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**Datasheet for the decision  
of 17 June 2010**

**Case Number:** T 0220/05 - 3.5.04

**Application Number:** 96106436.7

**Publication Number:** 0740478

**IPC:** H04N 9/804

**Language of the proceedings:** EN

**Title of invention:**

Method and apparatus for receiving and/or reproducing digital signals

**Patentee:**

Hitachi, Ltd.

**Opponent:**

IGR GmbH & Co. KG.

**Headword:**

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**Relevant legal provisions:**

RPBA R. 12(4)

**Relevant legal provisions (EPC 1973):**

EPC Art. 100(a)

**Keyword:**

"Inventive step (no for all requests)"

"Admissibility of a document filed in reply to the statement of grounds of appeal (yes)"

**Decisions cited:**

-

**Catchword:**

See point 4



Case Number: T 0220/05 - 3.5.04

**D E C I S I O N**  
**of the Technical Board of Appeal 3.5.04**  
**of 17 June 2010**

**Appellant:** Hitachi, Ltd.  
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**Decision under appeal:** Decision of the Opposition Division of the  
European Patent Office posted 10 January 2005  
revoking European patent No. 0740478 pursuant  
to Article 102(1) EPC 1973.

**Composition of the Board:**

**Chairman:** F. Edlinger  
**Members:** M. Paci  
B. Müller

## Summary of Facts and Submissions

- I. This is an appeal by the patent proprietor against the decision of the opposition division revoking European patent No. 0 740 478.
- II. Opposition had been filed against the patent as a whole, based on Article 100(a) EPC 1973 on the ground of lack of inventive step.
- III. In the decision under appeal the opposition division held that the subject-matter of claim 1 according to a main and an auxiliary request did not involve an inventive step in view of
- D2: DE 42 01 031 C2
- and commonly known features of the MPEG-2 standard.
- IV. With the statement of grounds of appeal the appellant (patent proprietor) filed amended claims 1 and 3 according to a main and an auxiliary request.
- V. In his reply to the statement of grounds of appeal the respondent (opponent) submitted the following prior art document:
- D3: U. Riemann, "Der MPEG-2-Standard", *Fernseh- und Kino-Technik*, Vol. 48, No. 9/1994, 460-468 and No. 10/1994, 545-553.
- VI. Oral proceedings were held on 17 June 2010, at the end of which the board announced its decision.

VII. The appellant's final requests are that the decision under appeal be set aside and that the patent be maintained on the basis of claims 1 and 3 of the main request, auxiliary request I and auxiliary request II, respectively and in that order, as submitted during the oral proceedings. Claims 1 and 3 of either request replace claims 1 and 3 as granted and the remaining documents are the patent documents as granted.

VIII. The respondent's final request is that the appeal be dismissed.

IX. Claim 1 according to the appellant's **main request** reads as follows:

"A receiver apparatus (52) for a digital signal, comprising:

    a receiver (210) which receives a plurality of programs (160-163) multiplexed into a plurality of data packets, each data packet including data packet type identification information, and receives packets including program information regarding said plurality of programs, wherein said packets including plurality of programs and said packets including program information regarding said plurality of programs are transmitted in a transmission channel;

    a selector (230) which selects packets of a desired program from packets including the plurality of programs received by said receiver;

    a former (290) which forms packets of program information which specifies identification information of the selected packets regarding the desired program from the packet including program information regarding said plurality of programs; and

output means (203) which output said selected packets of the desired program and formed packets of program information regarding the desired program."

Claim 1 according to the appellant's **auxiliary request I** differs from claim 1 according to the main request by the addition of the phrase "*to a recorder which records the packets*" at the end of the claim.

Claim 1 according to the appellant's **auxiliary request II** reads as follows:

"A receiver apparatus (52) for a digital signal, comprising:

a receiver (210) which receives a plurality of programs (160-163) multiplexed into a plurality of data packets, each data packet including data packet type identification information, and receives packets including program information regarding said plurality of programs, wherein said packets including plurality of programs and said packets including program information regarding said plurality of programs are transmitted in a transmission channel;

a selector (230) which selects packets of a desired program from packets including plurality of programs received by said receiver;

a former (290) which forms packets of program information which specifies identification information of the selected packets regarding the desired program, and omits program information of other programs which is transmitted in the same transmission channel as the desired program from the packet including program information regarding said plurality of programs; and

output means (203) which output said selected packets of the desired program and formed packets of program information regarding the desired program to a recorder which records the packets."

- X. In the decision under appeal the opposition division's finding of lack of inventive step regarding claim 1 (according to the main request and auxiliary request then on file) was essentially based on the following considerations:

D2 discloses an analogue television signal receiver apparatus which receives a plurality of analogue television programs and program information relating to these programs, selects one of these programs and records it together with the associated program information on a recording medium. The skilled person would want to adapt the receiver apparatus of D2 to the new MPEG-2 standard for digital television. In doing so he/she would arrive in an obvious manner at the subject-matter of claim 1 according to each request.

- XI. The appellant essentially argued as follows:

*Admissibility of document D3*

D3 had been submitted only with the respondent's letter of reply to the statement of grounds of appeal, i.e. only during the course of the appeal proceedings. The document was filed belatedly as it could have been filed together with the notice of opposition or at least during the proceedings before the opposition division. The filing of D3 cannot be justified by the filing of a main request and an auxiliary request with

the grounds of appeal. Moreover, D3 is not *prima facie* highly relevant state of the art. Hence the late filed document D3 should be rejected as inadmissible.

*Inventive step*

*Main request*

The digital receiver apparatus of claim 1 solves the objective technical problem of providing a receiver which is capable of receiving a digital signal that comprises a plurality of programs in the form of packets, selecting specific ones out of those packets, i.e. a dedicated program based on program guide information, and pre-processing the digital signal for easy digital recording and retrieval.

Importantly, the apparatus of claim 1 includes a former which forms packets (MPG in figure 8(3)) of program information which specifies identification information of the selected packets regarding the desired program from the packet (PG) including program information regarding said plurality of programs. In this way, only program information regarding the desired program is recorded together with the desired program, thereby advantageously simplifying the identification of the program information at the time of reproduction.

D2 discloses a television receiver for receiving analogue television programs. Program information regarding a given program may be embedded in the program (for instance, in the vertical blanking interval) or transmitted in a separate channel. When a program is recorded, the embedded program information

is also automatically recorded. However, this program information is not "formed" as in claim 1 because it was already present in the desired program and related only to this program. As a result, D2 teaches away from forming program information prior to recording it.

D3 describes the MPEG-2 standard and discusses a digital receiver for this standard. According to the MPEG-2 standard described in D3, a digital audio/video program is formed into either a *transport stream* or a *program stream*. Each type of stream is optimized for a different set of applications. A transport stream is optimized for environments where errors are likely, such as broadcasting, whereas a program stream is designed to be used in relatively error-free environments, such as storage. A transport stream is formed of packets of constant length (188 bytes) and includes *Program Specific Information (PSI)*, whereas a program stream is composed of packets of variable length and does not contain PSI. Hence, a digital receiver designed according to the teaching of the MPEG-2 standard would convert a television program transmitted as a transport stream into a program stream before recording the program on a recording medium. As a consequence, the recorded program stream would not include program information because a program stream does not comprise *Program Specific Information (PSI)*.

Hence neither D2 nor D3, nor the combination thereof, teaches that a receiver apparatus should comprise a former as defined in claim 1.



*Auxiliary request I*

The added phrase at the end of claim 1 removes any doubt that the packets from the former are actually recorded.

*Auxiliary request II*

Claim 1 according to this request explicitly states that the former omits program information from other programs transmitted in the same transmission channel as the desired program. This feature was implicit in claim 1 according to the main request or auxiliary request I.

XII. The respondent's arguments can be summarised as follows:

*Admissibility of document D3*

D3 summarises the technical specification for multiplexing according to the MPEG-2 standard cited in paragraph [0005] of the patent specification. The filing of D3 as evidence was held by the opposition division to be unnecessary because the main technical features of the MPEG-2 standard were regarded as common general knowledge. D3 was submitted by the respondent as evidence of the features of the MPEG-2 standard in reaction to the amended claims filed by the appellant with the statement of grounds of appeal.

Hence D3 should be admitted into the proceedings.

*Inventive step*

*Main request*

The core features of claim 1 have not changed compared to claim 1 underlying the decision under appeal. The only substantial change in claim 1 of the present main request is the mention of packets. However, multiplexed packets are a central feature of the MPEG-2 standard. Hence the receiver apparatus of claim 1 according to the main request does not involve an inventive step in view of D2 and commonly known features of the MPEG-2 standard (or D3) for the reasons laid out by the opposition division in the decision under appeal.

Moreover, the subject-matter of claim 1 is also obvious in view of the disclosure of D3 alone which discloses a digital receiver apparatus (see in particular figure 14) and teaches to record a program together with program information (PSI) specific to this program (see page 553, middle column).

*Auxiliary requests I and II*

The additional features in claim 1 according to these requests are known from D3 (see page 553, middle column) and thus cannot contribute to the presence of an inventive step.

**Reasons for the Decision**

1. The appeal is admissible.

*Admissibility of document D3*

2. The appellant argued that D3, filed by the respondent with the reply to the statement of grounds of appeal, should not be admitted into the proceedings.
3. D3 is a magazine article, published before the priority date of the patent, describing how digital audiovisual information is divided into data packets, time-multiplexed and transmitted according to the MPEG-2 standard.
4. The MPEG-2 standard is referred to throughout the description of the patent specification, as well as in the appealed decision and in the statement of grounds of appeal. The main features of the MPEG-2 standard were apparently regarded by both parties and the opposition division as so well-known that no document describing them needed to be cited as evidence in opposition proceedings. However, with the statement of grounds of appeal the appellant filed amended claims which introduced new features warranting a closer look at the technical details of the MPEG-2 standard. Under these circumstances, the respondent's case made by referring to D3 in the written reply to the statement of grounds of appeal met the requirements for being taken into account by the board under Article 12(4) RPBA (OJ EPO 2007, 536) because the respondent's case made by referring to the technical content of D3, which essentially reflects a relevant part of the skilled person's common general knowledge of the MPEG-2 standard, also relates to the case under appeal and meets the requirements in Article 12(2) RPBA.

5. Accordingly, the board exercised its discretion under Article 12(4) RPBA (see OJ EPO 2007, 536) and admitted D3 into the appeal proceedings.

*Inventive step (Article 100(a) EPC 1973)*

*Main request*

6. D3 describes how digital audiovisual information is divided into data packets, time-multiplexed and transmitted according to the MPEG-2 standard. Where the audiovisual information consists of a plurality of digital television programs, the following operations illustrated in figure 8 of D3 are performed on the transmitter side:

each television program is formed of several Packetized Elementary Streams (PES) comprising at least one video stream, one or more audio streams and possibly at least one data stream containing alphanumeric characters such as teletext (see page 545, middle column);

for each television program the video, audio and data streams and so-called Program Specific Information (PSI, see section 2.3.2 on pages 466 and 468), which includes program information regarding the plurality of programs ("Übertragung von programmbegleitender Information"), are multiplexed into one MPEG-2 transport stream (see figure 8) formed of packets of constant length, each comprising data packet type identification information (see PID on page 466, left and middle columns); and

a plurality of transport streams corresponding to a plurality of television programs are then multiplexed

to form a single MPEG-2 transport stream for transmission over a transmission channel (see figure 8).

On the receiver side, D3 discusses the features which a future digital receiver apparatus should have for receiving, demultiplexing and decoding the above transmitted signal (see page 553, section 6 and figure 14). D3 indicates that the receiver apparatus should include:

a receiver for receiving the multiplexed plurality of programs as packets identified by data packet type identification information (this part is called "analoges Frontend" in figure 14 and adapted for receiving packets via different transmission channels); and

a selector ("Demultiplexer" in figure 14; see also page 553, middle column, lines 3 to 10) for selecting packets of a desired program from the packets received by the receiver.

Hence D3 discloses a receiver apparatus comprising a receiver and a selector as defined in claim 1.

The apparatus of claim 1 thus differs from the apparatus of D3 by "a former (290) which forms packets of program information which specifies identification information of the selected packets regarding the desired program from the packet including program information regarding said plurality of programs" and "output means (203) which output said selected packets of the desired program and formed packets of program information regarding the desired program".

Understood in a broad sense, the expressions "former" and "which forms packets" in claim 1 relate to the necessity that changed program information packets have to be formed when packets of a desired program are selected from a plurality of programs and output in a new stream of packets (see figure 8 and paragraphs [0087] to [0091] of the patent specification). Even if these expressions are construed in a narrower manner (i.e. more favourable to the appellant when assessing inventive step) as implying a change in the payload of the packets as opposed to merely a reconfiguration of the packets or a change limited to the headers of the packets, the board comes to the conclusion that the subject-matter of claim 1 does not involve an inventive step.

Indeed, D3 contemplates that the demultiplexor of the future digital receiver apparatus ("Demultiplexer" in figure 14) could also output a program to a video recorder via a MPEG-2 interface (see page 553, middle column, lines 10 to 14). D3 further states that in order to do so the demultiplexor should configure all the packets of the desired data stream, including the Program Specific Information (PSI), into a new data stream (see page 553, middle column, lines 15 to 21). If all the video, audio and data (e.g. teletext) packets of the desired program are recorded without any change, it would be obvious for the skilled person to consider not recording all the packets of a program unchanged. For instance, if a program contained several audio streams corresponding to different languages, it would be obvious to record only the audio stream in the language selected by the user. Another obvious example would be not to record certain teletext information if

this information is not related to the recorded program. Any such change would result in the demultiplexor having to form packets comprising different Program Specific Information (PSI), i.e. both a different header and payload for at least some of the packets. A receiver apparatus put into practice in accordance with the MPEG-2 standard and the considerations about a suitably adapted demultiplexor disclosed in D3 would then have all the features of the "former" and "output means" of claim 1.

For the above reasons, the skilled person would have arrived at the receiver apparatus of claim 1 without having performed an inventive step.

7. The appellant's arguments

The appellant argued that a digital receiver designed according to the teaching of D3 (or commonly known features of the MPEG-2 standard) would receive a desired program as a transport stream and would have to convert it to a program stream before recording it. As a consequence, the recorded program stream would not include program information because a program stream does not comprise Program Specific Information (PSI).

The board is not convinced by this argument because D3 clearly suggests that the recorded program should include Program Specific Information (PSI) and that a transport stream may be received from a video recorder via the MPEG-2 interface (see page 553, lines 15 to 25).

8. Since the subject-matter of claim 1 does not involve an inventive step, the main request is not allowable.

*Auxiliary request I*

9. Claim 1 according to this request differs from claim 1 according to the main request only by the addition of the phrase "*to a recorder which records the packets*" at the end of the claim. Since the receiving apparatus suggested in D3 also includes a recorder which records the packets, the same conclusion as for claim 1 according to the main request must be reached.

Hence auxiliary request I is not allowable.

*Auxiliary request II*

Claim 1 according to this request adds with respect to claim 1 according to auxiliary request I that the packet former "*omits program information of other programs which is transmitted in the same transmission channel as the desired program*".

This additional feature also derives in an obvious manner from D3 because, when a desired program is recorded, the Program Specific Information (PSI) of that program only is also recorded in an obvious realisation of the disclosure made in D3. As set out in point 6 above, the Program Specific Information of other programs transmitted in the same transmission channel which is of no relevance to the recorded program may obviously be omitted. It should be noted in this context that, independently of the intended usage (display or output for recording), the selection of a desired program from the multiplexed stream of data packets received necessarily involves the selection of



video, audio and data packets which make up a corresponding PES (as an inverse operation of forming a PES at the transmitter side; see point 6 above).

Hence the subject-matter of claim 1 according to auxiliary request II does not involve an inventive step. As a result, this auxiliary request is not allowable.

## **Order**

### **For these reasons it is decided that:**

The appeal is dismissed.

The Registrar:

The Chairman:

L. Fernández Gómez

F. Edlinger