

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

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

To:

see form PCT/ISA/220

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/US2018/044493

International filing date (day/month/year)
31.07.2018

Priority date (day/month/year)
07.09.2017

International Patent Classification (IPC) or both national classification and IPC
INV. G06F8/30 G06F17/30 G06F9/448

Applicant
MASTERCARD INTERNATIONAL INCORPORATED

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

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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>1-18</u>
	No: Claims	
Inventive step (IS)	Yes: Claims	
	No: Claims	<u>1-18</u>
Industrial applicability (IA)	Yes: Claims	<u>1-18</u>
	No: Claims	

2. Citations and explanations

see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

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

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1 Documents used

1.1 Reference is made to the following documents:

D1 Kanivalan Raju: "Deserializing JSON to Object Without Creating Custom Class", 9 June 2016 (2016-06-09), XP055515202, Retrieved from the Internet:
URL:<https://www.codeproject.com/Tips/1105691/Deserializing-JSON-to-Object-Without-Creating-Cust?display=Print>
[retrieved on 2018-10-15]

D2 Alex Ghiondea: "Using Anonymous types to deserialize JSON data", 22 December 2008 (2008-12-22), pages 1-3, XP055515198, Retrieved from the Internet:
URL:<https://blogs.msdn.microsoft.com/alexghi/2008/12/22/using-anonymous-types-to-deserialize-json-data/>
[retrieved on 2018-10-15]

D3 US 9 460 198 B1 (AMAN ROBERT MATTHEW [KE]) 4 October 2016 (2016-10-04)

2 Summary of the communication

2.1 Claims 1-18 are considered to lack inventive step, Article 33(3) PCT. Claims 1-18 lack clarity, Article 6 PCT.

3 Independent claims 1, 7 and 13 - Lack of inventive step, Article 33(3) PCT

3.1 The below-mentioned lack of clarity notwithstanding, the subject-matter of claims 1, 7 and 13 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.

- 3.2 Document D1 is considered to be the prior art closest to the subject-matter of claim 1 and discloses (the references in parentheses applying to this document, the original wording of the claim being in *italics*, and the ~~struck-out~~ text being subject-matter not disclosed in document D1):

A C Sharp (C#) system comprising one or more C Sharp (C#) computing devices for dynamically serialize C Sharp (C#) classes during runtime of data objects, the one or more C# computing devices comprising at least one processor and a memory, the one or more C# computing devices configured to: (page 1: "Deserializing JSON to object without creating any custom class using C# Dynamic type...Usually, we create custom classes to store the deserialized data from json. These custom classes were no more required if we use dynamic type which is introduced in C# 4.0.")

receive a serialized JSON class including at least one data object associated with at least one attribute name; (First listing on page 2: "string serialized = JsonConvert.SerializeObject(car);")

deserialize the serialized JSON class; (First Listing on page 2: "dynamic deserialized = JsonConvert.DeserializeObject(serialized);")

serialize a C# class using the deserialized JSON class;

dynamically identify, from the C# class, the at least one data object during the runtime of the data objects;

generate a dynamic C# class, wherein the dynamic C# class includes a ~~target class~~ and a method for returning the at least one data object; and (see last citation above and there is always a constructor, by default if needed)

return the at least one data object. (see last citation above)

- 3.3 The subject-matter of claim 1 therefore **differs** from this known system in that a C# class is serialized and at least one data object is identified from the C# class.
- 3.4 The system of document D1 reaches the same result than the subject-matter of claim 1 with less features, and it is not possible to ascertain a particular technical effect, and therefore a technical problem to be solved, from the differentiating features. Thus, it appears that the subject-matter of claim 1 presents technical disadvantages with respect to the disclosure of document D1, and can therefore not involve an inventive step, Article 33(3) PCT.

- 3.5 The same reasoning applies, mutatis mutandis, to the corresponding independent claims 7 and 13, which are therefore also considered not inventive, Article 33(3) PCT.
- 3.6 The same reasoning can be made using document D2 (page 1, paragraphs 1 and 2, and page 2, paragraphs 1 and 2) instead of document D1, Article 33(3) PCT.
- 4 Dependent claims 2-6, 8-12 and 14-18 - Lack of inventive step, Article 33(3) PCT**
- 4.1 Dependent claims 2-6, 8-12 and 14-18 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 inventive step, for the same reasons given for the independent claims.

Re Item VII

Certain defects in the international application

- 5 Formal requirements**
- 5.1 Independent claims 1, 7 and 13 are not in the two-part form in accordance with Rule 6.3(b) PCT, which in the present case would be appropriate, with those features known in combination from the prior art document D1 being placed in the preamble (Rule 6.3(b)(i) PCT) and the remaining features being included in the characterising part (Rule 6.3(b)(ii) PCT).
- 5.2 The features of claims 1-18 are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).
- 5.3 Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in documents D1 to D3 is not mentioned in the description, nor are these documents identified therein.
- 5.4 According to the requirements of Rule 11.13(m) PCT the same feature shall be denoted by the same reference sign throughout the application. This requirement is not met in view of the use of 102 on page 6.

Re Item VIII

Certain observations on the international application

6 Lack of clarity, Article 6 PCT

- 6.1 The application does not meet the requirements of Article 6 PCT, because claims 1-18 are not clear.
- 6.2 Claims 1, 7 and 13 are not clear, Article 6 PCT, because they specify that a serialized JSON class includes a data object, whereas a serialized class is only made of text and a data object is a runtime artefact, i.e not text. Thus, these claims contain a contradiction.
- 6.3 Claims 1, 7 and 13 are not clear, Article 6 PCT, because they specify "*dynamically identify, from the C# class, the at least one data object during runtime of the data objects*" although there has been not instantiation/creation of a data object from any class beforehand. Moreover it is not clear what technical features are employed to achieve the identification of the at least one data object from the C# class.
- 6.4 Claims 1, 7 and 13 are not clear Article 6 PCT, because they specify that the dynamic C# class includes a target class but fail to specify where this target class comes/is computed from.
- 6.5 Claims 1, 7 and 13 are not clear, Article 6 PCT, because they specify that they return the at least one data object without specifying from each class they should be instantiated. As a matter of fact, the at least one data object are already identified during the step "*dynamically identify...*" and the "*generate a dynamic C# class...*" step seems then superfluous.