

PROTOARM BRIEF REPORT (Technology ,Progress, Status)

PROBLEM : The scarcity of inexpensive prosthetic limbs for children, as well as lack of indigenous manufacturers, and the products are quite expensive, and they are only compatible with standard sizes.

SOLUTION : PROTOARM is 3D printed in a variety of materials and customizable sizes. With constant maintenance and care, the goal is to make prosthetics more accessible and affordable to end users

Faculty in Charge : Mr Rahul Manohar, Assistant Professor, Dept of ECE, Christ College of Engineering

PROTOARM - FEATURES

- ❖ SIMPLISTIC DESIGN INCULCATING BASIC LIMB FUNCTIONS.
- ❖ SKIN FRIENDLY MATERIAL AT POINT OF CONTACT.
- ❖ ELECTROMYOGRAPHIC SENSORS (EMG).
- ❖ MOTION IS CONTROLLED USING HIGH TORQUE MG995 SERVO MOTORS.
- ❖ ARDUINO NANO FOR CONTROLLING MOTORS.
- ❖ HIGH QUALITY MATERIAL USED : ABS/PETG ETC.

Myoelectric bionic arm with high precision 3D printed interchangeable mechanisms that mimic the functions of organic hands.

The arm is controlled by the operator by flexing muscles, and the pointed tips with grips allow it to handle even small items.

Using an Analog EMG sensor, the arm is controlled by myoelectric impulses generated by the muscles.

The muscles' myoelectric impulses are sent to an MCU, and the fingers are controlled by the signals received through the EMG electrodes.

The arm's modes of operation are controlled by the switch on the arm, which also serves as an emergency OFF switch in the event of a malfunction.

STATUS OF PROJECT

IDEATION IS COMPLETED

DESIGNING STAGE AND IDENTIFICATION OF REQUIRED COMPONENTS IS

- COMPLETED
- PROTOTYPING - COMPLETED AND TESTING IS ONGOING

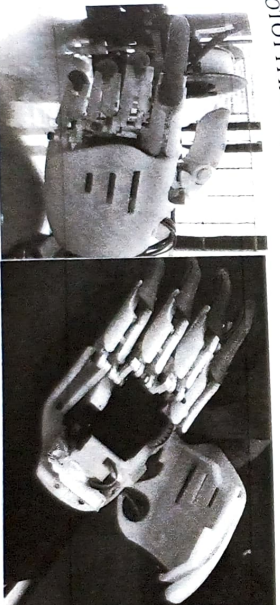


Fig 5.7.1. Protoarm Prototype



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DK 317690

AGREEMENT FOR AVAILING IDEA GRANT, SCALEUP
GRANT AND PRODUCTISATION GRANT

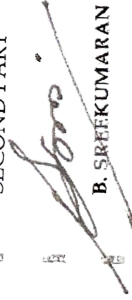
27.01.2023

This agreement made this 27th day of January Two Thousand and Twenty Three at Trivandrum by and between

KERALA STARTUP MISSION (TECHNOPARK TECHNOLOGY BUSINESS INCUBATOR), a society under the Travancore - Cochin Literary Scientific and Charitable Societies Registration Act 12 of 1955, and having its registered office at Technopark Campus, Kariavattom, Trivandrum - 695 581, represented by its Secretary- Registrar, Mr.B.Sreekumaran Nair, hereinafter referred to as "K-SUM" (which expression shall unless assigns) of the FIRST PART.

AND

Mr. Shawn M. Sandhosh, C/o. Mr. Sandhosh M. John, A6, Mangan House, Ward 3/116/4/1 (22/1745), Kizhakkumpattukara, Ootty Gardens, Opp. District Homeo Hospital, Thrissur- 680005, student of the Christ College Of Engineering, Christ College Road, Irinjalakuda, Kerala 680125, and working as an innovator with the Innovation and Entrepreneurship Development Centre of the Christ College Of Engineering, Christ College Road, Irinjalakuda, Kerala 680125, hereinafter referred to as the "Awardee" of the SECOND PART



B. SREEKUMARAN NAIR



SHAWN M. SANDHOSH



RAHUL MANOHAR O.



20540
KSC CURIST COLLEGE OF 19/01/2023
GANNINGAN KERALA



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DK 317691

AND

Innovation and Entrepreneurship Christ College Of Engineering, Christ College Road, Irinjalakuda, Kerala 680125,, Established with the support of the Kerala Startup Mission represented by Mr. Rahul Manohar O., Professor/Coordinator IEDC, Christ College Of Engineering, Christ College Road, Irinjalakuda, Kerala 680125, hereinafter referred to as the "IEDC" of the THIRD PART

WHEREAS Government of Kerala has a scheme to promote innovative idea by supporting through idea grant upto Rupees two lakh for developing the prototype of the idea, productisation grant upto Rupees five lakh for converting the prototype into a marketable product and scale up grant of Rupees Five lakh for scaling up of the product into a business. The ideas presented in the idea days conducted by the Kerala Startup Mission will be evaluated by the Expert Committee and grants under the scheme will be released according to the recommendation.


AND WHEREAS the Borrower has submitted a proposal to consider the idea "Protoarm" in the idea day for giving them grants under the above mentioned scheme.


B. GREEKUMARAN NAIR

SHAWN M. SANDHOSH


RAHUL MANOHAR O.

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2024/1
IEDC CHRIST COLLEGE OF
ENGINEERING IRINJALAKUDA
19/06/2023

V. S. S. S.



AND WHEREAS the idea submitted by the Awardee was placed idea grant in the "Idea Fest 2022" and the Expert Committee has recommended for a support of Rs. 2 Lakhs against idea grants.

NOW THEREFORE, in consideration of the promises and mutual covenants hereinafter contained, the parties, hereto, agree as follows:

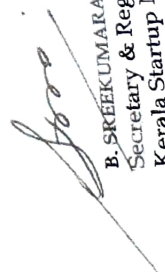
The amount of Rs. 2 lakhs will be released by the KSUM as instalments. The 1st Instalment as per the eligibility according to the requirements submitted by the awardee is Rs. 1 Lakh. The 1st instalment of Rs. 1 Lakh will be released on execution of this agreement.


The IEDC agreed that the amount will be transferred in full to the Awardee immediately on receipt of the same from the KSUM


The amount of Rs. 2 Lakhs sanctioned under the scheme will be utilised by the Awardee only for the purpose of prototyping/productisation/scaling up the idea and that the entire amount will be utilised for the purpose in accordance with the utilisation plan and milestones submitted by the awardee.

The Awardee will submit the details of utilisation to the IEDC immediately on utilisation along with the details of utilisation and on receipt of the same the IEDC will submit an utilisation certificate certified by the IEDC to KSUM within 3 months from the date of receipt of the amount.

Signed, sealed and delivered on the same day written above.


B. SREEKUMARAN NAIR
Secretary & Registrar
Kerala Startup Mission


SHAWN M. SANDHOSH
Student
Christ College of
Engineering, Irinjalakuda


RAHUL MANOHAR O.
Asst. Professor
Christ College
Engineering, Irinjalakuda



PAY: *Pratoasm*

RUPEES: *Two Lakh Only*

Payable or per through clearing / transfer at all branches

RS. *2,00,000/-*

KERALA STARTUP MISSION