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D E C I S I O N
of 27 July 1999

Case Number: T 0203/98 - 3.5.1

Application Number: 92119481.7

Publication Number: 0543294

IPC: H04N 7/167

Language of the proceedings: EN

Title of invention:

Method and apparatus for scrambling and descrambling of video signals with edge fill

Applicant:

Macrovision Corporation

Opponent:

-

Headword:

-

Relevant legal provisions:

EPC Art. 84
EPC R. 27, 29

Keyword:

"Claims - clarity (yes), essential features (yes)"

Decisions cited:

T 0032/82, T 1055/92

Catchword:

-



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Boards of Appeal

Chambres de recours

Case Number: T 0203/98 - 3.5.1

D E C I S I O N
of the Technical Board of Appeal 3.5.1
of 27 July 1999

Appellant: Macrovision Corporation
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Decision under appeal: Decision of the Examining Division of the
European Patent Office posted 18 September 1997
refusing European patent application
No. 92 119 481.7 pursuant to Article 97(1) EPC.

Composition of the Board:

Chairman: P. K. J. van den Berg
Members: A. S. Clelland
V. Di Cerbo

Summary of Facts and Submissions

- I. This is an appeal against the decision of the examining division to refuse application 92 119 481.7 on the ground that various of the independent claims lacked clarity, Article 84 EPC.
- II. The appellant (applicant) lodged an appeal against this decision and together with the statement of grounds submitted a revised set of claims to replace those refused by the examining division. It was argued that these revised claims met all the objections in the decision.
- III. The appellant has requested that the examining division's decision be set aside and the case remitted to the first instance for continued examination on the basis of the following documents:

Claims: 1 to 13 as filed on 28 January 1998

Description: Pages 2 to 7, 15 to 31, 33, 36 to 40, 44 to 47 as originally filed; pages 1, 1a, 8, 10 to 12, 32, 35, 42, 43, 48 as filed on 1 March 1996; and pages 13, 34 and 41 as filed on 28 January 1998 (no pages 9 or 14).

Drawings: Figures 1 to 3, 5, 6, 7b, 10 to 16a and 17 as originally filed; Figures 4, 7a, 8, 9, and 16b as filed on 28 January 1998.

IV. The revised set of claims includes six independent claims directed to a colour video signal encoder for two-channel digitally processing a colour video signal (claim 1), a descrambler for descrambling a video signal having active video portions therein randomly time-shifted line-by-line with respect to a sub-carrier signal (claim 5), a method for two-channel digitally encoding a colour video signal (claim 7) a method for descrambling a video signal (claim 9) and a system and a method for vertically scrambling video signals (claims 11 and 13 respectively). Apparatus claims 1 and 5 read as follows:

"1. A colour video signal encoder for two-channel digitally processing a colour video signal, comprising:

an analogue-to-digital converter (74) for converting an input video signal to digital data;

a buffer (76) for holding the digital data of at least one video line for the period of one video line and outputting said digital data;

an adder (78) for summing up an input and an output of the buffer (76), thereby arriving at a digital luminance signal;

a subtractor (80) for subtracting the input from the output of the buffer (76), thereby arriving at a digitised chrominance signal;

a luminance buffer (82) for holding the digital data of one line of the luminance signal;

a chrominance buffer (84) for holding the digital data of one line of the chrominance signal;

means (68,70) for controlling the input of the digital data into the luminance and chrominance buffers (82,84) at a constant clock rate derived from the input video signal;

control means (88,90,92,94) for controlling the output of the digital data from the luminance and chrominance buffers (82,84) at a clock rate which is wobbling in time, thereby arriving at luminance and chrominance signals which are wobbling time-wise in the digital domain;

a first digital-to-analogue converter (98) for converting the one line of the time-wise wobbling chrominance signal to an analogue chrominance signal;

a second digital-to-analogue converter (104) for converting the one line of the time-wise wobbling luminance signal to an analogue luminance signal;

a vertical blanking interval digital-to-analogue converter (106) supplied by the output of said first mentioned buffer (76) and connected with its output to a vertical and horizontal blanking interval regenerator (108) for producing stable and not wobbling vertical and horizontal blanking interval signals;

a heterodyne mixer (100) provided with the analogue chrominance signal and with a local signal derived from the control means (88,90,92) and wobbling in frequency corresponding with the time-wise wobbling of the

chrominance signal in the digital domain, thereby arriving at an analogue chrominance signal having a stabilised frequency, and

an adder (102) for combining the stabilised analogue chrominance signal with the wobbling analogue luminance signal and said stable vertical and horizontal blanking interval signals, thereby providing a scrambled composite analogue video signal."

"5. A descrambler for descrambling a video signal having active video portions therein randomly time-shifted line-by-line with respect to a subcarrier signal comprised in the video signal and further including data indicating the actual amount of time-shift, said descrambler comprising;

an extractor (522) for extracting from the video signal said time shift indication data;

means (536) for generating a digitally synthesised waveform from the extracted data;

means (526) for converting the digitally synthesised waveform into a blanking interval signal for the respective line of the video signal, and

means (548) for switching the blanking interval signals into the video signal, thereby arriving at a video signal in which said time-shift is compensated."

V. In the statement of grounds of appeal the appellant argues that the objections raised by the examining division are met by the revised claims and asks that

the examining division grant interlocutory revision.

Reasons for the Decision

1. This application is concerned with a problem which arises in conditional-access television systems in which encryption is effected by time-shifting of information contained in individual lines of the image. The application acknowledges as known a system in which the period between the start of horizontal sync and active video is staggered on a line-by-line basis. This time-shift varies in a regular manner and is referred to in the application as a "wobble". Decryption is effected by establishing a fixed relationship between the start of horizontal sync and that of active video but varying the start of the sync pulses. A disadvantage of this system is said to be that the Y, I and Q signals have to be processed separately (an NTSC system is described); also, because successive video lines are displaced from the usual position in a line it is theoretically possible for an unauthorised user to determine the amount of time displacement or "wobble" and thus decode the image. Further disadvantages are said to be that the image is not wholly concealed and may be partially viewable, and that the "wobble" causes problems with NTSC comb filter decoders. These problems are said to be overcome in the preferred embodiment in that an "edge fill" video signal is provided to disguise the start of the actual video signal and in that the "wobble" is provided for a luminance and a composite chrominance component of the video, the chrominance component being stabilized in frequency before transmission.

It is observed that the feature of "edge fill" is not claimed in the independent claims now presented.

2. Although the examining division's primary objection is a lack of clarity under Article 84 EPC, the decision under appeal makes various references to the omission of "essential features" from the claims. For example, in connection with claim 1 the decision states at page 3, third paragraph that "in order to remedy the above obscurities, present claim 1 has omitted the essential features disclosed in the description that...". The objection is therefore not one of lack of clarity per se; it is apparently based on the Guidelines for Examination in the European Patent Office, Part C, Chapter III, paragraph 4.3, "(ii) Inconsistency regarding apparently essential features". This passage states:

"For example, it may appear ... that a certain described technical feature not mentioned in an independent claim is essential to the performance of the invention, or in other words is necessary for the solution of the problem to which the invention relates. In such a case the claim is unclear, because Article 84 when read in conjunction with Rules 29(1) and (3), has to be interpreted as meaning not only that an independent claim must be comprehensible from a technical point of view but also that it must define clearly the object of the invention, that is to say indicate all the essential features thereof (see T 32/82, OJ 8/1984, 354)."

3. However, as noted by this Board in its decision T 1055/92 (OJ EPO 1995, 214), at point 4 of the

Reasons: "... the primary function of a claim is to set out the scope of protection sought for an invention. This implies that it is not always necessary for a claim to identify technical features or steps in detail ... the Board considers that it is sufficient if the application as a whole (the claims together with the description and drawings) describes the necessary characteristics of an invention ... in a degree of detail such that a person skilled in the art can perform the invention. This requirement, however, relates to Article 83 EPC and is not relevant to Article 84 EPC."

The Decision goes on to state at point 5: "During proceedings before an examining division, it often happens that pertinent documents are cited with the result that the core of a claimed invention has to be changed and also the corresponding problem to be solved appears in a modified form. In such cases often new essential features must be added to the claim in order to identify clearly the solution and to distinguish the invention from the prior art."

4. In decision T 1055/92 the examining division had not mentioned any documents in the light of which "essential features" could be identified. The Board notes that this is also true of the present case. In the absence of an analysis by the examining division of pertinent prior art there is no basis for the assertion that "essential features" of the invention are missing.
5. In the Board's view the present claim 1 defines the matter for which protection is sought, is clear and is concise. It is not inconsistent with the description.

- It is noted that the claim has been revised to meet specific objections to the wording raised in the decision. The claim is accordingly considered to meet the requirements of Article 84 EPC.
6. Similarly, the objections raised against claim 5 have in the main been met by amendment of the claim.
 7. Referring to claim 6, it is noted that the claim has been amended to use the wording suggested by the examining division.
 8. As regards claim 7, no objections as such were made to this claim other than that it was "closely related to present claim 1" and reference was made to the statements on claim 1. This does not in fact appear to be wholly correct and in the absence of clear objections the Board can see no reason why claim 7 lacks clarity. The reference in the claim to "time-shifting active video portions...with respect to other portions of the video line" appears in context to be clear.
 9. Claim 9 was objected to for the same reasons as claim 5; since in the Board's view claim 5 is adequately clear, the same conclusion is reached with respect to claim 9.
 10. It is observed that this would have been an appropriate case in which the appeal procedure could have been short-circuited by the application of interlocutory revision in accordance with Article 109 EPC. The specific objections made by the examining division have, with minor exceptions, been directly met by the

appellant, so that substantive examination could have been recommenced. Referring to the Guidelines for Examination in the European Patent Office (Part E, Chapter XI, 7, final paragraph), interlocutory revision is also appropriate when the applicant presents new information or evidence or files amendments to the application, which overcome the objections of the decision under appeal.

11. The Board considers it necessary, in order to preserve two instances, to remit the application to the examining division for further prosecution, and in particular for examination as to novelty and inventive step to be carried out on the independent claims.

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 with the order that further prosecution is to be based on claims 1 to 13 as filed on 28 January 1998.

The Registrar:

The Chairman:

S. Fabiani

P. K. J. van den Berg