Datasheet for the decision
of 6 October 2006

Case Number: T 0579/03 - 3.5.01
Application Number: 96940348.4
Publication Number: 0862836
IPC: H04N 7/58, H04N 7/52
Language of the proceedings: EN
Title of invention:
Method and apparatus for multiplexing and distributing data with preformatted real-time video
Applicant:
IMEDIA CORPORATION
Opponent:
-
Headword:
Distributing video data/IMEDIA CORPORATION
Relevant legal provisions:
EPC Art. 56
Keyword:
"Inventive step (all requests) - no"
Decisions cited:
-
Catchword:
-
Case Number: T 0579/03 - 3.5.01

DECISION
of the Technical Board of Appeal 3.5.01
of 6 October 2006

Appellant: IMEDIA CORPORATION
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Decision under appeal: Decision of the Examining Division of the European Patent Office posted 21 October 2002 refusing European application No. 96940348.4 pursuant to Article 97(1) EPC.

Composition of the Board:
Chairman: S. Steinbrener
Members: W. Chandler
P. Schmitz
Summary of Facts and Submissions

I. This appeal is against the decision of the examining division to refuse the application on the grounds that the subject-matter of the independent claims did not involve an inventive step (Article 56 EPC). The following documents were mentioned in the decision:

D1: WO-A-95/15647
D2: WO-A-94/30014
RIEMANN U.: 'Der MPEG-2-Standard, Teil 5_2'

II. In the grounds of appeal, the appellant gave reasons why the decision should be set aside. In reply to the communication accompanying the summons to oral proceedings, in which the Board set out the issues to be discussed, the appellant submitted a main request and first to fifth auxiliary requests. In a subsequent letter, the appellant made a further amendment to claim 1 and claim 11 of the main request.

III. At the oral proceedings, the appellant requested that the decision under appeal be set aside and a patent granted on the basis of the main request filed in the subsequent letter, received 3 October 2006, or the first to fifth auxiliary requests filed with the reply to the summons, dated 30 August 2006, or to remit the case to the department of first instance. At the end of the oral proceedings, the Chairman announced the decision.
IV. Claim 1 of the main request reads as follows:

"A method of forming a constant bit rate data stream for distribution to a plurality of receivers, comprising statistically multiplexing a plurality of encoded video programs (110), the improvement comprising, after said statistical multiplexing, the steps of:

inserting an auxiliary data stream to form an intermediate data stream (200); and

adding location data (300) for the encoded video programs and for the auxiliary data;

to form a common data stream for distribution to a plurality of receivers capable of individually extracting selected portions of the common data stream in accordance with the location data."

Apart from lacking the feature "after said statistical multiplexing", the respective versions of claim 1 of the first to fourth auxiliary requests differ from claim 1 of the main request by adding or limiting one or more features:

Claim 1 of the first auxiliary request includes an explanation of "location data";

Claim 1 of the second auxiliary limits claim 1 of the first auxiliary request to MPEG compatible encoding and defines the "location data" as "MPEG-compliant program map data";

Claim 1 of the third auxiliary request defines the step of inserting the auxiliary data stream as consisting of detecting and replacing fill packets by auxiliary data segments maintained in a buffer; and

Claim 1 of the fourth auxiliary request adds to claim 1 of the third auxiliary request the explanation of
"location data" as in claim 1 of the first auxiliary request.

Claim 1 of the fifth auxiliary request includes all the amendments of the preceding auxiliary requests and reads as follows:

"A method of forming a constant bit rate data stream for distribution to a plurality of receivers, comprising statistically multiplexing a plurality of encoded video programs (110), the improvement comprising the steps of: monitoring the statistically multiplexed encoded video programs for the occurrence of a fill packet (210); maintaining a buffer of auxiliary data segments (290); replacing the fill packet with at least one segment of the auxiliary data stream from the buffer if the segment is smaller than the size of the fill packet (280) to form an intermediate data stream (200); and adding MPEG-compliant program map data (300) illustrating the location of each of the encoded video programs and the auxiliary data in the intermediate data stream; to form a common data stream for distribution to a plurality of receivers capable of individually extracting selected portions of the common data stream in accordance with the program map data, the constant bit rate common data stream being encoded in a manner compatible with the MPEG standard."
The appellant argued essentially as follows:

It was not certain that D1 disclosed multiplexing of the encoded video programs in the sense of the application, i.e. statistical multiplexing. In D1, the text data was not added after the multiplexing as claimed in claim 1 of the main request. Furthermore, D1 did not disclose location data for the auxiliary data or forming an intermediate data stream. D2 disclosed location data, but not statistical multiplexing and thus not adding auxiliary data after the statistical multiplexing. The directory information added in D2 was not auxiliary data in the sense of the claims because it was itself location data and it was not to be displayed on the receiver.

The first and second auxiliary requests clarified details of the main request.

There was no hint to replace fill packets by auxiliary data as in the third to fifth auxiliary requests.

**Reasons for the Decision**

1. The appeal complies with the requirements referred to in Rule 65(1) EPC and is, therefore, admissible.

2. The application relates to multiplexing packets of data from encoded program streams, e.g. MPEG encoded programs, into a single multiplex. It improves the utilisation of the capacity of a constant bit rate channel by transmitting auxiliary data, such as advertisements or news (see pages 5 to 8) in the
channel bandwidth remaining after the real-time statistical multiplex has been formed (see pages 8 to 9). The embodiment does this by replacing the fill packets, which serve as delay buffers, with the auxiliary data (page 15, paragraph 2).

3. In the early stages of the appeal, the Board like the examining division started from D1 as the closest prior art for claim 1. However, as the applicant sought to distinguish the claims from this prior art in successive auxiliary requests, the subject-matter approached the above-mentioned embodiment of replacing fill packets in a multiplexed MPEG data stream with auxiliary data segments. The Board judges that the closest prior art for this subject-matter is the known method of multiplexing MPEG encoded data streams.

4. This prior art is acknowledged in the application itself. In particular, the passages at page 9, lines 10 to 12 and page 15, lines 16 to 23 show that it was known to statistically multiplex MPEG program streams and to make a constant bit rate data stream by adding fill packets.

   The application also states, at page 7, lines 5 to 10 and page 10, lines 2 to 4, that it was also known to identify different programs contained in the multiplex using tables or program maps within the bit-stream. Most of this is also described in D3.

5. The subject-matter of claim 1 of the fifth auxiliary request, which is the most limited request (see point 9, below) differs from this known MPEG statistical multiplex by the first four features, essentially replacing the fill packets with segments of auxiliary...
6. The Board judges that these differences solve the problem of how to transmit auxiliary data with the program data. This is a well known problem in this field where "auxiliary" data is often transmitted with program data – e.g. teletext data as in D1 (Figure 4; page 19, second paragraph).

7. Faced with the problem of transmitting auxiliary data with an MPEG multiplex, the skilled person would consider D2, which relates to MPEG coding and is specifically concerned with this problem as is apparent from the title, or the general disclosure of the invention at page 40, lines 20 to 22. As briefly indicated by the examining division at point 6 of the decision in connection with the dependent claims before them, D2 also discloses at page 107, lines 3 to 16, that in constant bit rate systems if the video output buffer becomes empty, the multiplexer can include "other useful information" instead of the video stream or include stuffing bits.

8. The Board judges that the skilled person would recognise from this that the use of other useful information or stuffing bits are equivalent possibilities for utilising the capacity of a constant bit rate channel. Thus faced with the problem of transmitting auxiliary information over a constant bit rate channel, the skilled person would consider replacing the existing stuffing bits with this information. Furthermore, the Board judges that it would be self-evident that this information must be
identified and to use the program map data, provided for such a purpose, to do this.

9. The Board accordingly judges that the subject-matter of claim 1 of the fifth auxiliary request does not involve an inventive step (Article 56 EPC). Since claim 1 of this request contains only limitations over claim 1 of the first to fourth auxiliary requests, the latter are also not allowable (Article 56 EPC).

10. Claim 1 of the main request contains the feature, not in claim 1 of the fifth auxiliary request, that the auxiliary data is added "after said statistical multiplexing". However, since the fill bits are added to the multiplexed MPEG programs after statistical multiplexing, the above mentioned replacement would also be performed after the statistical multiplexing, so that this feature would follow automatically. Thus, the claim does not involve an inventive step for the same reasons.

Similarly, the Board sees no prospect for the appellant's proposed limitation that the auxiliary data is displayed at the receiver because it is an obvious possibility that the useful information to be transmitted with the program data could be information to be displayed, e.g. teletext data (see point 6, above).
Order

For these reasons it is decided that:

1. The appeal is dismissed.

The Registrar:     The Chairman:

P. Cremona         S. Steinbrener