

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

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Date of mailing (day/month/year) 28-08-2019

Applicant's or agent's file reference
ADH-NIR-002

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/IN2019/050437

International filing date (day/month/year)
07-06-2019

Priority date (day/month/year)
07-12-2018

International Patent Classification (IPC) or both national classification and IPC
H03L7/00,H03H11/26 Version=2019.01

Applicant
VARROC ENGINEERING LTD.

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. I(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/
Indian Patent Office
Plot No. 32, Sector 14,
Dwarka, New Delhi-110075
Facsimile No.

Date of completion of this opinion
28-08-2019

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Box No. I Basis of this 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(b)).
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	1-5	YES
	Claims	_____	NO
Inventive step (IS)	Claims	_____	YES
	Claims	1-5	NO
Industrial applicability (IA)	Claims	1-5	YES
	Claims	_____	NO

2. Citations and explanations:

Reference is made to the following documents:

D1:- "Diode and Transistor NAND Gate or DTL NAND Gate and NAND Gate Ics"-- Electrical4U.com, 25-07-2018 (25 July, 2018).

(URL -

<https://www.electrical4u.com/diode-and-transistor-nand-gate-or-dtl-nand-gate/>)

D2:- "Time Delay Relay" - theorycircuit.com, 01-10-2017 (01 October, 2017).

(URL <http://www.theorycircuit.com/time-delay-relay/>)

Novelty:

Claims 1-5 are novel and fulfill the requirements of PCT Article 33(2) as no single document of the prior art discloses all technical features of claims 1-5.

Inventive Step:

The present application fails to meet the requirements of PCT Article 33(3) because the subject-matter of claims 1-5 does not involve an inventive step in view of the disclosure of D1 and D2.

The subject-matter of claim 1 relates to the circuit for the phase detection with delay circuit. D1 discloses having a first transistor having a base, an emitter and a collector, the base and the collector of the first transistor connected to a reference potential supplied by a DC voltage source; a diode, anode of the diode connected to the base of the first transistor and cathode of the diode receives the input signal (See D1, NAND Gate figure shows the diode and transistor, with 2 inputs but the same can be used with 1 input).

D1 does not disclose the delay circuit. However, Document D2 discloses a second transistor having a base, an emitter and a collector, the collector of the second transistor connected to the reference potential supplied by the DC voltage source and provides the control voltage; a Zener diode, anode of the Zener diode connected to the base of the second transistor and cathode of the

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Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

1. The features of the claims may be provided with reference signs placed in parentheses to increase the intelligibility of the claims (Rule 6.2(b) Regulations under the PCT).
2. The independent claims are not drafted in the two-part form (Rule 6.3(b) PCT).

Supplemental Box

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

Continuation of:

Continuation of Citation and Explanation(Box5)

Zener diode connected to the collector of the first transistor; a capacitor connected between cathode of the Zener diode and ground terminal. (D2, Circuit diagram shows the second transistor with zener diode and capacitor).

By the combined teachings of D1-D2 of the circuits, the person skilled in the art will arrive the subject-matter of claim 1 implementing the functionality of phase detector. Thus by the combined teachings of D1-D2 and having regards to common general knowledge, a person skilled in the art can easily arrive at the subject matter of claim 1 and thus lack inventive step.

Dependent claims 2-5 do not contain any features which, in combination with the features of a claim to which they refer, meet the requirement of inventive step(Article (33)(3) of PCT) in view of disclosure of D1(Whole Document) and D2 (Whole Document) and having regards to common general knowledge in the art.

Industrial Applicability:

The claimed subject matter of claims 1-5 is considered to be industrially applicable and thus fulfils the requirements of PCT Article 33(4).