Projets de recherche fondamentale IVADO - External Review and Midterm Feedback

Context and Rationale

This program enables the funding and support of five large-scale research framework programs related to strategic topic areas. The total IVADO budget for this funding opportunity is $6 million.

The research framework programs have been developed collaboratively by research teams to address major scientific challenges in artificial intelligence. Projects have been developed and designed in order to:
- Advance knowledge.
- Have a strong potential for impact on the socio-economic development of Québec and the rest of Canada.
- Strengthen the global positioning of IVADO's community.
- Structure and mobilize diversified actors (academia, industry, fields of application, etc.) in Québec and the rest of Canada.
- Establish new collaborations, including international ones.

This funding opportunity is not a competition, but a call upon the research ecosystem to work together. For this reason, a consultation was launched (Stage 1 - June to July 2021) to jointly identify strategic topic areas that the chosen research framework programs could address and teams that would be best suited to deliver them (Stage 2 - August to November, 2021). Detailed research proposals were then developed (Stage 3 - November to December 2021). The rollout of the framework programs (January 2022 to August 2024) include an external review and feedback.

The five supported research framework programs are:

- [Integrated Machine Learning and Optimization for Decision Making under Uncertainty: Towards Robust and Sustainable Supply Chains](#)
- [AI, Biodiversity and Climate Change](#)
- [Human health and secondary use of data](#)
- [AI for the discovery of materials and molecules](#)
- [Human-centered AI: From Responsible Algorithm Development to Human Adoption of AI](#)

Review Process

The review process follows the values of the program: transparency, openness, collaboration, integrity, constructive feedback, and respect for the amount of work performed by all participants. It is an integral part of IVADO's goal to ensure the researchers can focus on high quality research

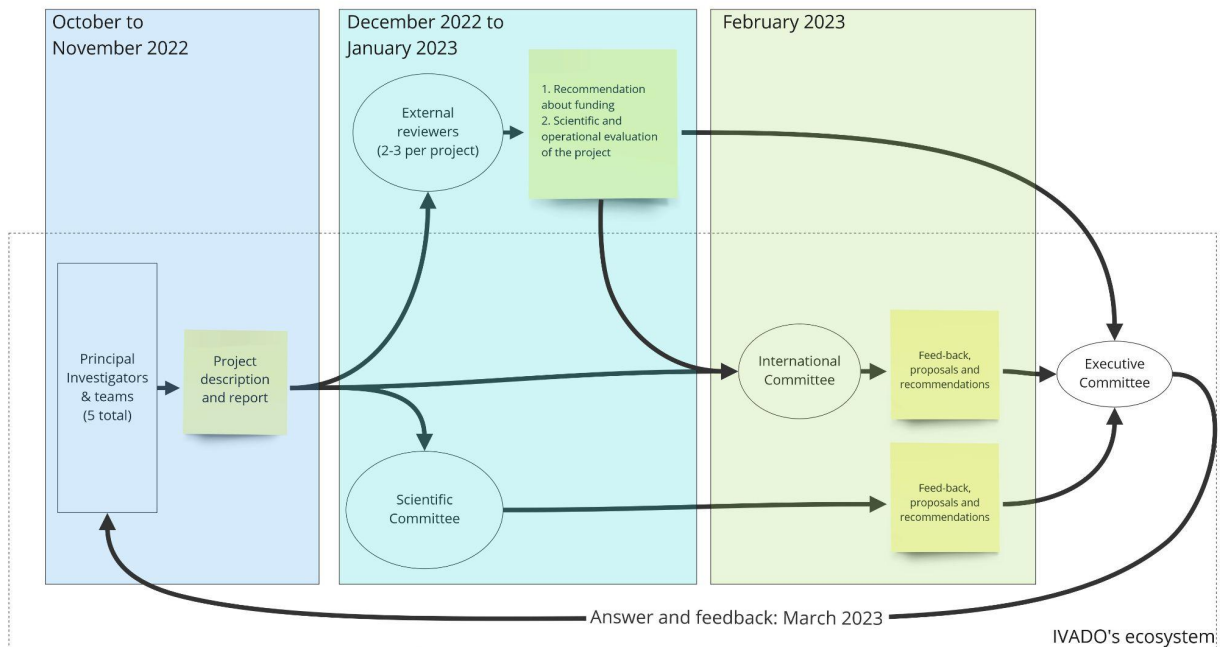The goal of the review is three-fold:
1. First, to have an unbiased external review of the research plan, activities, and use of resources (actual or planned) for each of the five research programs.
2. Second, to have a checkpoint one year into the research programs in order to assess their progress and to allow for early course correction or enrichment if necessary (strongly related to the last point).
3. Last, to provide useful feedback to the researchers on all the aspects of their research programs: not only regarding scientific elements, but also with respect to management, planned activities, opportunities for collaborations, etc.

The review process will rely on different stakeholders:
- Principal investigators and their teams
- Independent external reviewers
- Members of IVADO's Scientific Committee
- Members of IVADO's International Committee
- IVADO's Executive Committee

IVADO will provide support to all these stakeholders according to their respective roles.

The stakeholders will make recommendations and comments to the Executive Committee, who will in turn decide to cease, continue or adapt the funding.

October to November 2022

December 2022 to January 2023

February 2023

Principal Investigators & teams (5 total)

Project description and report

External reviewers (2-3 per project)

1. Recommendation about funding
2. Scientific and operational evaluation of the project

Scientific Committee

International Committee

Feed-back, proposals and recommendations

Executive Committee

Feed-back, proposals and recommendations

Answer and feedback: March 2023

IVADO's ecosystem

Evaluation Criteria

- Consistency with the general objectives of the PRF3 program
  - Community-building, potential for international collaborations, potential for socio-economic impacts, …
- Evaluation of the project and research activities
  - Advancement of knowledge: clear and relevant methodology/approach, reasonable goals, originality, scientific impact, …
  - Process/operations: appropriate use of funds, training, efficient planning and project management,efficient coordination of the activities, …
- Research team
  - Composition of the team adapted to the project, diversity in scientific origins and in levels of career advancement, training/progression opportunities for students and early career researchers, …
- Outreach and Scale-up
  - Long-term vision, nurturing of a community, sharing of results, training of the next generation, ...
- EDI Plan
  - Relevance of EDI objectives with regards to the team and the research topic, consistency of the measures with the goals, realistic deliverables, …

Stakeholders

Principal Investigators and their teams: The PIs and their teams launched their projects in january 2022. They are responsible for providing the project description and report, on which the review process will be based. The teams have emerged from the consultation and consolidation phases. Therefore, for some of them, this is their first collaboration.

External reviewers: Two or three reviewers will be assigned to each project. They will be experts in the field or, given the multidisciplinary nature of the projects, experts in some aspects. Each will produce an external review report.

Scientific Committee (IVADO): Each member will have access to the project description and report for each research framework program. They will have an opportunity to provide feedback to the **Principal Investigators and their teams**, as well as to share their comments with the **Executive Committee**. Their comments and feedback will provide the perspective of Montreal's AI community.

International Committee (IVADO): Each member will have access to the project description and report, but also to the external reviews. They will have an opportunity to provide feedback to the **Principal Investigators and their teams**, as well as to share their comments with the **Executive Committee**. Their comments and feedback will provide an international perspective.

Executive Committee (IVADO): This committee will receive the external reviews and, based on their recommendations, will decide to cease, continue or adapt the funding of each project. They will also have access to the project descriptions and reports, the Scientific Committee feedback, and the International Committee feedback. The committee will also provide additional feedback to the **Principal Investigators and their teams**.

Documents

Project description and report: All **Principal Investigators and their teams** will provide a set of documents as the basis of this review and feedback process. Documents required are:
- The progress video presented to the Executive Committee in June 2022 (optional)
- French and English lay summaries of the project (½ page each)
  - For public use
- Project description (4 pages)
  - Including: context, process, expected benefits/impacts, etc.
- Planning (3 pages)
  - In the form of a GANTT chart or a description of the main milestones
  - Including what has already been done since the start of funding and scenarios for the future.
  - Important to present the project as self-contained, *but also* to describe how it can be a springboard for future research beyond 2024.

- Dissemination plan, knowledge sharing and training (3 pages)
  - Including planned and already completed activities, publications, press reviews, …
- People involved and roles (3 pages)
  - Including comments on the dynamics of the team, organised/planned activities, and strategies to support collaborative work.
- Budget justification (2 pages)
- EDI commitment (1 page)
  - Including goals, measures, and deliverables
- Elements of the project description and report that will have *no bearing on the funding recommendation*, but on which feedback, suggestions, and recommendations will be provided (note: PIs can also present these elements in other sections if they believe they are relevant to a particular aspect of the review):
  - Potential environmental impacts (see FRQ)
  - Potential ethical/moral issues
  - Relevance with SDGs

External review: Each **external reviewer** will provide a report comprising:
- Evaluation of the project along each of the evaluation criteria
  - Including explicit feedback, suggestions, and recommendations for the **PIs and their teams** that would enhance the project
- General review of the progress of the project
- Confidential comments for the **Executive Committee**
- Recommendation for funding

Scientific Committee feedback: Feedback, suggestions, and recommendations for the PIs and their teams that would enhance the project.

International Committee feedback: Feedback, suggestions, and recommendations for the PIs and their teams that would enhance the project. Confidential comments for the **Executive Committee**.

Timeline

- Early November 2022: review guidelines shared with the **PIs and their teams**
- mid-December 2022: Project descriptions and reports sent to the **external reviewers** and to the **Scientific Committee**
- Early February 2023: External reviews received. External reviews and Project descriptions and reports sent to the **International Committee**
- Mid-February 2023: Scientific Committee feedback and International Committee feedback received

- Mid-March 2023: Decision reached by the **Executive Committee**. Feedback sent to **PIs and their teams**