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D E C I S I O N
of 17 June 2005

Case Number: T 1059/04 - 3.5.3

Application Number: 00307592.6

Publication Number: 1094616

IPC: H04B 3/23

Language of the proceedings: EN

Title of invention:

Echo canceller with quadrature filter implementation

Applicant:

LUCENT TECHNOLOGIES INC.

Opponent:

-

Headword:

Echo Cancellor/LUCENT

Relevant legal provisions:

EPC Art. 84, 123(2), 113(1)

RPBA Art. 11(3)

Keyword:

"Reasons for rejecting appellant's request to cancel oral proceedings"

"Clarity - yes, after amendment"

"Objections leading to refusal overcome - remittal for further prosecution"

Decisions cited:

G 0010/93

Catchword:

-



Case Number: T 1059/04 - 3.5.3

D E C I S I O N
of the Technical Board of Appeal 3.5.3
of 17 June 2005

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. 00307592.6
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 30 April 2004, to refuse the European patent application number 00 307 592.6, publication number 1 094 616. The reason given for the refusal was that the claimed subject-matter was not clear, in violation of Article 84 EPC.
- II. Notice of appeal was filed and the fee paid with a letter dated 14 June and received on 17 June 2004. A statement setting out the grounds of the appeal dated 3 August 2004 was received on 5 August 2004. The appellant argued that the terms objected to in the claimed subject-matter were defined in the description.
- III. The board issued, of its own motion, a summons to attend oral proceedings to be held on 17 June 2005. In the accompanying communication the board gave its preliminary opinion that the appellant's arguments did not overcome the objection, and moreover that the description itself was unclear. The appellant was also informed that in the event of the objection being overcome, the board would probably remit the case to the examining division for further prosecution.
- IV. In a submission dated 27 April and received on 29 April 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. Claim sets of new main and auxiliary requests were submitted, together with indications of the source of their support in the description and drawings.

V. The independent claims of the main request are as follows:

"1. An apparatus comprising:
an echo canceler including an adaptive filter (12)
characterized in that
said adaptive filter comprises: (i) a tapped delay line
finite impulse response filter processing signals $x(k)$,
 $x(k-1), \dots, x(k-N+1)$, where N is the number of taps of
the delay line, and (ii) first and second infinite
impulse response filters receiving at their respective
inputs the signal $x(k-N+1)$ and generating respective
outputs $q_0(k)$ and $q_1(k)$."

"4. A method of processing a signal, the method
comprising the steps of:
processing the signal in an echo canceler including an
adaptive filter (12)
characterized in that
said adaptive filter comprises: (i) a tapped delay line
finite impulse response filter processing signals $x(k)$,
 $x(k-1), \dots, x(k-N+1)$, where N is the number of taps of
the delay line, and (ii) first and second infinite
impulse response filters receiving at their respective
inputs the signal $x(k-N+1)$ and generating respective
outputs $q_0(k)$ and $q_1(k)$."

The independent claims of the auxiliary request
(claims 1 and 3) add the following feature to the
corresponding independent claims of the main request:

"wherein the first and second infinite impulse response
filters collectively provide a complex-pole pair that

is matched to a dominant complex-pole pair of an echo path associated with the echo canceler, the dominant complex-pole pair of the echo path comprising a complex-pole pair that is closest to the unit circle."

- VI. The appellant requested in the statement of grounds that "the decision be cancelled in its entirety and a patent be granted". Despite being asked in the communication accompanying the summons to oral proceedings to clarify the request, the appellant has not done so and in particular has not specified the description pages and drawing sheets. The request can only therefore be inferred to be for grant on the basis of claims 1 to 17 of the main request claim set or 1 to 15 of the auxiliary request claim set submitted in its response to the summons to attend oral proceedings.
- 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 (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 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 request to cancel the scheduled oral proceedings was therefore refused.

2. *Disclosure of the claimed subject-matter*

2.1 Claim 1 of the application as filed specified an apparatus comprising an echo canceller including an adaptive filter. Paragraph 0011 of the published application shows that the filter comprises a tapped delay line, which the skilled person would understand to be a finite impulse response filter; this is also clear from e.g. Paragraph 0028 of the description ("... equal to the power of the finite impulse response (FIR) basis functions $x(k-n)$..."). That this filter is augmented by a pair of infinite impulse response filters is disclosed at Paragraph 0007, and that the input to these filters is $x(k-N+1)$ is e.g. shown in Fig.8, as are the outputs $q_0(k)$ and $q_1(k)$. The subject-

matter of claim 1 of the main request is thus derivable from the originally filed application.

- 2.2 At Paragraph 0027 of the description it is made clear that the term "dominant pole" in the application as filed is interchangeable with "dominant complex-pole pair" and refers to a complex pole pair closest to the unit circle. Paragraphs 0026 and 0028 together make it clear that the purpose of the infinite impulse response filters is to match the dominant complex-pole pair of the echo path, which is in turn the dominant complex pole pair of the high pass filter. This matching can be phrased as "providing" a complex-pole pair. The subject-matter of claim 2 of the main request is thus also derivable from the originally filed application.
- 2.3 Claim 1 of the auxiliary request corresponds to a combination of claims 1 and 2 of the main request and thus its subject-matter does not extend beyond the content of the application as filed. Equally, the corresponding method claims (4 and 5 in the main request, 3 in the auxiliary request) do not add anything to the original disclosure of the application.
- 2.4 The remaining claims of both requests are in general closely based on the original claims. The only substantive change is that the original use of the singular "dominant pole" has in most cases been replaced by "dominant complex-pole pair" in response to an objection raised by the board. In two cases where the consequences of this have not fully been taken into account, namely claims 12 and 13 of the main set, the question of added subject-matter would still appear to arise (see also comments on clarity at point 3.3 below).

3. *Clarity*

3.1 The claims no longer include the phrases which led the examining division to refuse the application, namely "quadrature response" and "components of the first filter being in quadrature with the components of the second filter". Without these phrases, the board considers that the person skilled in the art would have no difficulty determining the matter for which protection is sought in the independent claims of both main and auxiliary requests.

3.2 The board notes that the reference to "the dominant complex-pole pair ... comprising a complex-pole pair ..." (independent claims 1 and 3 of the auxiliary set, dependent claims 2 and 5 of the main set) does not make sense, and should apparently read for example "the dominant complex-pole pair ... being the complex-pole pair ...". Nonetheless the intended meaning is clear.

3.3 Dependent claims 12 and 13 of the main set are unclear as a result of a failure to adapt original dependent claims to the use of the plural "dominant complex-pole pair" (see also the discussion at point 2.4 above).

3.4 The board notes that the description requires amendment to remove conflicts between it and the present claims before the grant of a patent can be contemplated.

4. Thus the specific objections which were the basis of the examining division's decision to refuse the application have been overcome, in that at least the independent claims of the main and auxiliary requests

are clear; nor do these claims contain subject-matter which extends beyond the content of the application as filed. However, in addition to the deficiencies listed above, an examination with respect to the other requirements of the EPC is not complete (see e.g. the examining division's communication of 5 November 2003, point 3). When deciding whether to rule on the case itself or whether to remit the matter for further prosecution, the board must assess the particular circumstances (G 10/93 point 5). In the present case it appears to be more appropriate to remit the application to the department of first instance for further prosecution, as was contemplated in the communication accompanying the summons to attend oral proceedings, since although the reasons given for the refusal of the application have been overcome the process of examination is by no means complete.

The board observes that one of the requirements still to be examined is whether the invention as claimed is disclosed by the application in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art (Article 83 EPC), given that the description still contains frequent references to "quadrature responses", "components in quadrature", etc.. The board agrees with the examining division that these expressions are unclear.

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.

The Registrar:

The Chairman:

D. Magliano

A. S. Clelland