French Indian call for joint research and innovation project proposals in "Applied Mathematics and Artificial Intelligence" 2026 edition

Jointly opened by the French National Research Agency (ANR) and the Department of Science and Technology (DST), Ministry of Science & Technology, Government of India

IMPORTANT
The evaluation of Indo-French project proposals is carried out by ANR and DST according to the procedures defined below, in addition to the specific procedures for each organization, which are available on their respective websites.
Before submitting research project proposals, it is imperative to carefully read the entire text of the call for proposals, the specific terms and conditions, and the financial regulations of the two organizations.

Contact ANR

Dr. Eugenio Echagüe, Scientific Project Officer
E-mail : eugenio.echague@agencerecherche.fr
Tel: +33173548221

Prof. Dr. Mamadou Mboup, Scientific Coordinator
E-mail : mamadou.mboup@agencerecherche.fr
Tel: +33173548131

Contact DST

Dr. Sapana Kaushik, Scientist 'E'
E-mail : sapana.kaushik@nic.in
Tel : 011-26590289

1. CONTEXT AND CALL FOR PROPOSALS OBJECTIVES

Following the meeting of the Indo-French Joint Committee of Science and Technology (JCST) which took place in Delhi NCR on January 18th, 2024, an initial call dedicated to "Green hydrogen innovations for sustainable energy solutions" was launched in 2025.

In order to strengthen the Indo-French scientific partnership, the French National Research Agency (ANR) and the Department of Science and Technology (DST), Ministry of Science & Technology, Government of India are launching a second call for proposals in February 2026, dedicated to Applied Mathematics and Artificial Intelligence.

The aim of this second call is to consolidate Indo-French research networks in Applied Mathematics and Artificial Intelligence and create new ones. Through bilateral funding, both organizations seek to fund innovative binational projects that demonstrate strong synergy between the teams in each country and real integration of joint work, i.e. effective cooperation between the Indo-French partners. Partners will work together as a joint team with complementary competencies in one common project, creating a joint output.

Each side will allocate a maximum of 1,5 million EUR, to support joint research and innovation projects. The financial requirements should align with the project's goals and the number of applicants involved.

Each funding organization will cover expenditures for their respective country's teams according to its own rules. Details can be found in the underlying call text in the "Funding Regulations" section (§ 6). As far as possible, the project start and end dates should be the same for the French and Indian partners. The projects will be funded for **up to three years**[1].

As both countries intend to encourage researchers' mobility and knowledge exchange between France and India, consortia are asked to include concepts for integrated collaboration between partners from both countries and cross-border networking (e.g. regular meetings of participating work groups, common workshops, exchange of personnel between research organizations, joint publications, visas, medical insurance[2] etc.).

[1] An extension of the funding period, not exceeding one additional year, may be granted on a case-by-case basis, subject to the specific needs of the project

[2] DST norms, applicable to the Indian partners.

2. RESEARCH AREAS

The objective of this joint call is to support research addressing the next four thematic areas, including the following related subtopics:

1. **Mathematical Foundations of AI**

Subtopics

- Geometric approaches and information geometry for AI: Geometric methods, including information geometry, offer insights into the structure and learning dynamics of AI models.
- Algebraic and formal modeling for AI, low rank matrix and tensor decomposition algebraic techniques provide tools for analyzing and designing AI models with structured representations. For example, deep convolution neural networks which are higher degree polynomial functions of inputs is a new class of neural networks which can be analyzed using algebraic techniques.
- Stochastic modeling and AI and statistical evaluation (stochastic processes, random matrices, etc.). Stochastic models help capture randomness and uncertainty in AI systems, from training to prediction. Stochastic models and statistical evaluation will encompass stochastic approximation and Markov chain Monte Carlo methods with applications to machine learning, random matrices, queuing models and bandit optimization, among others. Non-uniform data across clients in federated learning is another paradigm.
- Analytical approaches: control-theoretic foundations of AI (stability properties, convergence behavior and guarantees), statistical learning theory, high-dimensional geometry and probability, as well as applications of approximation theory to machine learning.
- Limiting laws and guarantees for the behavior of large-scale AI systems.

2. **Theoretical foundations of Optimization and AI**

Subtopics

- AI-assisted optimization and control: data-driven approaches.
- Optimization in AI context: distributed data and models, concept drift/distributional shifts, multi-criteria optimization including regularization, optimization for non-Euclidean spaces.
- Fundamental limits of AI: complexity statements bounding the potential of generalization.
- Optimal transport theory: Optimal transport provides a powerful framework for comparing and aligning data distributions in AI.
- Automatic differentiation: approximating gradients and higher-order derivatives are a crucial component of efficient optimization techniques for machine learning, e.g., gradient-based methods are crucial for training deep learning models.
- Multi-agent environments: game theory, theory of cooperative reinforcement learning.

3. Mathematics for safe, trustworthy and reliable AI

Subtopics

- Interpretability and explainability of AI systems are mandatory so that solutions provided by such systems can be explained (to humans), understood and accepted: formal methods and logical formalization, statistical theory of causality (in order to infer and leverage causal relations, rather than just correlations), representation and reasoning (creating mathematical models to improve reasoning capabilities of AI systems)
- Fairness to ensure the equity of the solutions provided by AI tools: optimal transport, sensitivity analysis, game theory, synthesis of fair-by-construction systems.
- Uncertainty quantifications in the context of AI solutions seek to ensure that AI systems perform reliably under perturbations or adversarial conditions, or with uncertain data: robustness aspects, propagation and retro-propagation, stochastic modeling, modal or interval logics.
- Frugality: Frugal AI emphasizes efficient learning using limited data, computation or energy resources: algorithms, optimization.

4. AI Modeling for PDEs and PDEs Modeling for AI

Subtopics

- Numerical analysis with AI methods: Numerical algorithms are increasingly combined with AI to improve the accuracy and efficiency of scientific computations.
- PDE modeling of neural networks: Multi-physics and multiscale modeling leverage AI to handle the interaction of multiple physical processes in a unified framework.
- Learning-enhanced control (neural networks can be used as controllers, or to generate controllers), control-enhanced learning (control of hyperparameters, or of training sets, or of the decision-making).
- Study of stochastic PDE using AI (solvability, control, estimations and inverse problems).
- Neural PDE, PDE inspired designs for neural networks architectures.

Even if at the early stages of research, all projects must consider issues related to environmental and socio-economic impacts if relevant to their research topic.

3. Projects Proposals Submission

French and Indian partners must prepare a joint scientific project proposal.

The project must be submitted in parallel to the respective funding organizations using their respective submission templates.

The joint project proposal provided to each organization **must be identical** in scientific content with identical acronyms and titles.

Each team must appoint

- a national scientific coordinator for ANR;

- a PI[3]/Co-PI[4] for DST.

A full project proposal includes the scientific document, CVs, and all the information required to be submitted online on the respective submission platforms of ANR and DST:

- French partners:

Project proposals must be submitted before April 20th 2026, 5:00 pm (CEST) on the following platform:

https://aap.agencerecherche.fr/_layouts/15/SIM/Pages/SIMNouveauProjet.aspx?idAAP=2384

- Indian partners:

Project proposals must be submitted before April 20th 2026, 5:00 pm (IST) on the following platform:

e-PMS Department of Science and Technology Home Page

3.1. A. SUBMISSION OF FULL PROJECT PROPOSALS TO ANR

The French partner's scientific coordinator **must submit his or her full project proposal (scientific document, CV, information filled in online)** on the ANR submission platform before **April 20th 2026, at 5:00 pm (CEST).**

This submission is mandatory to participate in the selection process.
The document *« Modalités de participation pour les partenaires sollicitant une aide de l'ANR » - "Terms of participation for partners applying for ANR funding"*- details how to submit an application online. It can be downloaded from the current year's call for proposals website page: : https://anr.fr/ANR-DST-MIA-2026

3.1. B. SUBMISSION OF FULL PROJECT PROPOSALS TO DST

The Principal Investigator (PI) of the Indian partner **must submit his or her full project proposal (scientific document, CV, online filled-in information)** through **ONLINE MODE ONLY** by Scientists/ Engineers/ Technologists / Faculties working in universities and other Academic institutions; R&D institutions / laboratories having adequate infrastructure and facilities to carry out R&D work. The PI(s) should have relevant experience, as evidenced by previous prototype commercialization or development or practical experience in the chosen area/topic with field knowledge. It is advised to include one Co-Principal Investigator (Co-PI) in the proposal.

[3] Principal Investigator (PI) is the equivalent of scientific coordinator on the ANR side
[4] Co-PI is the 2nd lead of the project from the same institute as the PI.

On the Indian side, the project proposal should be submitted in the enclosed format through ONLINE MODEONLY (e-PMS Department of Science and Technology Home Page). NO HARD COPY of the project proposal should be submitted.

The funding will be governed by the Department of Science and Technology funding guidelines.

Please ensure that the following documents and the proposal have been completed and uploaded.

i. Certificate from the investigator (in the enclosed format).
ii. Endorsement from the Head of the institution on Letter Head (in the enclosed format).
iii. A signed certificate for the Conflict of Interest (in the given format)
iv. Biodata of PI/Co-PI

Applications received without the above documents and with incomplete information will not be entertained. Soft copies in PDF format must also be emailed to the DST Scientific Officer in charge on or before **April 20th 2026, 5:00 pm (IST)**

This submission is mandatory to participate in the selection process.

3.2. SCIENTIFIC DOCUMENT

French and Indian partners must prepare **a joint scientific project, with identical scientific content, using submission templates provided by each agency**.

Each team must appoint

- a national scientific coordinator for ANR;
- a PI/Co-PI for DST.

The project must be submitted in parallel to the respective funding organizations.

- French partners submitting to ANR:

The scientific document consists of a maximum of 35 pages in A4 format, including a bibliography, diagrams, and footnotes, as well as a description of the requested budget and its scientific justification.

The document must be in PDF format without any protection.

- Indian partners submitting to DST:

It is essential to comply with DST's procedures and submission format

4. PROJECTS PROPOSALS ELIGIBILITY

To be eligible, detailed proposals and CVs must comply with all the eligibility conditions, whether common to both funding organizations or specific to each.

The information entered online (ANR platform) takes precedence over the information in the scientific document if these two sources of information do not tally, including if they are incorrectly filled in or missing.

No modification of data will be possible, and no document will be accepted after the closing date and time of the call from either of the two organizations. Data entry is the direct responsibility of the applicants (French scientific coordinator for ANR's platform and Indian scientific coordinator (PI) for DST).

Project proposals **may be declared ineligible at any time** during the evaluation process. Proposals that do not meet the eligibility conditions, whether common to both organizations or specific to each, will not be evaluated a priori and will under no circumstances be eligible for funding.

4.1. JOINT PROJECT PROPOSAL ELIGIBILITY CRITERIA

Completeness of the project proposal:

The full project proposal must be finalized as requested by both organizations (ANR online on the dedicated submission platform) by the communicated closing date and time.

- <u>French Partners to ANR:</u>

To be complete, the full project proposal must include the following:

- the scientific document, 35 pages in a PDF file without protection submitted on the ANR's platform;
- the CVs of the ANR scientific coordinator and the DST PI/CoPI, combined in one PDF file without protection, submitted as an annex;
- online data filled as requested by ANR;

- <u>Indian Partners to DST:</u>

It is essential to comply with DST's procedures and submission requests

Composition of the consortium:

The consortium **must include at least one partner eligible for ANR funding and one partner eligible for DST funding**.

Participation of a company/NGO in the consortium is possible respect to the following constraints:

- ANR: eligible for funding according to ANR's funding regulations
- DST: not eligible for funding, own funds only (cooperation partners)

On the Indian side, cooperation partners are asked to contribute to the project, e.g., by financial, infrastructural, or personal means. In this case, a letter of intent (LOI) describing their contribution to the project is required.

Scientific nature of the full project proposal:

The full project proposal must relate to the themes expressed in point 2, "Research Areas."

Project proposal duration

The project's planned duration must be the same for both countries' partners and no longer than 3 years. An extension of the funding period, not exceeding one additional year, may be granted on a case-by-case basis, subject to the specific needs of the project.

4.2. ANR's ELIGIBILITY CRITERIA

ANR verifies the eligibility of project proposals by taking into account the conditions described above (§ 4.1) and explained in the document *« Modalités de participation pour les partenaires sollicitiant une aide de l'ANR » - "Terms of participation for partners applying for ANR funding"*- available on the web page dedicated to this call.

4.3. DST's ELIGIBILITY CRITERIA

DST verifies the eligibility of project proposals by considering the conditions described above (§ 4.1) and reflected in the DST call templates.

5. PROJECT PROPOSALS EVALUATION AND SELECTION FOR FUNDING

Each full project proposal is evaluated on the basis of the information as completed and submitted online at the closing date and time, in accordance with the evaluation criteria (see § 5.3 'Evaluation criteria'). The evaluation will involve external peer reviewers and panel members. **The scientific panel is joint for both funding organizations**.

5.1. REVIEWERS EVALUATION

The aim is for each project proposal to be evaluated by at least two external peer reviewers (individuals who do not take part in the joint scientific panel meetings), who the ANR and the DST call in after checking that there is no conflict of interest. Peer reviewers operate

individually and confidentially without any discussion with third parties. Peer reviewers complete an individual assessment report, commenting on each evaluation criterion.

ANR and DST will call on them according to their own procedures.

5.2. PANEL MEMBERS EVALUATION

The full project proposals are evaluated by the members of the joint scientific panel based on the information submitted by the applicants by the closing date and time of the call for proposals and on the peer reviewers' reports. The panel members may put these assessments into perspective because, unlike the reviewers, they have a synoptic view of all the full project proposals.

The scientific panel consists of highly qualified French, Indian, or foreign individuals from the research communities selected according to the submitted full project proposals. Panel members are appointed based on their scientific expertise, and the panel is co-chaired by two chair representatives, one appointed by ANR and one by DST.

5.3. EVALUATION CRITERIA

Criterion 1: Scientific excellence

- Conformity with the call for proposals aims and degree of conformity with designated research areas
- Scientific and technical quality, innovativeness and knowledge gain of the joint research project
- Methodology and quality of project construction, feasibility and appropriateness of the joint research project (timeline, work packages)

Criterion 2: Consortium, Collaboration and Implementation

- Quality, competence and complementarity of the partnership to address the objectives of the project including the eventual active involvement and commitment of companies and organizations; skills, expertise and involvement of the ANR project coordinator and the DST PI/Co-PI.
- Added value of the bilateral cooperation and expected benefit for France and India, as well as the complementarity of cooperation.
- Appropriateness of resources and funding requested.

Criterion 3: Impact and benefits of the project

- Overall impact of the project, including scientific, technological, economic and social aspects, if relevant.
- Strategy for the dissemination and exploitation of the results; promotion of scientific, technical and industrial culture.

External peer reviewers and panel members use **the same evaluation grid.**

With regard to the sub-criterion "Appropriateness of resources and funding requested" of the Criterion 2 "Consortium, Collaboration and Implementation", the economic context of the partners' countries is taken into account. Project coordinators[5] are informed that under the bilateral agreement, DST will provide Indian partners with a maximum funding of 15 Million INR for the three-year duration of the project. French applicants are invited to submit projects that justify ANR funding for indicative amounts of 200 k€ to 300 k€, depending on the project's ambition and the number of partners applying for ANR funding. The maximum amount that can be requested from ANR to fund a project is set at 300 k€.

5.4. SELECTION AND FUNDING DECISION

Once the peer reviewers have completed their evaluations, the joint scientific panel meets in a plenary session (virtual meeting).

The collective discussion results in ranking the full project proposals in relation to each other. The outcome of the discussion is recorded in a final evaluation report reflecting the consensus reached by the joint scientific panel.

The list of projects selected for funding will be published on ANR and DST websites around September 2026.

ANR and DST will notify the successful applicants individually when the results are published.

6. FUNDING REGULATIONS

Each organization funds eligible expenses for its country's teams according to its rules.

- ANR funding regulations:

https://anr.fr/RF

- DST funding regulations:

The financial guidelines are outlined in the DST call templates.

[5] Equivalent to PI/Co-PI on the Indian side.

7. SCHEDULE

Call for proposals opening date: February 19th, 2026.

Deadline for full proposals submission on ANR's website: April 20th, 2026, 5:00 pm (CEST).

Deadline for full proposals submission on DST's website: April 20th, 2026, 5:00 pm (IST)

Joint decision and publication of results: September 2026 (indicative date)

Possible projects starting from December 2026.