REQUEST FOR PROPOSALS

for supporting

Biotechnological Product/Technology development

from

Academia and Industry

under

BIPP, SBIRI and PACE

Under the present call, proposals are invited only in PRIORITY AREAS in following fields:

- **Healthcare**
  (Devices and Diagnostics, Drugs & Drug Delivery, Biopharmaceuticals, Regenerative Medicine, Stem cells, Vaccines & Clinical trials)
- **Energy, Environment and Secondary Agriculture**
- **Agriculture, Veterinary Sciences and Aquaculture**

Proposals are invited under 2 sections as per the details below:

Section 1: Development and validation of new products & technologies

AREAS FOR SUPPORT:

a) Drugs, Vaccines, Biopharmaceuticals and Diagnostics for Cancer and Neurological disorders.

b) Strain engineering and process development for production of Industrial enzymes

c) Diagnostics for disease detection and management in plants, livestock and aquatic animals

d) Emerging technologies such as: (i) 3D printing, (ii) Cell Therapy, (iii) Gene Editing, (iv) in-silico studies, (v) Robotics, (vi) IoT , (vii) UAV and (viii) Artificial intelligence in Healthcare or Agriculture.

Under (d) proposals are invited selectively in following areas only:

(i) 3D printing

- Technologies for rapid prototyping, bioprinting tissues and organoids
- Customized patient-specific implants
- Customization and rapid manufacturing of spare parts and modern instruments for agriculture, food production, farm equipment, farming products.

(ii) Cell therapy

- Stem cell based therapies for treatment of various diseases
- Technologies towards design and development of CAR-T cell therapy against cancer and other diseases
- Platform technologies for manufacturing of clinical grade material
- Methods of delivery of cell therapy products

(iii) Gene editing

- Technologies for Somatic gene therapy
- Developing gene editing technology for editing of specific sequences within a genome (CRISPR-Cas9, ZFNs or TALENs) for therapeutic applications
- Developing gene editing technologies to improve traits like yield, quality, disease resistance to accelerate breeding in crops and improved breeding, and diseases resistance in animals

(iv) In-silico Studies

- In-silico studies in facilitating drug discovery and development

(v) Robotics

- Development and validation of Surgical Assistant robots, Sanitation and Disinfection Robots and robots enabling lab automation
- Robotic exoskeletons
- Robots for mowing, crop seeding, nursery planting, fertilizing, pruning, spraying, phenotyping, weeding, harvesting, sorting and packing

(vi) Artificial Intelligence

- AI in disease diagnosis, medical imaging, drug discovery and precision medicine
- Real time analysis of weather conditions, temperature, water usage or soil conditions and development of seasonal forecasting models to improve agricultural accuracy and productivity
- Use of AI in detecting diseases in plants, pests, and poor plant nutrition on farms

(vii) IoT

- Development of IoT enabled systems/devices for: (a) hospital management and in-patient care and monitoring, (b) for storage and transportation of healthcare products including drugs, vaccines etc.
- Real time monitoring of crops with the help of sensors (light, humidity, temperature, soil moisture, etc.) to automate the irrigation system for optimal water utilization and for detection and spread of diseases and (c) better management of farm activities

(viii) UAV (Unmanned Aerial Vehicle)

- Use of Sensors and digital imaging capabilities for soil assessment, soil variation, soil fertility, and water stress
- Crop mapping, surveying & monitoring for crop growth, pest and diseases, seeding, crop spraying (fertilizers, pesticides, etc.) to improve farm efficiency and crop production

Types of Projects to be supported:

- Products/Technologies with established Proof of Principle for PACE-AIR and Proof of Concept for PACE-CRS
- Projects that propose a process/product innovation with significant potential impact or commercial potential
- Developed process should be sustainable from an economic and environmental point of view and should be scalable
- The Technology Readiness Level (TRL) at the end of the project should be:

  TRL 3 (Proof of concept established): PACE-AIR

  TRL 6-7 (Early and Late stage validation): SBIRI & CRS

  TRL 7 and above (Late stage validation up to pre commercialization): BIPP

What is not supported?

- Concepts/exploratory research ideas without proper Proof-of-Principle (PACE-AIR and SBIRI) and Proof-of-Concept (PACE-CRS, BIPP)
- Proposals without preliminary data and potential for product/technology development
- Funding cannot be used to support PhD student research or any other academic research.
- The grant is not a research fellowship

Section 2: Demonstration & Deployment of validated products/ technologies in the field

AREAS FOR SUPPORT:

- Point of care devices & diagnostics for primary health centers
- Reducing and utilizing dairy, industrial and municipal solid waste.
- Products and technologies related to Precision farming at farmers` field.

Types of Projects to be supported:

- Products/technologies at TRL 7 and above
- ONLY Products/technologies that are fully developed and validated as per regulatory standards and are ready for commercialization/deployment will be considered.

Who Can Apply?

Eligibility:

PACE-AIR:

1. Under the scheme, academia (Public or Private Institute, University, NGO, or Research Foundation) having a well-established support system for research shall be the primary applicant.

It can apply either:

a) Individually, or

b) Jointly with academic* and/or industrial** partner

**For Public or Private Institute, University, NGO, or Research Foundation, proper registration/accreditation from a government body is mandatory*

***Participating company (if any) should be registered under the Indian Companies Act, 2013 with at least 51% Indian shareholding i.e., shares of the Company should be held by Indian Citizens holding Indian passport (Indian citizens do not include Person of Indian Origin (PIO) and Overseas Citizenship of India (OCI) holders).*

2. The applicant Company should have adequate in-house facility to address the project implementation or incubated with any of the recognized incubation facility.

PACE-CRS:

1. Academia* has to be the Primary Applicant with one or more partners of which at least one is a company**

**For Public or Private Institute, University, NGO, or Research Foundation, proper registration/accreditation from a government body is mandatory*

***Participating company should be registered under the Indian Companies Act, 2013 with at least 51% Indian shareholding i.e., shares of the Company should be held by Indian Citizens holding Indian passport (Indian citizens do not include Person of Indian Origin (PIO) and Overseas Citizenship of India (OCI) holders).*

2. The applicant Company should have adequate in-house facility to address the project implementation (which shall be evaluated during the site visit) or incubated with any of the recognized incubation facility.

SBIRI:

1. The proposals can be submitted

a) solely by a Company* incorporated under the Companies Act, 2013 or Limited Liability Partnership (LLP)** incorporated under the Limited Liability Partnership Act, 2008 or Joint Ventures either in the form of Company/ LLP

b) by any of the above entities jointly with other private or public partner(s) (Universities or Institutes).

**Minimum 51% of the shares of the Company should be held by Indian Citizens holding Indian passport (Indian Citizens do not include Person of Indian Origin (PIO) and Overseas Citizenship of India (OCI) holders)*

***Minimum half of the persons who subscribed their names to the LLP document as its Partners should be Indian citizens.*

2. The Applicant Company/LLP should either:-
   a) Have adequate in-house facility to address the project implementation (which shall be evaluated during the site visit) or
   b) Incubated with any of the recognized Incubation Facility

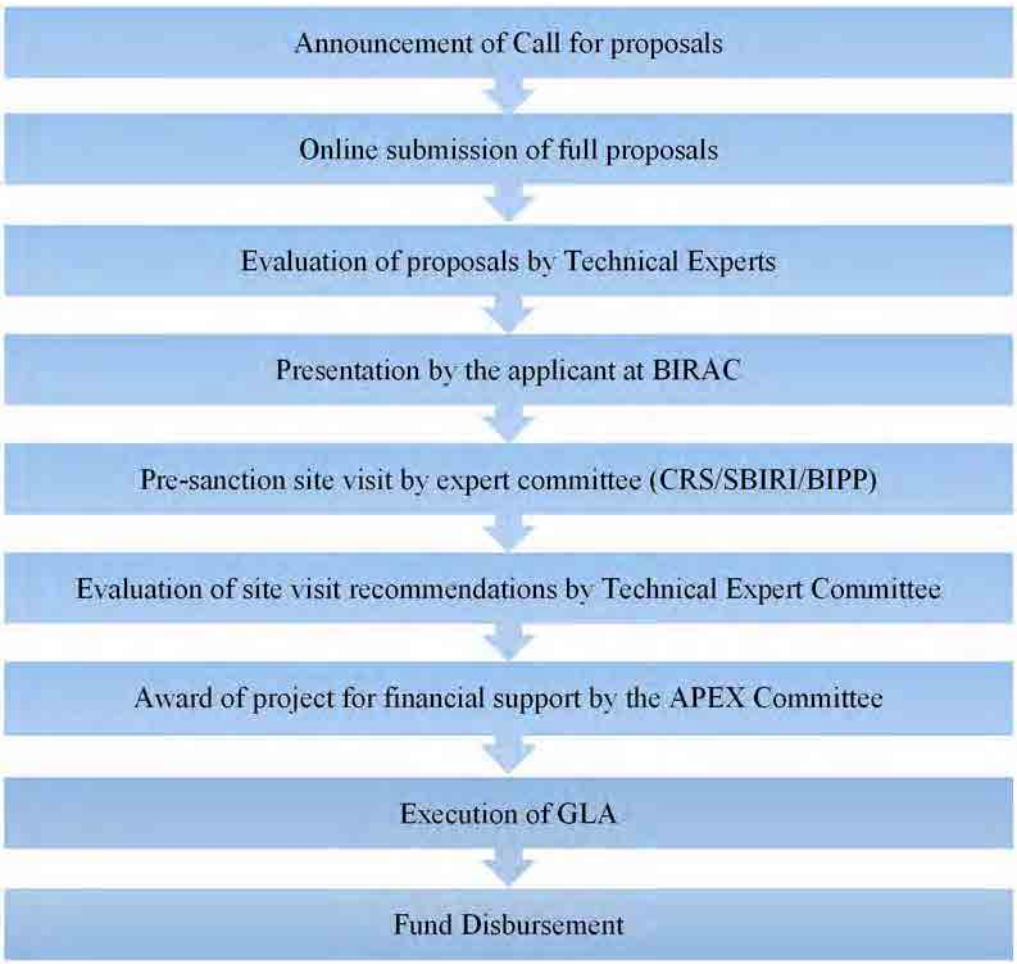
BIPP:

1. Single or consortia of Indian Company (ies) - Small, Medium or Large. An Indian Company is defined as one which is registered under the Indian Companies Act, 2013 and Minimum 51% of the shares of the Company should be held by Indian Citizens holding Indian passport (Indian Citizens do not include Person of Indian Origin (PIO) and Overseas Citizenship of India (OCI) holders) The proposals can be submitted:
   - Solely by an Indian Company; or
   - Jointly by an Indian Company and National R&D Organizations and Institutions; or
   - By a group of Indian Companies along with National Research Organizations etc.
2. The applicant Company should either :-i) Have adequate in-house facility to address the project implementation (which shall be evaluated during the site visit) or ii) Incubation with any of the recognized Incubation Facility.

Duration of Project

Up to 18 months for proposal submitted under PACE-AIR. No specific duration has been fixed for PACE-CRS, SBIRI and BIPP schemes.

Evaluation Process



Funding

Funding support will be in the form of Grant-in-Aid and is scheme specific. Kindly refer to the guidelines of respective schemes for more details by visiting http://www.birac.nic.in

Fund Disbursement Policy

The fund disbursement is milestone based and will be released in 4-5 instalments as per the timeline of the project.

Instalment No.	When	Amount (for proposal more than 12 month)	Amount (for proposal less than 12 month)
1	Signing of Contract	30% of project cost	30% of project cost
2	Completion of 1st Milestone	20% of project cost	30% of project cost
3	Completion of 2nd Milestone	20% of project cost	30% of project cost
4	Completion of 3rd Milestone	20% of project cost	NA
5	Completion of project and	10% of project cost	10% of project cost

(Final) *	submission of final report		

**Since the last instalment is released after conclusion of the project, its nature would be reimbursement.*

Duration of Call for Proposals

The call would open on 15th October, 2019 and shall close on **30th November, 2019 at 5:30 p.m.**

Additional information

For details related to TRL definitions, schemes and submission of proposals, please log on to http://www.birac.nic.in

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