

# PATENT COOPERATION TREATY

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## WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing  
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference  
see form PCT/ISA/220

**FOR FURTHER ACTION**  
See paragraph 2 below

International application No.  
PCT/EP2020/063303

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International Patent Classification (IPC) or both national classification and IPC  
INV. G06K9/00 G06K9/62 ADD. G06K9/46

Applicant  
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1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☒ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

### 2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

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this opinion

see form  
PCT/ISA/210

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**Box No. I Basis of the opinion**

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1. With regard to the **language**, this opinion has been established on the basis of:
  - ☒ the international application in the language in which it was filed.
  - ☐ a translation of the international application into , which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1 (b)).
2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43bis.1(a))
3. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing:
  - a. ☐ forming part of the international application as filed:
    - ☐ in the form of an Annex C/ST.25 text file.
    - ☐ on paper or in the form of an image file.
  - b. ☐ furnished together with the international application under PCT Rule 13ter.1(a) for the purposes of international search only in the form of an Annex C/ST.25 text file.
  - c. ☐ furnished subsequent to the international filing date for the purposes of international search only:
    - ☐ in the form of an Annex C/ST.25 text file (Rule 13ter.1(a)).
    - ☐ on paper or in the form of an image file (Rule 13ter.1(b) and Administrative Instructions, Section 713).
4. ☐ In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that forming part of the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
5. Additional comments:

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**Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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1. Statement

|                               |             |             |
|-------------------------------|-------------|-------------|
| Novelty (N)                   | Yes: Claims | <u>1-17</u> |
|                               | No: Claims  |             |
| Inventive step (IS)           | Yes: Claims |             |
|                               | No: Claims  | <u>1-17</u> |
| Industrial applicability (IA) | Yes: Claims | <u>1-17</u> |
|                               | No: Claims  |             |

2. Citations and explanations

see separate sheet

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**Box No. VII Certain defects in the international application**

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The following defects in the form or contents of the international application have been noted:

see separate sheet

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**Box No. VIII Certain observations on the international application**

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The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

- 1 Reference is made to the following documents; the numbering will be adhered to in the rest of the procedure:
- D1 WO 2018/191435 A1 (ALIBABA GROUP HOLDING LTD [US]) 18 October 2018 (2018-10-18)
- Rob Lightner: "How to remove personal data from image files", 20 June 2011
- D2 Retrieved from the Internet: <https://web.archive.org/web/20170629160331/https://www.cnet.com/how-to/how-to-remove-personal-data-from-image-files/>
- D3 JERRY ALAN FAILS ET AL: "Interactive machine learning", INTERNATIONAL CONFERENCE ON INTELLIGENT USER INTERFACES, 12 January 2003, pages 39-45
- D4 US 2013/259314 A1 (KOZITSKY VLADIMIR [US] ET AL) 3 October 2013 (2013-10-03)
- K. N. Divya ET AL: "RECOGNITION OF VEHICLE NUMBER PLATES AND RETRIEVAL OF VEHICLE OWNER'S REGISTRATION DETAILS", International Journal of Innovative Research in Technology & Science, vol. 2, no. 3, 30 May 2014, pages 61-66
- D5
- 2 The present application does not meet the requirements of Article 33(1) PCT because the subject-matter of claim 1, as understood in the light of the description and drawings (see below), does not involve an inventive step within the meaning of Article 33(3) PCT.
- D1 is considered to be the prior art closest to the subject-matter of claim 1 and discloses (the references in parentheses applying to this document):
- 2.1 a computer-implemented method (§111: "FIG 9 is a flowchart illustrating [...] a computer-implemented method [...] according to an implementation of the present disclosure". Also see Fig. 9) for a system to assign quantitative characteristics (in D1, "loss assessment" or "maintenance plan"—§57 makes it

*clear that both the loss assessment and the maintenance plan are "quantitative characteristics": "the loss assessment can include [...] cost assessment [...] the maintenance plan includes information about maintenance costs") to an object (in D1, "vehicle") based on at least one photograph (§4: "The present application aims to provide a picture-based vehicle loss assessment method [...] of a vehicle component") that a portable device (in D1, "mobile phone") takes of the object (§25: "the vehicle owner user can take photos for [...] an entire vehicle by using a [...] mobile phone"), said portable device being configured for taking photographs (see above) and storing them in an internal memory (mobile phones are known to store photographs in their memory), wherein the system comprises:*

- 2.1.1 an identification module (in D1, "damage identification model") configured for receiving the at least one photograph that the portable device takes, identifying a typology (in D1, "damage type") of the photographed object, and providing said identified typology together with a level of accuracy (in D1, "confidence"—§46: "The damage identification model is set to output at least one damaged part and a damage type corresponding to the damaged part [...] and [...] data information indicating a confidence level for a degree of authenticity of the damage type". S2 and S3 in Fig. 1 make it clear that the damage identification model receives the vehicle's photo),
- 2.1.2 a valuing module (in D1, "loss assessment processing module") configured for linking a typology of an object with the valuation of the photographed object (in D1, "maintenance plan"—§7: "the apparatus includes [...] a loss assessment processing module, configured to: generate a maintenance plan based on [...] the damage type"), and
- 2.1.3 a characterization module (in D1, "loss assessment processing module") which assigns quantitative characteristics to an object depending on its valuation (see §2.1.2 of the present communication. The "assessment" and the "quantitative characteristics" are assumed to identify, as explicitly mentioned in p. 5, l. 28–30 of the present application: "the valuation itself [...] can also be considered a financial characteristic"—it is clear from the context that the "financial characteristic" is a "quantitative characteristic"), and
- 2.1.4 a ~~temporary~~ storage server (in D1, "cloud server"), with a database (in D1, "price database"), configured for ~~anonymizing and storing in the database in a temporary manner~~ the at least one anonymized photograph that the portable device has taken and the identification module will receive (§25: "the vehicle owner user uploads the photographed photos (pictures) [...] After acquiring the

*to-be-processed pictures [...] a cloud server can first identify damaged components [...] Then, a rule engine can [...] invoke different price databases"), anonymizing being an irreversible process in which any reference to the authorship of the photograph is completely eliminated,*

- 2.2 wherein the method comprises the steps of:
- 2.2.1 a) the identification module receiving at least one photograph of an object, wherein the photograph was stored in an internal memory of a portable device (*see §2.1–§2.1.1 of the present communication*),
- 2.2.2 b) the identification module identifying at least one typology of the photographed object furthermore providing its level of accuracy (*see §2.1.1 of the present communication*), such that:
- 2.2.2.1 in the event that said level of accuracy is ~~equal to or~~ lower than a given threshold (*in D1, "preselected confidence level"*), the at least one photograph is rejected (*§117: "a maximum number of images with a confidence level equal or higher than a preselected confidence level can be used". In other words, if the confidence level is lower than the preselected confidence level, the photograph is rejected*), and
- 2.2.2.2 in the event that said level of accuracy is greater than the given threshold, the at least one photograph is assigned the "valid" state and the following step is carried out (*see §2.2.2.1 of the present communication. In particular, according to p. 4, l. 26–29 of the present application, "assigning 'valid' state to a photograph must be understood to mean that typologies of a specific object could be correctly identified from said photographs". Hence, D1 discloses assigning the "valid" state to the at least one photograph*),
- 2.2.3 c) the valuing module receiving the at least one typology of the photographed object from the identification module (*see §2.1.2 of the present communication. In particular, since the loss assessment processing module generates a maintenance plan based on the damage type, it is implicit that the loss assessment processing module received the damage type*),
- 2.2.4 d) the valuing module linking the at least one typology of the object with the valuation of the photographed object (*see §2.1.2 of the present communication*),

- 2.2.5 e) the characterization module receiving said valuation linked with the at least one typology by the valuing module (*trivially true, since the assessment module and the characterization module identify*) and the characterization module assigning quantitative characteristics to the object depending on said valuation (*see §2.1.3 of the present communication*), and
- 2.2.6 f) sending said valuation and quantitative characteristics of the object to the portable device (§119: *"the maintenance plan is transmitted to the user [...]. The application can be configured to display the maintenance plan for the user of the mobile device on a graphical user interface of the application". Also see Fig. 8 and 914 in Fig. 9*);
- 2.3 wherein the method additionally comprises the following steps performed by the temporary storage server:
- 2.3.1 g) receiving at least one photograph of an object (*see §2.1.4 of the present communication*) stored in an internal memory of the portable device (*see §2.1 of the present communication*),
- 2.3.2 ~~h) anonymizing the at least one photograph of an object,~~
- 2.3.3 ~~i) storing in the database the at least one anonymized photograph of an object~~ (*see §2.1.4 of the present communication*),
- 2.3.4 j) sending the at least one ~~anonymized~~ photograph to the identification module (*see §2.1.1 of the present communication*).
- 3 The subject-matter of claim 1 differs from the subject-matter of D1 in the following features:
- 3.1 (in the following, *Feature 1A*) [a] temporary [storage server... storing...] in a temporary manner [the at least one anonymized photograph...],
- 3.2 (in the following, *Feature 1B*) [a temporary storage server... configured for] anonymizing and [storing... the at least one] anonymized [photograph...], anonymizing being an irreversible process in which any reference to the authorship of the photograph is completely eliminated,
- 3.3 (in the following, *Feature 1C*) [a temporary storage server... storing] in the database [... the at least one anonymized photograph...],
- 3.4 (in the following, *Feature 2*) [in the event that said level of accuracy is] equal to or [lower than a given threshold, the at least one photograph is rejected, and]
- 3.5 (in the following, *Feature 3*) h) anonymizing the at least one photograph of an object.

- 3.6 (in the following, *Feature 4*) [i] storing] in the database [the at least one anonymized photograph of an object]
- 3.7 (in the following, *Feature 5*) [j] sending the at least one] anonymized [photograph to the identification module].
- 4 On the one hand, Features 1B, 3 and 5 provide the technical effect that the identity of the one seeking to obtain the financial information is protected. On the other hand, Features 1A, 1C–2 and 4 cannot be related to a specific technical effect or technical problem in the application as filed.
- 5 As a consequence, the interactions of Features 1B, 3 and 5 on the one hand and Features 1A, 1C–2 and 4 on the other hand do not produce a synergistic technical effect. For this reason, to prove that the set of such features does not involve an inventive step, it is enough to show that Features 1B, 3 and 5 on the one hand and Features 1A, 1C–2 and 4 on the other hand are obvious (see PCT-EPO Guidelines G-VII.7).

*Features 1A*

- 6 Storing the anonymized photograph *in a temporary manner* cannot be *itself* related to a specific technical effect or technical problem in the application as filed. In particular, how long the anonymized photograph is stored (whether temporarily or persistently) is an administrative rule and hence *per se* not serving a technical purpose. More specifically, no technical difference would be detected in the system's behavior if such a rule were replaced by a different one, just like, when employing said rule, the choice of different time intervals for storing the anonymized photograph does not cause the system to behave in a technically different way.
- 7 Thus, storing the anonymized photograph in a temporary manner does not contribute to the technical character of the claimed invention but forms part of a requirement specification for the skilled person (see PCT-EPO Guidelines G-VII. 5.4.1). The objective technical problem to be solved by the claimed invention may therefore be regarded as how to modify D1 so as to store the anonymized photograph in a temporary manner.
- 8 In absence of any further technical implementation details, the skilled person would solve the problem as claimed, thereby arriving at the claimed invention without making an inventive step.

*Features 1B, 3 and 5*

- 9 According to p. 8, l. 2–4 of the present application, Features 1B, 3 and 5 provide the technical effect that the identity of the one seeking to obtain the financial information is protected.
- 10 The technical problem to be solved by the present invention may be regarded as how to modify D1 to protect the identity of the one seeking to obtain the financial information.
- 11 The solution proposed in claim 1 of the present application cannot be considered to involve an inventive step (Articles 33(1) and 33(3) PCT) since, faced to the technical problem and having D1 at hand, the skilled person would find D2 which belongs to the field of image anonymization, targets the protection of personal data and discloses (the references in parentheses applying to this document):
- 11.1 [a temporary storage server... configured for] anonymizing and [storing... the at least one] anonymized [photograph...], anonymizing being an irreversible process in which any reference to the authorship of the photograph is completely eliminated (*p. 3, l. 1–7: "Select the 'Details' tab, then click on 'Remove Properties and Personal Information.' [...] If you'd rather choose which info to keep and which to delete, select 'Remove the following properties from this file' at the top and then scroll down the list to select the info you want to remove, then click 'OK.' This does not create a copy, so preserve the information externally if you think you'll want it later!". In particular, by checking the Authors checkbox in the figure on p. 3, any reference to the authorship of the photograph is completely eliminated*),
- 11.2 h) anonymizing the at least one photograph of an object (*see §11.1 of the present communication*),
- 11.3 [j) sending the at least one] anonymized (*see §11.1 of the present communication*) [photograph to the identification module].
- 12 In order to solve the aforementioned technical problem, the skilled person would add the features under §11 of the present communication for protecting the identity of the one seeking to obtain the financial information, thereby arriving at the claimed invention without any inventive step.

- 13 For the sake of completeness, it is noted that a possible modification of claim 1 requiring the method disclosed therein to be performed automatically (i.e., without the human intervention disclosed in D2) would not make the claim inventive, since automation of known human behaviour is a routine matter not involving inventive skill (T1937/09.5.4 and T0634/01.6).

*Features 1C and 4*

- 14 Storing the anonymized photograph *in the database* cannot be related to a specific technical effect or technical problem in the application as filed. As no such technical effect is derivable from the application as filed, the objective technical problem is regarded as how to provide an alternative storage solution to store the anonymized photograph in a method according to D1.
- 15 It is established Case Law that, when the technical problem is that of providing a further method (here, a further method having an alternative storage solution to store the anonymized photograph), i.e., simply that of providing an alternative to the prior art, any feature or combination of features already conventional for that sort of method represents an equally suggested or obvious solution to the posed problem. Thus, arbitrarily selecting one among equally obvious alternative variations is deprived of any inventive character.
- 16 Here, the usage of the database is one such equally obvious alternative which the skilled person would choose to solve the problem of storing the anonymized photograph without resorting to an inventive step.

*Features 2*

- 17 The criterion according to which the photograph is rejected (here, if level of accuracy is equal to or lower than a given threshold) is an administrative rule. Therefore, the objections laid out at §6–§8 of the present communication apply *mutatis mutandis*.
- 18 The additional features of claims 2–14, as understood in the light of the description and drawings (see below), are trivial adaptations of the subject-matter of D1, i.e., they are not inventive within the meaning of Article 33(3) PCT. More specifically:
- 18.1 (claim 2) edge enhancement, color correction and removal of objects from images are well-known techniques in the field of image processing;

- 18.2 (claim 3) D1, §29 ("If the picture quality is relatively poor [...], the component picture can be discarded"). Also see D1, §113–§114; 904 in D1, Fig. 9 and §2.2.2.1 of the present communication;
- 18.3 (claim 4) D1, §32 ("the component identification model used to identify a vehicle component in a picture can be constructed [...] by using a designed machine learning algorithm. [...] the component identification model can be constructed based on a convolutional neural network");
- 18.4 (claim 5) D1, §42 ("a plurality of damaged parts in a single damage sample picture can be identified during model training [...] by using marking data. [...] The marking data is a picture marked with a region and a corresponding type");
- 18.5 (claims 6–7) interaction with the user is disclosed in D1, §62 ("The information about the maintenance strategy can be determined based on user's selection. For example, the user can select a maintenance place [...], select an authorized dealership or a general repair shop, and input a vehicle brand and a model"). Moreover, interactive machine learning is common general knowledge (see e.g., D3);
- 18.6 the subject-matter of claim 8 cannot be regarded as inventive since it amounts to providing the ML algorithm with a bigger training set (namely, the one obtained by augmenting the original one with the output of the algorithm). Moreover, it is questionable whether such an approach produces the claimed technical effect of obtaining "a higher level of accuracy", since it is more credible that it would rather lead the algorithm to reinforce its previous (both correct and incorrect) behavior;
- 18.7 (claims 9–10) OCR-based automatic number-plate recognition is well-known (see e.g., D4);
- 18.8 it is questionable whether the subject-matter of claims 11–13 is unitary with the rest of the present application. Assuming it is:
- 18.8.1 (claims 11 and 13) see §18.7 of the present communication. Moreover, number plate-based retrieval of vehicle-related information is also well-known (see e.g., D5, abstract: "In this paper vehicle numbers are recognized and later used for retrieval of vehicle owner details");
- 18.8.2 (claim 12) image segmentation is common general knowledge.
- 18.9 (claim 14) autofocus as well as technologies to automatically set shutter speed and aperture are common general knowledge (see e.g., Nikon D5300).

- 19 The objections above applying to the subject-matter of claims 1–14 also apply *mutatis mutandis* to the subject-matter of claims 15–17, as understood in the light of the description and drawings (see below).

**Re Item VII**

**Certain defects in the international application**

- 20 To meet the requirements of Rule 5.1(a)(ii) PCT, D1 and D2 should be identified in the description and the relevant background art disclosed therein should be briefly discussed.

**Re Item VIII**

**Certain observations on the international application**

- 21 The present application does not meet the requirements of Article 6 PCT because claims 1 and 6 are unclear:
- 21.1 (claim 1) it is unclear whether the expressions "an object" and "the photographed object" refer or not to the same entity. In the first (resp. second) case, the statement "linking a typology of an object with the valuation of the photographed object" should be replaced by the statement "linking a typology of an object with the valuation of the ~~photographed~~ object" (resp. "linking a typology of an object with the valuation of a photographed object" or similar ones);
- 21.2 (claim 1) it is unclear how an object's typology can be "linked" with the photographed object's valuation. If "linking a typology of an object with the valuation of the photographed object" is supposed to mean "provide a valuation of the photographed object based on a typology of an object", it is suggested to modify the text of the claim accordingly;
- 21.3 (claim 1) it is unclear why an already anonymized photograph should be anonymized again. More specifically, claim 1 states that:
- 21.3.1 on the one hand, the temporary storage server is "configured for anonymizing [...] the at least one [...] photograph";
- 21.3.2 on the other hand, the photograph is already anonymized;
- 21.4 (claim 6) it is unclear what the expression "the selected typology" refers to, since no antecedent is provided. If "the selected alternative of typology" is intended instead of "the typology alternative of the selected typology", it is suggested to modify the text of the claim accordingly.

- 22      The objections above applying to the subject-matter of claims 1 and 6 also apply *mutatis mutandis* to the subject-matter of claims 15–17.