PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA220

PCT

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

Date of mailing
(day/month/year) see form PCT/ISA210 (second sheet)

FOR FURTHER ACTION
See paragraph 2 below

Applicant's or agent's file reference
see form PCT/ISA220

International application No.
PCT/US2015/050097

International filing date (day/month/year)
15.09.2015

Priority date (day/month/year)
15.09.2014

International Patent Classification (IPC) or both national classification and IPC

Applicant
MICROSOFT TECHNOLOGY LICENSING, LLC

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 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 66.1bis(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/ISA220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA220.

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Date of completion of this opinion
see form PCT/ISA210

Authorized Officer
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Form PCT/ISA237 (Cover Sheet) (January 2015)
Box No. 1  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 6-9
No: Claims 1-5, 10

Inventive step (IS)  
Yes: Claims
No: Claims 1-10

Industrial applicability (IA)  
Yes: Claims 1-10
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
Reference is made to the following documents:

D1: EP 0 762 265 A2 (CANON KK [JP]) 12 March 1997 (1997-03-12)

Re Item V

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

1. Novelty of the claims:

The present application does not satisfy the criterion set forth in Article 33(2) PCT because the subject-matter of claim 1 is not new in respect of the prior art as defined in the regulations (Rule 64(1)-(3) PCT).

D1 discloses a method being performed by one or more computing devices (see Figure 5) including at least one processor (56), the method for smoothing digital ink input.

The method of D1 comprises:

- receiving a first ink point and a second ink point (see Figure 1);
- computing an active cubic Bézier approximation based on at least the first and second ink points (Bézier curve section 9 formed by points 13 and 19, including apexes 10, 12 - see column 6, lines 45-49);
- receiving a third ink point (7, 8, 21, 22);
- determining whether the third ink point adequately fits the active cubic Bézier approximation (column 6, line 55 to column 7, line 6); and
- computing a new cubic Bézier approximation utilizing at least the first, second and third ink points (see column 6, line 55 to column 7, line 6 and Figure 1).

2. As to the dependent claims:

Dependent claims 2-10 do not appear to contain any additional features which, in combination with the features of any claim to which they refer, are new or involve an inventive step for the following reasons:
D1 discloses that, upon determining that the third ink point (for example point 22 for curve 41 - see column 7, lines 57-58 and Figure 4) does adequately fit the active cubic Bézier approximation, computing a new cubic Bézier approximation comprises updating the active cubic Bézier approximation.

D1 also discloses that, upon determining that the third ink point (for example point 8 for curve 41) does not adequately fit the active cubic Bézier approximation, computing a new cubic Bézier approximation comprises terminating the active cubic Bézier approximation (curve 41) and initiating a second cubic Bézier approximation.

D1 further discloses the step of determining if one or more intended cusps are present (angle between vectors 42 and 43 too sharp, i.e. exceeds a predetermined threshold - see column 8, lines 33-40), wherein C1 continuity is preserved between the active cubic Bézier approximation and the second cubic Bézier approximation when no intended cusps are detected (smoothing when angle not too sharp, for example between vectors 40, 41 and 42 - see Figure 4).

D1 also discloses that the first, second, and third ink points are sequentially received as they are digitized and that the active Bézier approximation is computed while an input instrument continues to provide input data (when four or more unprocessed coordinate data have been counted, the curve processor starts processing apexes - see column 9, lines 21-24 and see Figure 5).

D1 does not disclose the prediction of a subsequent ink point. However D2 discloses, in the same context of a cubic Bézier curve fitted to a sequence of points, such a prediction (see paragraph [0085], lines 10-16). Using the prediction of D2 in the method of D1 is thus considered straightforward.

The features of the remaining claims correspond to implementation details, in particular the fact that resolution of the display is taken into account (see also D4, column 8, lines 37-60).

**Re Item VII**

**Certain defects in the international application**

i) To meet the requirements of Rule 6.3(b) PCT the independent claims should be properly cast in the two part form, with those features which in combination are part of the prior art (see document D1) being placed in the preamble.

ii) The description is not in conformity with the claims as required by Rule 5.1(a)(iii) PCT. Care should be taken during revision, especially of the introductory portion including any statements of problem or advantage, not to add subject-matter which extends beyond the content of the application as originally filed, Article 34(2)(b) PCT.
iii) Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the documents D1, D2 and D3 is not mentioned in the description, nor are these documents identified therein.

iv) The vague and imprecise statement in the description on page 26, line 19 ("spirit of the ....") implies that the subject-matter for which protection is sought may be different to that defined by the claims, thereby resulting in lack of clarity (Article 6 PCT) when used to interpret them.