PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

<table>
<thead>
<tr>
<th>Applicant’s or agent’s file reference</th>
<th>FOR FURTHER ACTION</th>
<th>See Form PCT/IPEA/416</th>
</tr>
</thead>
<tbody>
<tr>
<td>International application No.</td>
<td>International filing date (day/month/year)</td>
<td>Priority date (day/month/year)</td>
</tr>
<tr>
<td>International Patent Classification (IPC) or national classification and IPC</td>
<td></td>
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</tr>
<tr>
<td>Applicant</td>
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</tbody>
</table>

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of ______ sheets, including this cover sheet.

3. This report is also accompanied by ANNEXES, comprising:
   a. (sent to the applicant and to the International Bureau) a total of ______ sheets, as follows:
      - sheets of the description, claims and/or drawings which have been amended and/or sheets containing rectifications authorized by this Authority, unless those sheets were superseded or cancelled, and any accompanying letters (see Rules 46.5, 66.8, 70.16, 91.2, and Section 607 of the Administrative Instructions).
      - sheets containing rectifications, where the decision was made by this Authority not to take them into account because they were not authorized by or notified to this Authority at the time when this Authority began to draw up this report, and any accompanying letters (Rules 66.4bis, 70.2(e), 70.16 and 91.2).
      - superseded sheets and any accompanying letters, where this Authority either considers that the superseding sheets contain an amendment that goes beyond the disclosure in the international application as filed, or the superseding sheets were not accompanied by a letter indicating the basis for the amendments in the application as filed, as indicated in item 4 of Box No. I and the Supplemental Box (see Rule 70.16(b)).
   b. (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) ______ containing a sequence listing, in the form of an Annex C/ST.25 text file, as indicated in the Supplemental Box Relating to Sequence Listing (see paragraph 3ter of Annex C of the Administrative Instructions).

4. This report contains indications relating to the following items:
   - Box No. I Basis of the report
   - 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 Article 35(2) 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

<table>
<thead>
<tr>
<th>Date of submission of the demand</th>
<th>Date of completion of this report</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name and mailing address of the IPEA/</td>
<td>Authorized officer</td>
</tr>
<tr>
<td>Facsimile No.</td>
<td>Telephone No.</td>
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</tbody>
</table>

Form PCT/IPEA/409 (cover sheet) (January 2015)
1. With regard to the **language**, this report is based on:

- ☐ 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)).
  - ☐ publication of the international application (Rule 12.4(a)).
  - ☐ international preliminary examination (Rules 55.2(a) and/or 55.3(a) and (b)).

2. With regard to the **elements** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as “originally filed” and are not annexed to this report)*:

- ☐ the international application as originally filed/furnished, or
- ☐ the description: pages __________________________________ as originally filed/furnished.
  - pages* ___________________________ received by this Authority on ________________
- ☐ the claims: Nos. __________________________________ as amended (together with any statement) under Article 19
  - Nos.* ___________________________ received by this Authority on ________________
- ☐ the drawings: pages __________________________________ as originally filed/furnished.
  - pages* ___________________________ received by this Authority on ________________
  - pages* ___________________________ received by this Authority on ________________
- ☐ a sequence listing - see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages __________________________________
- ☐ the claims, Nos. _______________________________________
- ☐ the drawings, sheets/figs ___________________________________
- ☐ the sequence listing *(specify): ____________________________

4. ☐ This report has been established as if *(some of) the amendments annexed to this report and listed below had not been made, since either they are considered to go beyond the disclosure as filed, or they were not accompanied by a letter indicating the basis for the amendments in the application as filed, as indicated in the Supplemental Box (Rules 70.2(c) and (c-bis)):

- ☐ the description, pages __________________________________
- ☐ the claims, Nos. _______________________________________
- ☐ the drawings, sheets/figs ___________________________________
- ☐ the sequence listing *(specify): ____________________________

5. ☐ This report has been established:

- ☐ taking into account the rectification of an obvious mistake authorized by or notified to this Authority under Rule 91 (Rules 66.1(d-bis) and 70.2(e)).
- ☐ without taking into account the rectification of an obvious mistake authorized by or notified to this Authority under Rule 91(Rules 66.4bis and 70.2(e)).

6. With regard to top-up searches (Rules 66.1ter and 70.2(f)):

- ☐ A top-up search was carried out by this Authority on ____________________________
  - Additional relevant documents have been discovered during the top-up search.
- ☐ No top-up search was carried out by this Authority because it would serve no useful purpose.

7. ☐ Supplementary international search report(s) from Authority(ies) ____________________________ has/have been received and taken into account in establishing this report (Rule 45bis.8(b) and (c)).

* If item 4 applies, some or all of those sheets may be marked “superseded.”*
Box No. II  Priority

1. □ This report has been established as if no priority had been claimed due to the failure to furnish within the prescribed time limit the requested:
   - □ copy of the earlier application whose priority has been claimed (Rule 66.7(a)).
   - □ translation of the earlier application whose priority has been claimed (Rule 66.7(b)).

2. □ This report has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rule 64.1). Thus for the purposes of this report, the international filing date indicated above is considered to be the relevant date.

3. Additional observations, if necessary:
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**Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability**

The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

- [ ] the entire international application.
- [ ] claims Nos. ____________________________________________

because:

- [ ] the said international application, or the said claims Nos. ____________________________________________ relate to the following subject matter which does not require an international preliminary examination *(specify)*:

- [ ] the description, claims or drawings *(indicate particular elements below)* or said claims Nos. ____________________________________________ are so unclear that no meaningful opinion could be formed *(specify)*:

- [ ] the claims, or said claims Nos. ____________________________________________ are so inadequately supported by the description that no meaningful opinion could be formed *(specify)*:

- [ ] no international search report has been established for said claims Nos. ____________________________________________

- [ ] a meaningful opinion could not be formed without the sequence listing; the applicant did not, within the prescribed time limit:
  - [ ] furnish a sequence listing in the form of an Annex C/ST.25 text file, and such listing was not available to the International Preliminary Examining Authority in the form and manner acceptable to it; or the sequence listing furnished did not comply with the standard provided for in Annex C of the Administrative Instructions.
  - [ ] furnish a sequence listing on paper or in the form of an image file complying with the standard provided for in Annex C of the Administrative Instructions, and such listing was not available to the International Preliminary Examining Authority in the form and manner acceptable to it; or the sequence listing furnished did not comply with the standard provided for in Annex C of the Administrative Instructions.
  - [ ] pay the required late furnishing fee for the furnishing of a sequence listing in response to an invitation under Rules 13ter.1(a) or (b) and 13ter.2.

- [ ] See Supplemental Box for further details.
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Box No. IV  Lack of unity of invention

1. [ ] In response to the invitation to restrict or pay additional fees the applicant has, within the applicable time limit:
   [ ] restricted the claims.
   [ ] paid additional fees.
   [ ] paid additional fees under protest and, where applicable, the protest fee.
   [ ] paid additional fees under protest but the applicable protest fee was not paid.
   [ ] neither restricted the claims nor paid additional fees.

2. [ ] This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is:
   [ ] complied with.
   [ ] not complied with for the following reasons:

4. Consequently, this report has been established in respect of the following parts of the international application:
   [ ] all parts.
   [ ] the parts relating to claims Nos. ________________
<table>
<thead>
<tr>
<th>Box No. V</th>
<th>Reasoned statement under Article 35(2) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement</th>
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<tr>
<td>1. Statement</td>
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<tr>
<td>Novelty (N)</td>
<td>Claims ______________________________________________________ YES</td>
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<td>Inventive step (IS)</td>
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<td>Industrial applicability (IA)</td>
<td>Claims ______________________________________________________ YES</td>
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<td>2. Citations and explanations (Rule 70.7)</td>
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## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

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<th>Box No. VI</th>
<th>Certain documents cited</th>
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<tr>
<td>1. Certain published documents (Rule 70.10)</td>
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<td>Application No.</td>
<td>Publication date</td>
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<tr>
<td>2. Non-written disclosures (Rule 70.9)</td>
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Form PCT/IPEA/409 (Box No. VI) (January 2015)
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<tr>
<th>Box No. VII</th>
<th>Certain defects in the international application</th>
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</table>

The following defects in the form or contents of the international application have been noted:
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:
Supplemental Box Relating to Sequence Listing

Continuation of Box No. I, item 2:

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this report was 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 and/or examination:
      ☐ 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).

   d. ☐ furnished to this Authority as an amendment* under PCT Article 34 on ________________________________:
      ☐ in the form of an Annex C/ST.25 text file, and preferably identified as “Amended” at the first line of text.
      ☐ on paper or in the form of an image file.

2. ☐ 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.

3. Additional comments:

* If item 4 in Box No. I applies, the sequence listing, which forms part of the basis of the report, may be marked “superseded.”
In case the space in any of the preceding boxes is not sufficient.
Continuation of: