informed the appellant that the requests to cancel oral proceedings and to continue the procedure in writing could not be granted. 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). 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. 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. 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 mere choice by the appellant not to attend was not sufficient reason to delay the board's decision. As made clear in the Rules of Procedure of the Boards of Appeal, Article 11(3), a party duly

summoned to oral proceedings and not attending may be treated as relying only on its written case. The board considered that Article 113(1) EPC had been satisfied. The requests that the oral proceedings be cancelled and that the procedure be continued in writing were therefore refused.

2. Lack of support for the claimed subject-matter
(Article 84 EPC)

2.1 Claim 1 covers the case where the two "first and second orthogonal sequences" have respective lengths which are a common multiple of the respective channel lengths. Thus for example old1 and old2 might have lengths 4 and 6 respectively while the corresponding channels have respective lengths 2 (M_{old1}) and 3 (M_{old2}). In this case the resulting sequence would have length 12, i.e. twice M_{new} . However, from the description it is clear that only sequence lengths which are the same as the channel lengths are considered (see e.g. paragraph 0004, "Thereafter, an orthogonal sequence of length M_{new} is developed," and paragraphs 0014 and 0015 as a whole). Thus the application does not disclose the invention claimed and there is a lack of support in violation of Article 84 EPC.

2.2 It would not appear that this is a simple error in the formulation of the claim, since if claim 1 were intended to be restricted to sequences of the same length as the corresponding channels, whose lengths are defined to have no common prime number factor, then claim 5, which specifies the same feature for the sequence lengths, would be redundant. Thus the board

must assume that it was the appellant's intention to claim the unsupported subject-matter.

- 2.3 In response to the same argument put forward in the communication accompanying the summons to oral proceedings, the appellant asserted (in the submission of 17 October 2005) that, "each of the old orthogonal signals has the length of its corresponding channel," (page 2) and "throughout the application and claims, the sequence length is the same as the associated channel length that is employed," (page 3). The board cannot agree; it is precisely because the claims are not so limited, even though the description is, that the objection arises.
3. Since claim 1 of the only request does not satisfy Article 84 EPC the request is not allowable and the appeal must be dismissed. It is not necessary for the board to decide on the variety of other potential objections mentioned in the communication accompanying the summons to oral proceedings. The board notes however in particular that since there is no indication in the application how the person skilled in the art might extend its teaching to sequences having lengths which are a common multiple of the respective channel lengths (see point 2), the invention is also not disclosed in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art. Thus Article 83 EPC is also not satisfied.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

D. Magliano

A. S. Clelland