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**Datasheet for the decision  
of 22 June 2021**

**Case Number:** T 1791/16 - 3.5.06

**Application Number:** 04758859.5

**Publication Number:** 1611541

**IPC:** G06K9/00

**Language of the proceedings:** EN

**Title of invention:**  
MULTISPECTRAL BIOMETRIC SENSOR

**Patent Proprietor:**  
HID Global Corporation

**Opponent:**  
Idemia Identity & Security France

**Headword:**  
Multispectral skin biometrics / HID 2

**Relevant legal provisions:**  
EPC Art. 100(c), 123(2)  
RPBA 2020 Art. 13(1)

**Keyword:**

Grounds for opposition - added subject-matter (yes) - clarity in opposition proceedings  
Amendment to appeal case - suitability of amendment to resolve issues raised (no)

**Decisions cited:**

**Catchword:**

If a claim is ambiguous/unclear, all technically reasonable claim interpretations must be considered. If one of those interpretations contains matter that extends beyond the content of the application as originally filed, it must be concluded that added subject-matter is present (reasons point 11).



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**Case Number: T 1791/16 - 3.5.06**

**D E C I S I O N**  
**of Technical Board of Appeal 3.5.06**  
**of 22 June 2021**

**Appellant:**  
(Patent Proprietor)

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**Representative:**

DTS Patent- und Rechtsanwälte  
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**Respondent:**  
(Opponent)

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**Decision under appeal:**

**Decision of the Opposition Division of the  
European Patent Office posted on 8 June 2016  
revoking European patent No. 1611541 pursuant to  
Article 101(3) (b) EPC.**

**Composition of the Board:**

**Chairman** B. Müller  
**Members:** T. Alecu  
A. Teale

## **Summary of Facts and Submissions**

- I. The appeal is against the decision of the Opposition Division to revoke European patent number EP 1611541 B1 (the patent in suit). The notice of opposition raised all grounds for opposition (Article 100(a), (b) and (c) EPC). The decision found the patent as granted (main request) to extend beyond the subject matter of the parent application (Article 100(c) EPC), and found all other requests to have the same substantive deficiency (under Article 123(2) EPC).
  
- II. With the grounds of appeal, the appellant (patent proprietor) requested that the impugned decision be set aside and that the case be remitted for further prosecution on the basis of the patent as granted, or on the basis of an auxiliary request filed therewith. They also made arguments as to why the impugned decision was wrong and why the new request was allowable.
  
- III. The respondent requested to "reject the appeal" and "revoke the patent". They argued that the patent in suit was in breach of Article 100(c) EPC and that the first auxiliary request violated Article 123(2) EPC and Article 84 EPC.
  
- IV. The Board summoned the parties to oral proceedings. In the communication accompanying the summons it informed the parties of its provisional opinion that the patent as granted extended beyond the subject matter of the parent application and that this was also the case for the auxiliary request. It also considered that the auxiliary request was in breach of Article 84 EPC.

V. The appellant filed two new auxiliary requests as first and third auxiliary requests, and re-filed the previous auxiliary request as the second auxiliary request, and argued in favor of their admittance and of the allowability of all requests.

VI. The respondent indicated that they would not take part in the oral proceedings and requested to not admit the newly filed auxiliary requests because they were late filed and did not comply with Rule 80 EPC, in that they did not address the added matter objection. Furthermore, the new requests remained in breach of Article 123(2) EPC. Remittal was requested should the Board find any of the requests to not extend beyond the subject matter of the application as originally filed.

VII. The requests of the parties are as follows:

The appellant (patent proprietor) requests that the decision under appeal be set aside and the case be remitted to the department of first instance for further prosecution on the basis of claim 1 of the main request, i.e. the patent as granted, or auxiliary requests I to III, all filed with a letter dated 23 April 2021.

The respondent (opponent) requests that the appeal be dismissed. Should the Board consider that the subject-matter of one of the requests does not extend beyond the content of the application as filed, it is requested that the case be remitted to an Opposition Division, as the other grounds for opposition were not yet discussed in opposition proceedings.

VIII. Claim 1 of the main request reads (reference signs omitted):

*A sensor system comprising:*

*an illumination subsystem disposed to provide light at a plurality of discrete wavelengths to a skin site of an individual;*

*a detection subsystem disposed to receive light scattered from the skin site; and*

*a computational unit interfaced with the detection subsystem and having:*

*instructions for deriving a plurality of spatially distributed multispectral images from the received light at the plurality of discrete wavelengths, the plurality of spatially distributed multispectral images corresponding to spatial spectral information from multiple skin features of the individual at various depths and positions; and*

*instructions for comparing the multiple skin features extracted from the derived plurality of multispectral images with multiple skin features defined by a database of multispectral images to identify the individual.*

IX. Claim 1 of the first auxiliary request differs from that of the main request in that it is specified (in the penultimate feature) that the images correspond to *spatial spectral information from multiple skin features of the individual at various depths and positions within an image volume*.

X. Claim 1 of the second auxiliary request differs from that of the main request by adding at the end of the claim that:  
*wherein the data to be compared is of the same type.*

- XI. Claim 1 of the third auxiliary request comprises both amendments introduced with the first and second auxiliary requests, respectively.

## **Reasons for the Decision**

### The patent in suit

1. The patent in suit relates to multispectral imaging biometrics. A skin site (e.g. a fingertip) is illuminated with light of multiple illumination wavelengths to obtain multispectral image data (paragraphs 11, 12).
2. This multispectral image can be used for biometric authentication/identification (paragraphs 14, 19), but also to estimate other parameters, e.g. alcohol or glucose level (paragraph 18).

### Main request

3. According to the impugned decision, added matter is to be found in the last claim feature, which reads (emphasis by the Board):  
*"instructions for comparing the multiple skin features extracted from the derived plurality of multispectral images with multiple skin features defined by a database of multispectral images to identify the individual."*  
In claim 1 as filed the underlined passages, terms or letter above were missing.
4. Support for these amendments was, according to the proprietor, to be found in original claim 22, dependent on 1, paragraphs 72 and 73, and in the application as a whole.

- 4.1 Original claim 22 recited comparing "*spectral-distribution characteristics*" with a database of "*spectral-distribution characteristics*".
- 4.2 Paragraphs 72 and 73 taken together describe three examples of features that are used to identify an individual. Paragraph 72 describes classifying image pixels as *ridge* and *valley* pixels to form a *fingerprint* image. Paragraph 73 talks of separating *spatial* or *spectral* frequencies "*typically representative of deeper spectrally active structures in the tissue*". In terms of the performed comparison, it is stated that: "*These three portions of the datacube may then be processed and compared to the corresponding enrollment data*".
5. In the opinion of the Opposition Division, the amendments add subject matter in the following ways
  - (a) by generalizing the three features exemplified in paragraph 73 to "*multiple skin features*", which would include skin features elsewhere described (e.g. for estimating other parameters), but which were not meant to be used for individual identification (Grounds 2.3.3.1)
  - (b) by allowing for comparison between skin features and "*skin features defined by a database*",
    - (i) in that the original application envisaged (paragraph 73 and claim 22) only comparison of features with a database of enrolled features (not images) or of images with a database of images (claim 1), and thus not of features with a database of images (Grounds 2.3.3.2), which would imply extracting features from the database "*on the fly*" (Grounds 2.3.3.3)
    - (ii) and in that features were now to be "*defined by a database*", and not extracted



from multispectral images (Grounds 2.3.3.3).

6. The appellant argued in their grounds of appeal that the amendment was clearly a limitation, that the generalization from the three examples was allowable, there being no need to disclose all possible features to be used, and that it was clear to the skilled person that one had to compare data of the same type (i.e. images with images and extracted features with extracted features).
7. The respondent argued in the letter in reply to the summons (section 3) that one should not confuse *skin features* with *image features*. The original application disclosed comparing images with images (claim 1) and image features with image features (claim 22), but did not disclose comparing skin features, which are skin structures such as veins (with reference to *vein imaging*), and "*are not image features*".
8. During the oral proceedings, in response to this aspect, the appellant argued that there was no distinction to be made between image features and skin features. Paragraph 73 disclosed extracting spatial and spectral characteristics which were image features but also skin features. Any number of skin features could be extracted using spatial spectral characteristics. The appellant also referred to paragraph 13, second sentence, stating that: "*The embodiments of the present invention collect multispectral image data that represent spatio-spectral information from multiple skin features of the individual at various depths and positions within an image volume*".

9. The Board notes that there is ambiguity as to what the *skin features* can be. In the above cited claim passage they may be understood to be the result of a mathematical operation on the image, i.e. "extracted" image features, but at the same time they are "defined by a database", which implies a semantic meaning.
- 9.1 The claim states in the previous section, with wording from said paragraph 13, that: "*the plurality of spatially distributed multispectral images correspond[ing] to spatial spectral information from multiple skin features of the individual at various depths and positions*". This (*spatial spectral information **from** skin features*) points rather to the fact that skin features are *objects being imaged*, as opposed to being *image features*.
- 9.2 There is indeed a general distinction to be made between what is imaged and the image and features extracted from it. One speaks, for instance, of vein imaging and fingerprint imaging to denote the objects being imaged. This implies that the image processing techniques used for image feature extraction are targeted to extract information specific to these objects.
- 9.3 Thus, when the claims set out images *corresponding to spatial spectral information from multiple skin features*, and that these skin features are compared with *skin features **defined** by a database for identification*, one reasonable claim reading is that some *biological* skin features are *defined*, such as fingerprints, veins or sweat pores, and that some processing specific to those biological skin features is performed to extract *corresponding* image features suitable for identification.

10. This subject-matter is not directly and unambiguously derivable from the application as filed.
- 10.1 Paragraph 13, cited by the appellant, refers to skin features in general, not for identification (n.b. the application is concerned with other uses as well, as noted above in point 2).
- 10.2 Original claim 22, and paragraph 73 in particular, disclose extracting general image features, which may correspond to skin features, but do not disclose defining *multiple skin features*, in the biological sense, and performing (imaging and) processing specific to those defined features.
- 10.3 The only *skin features* which are identified are the fingerprint ridges and valleys, for which a specific processing is indeed performed (paragraph 72). This defines *one* type of skin feature; the application does not define other types of skin features, in any case not for identification purposes, nor does it disclose corresponding specific feature extraction processes.
11. The Board finds the above claim construction to be a reasonable one, but does not exclude that the interpretation provided by the appellant may also be a reasonable one, in fact the Board is of the opinion that the amendments themselves are not clear and may be interpreted in different ways. This lack of clarity, while it cannot be invoked as a ground for opposition to the patent as granted, causes the subject-matter of the claim to be ambiguously defined. In such circumstances, in the interest of legal certainty, the Board must consider all technically reasonable claim interpretations. If one of those interpretations contains matter that extends beyond the content of the application as originally filed, it must be concluded that a breach of Article 100(c) EPC has occurred. This is the case here.

12. Thus claim 1 of the patent in suit is in breach of Article 100(c) EPC.
13. The above conclusion corresponds to the Opposition Division's objections (a) and (b) (2) (mentioned in point 5 above). For the sake of completeness, the Board notes, regarding the type of data that is to be compared (objection b.1), that the skilled person would understand that the comparison of images generally implies the extraction of features. So when stating, as claim 1 originally did, that images are compared to a database of images, this already implied, to the skilled person, an embodiment where features were extracted "on the fly", both from the test image and from the database. Objection (b) (1) above is therefore unconvincing.

#### Auxiliary Requests

14. The amendment made in the second auxiliary request, i.e. "*wherein the data to be compared is of the same type*" does not change the analysis above as regards the nature of the *skin features*, as also acknowledged by the appellant. Hence claim 1 of this request is in breach of Article 123(2) EPC.
15. The amendment made in the first auxiliary request, i.e. "*within an image volume*" is from a prima facie perspective not suitable to overcome this objection. There was no doubt that the spatial spectral information was to be found within the imaging volume. However, this does not change the fact that the claim defines the use of multiple skin features (in the biological sense) for identification. The appellant did not challenge this assessment.

16. In the light of the foregoing, neither the first auxiliary request nor the third auxiliary request (wherein the two above amendments are combined) are suitable to resolve the issues raised and are therefore not admitted (Article 13(1) RPBA 2020).

## Order

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

The appeal is dismissed.

The Registrar:

The Chairman:



L. Stridde

B. Müller

Decision electronically authenticated