

PATENT COOPERATION TREATY

TRANSLATION

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:

Date of mailing (day/month/year)	28.11.2017
-------------------------------------	-------------------

Applicant's or agent's file reference 17F0080PCT	FOR FURTHER ACTION See paragraph 2 below
--	--

International application No. PCT/JP2017/031001	International filing date (day/month/year) 29.08.2017	Priority date (day/month/year) 05.09.2016
---	---	---

International Patent Classification (IPC) or both national classification and IPC
H02P6/18 (2016.01) i, H02M7/48 (2007.01) i, H02P27/06 (2006.01) i

Applicant
TOSHIBA INFRASTRUCTURE SYSTEMS & SOLUTIONS CORPORATION

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 or 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/JP	Date of completion of this opinion	Authorized officer
Facsimile No.		Telephone No.

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2017/031001

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 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:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/JP2017/031001

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)	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">Claims</td> <td style="width: 80%; border-bottom: 1px solid black;">1-8</td> <td style="width: 10%; text-align: right;">YES</td> </tr> <tr> <td>Claims</td> <td style="border-bottom: 1px solid black;"> </td> <td style="text-align: right;">NO</td> </tr> </table>	Claims	1-8	YES	Claims		NO
Claims	1-8	YES						
Claims		NO						
	Inventive step (IS)	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">Claims</td> <td style="width: 80%; border-bottom: 1px solid black;">1-8</td> <td style="width: 10%; text-align: right;">YES</td> </tr> <tr> <td>Claims</td> <td style="border-bottom: 1px solid black;"> </td> <td style="text-align: right;">NO</td> </tr> </table>	Claims	1-8	YES	Claims		NO
Claims	1-8	YES						
Claims		NO						
	Industrial applicability (IA)	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">Claims</td> <td style="width: 80%; border-bottom: 1px solid black;">1-8</td> <td style="width: 10%; text-align: right;">YES</td> </tr> <tr> <td>Claims</td> <td style="border-bottom: 1px solid black;"> </td> <td style="text-align: right;">NO</td> </tr> </table>	Claims	1-8	YES	Claims		NO
Claims	1-8	YES						
Claims		NO						
<p>2. Citations and explanations:</p> <p style="margin-left: 40px;">Document 1: JP 2009-112081 A (FUJI ELECTRIC SYSTEMS CO., LTD.) 21 May 2009, entire text, all drawings (Family: none)</p> <p style="margin-left: 40px;">Document 2: JP 2004-187396 A (FUJI ELECTRIC FA COMPONENTS & SYSTEMS CO., LTD.) 02 July 2004, entire text, all drawings (Family: none)</p> <p style="margin-left: 40px;">Document 3: JP 2003-299381 A (YASKAWA ELECTRIC CORPORATION) 17 October 2003, entire text, all drawings & US 2005/0146306 A1, entire text, all drawings & WO 2003/084050 A1 & EP 1492224 A1 & CN 1647359 A</p> <p style="margin-left: 40px;">The invention as in claims 1-8 is novel and involves an inventive step with respect to the documents cited in the ISR. Documents 1-3 do not disclose "... a normal operation control unit for calculating an estimated rotational phase angle of the electric motor in the context of a rotating coordinate system by using a value corresponding to the rotation speed as the initial value." Furthermore, this feature could not easily be</p>								

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2017/031001

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**

conceived of even by a person skilled in the art.