

From the INTERNATIONAL SEARCHING AUTHORITY

To:

**PCT**

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Applicant's or agent's file reference <b>IP2284WO</b>		Date of mailing (day/month/year) <b>28 July 2017</b>
International application No. <b>PCT/EP2017/061605</b>		<b>FOR FURTHER ACTION</b> See paragraph 2 below
International filing date (day/month/year) <b>15 May 2017</b>	Priority date (day/month/year) <b>17 May 2016</b>	
International Patent Classification (IPC) or both national classification and IPC <b>B66B 7/12(2006.01)i</b>		
Applicant <b>INVENTIO AG</b>		

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 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/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/	Date of completion of this opinion	Authorized officer

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## Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of:
  - the international application in the language in which it was filed.
  - a translation of the international application into \_\_\_\_\_ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).
2.  This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 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:

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Box No. V	Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement		
1. Statement			
Novelty (N)	Claims	1-17	YES
	Claims	_____	NO
Inventive step (IS)	Claims	1-17	YES
	Claims	_____	NO
Industrial applicability (IA)	Claims	1-17	YES
	Claims	_____	NO
2. Citations and explanations :			
See Supplemental Box			

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**PCT/EP2017/061605****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 Supplemental Box

**Supplemental Box**

In case the space in any of the preceding boxes is not sufficient.

Continuation of:

[1] **Box V**

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

[1.1] Reference is made to the following document:

D1	WO 2014/130029 A1 (OTIS ELEVATOR CO [US]) 28 August 2014 (2014-08-28), cited in the application
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[1.2] D1 is considered to be the prior art closest to the subject matter of claim 1 and discloses a method for detecting damage in a suspension means (24) comprising at least one tension member for an elevator system comprising the following steps:

- generating at least one ~~digital~~ input signal by means of a pulse generator (see paragraph [0032] of the description),
- feeding the ~~digital~~ input signal to the at least one tension member,
- detecting a ~~digital~~ output signal after the ~~digital~~ input signal has passed through the at least one tension member (see paragraph [0032] of the description).

[1.2.1] The subject matter of claim 1 thus differs from the known method in that the input signal (4) is digital and represents at least one first binary number (4B), the output signal (5) is digital and represents at least one second binary number (5B), and the method further comprises:

- comparing, in particular digit by digit, the second binary number (5B) with a binary target binary number (14) and/or directly with the first binary number (4B),
- reporting a defective state if the second binary number (5B) differs from the target binary number (14) and/or from the first binary number, and is therefore novel (PCT Article 33(2)).

[1.2.2] The problem addressed by the present invention can be considered that of improving the reliability of the monitoring of the suspension means.

[1.2.3] The solution to this problem, as proposed in claim 1 of the present application, involves an inventive step (PCT Article 33(3)) for the following reasons:

[1.2.4] The monitoring devices in the prior art are based on an analogue signal for monitoring the mechanical properties of a suspension means (e.g. a method based on the temperature or the magnetic/electrical conductivity).

For example, D1 discloses a method wherein the resistance of the cable is measured.

No prior art document discloses the use of a digital signal to detect a defective state of the suspension means.

Proceeding from document D1 or any other document, a person skilled in the art would not arrive at the subject matter of claim 1 without exercising inventive skill.

[1.2.5] The subject matter of claim 1 therefore involves an inventive step.

[1.3] The same argument applies, mutatis mutandis, to the device according to claim 13. The subject matter of claim 13 is therefore novel and also involves an inventive step.

[1.4] Claims 2-12 and 14-17 are dependent on one or more independent claims, the subject matter of which, as explained above, is considered novel and inventive, and therefore likewise meet the requirements of the PCT in respect of novelty and inventive step.

[2] **Box VIII**

**Certain observations on the international application**

[2.1] The application does not meet the requirements of PCT Article 6 because claims 3, 10 and 11 are unclear.

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## Supplemental Box

- [2.2] Claim 4 contains a feature (*the group*) which is introduced in claim 3. Claim 4 should therefore be made dependent on claim 3.
- [2.3] Claim 10 contains a feature (*the resulting sum*) which is introduced in claim 9. Claim 10 should therefore be made dependent on claim 9.
- [2.4] Claim 11 contains a feature (*the first binary number comprises at least one second special position*) which is introduced in claim 6 (*the first binary number comprises at least one first special position*). Claim 11 should therefore be made dependent on claim 6.