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**Datasheet for the decision  
of 17 November 2010**

**Case Number:** T 2091/08 - 3.4.01

**Application Number:** 00126293.0

**Publication Number:** 1107170

**IPC:** G06K 9/68

**Language of the proceedings:** EN

**Title of invention:**

Device and method for detecting objects

**Patentee:**

KABUSHIKI KAISHA TOSHIBA

**Headword:**

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**Relevant legal provisions:**

-

**Relevant legal provisions (EPC 1973):**

EPC Art. 56

**Keyword:**

"Inventive step (no; all requests)"

**Decisions cited:**

-

**Catchword:**

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Case Number: T 2091/08 - 3.4.01

**D E C I S I O N**  
of the Technical Board of Appeal 3.4.01  
of 17 November 2010

**Appellant:**

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**Decision under appeal:**

Decision of the Examining Division of the  
European Patent Office posted 4 April 2008  
refusing European patent application  
No. 00126293.0 pursuant to Article 97(2) EPC.

**Composition of the Board:**

**Chairman:** B. Schachenmann  
**Members:** H. Wolfrum  
P. Fontenay

## Summary of Facts and Submissions

- I. European patent application 00 126 293.0 (publication No. EP-A-1 107 170) was refused by a decision of the examining division dispatched on 4 April 2008, for the reason of lack of inventive step (Articles 52(1) and 56 EPC 1973) of the subject-matter of the claims of a main request and an auxiliary request then on file.

The examining division had based its decision in particular on document:

D3: US-A-5 538 138.

- II. The applicant lodged an appeal against the decision and paid the prescribed fee on 28 May 2008. On 1 August 2008 a statement of grounds of appeal was filed. The appellant requested the grant of a patent on the basis of a set of claims 1 to 3 which corresponded to claims 1 to 3 of the auxiliary request on which the contested decision was based.

An auxiliary request for oral proceedings was made.

- III. On 26 August 2010 the appellant was summoned to oral proceedings.

In a communication annexed to the summons, the Board gave a preliminary opinion, in particular on the issue of inventive step. In this context, the Board made reference *inter alia* also to document:

D4: EP-A-0 589 118.

IV. In response, the appellant filed by letter of 15 October 2010 two sets of claims 1 to 4 according to a first and a third auxiliary request and a set of claims 1 to 3 as a second auxiliary request.

V. Oral proceedings were held on 17 November 2010.

As a result of the discussion, the appellant requested that the decision under appeal be set aside and a patent be granted, by way of a main request, on the basis of the set of claims 1 to 3 filed on 1 August 2008 with the statement of grounds of appeal, or on the basis of the sets of claims filed as first to third auxiliary requests with the letter of 15 October 2010. For all requests, the description consists of pages 1, 2, 5, 6 and 8 to 30 as originally filed and pages 3, 3a, 3b, 4, 4a and 7, as filed on 1 August 2008 with the statement setting out the grounds of appeal, and the drawings consist of sheets 1/12 to 12/12 as originally filed.

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

*" 1. A detecting device comprising:*

*acquiring means (11) for acquiring physical characteristic information obtained from a to-be-detected object (S);*

*storage means (14) for storing the physical characteristic information acquired by said acquiring means (11) together with specified data which specifies the to-be-detected object (S);*

*first determining means (13) for determining within a certain period of time that the to-be-detected object (S) corresponding to the physical characteristic*

*information acquired by said acquiring means (11) is a specified object based on the physical characteristic information;*

*second determining means (16) for making a more precise determination than the determination by said first determining means (13) with respect to the to-be-detected object (S) based on the physical characteristic information and the specified data stored in the storage means (14) in case the first determining means (13) fails to determine within the certain period of time that the to-be-detected object is a specified object, wherein*

*the acquiring means (11) comprises a plurality of detecting means (11) for detecting physical characteristics of objects (S) at a plurality of points along a first feeding path (1) on which the objects (S) are fed,*

*a distributor means (3) for selectively storing the objects (S) fed by the feeding means in a plurality of storage units (4a, 4b) on the basis of determination results of the first determining means (13), and storing the objects (S) in another storage unit (4c) when the first determining means (13) fails to determine the types of objects (S) within the certain period of time, which certain period of time is the time period on a real-time basis in which the to-be-detected object is fed to the distributor means (3)."*

Claims 2 and 3 are dependent claims.

The amendment to claim 1 of the **first auxiliary request** consists in the replacement of the phrase "*based on the physical characteristic information and the specified data stored in the storage means (14)*" of claim 1 of

the main request by the phrase "*by using a high-degree algorithm, which requires a processing time which is longer than the certain period of time, on the physical characteristic information stored in the storage means (14)*".

Claims 2 to 4 are dependent claims.

With respect to claim 1 of the main request, the amendment to claim 1 of the **second auxiliary request** consists of a further definition of "*second acquiring means (15) for acquiring corresponding physical characteristic information from said storage means (14) based on information indicating a to-be-detected object (S) for which a determination result has not been obtained by said first determining means (13)*" and of the replacement of the phrase "*based on the physical characteristic information and the specified data stored in the storage means (14)*" by the phrase "*based on the physical characteristic information acquired by the second acquiring means (15)*".

Claims 2 and 3 are dependent claims.

Claim 1 of the **third auxiliary request** combines the amendments made to each of claim 1 of the first and second auxiliary requests.

Claims 2 to 4 are dependent claims.

## Reasons for the Decision

1. In the following reference is made to the provisions of the EPC 2000, which entered into force as of 13 December 2007, unless the former provisions of the EPC 1973 still apply to pending applications.
2. The appeal complies with the requirements of Articles 106 to 108 EPC and Rule 99 EPC and is, therefore, admissible.
3. Main request - inventive step (Article 52(1) EPC and Article 56 EPC 1973)
  - 3.1 Document D4 (see in particular the abstract; claim 3; column 3, lines 3 to 45; and Figures 1 and 3 with their corresponding description) refers to a system (and method) for automatically processing and sorting parcels at a post office. For each parcel, images are acquired by scanning of the destination address blocks which are redundantly provided both on a label that is attached to the parcel as well as on separate shipping instructions that accompany the parcel (column 3, lines 31 to 36; column 5, lines 5 to 8; column 7, lines 18 to 21). A parcel is given an identification number and, in a main line of an automated processing, the city/state/zip code line of the address block is resolved by OCR equipment from the image of the label (column 3, line 46 to column 4, line 5; column 4, lines 50 to 58; column 5, lines 24 to 27 and 35 to 41) and the parcel is accordingly sorted for transport to the respective destination location (column 4, lines 1 to 5). In case OCR recognition of the said code line for the destination location fails in the main line of

automated process, an off-line recovery of a parcel is performed by applying an automated fuzzy key match between the scanned images of the label and of the shipping instruction. If this retry is successful, the parcel is rendered to the main line of process (column 3, lines 31 to 45).

- 3.2 In the terms of claim 1 under consideration, the parcel processing and sorting system known from document D4 constitutes a 'detecting device' for to-be-detected objects (*ie* parcels) which has 'acquiring means' (*ie* the scanning equipment) for acquiring physical characteristic information (*ie* the scanned image data of the label and the shipping instruction) from a to-be-detected object. The fact that code line information is retrieved by OCR methods from the scanned image data presupposes the presence of 'storage means' for storing the physical characteristic information (*ie* the image data) acquired by the acquiring means together with specified data (*ie* the respective identification number) which specifies the to-be-detected object. The OCR equipment of the known system/device which retrieves in the main-line process the said code line information from the labels constitutes 'first determining means' for determining, based on the physical characteristic information, within a certain period of time (*ie* the time it takes for sorting a parcel in the main-line process) that the to-be-detected object corresponding to the physical characteristic information acquired by the acquiring means is a specified object (*ie* a parcel with a recovered destination location). Furthermore, with the equipment for executing an automated fuzzy key match in an off-line process, the known system/device possesses 'second determining means' for making a more



precise determination than the determination by said first determining means with respect to the to-be-detected object based on the physical characteristic information and the specified data stored in the storage means in case the first determining means fails to determine within the certain period of time that the to-be-detected object is a specified object. Finally, the ability of the known system to automatically sort parcels according to their respective destination location implies the presence of 'distributor means' for selectively storing the objects fed by 'feeding means' in a plurality of 'storage units' on the basis of determination results of the first determining means, whilst the arrangement for off-line processing of parcels that are not recognized in the main line necessitates the provision of 'another storage unit' in which the parcels have to be kept before being possibly fed back to the main line of processing. In this context, it is clear that the time that is available in the known system/device for any successful off-line retry of an automated determination of the destination location is the time period on a real-time basis in which a parcel is conveyed to the distributor means.

- 3.3 It follows from these considerations that the detecting device according to claim 1 of the main request differs from the device/system known from document D4 in that its acquiring means comprises a plurality of detecting means for detecting physical characteristics of objects at a plurality of points along a first feeding path on which the objects are fed.

The purpose served by this measure and thus the objective problem to be solved can for instance be seen

in the desire to better distinguish between different objects and to achieve a more diverse sorting and distribution.

- 3.4 It would not be uncommon for the skilled person to adjust the mail sorting system such as the one known from document D4 so that more than one criterion for automatic sorting is taken into account in order to increase the diversity of sorting. Straightforward examples of additional sorting characteristics would for instance be weight and size of parcels or mail items in general. As a matter of fact, Figures 1, 3 and 5 of document D4 show characteristics such as 'size' and 'weight' as entries to a 'parcel sort information data base' and in column 7, line 20 of D4 it is mentioned that the OCR scanner can be attached to a weighing scale.

Moreover, even the use of some common types of OCR scanners in the system/device of document D4, namely scanners having either a two-dimensional array of (CCD) sensor elements or having parallel rows of sensor elements which are sensitive to different wavelength ranges, would lead to an arrangement that would embody the claimed form of the acquiring means, because successive rows of sensors along the direction of the feeding path for the parcels would constitute a 'plurality of detecting means' within the broad scope of the claim definition under consideration.

For these reasons, neither the problem nor its solution identified in point 3.3. above involves an inventive step.

3.5 The appellant contested this finding. In its view, the claimed subject-matter was further distinguished from the prior art according to document D4, in that the fuzzy key match in the off-line process of the known device did not possess the functionality of the claimed 'second determining means'. First of all, data processing by a fuzzy key match did not constitute a "more precise determination" within the meaning of claim 1 on file but amounted to a mere retry of an unsuccessful first determination. Moreover, in the device known from D4 the main-line and the off-line OCR processes operated on different pieces of information. Whereas the main-line process operated on the image data stemming from a label, the fuzzy key match required additionally the image data of the respective shipping instruction. In distinction thereto, the claimed second determining means used exactly the same physical characteristic information and only that piece of information as was used by the first determining means. Finally, D4 still foresaw manual intervention by an operator, for instance in case the off-line fuzzy key match also failed.

The argument that the off-line fuzzy key match according to document D4 did not qualify as a "more precise determination" is untenable in view of the fact that parcel recognition in the main-line of D4 consists of an OCR process exercised on the image data of the label, whereas the off-line recognition additionally comprises an OCR process exercised on the image data of the shipping instruction and on a comparison of the results of the two OCR processes. The appellant's second argument is not valid given the fact that claim 1 under consideration (and, besides, the

application description as well) is silent as to the respective extent with which the first and second determining means resort to the acquired physical characteristic information. All that is required by the claim definition at hand is that both, the first and the second determining means "base" their respective determination on the physical characteristic information acquired from the to-be-detected object. Exactly the same is done by the main-line and off-line OCR processes in the system of document D4, where the physical characteristic information consists of the scanned image data of a label and a corresponding shipping instruction.

The appellant's last argument cannot convince given the fact that the wording of claim 1 on file does not exclude operator intervention for a situation which would be analogous to that described in document D4, *ie* in case the second determining means also failed to detect the object. Besides, the embodiment of Figure 12 of the present application expressly foresees operator intervention.

3.6 For the above reasons, the Board has arrived at the conclusion that the main request does not meet the requirement of Article 52(1) EPC and Article 56 EPC 1973 and is therefore not allowable.

4. Auxiliary requests - inventive step

4.1 Claim 1 of the first auxiliary request additionally specifies that for making the more precise determination the second determining means uses a high-degree algorithm which requires a processing time which is longer than the certain period of time.

In the Board's view, the fuzzy key match in the off-line OCR processing of the system of document D4 qualifies as such a 'high-degree algorithm' in the recognizable meaning of this term. Therefore, the subject-matter of amended claim 1 of the first auxiliary request does not involve an inventive step either.

- 4.2 Claim 1 of the second auxiliary request additionally defines second acquiring means which retrieve the physical characteristic information stored in the storing means so as to be used by the second determining means for making the said more precise determination.

Since such a *modus operandi* is implicit to the description of the off-line OCR processing in the system/device of document D4, no difference can be seen in the amendment between the claimed subject-matter and the teaching of the prior art according to D4. Therefore, the amendment to claim 1 of the second auxiliary request can not establish the presence of an inventive step.

- 4.3 An analogous judgement of lack of inventive step is reached at for the subject-matter of claim 1 of the third auxiliary request which combines the amendments made in the first and the second auxiliary request.
- 4.4 For these reasons, none of the first, second and third auxiliary requests is allowable either.

**Order**

**For these reasons it is decided that:**

The appeal is dismissed.

The Registrar

The Chairman

R. Schumacher

B. Schachenmann