

# PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To:  
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METIS IP (CHENGDU) LLC

## PCT

WRITTEN OPINION OF THE  
 INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing (day/month/year) <b>29 August 2019</b>	
Applicant's or agent's file reference <b>206150558W00</b>	<b>FOR FURTHER ACTION</b> See paragraph 2 below
International application No. <b>PCT/CN2018/122125</b>	International filing date (day/month/year) <b>19 December 2018</b>
Priority date (day/month/year) <b>28 November 2018</b>	
International Patent Classification (IPC) or both national classification and IPC G08G 1/01(2006.01)i	
Applicant <b>BEIJING DIDI INFINITY TECHNOLOGY AND DEVELOPMENT CO., LTD.</b>	

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 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.

Name and mailing address of the ISA/ <b>National Intellectual Property Administration, PRC China 6, Xitucheng Rd., Jimen Bridge, Haidian District, Beijing 100088</b>	Date of completion of this opinion <b>21 August 2019</b>	Authorized officer <b>HAO,Feifei</b>
Facsimile No. (86—10) 62019451	Telephone No. 86-(10)-53962456	

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/CN2018/122125

Box No. I Basis of the opinion

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 43*bis*.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 13*ter*.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 13*ter*.1(a)).
    - on paper or in the form of an image file (Rule 13*ter*.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:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

**PCT/CN2018/122125**

**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**

1. Statement

Novelty (N)	Claims	<u>1-19</u>	YES
	Claims	<u>None</u>	NO
Inventive step (IS)	Claims	<u>5-6, 14-15</u>	YES
	Claims	<u>1-4, 7-13, 16-19</u>	NO
Industrial applicability (IA)	Claims	<u>1-19</u>	YES
	Claims	<u>None</u>	NO

2. Citations and explanations :

- [1] D1: Research on traffic demand control using the two-fluid theory for the sensitive areas of urban networks
- [2] 1. D1 discloses a method for determining traffic information of an area (see pages 13-14, 18-19, 27-30, 32, 47-49), comprising:
- [3] determining a sensitive area  $S_1$  (corresponding to the first region) and an area  $S_2$  (corresponding to the second region), the area  $S_1$  being within the area  $S_2$ ;
- [4] obtaining a set of links associated with the area  $S_1$  and the area  $S_2$ , as figure 4.8 showing, the set of links including a plurality of links inside the area  $S_1$  (corresponding to the first links), a plurality of links cross a boundary (corresponding to the first boundary) of the area  $S_1$  (corresponding to the second links), a plurality of links inside the area  $S_2$  other than the area  $S_1$  (corresponding to the third links);
- [5] obtaining a plurality of driving routes of a plurality of vehicles in the area  $S_1$  and the area  $S_2$  (as the OD matrix in table 2.1 showing) in a predetermined time period, such as during rush hour;
- [6] selecting more driving routes that traverse the boundary of the area  $S_1$  based on the set of links associated with the area  $S_1$  and the area  $S_2$ ;
- [7] and determining inflow variables (corresponding to the first traffic information, indicating traffic flowing into the area  $S_1$  from the area  $S_2$ ) and outflow variables (corresponding to the second traffic information, indicating traffic flowing out of the area  $S_1$  to the area  $S_2$ ).
- [8] D1 does not disclose the following features of claim 1: 1) the title of the subject matter is about a system, comprising at least one storage medium including a set of instructions and at least one processor in communication with the storage medium; the at least one processor executes the set of instructions; 2) the set of links still include a plurality of fourth links cross a second boundary of the second region; the selected driving routes still traverse the second boundary.
- [9] Except the said distinguishing features 2), claim 10 still differs from D1 in: 3) the method is implemented on a computing device having at least one processor, at least one storage medium, and a communication platform connected to a network.
- [10] Except the said distinguishing features 2), claim 19 still differs from D1 in: 4) the title of the subject matter is a non-transitory computer readable medium, comprising instructions executed by at least one processor.
- [11] Therefore, claims 1-19 are new in the sense of PCT Article 33(2).
- [12] 2. On the basis of the said distinguishing features, the technical problem to be actually solved by the present invention may be regarded as: how to implement the method automatically; restrict the coverage of the second region.
- [13] The distinguishing features 1) , 3) and 4) are normal designs of the person skilled in the art.
- [14] As for the distinguishing features 2), D1 discloses: OD points A~M are distributed in the area  $S_2$ , and some links cross the OD points A~M (as figure 4.8 showing). The person skilled in the art can readily envisage generating boundary for the area  $S_2$  based on the OD points A~M in D1.

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

- [15] As for claims 2-3 and 11-12, D1 discloses: determining inflow variables indicating traffic flowing into the sensitive area  $S_1$  from the area  $S_2$  (see pages 29-30, 32, 47-49). Based on figure 4.8 in D1, the person skilled in the art can readily envisage that, if intersection 23 is selected as destination, the link between the intersection 23 and 25 corresponds to the first link, the link between OD point K and intersection 24 corresponds to the second link, and the route from OD point K to the intersection 23 can be used for the determination of inflow variables as the target route, wherein the link between the intersection 24 and 25 is part of the target route between the first and second link and is within the area  $S_2$  other than the sensitive area  $S_1$ .
- [16] As for claims 4, 7, 13 and 16, the additional features are common practices for the person skilled in the art.
- [17] As for claims 8-9 and 17-18, D1 discloses (see pages 32, 47-48): adjusting traffic lights control of the sensitive area  $S_1$  based on the inflow variables and outflow variables to perform traffic control. Other additional features are common practices for the person skilled in the art.
- [18] Therefore, claims 1-4, 7-13, and 16-19 do not involve an inventive step in the sense of PCT Article 33 (3).
- [19] As for claims 5-6 and 14-15, the additional features are neither disclosed in the prior art, nor well known in the art, therefore, these dependent claims 5-6 and 14-15 involve an inventive step in the sense of PCT Article 33 (3).
- [20] 3. Claims 1-19 meet the requirements of PCT Article 33(4).