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**Datasheet for the decision
of 15 January 2013**

Case Number: T 2302/08 - 3.5.04

Application Number: 02701921.5

Publication Number: 1476952

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Language of the proceedings: EN

Title of invention:

OPTIMIZED DATA TRANSMISSION SYSTEM AND METHOD

Applicant:

Vedanti Systems Limited

Headword:

Relevant legal provisions:

EPC 1973 Art. 84

Keyword:

Claims - clarity (no)

Decisions cited:

G 0002/88, G 0001/04, T 0630/93

Catchword:



**Beschwerdekammern
Boards of Appeal
Chambres de recours**

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Case Number: T 2302/08 - 3.5.04

D E C I S I O N
of the Technical Board of Appeal 3.5.04
of 15 January 2013

Appellant: Vedanti Systems Limited
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Decision under appeal: **Decision of the Examining Division of the
European Patent Office posted 11 June 2008
refusing European patent application No.
02701921.5 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman: F. Edlinger
Members: C. Kunzelmann
T. Karamanli

Summary of Facts and Submissions

- I. The appeal is against the decision of the examining division to refuse European patent application No. 02 701 921.5 under Article 97(2) of the European Patent Convention (EPC).
- II. The application was refused *inter alia* on the grounds that the subject-matter of claim 1 according to the main and the first auxiliary requests then on file lacked novelty, and that the subject-matter of claim 1 according to the second auxiliary request then on file lacked an inventive step. Moreover, at least claim 1 according to the first auxiliary request was found not to be clear (Article 84 EPC). Moreover, the examining division declined to admit a set of claims under Rule 137(3) EPC which were identical to the claims of the application as published.
- III. The applicant appealed and requested that a patent be granted on the basis of the claims as originally filed. The appellant filed new sets of claims with the statement of grounds of appeal, with a letter dated 31 August 2010, and with a letter dated 15 November 2011.
- IV. The board issued a communication pursuant to Article 15(1) of the Rules of Procedure of the Boards of Appeal (RPBA), annexed to a summons to oral proceedings. The board expressed its provisional opinion that the requirement of clarity (Article 84 EPC 1973) was not met for a number of reasons.
- V. Oral proceedings were held before the board on 15 January 2013. In the oral proceedings the appellant withdrew the third auxiliary request filed with the

letter dated 15 November 2011 and filed a new third auxiliary request and a fourth auxiliary request. The appellant also submitted extracts from patent specifications as evidence that the expressions "region" and "pixel" had a clear meaning for a person skilled in the art at the date of priority of the application.

The appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of the claims as originally filed (main request), or of the claims according to the first or second auxiliary requests, both filed with the letter of 15 November 2011, or the third or fourth auxiliary requests, both filed at the oral proceedings of 15 January 2013. At the end of the oral proceedings, the chairman announced the board's decision.

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

"A system for transmitting data comprising:
a frame analysis system receiving frame data and generating region data; and
a pixel selection system receiving the region data and generating one set of pixel data for each region."

VII. Claim 1 of the first auxiliary request reads as follows:

"A system for transmitting data transmission [*sic*] comprising:
an analysis system receiving frame data and generating region data comprised of high detail and/or low detail;
a pixel selection system receiving the region data and generating one set of pixel data for each region forming a new set of data for transmission;

a data receiving system receiving the region data and the pixel data for each region and generating a display;

wherein the data receiving system comprises a pixel data system receiving matrix definition data and pixel data and generating pixel location data;

wherein the data receiving system comprises a display generation system receiving pixel location data and generating display data that includes the pixel data placed according to the location data."

VIII. Claim 1 of the second auxiliary request reads as follows:

"A system for transmitting data comprising:
a frame analysis system receiving frame data including regions of high detail and/or low detail and generating region data; and
a pixel selection system receiving the region data and generating one set of pixel data for each region based on the level of detail required."

IX. Claim 1 of the third auxiliary request reads as follows:

"A system for transmitting data comprising:
a frame analysis system receiving frame data and generating region data;
a pixel selection system receiving the region data and generating one set of pixel data for each region; and
means for transmitting the region data and the set of pixel data for each region."

X. Claim 1 of the fourth auxiliary request reads as follows:

"A system for transmitting data comprising:
a frame analysis system receiving frame data including regions of high detail and/or low detail and generating region data;
a pixel selection system receiving the region data and generating one set of pixel data for each region based on the level of detail required; and
means for transmitting the region data and the set of pixel data for each region."

- XI. The reasons for the decision under appeal, as far as they are relevant for the present decision, may be summarised as follows:

The claims used vague and imprecise terms which had no definite meaning in the art and were not defined in the claims. Examples were "region identification data", "region size data" "matrix size data", "matrix identification data" and "pixel variation data". Moreover, the fact that some data values were generated **based on** some other value did not imply a well-defined technical feature which defined the algorithm for generating the data values.

- XII. The appellant's arguments may be summarised as follows:

The invention was fundamentally different from transmission systems known at the priority date, in that the data were not compressed. Instead only the data that were necessary were transmitted. This reduced the amount of data to be transmitted to such an extent that compression of the transmitted data (and decompression at the receiving end) were not required. The invention was applicable to transmission of video data, audio data, graphical data, text data or other suitable data and was used, for instance, in H.264,

perceptual coding, or smartphones. Thus it was appropriate to define the invention in broad terms in the claims. The features needed to define the data transmission system were different from the features needed to define the method for transmitting data. The decision under appeal was incorrect because it had not taken into account that a person skilled in the art was familiar with the common general knowledge. On the basis of this knowledge, the expressions used in the claims had a clear meaning. For instance, the expressions "region" or "region data" and "pixel" or "pixel data" were also present in patent specifications issued in respect of applications filed before the priority date of the present application. In particular, a region was a part of a frame. Evidence for this were extracts of the patent specifications US 6 940 997 B1, US 6 654 067 B1, US 5 850 295 A and EP 1 008 107 B1, filed during the oral proceedings before the board. In the present application the region was the result of a segmentation process. The function of a claim was to set out the scope of protection sought for an invention. As set out in T 630/93, point 3.1 of the Reasons, it was not necessary for a claim to identify technical features or steps in every detail, in particular not in the present case where the disclosed invention was fundamentally different from the disclosure in the prior-art documents found in the search and the novelty objections raised in examination were based on an incorrect construction of the claims.

Reasons for the Decision

1. *Main request: clarity of claim 1 (Article 84 EPC 1973)*
- 1.1 Article 84 EPC 1973 reads as follows: "The claims shall define the matter for which protection is sought. They shall be clear and concise and be supported by the description." The first of these three requirements, clarity, is further specified in Rule 29(1) EPC 1973, according to which "The claims shall define the matter for which protection is sought in terms of the technical features of the invention." It is established jurisprudence that the purpose of claims under the EPC is to enable the protection conferred by the patent or patent application to be determined (see decision G 2/88 of the Enlarged Board of Appeal, OJ EPO 1990, 93, point 2.5 of the Reasons). This means that "an independent claim within the meaning of Rule 29 EPC [1973] should explicitly specify all of the essential features needed to define the invention, and that the meaning of these features should be clear for the person skilled in the art from the wording of the claim alone" (see opinion G 1/04 of the Enlarged Board of Appeal, OJ EPO 2006, 334, point 6.2 of the Reasons). The invention to which Rule 29(1) EPC 1973 refers is the invention disclosed in the description (see Rule 27(1)(c) EPC 1973).
- 1.2 In the present case the data transmission system disclosed in the description is arranged to solve the problem of decreasing bandwidth requirements for data transmission, but nevertheless transmitting those data which are necessary for the use of the data at the receiving end. The transmission system uses data optimisation to transmit only the data that is

necessary for that use (see paragraphs [0001], [0007], [0022] and [0035]). It comprises a frame analysis system which receives (original) frame data including pixel data, and generates matrix size data based upon the pixel data. Instead of matrices "other suitable data optimization regions can be selected, such as ones that are not based on a matrix structure, but which may be circular, elliptical, amorphous or based on other suitable structures" (see paragraph [0024]). In context, it is clear that the frames are frames of video data. However, the description also specifies that the pixel data can instead be audio data, text data, graphical data or other suitable data (see for instance paragraphs [0006], [0027], [0028] and [0061]). The data transmission system also comprises a pixel selection system which can select, from the regions, pixels for transmission that are needed in order to allow the frames of video data to be viewed by the human eye. The number of pixels to be transmitted can be decided on a region-by-region basis within the frame (see paragraph [0022]). In one case considered in the description regions may be a single pixel (see paragraphs [0052] and [0055]). In this latter case, every pixel is transmitted and no bandwidth reduction is achieved for those regions. In another case considered in the description, if a frame of video data has low detail it may be necessary to provide a data value for one of every twenty-five pixels or fewer (see paragraph [0022]). In such cases the regions may be larger (see paragraphs [0031] to [0033] and [0055]). However, there may also be size constraints for the regions (see, for instance, paragraph [0024]). The system can be used in conjunction with a compression system, a frame elimination system, or with other suitable systems or processes to achieve further savings in bandwidth requirements, provided there is no

unacceptable decrease in the quality of the data at the receiving end (see paragraph [0029]).

1.3 Thus data optimisation (viz. how the regions and pixels are selected such that only the necessary data are transmitted) is an essential feature of the invention. The problem underlying the invention (reduction of the bandwidth required for transmission while at the same time transmitting those data which are necessary for the use at the receiving end) can only be fully achieved if the regions and pixels are selected in an optimised manner. This variability of the data to be transmitted (together with other features) allows data optimisation to be performed within the constraints set by the system. Data optimisation is dependent on the content of the frame and the application. However, it is clear for the person skilled in the art that data optimisation is not uniquely determined. For instance, there may be a subjective element in determining which data are considered to be necessary for the use at the receiving end or in whether lossy or lossless data transmission is desired (see paragraph [0028]).

1.4 Claim 1 does not specify any kind of (means for) data optimisation. Also the variability of the data to be transmitted is not reflected in claim 1. Quite to the contrary, even though claim 1 is directed to a system for transmitting data, it does not identify any data to be transmitted. It specifies frame data which are received and region data and pixel data which are generated, but does not specify which, if any, of these are to be transmitted. Even if, for the sake of argument, it is assumed that the region data and the pixel data are to be transmitted by the system of claim 1, claim 1 does not specify that the region data and/or the pixel data reflect data optimisation. In

particular, claim 1 does not specify a clear relationship between the received frame data and the data which are to be transmitted, nor how regions are generated and pixels selected to achieve optimisation. Thus claim 1 does not specify all the essential features needed to define the invention.

1.5 Moreover, as set out in point 1.2 above, the invention is applicable to transmission of different kinds of data, and therefore data types or formats do not imply clear limitations of the data transmission system. However, claim 1 is formulated with expressions which are usual in the context of a particular kind of data, namely video data ("frame", "region", "pixel"). The technical meaning of these expressions in the context of other kinds of data is not always clear. For instance, the technical meaning of a pixel in the context of audio data or text data is not clear. Also in general the technical meaning of a frame in the context of text data is not clear. Thus the technical meaning of these terms in the context of broad claim 1 is not clear.

1.6 The appellant argued that features essential for the method of the invention were not essential for the system of claim 1. However, claim 1 is drafted with functional features such that the features of the claimed system correspond to method steps of the disclosed invention. Moreover, it is clear from the description that the data transmission system comprises, at the sending end, a frame analysis system and a pixel selection system for carrying out data optimisation (see figure 1 and the corresponding description).

- 1.6.1 The appellant also argued that a broad claim was appropriate in view of the fundamental difference of the invention when compared with data compression usually used at the priority date. In particular, it was not always necessary for a claim to identify technical features or steps in every detail (T 630/93, point 3.1 of the Reasons). However, decision T 630/93 also states that Article 84 EPC 1973 means that a claim must be clear in the sense that it uses language that is clear and avoids giving rise to misinterpretations of its wording (see point 3.2 of the Reasons). Moreover, the board in T 630/93 took the view that the application disclosed a new principle and therefore a claim having a broad scope was justifiable. Thus the situation underlying T 630/93 was different from the present case, in which the appellant has not convinced the board that data optimisation (in the broad sense of transmitting only the data that are necessary for the use) was a new principle. On the contrary, prior-art compression schemes such as MPEG-2 (or, for instance, MP3 for audio data) achieved compression by omitting redundant or unnecessary data (even if the way in which the redundant/unnecessary data are determined may differ from that disclosed in the present application).
- 1.6.2 The appellant also argued that data optimisation (based on segmentation in the case of video data, for instance) was reflected in the features of claim 1 if the claim was properly construed. However, if read in the context of the application, a "region" is a part of a frame having a minimum size of one pixel and the maximum size remaining unspecified (see paragraph [0054]). Thus the application does not give a particular meaning to the term "region". Also the documents submitted in the oral proceedings do not indicate that the term "region" has a specific meaning

in the present application. Instead the present application uses the term in its usual general meaning and gives additional information as to how regions may be determined which allow data optimisation in the particular case of video frames. This additional information is not specified in claim 1, with the exception of the feature that the region data are generated by a frame analysis system. But also the expression "frame analysis system" is used in the application with its usual, general meaning. Additional information as to how the frame is analysed to allow data optimisation is given in the description but not specified in claim 1. Hence, in claim 1 neither the frame analysis system nor its function of generating region data implies a specific data optimisation.

1.6.3 The appellant also argued that a distinction had to be made between the invention and specific described implementations. A specific selection of the regions and pixels (for the purpose of data optimisation) was only essential for a specific implementation. However, in the present case data optimisation in general, without any indication as to how the data are optimised, is a vague concept which does not allow the determination of the scope of the invention for which protection is sought, even if it were considered to be reflected in features of claim 1.

1.7 In view of the above the board finds that claim 1 according to the main request is not clear within the meaning of Article 84 EPC 1973.

2. *First auxiliary request: clarity of claim 1*

2.1 Claim 1 of the first auxiliary request does not specify data optimisation either.

- 2.2 The appellant's argument that optimisation was reflected in the feature "generating region data comprised of high and/or low detail" did not convince the board. First, this feature does not specify that (or how) regions may be determined which allow data optimisation, but instead specifies resulting region data. Even if, for the sake of argument, this feature is understood to specify different types of regions, then the claim wording "and/or" specifies region content in a manner which encompasses all alternatives (only high detail, only low detail, both high and low detail).
- 2.3 The further additional features in claim 1 of the first auxiliary request specify the data to be transmitted and features of the receiving end of the data transmission system but do not specify data optimisation in that they do not specify a clear relationship between the received frame data and the generated set of data for transmission, reflecting how the regions are generated and pixels selected.
3. *Second auxiliary request: clarity of claim 1*
- 3.1 Claim 1 of the second auxiliary request does not specify data optimisation either.
- 3.2 The appellant argued that optimisation was reflected in the feature "receiving frame data including regions of high detail and/or low detail and generating region data". However, this feature merely specifies region content in a manner which encompasses all alternatives (only high detail, only low detail, both high and low detail).

3.3 The appellant also argued that data optimisation was reflected in the feature "a pixel selection system receiving the region data and generating one set of pixel data for each region based on the level of detail required". Again, this feature does not specify how (different) regions, based on the level of detail, are generated from the received frame data and what the required level of detail is. Even if, for the sake of argument, this feature is understood to mean that the receiving end requires a level of detail (for instance a particular resolution), and that the sending end generates and transmits the region data and the set of pixel data for each region based on these requirements, this feature does not specify that the data are optimised to meet the requirements.

4. *Third auxiliary request: clarity of claim 1*

4.1 Claim 1 of the third auxiliary request does not specify data optimisation either.

4.2 Instead, when compared with claim 1 of the main request, claim 1 of the third auxiliary request only comprises an additional feature "means for transmitting the region data and the set of pixel data for each region". Thus the third auxiliary request is a reaction to the objection that claim 1 of the main request did not identify any data to be transmitted, but claim 1 does not overcome the objections set out in points 1.4 and 1.5 above.

5. *Fourth auxiliary request: clarity of claim 1*

5.1 Claim 1 of the fourth auxiliary request does not specify data optimisation either.

- 5.2 The appellant's argument that data optimisation was reflected in the features "a frame analysis system receiving frame data including regions of high detail and/or low detail and generating region data" and "a pixel selection system receiving the region data and generating one set of pixel data for each region based on the level of detail required" did not convince the board, for the reasons given in points 3.2 and 3.3 above.

6. Hence, claim 1 of none of the first to fourth auxiliary requests clearly specifies data optimisation within the meaning of the context of the main request. Thus these claims do not comply with Article 84 EPC 1973 either.

7. Thus the decision under appeal cannot be set aside and the appeal must be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:



K. Boelicke

F. Edlinger

Decision electronically authenticated