

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To: 100080 China 10th Floor, Building 1, 10 Caihefang Road, Haidian District, Beijing LIU, SHEN & ASSOCIATES
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PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

Applicant's or agent's file reference <p style="text-align: center;">C19W5575</p>	Date of mailing (day/month/year) 12 March 2020	
FOR FURTHER ACTION See paragraph 2 below		
International application No. <p style="text-align: center;">PCT/CN2019/124041</p>	International filing date (day/month/year) <p style="text-align: center;">09 December 2019</p>	Priority date (day/month/year) <p style="text-align: center;">08 December 2018</p>
International Patent Classification (IPC) or both national classification and IPC <p style="text-align: center;">H04N 19/176(2014.01)i</p>		
Applicant <p style="text-align: center;">BEIJING BYTEDANCE NETWORK TECHNOLOGY CO., LTD. et al</p>		

<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 and 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 checked="" 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>

Name and mailing address of the ISA/ <p style="text-align: center;">National Intellectual Property Administration, PRC China 6, Xitucheng Rd., Jimen Bridge, Haidian District, Beijing 100088</p>	Date of completion of this opinion <p style="text-align: center;">07 March 2020</p>	Authorized officer <p style="text-align: center;">BAI,Lushuang</p>
Facsimile No. (86—10) 62019451	Telephone No. 86-(10)53961390	

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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:

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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

1. Statement

Novelty (N)	Claims	<u>1-68</u>	YES
	Claims	<u>None</u>	NO
Inventive step (IS)	Claims	<u>8-15, 27-31, 33-36, 60-66</u>	YES
	Claims	<u>1-7, 16-26, 32, 37-59, 67-68</u>	NO
Industrial applicability (IA)	Claims	<u>1-68</u>	YES
	Claims	<u>None</u>	NO

2. Citations and explanations :

- [1] Cited documents
- [2] D1: CN108432250 A
- [3] The speculative statement of the novelty, inventive step, and industrial applicability of claim 1 is made based on reasonable expectations. For details, see Box No. VIII.
- [4] 1. Novelty & Inventive Step
- [5] D1 is considered to be the prior art and discloses (see description, paragraphs [0004]- [0064], [0082]- [0159], and figures 1-15) : Methods and apparatus of Inter prediction for video coding performed by a video encoder or a video decoder that utilizes motion vector prediction (MVP) to code a motion vector (MV) associated with a block coded with coding modes including affine Inter mode are disclosed. According to the method, MVP pairs for the current block are derived based on neighboring blocks related to two control points for representing a 4-parameter affine motion model associated with the current block. A final MVP pair is selected based on two MVs for each MVP pair. In another method, MVP sets for three control points are derived to represent a 6-parameter affine motion model associated with the current block. A final MVP set is selected and included in the Inter candidate list.
- [6] The distinguishing technical feature between claim 1 and D1 is that: performing a conversion between the second block and a bitstream representation of the second block
- [7] by using the inherited motion information.
- [8] The distinguishing technical feature between claim 40 and D1 is that: a conversion between a first block of video and a bitstream representation of the first block. Therefore, claims 1,
- [9] 40 are novel in the sense of PCT Article 33(2).
- [10] On the basis of the distinguishing technical features between claims 1, 40 and D1, the technical problem to be solved by the present invention is considered to be: how to perform a conversion between the block and a bitstream representation of the block.
- [11] However, the distinguishing technical features are commonly known in the art. Therefore the subject-matter of claims 1, 40 do not involve an inventive step in the sense of PCT Article 33(3).
- [12] The additional technical features of the dependent claims 2-7, 16-26, 32, 37-39, 41-59 are all commonly known in the art, Therefore, claims 2-7, 16-26, 32, 37-39, 41-59 are novel in the sense of PCT Article 33(2), but do not involve an inventive step in the sense of PCT Article 33(3).
- [13] The additional features of the dependent claims 8-15, 27-31, 33-36, 60-66 are neither indicated from the prior art, nor commonly known in the art. Therefore claims 8-15, 27-31, 33-36, 60-66 are novel in the sense of PCT Article 33(2), and involve an inventive step in the sense of PCT Article 33 (3).
- [14] Claim 67 sets forth an apparatus in a video system comprising a processor and a non-transitory memory with instructions thereon, wherein the instructions upon execution
- [15] by the processor, cause the processor to implement the method in any of claims 1 to 66. Claim 68 sets forth a computer program product stored on a non-transitory computer

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- [16] readable media, the computer program product including program code for carrying out the method in any of claims 1 to 66.
- [17] Base on the reason of the claims 1-66, claims 67-68 are novel in the sense of PCT Article 33(2), and involve an inventive step in the sense of PCT Article 33(3) when they are corresponding to claims 8-15, 27-31, 33-36, 60-66, but do not involve an inventive step in the sense of PCT Article 33(3) when they are corresponding to claims 1-7, 16-26, 32, 37-59, 67-68.
- [18] **2. Industrial Applicability**
- [19] The technical solutions of claims 1-68 meet the criteria set out in PCT Article 33(4).

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:

- [1] (1) The technical solution of claim 1 does not meet the criteria set out in PCT Article 6, because of the word 'conversation' in claim 1.
- [2] (2) As the feature 'conversation' is described in claim 1, the examiner expects 'conversation' to refer to the feature 'conversion', and based on this, the speculative
- [3] statement of the novelty, inventive step, and industrial applicability of claim 1 is made
- [4] based on reasonable expectation.