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D E C I S I O N
of 29 October 2004

Case Number: T 0449/01 - 3.5.1

Application Number: 97106172.6

Publication Number: 0793383

IPC: H04N 5/92, H04N 7/26

Language of the proceedings: EN

Title of invention:
Information transmission system with record/reproducing device

Applicant:
CANON KABUSHIKI KAISHA

Opponent:
-

Headword:
Information transmission/CANON

Relevant legal provisions:
EPC Art. 56

Keyword:
Inventive step - main request (no)"
"Document forming basis of decision no longer closest prior art - auxiliary request remitted to first instance"

Decisions cited:
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Catchword:
-

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Case Number: T 0449/01 - 3.5.1

D E C I S I O N
of the Technical Board of Appeal 3.5.1
of 29 October 2004

Appellant: CANON KABUSHIKI KAISHA
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Decision under appeal: **Decision of the Examining Division of the European Patent Office posted 11 December 2000 refusing European application No. 97106172.6 pursuant to Article 97(1) EPC.**

Composition of the Board:

Chairman: S. V. Steinbrener
Members: W. E. Chandler
G. E. Weiss

Summary of Facts and Submissions

I. This appeal is against the decision of the examining division to refuse the application on the ground that the subject-matter of claims 1 to 12 did not involve an inventive step (Article 56 EPC) having regard to the following documents:

D1: US-A-4 748 511

D2: IBA Technical Review, No. 16, March 1982, London, GB, pages 26-42, M.S. Tooms: "Systems Engineering Considerations in the All Digital Television Production and Transmission Centre".

II. The appellant (applicant) lodged an appeal against the decision and paid the prescribed fee. The appellant requested that the decision under appeal be set aside and a patent granted, on the basis of a main request, comprising the refused claims, or on the basis of an auxiliary request filed with the grounds of appeal.

III. In a reply to the communication accompanying the summons to oral proceedings, the appellant commented on the issues raised by the Board, and filed a second and third auxiliary request.

IV. At the oral proceedings, the appellant requested that the decision under appeal be set aside and a patent granted, on the basis of a main request, comprising the refused claims, or on the basis of claims 1 to 10 of an auxiliary request filed during the oral proceedings. At the end of the oral proceedings, the Board announced its decision.

V. Claim 1 of the main request reads as follows:

"An information transmitting apparatus, comprising:
input means (1) for inputting information data;
encoding means (103) for compression-encoding the information data to generate compression-encoded data;
record/reproducing means (10) for recording the compression-encoded data on a recording medium and reproducing therefrom the compression-encoded data; and
transmission means (56) for transmitting the compression-encoded data to an external transmission channel (30);
characterized in that
said record/reproducing means (10) is connected to said encoding means and
said transmission means selectively transmits the compression-encoded data reproduced by said record/reproducing means and the compression-encoded data generated by said encoding means to the external transmission channel without expanding the compression-encoded data so that the compression-encoded data is expanded by external decoder (104)."

Claim 1 of the auxiliary request reads as follows:

"A digital video recording apparatus for recording and transmitting information comprising video data, said device (sic) comprising:
input means (1) for inputting information data comprising video data;
encoding means (103) for compression-encoding the information data to generate compression-encoded data;

record/reproducing means (10) for recording the compression-encoded data on a recording medium and reproducing therefrom the compression-encoded data; and transmission means (56) for transmitting the compression-encoded data to an external transmission channel (30);
wherein
said record/reproducing means (10) is fixedly connected to said encoding means and
said transmission means (56) comprises a switch arranged between the record/reproducing means (10) and the external transmission channel (30) operable so as to selectively transmit the compression-encoded data reproduced by said record/reproducing means or, in real time, bypassing the record/reproducing means (10), the compression-encoded data generated by said encoding means to the external transmission channel without expanding the compression-encoded data so that the compression-encoded data is expanded by external decoder (104)."

VI. The appellant argued essentially as follows:

A broad claim was allowable because none of the prior art suggested selectively transmitting compressed data from either a record/reproducing means, or an encoding means.
Claim 1 of the main request differed from D1 in that data from the compressor was transmitted without being stored on the hard disk. This solved the problem of transmitting the data in real time as mentioned in the description of the application at column 5, lines 4 to 6 and column 8, lines 19 to 22. D1 did not provide any incentive to consider this problem.

Firstly, there was no need, let alone hint, to speed up the system of D1. Secondly, the system of D1 stored the images with additional information, such as patient data. The skilled person would not have considered sending the images directly without this data.
The skilled person would also not have considered a direct path from the compressor to the modem because the compressed data was handled in a different way from the data to be transmitted. The compressed data passed under control of the DMA controller from the Huffman buffer via the SMD controller to the hard disk drive. The data to be transmitted passed under control of the CPU from the hard disk drive via the SMD controller to the system RAM 21, from where the modem retrieved it. It was thus not possible to store and transmit the compressed data simultaneously, and a direct transmission would have required substantial changes to the system architecture.

The above arguments applied all the more to claim 1 of the auxiliary request, which was clearly distinguished from the bus-based system of D1.

The television production and transmission centre described in Figure 8 of D2 did not use or suggest the use of compression. Even if the skilled person were to have considered compression, it would not have been at the input to the system. This was because there was no advantage in the whole system working with compressed data, and because the output of the system had to be a conventional transmitted television signal, which was not in compressed form.

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 concerns the general problem of avoiding repeated compression and expansion when recording and transmitting a digital video signal. This is solved by compressing the video signal only once and transmitting it either directly, or after recording and reproduction.

Main request

3. There is no disagreement, and the Board sees no reason either to deviate from the examining division's findings, that D1 is the closest prior art for the main request. D1 discloses, at column 1, lines 6 to 14 and in Figure 1, a computerised tele-radiology system that scans X-ray images and transmits the scanned images to various locations. A scanned image can be stored, either in expanded or compressed form, for later call up. Local and remote monitors can be connected to the system to provide image displays. Stored images can also be directed via a modem over transmission lines hundreds or even thousands of miles away.

4. It is common ground that claim 1 of the main request differs from D1 in that the transmission means 56 ("LINE" in Figure 1 of D1) "selectively" transmits, i.e. selects for transmission from one of, the compressed data from the record/reproducing means 10 (hard disk drive 16 in Figure 1 of D1) and the encoding means 103 (compressor/expander 12 in Figure 1 of D1), whereas in

D1 no direct transmission from the compressor/expander is provided.

5. The appellant and the examining division both formulated the problem in terms of the recipient of the transmitted data, namely providing the image data in real time or providing instantaneous remote access, respectively. The examining division then went on to say that, although there was no demand for the system of D1 to transmit images instantaneously, the skilled person would have considered providing this capability and directly transmitting the data to "streamline" the system.

6. In the Board's judgement, these problems are slightly too specific given the broadness of the claim and the disclosure of D1. In fact, D1 already discloses transmitting the compressed data, albeit by going through the sequence of steps of using the "X" or "SCAN" key to scan an image (column 22, lines 48 to 60), the "S" key to store the image (column 23, lines 50 to 51), and the "TRANSMIT" key to select images for transmission (column 26, lines 22 to 24). Thus, regardless of whether the data is transmitted in real time or not, the Board finds that the fundamental effect, and thus the problem solved by the feature, of "selectively" transmitting the compressed data is to enable rapid and easy transmission of the images. Thus, the Board in some sense agrees with the examining division and judges that the objective technical problem is to "streamline" the system, albeit from the operator's point of view.

7. The Board further judges that it is a constant endeavour to simplify or "streamline" user interfaces for the operator. It would thus be a matter of obvious design to consider transmitting the compressed data using fewer key presses, and solve this problem by combining the separate functions mentioned above into a single "transmit" function, for example.

8. Furthermore, in the Board's judgement the broadest interpretation of the distinguishing feature of claim 1, namely "selectively" transmitting the compressed data from the encoding means, covers the act of merely "selecting" such a new transmit function as opposed to the existing function for transmitting a recorded image. Thus, it is not relevant if the data is stored or transmitted in real time. In other words, the claimed feature does not exclude the possibility, disclosed in D1, of a temporary storage on the hard disk.

9. Nevertheless, contrary to the appellant's view, the Board judges that the skilled person would also consider modifying the circuit design to implement a direct transfer of data from the compressor to the modem. D1 already hints at the flexibility of the system when it mentions, in the abstract, the possibility of passing "selectively" data between the compressor/expander and "various input/output devices". The Board judges that the skilled person would consider exploiting this flexibility as an obvious possibility to solve the problem of enabling rapid and easy transmission the images, if this were required for some particular application.

In this connection, the Board is of the opinion that the techniques of transferring data under direct control of the CPU or by using a DMA controller are well known alternatives that the skilled person would choose depending on design considerations such as speed or circuit complexity. Thus, even if the CPU does control data transfers between some of the components of D1, the Board judges that the skilled person would be able to modify the operation of the CPU and/or DMA transfers in the course of routine design to achieve the required direct transmission of compressed data.

10. Finally, the applicant argues that the skilled person would not consider sending the images directly without the additional data, such as patient data. However, even if this is true, the Board judges that this is not incompatible with, and therefore does not affect the argument concerning, modifying D1 to "selectively" transmit the compressed data, either with or without storage; the data could simply be entered in advance of selecting the transmit function, for example.

11. Accordingly, the Board judges that claim 1 of the main request does not involve an inventive step (Article 56 EPC).

Auxiliary request

12. Claim 1 of the auxiliary request essentially adds that the record/reproducing means 10 is **fixedly** connected to the encoding means, and that a **switch** selects the output from the record/reproducing means or the compression encoding means, thereby eliminating the possibility of temporary storage.

13. In the Board's view, these amendments effectively restrict the claim to the circuit embodiment shown in Figure 4 of the application, and circumvent the above arguments based on the bus-based system of D1. In fact, the Board judges that D1 is no longer the closest prior art because no realistic technical problem can be formulated on the features distinguishing claim 1 from it.

14. The Board also considers that claim 1 involves an inventive step starting from the prior art of D2. D2 may be closer prior art than D1 since it relates to switching a direct signal or a recorded and reproduced signal. However, the Board agrees with the appellant that it would not make sense to add a compression stage to the input of this particular system because the output would need to be decompressed to provide the required transmitted television signal. It would be more logical to compress and decompress around the VTR system, which is the only component in D2 that would benefit from it.

15. Accordingly, the Board holds that the subject-matter now claimed in the auxiliary request has changed to such an extent that it needs further examination in the light of possibly more relevant prior art. Under these circumstances, and given that, in any case, the description needs adapting, in particular to remove the embodiments not covered by the claims, the Board judges that this work is more appropriately carried out by the first instance.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the first instance for further prosecution.

The Registrar: The Chairman:

M. Kiehl S. Steinbrener