



**Technology Executive Committee**

05 September 2023

**Twenty-seventh meeting**

**19–21 September and 22 September 2023 (TEC-CTCN Joint session)**

## **Innovation Grand Challenge**

### **Concept 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 TEC26, the TEC welcomed with appreciation a presentation on artificial intelligence and applied machine learning by Enterprise Neurosystem delivered in line with Activity A.4.1.i. Enterprise Neurosystem, building on its previous experience, proposed to launch an innovation grand challenge in collaboration with the Technology Mechanism. The TEC requested the open-ended activity group supporting the implementation of Activity A.4.1 to continue engaging with Enterprise Neurosystem to develop a concept note on an innovation grand challenge.

#### **II. Scope of the note**

3. The annex to this note contains the concept note on an innovation grand challenge on AI prepared by Enterprise Neurosystem under the guidance of the open-ended activity group.

#### **III. Expected action by the Technology Executive Committee**

4. The TEC will be invited to consider the concept note contained in the annex and provide guidance on further work on this matter.

## Annex

# Concept note on the AI Grand Challenge

## I. Introduction

1. The UNFCCC occupies a key leadership position in addressing crucial challenges facing climate in our time. Equipped with principled and systematic programs, the UNFCCC can help structure international policy, and shape the introduction, implementation, and use of Artificial Intelligence (AI) and Machine Learning (ML) in keeping with its climate charter.
2. The following programs build upon each other and will create a pipeline of software and policy-building/best practices for the introduction, implementation, and deployment of AI for climate action.

## II. AI Grand Challenge

3. An AI technology development and innovation campaign to drive new AI technologies in the areas of climate change mitigation and adaptation. It will drive global participation with cash prizes, IT infrastructure and related publicity. This also helps addressing the issue of venture investment in climate applications and will in turn feed the UNFCCC Climate Application catalogue with ground-breaking innovations for use by developing countries, further accelerating and supporting the UNFCCC charter for capacity-building.
4. The evaluation criteria will be as follows:
  - (a) AI/ML applications that have the highest potential for mitigation or enabling potential for mitigation solutions;
  - (b) AI applications that could best aid the most vulnerable communities in adapting to the effects of climate change, either now or in the future;
  - (c) As a guideline, the proposals should assist the Technology Mechanism Joint Work Programme and the climate responses and mitigation options identified in the IPCC AR6;
  - (d) Solutions that could be implemented in various contexts and regions;
  - (e) Female leadership is considered a positive element of the evaluation.
5. Planning considerations include:
  - (a) Publicity and press releases: A series of press releases and a publicity campaign both online and via media outlets;
  - (b) Logistics and planning sessions: Monthly calls for planning and preparation, moving to weekly calls as the event draws close;
  - (c) Voting Duties: The voting process will be determined with the UNFCCC Technology Mechanism and can be a multi-stage vote to determine a group of semi-finalists, followed by finalists. Members of the Enterprise Neurosystem with related expertise, external dignitaries and partners, and designees from the UNFCCC Technology Mechanism could act as judges;
  - (d) COP 28 badges: A process should be conducted to ensure a minimum of three blue zone badges for the Enterprise Neurosystem team, if the AI Grand Challenge will be launched at COP 28;
  - (e) Awards Venue: This can be determined in partnership with the UNFCCC secretariat, based on the timeline of the award cycle (6 months, one year, etc.) and related events where winners can be announced.

6. UNFCCC Technology Mechanism Climate Application Hub:

(a) A repository of AI powered open-source climate applications that can be freely accessed by all countries, featuring the outputs of the AI Grand Challenge. This supports the objectives of the Technology Mechanism and capacity-building for developing countries;

(b) The Enterprise Neurosystem is building a secure AI catalogue for software distribution to developing countries and will indelibly link additional identification and information associated with each application. This in turn allows users to see the origin, development history and training provenance of each AI application, providing full transparency and ease of security assessments;

(c) There will also be checks and balances to guard against bias in each AI application, and best practices and tools applied to safeguard the equity and fairness of AI outputs. And the use of green power sources and sustainable training techniques for these AI applications will be a requisite part of the compliance and catalogue acceptance criteria, to reduce power consumption and associated carbon emissions;

(d) It will be a dedicated open-source project, but may support both open-source (free) and proprietary (paid) software, to deliver the full spectrum of related AI software offerings.

7. This can be cost-effectively implemented with contributions from Parties and the private sector. The Enterprise Neurosystem looks forward to supporting this innovation engine in partnership with the UNFCCC Technology Mechanism.