****

Guidelines to Develop NCRA Research Fund Proposals

# Background

National Centre of Robotics and Automation (NCRA) is a consortium of 11 Labs hosted at 13 universities of Pakistan. The secretariat is hosted at NUST college of E&ME. NCRA has a research fund at its disposal. The fund will cater for conducting research activities in the field of Robotics and automation. This funding opportunity aims at fostering the transition from research and technology to integration and business. The successful outcome of this fund shall put in place a combination of market oriented technological research and development of integration solutions. This shall help new robotics applications to reach the market.

# Guidance Notes

Relevance with robotics and Automation shall be the key parameter for evaluation. Proposals will be considered for partnership project with clearly defined objectives and outcomes. Proposals should also demonstrate how the partnership will be further developed and sustained following the initial project.

In view of various priorities of participating institutions/universities, following domains are already being covered under the current PC-1 by NCRA Partner labs, therefore any proposal having significant overlap with these fields **will not be considered** for the research fund:

1. Electrical/Mechanical Design Services
2. Manufacturing Facility
3. Unmanned / Autonomous Ground Vehicles
4. Path Planning of Robots
5. Upper/lower Limb Prosthetics and Orthoses
6. Aerial Platforms and Associated Services
7. Exoskeletons / Gravity Compensators
8. IoT Based Industrial Health Monitoring
9. Motor Characterization and Improvement
10. Air Quality Monitoring Systems
11. Mems Physical Sensor Designing, RF MEMs, Energy Harvesters and Micro Robotic manipulators and open cell libraries
12. IoT Based Agricultural Monitoring
13. Crop Monitoring Services
14. Water Availability / Contamination Monitoring Devices
15. Hardware / Software in loop Testing of Aerial Platforms
16. Swarm Robotics
17. Tele-Robotics
18. Condition monitoring of Locomotives
19. Search and Rescue Robots
20. Automated Seed Planters and harvesters
21. Intelligent Spray Systems
22. Robotics / STEM training facility

# Responsibilities of PI:

P.I of the research project shall certify the following:

1. Certify that the P.I is a full time Faculty Member of the University / Degree awarding institutes.

ii. Certify that the equipment(s) demanded for the subject research is / are not already available at the University / Institute.

iii. Certify that the project under reference has not been submitted to any other funding agency including HEC.

iv. Certify that this research / portion of research has not been funded by any other funding agency including HEC in the past.

v. Certify that the subject research is genuinely novel and that there is no plagiarized material including self-plagiarism

# Possible Partners

The proposals need to be academia-industry joint projects leading to products or services which solve a current problem or identify a new opportunity; are marketable, leading to positive cash-flows. In another way the local Industrial R&D can join nearby academic research experts of the university to solve their problem, upscale the process or prototype their innovative idea to a successful business.

This grant can be used by the applicant to develop partnerships of their universities with business community. All proposals will be expected to have identified how their collaboration will develop partnerships outside the university with active industrial sector.

# Business Model

## Executive Summary

This executive summary will follow the title page. The summary should tell the reader what you want.

**Business Description**

The business description usually begins with a short description of the industry. When describing the industry, discuss the present outlook as well as future possibilities. You should also provide information on all the various markets within the industry, including any new products or developments that will benefit or adversely affect your business.

**Market Strategies**

Market strategies are the result of a meticulous market analysis. A market analysis forces the entrepreneur to become familiar with all aspects of the market so that the target market can be defined and the company can be positioned in order to garner its share of sales.

**Competitive Analysis**

This is to determine the competitors’ strengths and weaknesses within your market, strategies that will provide you with a distinct advantage, the blockades that can be developed in order to prevent competition from entering your market, and any weaknesses that can be exploited within the product development cycle.

**Design & Development Plan**

This is to provide investors with a description of the product's design, chart its development within the context of production, marketing and the company itself, and create a development budget that will enable the company or product to reach its goals.

**Operations & Management Plan**

The operations and management plan is designed to describe just how the business functions on a continuing basis. The operations plan will highlight the logistics of the organization such as the various responsibilities of the management team, the tasks assigned to each division within the company, and capital and expense requirements related to the operations of the business.

In case of introducing new product in existing industry or industry problem solution the operations plan will highlight the logistics of the existing industry/organization such as the various responsibilities of the management team, the tasks assigned to each division within the company in regard to this product or process induction in industry, and capital and expense requirements related to this intervention.

**Financial Factors**

Every successful business plan depends on financial data at its back, but that doesn't mean it's any less important than up-front material such as the business concept and the management team.

# Eligibility

Applicants must be based within a Higher Education Institution in Pakistan and have backing by their Head of the Institution. Co-PI could be from local Industrial Partner or R&D institutions.

# Duration and value of award

* Duration of each research project will be maximum of two years.
* **Total grant for each proposal: (Maximum up to) Rs15.00 Million**
* Proposals with partner industry contribution (in cash or kind) will be preferred

# Application Process

Proposals for funding should be submitted on the standard Application Form available on the NCRA website Application Forms can be downloaded from the following link <http://ncra.org.pk>

Completed applications must be routed to NCRA on following address through the University ORIC or Directorate of Research where the applicant team is located dually endorsed by head of University and Partner Industry. Proposals will be received till 15th May 2020 and evaluated on first come first serve bases.

# Evaluation Process

There will be a 3 stage approach to evaluating proposals:

1. Secretariat will formulate an editorial board of 3 to 5 experts. The board will shortlist proposals based on relevance to the field of robotics and automation. Incomplete and irrelevant proposals will be rejected. Proposals with industrial partner investing in cash or kind shall be preferred. The funding proposal along with details of credentials of industry partner shall be initially evaluated by editorial board.
2. After initial scrutiny of all proposals the secretariat will forward the list of long listed proposals and profiles of recommended reviewers to NCRA NSC for approval, before forwarding the proposals to reviewers. Shortlisted applications shall be sent to reviewers as per area of speciality.
3. The proposal shall then be sent to 2 x Local/International reviewers. Shortlisted proposals shall be compiled by the secretariat and forwarded to NSC for approval.
4. Top ranked proposals will be asked to give a presentation to the board. Depending upon the availability of funds top ranked proposals shall be recommended to NSC for approval for award of grant. Agreement shall be signed between selected PIs and secretariat and first instalment of funds shall be released.

# Monitoring

Each partnership may be monitored over the course of the project and can be called to pitch the progress or product display.

# Reporting

Each partner is required to submit to NCRA a six monthly progress report with presentation, after the start of the partnership, an end-of-year report and a final report on completion of the project. These will be both technical and financial; the items to be covered will be specified at the time of finalising the contract.

# Data Protection Statement

All information on the application forms of proposals that are successful and funded by NCRA will have details made public and it is a condition of application to the scheme that you agree to this.

Please confirm that you agree to the use of the data in the application in this way.

# Signatures, Submission and Deadline

Please follow the advice set out in these guidelines carefully. Applications should be submitted on the application forms available on the website.

If necessary signed letters of support from Partner Industrial/R&D institutional heads or equivalent can be submitted separately.

# Proposal Information sheet

Proposal information sheet in M.S. excel is given with dummy data entered for the basic information of the proposal must be filled by Principle Investigator and send with the soft copy in email.

# Application Procedure

The deadline for submission of proposals is **15th April 2020; however, applications will be processed on first come first serve bases.**

The paragraph numbering below follows the section numbers on the Application Form

1. **Project Title**

Please choose a title that uniquely describes your project and clearly identifies the primary subject area for the activity.

1. **Key Subject Words**

Please provide up to 6 key words that most closely relate to the application area.

1. **Project Objectives**

Please summarise the main objectives of the proposed project in terms that might be understood by a non-specialist. Please provide in a maximum of 100 words.

1. **Proposed Start and End Dates for your project**

The project will commence once the contract has been signed and will run for no more than 24 months.

1. **Information about applicants**

The details of the Project Team Leaders in each institution and their contact details should be provided.

1. **Overview of the Project**

Please provide an overview of the proposed project in a language suitable for a general audience. Include the project objectives, proposed process and anticipated outputs and impact.

1. **Proposed Goals / Objective:**

Please clearly identify the output in the form of a product or process, need or relationship to non-university partner

1. **Project Business Development Plan / Work plan for the Project**

Please provide an overview of your Business plan to include activities taking place. Please note that this Business plan will form the basis of your contract and progress will be measured against working towards it’s delivery.

1. **Proposed Project Outputs:**

Please summarise briefly the intended outputs of the proposed co-operation – both qualitative and quantitative. Please try to fill all columns.

1. **Other sources of funding**

In this section please include details of any funding which will be received by the project which is from a source outside of the participating institutions. Include details on the exact nature & amount of this funding, the donor organisation and the anticipated time frame.

1. **Proposed Team (Principle Investigator, Industrial Partner and Co PI)**

This section details about project team and their profile.

1. **Financial Proposal**

Please summarise the estimated costs (PKRs in Million) over the 1.5-year period of the project and present this information in prescribed **M.S excel spreadsheet** and same will be mentioned in the main application form.

You are also required to complete the shorter table in the application setting out your requests for funding. Please refer to the section in the Guidelines that set out what activities can be funded and what are ineligible. Note that funds cannot be employed to contribute towards the salaries of staff other than allowed nor for administration, estate costs or other institutional overheads.

Air fares should normally be the most reasonable economy class fare.

1. **JUSTIFICATION**

Please justify your requests for staff, Salaries Allowances, expandable Supplies and permanent equipment in background of the existing facilities available at the host Institute.

1. **Referees/Reviewers**

Enlist 3 academic and 2 Industrial Reviewers.

1. **Check list**

Check list is provided to have a holistic review of proposal developed whether it followed all guidelines which for sure made application pass successfully initial scrutiny phase.

1. **Attachments**

Make Sure CNIC, Photo, Industry Support letter, Key performance Indicators, CVs of PI, CO-PI, Industry Partner must be included in one M.S world application file and create PDF of the same. No loose above documents will entertained.

**Hard copies (3 sets) through surface mail should reach before 00:00 hrs on 15th May, 2020.**

**Muhammad Qasim Altaf**

Program Manager

National Centre of Robotics and Automation

College of E&ME, NUST

Peshawar road, Rawalpindi

051-54444458

**Completed applications should be submitted electronically (Microsoft word & PDF) as well to:** **qasim@ncra.ogr.pk** **and** **pd@ncra.org.pk** **.** Please give title your e-mail as (NCRA-PI Name-University name Abbreviation) i.e. (NCRA-Qasim-NUST)

**Once submitted, we cannot accept any changes to the application.**

If you have any questions about your application please contact

Muhammad Qasim Altaf : qasim@ncra.org.pk