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Datasheet for the decision of 19 July 2012

Case Number: T 2172/08 - 3.5.04

Application Number: 99948171.6

Publication Number: 1112659

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Title of invention:
ADAPTIVE RATE CONTROL FOR INSERTION OF DATA PACKETS INTO A BITSTREAM

Applicant:
SCIENTIFIC ATLANTA, INC.

Headword:

Relevant legal provisions:
EPC 1973 Art. 84

Keyword:
Clarity of claims (yes)
Claims supported by the description (yes)

Europäisches Patentamt | European Patent Office | Office européen des brevets

Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T2172/08 - 3.5.04

D E C I S I O N
of the Technical Board of Appeal 3.5.04
of 19 July 2012

Appellant: (Applicant)
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Decision under appeal:
Decision of the Examining Division of the European Patent Office posted 6 June 2008 refusing European patent application No. 99948171.6 pursuant to Article 97(2) EPC.

Composition of the Board:

Chairman: F. Edlinger
Members: A. Dumont
T. Karamanli

Summary of Facts and Submissions

I. The examining division refused the present European patent application 99 948 171.6 on the grounds that the independent claims according to all the requests then on file infringed Article 84 EPC 1973.

II. The examining division further stated *obiter* in its decision that, with the present formulation of the independent claims, it was not possible to determine what the best piece of prior art was, and that examination under Article 52(1) EPC still had to be performed.

III. The applicant filed an appeal requesting that the decision under appeal be set aside and that a patent be granted on the basis of amended claims of a main request and an auxiliary request. In reply to a communication of the board, the appellant filed substitute claims for the main request and withdrew the claims of the auxiliary request.

IV. In a communication dated 18 November 2010 the board observed that the amended claims according to the main request then on file appeared to remedy the objections of lack of clarity and support in the decision under appeal. The board raised further deficiencies and announced its intention to remit the case to the first instance for further prosecution, once the outstanding deficiencies were remedied.

V. With a letter dated 18 January 2011 the appellant filed claims 1 to 34 to replace the claims of the previously filed main request.

VI. With a letter dated 13 June 2012 the appellant filed a new page 8, comprising hand-written amendments to claim 25, to be substituted for page 8 of the claims filed with the letter of 18 January 2011.

VII. Independent claim 1 reads as follows:

"A method for inserting outgoing data into an outgoing bit stream, and for controlling adaptively the rate at which said outgoing data is inserted into said outgoing bit stream, in a data communication system comprising an incoming bit stream including content and overhead relating to the organization of the incoming bit stream, and said outgoing bit stream including said content from the incoming bit stream and said outgoing data comprising information pertaining to the organization of the outgoing bit stream, the method comprising the steps of:
determining an available capacity for insertion of said outgoing data into said outgoing bit stream (599), by comparing a predetermined maximum bit rate or size of the outgoing bit stream and a transfer rate or an amount of said content for the outgoing bit stream, thereby indicating the outgoing bit stream's capacity for accommodating inserted outgoing data;
determining a desired insertion rate of said outgoing data into said outgoing bit stream (599);
adjusting an actual insertion rate of said outgoing data into said outgoing bit stream for controlling the rate of insertion of said outgoing data into said outgoing bit stream, wherein said adjusting said actual insertion rate maximizes achievement of said desired insertion rate of said outgoing data and comprises:
setting said actual insertion rate equal to said desired insertion rate when said available capacity for

insertion is greater than or equal to said desired insertion rate; and
reducing said actual insertion rate from said desired insertion rate to said available capacity for insertion when said available capacity for insertion is less than said desired insertion rate; and
inserting said outgoing data into said outgoing bit stream (599) at said actual insertion rate."

VIII. Independent claim 25 relates to a data communication apparatus comprising means for performing the method steps of claim 1.

IX. The reasons in the decision under appeal why the claims then on file did not comply with Article 84 EPC 1973 may be summarised as follows, in so far as they may be of relevance to the present claims:

Reason (a): the expression "a predetermined maximum bit rate of the bitstream" is unclear in that it does not set out whether it relates to the input or the output bit stream.

Reason (b): the expression "incoming bit stream" is ambiguous and not supported by the description. Only streams comprising content and overhead information are described.

Reason (c): the "available capacity for insertion of data" or "the outgoing's bit stream capacity" refer to a difference between the maximum bit rate of the outgoing bit stream and something else, which is not defined. It is thus unclear.

Reason (d): the rate of data insertion for overhead information may reach the maximum bit rate of the

outgoing bit stream. That is to say that the content information is absent. This extreme instance is not supported by the description.

Reason (e): the claims are not limited to cases where the bit rate of the actual amount of information in the incoming bit stream is higher than the maximum bit rate of the outgoing bit stream. Thus the technical effect underlying the invention is not expressed across the whole breadth of the claims. This is not supported by the description.

Reason (f): according to the applicant, partial information is added, or extracted from the incoming bit stream, transformed and re-added in order to form the outgoing bit stream in such a way as to optimise the bit rate of the outgoing bit stream. Such an optimisation may take place only when non-mandatory information is identified, prioritised, and injected at a lower rate. However, the claims are not limited in such a way as to express the effect of optimisation. Consequently, they are not clear in that they present a lack of essential features.

Reasons for the Decision

1. The appeal is admissible.

2. Amendments

The board is satisfied that the amendments to claim 1 and the correspondingly adapted claim 25 comply with Article 123(2) EPC. In particular, the following passages in the application documents as originally

filed provide a basis for the direct and unambiguous disclosure of the following amendments:

- page 15, lines 28 to 32 for the step of determining an available capacity for insertion;
- page 17, lines 21 to 25 for the step of determining a desired insertion rate;
- page 20, lines 8 and 9 for maximizing achievement of said desired insertion rate of said outgoing data in the adjusting step;
- claim 6 and page 19, line 32 to page 20, line 9 for the setting and reducing steps comprised in the step of adjusting an actual insertion rate.

3. Article 84 EPC 1973

3.1 Independent claim 1

3.1.1 The "predetermined maximum bit rate" is defined in amended claim 1 as relating to the outgoing bit stream. Thus reason (a) summarised in the facts and submissions, point IX, above does not apply anymore.

3.1.2 The incoming bit stream is limited in amended claim 1 to a stream including content and overhead. Thus reason (b) summarised in the facts and submissions, point IX, above does not apply anymore.

3.1.3 The "available capacity for insertion", "indicating the outgoing bit stream's capacity" is determined in amended claim 1 by comparing a predetermined maximum bit rate of the outgoing bit stream (or its size) and a transfer rate of the content (or its amount) for the outgoing bit stream. Thus reason (c) summarised in the facts and submissions, point IX, above does not apply anymore.

3.1.4 The incoming bit stream includes content and the outgoing bit stream includes said content in amended claim 1. The extreme instance where the content information is absent from the outgoing bit stream is therefore excluded. Thus reason (d) summarised in the facts and submissions, point IX, above does not apply anymore.

3.1.5 The bit rate (or amount) of (overhead) information comprised in the outgoing data may vary and be larger than that of the overhead information included in the incoming bit stream (see page 2, lines 18 to 33 of the application as originally filed). The available capacity for insertion of the outgoing data may temporarily also vary (see page 19, line 20 to page 20, line 9 of the application as originally filed). The present invention provides method steps for adjusting, in particular reducing, the actual insertion rate of the outgoing data when the available capacity is insufficient. The fact that there may be cases, where the condition for reducing the actual insertion rate is not fulfilled, does not prevent the method of claim 1 from having a technical effect when the available capacity is insufficient. Claim 1 thus need not be limited to certain "classes of input and output bitstreams". Thus reason (e) summarised in the facts and submissions, point IX, above is not convincing.

3.1.6 Reason (f) in the decision under appeal considers identification, prioritisation and injection of non-mandatory information at a lower rate as essential for optimising the bit rate. In the board's view, the effect of optimisation is expressed in amended claim 1 by determining an available capacity and a desired insertion rate, adjusting the actual insertion rate and

in that the "actual insertion rate maximizes achievement of said desired insertion rate of said outgoing data". Thus reason (f) summarised in the facts and submissions, point IX, above is not convincing.

3.1.7 The decision under appeal lists further objections under Article 84 EPC 1973 relating to a particular embodiment as an MPEG bit stream. These objections are not relevant for present claim 1, since it is not limited to that embodiment.

3.1.8 As a result, amended claim 1 complies with Article 84 EPC 1973.

3.2 Independent claim 25

Claim 25 has been amended to set out an apparatus comprising the means for performing the steps of claim 1. In the board's view, amended claim 25 also complies with Article 84 EPC 1973 for essentially the same reasons as claim 1.

3.3 In conclusion, the objections under Article 84 EPC 1973 in the decision under appeal do not apply to the amended independent claims 1 and 25, so that the decision is to be set aside for this reason alone.

4. Since other issues, in particular the compliance with Article 52(1) EPC, have not been dealt with by the examining division, the board decides to remit the case to the examining division for further prosecution under Article 111(1) EPC 1973.

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:

K. Boelicke F. Edlinger

Decision electronically authenticated