

**PATENT COOPERATION TREATY**

**PCT**

**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference <b>46774-709601</b>	<b>FOR FURTHER ACTION</b>		See item 4 below
International application No. <b>PCT/US2017/047854</b>	International filing date ( <i>day/month/year</i> ) <b>21 August 2017 (21.08.2017)</b>	Priority date ( <i>day/month/year</i> ) <b>22 August 2016 (22.08.2016)</b>	
International Patent Classification (8th edition unless older edition indicated) <b>See relevant information in Form PCT/ISA/237</b>			
Applicant <b>RAPIDSOS, INC.</b>			

<p>1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).</p> <p>2. This REPORT consists of a total of 8 sheets, including this cover sheet.</p> <p>In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.</p>																								
<p>3. This report contains indications relating to the following items:</p> <table> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. I</td> <td>Basis of the report</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table> <p>4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).</p>	<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input type="checkbox"/>	Box No. II	Priority	<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI	Certain documents cited	<input type="checkbox"/>	Box No. VII	Certain defects in the international application	<input type="checkbox"/>	Box No. VIII	Certain observations on the international application
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	Date of issuance of this report <b>26 February 2019 (26.02.2019)</b>
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## PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

# PCT

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To: BURKETTE, SCOTT L.  WILSON SONSINI GOODRICH & ROSATI 650 PAGE MILL ROAD PALO ALTO CA 94304 USA
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Date of mailing (day/month/year) <b>28 November 2017 (28.11.2017)</b>
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Applicant's or agent's file reference 46774-709601	<b>FOR FURTHER ACTION</b> See paragraph 2 below	
International application No. <b>PCT/US2017/047854</b>	International filing date (day/month/year) <b>21 August 2017 (21.08.2017)</b>	Priority date(day/month/year) 22 August 2016 (22.08.2016)
International Patent Classification (IPC) or both national classification and IPC <b>G08B 31/00(2006.01)i, G08B 21/10(2006.01)i, G08B 25/14(2006.01)i</b>		
Applicant <b>RAPIDSOS, INC.</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/KR International Application Division Korean Intellectual Property Office 189 Cheongsa-ro, Seo-gu, Daejeon, 35208, Republic of Korea Facsimile No. +82-42-481-8578	Date of completion of this opinion  28 November 2017 (28.11.2017)	Authorized officer  KIM, Sung Gon  Telephone No. +82-42-481-8746
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**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

**PCT/US2017/047854**

**Box No. I Basis of this 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*. I(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*. I(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*. I(a)).
    - on paper or in the form of an image file (Rule 13*ter*. I(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/US2017/047854**

**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**

1. Statement

Novelty (N)	Claims	<u>1-20</u>	YES
	Claims	<u>NONE</u>	NO
Inventive step (IS)	Claims	<u>NONE</u>	YES
	Claims	<u>1-20</u>	NO
Industrial applicability (IA)	Claims	<u>1-20</u>	YES
	Claims	<u>NONE</u>	NO

2. Citations and explanations :

Reference is made to the following documents:

D1: US 2014-0324351 A1 (SAINT LOUIS UNIVERSITY) 30 October 2014

D2: US 2013-0331055 A1 (GUARDITY TECHNOLOGIES, INC.) 12 December 2013

D3: US 2005-0104745 A1 (AARON BACHELDER et al.) 19 May 2005

2.1 Novelty (PCT Article 33(2)) and Inventive Step (PCT Article 33(3))

2.1.1 Claims 1-7

a. Independent claim 1

D1, which is considered to be the closest prior art to the subject matter of claim 1, discloses a method of creating a prediction model for generating at least one spatiotemporal emergency prediction, the method comprising: capturing, by an Earth and Atmospheric Science(EAS) system, additional information including geographic information through Supervisory Control And Data Acquisition(SCADA) communication; defining, by the EAS system, a model domain based on data which can be time and space; and generating weather prediction data based on a forecasting model (see paragraphs [61], [62], [79], [221] in D1).

Claim 1 differs from D1 in obtaining, by an emergency prediction system(EPS), emergency data comprising emergency type, emergency location, and emergency time for a plurality of emergency communications. However, the difference is merely a variation of the disclosure of D1 considering obtaining, by the EAS system, the data comprising time and space through SCADA communication (see paragraphs [62], [79] in D1) and D2 considering obtaining type of crash related vehicle, time of the associated accelerometer crash pulse and a vehicle speed from a GPS receiver (see paragraphs [52], [58], [59] in D2).

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**Supplemental Box**

In case the space in any of the preceding boxes is not sufficient.

Continuation of : Box No. V

In view of the above, a person skilled in the art would arrive at the claimed invention by general experimentation alone without exercising any ingenuity. Accordingly, claim 1 would have been obvious over D1 in view of D2. Therefore, claim 1 lacks an inventive step under PCT Article 33(3).

b. Dependent claims 2-7

The additional feature of claim 2 can be easily derived from the feature of D1 considering obtaining data comprising time, space and geographic information (see paragraphs [61], [62], [79] in D1).

The additional feature of claim 3 can be easily derived from the feature of D1 considering capturing additional information including geographic information, describing a boundary of a model using the additional information and combining data to produce for a model domain (see paragraphs [61], [68], [79] in D1).

The additional feature of claim 4 can be easily derived from the feature of D1 considering giving EAS process an ability to create threat indicators within other agencies in allocation of resources and manpower (see paragraph [226] in D1).

The additional feature of claim 5 can be easily derived from the feature of D1 considering overlaying index data on a generated map grid of an area (see paragraph [78] in D1).

The additional feature of claim 6 can be easily derived from the feature of D1 considering that predicting data comprising time and space can be combined with geographic information (see paragraphs [62], [68], [79] in D1).

The additional feature of claim 7 can be easily derived from the feature of D1 considering giving the EAS process an ability to create threat indicators within other agencies in allocation of resources and manpower (see paragraph [226] in D1).

In view of the above, a person skilled in the art would arrive at the claimed invention by general experimentation alone without exercising any ingenuity. Accordingly, claims 2-7 would have been obvious over D1 in view of D2. Therefore, claims 2-7 lack an inventive step under

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PCT Article 33(3).

2.1.2 Claims 8-12

a. Independent claim 8

Claim 8 relates to an emergency prediction system, but it has substantially the same technical features as claim 1, differing only in the category. Accordingly, claim 8 would have been obvious over D1 in view of D2. Therefore, claim 8 lacks an inventive step under PCT Article 33(3).

b. Dependent claims 9-12

The additional features of claims 9-12 have substantially the same technical features as claims 2-4, 7, respectively. Accordingly, claims 9-12 would have been obvious over D1 in view of D2. Therefore, claims 9-12 lack an inventive step under PCT Article 33(3).

2.1.3 Claims 13-20

a. Independent claim 13

D1, which is considered to be the closest prior art to the subject matter of claim 13, discloses a method for detecting an emergency anomaly, comprising: obtaining, by an Earth and Atmospheric Science(EAS) system, data comprising time and space through Supervisory Control And Data Acquisition(SCADA) communication (see paragraphs [62], [79] in D1).

Claim 13 differs from D1 in providing, by an emergency prediction system, an emergency anomaly detection algorithm for monitoring emergency communications to identify an emergency anomaly; and executing, by the emergency prediction system, the emergency anomaly detection algorithm to identify the emergency anomaly based on emergency data, said the emergency anomaly comprising a cluster of emergency communications. However, the difference is merely a variation of the disclosure of D2 considering processing a car crash detection algorithm to make a preliminary crash detection decision (see paragraph [58] in D2).

In view of the above, a person skilled in the art would arrive at the claimed invention by general experimentation alone without exercising any ingenuity. Accordingly, claim 13 would

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have been obvious over D1 in view of D2. Therefore, claim 13 lacks an inventive step under PCT Article 33(3).

b. Dependent claims 17-20

The additional feature of claim 17 can be easily derived from the feature of D2 considering that crash analysis parameters are based on Injury Severity Prediction(ISP) algorithms (see paragraph [61] in D2).

The additional feature of claim 18 can be easily derived from the feature of D1 considering SCADA communication network facilitating EAS sensor stations that acquire data comprising time and space (see paragraphs [62], [79] in D1).

The additional feature of claim 19 can be easily derived from the feature of D1 considering giving EAS process an ability to create threat indicators within other agencies in allocation of resources and manpower (see paragraph [226] in D1).

The additional feature of claim 20 can be easily derived from the feature of D1 considering overlaying index data on a generated map grid of an area (see paragraph [78] in D1).

In view of these, a person skilled in the art would arrive at the claimed invention by general experimentation alone without exercising any ingenuity. Accordingly, claims 17-20 would have been obvious over D1 in view of D2. Therefore, claims 17-20 lack an inventive step under PCT Article 33(3).

c. Dependent claims 14-16

The additional feature of claim 14 can be easily derived from the feature of D3 considering using, by an emergency vehicle traffic signal preemption system, an emergency priority code interface for communications and operations network (see paragraphs [52], [53] in D3).

The additional feature of claim 15 can be easily derived from the feature of D3 considering that information contains data about its priority-code status such as code-2, code-3 (see paragraph [60] in D3).

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The additional feature of claim 16 can be easily derived from the feature of D3 considering that a module provides real-time reading and logging of a controller signal (see paragraph [54] in D3).

In view of the above, a person skilled in the art would arrive at the claimed invention by general experimentation alone without exercising any ingenuity. Accordingly, claims 14-16 would have been obvious over a combination of D1, D2 and D3. Therefore, claims 14-16 lack an inventive step under PCT Article 33(3).

**2.2 Industrial Applicability (PCT Article 33(4))**

The subject matter of claims 1-20 is considered to be industrially applicable and meets the requirements of PCT Article 33(4).