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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

D E C I S I O N
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
        D3: FERNSEH- UND KINO-TECHNIK, vol. 48, no. 10, October
        1994, Heidelberg, DE, pages 545-553, XP000468290
        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."

V.   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

data and using the program map data to identify their
location.

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

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