

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

PCT

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL SEARCH REPORT AND
THE WRITTEN OPINION OF THE INTERNATIONAL
SEARCHING AUTHORITY, OR THE DECLARATION

To:
Cpa Global
BRAKE HUGHES BELLERMANN LLP
C/O CPA GLOBAL
900 Second Avenue South, Suite 600
Minneapolis, MN 55402
ETATS-UNIS D'AMERIQUE

(PCT Rule 44.1)

Applicant's or agent's file reference 0059-701WO1	Date of mailing (day/month/year) 25 February 2020 (25-02-2020)
International application No. PCT/US2019/065448	International filing date (day/month/year) 10 December 2019 (10-12-2019)
Applicant GOOGLE LLC	

1. The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

Filing of amendments and statement under Article 19:
The applicant is entitled, if he so wishes, to amend the claims of the International Application (see Rule 46):

When? The time limit for filing such amendments is normally two months from the date of transmittal of the International Search Report.

How? Directly to the International Bureau of WIPO, 34 chemin des Colombettes
1211 Geneva 20, Switzerland, Facsimile No.: (41-22) 338.82.70

For more detailed instructions, see PCT Applicant's Guide, International Phase, paragraphs 9.004 - 9.011.

2. The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.

3. **With regard to any protest** against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

the protest together with the decision thereon has been transmitted to the International Bureau together with any applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.

no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Reminders**

The applicant may **submit comments on an informal basis on the written opinion of the International Searching Authority** to the International Bureau. These comments will be made available to the public after international publication. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established.

Shortly after the expiration of **18 months from the priority date, the international application will be published** by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau before the completion of the technical preparations for international publication (Rules 90bis.1 and 90bis.3).

Within **19 months** from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase **until 30 months** from the priority date (in some Offices even later); otherwise, the applicant must, **within 20 months** from the priority date, perform the prescribed acts for **entry into the national phase** before those designated Offices. In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19 months. For details about the applicable time limits, Office by Office, see www.wipo.int/pct/en/texts/time_limits.html and the *PCT Applicant's Guide*, National Chapters.

Within **22 months from the priority date, the applicant may request that a supplementary international search be carried out** by a different International Searching Authority that offers this service (Rule 45bis.1). The procedure for requesting supplementary international search is described in the *PCT Applicant's Guide*, International Phase, paragraphs 8.006-8.032.

<p>Name and mailing address of the International Searching Authority</p> <p>European Patent Office, P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk Tel. (+31-70) 340-2040 Fax: (+31-70) 340-3016</p>	<p>Authorized officer</p> <p>IPIñAZAR, Paula Tel: +49 (0)89 2399-8131</p>
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PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 0059-701WO1	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/US2019/065448	International filing date (<i>day/month/year</i>) 10 December 2019 (10-12-2019)	(Earliest) Priority Date (<i>day/month/year</i>) 4 March 2019 (04-03-2019)
Applicant GOOGLE LLC		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 3 sheets.

It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**

a. With regard to the **language**, the international search was carried out 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))

b. This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6*bis*(a)).

c. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. **Certain claims were found unsearchable** (See Box No. II)

3. **Unity of invention is lacking** (see Box No III)

4. With regard to the **title**,

- the text is approved as submitted by the applicant
- the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

- the text is approved as submitted by the applicant
- the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority

6. With regard to the **drawings**,

- a. the figure of the **drawings** to be published with the abstract is Figure No. 1
 - as suggested by the applicant
 - as selected by this Authority, because the applicant failed to suggest a figure
 - as selected by this Authority, because this figure better characterizes the invention
- b. none of the figures is to be published with the abstract

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2019/065448

A. CLASSIFICATION OF SUBJECT MATTER INV. G09G3/3225 H01L27/32 H04M1/02 ADD.		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) G09G H01L H04M G06F		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) EPO-Internal, WPI Data		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	EP 3 226 101 A1 (SAMSUNG ELECTRONICS CO LTD [KR]) 4 October 2017 (2017-10-04) paragraph [0075] - paragraph [0143]; figures 4-8 paragraph [0183] - paragraph [0196]; figures 16,18,19	1-13, 15-22 14
A	----- US 2011/242058 A1 (LEE CHOON-HYOP [KR] ET AL) 6 October 2011 (2011-10-06) paragraph [0031] - paragraph [0064]; figures 1-3 -----	14
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex.		
* Special categories of cited documents :		
"A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed		"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family
Date of the actual completion of the international search <p align="center">17 February 2020</p>		Date of mailing of the international search report <p align="center">25/02/2020</p>
Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016		Authorized officer <p align="center">Adarska, Veneta</p>

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No PCT/US2019/065448

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 3226101	A1	04-10-2017	CN 107241465 A
			EP 3226101 A1
			KR 20170111827 A
			US 2017287992 A1

US 2011242058	A1	06-10-2011	KR 101048974 B1
			TW 201135555 A
			US 2011242058 A1

TITLE: DISPLAY CONFIGURATION FOR MOBILE COMPUTING DEVICES

APPLICANT: GOOGLE LLC

IPC CLASSIFICATION: G09G3/3225, H01L27/32, H04M1/02

EXAMINER: Adarska, Veneta

CONSULTED DATABASES:

CLASSIFICATION SYMBOLS DEFINING EXTENT OF THE SEARCH:

IPC:

CPC: EPODOC, WPI, G09G3/32/LOW, G09G3/3225, G09G2300/023, G09G2300/0426, G09G2360/14, H01L27/3276, H04M1/02, G06F1/16

FI/F-TERMS:

KEYWORDS OR OTHER ELEMENTS FEATURING THE INVENTION:

display panel
AM OLED pixels
light sensor or camera
aperture/hole/opening of panel
panel signals routing
intensity control
touch sensor
mobile computing device

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY
(PCT Rule 43bis.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/US2019/065448

International filing date (day/month/year)
10.12.2019

Priority date (day/month/year)
04.03.2019

International Patent Classification (IPC) or both national classification and IPC
INV. G09G3/3225 H01L27/32 H04M1/02

Applicant
GOOGLE 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 66.1 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:



European Patent Office
D-80298 Munich
Tel. +49 89 2399 - 0
Fax: +49 89 2399 - 4465

Date of completion of this opinion

see form PCT/ISA/210

Authorized Officer

Adarska, Veneta

Telephone No. +49 89 2399-0



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 43*bis*.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 13*ter*.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 13*ter*.1(a)).
 - on paper or in the form of an image file (Rule 13*ter*.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>8, 9, 14, 16, 17, 22</u>
	No: Claims	<u>1-7, 10-13, 15, 18-21</u>
Inventive step (IS)	Yes: Claims	<u>14</u>
	No: Claims	<u>1-13, 15-22</u>
Industrial applicability (IA)	Yes: Claims	<u>1-22</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 Reference is made to the following documents (D1-D2):
- D1 EP 3 226 101 A1 (SAMSUNG ELECTRONICS CO LTD [KR]) 4 October 2017 (2017-10-04)
- D2 US 2011/242058 A1 (LEE CHOON-HYOP [KR] ET AL) 6 October 2011 (2011-10-06)
- 2 The present application does not meet the criteria of Article 33(2) PCT, because the subject-matter of claims 1 and 21 is not new.
- 2.1 D1 discloses a "display panel (display panel 700 in figures 4 to 7, par. 75 to par. 131) including: an emissive portion configured to emit light ("active area" in par. 102, fig.6B), and a non-emissive portion (803b in fig.8, par. 127 to par.131) configured to carry signals (1720 in fig.8) to the emissive portion (figures 4, 6B and 8); wherein the non-emissive portion (803b in fig.8) of the display panel (700 in figures 6B) is configured to permit light transmitted or received by at least one light device (800 in fig. 6B, 800 in fig. 8; "camera device 800" par.97 to par. 131) positioned behind the display panel (700 in fig.6B) to pass through the non-emissive portion (803b in figure 8) of the display panel (700 in fig.7, par. 97 to par.131)".
- Therefore, the subject-matter of claim 1 is not new with respect to D1.
- 2.2 The same reasoning applies, mutatis mutandis, to the subject-matter of the corresponding independent claim 21. D1 also comprises the additional features of claim 21 to providing light to a plurality of light devices (800 in figures 6B, 8, 16 and 18) in a mobile computing device (figures 4, 7A and 19), arranging the plurality of light devices (devices in 707 and 705 in fig.7A, 800 in figures 6B and 8) so that light devices that are operable with partially obstructed light (707 and 705 in fig.7A, positions of camera sensors 800 with partially obstructed light due to the routing lines in fig.8) are positioned relative to light devices that required unobstructed light (positions of other camera sensors 800 with unobstructed light due to the routing lines in fig.8); positioning a display panel (700 in fig.6B) in front of the light devices (800 in fig.6B, 705 and 707 in fig.7A) so that the light devices that require unobstructed light are aligned with apertures in the display

panel (700 in figures 4 to 8) and so that the light devices (800 in fig.6B, 705 and 707 in fig.7A) that are operable with partially obstructed light (positions of sensors of 800 with obstructed light due to the routing lines in fig.8) are aligned with routing areas of the display panel (figure 8); and providing partially obstructed light through routing areas of the display panel to the devices that are operable with partially obstructed light (figures 7A, 6B and 8). Therefore, the subject-matter of claim 21 is also not new with respect to D1.

- 3 Dependent claims 2 to 13, 15 to 20 and 22 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty (Article 33(2) PCT) or inventive step (Article 33(2) PCT).

Claims 2 to 5: The display panel of D1 (700 in figures 4 and 6B, claim 1) also shows that the emissive portion includes a matrix of thin film transistors (array of TFTs in claim 6 and in par. 139 to par.141) controlled by control lines (par. 96, fig.8) to control light emission for pixels (par. 141 to par.143) in the emissive portion and the pixels are organic light emitting diodes ("organic light emitting layer" in claim 6, OLED display in par. 87 and par. 139 to par.142) and wherein the non-emissive portion (803b in fig.8) includes the control lines (1707) for pixels in the emissive portion but is not configured to emit light (opening 810 in par 92 for the camera 800 in figures 6B and 8), the control lines partially obstructing the light transmitted or received through the non-emissive portion (fig.8) and the herein the non-emissive portion (803b in fig.8) includes no pixels (par. 92 to par. 96). The subject-matter of claims 2 to 5 is therefore not new with respect to D1.

Claims 6 and 7: The non-emissive portion (803b in fig.8) of the display panel of D1 (700 in figures 4 and 6B) includes an aperture (800 in figures 6B and 8) through the display panel (700 in figures 4 to 7) and a routing area (routing area 803b in fig,8) that surrounds the aperture (opening 810 in par. 92 to par. 96 for the camera 800 in figures 6B and 8) and that includes control lines for the emissive portion (figure 8, par. 129 to par.131) and the light transmitted or received through the routing area partially is obstructed by the control lines (figure 8, par. 129 to par.131). The subject-matter of claims 6 and 7 is therefore not new with respect to D1.

Claims 8, 9, 17 and 22: The display panel of D1 (700 in figures 4,6B, 7A and 19) shows that the non-emissive portion (opening 810 in par. 92 to par. 96 for the camera 800 in figures 6B, 8, 16 and 19) includes a first aperture (hole 705 for camera 800 in figures 7A or 19, par. 195 and par 196) through the display

panel (700 in fig.4,6B, 7A and 19) and a second aperture (sensor hole 707 in fig.19, par. 195 and par.196) through the display panel (700 in fig.19) and the light transmitted or received by the is partially obstructed by the control lines (fig.8). Using the teaching for the routing of the first aperture area (figures 8 and 16 with respect to the opening for the camera 800,par. 183 and par. 184; hole 705 for 800 in fig.19, par. 196) by using a routing area that surrounds the first aperture (figures 8 and 16,par. 127 to par.131, par. 183 and par.184) it would be obvious for skilled person working with D1 (opening 707 and 705 in figures 7A or 19 and fig.16) to apply this teaching in the same way for the routing of the control signals (figures 8 and 16,par. 127 to par.131, par. 183 and par.184) around the second aperture (opening 707 in figures 7A or 19 in the same way as for the opening 705 in figures 7A or 19 based on fig.16), thus arriving at the subject-matter of claims 8, 9, 17 and 22 without involving an inventive step with respect to D1.

Claims 10, 12 and 13: The display panel of D1 also shows that the light is visible light (par. 129) and the non-emissive portion (803b in fig.8) is configured to be positioned over a light device operable with partially obstructed light (fig.8 and par. 129). The display panel of D1 also shows a plurality of apertures (707 and 705 in figure 19, par. 195 and par.196), each of the plurality of apertures (707 and 705 in figure 19) configured to be positioned over a light device (opening 705 in fig. 19 for device 800 in fig.18) operable with unobstructed light (fig.18). The subject-matter of claims 10, 12 and 13 is therefore not new with respect to D1.

Claim 11:The display panel (700 in fig.4, claims 1 and 6) also shows that the emissive portion has an OLED display structure ("organic light emitting layer" in claim 6, OLED display in par. 87 and par. 139 to par.142) that includes a matrix of organic light emitting diode ("organic light emitting layer" in claim 6, OLED display in par. 87 and par. 139 to par.143), a matrix of thin film transistors (array of TFTs in claim 6 and in par. 139 to par.141) controlling an intensity of the matrix of OLEDs, and control lines (fig.8) carrying signals (par. 96, fig.8) for controlling the matrix of TFTs (claims 1 and 6, fig.8, par.141 to par. 143); the non-emissive portion (fig.8) comprises a routing area configured to carry signals (par. 96) for the emissive portion, the routing area of the display panel having a simplified OLED display structure that includes the control lines controlling the matrix TFTs (claims 1 and 6, par. par. 87 and par. 139 to par.143); and the routing area is partially obstructed by the control lines but otherwise

transparent so light can pass partially obstructed through the routing area of the display panel to and from light devices (fig.8 and par. 129). The subject-matter of claim 11 is therefore not new with respect to D1.

Claim 15: D1 (fig.4, fig.6B or fig.19) also shows a mobile computing device (fig. 4, par. 75 and par.76) comprising said display panel (700 in fig.4) and at least one light device (800 in fig.6B) positioned behind the display panel (fig.6B) and configured to transmit or receive light through the non-emissive portion of the display panel (par. 97 to par. 100, 800 in figures 6B and 8). The subject-matter of claim 15 is therefore not new with respect to D1.

Claim 16: The mobile computing device of D1 (figures 4 or 19) also shows that the non-emissive portion includes an aperture (fig.16) through the display panel (700 in figures 4 or 19) and a routing area that surrounds the aperture (figures 16 and 19) and that includes control lines (742 and 744 in figure16) for the emissive portion (figures 16 and 19); and one of the at least one light device (800 in fig. 16 and 800 for the opening 705 in figures 7 or 19) is configured to transmit or receive light through the aperture (810 for 800 in fig.18) and it would be obvious for a skilled person to provide in the same way another device in another aperture (sensor device for 707 in figures 7 or 19) which could be also selected to transmit or receive light through the routing area, thus arriving at the subject-matter of claim 16 without involving an inventive step with respect to D1.

Claims 18 to 20: The mobile computing device of D1 (figures 4 and 6B) also shows that the at least one light device (800 in fig.6B) comprises a camera (800 in fig. 6B and 705 in fig.7A) and light sensor (707 in fig.7A and par. 116 to par. 118) or light emitter (camera flash of the camera device 800 in fig.6B of mobile phone device in fig.4). The subject-matter of claims 18 to 20 is therefore not new with respect to D1.

- 4 Claim 14: The combination of the features of dependent claim 14 is neither known from, nor rendered obvious by, the available prior art. D1(fig.6B) shows a touch pattern layer (729 in fig.6B) above the aperture (810 in fig.6B) but it fails to disclose touch sensing electrodes arranged in a pattern of unit cells with each unit cell larger than each aperture. D2(paragraph [0031] - paragraph [0064]; figures 1-3) shows a display device comprising a touch sensing electrodes arranged in a pattern of unit cells (figure 1) but it fails to disclose any aperture for a lighting device behind the display panel. Even combining the teaching of D2 for touch sensing electrodes arranged in a pattern of unit cells

into D1, there is no hint to provide each unit cell larger than any of the plurality of apertures and to provide these cells in a region with aperture, i.e. the solution of claim 14 is not obvious with respect to D1 and D2.

5 **Re Item VII**

Certain defects in the international application

- 5.1 The features of independent claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).
- 5.2 Independent claims are not in the two-part form in accordance with Rule 6.3(b) PCT.
- 5.3 Contrary to the requirements of Rule 5.1(a)(ii) PCT, no prior art documents are identified in the description.

6 **Re Item VIII**

Certain observations on the international application

- 6.1 Claims 1 and 21: Claim 1 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 (i.e. the definition "wherein the non-emissive portion of the display panel is configured to permit light transmitted or received by at least one light device positioned behind the display panel to pass through the non-emissive portion of the display panel"), which merely amounts to a statement of the underlying problem, without providing the technical features such as aperture or/and (transparent) display panel technology necessary for achieving this result.

This clarity objection raised above with respect to claim 1 also applies to the corresponding independent claim 21 (Article 6 PCT). In addition, it is also unclear from the present wording of claim 21 whether it is directed to a light control method ("method for providing light") or to a device manufacturing method ("arranging the plurality of light devices" and "positioning a display panel").

Possible steps after receipt of the international search report (ISR) and written opinion of the International Searching Authority (WO/ISA)

General information

For all international applications, the competent International Searching Authority (**ISA**) will establish an international search report (**ISR**) accompanied by a written opinion of the International Searching Authority (**WO/ISA**). The **WO/ISA** may be responded to by

- filing informal comments with the **International Bureau of WIPO (IB)** (where no demand for international preliminary examination (**demand**) is filed)
- filing amendments under Art. 19 PCT (this can be done whether or not a **demand** is filed)
- filing amendments under Art. 34 PCT and/or formal observations in response to objections raised in the **WO/ISA** (where a **demand** is actually filed)

This document explains these possibilities.

Filing informal comments

After receipt of the **ISR and WO/ISA**, the applicant may file informal comments on the **WO/ISA, directly with the IB** (see International Search and Preliminary Examination Guidelines 2.15). These will be communicated to the designated/elected Offices, together with the International Preliminary Report on Patentability (**IPRP**) at 30 months from the priority date.

Amending claims under Art. 19 PCT

The applicant may file **amended claims** under Art. 19 PCT, **directly with the IB** by the later of the following dates:

- 2 months from the date of mailing of the **ISR and the WO/ISA**
- 16 months from the priority date

However, any such amendment received by the **IB** after the expiration of the applicable time limit shall be **considered to have been received on time** by the **IB**, if it reaches it **before** the technical preparations for international publication have been completed (the 15th day prior to the date of publication, see PCT Applicant's Guide, International Phase, 9.013).

For further information, please see Rule 46 PCT as well as form PCT/ISA/220.

Please also note that, when filing amended claims under Art. 19 PCT, such amendments shall be **accompanied by a letter** identifying the amendments made and also the basis for the amendments in the application as originally filed (Rule 46.5(b) PCT). Where a **demand** is filed, failure to comply with this requirement may result in the amendments being ignored in the International Preliminary Examination Report (**IPER**), see Rule 70.2(c-bis) PCT.

Filing a demand for international preliminary examination

In principle, the **WO/ISA** will be considered to be the written opinion of the International Preliminary Examining Authority (**IPEA**). Where the **WO/ISA** issued by the **EPO** as **ISA** gives a positive opinion on the international application and the invention to which it relates, filing a **demand** with the **EPO** as **IPEA** would normally be unnecessary, since a positive **IPRP** would anyway be established by the **IB** based on the **WO/ISA** (see also further below).

If the applicant wishes to file a **demand** (for example, to allow him to argue his case in international preliminary examination with regard to objections raised in a negative **WO/ISA** before the **IPEA** issues an **IPER**), this must be done before expiration of **3 months after the date of mailing of the ISR and WO/ISA** or **22 months after priority date**, whichever expires later (Rule 54*bis* PCT). Amendments under Art. 34 PCT can be filed with the **IPEA**, normally at the same time as filing the demand (Rule 66.1(b) PCT) or within the time limit set for reply to any written opinion issued during international preliminary examination by the **IPEA**.

If a **demand** is filed at the **EPO** as **IPEA** and no comments/amendments have been received by the time the **EPO** starts drawing up the **IPER** (Rule 66.4*bis* PCT), the **WO/ISA** will be transformed by the **IPEA** into an **IPER** (also called the **IPRP (Chapter II)** which would merely reflect the content of the **WO/ISA** (OJ 10/2011, 532). The **demand** can still be withdrawn (Art. 37 PCT).

Please also note that, when filing amendments under Art. 34 PCT, such amendments shall be accompanied by a letter which identifies the amendments made and also the basis for the amendments in the application as originally filed (Rule 66.8(a) PCT). Failure to comply with this requirement may result in the amendments being ignored in the **IPER (IPRP (Chapter II))**, see Rule 70.2(c-*bis*) PCT.

Filing a request for supplementary international search

The applicant may, with the **IB**, file a request for **supplementary international search** under Rule 45*bis*.1 PCT. The present **ISR** and **WO/ISA** may also be taken into account in the execution of that supplementary international search, provided that these are available to the Authority charged with this task before it starts the supplementary search (Rule 45*bis*.5 PCT).

This kind of request **cannot be filed specifying the ISA** who did the **international search**.

More information on this topic can be found in the **PCT Applicant's Guide**, Chapter 8 (<http://www.wipo.int/pct/en/guide/ip08.html>).

End of the international phase

Where no **demand** is filed, at the end of the international phase, the **IB** will transform the **WO/ISA** into the **IPRP (PCT Chapter I)** (Rule 44*bis* PCT), which will then be transmitted together with possible informal comments to the designated Offices. Where a demand is filed, the **WO/ISA** is not transformed into an **IPRP (Chapter I)** by the **IB**, but rather the **IPEA** will establish an **IPER**, (the **IPER** is the same as the **IPRP (PCT Chapter II)**, see Rule 70.15 PCT).
