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D E C I S I O N
of 25 January 2005

Case Number: T 0541/01 - 3.5.1

Application Number: 91916179.4

Publication Number: 0500883

IPC: G06F 17/30

Language of the proceedings: EN

Title of invention:
Image database incorporating low resolution index image data

Patentee:
EASTMAN KODAK COMPANY

Opponent:
Spandern, Uwe

Headword:
Image index file/EASTMAN KODAK

Relevant legal provisions:
EPC Art. 52(1), 56
EPC R. 27(1)(b)(c)

Keyword:
"Inventive step (no)"

Decisions cited:
-

Catchword:
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 0541/01 - 3.5.1

D E C I S I O N
of the Technical Board of Appeal 3.5.1
of 25 January 2005

Appellant: (Proprietor of the patent)
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Decision under appeal: **Decision of the Opposition Division of the European Patent Office posted 14 March 2001 revoking European patent No. 0500883 pursuant to Article 102(1) EPC.**

Composition of the Board:

Chairman: S. V. Steinbrener
Members: R. R. K. Zimmermann
G. E. Weiss

Summary of Facts and Submissions

I. European patent number 0 500 883 granted on European patent application number 91 916 179.4 relates to an image database incorporating low resolution index image data. The patent, which claims the 14 September 1990 as priority date, was granted to the appellant with effect from 23 April 1997.

II. On 23 January 1998, the respondent filed an opposition against the patent in its entirety on the grounds of lack of novelty and inventive step, citing, among others, the US patents US-A-4 682 869 (document D1) published in 1987 and US-A-4 931 984 (document D2) published in June 1990.

III. The opposition division revoked the patent inter alia for lack of inventive step. The decision in writing was posted on 14 March 2001.

IV. The appellant lodged an appeal on 11 May 2001, paying the appeal fee by debit order the same day. The filing date for the grounds of appeal was 16 July 2001.

In oral proceedings taken place on 25 January 2005, the appellant filed an amended set of claims including three independent claims. Claim 1 reads as follows:

"1. Method of storing a plurality of digitized original images having high-resolution image-representative data, comprising, for each original image, the step of generating an image identifier and a multi-resolution image-representative data file containing at least low-

resolution image-representative data corresponding to said original image, and the step of
storing each multi-resolution image-representative data file corresponding to an original image at first respective storage locations of a digital data storage medium;
the method being characterized by:
storing, in a second storage location of said digital data storage medium, which second storage location is separate from said first respective storage locations, a separate image index file which contains a duplicate copy of each of the low-resolution image-representative data corresponding to said original image and an identifier which points to the associated multi-resolution image-representative data file,
further characterised in that
each multi-resolution image-representative data file further comprises modifier data associated with the low-resolution image-representative data corresponding to each original image, which modifier data, when combined with the low-resolution image-representative data, produces high-resolution image-representative data corresponding to the original image."

V. According to the appellant, the invention resided in an inventive combination of an index file and a multi-resolution image-representative data file stored at separate storage locations of the storage medium. By means of the file structure an efficient, fast and convenient search and retrieval of images from the image data file was achieved. The multi-resolution format of the image data file was particularly suited to be used in combination with the index file since the low-resolution image data could, in a fast and

efficient manner, be duplicated and used to produce the image index file. This was also a surprisingly successful concept which the average skilled person would have been deterred to apply in view of the increased storage demand caused by the inventive index file. It was not obvious to the skilled person to foresee the important improvements nevertheless achievable with regard to performance and convenience of the inventive image database.

Document D2, which was acknowledged as the closest prior art, did not disclose a dedicated file structure like the invention. The index and the high-resolution image file was rather commonly stored at the same locations on the storage medium. Furthermore, the image data were not in a multi-resolution file format and thus did not allow to merely copy the low-resolution image data into the index file. There was finally no disclosure of an image identifier which provided an efficient link between the index file and the high-resolution image data. With the invention, a clearly patentable improvement over the prior art of document D2 was achieved.

No other conclusion could be drawn from document D1. This document did not concern an image retrieval system at all so that the skilled person would have no reasons to combine the two documents D1 and D2. Furthermore, the multi-resolution image data were stored in different files, in clear distinction to the single one file in which the multi-resolution image data were stored according to the invention. A combination of documents D1 and D2 would consequently lead to a completely different file and storage structure.

VI. The appellant thus requested that the decision under appeal be set aside and that the patent be maintained on the basis of the single main request submitted at the oral proceedings.

VII. The respondent requested that the appeal be dismissed.

VIII. In its view, document D2 already referred to low-resolution and high-resolution image data and thus disclosed a multi-resolution image file format. The only difference acknowledged to be present was that the index file contained a duplicate copy of each of the low-resolution image data. However, this difference did not have any technical advantage, neither did it improve the file access time in searching and retrieving image data.

IX. The Board announced the decision on the appeal in the oral proceedings of 25 January 2005.

Reasons for the Decision

1. The appeal complies with the requirements of Articles 106 to 108 and Rules 1(1) and 64 EPC and is thus admissible.

2. The appeal request to maintain the patent in the amended form, however, is not allowable since the claimed invention fails to meet the requirement of inventive step. It is sufficient to give reasons in respect to claim 1 only; considering independent

claims 5 and 6, however, would not lead to any different conclusion.

3. The inventive step requirement of the EPC is examined on the basis of the problem and solution approach as applied by the boards of appeal (Case Law of the Boards of Appeal of the European Patent Office, 4th edition 2001, European Patent Office 2002, Chapter I.D.2). According to the method the examination starts from a relevant piece of prior art to determine the technical contribution provided by the claimed invention in relation thereto.

4. The opposition division as well as both parties in the appeal proceedings agreed on document D2 as the closest prior art.

5. Document D2 indeed discloses the majority of features of method claim 1. It is undisputed between the parties to the appeal proceedings that document D2 discloses a method of storing a plurality of digitized original images (see document D2, column 1, lines 10 to 13 and 25 to 27) having high-resolution image-representative data ("file data", see for example column 2, lines 21 to 26). These high-resolution image data are compressed and stored for each original image as file data in a storage medium ("optical disc $12a_1$") which is, in one embodiment, the data region III of the optical disc $12a_1$ (see document D2, figures 2A and 2B and column 4, line 33 to column 5, line 2).

Moreover, in a second storage location of said digital data storage medium (data region IV, see document D2 loc. cit.), which is separate from said first

respective storage location, a separate image index file ("retrieval-use-image data") is stored which contains a low-resolution copy of each of the original images (see document D2, column 2, lines 26 to 36, column 3, lines 62 to 66, column 4, lines 50 ff.).

The "retrieval-use-image data" are used, in the retrieval mode, to be displayed (see document D2, figure 5A, steps 201 to 204). If the operator wishes to display the (original) file data, he depresses a key, causing the CPU to supply the file identification directory and the file header (see document D2, column 3, line 67 to column 4, line 1, column 4, lines 19 to 32, column 7, lines 10 to 21). Therefore, these data elements serve as an identifier, which is stored in the storage medium and points to the associated original image data.

6. The only features of claim 1, therefore, which are not anticipated by document D2 are the following:

(A) the data format in which the (original) image data are stored is a multi-resolution image file format, i.e. the image data are stored as a low-resolution image and a sequence of differential image data (modifier data), which when combined with the low-resolution image produce the high-resolution image data corresponding to the original image.

(B) the image index file contains a "duplicate copy of each of the low-resolution image-representative data".

7. Multi-resolution encoding of image data, however, is per se known in various forms and used for storing,

searching, and retrieving image data. This is undisputed and also explicitly acknowledged in the prior art as, for example, in document D1, column 1, lines 53 to 62. Document D1 itself discloses a particular multi-resolution image file format comprising a first lowest-resolution base layer and several further levels of modifier data ("error compensation data", see column 2, lines 5 to 35).

8. Except for the function of compressing the original image data, document D2 is silent about the encoding scheme or the graphics file format used with the original and the high-resolution image data. A skilled person, starting from document D2, is thus left with the technical problem to provide and implement a suitable encoding scheme and image data format for storing and reproducing the high-resolution image data.

When looking for such a suitable encoding scheme, and considering that it should allow the efficient generation of both a high-resolution image, and a low-resolution image for the index file (the retrieval-use-image data in data region IV - see document D2, figure 2B) from the original image data, the skilled person would immediately consider one of the well-known multi-resolution encoding schemes since they directly produce these image components. Difference (A) in combination with difference (B) are thus the result of a normal design option which the skilled person would choose, without exercising any inventive skills, as an implementation detail in reducing to practice the retrieval system of document D2.

9. In summary, the Board holds that the method of claim 1 is not patentable for lack of inventive step (Article 56 EPC) and that hence the appellant's only request is not allowable.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

M. Kiehl S. V. Steinbrener