

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**
(PCT Rule 43*bis*.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/BA2017/000005

International filing date (day/month/year)
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28.06.2017

International Patent Classification (IPC) or both national classification and IPC
INV. B60L11/18

Applicant
MUSIC, SALIH

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 43*bis*.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 usually 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*bis*(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:



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Date of completion of this opinion

see form
PCT/ISA/210

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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 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:

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)	Yes: Claims	<u>4-6, 8, 9</u>
	No: Claims	<u>1-3, 7</u>
Inventive step (IS)	Yes: Claims	
	No: Claims	<u>1-9</u>
Industrial applicability (IA)	Yes: Claims	<u>1-9</u>
	No: Claims	

2. Citations and explanations

see separate sheet

Box No. VIII Certain observations on the international application

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:

see separate sheet

Item V:

1. CLARITY

The application does not meet the requirements of Article 6 PCT, because claims 1-9 are not clear.

1.1 Independent versus dependent claims

Claims 1-9 are all presently drafted as being independent claims, i.e. none of them refer to a previous claim in the sequence of nine claims.

This has been considered to be an oversight/error on the part of the drafter of the claims, ***otherwise the application would constitute nine separate independent claims and hence potentially nine different inventions resulting in the need to pay additional search fees.***

The Applicant has therefore been given the benefit of the doubt that the claims were intended to constitute **one** independent (claim 1) and **eight** dependent claims (claims 2-9).

The search of the subject-matter has thus been carried out as if the claims were intended to be drafted as below:

1.2 Interpretation of dependencies of the claims:

1. An improved wireless transmission system of electricity and data for electric drive vehicles and systems when moving in a near field, using receiving and transmitting resonant inductive coils, characterized in that, said receiving inductive coil is positioned in parallel to the line and the surface of the vehicle movement, in the bottom side of the vehicle, as wider and longer with respect to the vehicle dimension capabilities.

2. The system of **claim 1**, characterized in that, the receiving coil is made spirally or in some other form, from single-layer or multilayer windings, arranged to fill the most possible or the entire surface of the body.

3. The system of **claim 1 or 2**, characterized in that, parallel to the line of movement, the transmitter coils are placed in the middle of the traffic lane, in a much smaller width with respect to the width of the receiving coil.

4. The system of **claim 1 or 2**, characterized in that, parallel to the line of movement, the transmitter coils are placed in the middle of the traffic lane at a distance smaller than, equal to or greater than the length of the body of the receiving coil.

5. The system of **claim 3 or 4**, characterized in that the receiving coil is positioned in the way to completely cover the surface of at least one transmitter coil with its surface during a vehicle movement and the longest possible time interval, placing both surfaces parallel at the closest possible distance.
6. The system of **any of the preceding claims**, characterized in that, the said system includes measuring the power of high-frequency signals between the transmitter and the receiver, and based on that data enable precise determination of the position, direction, angles and speed of the movement of the receiving coil in relation to the transmitter coils, and hence the position, direction, angles and speed of the vehicle movement.
7. The system of **claims 2 to 6**, characterized in that, the said system improves the efficiency of the transmission of energy by using single-layer and multilayer spiral or some other coil shapes.
8. The system of **any of the preceding claims**, characterized in that, said system excludes a mechanical carrier and position corrector of the receiving coil.
9. The system of **claims 6 to 8**, characterized in that, traffic control and synchronization of one or more electric vehicles is being achieved through the system and its components.

Please note: The dependencies as indicated above are merely an interpretation of the claims and are based on the preceding claims and, as such, are non-limitative.

The claims are further unclear for the reasons outlined below:

1.3 Independent claim 1

1.3.1 Essential feature/s missing

It is clear from the application as a whole that the feature of a transmitting coil being embedded in a road surface is essential to the definition of the invention.

Since independent claim 1 does not contain this feature it does not meet the requirement following from Article 6 PCT taken in combination with Rule 6.3(b) PCT that any independent claim must contain all the technical features essential to the definition of the invention.

1.3.2 The terms used in claim 1 are vague and unclear and leaves the reader in doubt as to the meaning of the technical feature to which it refers, thereby rendering the definition of the subject-matter of said claim unclear, Article 6 PCT. In this respect, claim 1 is unclear due to the wording '*as wider and longer with respect to the vehicle dimension capabilities*' as it is not clear what is intended.

1.4 Claim 2

Claim 2 refers to '*surface of the body*', however, there is no previous mention of a '*body*'. Hence claim 2 is unclear.

1.5 Claim 4

Claim 4 recites '*... the transmitter coils are placed in the middle of the traffic lane at a distance smaller than, equal to or greater than the length of the body of the receiving coil*'. The underlined text gives no point of reference, i.e. at a distance apart from each other (- the transmitting coils). Hence, this claim is presently unclear.

1.6 Claim 6

Claim 6 does not meet the requirements of Article 6 PCT because the matter for which protection is sought is not clearly defined. The claim attempts to define the subject-matter in terms of the result to be achieved, which merely amounts to a statement of the underlying problem, without providing the technical features necessary for achieving this result.

It would further appear that there is an ***insufficiency of disclosure*** issue with this claim.

1.7 Claim 7

The present wording of claim 7 is trivial due to the feature '*said system improves the efficiency of the transmission of energy by using single-layer and multilayer spiral or some other coil shapes*', i.e. by using coils. It is considered that this covered by the previous claims.

1.8 Claim 8

Claim 8 seeks to define a system by omission, i.e. by defining a feature of what the system is not, rather than by defining what it is - i.e. it is unclear - and is therefore somewhat trivial.

1.9 Claim 9 does not meet the requirements of Article 6 PCT because the matter for which protection is sought is not clearly defined. The claim attempts to define the subject-matter in terms of the result to be achieved, which merely amounts to a statement of the underlying problem, without providing the technical features necessary for achieving this result.

In particular, the wording *'traffic control and synchronization of one or more electric vehicles is being achieved through the system and its components'* is problematic (see underlined text), as there are no technical details disclosed as to how to achieve the desired objective.

2. PRIOR ART

Reference is made to the following documents:

- D1 WO 2009/042214 A1 (GOVERNING DYNAMICS LLC [US]; MASHINSKY ALEX [US]) 2 April 2009 (2009-04-02)
- D2 WO 2011/059109 A1 (PANASONIC CORP [JP]; KANNO HIROSHI) 19 May 2011 (2011-05-19)
- D3 WO 2011/059108 A1 (PANASONIC CORP [JP]; KANNO HIROSHI) 19 May 2011 (2011-05-19)
- D4 US 2016/372955 A1 (FACKELMEIER ANDREAS [DE] ET AL) 22 December 2016 (2016-12-22)

D1 is considered the closest state of the art, the reasons being outlined below.

3. NOVELTY

Furthermore, the above-mentioned lack of clarity notwithstanding, the subject-matter of claims 1-3 (and 4*) and 7 is not new in the sense of Article 33(2) PCT, and the criteria of Article 33(1) PCT are therefore not met.

* See point 4.1 below.

3.1 Independent claim 1

Document D1 discloses (par. 2, 7-12, 31, 52; Fig. 1) a system for inductively charging electric vehicles (EVs), whereby a primary coil is configured to transmit electromagnetic energy using an electromagnetic coil and whereby a secondary coil is located in a suitable part of an EV (e.g. the underside) for receiving said electromagnetic energy, the primary and secondary coils having an inductive resonant relationship. Further disclosed (par. 50, 55, 59) in D1 is the wireless transmission of data between from the EV to the power network (for example, for identification and authentication purposes) and where data can be transmitted from the network to the EV relating to, for example, traffic information.

3.2 Claims 2 and 7

Document D1 discloses (par. 39, 40; Figs. 3, 4) that the primary and secondary coils may be either cylindrical or flat in shape, i.e. spiral, single-layer or multi-layer coils.

3.3 Claim 3 (and 4*: *see point 4.1 below)

Document D1 discloses (par. 49-52, 56, 65; Fig. 8) transmitter coils being *imbedded* (sic) (i.e. embedded) in a traffic lane of a road surface.

Therefore, the subject-matter of claims 1-3 (and 4*) and 7 is not new in the sense of Article 33(2) PCT, and the criteria of Article 33(1) PCT are therefore not met.

4. INVENTIVE STEP

Furthermore, the above-mentioned lack of clarity notwithstanding, the subject-matter of claims 4-6, 8 and 9 does not involve an inventive step in the sense of Article 33(3) PCT, and the criteria of Article 33(1) PCT are therefore not met.

Dependent claims 4-6, 8 and 9 do not appear to contain any additional features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step, the reasons being as follows:

4.1 Claim 4

The subject-matter of claim 4 merely defines (due to the range of implementation options) that transmitter coils may be placed in traffic lanes separated by a distance. This, due to the effectively trivial details of the coils being separated by a distance (i.e. any distance), may even be considered to be not novel, as it has no real technical feature over and above those of claim 3.

See also Fig. 1A of either of D2 and D3.

4.2 Claim 5

The subject-matter of claim 5 merely defines that the receiving coil in an EV be bigger than a transmitting coil in a traffic lane so as to maximize the time they are in inductive contact while the EV is travelling. This would appear to be a straight-forward design choice for optimal operation.

4.3 Claims 6 and 9

Document D1 discloses (par. 53, 55, 59) the transmission of data between transmitting system and EV in bi-directional fashion, using a range of implementations. as can clearly be seen from the disclosure of D1 (par. 59), traffic control and synchronization data is one type of data foreseen to be transmitted from the network to EVs.

(See also point 1.6 above re: claim 6.)

4.4 Claim 8

The subject-matter of claim 8 would appear to concern a straight-forward implementation option. See also point 1.8, above.

5. SUGGESTION/S

For the Applicant's consideration, it is not immediately clear if there is any patentable subject-matter in the specification, in the view of this Search Authority.

Item VIII:

See point 1, above.