

ANRF TRANSLATIONAL RESEARCH AND INNOVATION (ATRI) INITIATIVE

Technological innovation is a key driving force for economic growth and national development. For rapid progress, it is essential that every phase of the research-to-product pipeline is equally advancing. However, the transition stage between laboratory-scale validation (TRL4) and prototype demonstration in an operational environment (TRL 7) is extremely critical but remains under-supported. As a result, many technologies that have demonstrated potential in research fail to reach the end goal of commercialisation. ANRF intends to bridge this gap, to ensure that promising research translates into market-ready products, thereby enhancing global competitiveness and economic growth.

The ANRF Translational Research and Innovation (ATRI) initiative will bring together all key stakeholders to channelise the expertise and resources for unlocking the tremendous innovation potential. Under this initiative, ANRF will establish ATRI centres to provide targeted support for advancing potential technologies from TRL 4 to TRL 7, thereby strengthening the innovation pipeline from lab to market.

Operational Model

The ATRI centres will be established in sector-specific, focused areas built on the foundations of innovative technologies and strategic partnerships. They will be equipped with state-of-the-art infrastructure for prototyping, demonstration, testing and other facilities required for transitioning the lab-scale proof of concept to pre-commercial validation. A team of researchers with innovative technological know-how and industry partners with specialised expertise, resources, and market proficiency shall work jointly, with a clear focus on market translation and preparation for downstream commercialisation.

While the proposed technology will remain the central focus, the ATRI Centre is expected to develop enabling facilities, shared infrastructure, and complementary capabilities anchored around the proposed technology, with relevance to the broader thematic area. The centre should function as a sector-focused translational facility with the potential to support researchers, startups, industries and other stakeholders, enabling collaboration and strengthening the overall innovation ecosystem.

Scope and Requirements

A group of investigators from an academic institution or research organisation, with a potential technology and demonstrated commitment to translational research, may apply for support to establish ATRI Centres in specific areas under the tentative sectors specified. The technological area proposed should effectively combine technology push with market pull to drive the progression of technology to a higher TRL level. The innovation gap or current as-is state should be clearly demonstrated, along with a well-defined demand for the proposed new capabilities. Letters of commitment from prospective users / industry partners should be provided to support this demand. Industry interest and collaboration are central to the ATRI initiative. Proposals must demonstrate credible and compelling synergies with industry, reflected through outcome-oriented engagement where industry partners contribute substantially to technology development, validation, market alignment and creation of pathways to commercialisation.

The Lead Principal Investigator (LPI) has to submit the proposal on behalf of the team.

Objective of ATRI Centres

- Advance identified technologies from TRL-4 to TRL-7, enabling lab-to-market transition.
- Establish sustainable revenue models of profit generation, particularly through contract research and services for industries and public institutions.
- Position as sector-specific innovation hub, enabling facility sharing and collaboration
- Build a critical mass of people, infrastructure and activities concentrated around the thematic area.
- Provide mentoring, technical guidance, and support to promising startups, state universities and less endowed institutions.

Nature of Support

The nature of support is based on a co-funding model, in which project cost will be shared between ANRF and external partners. ANRF support is capped as a percentage of the total cost, and the balance is to be supported by non-ANRF sources, preferably industry. Multiple industries can team up as consortia to support the centre. Other than industries, the support can also be leveraged from other sources such as

state governments, autonomous bodies, central government departments/ministries or non-governmental foundations. The non-ANRF support should be in cash, as detailed in the following table.

Category	Total Project Cost	ANRF Contribution	Industry [#] / Non-ANRF sources
Mode I(a)	₹50 Cr - ₹200 Cr plus	Upto 50% of the total budget or ₹100 Cr, whichever is less	The balance amount (Total project cost – ANRF contribution) in cash
Mode I(b)	₹10 Cr - ₹50 Cr	Upto 70% of the total budget or ₹25 Cr, whichever is less	The balance amount (Total project cost – ANRF contribution) in cash

A minimum of 20% of the total project cost must be contributed in cash by the participating industry partner(s). Industry contributions are expected to align with the technological objectives, translational goals, and market pathways for the proposed technologies, and not be made merely to fulfil funding requirements.

Note: Industry / Non-ANRF sources may provide in-kind support in addition to in-cash contributions in the form of access to equipment, testing facilities, software, technical expertise, field-testing assistance, dedicated or part-time experts with experience in market validation, etc.

In both modes, ANRF support would be for a period of five years, with tapered funding in the last two years. The centre is expected to generate revenue through other collaborative R&D projects, contract research for industry, consultancy services and other initiatives.

Total budget contribution by ANRF is expected to be ₹ 400 Cr for the first edition of the ATRI initiative.

Role of Industry Partners

Industry partners play a pivotal role in the success of ATRI Centres and their engagement is expected to be strategic, sustained and directly relevant to the proposed technology translation. Each proposal must have at least one committed industry partner related to the technology proposed, identified at the time of submission.

Apart from co-funding in cash and a top-up in-kind contribution, the industry partners are expected to:

- Support the translation of technology, as proposed.

- Provide access to relevant facilities and infrastructure as applicable.
- Enable testing with customers and real-world market environments.
- Support market validation by facilitating customer pilots and aligning the technology with market needs.
- Contribute to the progression of Market Readiness Levels (MRL).

Proposals in which industry participation is peripheral or not aligned with the translational objectives may not be viewed favourably during evaluation.

Sectors

The sectors listed below are only indicative, and proposals in other relevant sectors may also be submitted. Proposals may also combine not more than two sectors, where appropriate. Further, translational research that forms pipelines aligned with sectors identified under the RDI Scheme is encouraged. Please visit <https://rdifund.anrf.gov.in/> for more details.

Indicative Sectors:

1. Energy
2. Advanced Materials
3. Photonics
4. Electronics and Digital Technologies
5. Transport
6. Smart Infrastructure
7. Smart Manufacturing
8. Sustainable Agriculture
9. Health and Medical Technologies
10. Molecular and Synthetic Biology
11. Security and Defence
12. Environmental Science and Climate Change

Eligibility

- LPIs and PIs should be Indian citizens. Foreign nationals (including OCI and NRI) are also eligible to apply, provided they fulfil the eligibility criteria notified by ANRF.

- LPI and PIs must hold a regular academic/research position in a recognized academic institution, national laboratory or any other recognized R&D institution in India.
- LPI and PIs should hold a PhD degree in Science, Engineering, Social Sciences, or an MD/MS/MDS/MVSc degree.
- LPI should have at least five years of service remaining before superannuation at the time of proposal submission.
- Researchers from industry may be included as “Honorary Investigators”.

General Conditions

- LPI can submit only one proposal during a call.
- There can be multiple proposals from an institution, however, not more than one ATRI centre shall be supported per institution
- Institutions can propose an ATRI centre that integrates multiple technologies across different sectors under a single framework.
- The proposal submission process will follow a two-stage approach. Initially, applicants must submit a Pre-Proposal outlining the project concept, objectives, expected outcomes, technology readiness level (TRL), industry engagement plan, etc. Only shortlisted applicants from the Pre-Proposal stage will be invited to submit a Full Proposal with comprehensive details and documented evidence of industry interest and support.
- A Technology Readiness Level (TRL) Framework developed under the supervision of the Office of the Principal Scientific Adviser to the Government of India may be used to assess the TRL levels.

Mode of Application and Selection

The Call for proposals will be notified through the ANRF website "www.anrf.gov.in" and ANRF online "www.anrfonline.in".

The selection will be based on the impact of the technology; translation and commercialisation potential; technical feasibility; value proposition; strength, relevance and depth of industry partnership, including demonstrated commitment to technology translation and market adoption; efficacy of the team; proposed work plan and deliverables. The Program Advisory and Monitoring Committee (PAMC), constituted by ANRF, will evaluate and recommend the proposals for funding support.

Review and Monitoring

The performance of the ATRI centres will be reviewed periodically by the PAMC. The review will assess the status and progress of TRL advancement together with MRL progression.

IPR and Licensing

The academic and industry partners have to sign a formal agreement before commencement of the project for matters related to IPR and licensing of the outcomes arising from the project, to enable smooth exploitation of the research results. A duly signed copy of the agreement has to be submitted to ANRF before the release of the first instalment of the grant.

Frequently Asked Questions

Q1: Can an applicant submit multiple proposals

A1: No, an applicant can submit only one proposal under a given call.

Q2: Can there be multiple proposals from a host institution

A2: Yes, multiple proposals in different thematic areas can be submitted; however, only one ATRI Centre per institution will be supported.

Q3: Will fundamental research with a strong possibility of practical application be supported?

A3: No, the ATRI Centres are intended for technologies at higher TRL levels of 4 and above, with potential for commercialisation. Proposals must also demonstrate strong market interest for commercialisation.

Q4: At what stage of maturity must the technology be for funding support?

A4: The technology must have reached at least TRL 4, where proof of concept has been validated in a laboratory environment. Proposals should demonstrate a clear pathway for advancement to TRL 7 (prototype demonstration in operational environment).

Q5: How many team members are required to submit a proposal for ATRI centres

A5: Each proposal must include one PI and a minimum of two Co-PIs.

Q6: Can a Co-PI belong to a different institution?

A6: Yes. While the ATRI Centre will be established at the host institution of the PI, Co-PIs with relevant complementary expertise may belong to other institutions. However, funding will be provided only to the host institution.

Q7: How should the market interest or readiness be demonstrated?

A7: Applicants must provide a compelling justification for market readiness, including an Expression of Interest from industry partners willing to adopt, collaborate or support the proposed technology.

Q8: Can a Co-PI be added at a later stage while the project is ongoing?

A8: Yes, Co-PIs can be added with proper justification during the course of the project.

Q9. Can I submit a proposal that was previously submitted to ANRF or another R&D scheme?

A9. No. Proposals that overlap with those submitted earlier to ANRF or any other R&D funding schemes are strongly discouraged. PIs are advised not to submit such proposals to ATRI Centres.

Q10. What if my idea has been explored before, but has now progressed further?

A10. If the proposal demonstrates clear advancement and presents technologies that fall within TRL-4 to TRL-7, it may still be considered, provided the progress is substantial and well-documented.

Q11. Do I need to identify an industry partner before submitting the proposal?

A11. Yes. Each proposal must have at least one committed industry partner identified at the time of submission.

Q12. Can existing centres or facilities be proposed under the ATRI initiative?

A12. No. Proposals should not be based on rebranding, restructuring, or continuation of existing centres or facilities. While Principal Investigators may build upon prior experience or capabilities, the ATRI Centre itself must be a newly established entity and not a scaled-up version of an earlier establishment.

Pre-Proposal Format:

Sector: (Dropdown: indicative sectors from list) (Can choose upto two sectors)

- Title: ATRI Centre on
- Summary:
- Keywords:
- Outcome
- Technology Proposed: (Can add more technologies)
 - Maturity level of technology:
Current TRL level
Target TRL level
 - Technical plan (5000 characters)

- Output and deliverables
- Demand justification
- Go-to-market plan
- Potential users/industry
- Team
- Honorary Investigators (if any)
- Industry Partners and their contribution

(Inclusion of industry partners solely for financial contribution, without technical or market relevance, must be avoided)
- Mode of Funding: Mode I(a) or I(b) (dropdown)
- Total Budget:
- Industry Funding Amount:
 - Cash
 - In-kind (if any)

Full Proposal Format:

1. Technical document (*upload as per template below; Separate technical document for each technology proposed*)
2. Budget:
 - Headwise budget details
 - ANRF support:
 - Industry support:
3. KPIs, Year-wise (Expected Outcome and Target value)
 - (i) TRL-linked KPIs
(Clear and measurable KPIs linked to TRL progression, milestones and deliverables. Examples include: Number of prototypes, TRL achieved, validation results, test reports, IP filings, publications, pilot deployments, or industry engagements.)
 - (ii) Supplementary KPIs
(Additional KPIs related to capacity development, institutional strengthening, scientific output and ecosystem development. Examples include: number of human resources trained, skill development workshops, internships, student participation, new labs/test benches, shared infrastructure created,

publications, conference papers, standardization contributions, partnerships with industry, engagement with regulators, spin-offs.)

4. Letters of Interest from prospective users
5. Letters of Commitment or MoUs from industry partners for co-funding support.

Technical Document Template

1 State of Art

1.1 International

1.2 National

(Provide a comprehensive and up-to-date review of the current status of technology development in the chosen domain, corresponding to the technology that is proposed. Include global developments, leading players and benchmark technologies. Outline national capabilities and the current status of research.)

2. Significance of the proposed technology translation

(Explain why this technology translation is important. Describe the scientific, industrial or societal need it addresses and how it contributes to national priorities such as strategic capability, competitiveness, sustainability or self-reliance. Highlight the expected impact of translating this technology.)

3. Innovation Gap to be addressed

(Clearly define the specific gap in current technologies or processes that the proposed work will address. Present the limitations of the existing technical, economic or operational benchmarks, and describe the 'before and after' improvement aimed at.)

4. Current TRL and Target TRL

(State the current TRL, the process of validation, and the targeted TRL, highlighting measurable advancement. Explain what demonstration is required to reach the TRL aimed)

5. Technical plan for advancing the TRL level

(Describe how the project will be executed. Credible and compelling translational plan for proposed technology or research activities)

5.1 Workplan and methodology

5.2 Design, fabrication and testing phases

5.3 Validation strategy (bench, field, pilot)

6. Conceptual plans for market validation and Go-to-Market

(Describe how the proposed technology will be validated in real-world conditions and how it will reach the intended users or markets. Outline the plan for pilot deployments, end-user feedback, certification or regulatory approvals (if applicable), and scale-up pathways. Provide an indicative strategy for market entry, such as licensing, startup creation, joint development with industry, or integration into existing products. Mention potential customers, market size, and competitive advantages, wherever available.)

7. Milestones and Timelines

(Link between each milestone and TRL progression should be provided)

8. Deliverables

(List the tangible output expected from the project, such as: Prototypes or demonstration units, Pilot-scale systems, Process technologies, IP filings, Validation and test data, etc.)

9. Risk Assessment and Mitigation Strategy

(Key technical, regulatory, market and execution risks, mitigation and fallback approaches)

10. Roles and Responsibilities of team members

(Clearly define the roles of the LPI, PIs and Honorary Investigators (if any). Describe how their combined expertise will support the successful technology translation.)

11. Industry Participation and Commitment

(Describe the role of industry partners in terms of co-development and other processes towards stepping up to market deployment. Mention financial support and in-kind contribution, if any.)

12. Role of other collaborators

(Describe the contribution of collaborators who are not part of the core project team. Specify their role in research, development, validation, testing, regulatory guidance, or access to facilities.)

13. Intellectual Property Status and Strategy

(Existing patents/ applications, ownership, FTO assessment, if any. IP expected to be generated and plan for protection and licensing between partners.)

14. Financial sustainability plan

(Outline the financial sustainability strategy, highlighting diversified funding sources and long-term revenue mechanisms to ensure operational continuity.)