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Datasheet for the decision of 28 January 2025

Case Number: T 0511/22 - 3.4.01

Application Number: 14796052.0

Publication Number: 3066612

IPC: G06K7/14, G06K19/06

Language of the proceedings: EN

Title of invention:
TWO DIMENSIONAL BARCODE AND METHOD OF AUTHENTICATION OF SUCH BARCODE

Patent Proprietor:
Scantrust SA

Opponents:
Advanced Track & Trace
SCRIBOS GmbH
U-NICA Solutions AG

Headword:
Authentication of 2D-barcodes / scantrust SA

Relevant legal provisions:
EPC Art. 56

Keyword:
Inventive step - (no)

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Case Number: T 0511/22 - 3.4.01

D E C I S I O N
of Technical Board of Appeal 3.4.01
of 28 January 2025

Appellant: (Patent Proprietor)	Scantrust SA EPFL PSE-C 1015 Lausanne (CH)
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Decision under appeal: **Decision of the Opposition Division of the European Patent Office posted on 22 December 2021 revoking European patent No. 3066612 pursuant to Article 101(3)(b) EPC.**

Composition of the Board:

Chairman B. Noll
Members: P. Fontenay
C. Almberg

Summary of Facts and Submissions

I. Three oppositions were filed against the patent. They relied on grounds laid down in Article 100(a) to (c) EPC.

II. The Opposition Division revoked the patent.

III. The decision of the Opposition Division is based on the sole request of the proprietor, that is the set of claims filed with letter dated 15 November 2021.

IV. In their decision to revoke the patent, the Opposition Division decided that the subject-matter of claim 1 of the (main and sole) request was not new (Article 54 EPC) in view of documents

D5: WO-A-2009/004172, or
D21: US-A-2013/0094064.

V. The Opposition Division did not decide on the grounds of insufficient disclosure and added subject-matter raised under Article 100(b) and (c) EPC.

VI. On appeal, the proprietor (appellant) sought maintenance of the patent based on said sole request.

VII. In reply, opponents 1 to 3 (respondents) in effect all sought dismissal of the appeal, i.e. confirmation of the revocation of the patent.

Opponent 3 further requested that the appeal be deemed not to have been filed or rejected as inadmissible. It held, in this respect, that the proprietor was not entitled to benefit from a reduction of the appeal fee since they did not belong to the category of small or medium-sized enterprises.

VIII. In a communication of the Board pursuant to Article 15(1) RPBA, the parties were informed of the Board's preliminary opinion.

The Board held that the arguments and evidence were not sufficient to support the assertion made by opponent 3 that the proprietor was not entitled to reduction of the appeal fee.

With regard to novelty, the Board noted that neither document D21 nor document D5 anticipated the claimed subject-matter. However, the subject-matter of claim 1 was considered to lack an inventive step starting from D21.

IX. There were no written submissions received in response to the Board's preliminary opinion.

X. The proprietor and the three opponents were represented at the oral proceedings before the Board.

XI. Their final requests were as follows.

The proprietor requested that the appealed decision be set aside and the patent maintained based on the claims of the sole request filed on 15 November 2021 and subject of the appealed decision.

The opponents requested that the appeal be dismissed.

XII. Claim 1 reads (reference signs have been omitted):

Method of authenticating a 2D barcode comprising the features of a 2D barcode created according to a method for creating a 2D barcode comprising:
- embedding primary information that can be read by a 2D-barcode-reader in a primary information pattern,
- embedding secondary information in a visible pattern embedded within said barcode in at least one area that does not contain any primary information such that the secondary information is separated from the primary information,
wherein said secondary information in a visible pattern is formed by light and dark elementary sub-cells having a largest dimension smaller than 50 µm configured to be difficult to reproduce without alteration,
and wherein the secondary information is generated using a secret key such that the visible pattern contains a secret,
the method of authenticating the 2D barcode comprising:
scanning said 2D barcode using a local device to generate at least one image frame,

reading from the image frame primary information in said local device,
extracting from the image frame secondary information in said local device,
generating a portion of secondary information using a key stored in the local device, said portion comprising or forming a signature of the secondary information,
comparing said signature of the secondary information with the extracted secondary information to verify the authenticity at a first local level of the 2D barcode wherein the comparison of said signature of the source secondary information with the extracted secondary information generates a score,
sending the primary information or an information correlated thereto, and an image of the extracted secondary information, to a remote server,
and authenticating the 2D barcode by comparing the image of the extracted secondary information with an original 2D barcode image generated in the remote server.

Reasons for the Decision

Status of the appeal

1. The parties have had opportunities to comment on the Board's positive preliminary opinion on the formal viability of the appeal. None of them have addressed, let alone contested it. The Board also sees no reason to deviate from it, and decides accordingly as follows.

2. In February 2022, in due time, the proprietor filed a notice of appeal and paid EUR 1.955,00, the then

prescribed reduced appeal fee for small and medium-sized enterprises (cf. Rule 6(4)(a) EPC and Article 2(1)(11) RFees, in the version applicable at the time). Two days later, still in due time, they declared themselves to belong to that category of enterprises (cf. Rule 6(6) EPC). The proprietor then filed a statement of grounds that meets the requirements of the EPC. Later during the appeal proceedings, in reply to the questioning by opponent 3 of their eligibility for appeal fee reduction, the proprietor once again confirmed their eligibility.

3. Opponent 3 asserted in reply to the appeal that the proprietor was not entitled to benefit from a reduction of the appeal fee since they did not belong to the category of small or medium-sized enterprises. For this reason, the appeal should not be admitted.

4. The arguments and evidence of opponent 3 are not sufficient to support their assertion. In particular, any assertion that the venture capital firm SOSV held a substantial stake in Scantrust SA (the proprietor) has, as such, no bearing on the number of employees working for Scantrust SA or on the annual turnover or balance sheet (data which would matter under Rule 6(5) EPC). The evidence provided is also not conclusive regarding the portion of capital of Scantrust SA that is owned by SOSV. That the shares of SOSV in Scantrust are substantial ("massgeblichen Beteiligung") cannot just be presumed.

5. In the absence of evidence proving otherwise, the Board has no reason to doubt the veracity of the proprietor's declaration.

6. Therefore, the appeal is not to be deemed not to have been filed (Article 108 EPC) and also not rejected as inadmissible (Rule 101(1) EPC).

Novelty (Article 54 EPC)

7. In document D21 the identification of an imprint is done with or without a database ([0156]-[0158], [0220]-[0222], [0246] -[0251], claims 14, 15).

8. The mention in D21 (paragraph [0220]), that the imprint of each of the legitimate documents can be destined both to be stored in a database and, in a secured way, on the document, may be construed as referring to the two branches of the alternative that the imprint of the identifier pattern contained in the captured image can be compared with the pre-calculated imprint stored in the document or, alternatively, in a server.

9. As underlined by the proprietor, and contrary to the view put forward by the opponents, this indication does not imply, as such, that the comparison is performed with both the imprint on the document and in addition with the imprint stored in the database. The two approaches are presented in D21 as being equivalent to determine the similarity scores needed to conclude upon the authenticity of the bar-code and associated product. In particular, in the absence of reference in D21 to various portions of the image being compared or as to the different nature of keys that are to be used locally and remotely, the document does not disclose the combination of both approaches.

10. The claimed subject-matter is thus new with regard to documents D21.

11. Similar considerations apply with regard to related document D5 which considers both a local and remote comparison of the calculated imprint but fails to combine them in a single process.

Inventive step - Article 56 EPC

12. Document D21 appears to constitute a suitable starting document of prior art when deciding on the inventive merits of the claimed invention.

13. As underlined by the Opposition Division, the step of embedding primary information that can be read by a 2D-barcode-reader in a primary information pattern does not imply embedding primary information that can be read by a 2D-barcode-reader **without a key** in a primary information pattern. The finding that keys are needed in D21 to extract imprints concerning Second Information Matrices (SIM) does not affect the conclusion that said document discloses the recited feature, which is silent as to the need or the absence of need for a key ([0186]-[0188]).

14. The secondary information is formed by light and dark elementary sub-cells having a largest dimension smaller than 50 micrometers configured to be difficult to reproduce without alteration ([0078], [00307]). In D21, the Second Information Matrix (SIM) is read by a 2D barcode reader with a key. The method of document D21 comprises the step of scanning the 2D barcode using a local device to generate at least one image frame ([0043], [0051], [0066], [0067], [0156] - [0158], [0246] - [0251]).

15. According to a first line of argumentation, the proprietor argued that the step of generating information using a key means that the information is generated using the key alone. The use of the sole key is thus in contrast with the step of decrypting information in the context of D21 that implies that the encrypted information as well as the cryptographic key are actually needed. Concretely that implies, according to this approach, that the feature of generating a portion of secondary information using a key stored in the local device, said portion comprising or forming a signature of the secondary information, is not anticipated by D21.

16. This is contested by all three opponents.

17. The patent specification suggests, in some embodiments of the invention, that the term "key" may simply refer to an imprint or image of the printed 2D-code that can be used as reference for the determination of similarity scores (see patent specification, reference to "signature key" in paragraph [0041]). The term key is used, in this context, as a synonym for a mere reference image to be used for comparison purposes. This is in contrast with the general understanding of the term in the field of encryption. Whether referring to symmetric or asymmetric encryption methods, the term key is generally understood as a number used to encrypt clear text to cyphertext - or the reverse - using a given cryptographic algorithm. This implies, contrary to the proprietor's view, that encryption requires knowledge of both the encrypting key and of the information to be encrypted. By analogy, this implies that a decryption method uses both the information to be decrypted and the decryption key. These are precisely the methods that are disclosed in document

D21 (D21, paragraph [0041]; [0086], page 20, line 35 - page 21, line 3). This also reflects the teaching of some embodiments of the invention.

18. The argument of the proprietor that the claimed method further differs from the method of D1 in that it uses a sole key is thus not corroborated by the patent disclosure that gives the term a much broader meaning, even suggesting that the term is primarily used according to its usual understanding. The argument is thus not persuasive.

19. The proprietor further argued during the oral proceedings that the claimed subject-matter differs from the authentication method of D21 by the nature of the primary and secondary information. They stressed, in this respect, with particular reference to Figure 8 in D21, that the central and surrounding portions in the 2D-barcode are actually referring to similar information contrary to the present invention where the primary and secondary information define different types of information. In the context of the invention, it is namely on the basis of the primary information read by the 2D code reader that a signature corresponding to the secondary information is obtained.

20. This argument is not persuasive. Claim 1 merely defines a step of embedding primary information that can be read by a 2D-barcode-reader in a primary information pattern and a step of embedding secondary information in a visible pattern embedded within said barcode in at least one area that does not contain any primary information such that the secondary information is separated from the primary information. This is precisely what is disclosed with regard to the embodiment of Figure 8 in D21. The manner according to

which the primary information is encoded and possibly ciphered and its relationship to the secondary information are not specified in claim 1. These aspects are thus not relevant regarding the aspects of novelty and inventive step for the claimed process.

21. Also the reference in claim 1 to the step of generating a portion of secondary information using a key stored in the local device, said portion comprising or forming a signature of the secondary information, is not sufficient to establish any further difference with regard to document D21. The Board stresses, in this respect, that the reference to a "portion of secondary information" is quite general and is not meant to exclude the totality of secondary information, as is the case in D21.

22. It follows from the above analysis that the claimed subject-matter differs from the method of D21, essentially, in that it combines the two levels of authentication that are disclosed therein as alternatives. While D21 suggests an authentication in a local device or possibly in a database, the claimed invention combines both approaches in one and the same method.

23. Regarding the problems addressed by the invention, the proprietor referred to advantages of the two-level authentication process of claim 1. In particular, the local low security check served as a form of image quality validation. While the mobile device is awaiting the server high security check, a message could already be shown to the user. The two-level authentication process of claim 1 had thus several advantages over the prior art. It allowed to detect fraud in addition to faster processing (a quick information may be provided

to the user) and less use of bandwidth (sending only scans of sufficient quality and only the relevant information to the server).

24. The board notes however that the claim language encompasses, in its generality, the case of the same secondary portion being compared according to the same algorithm in both a local device and in a a remote server. This implies that the two levels of verification are equivalent and that their combination in a single process neither adds to the reliability of the claimed authentication method nor increases its celerity or reduces the amount of information to be transmitted. This is in contrast to the teaching of the patent specification that combines a first-level security check locally on a first portion (signature portion) of the secondary information making use of a locally stored key, generated pseudo-randomly, with a higher level security check being carried out remotely on a different second portion (secret portion) of the secondary information and with a remotely stored and truly randomly generated key ([0041], [0086], [0087], [0089], [0091]).

25. The proprietor underlined that document D21 is leading away from the claimed invention. As emphasised above, the storing of the imprint on the document or in a remote database is considered to constitute the two branches of one and the same alternative to obtain and compare the signature information. The comparison of the same portion of a visible pattern would lead to the same results whether the comparison is performed locally or remotely in a database, thus leading away from the claimed invention where the additional step of authentication with a remote database adds a level of verification in that it contributes to increasing the

reliability of the obtained results and thus to also the reliability of the authentication.

26. The argumentation put forward by the proprietor is thus rejected. It just illustrates the fact that the claim language is deprived, in its generality, of any additional technical effect resulting from the juxtaposition of the two authenticating approaches envisaged in D21. This simply follows from the claim language also encompassing the case of the same secondary information being authenticated locally and remotely according to the same method, thus providing the same results in terms of reliability.

27. The fact that only persons with authorisations to access the remote server may have accessed the high-level authenticity check does not affect the present finding. First, the claim is silent as to the conditions for a user to access and send information to the remote server. Second, even if the argument were supported by the claim language, it would not define any technical effect regarding the result of the authentication check to be performed in the remote server.

28. It follows, in the absence of a technical effect resulting from the combination in the claimed method of the two alternatives disclosed in D21, that the claimed subject-matter is not inventive within the meaning of Article 56 EPC.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chair:

C. Moser B. Noll

Decision electronically authenticated