

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

To:
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|-----------------|-----------------------------|
| Date of mailing | 5 October 2018 (05-10-2018) |
| | <i>(day/month/year)</i> |

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| Applicant's or agent's file reference 294035.00011 | FOR FURTHER ACTION See paragraph 2 below |
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| International application No. PCT/CA2018/000138 | International filing date <i>(day/month/year)</i> 04 July 2018 (04-07-2018) | Priority date <i>(day/month/year)</i> 04 July 2017 (04-07-2017) |
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| International Patent Classification (IPC) or both national classification and IPC IPC: H04L 9/00 (2006.01), G06F 21/30 (2013.01), H04L 12/22 (2006.01), H04L 12/26 (2006.01), H04L 12/66 (2006.01), H04L 9/32 (2006.01) |
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| Applicant IS5 COMMUNICATIONS, INC. |
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| <p>1. This opinion contains indications relating to the following items:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Box No. I Basis of the opinion <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 Rule 43<i>bis</i>.1(a)(i) 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 <p>2. FURTHER ACTION</p> <p>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 66.1<i>bis</i>(b) that written opinions of this International Searching Authority will not be so considered.</p> <p>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.</p> <p>For further options, see Form PCT/ISA/220.</p> |
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| Name and mailing address of the ISA/CA Canadian Intellectual Property Office Place du Portage I, C114 - 1st Floor, Box PCT 50 Victoria Street Gatineau, Quebec K1A 0C9 Facsimile No.: 001-819-953-2476 | Date of completion of this opinion 02 October 2018 (02-10-2018) | Authorized officer Jamie Hayami (819) 639-4735 |
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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*.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 in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

5. Additional comments:

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

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| Novelty (N) | Claims 1-34 | YES |
| | Claims None | NO |
| Inventive step (IS) | Claims 1-34 | YES |
| | Claims None | NO |
| Industrial applicability (IA) | Claims 1-34 | YES |
| | Claims None | NO |

2. Citations and explanations:

Reference is made to the following document that was cited in the International Search Report:

D1: (2015). "Centralized Substation Protection and Control," *IEEE Power System Relaying Committee WG K15 Report*, December, 2015. [Online]. Available: http://www.pespsrc.org/Reports/IEEE_PES_PSRC_WG%20K15_Report_CPC_Dec_2015.pdf

Novelty – Article 33(2) PCT

Given that no single document teaches the exact system and method for an end-to-end security framework in a mission critical infrastructure site, claims 1-34 are considered to be novel and meet the requirements of **Article 33(2) PCT**.

Inventive Step – Article 33(3) PCT

Having regard to independent claim 1, document D1 (references in parentheses referring to document D1) discloses: A system for an end-to-end security framework in a mission critical infrastructure site (see section 7 – Conclusions and Recommendations, pages 71-72), the system comprising:

- an L3 level network partitioned into a plurality of L2 level networks based on functional purpose and connected through a plurality of firewall devices (see Figure 36, page 56);
- a control device provided in the mission critical infrastructure site connected to one of the plurality of L2 level networks (see Figure 36, page 56);
- a secure gateway device with dynamic firewall function managing access between the input device and the control device through applying dynamic firewall rules (see page 26, first paragraph – "(RTU/gateway function inside CPC) over station bus – with cyber security (e.g. firewall) measures").

Document D1 fails to explicitly disclose the features of independent claim 1 of: an input device connected to one of the plurality of L2 level networks for allowing a user to request access to the control device by inputting user information into the input device; a credential management application connected to at least one of the plurality L2 networks having a role based access control protocol for granting access to the control device by analyzing the user information, ; and whereby the user can be granted access to the control device based on the analysis of the user information by the role based access control protocol of the credential management application.

Therefore, since none of the prior art either alone or combined discloses all of the features of independent claim 1, independent claim 1 is considered to involve an inventive step and meets the requirements of **Article 33(3) PCT**. Furthermore, corresponding independent claims 6 and 34 contain all of the features disclosed in independent claim 1. Hence independent claims 6 and 34 and dependent claims 2-5 and 7-33 are also considered to involve an inventive step and meet the requirements of **Article 33(3) PCT**.

Industrial Applicability – Article 33(4) PCT

Claims 1-34 recite an end-to-end security framework in a mission critical infrastructure site, which is considered to have industrial applicability and meets the requirements of **Article 33(4) PCT**.