

Internal distribution code:

- (A) [-] Publication in OJ
(B) [-] To Chairmen and Members
(C) [-] To Chairmen
(D) [X] No distribution

**Datasheet for the decision
of 5 October 2017**

Case Number: T 2603/11 - 3.5.04
Application Number: 07122227.7
Publication Number: 1931135
IPC: H04N5/232, G02B27/64, G03B17/17
Language of the proceedings: EN

Title of invention:

Apparatus and method for correcting shake of image
photographing device

Applicant:

Samsung Electronics Co., Ltd.

Headword:

Relevant legal provisions:

EPC 1973 Art. 54, 56, 84
EPC Art. 123(2)

Keyword:

Novelty - main request (no)
Claims - clarity - auxiliary request (no)
Amendments - added subject-matter (yes)
Inventive step - auxiliary request (no)

Decisions cited:

Catchword:



Beschwerdekammern
Boards of Appeal
Chambres de recours

European Patent Office
D-80298 MUNICH
GERMANY
Tel. +49 (0) 89 2399-0
Fax +49 (0) 89 2399-4465

Case Number: T 2603/11 - 3.5.04

D E C I S I O N
of Technical Board of Appeal 3.5.04
of 5 October 2017

Appellant: Samsung Electronics Co., Ltd.
(Applicant) 129, Samsung-ro
Yeongtong-gu
Suwon-si, Gyeonggi-do, 443-742 (KR)

Representative: Grünecker Patent- und Rechtsanwälte
PartG mbB
Leopoldstraße 4
80802 München (DE)

Decision under appeal: Decision of the Examining Division of the
European Patent Office posted on 28 July 2011
refusing European patent application
No. 07122227.7 pursuant to Article 97(2) EPC.

Composition of the Board:

Chairman C. Kunzelmann
Members: C. Kunzelmann
B. Müller
M. Paci

Summary of Facts and Submissions

I. The appeal is against the decision of the examining division to refuse European patent application No. 07 122 227.7 under Article 97(2) of the European Patent Convention (EPC).

II. The application was refused on the grounds that the subject-matter of independent claims 1 and 6 of the main request and the first auxiliary request was not new over the disclosure of document

D2: US 2006/0127073 A1

and that the subject-matter of independent claims 1, 6, 11 and 15 of the main request and the first auxiliary request did not involve an inventive step in view of the disclosure of document

D3: US 5 333 076 A.

The examining division also raised clarity objections against the independent claims of the first auxiliary request.

With respect to the second auxiliary request, the examining division found that the subject-matter of claims 1 and 6 was not new over D2 or D3 and that the subject-matter of claims 1, 6, 11 and 15 did not involve an inventive step in view of the disclosure of D3. Moreover, these claims were found to lack clarity.

III. The applicant filed notice of appeal against this decision. With the statement of grounds of appeal, it filed the claims of a third auxiliary request. It requested that the decision under appeal be set aside

and that a European patent be granted on the basis of the claims of the main request or the first or second auxiliary request filed with a letter dated 7 March 2011, or the third auxiliary request filed with the statement of grounds of appeal.

- IV. The board issued a communication pursuant to Rule 100(2) EPC. In this communication it noted that the claims of the main request and the first and second auxiliary requests were those underlying the decision under appeal and explained in its preliminary opinion why it considered that the decision under appeal was correct. With respect to claims 11 and 15 of the main request the board raised doubts that the claimed subject-matter involved an inventive step in view of D2. The board also raised an objection under Article 123(2) EPC against the independent claims of the third auxiliary request.
- V. The appellant replied with a letter dated 27 April 2017 and filed the claims of fourth and fifth auxiliary requests. It also submitted counter-arguments to the reasoning given in the board's communication.
- VI. The board issued a communication pursuant to Article 15(1) of the Rules of Procedure of the Boards of Appeal (RPBA), annexed to a summons to oral proceedings. In the communication it made reference to the earlier communication under Rule 100(2) EPC and gave its preliminary opinion concerning the fourth and fifth auxiliary requests. The board also introduced document

D4: US 2004/0105025 A1

in support of the argument that, already before the priority date of D2, double folding of the light path had been considered for miniaturised cameras despite the very little space available.

- VII. The appellant replied with a letter dated 5 September 2017. In this letter it maintained the requests identified in and submitted with the statement of grounds of appeal as well as the fourth auxiliary request filed with the letter dated 27 April 2017. It also filed the claims of a new fifth auxiliary request.
- VIII. With a further letter dated 22 September 2017, the appellant's representative informed the board that it would not be attending the oral proceedings scheduled for 5 October 2017 and that the requests on file were maintained.
- IX. The board held oral proceedings on 5 October 2017 in the appellant's absence, in accordance with Rule 71(2) EPC 1973 and Article 15(3) RPBA. The chairman noted that the appellant had requested in writing that the decision under appeal be set aside and that a European patent be granted on the basis of the claims of the main request or the first or second auxiliary requests filed with the letter dated 7 March 2011, the claims of the third auxiliary request filed with the statement of grounds of appeal, the claims of the fourth auxiliary request filed with the letter dated 27 April 2017, or the claims of the fifth auxiliary request filed with the letter dated 5 September 2017. At the end of the oral proceedings, the chairman announced the board's decision.

X. Claim 1 of the main request reads as follows:

"An apparatus (100) for correcting a shake of a camera module for mounting on a portable appliance by a user using the camera module, the apparatus (100) comprising:

a shake sensing unit (110) sensing the shake of the camera module which photographs an image of a subject;
a first optical path changing unit (120) for correcting a shake component in a first direction by changing an optical path of light incident to the camera module;
an angle adjusting unit (130) adjusting an angle of an light-incident surface of the first optical path changing unit (120) according to the sensed shake; and
an image generating unit (140) comprising an image sensor (141) receiving light, and generating the image of the subject through the light, the optical path of which has been changed by the first optical path changing unit (120),
characterized in that

the image generating unit (140) further comprises:
a driver (142) changing a position of the image sensor (141) in the image generating unit (140) for correcting a shake component in a second direction according to the sensed shake while the first optical path changing unit (120) corrects the shake component in the first direction."

XI. Claim 1 of the first auxiliary request reads as follows:

"An apparatus (100) for correcting a shake of a camera module for mounting on a portable appliance by a user using the camera module, the apparatus (100) comprising:
an objective (120a);

a shake sensing unit (110) sensing the shake of the camera module which photographs an image of a subject; a first optical path changing unit (120) for correcting a shake component in a first direction by changing an optical path of light incident to the camera module; an angle adjusting unit (130) adjusting an angle of an light-incident surface of the first optical path changing unit (120) according to the sensed shake; and an image generating unit (140) comprising an image sensor (141) receiving light, and generating the image of the subject through the light, the optical path of which has been changed by the first optical path changing unit (120), wherein the image generating unit (140) further comprises:
a driver (142) changing a position of the image sensor (141) in the image generating unit (140) for correcting a shake component in a second direction according to the sensed shake while the first optical path changing unit (120) corrects the shake component in the first direction;
wherein the first direction refers to a direction perpendicular to an optical axis incident onto the objective (120a), and the second direction refers to a direction horizontal to the optical axis incident onto the objective (120a)."

- XII. Claim 1 of the second auxiliary request is (except for a typographical error) identical to claim 1 of the first auxiliary request with the feature "a camera module for mounting on a portable appliance" in the first two lines of the claim replaced with "a camera module for mounting on a cellular phone".

XIII. Claim 1 of the third auxiliary request is identical to claim 1 of the main request with the following feature appended at the end of the claim, before the full stop: "
", wherein the first optical path changing unit (120) and the image sensor (141) are actuated independently and relative to each other".

XIV. Claim 14 of the fourth auxiliary request and claim 5 of the fifth auxiliary request are identical to claim 15 of the main request and read as follows:

"A method of correcting a shake of a camera module for mounting on a portable appliance, by a user using the camera module the method comprising:
sensing the shake (S310) of the camera module which photographs an image of a subject;
changing an optical path of light (S320) incident to the camera module;
changing the changed optical path of the light once again (S330); and
generating the image of the subject (S340) through the light, the optical path of which has been changed again,
wherein one of the changing the optical path of the light and the changing the optical path of the light once again comprises adjusting an angle of a light-incident surface in a first direction according to the sensed shake,
wherein the generating the image of the subject comprises changing a position of an image sensor (141) in an image generating unit (140) in a second direction according to the sensed shake while the first optical path changing unit (120) corrects the shake component in the first direction."

XV. The reasons for the decision under appeal that are relevant to the board's decision may be summarised as follows:

Concerning claim 1 of the main request, document D2 (see the abstract) disclosed an apparatus for correcting a shake of a camera module for mounting on a portable appliance by a user using the camera module. D2, paragraph [0039] and Figure 2b (reference sign 40) disclosed the apparatus' shake sensing unit; D2, paragraph [0029] and Figure 2c (reference sign 32) disclosed the apparatus' first optical path changing unit; D2, paragraph [0036] and Figure 2a (reference sign 7) disclosed the apparatus' angle adjustment unit, and D2, paragraph [0031] and Figure 2c (reference sign 5) disclosed the apparatus' image generating unit. All these units of the apparatus of D2 had the functionalities specified in claim 1 (reference was made to paragraphs [0026], [0031], [0041] to [0043] and Figures 3a to 3c and 4a). These paragraphs of D2 also disclosed that the image generating unit comprised a driver changing the position of the image sensor as specified in claim 1. Thus D2 disclosed an apparatus having all the features of claim 1. In particular, D2 (for instance Figure 4a) disclosed correcting shake in two linearly independent shake directions X and Y. Claim 1 of the main request neither specified decomposing shake into two linearly independent directions nor moving the image sensor of the image generating unit independently of the first optical path changing unit. The feature "a driver for changing a position of the image sensor in the image generating unit" of claim 1 specified that the image sensor was located in the image generating unit but did not imply that the image sensor moved relative to the image generating unit.

In claim 1 of the first and second auxiliary requests, the feature "a direction horizontal to the optical axis" had no clear meaning. Moreover, it was not clear which features distinguished the "first direction perpendicular to an optical axis", from the "second direction ... horizontal to the optical axis".

XVI. The appellant's arguments may be summarised as follows:

Claim 1 of the main request implied that the first optical path changing unit and the image sensor were actuated independently and relative to each other, and corrected shake in two directions. This was clear from page 10, line 18, page 9, lines 25 and 26 and Figure 3. The arrow shown in Figure 3 related to the image sensor and indicated its position adjustment (relative to and in the image generating unit) caused by a driver. This adjustment was independent of the actuation of the optical path changing unit. The description of Figures 1 to 3 made clear that the width t indicated in Figures 2 and 3 (which is parallel to the arrow) corresponded to the thickness of the image photographing device and extended in a horizontal direction. The first optical path changing unit turned light incident through the objective in the horizontal direction to the vertical direction.

In contrast, in the apparatus of D2, the image sensor did not move relative to and in the image generating unit. Thus the claimed apparatus was new and inventive over D2.

The claims of auxiliary request 1 further specified that the first direction referred to a direction perpendicular to an optical axis incident onto the

objective and that the second direction referred to a direction horizontal to the optical axis incident onto the objective, as disclosed on page 8, lines 6 to 10. In the context of the application, horizontal was synonymous with parallel, having the meaning of "parallel" or "along". It followed from Figures 2 and 3 that the first direction was a vertical direction perpendicular to the optical axis of the objective and the second direction was along the optical axis of the objective.

The claims of auxiliary request 2 further specified that the camera module was for mounting on a cellular phone, i.e. that the portable appliance was a cellular phone.

The claims of auxiliary request 3 explicitly specified that the first optical path changing unit and the image sensor were actuated independently and relative to each other. This was supported by Figure 3 and the corresponding description on page 9, lines 23 to 26 and page 10, lines 3 to 18.

The disclosure of D2 referred to a rigid lens barrel that was pivotable around two axes, as shown in Figure 5. In this lens barrel there was extreme lack of space. Therefore a person skilled in the art would not consider folding the optical path once again within the lens barrel. Therefore, the subject-matter of claim 11 of the main request (which focused on the embodiment of Figure 5) involved an inventive step. The same was true for the corresponding method of claim 15.

Reasons for the Decision

1. The appeal is admissible.

Main request, claim 1: claim construction

2. It appears from the file that the technical meaning of the characterising feature "a driver (142) changing a position of the image sensor (141) in the image generating unit (140)" is decisive for the assessment of patentability of the claimed subject-matter.

- 2.1 The board agrees with the finding in point 2.1.2. of the decision under appeal that this feature has the technical meaning that the image sensor is located in the image generating unit, and the driver is arranged to change the position of the image sensor.
The reasons are as follows:

- 2.2 First, this interpretation of the wording of the feature is linguistically sound in the context of the claim language. Second, it is consistent with the structure of all the described embodiments comprising a driver. In particular, according to paragraph [0034] of the published application, which concerns the second embodiment (see Figure 3), "a position of an image sensor included in the image generating unit 140 is changed in the second direction". Paragraph [0037] discloses that "the image generating unit 140 may include an image sensor 141 receiving light and a driver 142 changing a position of the image sensor". Paragraph [0038] discloses that "the directions in which an angle of the incident surface of the first optical path changing unit 120 and a position of the image sensor 141 in the image generation unit 140 may

be reversed to each other". Paragraph [0044], which concerns the third embodiment (see Figure 6), discloses that "the image generating unit 140 may include the image sensor 141 and a driver 142 changing a position of the image sensor 141." Third, this interpretation is compatible with the function of the described driver, namely to change the position of the image sensor. Fourth, this interpretation is also consistent with the figures. These are only schematic and do not disclose that the image sensor changes position in the image generating unit. They are compatible with the interpretation that the image generating unit is moving with the image sensor located in it, too.

2.3 The appellant essentially argues that the driver's function is to change the image sensor position relative to the image generation unit (see page 2, bottom paragraph, of the statement of grounds of appeal). It bases its argument mainly on the description paragraphs discussed in point 2.2 above, which undisputedly do not explicitly state such a relative position change. It also adduces Figure 2 and the discussion of the width t of the image generating unit in Figure 2 corresponding to the thickness of the image photographing device (see paragraph [0028] of the published application). But Figure 2 does not relate to an embodiment comprising a driver.

2.4 The appellant also bases its argument on Figure 3. However, Figure 3 does not provide support for the appellant's view on the issue of image sensor motion.

2.4.1 In this respect, Figure 3 does not disclose which parts of the illustrated image generation unit 140 may be moving. The arrow drawn in the image sensor box 141 might indicate a change (in the t direction) of the

path of the light beam incident on the sensor as a result of the rotation of the prism 120 in the first optical path changing unit (as also indicated by the dotted arrows). In this option, no movement of the image sensor or the image generation unit is recognisable from Figure 3.

- 2.4.2 The arrow might also indicate a horizontal movement of the image sensor (as argued by the appellant) or the image generating unit in the plane of the drawing, in the *t* direction. This would mean that a vertical shake component would be corrected both by the rotation of the prism and by the movement of the image sensor because both of these corrections would influence the point of incidence of a light beam onto the image sensor in the direction of *t*. This would be contrary to the wording of claim 1 (on the assumption that the first and second directions are different from each other) and thus would not provide convincing support for the appellant's argument concerning image sensor motion specified in claim 1.
- 2.4.3 Also, the description of Figure 3 does not clarify whether the image sensor is moving relative to the image generating unit or with the image generating unit.
- 2.4.4 The argument that the arrow in Figure 3 related to the image sensor because it was drawn in the image sensor box 141 did not convince the board because of the schematic nature of Figure 3 and the inconsistency with the wording of claim 1 indicated in point 2.4.2. above.
- 2.5 Finally, the appellant also argues that the first optical path changing unit and the image sensor are actuated independently and relative to each other. In

this respect, the board agrees with the finding in point 2.1.4 of the decision under appeal that this is not reflected in the features of claim 1. The relevant relationship between the driver and the optical path changing unit is that they correct the shake component in a second and a first direction, respectively, consistent with paragraph [0034] of the published application. Thus, the appellant's arguments concerning the technical meaning of the characterising feature of claim 1 did not convince the board.

Main request: novelty (Articles 52 and 54(1), (2) EPC 1973)

3. On the basis of the above claim construction with respect to the disputed characterising feature, the board agrees with the finding in section 2.1 of the decision under appeal that the apparatus of claim 1 of the main request is not new over that of D2. The reasons are as follows:
 - 3.1 D2 discloses an optical image stabiliser ("shake compensation mechanism", see the abstract), i.e. an apparatus for correcting a shake of a camera module (the module comprising the taking optical system 3 and connection portion 24, see paragraphs [0028] to [0032]; Figure 4 of D2 illustrates the camera module). The camera module is for mounting on a portable appliance, such as a digital camera illustrated in Figure 1 or a mobile phone or video camera as disclosed in paragraph [0053] of D2. The shake to be compensated is that caused by a user using the camera module mounted on the portable appliance (see for instance paragraphs [0003] and [0026]).
 - 3.2 The apparatus of D2 comprises a shake sensing unit sensing the shake of the camera module when

photographing an image of a subject (shake sensor 40 comprising angular velocity sensors 41 and 42, see paragraph [0039]).

- 3.3 It also comprises a first optical path changing unit (lens barrel 35 including prism 32, see paragraph [0029]) for correcting a shake component in a first direction (the vertical or "pitch" direction) by changing an optical path of light incident onto the camera module.
- 3.4 Moreover, it comprises an angle adjusting unit (first direction actuator 7a, see Figures 2 and 3 and paragraphs [0036] and [0040] to [0042]) adjusting an angle of a light-incident surface of the (prism 32 of the) first optical path changing unit (see Figure 2). The angle adjustment is performed according to the sensed shake (see paragraph [0039]) and allows the correction of the shake component in the vertical direction ("pitch" in D2).
- 3.5 The apparatus also incorporates an image generating unit (taking optical system 3) comprising an image sensor (CCD 5) receiving light, and generating the image of the subject through the light, the optical path of which has been changed by the first optical path changing unit (see Figures 2 and 3 and paragraphs [0029] to [0032]).
- 3.6 In the apparatus of D2, the image generating unit further comprises a driver (second actuator 7b, see Figures 2 and 3 and paragraphs [0036] and [0043]) changing a position of the image sensor (CCD 5) in the image generating unit to correct a shake component in a second direction (a horizontal direction, "yaw" in D2) according to the sensed shake while the first optical

path changing unit corrects the shake component in the first direction.

3.7 Thus, D2 discloses an apparatus having all the features specified in claim 1.

3.8 The appellant's arguments in favour of the novelty of the claimed apparatus are based on a different interpretation of claim 1. These did not convince the board (see section 2 above).

3.9 Hence, the apparatus of claim 1 of the main request is not new.

Auxiliary requests 1 and 2: clarity (Article 84 EPC 1973)

4. According to claim 1 of auxiliary requests 1 and 2, the "second direction refers to a direction horizontal to the optical axis incident onto the objective (120a)".

4.1 The board agrees with the finding in point 2.2.2 of the decision under appeal that the technical meaning of a "direction horizontal to the optical axis..." is not clear. The reasons are as follows:

4.2 The appellant argues that "horizontal" is synonymous with "parallel" and means "along". This argument is not convincing, first, because the two terms, according to common parlance, have different meanings.

4.3 Second, in the entire application, the term "horizontal" does not have the meaning of one specific direction. In particular the parts of the application adduced by the appellant on page 3, last paragraph, of the statement of grounds of appeal (which correspond to paragraph [0027] of the application as published) do

not unambiguously define the technical meaning of "horizontal". According to this paragraph, any direction perpendicular to an optical axis incident onto the objective qualifies as "vertical". Assuming that a horizontal direction is perpendicular to a vertical direction, the direction of "horizontal" is not defined at all because the optical axis can be in any direction. And even if the term "vertical" is given its normal meaning and a usual horizontal optical axis is assumed (corresponding to an upright orientation of the camera module, illustrated in Figures 2 and 3), then there are an infinite number of horizontal directions (all directions in the plane defined by the t direction and the normal to the drawing plane). These horizontal directions may be parallel to the optical axis, or perpendicular to it.

In the technical terms of the application, this reflects a fundamental unresolved ambiguity at least as to whether the image sensor in the second embodiment moves parallel to the thickness of the image photographing device or parallel to the width thereof.

4.4 The board also notes that the description comprises generalising statements that the directions given in the description are merely exemplary (see paragraphs [0027] and [0033]).

4.5 Hence, claims 1 of auxiliary requests 1 and 2 are not clear.

Auxiliary request 3:

Added subject-matter (Article 123(2) EPC)

5. Claim 1 of auxiliary request 3 explicitly specifies that the first optical path changing unit and the image sensor are actuated independently and relative to each other. This feature is not directly and unambiguously derivable from the application as filed. To the contrary, there exist some dependencies in the actuation of these two elements. For instance, there is a common trigger, namely the sensing of a shake (see the description of Figure 8, i.e. of the operation in the second embodiment). Moreover, the intended shake compensation can only be achieved if the actuations are simultaneous. Furthermore, a change of the optical path (by adjusting the angle of the prism) in one direction will in general also influence the light impinging on the image sensor in the second direction unless the directions are orthogonal to each other. But, as discussed in section 4 above, specific directions cannot be directly and unambiguously derived from the application, and this is also true for the application as filed.

5.1 Thus claim 1 of auxiliary request 3 does not meet the requirements of Article 123(2) EPC.

Auxiliary requests 4 and 5: inventive step (Article 56 EPC 1973)

6. Claim 14 of auxiliary request 4 and claim 5 of auxiliary request 5 both relate to one and the same method of correcting a shake of a camera module for mounting on a portable appliance (which is identical to the method of claim 15 of the main request). This change of category (when compared with the claims of

the higher ranking requests discussed above) does not affect the relevance of document D2 to the assessment of inventive step.

- 6.1 By analogy with the analysis given in section 3 above, D2 (see the abstract) discloses a method of correcting a shake of a camera module for mounting on a portable appliance, by a user using the camera module. The module comprises the taking optical system 3 and connection portion 24, see paragraphs [0028] to [0032]. Figure 4 of D2 illustrates the camera module. The portable appliance may be a digital camera as illustrated in Figure 1 or a mobile phone or video camera as disclosed in paragraph [0053] of D2. The shake to be compensated is that caused by a user using the camera module mounted on the portable appliance (see, for instance, paragraphs [0003] and [0026]).
- 6.2 The method comprises sensing the shake of the camera module when photographing an image of a subject. This sensing is performed by the shake sensing unit (shake sensor 40 comprising angular velocity sensors 41 and 42, see paragraph [0039]).
- 6.3 The method further comprises changing an optical path of light incident on the camera module. This change is performed by the first optical path changing unit (lens barrel 35 including prism 32, see paragraph [0029]) to correct a shake component in a first direction (the vertical or "pitch" direction).
- 6.4 The method further comprises generating the image of the subject through the light the optical path of which has been changed by the first optical path changing unit. This generation is performed by the image generating unit (taking optical system 3) comprising an

image sensor (CCD 5) (see Figures 2 and 3 and paragraphs [0029] to [0032]).

6.5 According to D2, changing the optical path of the light comprises adjusting an angle of a light-incident surface in a first direction. This angle adjustment is performed by the angle adjusting unit (first direction actuator 7a, see Figures 2 and 3 and paragraphs [0036] and [0040] to [0042]) adjusting an angle of a light-incident surface of the (prism 32 of the) first optical path changing unit (see Figure 2). The angle adjustment is performed according to the sensed shake (see paragraph [0039]) and allows the correction of the shake component in the vertical direction ("pitch" in D2).

6.6 In the method of D2, the generating of the image of the subject further comprises changing a position of an image sensor in an image generating unit in a second direction according to the sensed shake while the first optical path changing unit corrects the shake component in the first direction. This change of position is performed by a driver (second actuator 7b, see Figures 2 and 3 and paragraphs [0036] and [0043]) changing a position of the image sensor (CCD 5) in the image generating unit to correct a shake component in a second direction (a horizontal direction, "yaw" in D2). The position is changed according to the sensed shake in the second direction while the first optical path changing unit corrects the shake component in the first direction.

6.7 D2 does not disclose changing the changed optical path of the light once again and, as a consequence, generating the image of the subject through the light the optical path of which has been changed again.

In the present application, this second optical path change is illustrated in Figures 5 and 6 concerning the third embodiment.

- 6.8 A conceivable technical implementation of this feature would be a deflecting mirror or prism in the first optical path folding the light path.
- 6.9 It is common general knowledge that such a folding of the light path may be useful in order to take into account mechanical or optical restrictions such as those caused by housing sizes, lens systems etc. Providing the camera of D2 with such a second optical path changing unit would not involve an inventive step. In the context of D2, depending for instance on the desired focal length of the lens units 33 and the desired size of the CCD 5 (in particular a size which might require the CCD to be located on a large surface of the lens barrel 35), a person skilled in the art would have considered folding the optical path once again, thereby arriving at the subject-matter of claim 14 of auxiliary request 4 and claim 5 of auxiliary request 5.
- 6.10 The appellant contested that a person skilled in the art would consider folding the optical path within the light barrel of D2 in view of the lack of space (see page 3, last paragraph, of the statement of grounds of appeal).
- 6.11 This argument did not convince the board because, before the priority date of D2, double folding of the light path had been considered for miniaturised cameras despite the very little available space. The board has introduced document D4 in the appeal proceedings in

support of this argument. The appellant did not submit any comment concerning D4.

6.12 Hence, the method of claim 14 of auxiliary request 4 and of claim 5 of auxiliary request 5 does not involve an inventive step.

Conclusion

7. In view of the above, none of the appellant's requests is allowable. Therefore, the appeal is to be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:



K. Boelicke

C. Kunzelmann

Decision electronically authenticated