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Datasheet for the decision of 10 March 2023

Case Number: T 2541/18 - 3.5.04

Application Number: 12805544.9

Publication Number: 2792136

IPC: H04N1/00, H04N1/203, H04N1/32

Language of the proceedings: EN

Title of invention:
SCANNER WITH EXCEPTION PREVIEW

Applicant:
Kodak Alaris Inc.

Headword:

Relevant legal provisions:
EPC Art. 56

Keyword:
Inventive step - (no)

Decisions cited:

Catchword:

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Boards of Appeal

Chambres de recours

Boards of Appeal of the
European Patent Office
Richard-Reitzner-Allee 8
85540 Haar
GERMANY
Tel. +49 (0)89 2399-0
Fax +49 (0)89 2399-4465

Case Number: T 2541/18 - 3.5.04

D E C I S I O N
of Technical Board of Appeal 3.5.04
of 10 March 2023

Appellant: (Applicant)	Kodak Alaris Inc. 2400 Mount Read Boulevard Rochester, NY 14650 (US)
Representative:	Wagner & Geyer Partnerschaft mbB Patent- und Rechtsanwälte Gewürzmühlstrasse 5 80538 München (DE)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 15 May 2018 refusing European patent application No. 12805544.9 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairwoman	T. Karamanli
Members:	M. Paci
	A. Seeger

Summary of Facts and Submissions

I. The appeal is against the examining division's decision refusing European patent application No. 12 805 544.9, published as international patent application WO 2013/090023 A2.

II. In the decision under appeal, the examining division referred, *inter alia*, to the following documents:

D1: US 6 370 277 B1
D12: US 6 748 119 B1

III. The decision under appeal was based, *inter alia*, on the grounds that the subject-matter of independent claims 1 and 11 of the main request and of the auxiliary request then on file did not involve an inventive step in view of the disclosures of prior-art documents D1 and D12 and the common general knowledge of the person skilled in the art.

IV. The applicant (appellant) filed notice of appeal. With its statement of grounds of appeal, the appellant maintained the main request and auxiliary request underlying the decision under appeal as the main request and first auxiliary request, respectively, and filed two sets of amended claims according to a second auxiliary request and a third auxiliary request, respectively.

V. A summons to oral proceedings was issued. In a communication under Article 15(1) RPBA 2020, the board gave the following preliminary non-binding opinion.
- The main and first auxiliary requests were taken into account (Article 12(2) RPBA 2020) and the board

was inclined to admit the second and third auxiliary requests into the appeal proceedings (Article 12(4) RPBA 2007).

- The claims of the main request complied with Article 84 EPC.
- The subject-matter of independent claims 1 and 11 of the main request lacked inventive step in view of document D1 combined with the common general knowledge of the person skilled in the art or in view of document D1 combined with the common general knowledge of the person skilled in the art and document D12.
- The additional features in the dependent claims of the main request were also obvious.
- The amendments made to the claims of the first to third auxiliary requests compared to the claims of the main request did not substantially change the claimed subject-matter in such a way that the objections of lack of inventive step raised against the main request would be overcome.

VI. In a letter dated 3 March 2023, the appellant provided its arguments as to why the subject-matter of claim 1 of the main request did involve an inventive step.

VII. The board held oral proceedings on 10 March 2023.

The appellant's final requests were that the decision under appeal be set aside and that a European patent be granted on the basis of the claims of the main request filed by letter dated 9 March 2018 or, alternatively, of the first auxiliary request filed as the sole auxiliary request by letter dated 9 March 2018 or of the second or third auxiliary requests, both filed with the statement of grounds of appeal.

At the end of the oral proceedings, the Chairwoman announced the board's decision.

VIII. Claim 1 of the appellant's **main request** reads as follows:

"*A scanning system (10) providing a exception correction capability, comprising:*

an image sensor for scanning a page of a hard-copy document;

an input tray (20);

an output tray (15);

a document feeding system (43) for picking a page (300) of a multi-page document (12) from the input tray (20), positioning the picked page (300) to be scanned by the image sensor, and depositing the picked page (300) in the output tray (15);

a sensing system (135) for sensing one or more attributes of the picked page (300) to detect an exception condition;

a user interface system including an image display (50) and one or more user controls;

an output interface (55) for transferring scanned documents to an image receiving system;

a storage memory for storing scanned documents;

a data processing system (120); and

a program memory communicatively connected to the data processing system (120) and storing instructions configured to cause the data processing system (120) to:

initiate a multi-page scanning operation to scan a multi-page document (12) in response to user activation of a user control;

for each page of the multi-page document (12)

pick the page (300) from the input tray (20);

scan the picked page using the image sensor (30, 35) and storing the scanned page in the storage memory;

sense one or more attributes of the picked page (300) using the sensing system (135);

deposit the picked page (300) in the output tray (15);

analyze the sensed one or more attributes to detect an exception condition (400);

in response to detecting an exception condition:

pause the multi-page scanning operation;

display (420) at least one scanned page (300) associated with the exception condition (400) on the image display (50);

use the user interface system (500) to provide a plurality of user-selectable corrective actions (430) associated with the exception condition (400), wherein the user interface system includes a user control to select an option to apply the same corrective action (430) for future instances of the same exception condition (400);

perform one or more corrective operations (435) in response to a user selecting a particular corrective action (430); and

restart the paused multi-page scanning operation in response to user activation of a user control; and

use the output interface (55) to transfer one or more pages of the scanned multi-page document (12) from the storage memory to the image receiving system."

IX. Claim 1 of the appellant's **first auxiliary request** reads as follows (with additions to claim 1 of the **main request** being underlined, deletions ~~struck-through~~ and long identical text portions replaced by "[...]"):

"*A scanning system (10) providing a exception correction capability, comprising:*

[...]

a program memory communicatively connected to the data processing system (120) within the scanning system and storing instructions configured to cause the data processing system (120) to:

initiate a multi-page scanning operation to scan a multi-page document (12) in response to user activation of a user control;

for each page of the multi-page document (12);

[...]

in response to detecting an exception condition:

[...]

use the user interface system (500) to provide a plurality of user-selectable corrective actions (430) associated with the exception condition (400), wherein the user interface system includes a user control to select an option to apply ~~the same~~ a selected corrective action (430) for future instances of the same exception condition (400) within the current multi-page scan and optionally future scanning operations;

perform one or more corrective operations (435) in response to a user selecting a particular corrective action (430); and

restart the paused multi-page scanning operation in response to user activation of a user control; and

use the output interface (55) to transfer one or more pages of the scanned multi-page document (12) from the storage memory to the image receiving system."

X. Claim 1 of the appellant's **second auxiliary request** reads as follows (with additions to claim 1 of the **main request** being underlined, deletions ~~struck through~~ and long identical text portions replaced by "[...]"):

"*A scanning system (10) providing a exception correction capability, comprising:*

[...]

a program memory communicatively connected to the data processing system (120) and storing instructions configured to cause the data processing system (120) to:

initiate a multi-page scanning operation to scan a multi-page document (12) in response to user activation of a user control;

for each page of the multi-page document (12);

[...]

in response to detecting an exception condition:

[...]

restart the paused multi-page scanning operation in response to user activation of a user control; ~~*and*~~

apply the same selected corrective action (430) for future instances of the same exception condition (400), if the option is selected by the user; and

use the output interface (55) to transfer one or more pages of the scanned multi-page document (12) from the storage memory to the image receiving system."

XI. Claim 1 of the appellant's **third auxiliary request** reads as follows (with additions to claim 1 of the **first auxiliary request** being underlined, deletions ~~struck through~~ and long identical text portions replaced by "[...]"):

"*A scanning system (10) providing a exception correction capability, comprising:*

[...]

a program memory communicatively connected to the data processing system (120) and storing instructions configured to cause the data processing system (120) to:

initiate a multi-page scanning operation to scan a multi-page document (12) in response to user activation of a user control;

for each page of the multi-page document (12);

[...]

in response to detecting an exception condition:

[...]

restart the paused multi-page scanning operation in response to user activation of a user control; ~~*and*~~

apply the same selected corrective action (430) for future instances of the same exception condition (400), if the option is selected by the user; and

use the output interface (55) to transfer one or more pages of the scanned multi-page document (12) from the storage memory to the image receiving system."

Reasons for the Decision

1. The appeal is admissible.

The invention

2. The present invention relates to a system for scanning a multi-page document, in which a plurality of sensors allow an "*exception condition*" (an error condition) for a scanned page to be detected. In response to detecting an exception condition, the multi-page scanning operation is paused, the scanned page is displayed on an image display, and the user is presented with a plurality of user-selectable corrective actions and an option to apply the selected corrective action to future instances of the same exception condition. Once the corrective action has been performed, the paused multi-page scanning operation is restarted.

Main request - inventive step (Articles 52(1) and 56 EPC)

3. Disclosure of document D1

D1 discloses a system for scanning a page. The page is scanned and stored as a digital image in an image cache (18 in Figure 2). The stored digital image is then processed according to stored parameters ("*setting switches 24*" in Figure 2) and passed to an image acquisition controller (2 in Figure 2) which detects an exception condition (a "*trap error code*" in Figure 6) for the page. In response to detecting an exception condition, the scanned page is displayed on an image display and the user is presented with user-selectable corrective actions, including changing the setting switches (Figures 6 and 7). In response to a change of

the setting switches, the digital image of the page stored in cache memory 18 is read out again, processed according to the new setting switches and the resulting image is displayed to the user (a "*virtual rescanning*"). The process may be repeated until the user accepts the image displayed.

4. Closest prior art

4.1 The appellant did not dispute that document D1 can be regarded as the closest prior art for the subject-matter of claim 1.

5. Distinguishing features

5.1 In point 1.2 of the Reasons for the decision under appeal, the examining division indicated where in document D1 the features of claim 1 could be found. It came to the conclusion that the system of claim 1 differed from the system of document D1 on account of the following distinguishing features:

- the ability to scan multi-page documents; and
- the setting of an option to apply the selected corrective action for future occurrences of the same exception condition.

5.2 The appellant argued that there were more distinguishing features than held by the examining division because document D1 did not disclose pausing and restarting the scanning operation (see the section entitled "Novelty" on page 3 of the statement of grounds of appeal, and pages 3 to 5 of the letter of 3 March 2023).

5.3 The board concurs with the appellant for the following reasons:

According to claim 1, the data processing system is configured to "*pause the multi-page scanning operation*" in response to detecting an exception condition. From page 15 of the description, in particular from the phrase "*it may not always be required for the multi-page scanning operation to be paused while the exception processing is being performed*", it can be derived that the "*scanning operation*" refers to the physical scanning of a page rather than to the subsequent processing (the "*exception processing*" in claim 1) of the digital image of the page.

Document D1 is silent as to whether the physical scanning of a second page is prevented (paused) when an exception condition is detected for a first page and the user is invited to select a corrective action. From a technical point of view, if the image cache (18 in Figure 2) can only store one image at a time, the physical scanning must be paused. This is because otherwise the digital image of the first page in the image cache would be replaced by the digital image of the second page, thereby making it impossible to perform a "*virtual rescanning*" of the first page. However, while the disclosure of document D1 gives the impression that the image cache only stores one image at a time, it cannot be entirely ruled out that the image cache might be able to store more images despite this being more complicated.

For the reasons set out above, the board is of the opinion that it is **not directly and unambiguously derivable** from the disclosure of document D1 that the

physical scanning is paused when an exception condition is detected.

5.4 Thus, the system of claim 1 differs from that of document D1 on account of the following distinguishing features:

(a) the ability to scan multi-page documents;

(b) the pausing of the scanning operation in response to the detection of an exception condition and the restarting of the scanning operation in response to user activation of a user control; and

(c) the setting of an option to apply the selected corrective action for future occurrences of the same exception condition.

6. Technical effect and objective technical problem

6.1 The appellant submitted that the three distinguishing features, individually and synergistically, had the technical effect of saving time and effort and that the objective technical problem could therefore be formulated as "*how to provide a more efficient scanner system*" (see the letter of 3 March 2023, point 19).

6.2 The board accepts this formulation of the objective technical problem.

7. Obviousness

7.1 Re distinguishing feature (a)

The appellant did not dispute that it was part of the common general knowledge of the person skilled in the

art to equip a scanning system with what was commonly known as an "*automatic document feeder*" or "*ADF*", which allowed a multi-page document to be automatically scanned without the pages having to be manually entered one by one. The appellant did not dispute that it would have been obvious to equip the scanning system of D1 with an ADF.

7.2 Re distinguishing feature (b)

7.2.1 The board regards this feature as obvious in view of document D1 for the reasons set out below.

In D1 (see Figure 2 and column 3, lines 20 to 25), when a page is physically scanned, a digital image is created by CCD 10 and stored in image cache 18. The digital image is subsequently read out, processed by image processor 22 according to "*setting switches 24*" (parameters) and stored in image acquisition controller 2. The function of image cache 18 thus appears to be that of a buffer memory. Nothing in the disclosure of document D1 indicates that the image cache could store more than one image at a time; nor is this necessary for the function it performs. Thus, the board takes the view that the skilled person reading document D1 would understand that cache memory 18 likely stores only one image at a time (see column 3, lines 20 to 25). The skilled person would thus deduct that when an exception condition is detected for a first page and the user is invited to select a corrective action, the user must be prevented from scanning a second page (**i.e. the physical scanning must be paused**) because otherwise the digital image of the first page in image cache 18 would be replaced by the digital image of the second page, thereby making it

impossible to perform a "*virtual rescanning*" of the first page.

7.2.2 The appellant's arguments were as follows:

The image cache did not necessarily store only the image of one page. It could also store images of several pages. Upon providing the system of D1 with an ADF, the skilled person would have wanted to store several images in cache memory 18 in order to be able to scan several pages one after the other without delay and without having to wait for the user to correct a page before scanning the next one.

7.2.3 The board does not find this argument persuasive for the following reasons:

In D1, cache memory 18 storing only one page is the technically simplest option. Contrary to a cache memory being able to store several pages, it does not require a large memory space and extra circuits to address the various images, neither of which are mentioned in D1. It allows several images to be scanned in quick succession as long as no exception condition is detected which requires the user to intervene. It is thus also well suited to the use of an ADF. Moreover, the board doubts that the skilled person would see it as a drawback that the physical scanning is paused when an exception condition is detected for a page.

7.2.4 Thus, in summary, the board is of the opinion that a cache memory storing only one page was the simplest, most straightforward and most attractive implementation of the cache memory of the system of D1, with or without an ADF. As a result, the physical scanning would have had to be **paused** when an exception condition

was detected and **restarted** once the user had accepted or finally refused the scanned page having an exception condition.

7.3 Re distinguishing feature (c)

7.3.1 In the system of D1, the user can set various parameters ("*setting switches*"), such as contrast and brightness, which are used for processing the captured digital image (see column 3, lines 34 to 40, column 4, lines 15 to 24, and Figure 4). When an exception condition is detected for the processed digital image, such as the contrast or brightness being out of range, the processed digital image is displayed and the user is asked to either accept the image or to change the processing parameters ("*setting switches*") to see if it renders the processed image acceptable (see column 4, line 25, to column 5, line 24, and Figures 6 and 7).

In the case of a multi-page document being scanned, an exception condition for one page of the document, such as out-of-range contrast or out-of-range brightness, would be likely to occur again for other pages of the same multi-page document. It would therefore be obvious to the skilled person to present the user with the option of automatically applying the corrective action(s) selected by the user for a page of a multi-page document to future occurrences of the same exception condition in the same document (and, also, in other subsequent documents). The skilled person would thus have arrived at distinguishing feature (c) without the involvement of an inventive step.

7.3.2 The appellant's arguments may be summarised as follows:

The deductions made by the board are based on hindsight. Without knowledge of the present invention, the skilled person would not come to this conclusion. In particular, the invention is specific in providing a user control to select an option to apply the same corrective action for future instances of the same exception condition, rather than automatically applying the same action, which would have been an alternative option. Also, if the option is chosen, it requires storage for the respective corrective actions being stored for a specific exception condition beyond the normal operation parameters being used. Such additional storage (for exception conditions) is not present in D1 and indeed not suggested.

7.3.3 The board does not find these arguments persuasive for the following reasons:

When using the system of D1, with or without an ADF, to scan a multi-page document having similar pages, the skilled person could reasonably expect that the same type of exception condition could occur for several pages and that the same corrective action would be needed for each of these pages. For instance, a document with text pages having insufficient contrast would trigger the same "*contrast out of range*" exception condition (see column 4, lines 27 to 32) for each page.

It would thus have been obvious for the skilled person to give the user the option to apply the same corrective action to subsequent pages having the same exception condition. This would have been easy to implement in the system of D1, by storing in image

acquisition controller 2 the user-selected changes to the "*setting switches*" corresponding to the exception condition and to automatically change the setting switches accordingly when the same exception condition is detected again. Hence, the board cannot see any difficulty in implementing this in the system of D1.

The board concurs with the appellant that there may be other options which could conceivably be proposed to the user for selection after correction of a scanned page, such as to revert to default setting switches or to permanently change the setting switches. However, in the board's view all these options are obvious alternatives with predictable pros and cons. According to the established case law of the boards of appeal, the selection of one of several obvious alternatives having predictable pros and cons cannot be considered inventive (see Case Law of the Boards of Appeal of the European Patent Office, 10th edition, 2022, I.D. 9.21.9).

8. Conclusion on inventive step

For the reasons set out above, the board is of the opinion that the subject-matter of claim 1 of the main request does not involve an inventive step in view of document D1 and the skilled person's common general knowledge.

First auxiliary request - amendments

9. Claim 1 of the first auxiliary request differs from claim 1 of the main request by the amendments shown in point IX above.

First auxiliary request - inventive step

10. The additional wording "*within the scanning system*" in claim 1 does not substantially change the claimed subject-matter because it was already stated in claim 1 of the main request that the scanning system comprises a program memory communicatively connected to the data processing system.

11. The amended wording "*an option to apply ~~the same~~ a selected corrective action (430) for future instances of the same exception condition (400) within the current multi-page scan and optionally future scanning operations*" cannot render the claimed subject-matter inventive because it would have been an obvious design choice to let the user choose to apply the same corrective action to the same exception condition not only in the same multi-page document, but also in subsequent documents (due to these having a similar format and thus presumably similar exception conditions).

12. The appellant argued that the system of Figure 2 of D1 had a separate scanning device (6) and acquisition controller (2).

13. The board does not find this argument relevant to the amendment ("*within the scanning system*") made to claim 1. Indeed, in D1, both the program memory (implicitly in acquisition controller 2 in Figure 2) and the data processing system (CPU 28 in Figure 2) are "*within the scanning system*" (the scanning system of D1 includes everything shown in Figure 2).

14. The appellant further argued that the wording "*and optionally future scanning operations*" offered the user an additional choice not suggested in document D1.

15. For the reasons given in section 7.3 and point 11 above, the board regards offering this additional option as an obvious design choice.

16. Conclusion on inventive step

For the reasons set out above, the board is of the view that the subject-matter of claim 1 of the first auxiliary request does not involve an inventive step in view of document D1 and the skilled person's common general knowledge.

Second and third auxiliary requests - amendments

17. Claim 1 of the second auxiliary request differs from claim 1 of the main request in that it comprises the following additional feature:

"*apply the same selected corrective action (430) for future instances of the same exception condition (400), if the option is selected by the user*".

Claim 1 of the third auxiliary request differs from claim 1 of the first auxiliary request on account of the above same feature.

Second and third auxiliary requests - inventive step

18. The appellant explained that the claims of the second and third auxiliary requests had been filed to clarify some of the features of the main request and first auxiliary request, respectively, and that these

clarifications were not relevant for inventive step because the board had considered these features to be implicitly present in claim 1 of the main and first auxiliary requests.

19. The board concurs with the appellant.

20. Conclusion on inventive step

For the reasons set out above, the board is of the opinion that the subject-matter of claim 1 of the second and third auxiliary requests does not involve an inventive step in view of document D1 and the skilled person's common general knowledge.

Conclusion

21. Since none of the appellant's requests is allowable, the appeal must be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairwoman:

K. Boelicke T. Karamanli

Decision electronically authenticated