

RESPONSE TO FIRST EXAMINATION REPORT

Patent Application No. 202011020649

Via e-filing

Controller of Patents : Shri Dilip Dandotiya

The Controller of Patents

Patent Office Branch

Plot No. 32, Sector 14, Dwarka,

New Delhi-110078

Deadline to file response to First Examination Report:

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Indian Patent Application No.	:	202011020649
Date of Filing	:	21/10/2020
Title	:	"ROBOTIC APPARATUS"
Applicant	:	University of Petroleum and Energy Studies
<i>Date of FER</i>	:	19/08/2021

Dear Sir,

We write in response to your office letter No. dated 19/08/2021.

NOVELTY AND INDUSTRIAL APPLICABILITY

We note that the learned Controller has acknowledged the Novelty and Industrial Applicability of the claims.

It is respectfully submitted that claims of the present invention have been suitably amended.

The features of originally filed claim 4 has been incorporated to independent 1 and 6.

(1) INVENTIVE STEP:

We respectfully submit that the subject matter of amended claims 1-9 of the present application is inventive in view of the cited documents:

D1: WO2019209878A1;

D2: KR20190094128A;

D3: Van Ninhuijs, B., van der Heide, L. A., Jansen, J. W., Gysen, B. L. J., van der Pijl,

D. J., & Lomonova, E. A. (2013). "Overview of Actuated Arm Support Systems and Their Applications. Actuators", 2(4), 86 – 110. doi:10.3390/act2040086.

In view of the cited documents, we submit following submissions:

According to the examiner, the present claims lack inventive step over D1-D3. We respectfully disagree with the Learned Controller.

It is submitted that the present invention relates to a robotic apparatus that acts as arm mounted on a maneuver robot. The present invention solves the technical problem where the existing robotics controllers cannot manage the task in the areas where human intervention is

restricted such as narrow ventilation pipes to hazardous gaseous regions where detection of any problem and graphical imaging is not possible.

With respect to D1

D1 discloses a system for robot navigation and task planning using a mobile device with augmented-reality simultaneous localization mapping ("ARSLAM") capabilities. It can be noted that D1 uses mobile phones with augmented reality simultaneous localization and mapping (AR-SLAM) capabilities. It is submitted that the present invention nowhere uses the mobile phones. Furthermore, D1 fails to disclose the LORA mechanism as used by the present invention.

With respect to D2

D2 discloses a method for providing information related to a control target device may provide an intuitive interface to a user by searching for the control target device and displaying a location of the control target device in a map of an area where the control target

device is located. It can be noted that D2 requires 5th generation mobile communication. D2 fails to disclose the technical features of present invention. D2 nowhere discloses the

LORA mechanism to transmit the sensory data to the maneuver present. Furthermore, D2 nowhere discloses a solar panel to energize a battery to power the Internet of things (IoT) device.

With respect to D3

D3 is basically related to actuated arm support system. D3 does not disclose any technical features of present invention. D3 fails to disclose the LORA mechanism used by the present invention to transmit the sensory data to the maneuver present. Furthermore, D2 nowhere discloses a solar panel to energize a battery to power the Internet of things (IoT) device.

In light of the above submissions and disclosure of the specification, it is most respectfully submitted that amended independent claim 1 is inventive in view of cited documents **D1-D3** and accordingly, the amended dependent claims of the present application are also inventive over **D1-D3**.

Therefore, in view of the above submissions and amendments made to the claims, it is respectfully submitted that cited documents **D1-D3** whether read alone or in combination neither teach, suggest nor provide motivation to arrive at the subject matter as claimed in amended claims 1-9 of the present application.

Accordingly, the present invention is inventive in view of documents **D1-D3** cited by the learned Controller.

(2) NON-PATENTABILITY:

Section 3(k)

The learned Controller has objected to originally filed claims 1-10 for being non-patentable under Section 3(k) of the Act. It is respectfully submitted that the amended claims of the present application do not fall within the preview of Section 3(k) of the Act.

Section 3(k) of the Act states that "a mathematical or business method or a computer programme per se or algorithms" are not patentable inventions.

The learned Controller in this respect has objected that the subject-matter of originally filed claims 1-10 fall within the scope of Section 3(k) for relating to "an algorithm" and "computer program per se".

However, the Applicant disagrees and respectfully submits that amended claims 1-9 of the present invention disclose constructional features and **solve a technical problem associated with the prior art**. Hence, the present invention is not excluded from patentability under section 3(k) of the Act.

It is submitted that the amended claims disclose a robotic apparatus and method to provide a robotic arm mounted on a maneuver robot

The present invention solves the technical problem where the existing robotics controllers cannot manage the task in the areas where human intervention is restricted such as narrow ventilation pipes to hazardous gaseous regions where detection of any problem and graphical imaging is not possible.

Amended claim 1 discloses a robotic apparatus mounted on a maneuver robot, the robotic apparatus comprising:

"an Internet of things (IoT) device to capture sensory data and to transmit to an IoT database;

a network to establish a communication with the maneuver robot and to transmit the sensory data to the maneuver robot;

wherein the network utilizes a LORA 868 MHz mechanism to transmit the sensory data to the maneuver robot present within 2 Kilometers range;

a plurality of robotic arm actuators to convert electrical energy detected over the network from a hand gesture of a user into physical motion; and

a solar panel to energize a battery to power the Internet of things (IoT) device and the plurality of robotic arm actuators. "

Furthermore, paragraph [0024]-[0030] of the specification

enumerates the various advantages of the present invention.

It is thus emphasized that the present invention produces a technical effect, as it provides an advantageous method/apparatus.

In view of the above-mentioned objection, the Applicant wishes to bring to the kind attention of the learned Controller that recently, the Hon'ble Delhi High Court in **Ferid Allani v. Union of India & Ors** (decided on Dec 12, 2019), has clarified that "If the invention demonstrates a technical effect or a technical contribution, it is patentable even though it may be based on a computer program". Notably, the Hon'ble Delhi High Court has emphasized that:

*"Section 3(k) has a long legislative history and various judicial decisions have also interpreted this provision. **The bar on patenting is in respect of computer programs per se....' and not all inventions based on computer programs.** In today's digital world, when most inventions are based on computer programs, it would be retrograde to argue that all such inventions would not be patentable. Innovation in the field of artificial intelligence, blockchain technologies and other digital products would be based on computer programs, however the same would not become non- patentable*

*inventions – simply for that reason. It is rare to see a product which is not based on a computer program. Whether they are cars and other automobiles, microwave ovens, washing machines, refrigerators, they all have some sort of computer programs in-built in them. **Thus, the effect that such programs produce including in digital and electronic products is crucial in determining the test of patentability.... Patent applications in these fields would have to be examined to see if they result in a technical contribution***".

The IPAB also in its decision (in *Ferid Allani* matter) upheld the patentability of Computer Related Inventions (CRI) clarifying that the invention in question had a significant technical contribution to the state of art and possesses critical technical effect and thus deserves to be patented. The IPAB, while recognizing the patentability of the said invention due its technical efficacy held that the mere fact that a computer program is used for effectuating a part of the invention cannot be a bar to patentability and that an invention must be examined as a whole taking into consideration its technical effect and technical contribution.

Furthermore, the Applicant would like to bring the kind attention of the learned Controller towards the landmark decision of the Hon'ble Delhi High Court in **Telefonktiebolaget Lm Ericsson v Lava International Ltd (I.A. Nos.5768/2015 & 16011/2015 in CS (OS) No.764/2015)**, the Hon'ble Court while relying on the judgment in **Telefonktiebolaget Lm 7 Ericsson v Intex** case, held the suit patents to be valid, not invoking section 3 (k) and pronounced as follows:

"87. The term 'algorithm' is being misunderstood and misinterpreted by the defendant in as much as the bar of Section 3(k) applies to algorithms which are theoretical in

nature and/or abstract formulae. This bar of Section 3(k) does not apply when in a patent involving modern day technology, algorithms are employed in order to perform certain calculations or selections which are thereafter utilized by various hardware components or elements to produce/improve a technology and create a practical effect or result in a physical realization.

*"90. Prima facie, it appears that **these inventions which have resulted in an improvement (technical advancement)** in telecommunication technologies and have had a huge effect upon the manner in which these technologies function thereby resulting in practical implementation and actual physical representation."*

In view of the above, it is submitted that the amended claims of the present invention do not claim for a computer program or algorithm. On the contrary, the present invention discloses a method and an apparatus which incorporates various constructional components/elements and produces **improved technical effect**.

It is reiterated that the present invention provides a **technical advancement** as discussed above. The present invention **thus solves a technical problem associated with the prior art, and hence is not excluded from patentability under Section 3(k) of the Act.**

In view of the foregoing submissions and landmark decisions in **Ferid Allani v. Union of India & Ors, and Telefonktiebolaget Lm Ericsson v Lava International Ltd,** it is pertinent to note that the present invention creates a practical effect and provides **technical advancement**, thus, the subject matter of the claims of the present

invention is not a mere algorithm or a computer programme per se and therefore, is patentable under the provisions of the Act.

Further, in the **Guidelines for Examination of Computer Related Inventions (CRIs)**, released by the Office of the Controller General of Patents, Designs and Trademarks in the year 2017, the following things have been acknowledged:

"...It is well-established that, while establishing patentability, the focus should be on the underlying substance of the invention and not on the particular form in which it is claimed. What is important is to judge the substance of claims taking whole of the claim together. If any claim in any form such as method/process, apparatus/system/ device computer program product/ computer readable medium falls under the said excluded categories, such a claim would not be patentable. However, if in substance, the claim, taken as whole, does not fall in any of the excluded categories, the patent should not be denied."

Based on the above, the Applicant respectfully submits before the learned Controller that the present invention involves **structural limitations** to create a practical effect as detailed in the foregoing paragraphs, and does not falls in any of the excluded categories.

Consequently, in view of the foregoing submissions it is pertinent to note that the present invention creates a practical effect and results in a physical realization, thus, the subject matter of the objected claims of the present invention is not a mere algorithm or a computer programme per se and therefore, is patentable under the provisions of the Act.

Evidently, as discussed in the foregoing paragraphs, the present invention does not fall within the purview of Section 3(k). Furthermore, the technical effect produced by the present invention is beyond the

elementary interaction of hardware and software, clearly taking it out of the purview of Section 3(k).

Therefore, the learned Controller is requested to waive this objection.

(4) CLARITY AND CONCISENESS:

1. It is respectfully submitted that the term "spirit" has been deleted to meet this objection.
2. It is respectfully submitted that the expression "network utilizes a LORA" is clear. Said expression is commonly used in the field of technology and is easily comprehensible by a person skilled in the art reading the term in consonance with the claims and specification. Withdrawal of this objection is therefore earnestly solicited.

(5) DEFINITIVENESS:

1. It is respectfully submitted that the phrase "according to" in the amended set of claims has been replaced with "as claimed in".
2. It is submitted that the terms "at least", "plurality", "one or more" are clear, definite and comprehensible by a person skilled in the art while reading claims in consonance with the specification. Also, these terms are usually allowed in the claims.
3. It is respectfully submitted that the claims have been suitably amended. The preamble of amended dependent claims 2-4 are consistent with amended independent claim 1. Thus, the objection rendered moot.

Accordingly, it is humbly requested to the learned Controller to waive the above objections.

(6) OTHER-REQUIREMENTS:

1. Reference numerals in the revised claims and abstract have been inserted.
2. It is respectfully submitted that independent claim 1 discloses the essential novel and inventive features of the present invention. It is submitted that a two-part format would not be appropriate in this case as it would require an artificial separation of the features, and would therefore affect clarity of the claims.

PART-III: FORMAL REQUIREMENTS

Endorsement by /Assignment from Inventor:

Our Submission: The Assignment has already been resubmitted with relevant petition to overcome the objection.

Date and Signature of Applicant

Our Submission: We hereby submit that all the relevant documents has been signed by authorized patent agent/applicant

Statement & Under Taking (Form 3 Details)

Our Submission: The Applicant humbly submits and undertakes that that they have not filed any foreign application corresponding to the instant patent application till date. Since, Form 3 was already filed on 21/05/2020 with indication of NIL/NOT APPLICABLE foreign filing declaration and subsequently till date there is no foreign filing and so there is no update regarding foreign filing after Form 3 that was filed on 21/05/2020. So, a sort of waiver is requested in the instant objection. It is requested to waive of this objection in light of above submission

Power of Attorney (Whether GPA, SPA, Stamped, requisite fee etc.)

Our Submission: We hereby submit that all Copy of GPA has been resubmitted with Additional Stamp Duty for Instant Application.

Format of Specification (rule 13)

Our Submission: Revised abstract is being re-submitted as per the direction of the Learned Controller

Other Deficiencies

Our Submission: Application number has been mentioned in the originally filed Form 3 and Form 5 already submitted. It is requested to waive of this objection in light of above submission

In view of the above and the documents enclosed, it is requested that the Objections of Part III shall be waived.

With the above, the Applicant believes that all the objections contained in the FER are appropriately addressed and hence, humbly pray for early grant of the Application. In the event the decision of the learned Controller of Patents is adverse to the Applicant, we humbly request that the Applicant be given an opportunity to be heard as per the provisions of Section 14 of the Indian Patents Act, 1970.

We thank you in advance for your cooperation in this regard.

Yours faithfully,

Dated: 14/10/2021



Vikas Asawat
Patent Agent INPA 1407
On Behalf of Applicant
Digitally Signed

Enclosed:

- 1) Amended Claims – Marked and Clean Copy
- 2) Amended Abstract– Marked and Clean Copy
- 3) Revised Specification- Marked and Clean Copy