

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

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

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/B2017/056263

International filing date (day/month/year)
10.10.2017

Priority date (day/month/year)

International Patent Classification (IPC) or both national classification and IPC
INV. A61B7/04 G16H40/67 ADD. A61B5/00

Applicant
CSEM CENTRE SUISSE D'ELECTRONIQUE ET DE

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 43*bis*.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:



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Date of completion of
this opinion

see form
PCT/ISA/210

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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 43bis.1(a))
3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing:
 - a. forming part of the international application as filed:
 - in the form of an Annex C/ST.25 text file.
 - on paper or in the form of an image file.
 - b. furnished together with the international application under PCT Rule 13ter.1(a) for the purposes of international search only in the form of an Annex C/ST.25 text file.
 - c. furnished subsequent to the international filing date for the purposes of international search only:
 - in the form of an Annex C/ST.25 text file (Rule 13ter.1(a)).
 - on paper or in the form of an image file (Rule 13ter.1(b) and Administrative Instructions, Section 713).
4. In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that forming part of the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
5. Additional comments:

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	<u>7, 13, 15, 29</u>
	No: Claims	<u>1-6, 8-12, 14, 16-28, 30, 31</u>
Inventive step (IS)	Yes: Claims	
	No: Claims	<u>1-31</u>
Industrial applicability (IA)	Yes: Claims	<u>1-31</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

Re Item V.

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

The application is found not to meet the criteria of Article 33(1) PCT, for the reasons herewith provided.

1. Documents cited

Reference is made to the following document cited in the Search Report:

- D1 US 2017/071565 A1 (KAHYA ZEYNEP YASEMIN [TR] ET AL) 16 March 2017 (2017-03-16)
- D2 US 2017/112439 A1 (DUBIN URI [IL] ET AL) 27 April 2017 (2017-04-27)
- D3 WO 2011/073879 A2 (KONINKL PHILIPS ELECTRONICS NV [NL]; KUMAR PRASHANT [IN]; SANJAYA KUMA) 23 June 2011 (2011-06-23)cited in the application
- D4 US 2004/092846 A1 (WATROUS RAYMOND L [US]) 13 May 2004 (2004-05-13)

2. Independent claim 1

Document D1 discloses (the references in parenthesis applying to this document):

A system for recording chest signals of a user (abstract, figures 1,5), the system comprising:

a sensing unit comprising a first sensor configured for recording a chest signal from the chest of the user (100 in figure 1);
a remote control device connectable with the sensing unit and configured for generating guiding information comprising a recording procedure to follow when performing the recording (200 in figure 1);
means for processing the chest signal such as to determine a confidence criterion of the chest signal (paragraph [0063] and figure 5);
the remote control device being further configured for generating instructional information comprising information about the determined confidence criterion, and comprising an interface allowing the user, or an assistant performing the recording on the user, to initiate and/or stop the recording or initiate a further analysis of the processed chest signal (paragraph [0063]).

Hence document D1 discloses all the features of claim 1, thereby rendering its subject-matter not new (Article 33(2) PCT).

Document D2 also disclose a system either comprising all the features of claim 1. Reference is in particular made to the passages of this document cited in the search report (Article 33(2) PCT).

Finally, reference is also made, for the sake of completeness, to the disclosure document D3, cited by the present application, as well as to the disclosure of document D4, and also considered novelty destroying to the subject-matter of claim 1 (see passages indicated in the Search Report).

3. Independent claims 19 and 31

Claim 19 recites a method using a system according to claim 1 comprising steps corresponding to the configuration of the system recited in claim 1, and claim 31 recites a computer readable medium comprising portions of a code of a software application configured for performing the method according to claim 19. The above mentioned passages of document D1, in particular paragraph [0063], also discloses a software application program as configuring the remote control system as recited. Hence the subject-matter of these claim not new (Article 33(2) PCT).

Also the above mentioned disclosure of documents D2-D4 is regarded as rendering these claims not compliant with the requirements of Article 33(1) PCT.

4. Dependent claims

None of the additional features recited in the dependent claims appears capable of contributing to novelty or to an inventive step, for the following reasons:

4.1 The above mentioned passages of document D1 also discloses the additional features recited in claims 2-4, 16-18 and 28(Article 33(2) PCT).

4.2 Paragraph [0092] of document D1 also discloses its system as being possibly further configured for measuring a complementary signal as recited in dependent claim 5, as well as such complementary signal as being possibly at least one of the options recited in each of the claims 8-12. Therefore these claims are also not new (Article 33(2) PCT). Furthermore, the complementary signal recited in dependent

claim 7, not being listed in paragraph [0092] is still seen as representing a trivial alternative to the complementary signals mentioned in this paragraph (Article 33(3) PCT).

4.3 Paragraph [0063] of document D1 also discloses the additional feature recited in claim 22 (Article 33(2) PCT) and hints at least towards the additional features recited in claims 20,21 (Article 33(3) PCT).

4.4 The additional features recited in dependent claim 23-26 and 29,30 are also disclosed or at least rendered trivial by the disclosure of document D1. Reference is made in particular to the disclosure in paragraph [0063] of the further processing of the chest signals by a remote server employing machine -learning classification and regression techniques (see also figure 7 and paragraph [0069]).

4.5 The additional features recited in dependent claims 13-15 are seen as unable to confer an inventive step over the disclosure of document D1, for representing trivial implementation alternatives or details, the person skilled in the art would contemplate employing, depending on the circumstances, without for that involving inventive skills (Article 33(3) PCT).

4.6 Finally, document D2 discloses, see e.g. figures 2,3 and paragraphs [0091-0098] the combination of a chest signal with a complementary signal (obtained with a camera) for determining the confidence criterion (seen as defined by proper/improper placement of the sensor). Hence also the subject-matter of claims 6 and 27, is not new over the disclosure of this document (Article 33(2) PCT).

For the sake of completeness note also that document D2 further discloses the additional features of several other dependent claims, as indicated in the Search Report.

Re Item VII.

Certain defects in the international application

Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in some of the documents cited in the search report is not mentioned in the description, nor are these document identified therein.