Request for Proposals (RFP) to Establish a Research and Development Laboratory for Biodevices and Biochips

Summary of the Request for Proposals

The Israel Innovation Authority invokes a procedure to submit applications to receive a grant for the purpose of establishing a research and development (R&D) laboratory for biodevices and biochips. The laboratory will contain dedicated equipment and multi-disciplinary staff for R&D services for Israeli corporations and/or for Israeli research institutions, by supporting the stages of research, development, planning, production of prototypes, validation, etc.

Applications in this Request for Proposals (RFP) will be submitted in the framework of the No. 10 Benefit Program - Establishing R&D Laboratories and Information Databases and Making them Accessible to the Industry (hereinafter: "**The Benefit Program**").

Application submission deadline: September 25, 2024, at 12:00 Noon IST.

Definitions Relevant to the RFP:

- **Bio-convergence -** a technology field, the very essence of which is combining methods, ideas or technologies based on biology with know-how and technologies from other fields, such as: engineering, physics, computer science, and mathematics. The outcome of this combination will be multi-disciplinary. Its application impacts many fields of life, including health, environment, energy, food, agriculture or computability.
- **Biodevice** - a device that can include a few different functional components and elements of electronics and biology (such as: bio chip/s, mechanical elements or passive elements), constituting a multi-purpose platform for the integrative execution of a broad spectrum of different actions, trials or applications, compactly and effectively. For the most part, this serves to maintain interaction with biological samples (cells, proteins, DNA, etc.) for diverse tasks such as DNA sequencing, assistance in developing drugs, diagnosis, and monitoring biological processes.
- **Bio-chip** -A group of microarrays constituting biological sensor/s, enabling performance of multiple trials at the same time, to achieve a higher yield of results quickly. Each microarray can identify a biological analyte, including enzymes, proteins, or nucleic acids.

Background

The bio-convergence field in general and the biodevices and biochip fields in particular are challenging fields due to the complexity and the multi-disciplinarity necessary for conducting research and development. Therefore, the Israel Innovation Authority is interested in advancing the establishment of research and development laboratories for biodevices and biochips, which combine engineering and biology, intended for applications in health, environment, agriculture, security, etc. Examples of biodevices: diagnostic sensors, smart implants intended for treatment and/or diagnostics, Lab-on-Chip, sensors and devices to monitor and catch contaminants in the environment, water purification devices, or devices to produce energy from a biological source.

This RFP is designated for establishing and making accessible an R&D laboratory for biodevices and biochips, and to this end, will include such equipment as: infrastructures for producing the devices, software tools, equipment for analysis, "wet" laboratories, bioprinting infrastructures, etc. Considering all of the above, the purposes of this RFP are, *inter alia*:

1. Rendering R&D services, with the aid of an in-house technical team to be employed by the Applicant, including aspects of accelerating the development process (saving time and money) for industrial corporations and research institutions developing biodevices using unique equipment and knowledge developed and/or purchased by the Applicant and/or through strategic collaborations with additional entities from Israel and around the world that complement the Applicant's capabilities.
2. Providing services in the production of prototypes and small series, based on the infrastructure (equipment and manpower) of the Applicant and/or creating strategic collaborations with additional entities from Israel and from around the world complementing the Applicant's capabilities.
3. Development of unique knowledge and providing applicable solutions to constitute competitive leadership in this field, at an international standard for industrial corporations, research institutions or other entities.
4. Holding training sessions and developing human capital to render services to industrial corporations and research institutions in Israel.
5. Making the infrastructure accessible to industrial corporations and research institutions in Israel.

Hereinafter are Possibilities for Research and Development Services to be Rendered by the Laboratory:

1. **Research, Development and Planning -** for example: acquiring the necessary know-how in the laboratory to provide consulting, research and development services that will support the activity of corporations and research institutions in Israel, designing electronic elements of a device, designing a bioelectronic interface, designing a device to diagnose and monitor biological processes, designing a lab-on-chip (it is clarified that the laboratory will also be entitled to provide services to entities outside Israel).

   The potential applications of the outcomes are diverse and can serve, *inter alia,* for research on the process of drug development (such as an organ-on-chip), for environmental sensors (such as monitoring contaminants), to monitor processes in the human body or in animals, for treatment with feedback on the human body (for example, controlled and focused release of drugs and/or while measuring the impact of the drugs' effect).

   Examples of personnel/equipment that will enable the rendering of services:

   - Experts in the domains of hardware, software, materials, data, biology, chemistry, hardware-biology/chemistry/materials interfaces.
   - Software for planning and simulating biodevice components from a range of perspectives.
2. **Production of Prototypes -** for example, production of biochips using semiconductor technology to serve as the biodevice component, production of biodevice system components such as micro-flow devices, production of optic components, or production of biological components of a chip. The technologies for producing prototypes will facilitate reproducibility and economically

viable scale-up for mass production. Examples of personnel/equipment that facilitate the rendering of services:

- Experts in the various engineering and biology fields and personnel to operate the equipment and the processes.
- Clean rooms, 3D printers, bioprinting (printing various materials, including biomaterials), equipment for mechanical work, a chemistry laboratory, a biology laboratory, imaging equipment, packaging, electronic testing equipment.

3. **Verification and Validation** - for example: performing tests required to examine product performance from various relevant perspectives (mechanical tests, shelf life, expected resistance to environmental conditions, reproducibility, etc.), to make it possible to submit the product for the approval of various regulatory bodies, according to its designation.
   Examples of personnel/equipment that facilitate the rendering of services:
   - Experts for planning methods and testing procedures, quality assurance experts in various fields.
   - Testing laboratories and equipment suitable for various technological fields (hardware, chemistry, biology, mechanics, and so on).
4. The infrastructure can also include personnel, such as CEO and business development managers.

Target Audience for Applications

A Users Group, , an industrial corporation, Tech Transfer Offices , or entrepreneur, according to the provisions of the Benefit Program no. 10.

Amount of the Grant

The total amount for all grants paid for all approved applications in the framework of this procedure will be up to 75 million NIS for the approved program period, whereby the extent of the approved grant will be 55% or 66% of the approved budget, as detailed in the benefit program.

Threshold Criteria

As detailed in the Benefit Program provisions.

Application Assessment Criteria

As detailed in the Benefit Program provisions.

Emphases

Everything stated herein, including in relation to submitting the applications, examining them, the decision whether to approve or reject applications, the provision of benefits, and the obligations and rights of a benefit recipient, such as in connection with knowledge and intellectual property, reporting and payment of royalties, will follow the provisions of the Innovation Law, the Benefit Program, and the procedures determined by virtue thereof (including those appearing in the Program Procedures section).

How to Submit an Application

1. Applications can be submitted by 25/09/2024 at 12:00 Noon IST. It is clarified that applications submitted after this deadline will not be accepted.

2. Read the Benefit Program Provisions and the relevant procedures carefully, and verify compliance with the threshold criteria as detailed in the full version.
3. Follow the instructions detailed in the Benefit Program provisions, the relevant procedures, and in this notice.
4. Submit the application in the personal area on the Innovation Authority's website using the benefit program's application form. Information about the application submission process and the additional required attached forms specified on the Benefit Program Page.
5. Follow this RFP page for updates on the procedure, if any.
6. The provisions in this notice do not constitute a commitment to approve a given application submitted in the framework of the procedure.

Questions and contact

Questions sent to yael.h@innovationisrael.org.il shall be addressed on the Webinar to be held on 25/07/24, at 15:00 Israel Time.

For questions in general or about how to submit an application in the profile section, contact the Innovation Authority's Customer Service via email at: contactus@innovationisrael.org.il or by telephone at 03-7157900 on Sundays-Thursdays between 9:00-17:00.

Additional Information

Content of the Application:

The Application and its appendices should relate and respond, *inter alia,* to the aspects detailed below. It is clarified that this is not a closed list, and it only constitutes part of the requirements in the framework of the application form. You may, and it is recommended to, elaborate on and address additional aspects that are not included in this list.

A. Scientific-Technological Aspects – a response to the provisions in this section should be given in Sections 3, 4, and 8 to the Application Form.

(1) Designation of the laboratory (Section 3): specify the R&D laboratory's designation, including aspects concerning the services to be rendered to the target audience of the potential users, bearing in mind the analysis to be performed by the Applicant in terms of demonstrating the need and the R&D laboratory's contribution to the Israeli industry.

(2) Chosen Field (Sections 3-4):

i. Specify the Applicant's focus (for example: focus on a specific field, focus on technology or target audience), if applicable.

ii. Specify the mapping of existing challenges and technological and business opportunities that this focus covers.

(3) The description of the services will also include reference to those that are not accessible in Israel today, and a comparison to infrastructures that exist around the world.

(4) Proposed Services (Section 8):

i. Specify the research and development services that the laboratory will provide to users (types of service, service fields), and focus specifically on services that are not effectively available today (financial and operational).

ii. Specify when the service will be operational, expected prices, and a comparison to other services existing around the world.

(5) Specify as to potential expansion of the laboratory after the three establishment years, as deemed appropriate.

B. Managerial-operational aspects - **a response to the provisions in this section will be given in Sections 5 and 6 of the Application Form:**

(1) Specify details pertaining to the Applicant's strategic partners.

(2) Specify details pertaining to additional ties and partnerships with the high-tech industry and academia.

(3) Details of business development/marketing and access of various users to the infrastructure.

(4) Details of the infrastructure support required for establishment and operation (including services, physical infrastructure and equipment), relating to the analysis performed by the Applicant regarding existing market failure or other restriction preventing the purchase of this equipment not in the framework of the Innovation Authority grant.

(5) Specify the scope of administrative and technological personnel, industry oriented, that will be employed to operate the equipment, and their professional experience in this field (attach CVs for CEO and proposed staff members).

(6) Specify how the service will be rendered to industrial corporations and to research institutions, including intellectual property ownership aspects.

(7) Establishment Schedule:

i. Specify the schedule for laboratory establishment and service provision. Describe the stages of technological capability building and provided R&D services.

ii. Describe short-term and long-term planning of technological know-how and capability building, rendering laboratory services. For the long term, describe which additional capabilities and R&D services can be provided after the laboratory is established and capabilities and experience are accumulated in the operation of the laboratory.

B. Budget/Finance Aspects - A response to the provisions in this section will be given in Sections 9, 10, and 12 of the Application Form and in the Excel file constituting an appendix thereto.

(8) The service pricing (expected price of services) - specify the expected process for determining the consideration demanded from potential users, relating to the global competition for similar services.

(1) Specify costs for administrative and technological personnel, including but not limited to issues related to required training before the R&D laboratory starts rendering the service.