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**Datasheet for the decision
of 7 November 2012**

Case Number: T 0116/09 - 3.4.01

Application Number: 04794080.4

Publication Number: 1671260

IPC: G06K 9/00

Language of the proceedings: EN

Title of invention:

Methods for finger biometric processing and associated finger biometric sensors

Applicant:

Authentec, Inc.

Opponent:

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Headword:

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Relevant legal provisions:

EPC Art. 123(2)

Relevant legal provisions (EPC 1973):

EPC Art. 84

Keyword:

"Clarity (yes, after amendment)"

"Added subject-matter (no)"

Decisions cited:

-

Catchword:

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Case Number: T 0116/09 - 3.4.01

D E C I S I O N
of the Technical Board of Appeal 3.4.01
of 7 November 2012

Appellant:
(Applicant)

Authentec, Inc.
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Representative:

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Decision under appeal:

Decision of the Examining Division of the
European Patent Office posted 31 July 2008
refusing European patent application
No. 04794080.4 pursuant to Article 97(2) EPC.

Composition of the Board:

Chairman: P. Fontenay
Members: H. Wolfrum
A. Pignatelli

Summary of Facts and Submissions

- I. European patent application 04 794 080.4 (publication No. 1 671 260) corresponding to published international application WO-A-2005/034021 was refused by a decision of the examining division dispatched on 31 July 2008, on the ground of lack of clarity and support by the description (Article 84 EPC) of the claims of a main request and an auxiliary request then on file.

In the contested decision, the examining division held that the independent method claim did not define two features which were considered essential to the invention, namely that the finger biometric enrollment data sets are image data and that the data sets of the at least one pair of enrollment data sets overlap. Thus, the claimed subject-matter was not supported by the description.

- II. The applicant lodged an appeal against the decision and paid the prescribed fee on 18 September 2008. On 8 December 2008 a statement of grounds of appeal was filed, which comprised new sets of claims according to a main request and an auxiliary request. Moreover, an auxiliary request for oral proceedings was made.
- III. On 30 April 2012 the appellant was summoned to oral proceedings. In an annex to the summons pursuant to Article 15(1) RPBA the Board pointed to a number of problems concerning lack of clarity (Article 84 EPC 1973) and added subject-matter (Article 123(2) EPC) for the requests on file. In this context, the Board embraced the examining division's view and pointed to a number of further deficiencies with respect to the

clarity of the claims, concerning in particular ambiguities in terminology and the lack of indications as to how the various claimed measures would have to be performed.

IV. Oral proceedings were held on 7 November 2012.

The appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of claims 1 to 6 filed during the oral proceedings.

V. Independent claims 1 and 6 of the appellant's request read as follows:

"1. A method for finger biometric processing comprising:

generating at least one pair of overlapping finger biometric enrollment image data sets based upon successive placements of a user's finger upon a finger biometric touch sensor or based upon sliding placement of a user's finger upon a finger biometric slide sensor, each type of said placements generating respectively a series of overlapping finger biometric enrollment image data sets, each of which corresponds to a slice, i.e. a slice image of a fingerprint;

generating a respective estimated physical transformation between each of the at least one pair of overlapping finger biometric enrollment image data sets of a finger, by means of correlation techniques for image registration so as to bring into alignment respective sub-regions of areas of overlap of the at least one pair of overlapping finger biometric enrollment image data sets, wherein the estimated physical transformation comprises at least one of a

horizontal translation, a vertical translation, and a rotation;

generating a respective uncertainty for each estimated physical transformation, using a multivariate probability density function by estimating a covariance matrix for the respective estimated physical transformation; and

associating the respective estimated physical transformation and the respective uncertainty with the at least one pair of overlapping finger biometric enrollment image data sets to define a logical finger biometric enrollment graph, in that the logical finger biometric enrollment graph is composed of nodes, which represent the input slices, i.e. slice images, and edges, which represent the respectively generated estimated physical transformation between consecutive nodes and the associated generated uncertainty."

"6. A finger biometric sensor implementing the method of Claims 1 to 5, wherein the at least one pair of overlapping finger biometric enrollment image data sets is generated by an integrated circuit finger biometric sensor."

Claims 2 to 5 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 and Rule 99 EPC and is, therefore, admissible.

3. Amendments (Article 123(2) EPC)

3.1 Claim 1 on file combines the features of original claims 1, 3, 7 and 16 and is limited to one of the alternatives defined in original claim 17 (*ie* that the data of the finger biometric enrollment data sets are image data).

As regards the step of generating the at least one pair of finger biometric enrollment data sets, information as to the nature of these data sets has been added, *ie* that the said data sets are overlapping and that each of them corresponds to a slice of a fingerprint. These pieces of information are disclosed *inter alia* in paragraphs [0015] and [0109] of the description as originally filed.

The step relating to the generation of a respective estimated physical transformation has been further amended by making reference to the use of correlation techniques for image registration, as disclosed in paragraph [0109] of the description as originally filed. Moreover, information has been added as to the nature of the said transformation. The respective basis of disclosure is provided by original claim 14 and paragraphs [0015], [0037], [0102] and [0109] of the original description.

The amendments made to the step of generating a respective uncertainty are disclosed in paragraphs [0101], [0117] and [0118] of the original description.

Further amendments to claim 1 which specify the nature of the logical finger biometric enrollment graph and its elements have a basis of disclosure in paragraphs [0081] to [0084], [0099], [0108], [0113] and [0139] of the original description. The fact that the generation of a confidence score is optional is derivable from original paragraphs [0032], [0073] and [0093].

3.2 Claims 2 and 3 correspond to original claims 2 and 15, respectively.

3.3 The additional features given in claim 4 concern a variant of fingerprint matching. They are disclosed in paragraphs [0086] to [0089] of the originally-filed description.

Claim 5 concerns an alternative variant of fingerprint matching and is based primarily on original claims 7 to 13 completed by information disclosed in paragraphs [0121], [0122], [0127] and [0134] of the originally-filed description.

3.4 The subject-matter of claim 6 is disclosed, *inter alia*, by paragraph [0039] of the description as originally filed

3.5 For the above reasons, the Board has come to the conclusion that the amendments made to the claims on file comply with the provision of Article 123(2) EPC.

4. Clarity of wording and support in the description

- 4.1 In the Board's view, the amendments made to the claims overcome the previously raised objections as to lack of clarity and support by the description.

Claim 1 on file defines in a comprehensible and comprehensive manner a method for finger biometric processing, which allows to readily and accurately determine enrollment image data of a fingerprint in cases in which the image of a fingerprint is composed of images of overlapping slices, and which preserves, in this context, information concerning the mutual alignment of consecutive slices and the associated alignment uncertainties.

In this context, claim 1 contains indications as to the technical meaning of the terms "finger biometric enrollment image data sets", "estimated physical transformation", "respective uncertainty" and "logical finger biometric enrollment graph". Likewise, the definitions comprised in claim 1 provide the necessary indications as to how the respective estimated physical transformation for alignment of overlapping finger biometric enrollment data sets and a respective uncertainty are generated, and what has to be done when associating the generated transformation and the corresponding uncertainty so as to define the logical finger biometric enrollment graph.

The wording of the dependent claims has been adapted to the terminology used in claim 1. Claims 4 and 5 define two alternatives of a complementary method of verifying

a user's fingerprint with respect to an enrolled fingerprint.

- 4.2 Therefore, the Board considers the requirements of Article 84 EPC 1973 to be met, as far as the claims on file are concerned.

For the avoidance of doubt it is added that the description on file has still to be adapted to the claims.

5. Given the fact that no decision has yet been taken as to the substantive merits of the claimed subject-matter in terms of novelty and inventive step, the Board, in exercising its discretion under Article 111(1) EPC, considers it appropriate to remit the case to the examining division for further prosecution.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the first instance department for further prosecution on the basis of the set of claims 1 to 6 filed during the oral proceedings before the Board of Appeal.

The Registrar

The Chairman

R. Schumacher

P. Fontenay