

**Internal distribution code:**

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

**Datasheet for the decision  
of 19 January 2021**

**Case Number:** T 1653/17 - 3.4.02

**Application Number:** 12002237.1

**Publication Number:** 2515071

**IPC:** G01B11/03, G01B11/25, G06T7/00

**Language of the proceedings:** EN

**Title of invention:**  
Shape measurement device

**Patent Proprietor:**  
Mitutoyo Corporation

**Opponents:**  
Carl Zeiss Industrielle Messtechnik GmbH  
SmartRay GmbH

**Headword:**

**Relevant legal provisions:**  
EPC Art. 84

**Keyword:**

Main request and first auxiliary request - Clarity (no)  
Second auxiliary request - Not admissible (reformatio in  
peius)

**Decisions cited:**

G 0009/92, G 0004/93, G 0001/99

**Catchword:**



**Beschwerdekammern**

**Boards of Appeal**

**Chambres de recours**

Boards of Appeal of the  
European Patent Office  
Richard-Reitzner-Allee 8  
85540 Haar  
GERMANY  
Tel. +49 (0)89 2399-0  
Fax +49 (0)89 2399-4465

Case Number: T 1653/17 - 3.4.02

**D E C I S I O N**  
**of Technical Board of Appeal 3.4.02**  
**of 19 January 2021**

**Appellant:** Carl Zeiss Industrielle Messtechnik GmbH  
(Opponent 1) Carl Zeiss Straße 22  
73447 Oberkochen (DE)

**Representative:** Witte, Weller & Partner Patentanwälte mbB  
Postfach 10 54 62  
70047 Stuttgart (DE)

**Appellant:** SmartRay GmbH  
(Opponent 2) Bürgermeister-Finsterwalder-Ring 12  
82515 Wolfratshausen (DE)

**Representative:** Weickmann & Weickmann PartmbB  
Postfach 860 820  
81635 München (DE)

**Respondent:** Mitutoyo Corporation  
(Patent Proprietor) 20-1, Sakado 1-chome  
Takatsu-ku  
Kawasaki-shi, Kanagawa 213-8533 (JP)

**Representative:** Müller-Boré & Partner  
Patentanwälte PartG mbB  
Friedenheimer Brücke 21  
80639 München (DE)

**Decision under appeal:** **Interlocutory decision of the Opposition  
Division of the European Patent Office posted on  
26 May 2017 concerning maintenance of the  
European Patent No. 2515071 in amended form.**

**Composition of the Board:**

**Chairman**            R. Bekkering  
**Members:**         C. Kallinger  
                         B. Müller

## **Summary of Facts and Submissions**

- I. During the first-instance opposition proceedings, the opposition division decided to maintain the patent in amended form on the basis of claim 1 according to the fourth auxiliary request filed with the letter dated 24 January 2017.
- II. Opponent 1 (appellant 1) lodged an appeal against the interlocutory decision of the opposition division and requested that the contested decision be set aside and the patent be revoked in its entirety based on Articles 84 EPC, 123(2) EPC and Article 100 (a) and (b) EPC in combination with Articles 83, 52, 54 and 56 EPC.
- III. Opponent 2 (appellant 2) lodged an appeal against the interlocutory decision of the opposition division and requested that the contested decision be set aside and the patent be revoked in its entirety based on Articles 84 EPC and Article 100 (a), (b) and (c) EPC in combination with Articles 83 and 52 to 56 and 123(2) EPC.
- IV. The patentee is a party to the appeal proceedings as of right (Article 107, second sentence, EPC) and respondent in the present case.

In its reply to the appellants' statements of grounds of appeal the respondent requested that the appeals be dismissed and that the patent be maintained as maintained by the decision of the opposition division.

In the alternative, the respondent requested to maintain the patent based on the claims according to

auxiliary requests 1 or 2, both filed with the letter dated 17 January 2018.

- V. In a communication sent pursuant to Article 15(1) RPBA the board set out its preliminary view, inter alia with respect to Article 84 EPC.
- VI. With a letter dated 25 February 2020 appellant 2 commented on the board's preliminary opinion and provided further arguments.
- VII. Oral proceedings were held on 19 January 2020.
- VIII. The appellants' (opponents 1 and 2) final requests were that the decision under appeal be set aside and that the European patent No. 2515071 be revoked.
- IX. The respondent's (patent proprietor's) final request was that both appeals be dismissed or that the decision under appeal be set aside and the patent be maintained in amended form with the claims according to auxiliary requests 1 or 2, both filed with the letter dated 17 January 2018.
- X. Claim 1 of the patent as maintained in amended form reads as follows:

*"A shape measurement device (100) comprising:*

*a light irradiation unit (20) which is adapted to irradiate linear light onto a work;*

*an imaging element (32) which is adapted to image reflected light of the light irradiated from the light irradiation unit, the reflected light being reflected by the work; and*

*an image-forming lens (31) which is adapted to form an image of the reflected light reflected by the*

work on an imaging plane of the imaging element,  
wherein

a light irradiation plane of the light irradiation unit, a principal plane including a principal point of the image-forming lens, and the imaging plane of the imaging element satisfy a Scheimpflug principle, **characterised in that** the shape measurement device further comprises:

an image obtaining region selection unit (13, 131) which is adapted to divide the imaging plane of the imaging element into a plurality of regions, and to select, as an image obtaining region, a region for use in measurement from the plurality of regions in response to measurement accuracy and a size of a measurement range; and

a designation unit (103) which is adapted to designate at least one of the measurement accuracy and the size of the measurement range; wherein

the shape measurement device (100) is configured to automatically decide the measurement accuracy and the measurement range in response to the shape of the work."

XI. Claim 1 of the first auxiliary request reads as follows (amendments in comparison to the main request marked by the board):

"A shape measurement device (100) comprising:

a light irradiation unit (20) which is adapted to irradiate linear light onto a work;

an imaging element (32) which is adapted to image reflected light of the light irradiated from the light irradiation unit, the reflected light being reflected by the work; and

an image-forming lens (31) which is adapted to form an image of the reflected light reflected by the

work on an imaging plane of the imaging element,  
wherein

a light irradiation plane of the light irradiation unit, a principal plane including a principal point of the image-forming lens, and the imaging plane of the imaging element satisfy a Scheimpflug principle, **characterised in that** the shape measurement device further comprises:

an image obtaining region selection unit (13, 131) which is adapted to divide the imaging plane of the imaging element into a plurality of regions, and to select, as an image obtaining region, a region for use in measurement from the plurality of regions in response to measurement accuracy and a size of a measurement range; and

a designation unit (103) which is adapted to designate at least one of the measurement accuracy and the size of the measurement range; wherein

the shape measurement device (100) is configured to automatically decide the measurement accuracy and the measurement range in response to the shape of the work, wherein irregularities of the work are recognized based on CAD data read in advance, and the measurement accuracy and the measurement range are decided."

XII. Claim 1 of the second auxiliary request reads as follows (amendments in comparison to the main request marked by the board):

"A shape measurement device (100) comprising:

a light irradiation unit (20) which is adapted to irradiate linear light onto a work;

an imaging element (32) which is adapted to image reflected light of the light irradiated from the light irradiation unit, the reflected light being reflected by the work; and



an image-forming lens (31) which is adapted to form an image of the reflected light reflected by the work on an imaging plane of the imaging element, wherein

a light irradiation plane of the light irradiation unit, a principal plane including a principal point of the image-forming lens, and the imaging plane of the imaging element satisfy a Scheimpflug principle, **characterised in that** the shape measurement device further comprises:

an image obtaining region selection unit (13, 131) which is adapted to divide the imaging plane of the imaging element into a plurality of regions, and to select, as an image obtaining region, a region for use in measurement from the plurality of regions in response to measurement accuracy and a size of a measurement range; ~~and~~

~~a designation unit (103) which is adapted to designate at least one of the measurement accuracy and the size of the measurement range; wherein~~

the shape measurement device (100) is configured to automatically decide the measurement accuracy and the measurement range in response to the shape of the work."

## Reasons for the Decision

1. Main request - patent as maintained in amended form

1.1 Amendments

In comparison to claim 1 as granted, claim 1 as maintained by the opposition division in amended form includes inter alia the following additional feature:

*"... wherein the shape measurement device (100) is configured to automatically decide the measurement accuracy and the measurement range in response to the shape of the work."*

1.2 Clarity - Article 84 EPC

The respondent argued that the newly added expression *"in response to the shape of the work"* put into words that the feature *"shape of the work"* related to a target shape ("Soll-Form"). The use of target data as well as its possible formats were standard in quality inspection. Therefore, the skilled person would immediately realize that the feature *"in response to shape of the work"* related to such target data which was clearly different from the shape to be measured by the claimed device.

The board is however not convinced by this line of argument. The wording of claim 1 does not support the alleged differing interpretations of *"shape"* (in line 1 of claim 1) and *"shape of the work"* (in the last paragraph of claim 1). It is not clear how the not yet determined shape of the work can form the basis for automatically deciding the measurement accuracy and the

measurement range in the claimed shape measurement device.

Therefore, the added feature renders claim 1 unclear and the patent as maintained does not meet the requirements of Article 84 EPC.

## 2. First auxiliary request

### 2.1 Amendments

In comparison to claim 1 of the main request, i.e. the patent as maintained by the opposition division, claim 1 of the first auxiliary request includes the following additional features which stem from the passage on page 14, lines 7 to 10 of the originally filed application:

*"... wherein irregularities of the work are recognized based on CAD data read in advance, and the measurement accuracy and the measurement range are decided."*

### 2.2 Clarity - Article 84 EPC

The appellants argued that the added features did not clarify the feature *"shape of the work"*.

The respondent argued that the addition of *"CAD data read in advance"* made clear that the feature *"shape of the work"* related to target data. Therefore, the intended scope of protection could readily be recognized by the skilled reader.

The board is not convinced by the respondent's line of argument. The added passage repeats that *"the*

*measurement accuracy and the measurement range are decided"* and defines in addition that *"irregularities of the work are recognized based on CAD data read in advance"*. The information that initially available CAD data are used to recognize irregularities of the work does however not further define or clarify the feature *"shape of the work"*, in particular not in the alleged sense that *"shape of the work"* relates to a target shape ("Soll-Form").

Therefore, it is still unclear how a not yet measured property of the object to be measured (*"shape of the work"*) can form the basis for the automatic decision of measurement accuracy and range.

In conclusion, claim 1 as amended according to the first auxiliary request does not meet the requirements of Article 84 EPC.

### 3. Second auxiliary request

#### 3.1 Amendments

In comparison to claim 1 of the main request, i.e. the patent as maintained in amended form, in claim 1 of the second auxiliary request the following feature has been deleted:

~~*"... a designation unit (103) which is adapted to designate at least one of the measurement accuracy and the size of a measurement range"*~~.

### 3.2 Admittance

The respondent argued that the "*designation unit*" did not form an essential element of the invention as disclosed in the application as originally filed. Therefore, its deletion did not broaden the scope of the claim and thus accepting its deletion would not lead to *reformatio in peius* for the appellants.

The board is not convinced by the respondent's argument. Decisions G 9/92 and G 4/93 of 14 July 1994 (both OJ EPO 1994, 875) explain the prohibition of *reformatio in peius* in European patent law. Catchword 2 of these decisions reads as follows:

*"If the opponent is the sole appellant against an interlocutory decision maintaining a patent in amended form, the patent proprietor is primarily restricted during the appeal proceedings to defending the patent in the form in which it was maintained by the Opposition Division in its interlocutory decision. Amendments proposed by the patent proprietor as a party to the proceedings as of right under Article 107, second sentence, EPC, may be rejected as inadmissible by the Board of Appeal if they are neither appropriate nor necessary." [end of catchword], "which is the case if the amendments do not arise from the appeal".* The latter passage has been taken from the end of point 16 of the two decisions.

In the present case, the opponents are the sole appellants against an interlocutory decision maintaining a patent in amended form. Therefore, pursuant to G 9/92 and G 4/93 above, the patent proprietor (respondent) is primarily restricted during the appeal proceedings to defending the patent in the

form in which it was maintained by the Opposition Division in its interlocutory decision.

The deletion of the feature relating to the designation unit broadens the scope of the claim, as the claimed device no longer comprises such a designation unit.

Different from what the respondent asserted, the deletion does not arise from the appeal. The clarity objection as discussed with respect to the main request (see point 1 above) could at best be dealt with by removing or clarifying the feature objected to ("*in response to the shape of the work*"), but not by deleting the feature relating to the designation unit. Pursuant to G 9/92 and G 4/93 cited above the amendment is thus neither necessary nor appropriate.

An exception to the rule against *reformatio in peius* embodied in catchword 2 of those decisions was acknowledged in G 1/99 (OJ EPO 2001, 381) if the opposition division had allowed an inadmissible amendment. In the present case, this had not happened so that the exception does not apply.

In this context the respondent relied on the decision in case T 111/10. In that decision the board observed that the exceptional possibilities for amendment provided for by G 1/99 only applied if the patent would otherwise have to be revoked, i.e. provided that, in view of the prohibition of *reformatio in peius*, the patent proprietor (respondent) did not have any other possibility of amendment which would allow the rescue of even part of the opposed patent.

As the requirements of G 1/99 are not met in the present case, the decision in case T 111/10 however does not apply.

It follows from the foregoing that admittance of the second auxiliary request would infringe the principle of prohibition of *reformatio in peius* as defined in decisions G 9/92, G 4/93 and G 1/99.

The second auxiliary request is therefore not admitted into the appeal proceedings.

4. In summary, neither claim 1 of the main request nor claim 1 of the first auxiliary request meets the requirements of Article 84 EPC. The second auxiliary request is not part of the proceedings. Consequently, the patent has to be revoked according to Article 101(3)(b) EPC.

## **Order**

### **For these reasons it is decided that:**

1. The decision under appeal is set aside.
2. The patent is revoked.

The Registrar:

The Chairman:



L. Gabor

R. Bekkering

Decision electronically authenticated