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Datasheet for the decision of 10 December 2015

Case Number: T 1921/10 - 3.4.01

Application Number: 06405105.5

Publication Number: 1962280

IPC: G10L17/00, G06K9/68, G07C9/00

Language of the proceedings: EN

Title of invention:
Method and network-based biometric system for biometric authentication of an end user

Applicant:
BIOMETRY.com AG

Headword:

Relevant legal provisions:
EPC 1973 Art. 56
RPBA Art. 13(1)

Keyword:
inventive step (no; main request)
late-
filed auxiliary requests (clearly not allowable; not admitted)

Decisions cited:
T 0037/85, T 1173/97

Catchword:

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Beschwerdekammern
Boards of Appeal
Chambres de recours

European Patent Office
D-80298 MUNICH
GERMANY
Tel. +49 (0) 89 2399-0
Fax +49 (0) 89 2399-4465

Case Number: T 1921/10 - 3.4.01

D E C I S I O N
of Technical Board of Appeal 3.4.01
of 10 December 2015

Appellant: (Applicant)	BIOMETRY.com AG Chilcherlistrasse 1 6055 Alpnach (CH)
Representative:	Rutz & Partner Postfach 4627 6304 Zug (CH)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 19 April 2010 refusing European patent application No. 06405105.5 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman	G. Assi
Members:	H. Wolfrum
	J. Geschwind

Summary of Facts and Submissions

I. European patent application 06 405 105.5 (publication No. EP 1 962 280) was refused by a decision of the examining division for the reasons of non-compliance with the requirements of Articles 52(1) and 56 EPC 1973 (for a main request then on file being based on the application documents as originally filed; and for a first auxiliary request then on file), of Article 84 (for the first and a second auxiliary request then on file) and of Article 123(2) EPC (for the second auxiliary request).

II. The applicant lodged an appeal against the decision.

With its statement setting out the grounds of appeal filed with a letter of 24 August 2010 the appellant requested, in accordance with the main request pursued in the examination proceedings, that the decision under appeal be set aside and that a patent be granted on the basis of the claims as originally filed.

III. The appellant was summoned to oral proceedings.

In a communication pursuant to Article 15(1) RPBA the Board doubted whether, in view of the prior art according to documents :

D1 : EP-A-1 526 505, and
D2 : EP-A-0 779 602,

the claimed subject-matter involved an inventive step and drew attention inter alia to the provision of Article 13(1) RPBA.

IV. In response, the appellant filed by letter of 14 June 2015 new independent claims 1 and 8 according to a first and a second auxiliary request, respectively.

V. In the oral proceedings which were held on 10 December 2015 the appellant maintained its requests as filed in writing.

VI. Independent claims 1 and 8 of the appellant's main request read as follows :

"*1. Method for the reliable biometric authentication of end users in at least one institution, such as a commercial, financial or official institution, by means of a network-based biometric system that comprises for each institution at least one authentication server (15), which is accessible over a network (5) such as the Internet, from fixed or mobile end user terminals (23), which are equipped with audio- and video-recording devices (21, 22) and which are designed for simultaneously capturing biometric audio and video samples from the end user, comprising the steps*

a) for the enrolment of an end user that has been identified by means of credentials provided at a registration authority (10) of the institution or a related service provider

a1) of simultaneously capturing biometric audio and video samples by means of an enrolment terminal (13)
equipped with audio- and video-recording devices (11, 12) for speech elements or speech segments expressed by the end user based on dictated speech elements or speech segments provided by the registration authority (10) and

a2) storing the user profile in a database (100) together with dictated information and the

accordingly captured biometric audio and video samples or related biometric data;

b) for the on-line authentication of the end user

b1) of sending information disclosing a sequence of randomly assembled dictated speech elements or speech segments, for which biometric audio and video samples were captured from the end user, over the network (5) to the end user terminal (23) and requesting a corresponding response;

b2) simultaneously capturing biometric audio and video samples for the corresponding speech elements or speech segments expressed by the end user and sending the captured biometric audio and video samples or related biometric data over the network (5) to the authentication server (15);

b3) comparing the on-line captured biometric audio and video samples or the related biometric data with correspondingly assembled biometric audio and video samples or related biometric data stored in the database (100); and

b4) providing a decision if the end user has been identified."

"*8. A network-based biometric system for the reliable biometric authentication of end users with end user terminals (23) which are equipped with audio- and video-recording devices (21, 22) and which are connected over a network (5) such as the Internet to a centralised authentication server (15) of an institution, such as a commercial, financial or official institution, which is connected to a database (100) of a registration authority (10), which is containing biometric audio and video samples or related biometric data that were captured from end users by means of an enrolment server (13) with audio- and*

video-recording devices (11, 12), said end user terminals (23), authentication server (15) and enrolment server (13) comprising program modules (230; 150; 130) that are designed to operate according to the method defined in one of the claims 1-7."

Claims 2 to 7 and 9 to 14 are dependent claims.

Claim 1 of auxiliary request 1 differs from claim 1 of the main request in that the phrase "from fixed or mobile end user terminals (23)" is replaced by the phrase "from mobile end user terminals (23) in the embodiment of a mobile phone" and in that the feature "and comprising the steps of individually adjusting thresholds that determine the allowable matching differences for each biometric according to the value or importance of a transaction to be performed after authentication" is added at the end.

The first one of these two amendments is made also to claim 8 of auxiliary request 1.

Claim 1 of auxiliary request 2 is based on claim 1 of auxiliary request 1 and differs therefrom by the addition at the end of the further feature "and comprising the steps of transferring an equipment identification of the end user terminal (23), such as the IMEI of the mobile phone, to the authentication server (15) for comparison with a value pre-stored for the concerned end user."

The wording of claim 8 of auxiliary request 2 is identical to that of claim 8 of auxiliary request 1.

VII. The appellant's arguments presented in writing may be summarized as follows :

The subject-matter of claims 1 and 8 of the main request was not only novel with respect to the prior art of each one of documents D1 and D2 but was not rendered obvious by these documents either.

The examining division's assessment of the problem-solution-approach was fundamentally flawed already because of the fact that it set out from a mono-modal authentication method according to document D1 which was based solely on taking audio samples of dictated speech and thus did not represent the closest prior art for the claimed bi-modal authentication process which relied on simultaneously capturing biometric audio and video sampling of speech segments. Instead, a correct application of the problem-solution approach should start from a bi-modal authentication method or system as was known from document D2. Only in that case the skilled person would be confronted with the true problems that the present inventors had to solve, i.e. to improve a multi-modal authentication method based on the utterance of a preselected phrase or password with the aim of reducing the false acceptance rate as well as the false rejection rate. Since bi-modal and mono-modal authentication processes were mutually incompatible processes and since document D1 would have offered only a partial solution for the audio authentication anyway, the skilled person would not have taken document D1 into consideration. Thus, any combination of features from documents D1 and D2 could only be based on an inadmissible ex-post-facto analysis. Moreover, the prior art would have offered a plurality of other solutions, such as for example iris recognition or fingerprint detection. A still further

hurdle that the skilled person had to overcome and which prevented the skilled person to resort to mono-modal processes was established by problems concerning the proper matching and synchronization of audio and video data as addressed in D2.

In the oral proceedings the appellant advanced a different line of argumentation, asserting why the skilled person would not have arrived at the claimed subject-matter when starting from the teaching of document D1. In this context, the appellant affirmed that, in relying on a synthesis of audio-visual measures consisting of the simultaneous registration of audio and video information, the invention achieved a synergistic effect in terms of the reliability of the authentication which exceeded the sum of the effects of the individual measures. Referring to decision T0037/85, the appellant stated that in the case of combination inventions it was not sufficient to examine whether individual features were known but it had to be ascertained whether the prior art gave indications as to their combination. A mere aggregation of features from documents D1 and D2 was impossible in any case, given the incompatibility of the two teachings, D1 relying on a fragmentation of mere audio information and D2 relying on the acquisition of integral phrases or passwords. Moreover, the presence of inventive step should be acknowledged in view of a number of secondary indicia, such as a regress from the earlier bi-modal approach of D2 (stemming from 1995) to a mono-modal approach of D1 (claiming priority from 2003), which regress even proved a technical prejudice as the authors of D1 apparently considered a multi-modal arrangement impossible. Furthermore, the present invention satisfied a long-felt need and established a significant technical advance which according to the

case-law of the Boards of Appeal merited patent protection (T1173/97).

Reasons for the Decision

1. The appeal complies with the requirements of Articles 106 to 108 and Rule 99 EPC and is, therefore, admissible.

2. Main request - inventive step (Articles 52(1) and 56 EPC 1973)

2.1 The following considerations take document D2 as the starting point for applying the problem-solution-approach, so as to directly respond to the appellant's argumentation given in the statement of grounds of appeal.

It is added that the same decision would be arrived at if document D1 is used as starting point, as it was done by the examining division in the contested decision.

At any rate, the appellant's criticisms that document D1 was allegedly an incorrect starting point and the conclusions drawn therefrom (see paragraphs 1.1, 1.11 and 1.12 of the statement of grounds of appeal) are mute.

2.2 It is undisputed by the appellant that document D2 (see in particular claim 1; Figures 1 and 4 with the corresponding description; column 1, lines 25-51; and column 2, lines 19-35) describes a "*method for the reliable biometric authentication of end users in at least one institution by means of a network-based biometric system that comprises for each institution at*

least one authentication server, which is accessible over a network from fixed or mobile end user terminals, which are equipped with audio- and video-recording devices and which are designed for simultaneously capturing biometric audio and video samples from the end user" which comprises steps a), a2), b), b2) and b4) of claim 1. In fact, the known method prompts a user to speak a selected phrase or password so as to register the voice and an associated video of lip movements.

The appellant sees the subject-matter of claim 1 under consideration distinguished from D2 by some elements of features a1) (in that D2 registered complete words or phrases in distinction to "*speech elements*" or "*speech segments*" as claimed), b1) (in distinction to D2, claim 1 required that the information sent over the network to the end user terminal consisted of "*randomly assembled dictated speech elements or speech segments*"), and b3) (in distinction to D2, the claimed method compared the on-line captured biometric data with the randomly assembled data).

In the Board's view, there is no difference as regards step a1) because the terms "*speech elements*" or "*speech segments*" are so vague and indefinite that they comprise passwords and even complete phrases.

Moreover, the comparing step b3) is as such also executed in the method known from document D2. The fact that the data samples against which the on-line captured biometric data are compared differ from those used in the known method is an immediate consequence of feature b1) and thus does not qualify as a separate difference. This leaves feature b1) as the sole

concrete difference between the subject-matter of present claim 1 and the teaching of document D2.

2.3 Based on this difference the objective problem to be solved can be considered as the desire to further enhance the security of the authentication process.

2.4 It is quite normal for a skilled person, when faced with a technical problem, to check whether the respective technical field already offers any solution. Contrary to the appellant's assertions, bi-modal and mono-modal authentication do not relate to different technical fields. The skilled person who is capable to implement a bi-modal authentication method, *i.e.* a method which is based on the recognition of speech and video samples, has of course to be familiar with each one of the two modes of authentication. Thus, the skilled person setting out to further improve the bi-modal authentication method according to document D2 will be aware of document D1 and will recognize that the more elaborate manner of speech authentication based on a random assembly of dictated speech elements or speech segments as taught by this document promises a significant improvement in terms of security of authentication of a user. When implementing the manner of speech authentication according to document D1 in the bi-modal authentication of document D2, there is no sensible reason to deviate from the practice established in D2 of simultaneously capturing audio and corresponding video samples for the speech elements. On the contrary, it would in fact be nonsensical to capture video samples separately and different from those which are directly available in conjunction with the captured audio samples.

Therefore, the skilled person would arrive at the subject-matter of claim 1 of the main request on file simply by upgrading the authentication method of D2 in an obvious and straightforward manner following the proposition of document D1 and thus without having to resort to inventive skills.

2.5 The appellant's arguments in support of inventive step are unconvincing.

The assertion that bi-modal and mono-modal authentication processes were mutually incompatible processes is technically unfounded already because bi-modal authentication encompasses both mono-modal audio and video authentication processes. The fact that according to D1 passwords are composed from speech elements whereas the teaching of D2 deals with integral passwords and phrases is of merely linguistic nature but does not involve different technologies. Therefore, the allegation of an inadmissible ex-post-facto analysis is untenable. Moreover, the presumption that other prior art may have offered other solutions does not invalidate the analysis given in point 2.4 above, in particular because the mere circumstance that the skilled person could have imagined a plurality of solutions does not render the choice of one of them inventive.

The argument that problems concerning the proper matching and synchronization of audio and video data, which are addressed in D2, had prevented the skilled person from taking information concerning mono-modal authentication according to document D1 into consideration is inconclusive and ignores the facts that the same problems would affect the presently claimed subject-matter as well, that the present

application - in distinction to the teaching of document D2 - would not offer any solution in their respect, and that the said problems are at any rate technically unrelated to the concrete aspect of improving the security of authentication as offered by document D1.

Moreover, the claimed subject-matter does not constitute a "*combination invention*" already for the simple reason that the claimed "*combination*" of audio-visual measures consisting of the simultaneous registration of audio and video information is already known from document D2, and thus constitutes the starting point for the problem-solution-approach as expounded in point 2.4 above. In the absence of any concrete technical difference other than that established in point 2.2 above, the claimed subject-matter does not achieve any unforeseeable technical effect, which generally characterizes a combination invention.

Finally it is noted that, apart from the fact that none of the secondary indicia for the presence of inventive step incited by the appellant are proven, any investigation of secondary indicia is inappropriate (see Case Law of the Boards of appeal, 7th ed. 2013, chapter I.D.10.1.) in view of the clear-cut assessment of lack of inventive step as given above.

2.6 For the above reasons, the subject-matter of claim 1 of the appellant’s main request lacks an inventive step within the meaning of Article 56 EPC.

The main request is therefore not allowable.

3. Auxiliary requests - admission into the proceedings (Article 13(1) RPBA)

3.1 Compared to the claims of the main request submitted with the statement setting out the grounds of appeal, claim 1 of each of auxiliary requests 1 and 2 filed by letter of 14 June 2015 contains the limitation to a mobile end user terminal in the embodiment of a mobile phone and the definition of "*steps of individually adjusting thresholds that determine the allowable matching differences for each biometric according to the value or importance of a transaction to be performed after authentication*".

In addition, claim 1 of auxiliary request 2 contains the further definition "*and comprising the steps of transferring an equipment identification of the end user terminal (23), such as the IMEI of the mobile phone, to the authentication server (15) for comparison with a value pre-stored for the concerned end user.*"

3.2 The limitations, which have been derived from originally-filed claims 5 and 6, respectively, did not play any prominent role during the examination and appeal proceedings.

3.3 Article 13(1) of the Rules of Procedure of the Boards of Appeal (RPBA) stipulates that "*Any amendment to a party's case after it has filed its grounds of appeal or reply may be admitted and considered at the Board's discretion. The discretion shall be exercised in view of inter alia the complexity of the new subject-matter submitted, the current state of the proceedings and the need for procedural economy.*" In accordance with consistent case law, if the amendments are not *prima facie* clearly allowable or if they lead to an excessive

delay in the proceedings, it is likely that the amendments will not be admitted (see chapter IV.E.4.4.1 of the 7th edition (2013) of Case Law of the Boards of Appeal of the European Patent Office).

3.4 The appellant argued in favour of the admission of the auxiliary requests that the amendments further distinguished the claimed subject-matter from the prior art according to documents D1 and D2 and thus rendered the claimed subject-matter inventive. Notably, the prior art did not disclose an adjustment of threshold values according to the economic value of a transaction for which an authentication is performed. Moreover, the prior art did not teach a transfer of an equipment identification of the end user terminal to the authentication server, which transfer constituted an additional, independent safety feature further enhancing the security of the authentication process. Although a mobile phone normally sent its IMEI to a server in a telephone network it was quite unusual to do the same with respect to an authentication server as it was unknown in the prior art to register mobile phones in the authentication server.

3.5 In the present case, none of the independent claims of auxiliary requests 1 and 2 can reasonably be considered as *prima facie* clearly allowable.

Paragraph [0071] of the application description as published acknowledges that is was known in the prior art to use a mobile phone as the end user terminal by means of which an authentication is established.

Moreover, documents D1 (paragraph [0049]) and D2 (column 2, lines 30-32) both teach the use of thresholds in the authentication process. In this

context, document D1 foresees a setting of different threshold levels, depending on whether high accuracy or a wide acceptance range for the authentication is desired. The claimed criteria of "*value*" or "*importance of a transaction*" are to be considered as special cases falling within the ambit of the teaching of document D1 and concern non-technical considerations anyway.

Finally, it appears safe to assume that, in analogy to a conventional telephone network, any practical authentication system has to keep a record of the individual end user terminals which are allowed to participate in the network.

For these reasons, none of the amendments made to the auxiliary requests on file renders the claimed subject-matter inventive and the auxiliary requests would clearly not be allowable.

3.6 As a result, in the oral proceedings the Board exercised its discretion under Article 13(1) RPBA and did not admit the appellant's auxiliary requests of 14 June 2015 into the proceedings.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

R. Schumacher G. Assi

Decision electronically authenticated