



भारत सरकार
दूरसंचार विभाग
दूरसंचार अभियांत्रिकी केंद्र
Government of India

Department of Telecommunications
Telecommunication Engineering Centre
K.L. Bhawan, Janpath, New Delhi- 110001



No. 14-1/2023-C&B/TEC/AI-Robustness

Dated 18.10.2023

Subject: Standard for Assessing and Rating Robustness of Artificial Intelligence Systems in Telecom Networks and Digital Infrastructure - reg.

Artificial intelligence (AI) and Machine Learning (ML) have gained significant traction across diverse domains, including Healthcare, Agriculture, Smart Cities, Finance, and more. Government organizations also deploy AI/ML for public services and e-governance. In the telecom industry, AI enables real-time decision-making and plays a growing role in upcoming technologies such as IMT-2030 (6G), satellite broadband, drone communication, and the Metaverse.

The telecom sector, crucial for information exchange and digital transformation, operates within a complex ecosystem driven by AI. Here, paramount importance lies in robustness, signifying AI's ability to perform reliably under diverse, unpredictable conditions. For the telecom networks and digital infrastructure, where connectivity is indispensable, robust AI isn't a luxury; it's a necessity. Developing a Responsible AI standard in telecom is imperative to ensure robustness and safety of AI/ML systems. Robustness may encompass an AI system's response to adversarial attacks, scalability, resilience, safety, and more. Assessing robustness is vital to ascertain the AI system's trustworthiness and responsibility.

National Digital Communications Policy-2018 mandates the synergistic deployment and adoption of AI. The National Strategy for Artificial Intelligence #AIforAll, and the Approach Documents for India, released by NITI Aayog, emphasise adoption of AI in a responsible manner in India, building public trust in the use of AI, and creating frameworks for compliance with relevant AI standards and guidelines. Telecommunication Engineering Centre (TEC), as the technical wing of DoT and the Standards Setting Organisation (SSO) in the field of telecom and related ICT sectors, recently released the Standard for Fairness Assessment and Rating of Artificial Intelligence Systems. Now, TEC proposes to develop a voluntary standard for assessing and rating the robustness of AI systems in telecom networks and digital infrastructure.

Accordingly, TEC is initiating stakeholder consultations and invites your inputs on the subject. Your valuable contributions as per the enclosed template may be sent to avinash.70@gov.in and dircb2.tec-dot@gov.in, preferably by 15th November 2023 please. Your insights are highly appreciated.

This issues with the approval of Sr. DDG, TEC.

Avinash
18/10/2023

(Avinash Agarwal)
DDG (Convergence & Broadcasting)
Email: avinash.70@gov.in

To:

1. All stakeholders

Copy for kind information to:

1. CEO Niti Aayog
2. Secretary Telecom/ Agriculture/ DST/ Defence/ Home / MeitY/ MIB / MoHUA/ MoRT&H
3. Member (Services)/ Member (Technology)/ Member (Finance)/ DG (Telecom) DoT
4. Principal Scientific Adviser (PSA) to the Government of India
5. Chairman TRAI/ Chairman DRDO
6. DG ICMR/ DG CDAC/ DG BIS/
7. CEO NeGD/ CEO CDOT/ CEO Prasar Bharati/ DG NTIPRIT
8. Directors of all IITs/ VC DIAT

Standard for Assessing and Rating Robustness of Artificial Intelligence Systems in Telecom Networks and Digital Infrastructure

Questionnaire

A. Respondent details:

- A1. Respondent type (Individual/ Academic institution/ Industry/ Association/ Others)
- A2. Name
- A3. Designation
- A4. Organisation
- A5. Headquarters
- A6. Turnover

B. Need for a Standard for assessing AI Robustness for telecom networks and digital infrastructure:

- B1. What are the various use cases/applications of AI in telecom networks and other digital infrastructure?
- B2. What new applications of AI in telecom networks and digital infrastructure are expected in the coming years?
- B3. What risks are anticipated due to the current and future use of AI in telecom networks and digital infrastructure?
- B4. When evaluating the robustness of AI systems, which aspects or dimensions do you consider most important, such as availability, accountability, explainability, fairness, privacy, reliability, resilience, safety, scalability, security, trust, and transparency?
- B5. How can one assess whether an AI system has a sufficient fallback plan for adversarial attacks or unexpected situations? How can real-world challenges be simulated during testing?
- B6. What roles are envisioned for government, standards organisations, and regulators in ensuring AI robustness in telecom networks and digital infrastructure?

C. Contours of a possible standard for assessing AI robustness:

- C1. How can AI systems be categorised to facilitate robustness assessment?
- C2. What essential steps or phases should be standardised for assessing AI system robustness in telecom?
- C3. What key metrics or performance indicators should be considered when evaluating AI system robustness?
- C4. Are there existing industry standards or guidelines regarding AI robustness? What methods are considered for evaluating robustness of the AI systems currently?
- C5. What key features should a standard for assessing AI systems for robustness, specifically focused on telecom networks and other digital infrastructure, include?
- C6. What considerations should be taken into account to ensure that the standard for assessing AI robustness remains adaptable to future advancements in AI and telecom technologies?

The responses to this questionnaire will serve as inputs for the proposed new standard, and their analysis may also be utilized in technical/research publications.