



Technology Executive Committee

02 April 2024

Twenty-eighth meeting

16–19 April 2024 (19 April TEC-CTCN Advisory Board Joint session)

Information note on the AI Innovation Grand Challenge

Cover note

I. Background

1. As per Activity A.4.1 of its rolling workplan (2023–2027), the TEC is exploring the role of artificial intelligence (AI) and applied machine learning as enablers of climate solutions.
2. At TEC 27, the TEC agreed on a concept note for the AI Innovation Grand Challenge and to launch the AI Innovation Grand Challenge at COP 28 in cooperation with Enterprise Neurosystem. The TEC activity group on digital technologies that supports the implementation of this activity continued working with Enterprise Neurosystem inter-sessionally on operationalizing the concept note and prepared a detailed information note for this purpose.

II. Scope of the note

3. The annex to this note contains the information note on the AI Innovation Grand Challenge prepared by Enterprise Neurosystem under the guidance of the TEC activity group on digital technologies with support of the TEC secretariat.

III. Expected action by the Technology Executive Committee

4. The TEC will be invited to take note of the information note on the AI Innovation Grand Challenge.

Annex

Information note on the AI Innovation Grand Challenge

Introduction

The UNFCCC Technology Executive Committee (TEC) occupies a key leadership position in addressing the global climate emergency. As the policy body on climate technology under the UNFCCC and the Paris Agreement, the TEC supports countries in exploring the use of artificial intelligence for climate action, in particular through the UNFCCC Technology Mechanism Initiative on AI for Climate Action with a focus on least developed countries (LDCs) and small island developing States (SIDS). At its 27th meeting in September 2023, the TEC agreed to partner with Enterprise Neurosystem, a non-profit open-source AI research community that aims to maximize the use of AI models and make them freely available to help combat climate change.

The AI Innovation Grand Challenge will help build an open-source Technology Mechanism AI Climate Application Hub to showcase and make available concrete AI-powered solutions for climate action in developing countries with a focus on LDCs and SIDS.

Concept

The AI Innovation Grand Challenge is an AI technology development and innovation contest to discover new AI-powered solutions that are applicable for climate change mitigation and adaptation action in developing countries. The Challenge will drive global participation with prizes provided by Enterprise Neurosystem, including AI consulting assistance and IT infrastructure.

Submissions will be uploaded into the Challenge website for the independent review by eight judges against the below evaluation criteria. Four judges will be nominated by the TEC activity group on digital technologies and Enterprise Neurosystem, respectively, ensuring gender balance among judges in line with the TEC gender policy and the UNFCCC Gender Action Plan.

The Challenge is being undertaken as part of the Technology Mechanism Initiative on Artificial Intelligence for Climate Action, led by the TEC activity group on digital technologies in the context of the activity of the rolling workplan of the TEC to explore the role of AI and applied machine learning as enablers of climate solutions. Outputs under this activity have been aligned with the following activities of the UNFCCC Technology Framework: promoting the development, deployment and dissemination of existing innovative technologies and accelerating the scale-up and diffusion of emerging climate technologies and facilitating information-sharing and networking among relevant organizations and institutions to create synergies and to enable the exchange among relevant players of best practices, experience and knowledge on technology development and transfer.

Evaluation criteria

- Potential for success in terms of reducing greenhouse gas emissions and/or increasing climate-resilience;
- Suitability for different country context, including LDCs and SIDS;
- Alignment with the work of the TEC rolling workplan (2023–2027) and the Technology Mechanism Joint Work Programme (2023–2027);
- Positive consideration will be given to projects that are already implemented in developing countries;
- Positive consideration will be given to projects developed under female leadership;
- Positive consideration will be given to proposals from LDCs and SIDS.

Judges and evaluation logistics

- Promotion and outreach:
 - The UNFCCC secretariat has issued a press release and announcement during COP 28 related to the Challenge;
 - The UNFCCC secretariat will encourage participation by sending relevant information to national focal points for technology development and transfer;
 - The TEC activity group will invite the CTCN to promote the Challenge through its Network Members;

- Partners of the Challenge that donate prizes will be encouraged to do press releases related to the event and awards;
- An online campaign will be initiated by the Enterprise Neurosystem once a month during the general submissions timeframe to drive visibility and attention. This will include targeted campaigns on LinkedIn, Instagram, Facebook, and other channels to draw attention from data scientists, climate scientists, academia, entrepreneurs and students in all countries;
- Enterprise Neurosystem will conduct outreach through established academic innovation initiatives (Stanford Moonshots, etc.) to drive student interest and participation.
- Judges and voting: The voting will be a multi-stage vote to first determine a group of semi-finalists, followed by determining finalists and lastly a winner:
 - Eight judges will be required for voting duties;
 - Judges will include an equal balance of female and male representation;
 - Half of the judges will be selected by the TEC activity group and the other half will be determined by the Enterprise Neurosystem;
 - Geographical balance is encouraged in the judges' composition;
 - Four COP 29 badges with access for three finalists and one member of the Enterprise Neurosystem team will be provided by the UNFCCC secretariat in support of the onsite competition, award announcement and related publicity.

- Voting Process

- Broad Submission / First Round:

- Each entry will have a 250-word limit to describe the submission concept;
- Applicants will be asked to provide their names, present country of work, email address, phone number and gender profile of the team;
- There will be a field added to confirm the open-source nature of the proposal;
- If the entries are in the dozens, then all judges will evaluate all the submissions and vote on the twenty ideas they find compelling, to create twenty total semifinalists;
- All votes per submission will be ranked by the total number of votes per entry from all judges. Any ties will be added to the semifinalist pool for fairness (twenty-three semifinalists would be acceptable in the event of a four-way tie, etc.);
- In the event the entries are higher (1000+ etc.), each judge will be preliminarily assigned to a subset of entries divided among the judges and will decide on twenty ideas to move forward to a similar semifinal decision round. The eight judges will take the accumulated 160 entries and decide on the twenty semifinalists for consideration.

- Semifinalist Round:

- The twenty semifinalists will be notified and asked to submit a more detailed 500-word description of their concept;
- Judges will apply the same voting process as when choosing the semifinalists, to get to ten finalists. In the event of a tie, the finalist pool will be extended as needed (eleven finalists, etc.).

- Finalist Round:

- All ten finalists will be interviewed by the judges in an online interview format.
- Judges will vote for their first, second and third place choices. Votes by preference will be given weights accordingly (1st choice = 3 points, 2nd choice = 2 points, and 3rd choice = 1 point, to determine the rank order);
- Based on this vote, three COP finalists will be selected to travel to COP 29 to present to the judges in person and participate in the final event. Travel and accommodation will be provided by the Enterprise Neurosystem.

- COP 29 Event:

- All three COP finalists will present their ideas to the judges in person during COP 29;
- A winner will be announced and presented with a certificate and prize onstage during an UNFCCC event at COP 29, to be determined;
- Award Venue - Determined in partnership with the UNFCCC secretariat, based on the timeline of the award cycle, and the related event where the winner can be announced.

Draft schedule

- 25 March 2024: Initial draft of contest website content and entrant guidelines completed and submitted for review and inputs by the UNFCCC secretariat;
- 28 March 2024: Press release, email campaigns and social media drafts completed by the Enterprise Neurosystem, for wide distribution and promotion. Submitted to the UNFCCC secretariat for review;
- 2 April 2024: All graphics and logos identified, and approvals secured for use on contest website;
- 5 April 2024: Initial website built (content and graphics), and complete for testing;
- 15 April 2024: Partnership Agreement completed and signed;
- 16 April 2024: Website launched;
- 23 April 2024: Judges confirmed by Enterprise Neurosystem and the TEC activity group;
- 24 April 2024: Prizes confirmed by Enterprise Neurosystem (additional prizes may be added going forward);
- 25 April 2024: Outreach campaigns by Enterprise Neurosystem and the UNFCCC secretariat started with first wave;
- 9 May 2024: Online and academic outreach campaign (second wave) to drive submissions;
- 31 May 2024: Online and academic outreach campaign (third wave) to drive submissions;
- 30 June 2024: Online campaign (fourth wave) to drive submissions;
- 12 July 2024: General submission window closes;
- 12 August 2024: Twenty semifinalists determined. Semifinalists are invited to submit a 500-word summary;
- 29 August 2024: Targeted production go-live date of the AI Climate Application Hub. Submission and formal review process established for AI applications. Ongoing support arranged for the website;
- 13 September 2024: Ten finalists selected;
- 20 September 2024: Online finalist presentations (all ten in sequence, one day);
- 1 October 2024: Three Grand Challenge finalists announced;
- 11–22 November 2024: Three Grand Challenge finalists are flown by Enterprise Neurosystem to COP 29 for a presentation and an interview-style review. Winner determined by judges onsite (and remote if needed) and announced onstage. Launch of the AI Climate Application Hub formally announced, with a few selected applications available for download (AgroSpace, etc.);
- December and beyond: Enterprise Neurosystem will continue to work with all participants that are interested in continuing to explore climate change projects in its open community setting. The Grand Challenge could turn into an annual or biennial event to ensure continued growth of the application hub and the promotion of development, deployment and dissemination of existing innovative technologies and accelerating the scale-up and diffusion of emerging AI powered climate solutions.
