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Datasheet for the decision of 21 October 2014

Case Number: T 2185/10 - 3.5.07

Application Number: 97117880.1

Publication Number: 0837405

IPC: G06F17/30, H04N1/21

Language of the proceedings: EN

Title of invention:
File management system of image data

Applicant:
Canon Kabushiki Kaisha

Headword:
Image file management/CANON

Relevant legal provisions:
EPC Art. 123(2), 56

Keyword:
Amendments - intermediate generalisation - after amendment (no)
Inventive step - after amendment (yes)

Decisions cited:
T 0962/98, T 1644/11

Catchword:

Beschwerdekammern
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Case Number: T 2185/10 - 3.5.07

D E C I S I O N
of Technical Board of Appeal 3.5.07
of 21 October 2014

Appellant: (Applicant)	Canon Kabushiki Kaisha 30-2, 3-chome, Shimomaruko, Ohta-ku Tokyo (JP)
Representative:	TBK Bavariaring 4-6 80336 München (DE)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 19 May 2010 refusing European patent application No.97117880.1 pursuant to Article 97(2) EPC**

Composition of the Board:

Chairman	R. Moufang
Members:	P. San-Bento Furtado
	R. de Man

Summary of Facts and Submissions

I. The appeal lies from the decision of the Examining Division to refuse European patent application No. 97117880.1. The application concerns image file management in a removable memory card in an image pickup apparatus.

II. The application was refused for lack of an inventive step of the subject-matter of independent claim 1 of the then main request (Articles 52(1) and 56 EPC), in view of the following document:
D1: EP-A-0 594 992, published on 4 May 1994.

The auxiliary requests were not admitted under Rule 137(3) EPC because their number and content were considered to be unclear.

III. In the statement of grounds of appeal dated 28 September 2010, the appellant requested that the decision be set aside and that a patent be granted on the basis of a main request or of an auxiliary request, both filed with the statement of grounds of appeal. Claim 1 of the then main request was the same as the independent claim considered in the appealed decision.

IV. In a communication accompanying a summons to oral proceedings, the Board expressed the view that both requests lacked clarity and defined added subject-matter. Claim 1 of each of the requests appeared to lack an inventive step.

V. With a letter dated 19 September 2014, the appellant filed a new main request, a new first auxiliary request and a new second auxiliary request.

VI. Oral proceedings were held on 21 October 2014. During the oral proceedings the appellant amended the main request by submitting an amended claim 1 and withdrew the first and second auxiliary requests. At the end of the oral proceedings, the chairman pronounced the Board's decision.

VII. The appellant's final request was that the contested decision be set aside and that a patent be granted on the basis of the claims of a main request consisting of claim 1 as filed during the oral proceedings and claims 2 to 28 as filed as part of a main request with the letter dated 19 September 2014.

VIII. Claim 1 of the sole request reads as follows:

"A file management method for managing files of image data photographed with an image pickup apparatus (7), the files being classified into directories every predetermined number of files in accordance with numerical values included in their file names, the method comprising

a) a counting step of updating a current numerical value every image data recording,

b) a generating step of generating the file name including as a part thereof said current numerical value when data of one of the photographed images is recorded as a file on a recording medium (33) and storing the data in a file with the generated file name, and

c) a storing step of storing the current numerical value updated in said counting step, into a nonvolatile memory (37) of said image pickup apparatus (7),

d) adding 1 to the current numerical value in said counting step every image data recording, and

wherein the method further comprises,

when the power source of the image pickup apparatus is turned on or the recording medium is changed:

e) obtaining (S6) a maximum directory number of directories stored on the recording medium for storing a recorded image;

f) comparing (S12) a current directory number based on the current numerical value with the maximum directory number; and

g) if the current directory number is not larger than the maximum directory number:

obtaining (S13) the maximum value of the numerical values included in the file names already stored in the directory having the maximum directory number,

comparing (S14) the obtained maximum value with the current numerical value, and

changing (S15) the current numerical value to be the obtained maximum value plus 1 in case the current numerical value is not larger than the obtained maximum value of the file names."

IX. In the contested decision, the Examining Division was of the opinion that document D1 disclosed a method for managing files of image data in a camera, the method generating file names including numerical values using a counter stored in a non-volatile memory. Document D1 disclosed steps (a) to (d) of the then claimed method in column 3, lines 31 to 43, and column 4, lines 19 to 22.

The distinguishing features solved the problem of how to achieve the effect of keeping file names unique even if a storage medium already containing files was inserted into the camera. Faced with that problem, it

was obvious for the skilled person to arrive at the claimed solution.

X. In the grounds of appeal the appellant argued that the skilled person starting from the disclosure of document D1 would not arrive at the claimed invention.

Document D1 disclosed features (a) to (c). The objective technical problem to be solved by the invention was: "How to give unique and non-overlapping file names throughout the lifetime of an image pickup apparatus".

In the method of document D1 the cumulative number of pictures already taken was kept in the image memory of the camera and was updated in the non-volatile memory only after a predetermined number of pictures, for example one hundred, had been taken. The cumulative number was also increased by a predetermined number if the battery had been changed. Additionally, document D1 described using a manufacturer's serial number of the camera body or the memory card in addition to the cumulative number. Document D1 therefore neither hinted at nor suggested the claimed solution.

XI. In the communication accompanying the summons to oral proceedings, the Board expressed its preliminary opinion that claim 1 of the then pending requests was unclear.

It also expressed the view that the claim defined an intermediate generalisation which had no basis in the application as filed. In particular, it appeared to be directed to some of the steps of the process described on pages 14 to 19 of the description and figures 4A and 4B for initial set-up when the power was turned on or

the recording medium was changed. However, the claim only defined modified versions of steps S13, S14 and S15. The initial set-up included other steps not mentioned in the claim. Step S13 as described on page 18 searched a specific directory, the name of which was obtained from the current numerical value by previous steps not defined in the claim.

In the preliminary opinion of the Board, the subject-matter of independent claim 1 of the then pending requests did not appear to involve an inventive step. Document D1 disclosed features a) to d). The distinguishing features seemed to solve the problem of adapting the prior-art method to avoid overwriting files in a directory used for storing photos in a new recording medium, while still ensuring unique file names throughout the lifetime of the image pickup apparatus. It appeared to be obvious for the skilled person facing said problem to arrive at the claimed solution.

The Board also drew attention to some possible deficiencies of the dependent claims as regards lack of clarity and added subject-matter.

XII. In the appeal proceedings the appellant argued that amended claim 1 fulfilled the requirements of Article 123(2) EPC. The steps of claim 1 were directly and unambiguously described in figure 4, other steps of the initial set-up disclosed in the original application being related to "exception operation" which was not part of the essential features of the invention.

The appellant further stated in oral proceedings that its understanding of the case law was that the

objection of intermediate generalisation applied if the public would not have expected the generalisation from the original application. Furthermore, there was no unallowable intermediate generalisation in the absence of a clearly recognisable functional or structural relationship among the features of an embodiment.

Regarding inventive step, the appellant argued that the claimed process was useful when the recording medium had been used in another camera and solved the problem of avoiding using the same file number as the one created by the previous camera. The prior art did not even mention such problems and did not suggest or teach any solution as to them either.

Reasons for the Decision

1. The appeal complies with the provisions referred to in Rule 101 EPC and is therefore admissible.

The invention

2. The application relates to a method for managing the image files in a memory card of an image pickup apparatus, for example an electronic camera, so that each file name is unique for the lifetime of the camera, even when the power is switched off or when the memory card is changed (original description, page 1, lines 5 to 12; page 10, lines 15 to 26).

Unique file names are automatically created for the generated image files. Each file name includes the current numerical value of a counter stored in a non-volatile memory of the camera (page 1, lines 5 to 12; page 10, lines 15 to 26). Each time a new image file is

generated, it is stored with a name including the current counter value and the counter is increased by one (page 11, line 2, to page 12, line 8).

The files are stored in different directories, each directory name also including a numerical value (page 19, line 21, to page 20, line 12; figure 5). The numerical value for the current directory name is the result of the division of the highest used file number by a predetermined number of files per directory, rounded down to a whole number (page 19, line 24, to page 20, line 2; figure 8).

When the memory card of the camera is changed or the power source is turned on, a set-up process is performed for initialisation. This process calculates the current file number and current directory number to be used to generate and store the next file. The current file and directory numbers are calculated based on the non-volatile counter and taking into account the contents of the recording medium (page 14, line 12, to page 19, line 12, figures 4A and 4B).

Each file name includes a limited number of digits (e.g. five). When the maximum value is achieved (e.g. 99999), no new filenames can be generated. The invention foresees exception processes to deal with that problem (page 20, line 13, to page 21, line 14).

Clarity

3. The Board is satisfied that independent claim 1 of the sole request clearly defines the matter for which protection is sought and therefore complies with Article 84 EPC.

3.1 In its communication the Board expressed the view that claim 1 of the then pending main request did not clearly specify whether the storing step was performed each time the current numerical value was updated or otherwise. Furthermore, the claim used inconsistent terminology in steps a) and d).

These deficiencies have been overcome by the amendments, especially of step d) which now reads "every image data recording" instead of "every photographing".

3.2 The Board also expressed doubts with respect to the language of the phrase "every image data recording" in the claim.

However, regarding this point the Board is now convinced that the skilled person understands what the expression means, namely "every time image data is recorded".

Basis in the application as filed

4. In the opinion of the Board, the former deficiencies with regard to added subject-matter (Article 123(2) EPC) no longer apply to current claim 1.

4.1 Features a) to d) describe the file management operation in the image apparatus as disclosed in original claim 1, and in the original description on page 19, line 21, to page 20, line 5, and depicted in figure 5. This first part of the claim describes the normal functioning of the camera in the context of which steps e) to g) of the initial set-up process are performed.

Features e) to g) deal with the situation of the power source of the image pickup apparatus being turned on or the recording medium being changed, and serve the purpose of initialising the current numerical value so that files cannot be overwritten. They were taken from the initial set-up process of figures 4A and 4B and pages 14 to 19 of the application as filed.

4.2 The claim correctly specifies the features of the process as directly and unambiguously derivable from the application as filed.

Claim 1 describes the use of directories in the invention in the same way as illustrated in figures 4A and 4B. In particular, it defines the feature "the files being classified into directories every predetermined number of files in accordance with numerical values included in their file names" as disclosed on page 11, last paragraph, of the application as filed. Even though the passage mentions "subdirectories", the Board is of the opinion that the term "directories" can be used instead. Directories can always be seen as subdirectories, of the root directory or of other directories, and the passage does not specify a parent directory.

Furthermore, the claim also includes the steps necessary for the definition of the initial set-up, namely steps S6 (feature e)) and S12 to S15 (features f) and g)) for finding out what the maximum directory number of existing directories is and, if the current directory number is not larger than the maximum directory number, executing steps S13 to S15. These steps recalculate the current file number if it is

smaller than or equal to the maximum file number found in the directory.

4.3 The claim does not mention all the features of the initial set-up process of figures 4A and 4B. As mentioned in section XII above, the appellant argued that features dealing with exception handling did not have to be included in the claim.

Against that submission, it could be argued that the event of power on or insertion of a recording medium into the camera are exceptions to the normal operation of the camera and that, therefore, the whole initial set-up process is dealing with exception handling.

However, the Board agrees with the appellant that some of the features shown on figures 4A and 4B are related to the treatment of further exceptions in the initial set-up of the camera, for example the card being inadequate (steps S1, S2 and S5), *CTG(dirNoFound)* not being a directory (step S7), or the current directory or file number being above a given threshold (steps S9 and S19). The steps performed to treat such exceptional cases are not part of the main process for determining the current numerical value when the power is switched on or the recording medium has been changed.

The skilled person would recognise from the original application that the concept of the invention is independent of the features for dealing with those further exceptions and that those features constitute side details which could be added to the main process only in a later phase of the design.

According to established case law "characteristics taken from a working example may be combined with other

features disclosed in a more general context" without infringing Article 123(2) EPC if "the skilled person can recognize without any doubt from the application as filed that those characteristics are not closely related to the other characteristics of the working example and apply directly and unambiguously to the more general context" (T 962/98 of 15 January 2004, reasons 2.5).

The Board considers that this reasoning applies to the present case. Features taken from the working example of the initial set-up process have been combined with the features described in the general context of the normal operation of the apparatus of original claim 1. For the reasons given above, the features of the main process taken from the initial set-up example are directed to solving the problem of avoiding overwriting files and are not closely related to the other features of the example directed to dealing with exceptional situations. In the implementation phase these features have to be added to the main process to ensure correct functioning of the initial set-up but they are not directed to the problem underlying the claimed invention and are not necessary for the definition of the invention (see also T 1644/11 of 4 April 2014, reasons 2.2).

Therefore, the Board concludes that the claim does not have to include those features dealing with exceptional situations in order to fulfil the requirements of Article 123(2) EPC.

4.4 In view of the above, the Board is of the opinion that the claim meets the requirements of Article 123(2) EPC.

Inventive step

5. The Board is also satisfied that the subject-matter of independent claim 1 of the sole request involves an inventive step within the meaning of Articles 52(1) and 56 EPC.

5.1 Document D1 relates to storing digitised image signals as image files in devices such as electronic still video cameras (column 1, lines 25 to 34; column 3, lines 44 to 49). An embodiment described in columns 3 and 4 is directed to generating unique file names in order to prevent the processing of the wrong image file in the camera or external devices (column 3, lines 23 to 31; column 4, lines 5 to 17). According to this embodiment of document D1, the solution is to keep track of the number of recorded pictures in a counter and add it "as a discrimination number" to the image file of an obtained picture when it is stored (column 3, lines 23 to 43). Additionally, in order to avoid a reset of the counter when a battery of the device is removed (column 3, lines 50 to 56), the counter is stored in a non-volatile memory (column 4, lines 18 to 22).

The appellant's statement that document D1 taught different solutions, namely incrementing the counter by a predetermined number or using serial numbers (see section X above), is irrelevant because those features are not part of the embodiment of columns 3 and 4 taken as closest prior art. As noted by the applicant and agreed by the Examining Division (see point 6 of the minutes of oral proceedings dated 19 May 2010), the embodiment described in document D1 as related art in columns 3 and 4, on which the novelty analysis was

based, is distinct from the further embodiments of the document.

Document D1 also discloses using directories in some embodiments, e.g. in an embodiment described as the combination of a "main operating routine" including steps for storing image data (figures 2 and 3, column 15, line 53, to column 18), and the routines of figures 4 and 8. However, these features are not described for the embodiment of columns 3 and 4.

5.2 The Board therefore agrees with the Examining Division that document D1 discloses the combination of features a) to d) (which were amended for improved clarity only).

The claimed subject-matter differs from the embodiment of columns 3 and 4 of document D1 in that the files are "classified into directories every predetermined number of files in accordance with numerical values included in their file names" (see first lines of the claim) and in the performance of steps e) to g) when the power source is turned on or the recording medium is changed.

Steps e) to g) are performed for finding out the maximum directory number of existing directories and, if necessary, recalculating the current file number.

5.3 The distinguishing features solve the technical problem of avoiding overwriting image files in a recording medium previously used in another camera.

The use of directories in the claimed manner has the further advantage of decreasing the average file access time by the file system, since it is faster to search a

file in a directory with fewer files (see also page 26, lines 6 to 9 of the original description).

5.4 In the opinion of the Board, the skilled person would not arrive at the claimed solution without inventive skill.

5.5 None of the available prior-art documents discloses the distinguishing features.

5.6 The Board does not consider the solution obvious in the light of document D1 alone either.

Considering the above technical problem, the skilled person could choose among several possibilities to solve it. Examples of the most immediate solutions would be checking whether the file name of the file to be created already existed and, if so, incrementing the counter, or taking the lowest non-used number for the next file name. Compared to these solutions, the claimed invention has the advantage of fast storage of obtained pictures, since no checks have to be performed each time data is stored.

Regarding the advantage of efficient search, other embodiments of document D1 also disclose the use of directories and it is obvious for the skilled person that file search is faster in directories having fewer files. However, the skilled person would still have to conceive a way of combining the distribution of files among directories with the file naming scheme of document D1.

Furthermore, the Board is of the opinion that the advantage of efficient file access cannot be seen as a second independent problem in the context of the

present application. The distinguishing features are functionally interdependent. The directory number is a function of the numerical value of the file names and this relationship influences the other features, in particular the way the current numerical value for the next file is updated.

5.7 The subject-matter of independent claim 1 therefore involves an inventive step.

Remittal

6. The sole request includes claims 2 to 28 of a previous main request filed with the letter dated 19 September 2014. Independent claim 15 and the dependent claims still have to be adapted to the new independent claim 1. Moreover, in its communication the Board drew attention to some potential deficiencies in the dependent claims. The Board also notes that the text "currFileNo ≤ dirNoFound" of figures 4C and 4D appears to be incorrect.

Therefore, the Board considers it appropriate to remit the case to the department of first instance for further prosecution (Article 111(1) EPC).

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

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

The Registrar: The Chairman:

I. Aperribay R. Moufang

Decision electronically authenticated