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**Datasheet for the decision
of 12 March 2009**

Case Number: T 1769/06 - 3.5.05

Application Number: 01302234.8

Publication Number: 1152563

IPC: H04L 1/24

Language of the proceedings: EN

Title of invention:

Method for displaying signal quality measurement

Applicant:

TEKTRONIX, INC.

Headword:

Quality cause measurement display/TEKTRONIX

Relevant legal provisions:

EPC Art. 54(2)

Relevant legal provisions (EPC 1973):

EPC Art. 56, 84

Keyword:

Clarity - (yes - after amendment)
Inventive step - (yes)

Decisions cited:

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Catchword:

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Case Number: T 1769/06 - 3.5.05

D E C I S I O N
of the Technical Board of Appeal 3.5.05
of 12 March 2009

Appellant:

TEKTRONIX, INC.
14200 S.W. Karl Braun Drive
P.O. Box 500
Beaverton
OR 97077 (US)

Representative:

Want, Clifford James
Harrison Goddard Foote
40-43 Chancery Lane
London WC2A 1JA (GB)

Decision under appeal:

Decision of the Examining Division of the
European Patent Office posted 21 June 2006
refusing European application No. 01302234.8
pursuant to Article 97(1) EPC 1973.

Composition of the Board:

Chairman: D. H. Rees
Members: M. Höhn
F. Blumer

Summary of Facts and Submissions

- I. This appeal is against the decision of the examining division dispatched 21 June 2006, refusing European patent application No. 01302234.8 for lack of clarity according to Article 84 EPC 1973 and lack of an inventive step according to Article 56 EPC 1973 based on documents:
- D1: US5751766,
D2: US6275523.
- II. In the statement setting out the grounds of appeal filed with letter dated 01 November 2006 it the grant of a patent was requested on the basis of the single claim 1 according to the main request or on the basis of single claim 1 of the first auxiliary request or claims 1 to 3 of one of the second to fourth auxiliary requests, all submitted with the statement setting out the grounds of appeal. Further, oral proceedings were requested in case the board contemplated refusing any of the requests. In addition, a refund of the appeal fee was requested because of substantial procedural violations alleged to have been committed in the first instance procedure.
- III. A summons to oral proceedings to be held on 20 February 2009 was issued on 25 November 2008. In an annex accompanying the summons the board expressed the preliminary opinion that the subject-matter of independent claim 1 of the main request did not fulfill the requirements of Articles 83 and 84 EPC 1973, of Article 123(2) EPC, and that the subject-matter of independent claim 1 of all requests was considered

obvious in the light of the disclosure of D1 when combined with the common general knowledge of the skilled person (Article 56 EPC 1973). The board gave its reasons for these objections and why the appellant's arguments were not convincing. Furthermore, the board informed the appellant that it appeared Article 113 EPC 1973 had not been infringed during the first instance procedure and that the appellant's allegation of a substantial procedural violation appeared unfounded, therefore not justifying a refund of the appeal fee.

- IV. With a letter dated 20 January 2009 the appellant filed an amended claim 1 as a new main request together with arguments that this request fulfilled the requirements of clarity and involved an inventive step. The previous requests were renumbered to form auxiliary requests 1 to 5.

- V. In reaction to a facsimile dated 11 February 2009 in which the representative of the appellant asked for rescheduling the oral proceedings the date for oral proceedings was postponed to 12 March 2009.

- VI. Oral proceedings were held on 12 March 2009 in the course of which the appellant's representative submitted an amended claim 1 as an amended main request. All the previous requests and the request for refund of the appeal fee were withdrawn.

The appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of the following documents:

- claim 1, filed as amended main request during the oral proceedings before the board
- description, pages 2 and 5 as originally filed, pages 1, 1a and 3 received with letter of 28 July 2004, and page 4 received with letter of 3 September 2004
- drawing sheet 1/1 as originally filed.

VII. Independent claim 1 reads as follows:

"1. A method of forming a quality cause measurement display for an overall quality value of a transmitter signal comprising noise associated with a plurality of transmitter noise parameters, the method comprising the steps of:

processing the transmitter signal to measure the overall quality value using a respective quality measurement algorithm; and
measuring the plurality of transmitter noise parameter values; the method being characterized by:
generating an ideal transmitter signal;
modifying the ideal transmitter signal with each parameter value to produce modified transmitter signals;
processing the modified transmitter signals with said respective quality measurement algorithm to produce a table of quality measurement values associated with the plurality of noise parameters; and
comparing the table of quality measurement values with the overall quality value to produce the quality cause measurement display as a display of percentage contributions of each parameter to the composite quality value."

VIII. After deliberation the board announced its decision.

Reasons for the Decision

1. *Original disclosure (Article 123(2) EPC)*

Claim 1 is originally disclosed in claim 1 as filed and on page 3, lines 2 to 14 and page 4, line 15 to page 5, line 4 of the description as filed.

2. *Clarity (Article 84 EPC 1973)*

The amendments to present claim 1 overcome the objections for lack of clarity on which the appealed decision is based and which were raised in the annex to the summons for oral proceedings.

3. *Inventive step (Article 56 EPC 1973)*

3.1 Publication D2 (US 6275523) which is referred to in the appealed decision is said to have been cited in the description of the present application. However, only the US-serial number is mentioned in the original application, not the patent. D2 was published on 14 August 2001 and is therefore post-published and not prior art according to Article 54(2) EPC. Hence, D2 cannot be considered for the assessment of inventive step. Therefore, the examining division's and the appellant's argumentation based on the publication D2 are not relevant to the board's decision.

3.2 D1 discloses a diagnostic tool (figures 3 and 6A) to extract information about the quality of a communication channel at a receiver. A reconstructed signal is applied to an impairment generator

introducing one or more impairments. According to the disclosure of D1 those impairments which are measured can be a noise signal, error signal, reflections (col. 2, l. 33-44 and l. 58 to col. 3, l. 11) or any other impairment signal, which the skilled person would understand to include those of the output of the diagnostic processor (as shown in figure 3). Statistics of an error signal may be computed in order to develop indicia of the link quality (col. 6, l. 30-67 and col. 11, l. 21-24).

3.3 The board is of the opinion that the skilled person would realise from this publication that the teaching can be applied not only to a receiver but also to the signal quality of the transmission signal at the transmitter side. This merely requires that the effect of the communication channel on the quality of the signal is not considered, but only the effect of the transmitter itself (D1 mentions such effects such as distortion by the transmitter, col. 2, l. 4, and artefacts caused by the transmitter, col. 6, l. 13-14). The teaching can be applied to the transmitter signal alone in the same way without having to use the specifically receiver side measurements of D1. This difference alone therefore does not involve an inventive activity.

3.4 For the assessment of inventive step further features distinguishing the claimed invention according to claim 1 from the teaching of D1 are (1) the use of a generated ideal transmitter signal in the present invention, in contrast to a reconstruction of a received signal in D1 and (2) that according to D1 the reconstructed signal is modified using an impairment

- signal until an unacceptable degradation is observed whereas according to present claim 1 the effect on the ideal signal of each measured parameter value with regard to the overall quality value is determined.
- 3.5 The objective problem solved by these distinguishing features can be regarded as to obtain information on the individual contribution of transmission related parameters on the quality of the signal.
- 3.6 The board regards the reconstructed signal in the receiver as similar to the ideal signal in the transmitter insofar as in both cases it represents the signal that one wants to achieve without loss of quality. The reconstructed signal is at least the receiver's "best guess" at the ideal signal. However, the board agrees with the appellant's argument that the reconstructed signal may contain errors, whereas the ideal transmitter signal according to claim 1 is free of errors.
- 3.7 The board further agrees with the appellant's argument that D1 introduces impairments in the system which is different to modifying an ideal signal. D1 discloses a variety of possible impairments (see output signals of the diagnostic processor shown in figure 3; col. 6, l. 31) and which can be used in order to identify the source of e.g. an interference signal (see col. 2, l. 41-42). Impairments can be further used in order to modify the reconstructed signal and be varied in order to determine the system margin (col. 3, l. 3 onwards).
- 3.8 While this teaching of D1 thereby may be used to determine which parameters are problematic, it does not

provide information about the actual level of contribution of the present value of a parameter to the overall quality of the signal and, hence, does not solve the objective technical problem posed.

3.9 Therefore, the teaching of D1, even when combined with the skilled person's common general knowledge, does not render obvious to generate an ideal transmitter signal and to modify this ideal signal with each parameter identified as problematic to the overall quality in order to produce modified transmitter signals used for determining a contribution of each parameter to the composite quality value, in particular not as a display of percentage contributions according to claim 1.

3.10 The subject-matter of independent claim 1 according to the sole request therefore involves an inventive step over the closest prior art D1.

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 with the order to grant a patent on the basis of the amended main request, the description and the drawings as requested by the appellant.

The Registrar

The Chairman

K. Götz

D. H. Rees