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| The International Teleocmmunication Union - Connecting the World. | | **International telecommunication union**  **Telecommunication Standardization Bureau** | |  |
|  | | | Geneva, 13 March 2020 | |
| **Ref:** | **TSB Circular 237** | | **To:**  - Administrations of Member States of the Union;  - ITU-T Sector Members;  - ITU-T Associates;  - ITU Academia | |
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| **E-mail:** | [ai5gchallenge@itu.int](mailto:ai5gchallenge@itu.int) | | **Copy to:**  - The Chairmen and Vice-Chairmen of Study Groups and Focus Groups;  - The Director of the Telecommunication Development Bureau;  - The Director of the Radiocommunication Bureau | |
| **Subject:** | **ITU Artificial Intelligence/Machine Learning (AI/ML) in 5G Challenge** | | | |

Dear Sir/Madam,

1 It is my pleasure to invite you to participate in the ITU Artificial Intelligence/Machine Learning in 5G Challenge, a competition which is scheduled to run from now until the end of the year.

2 Artificial Intelligence (AI) will be the dominant technology of the future and will impact every corner of society. In particular, AI / ML (machine learning) will shape how communication networks, a lifeline of our society, will be run. Many companies in the ICT sector are exploring how to make best use of AI/ML.

3 ITU has been at the forefront of this endeavour exploring how to best apply AI/ML in future networks including 5G networks and has already approved four specifications which form part of a toolkit to build Machine Learning into communication networks[[1]](#footnote-1), and further standards are in the pipeline[[2]](#footnote-2).

4 The Challenge is expected to build on ITU’s standardization efforts in AI/ML by adopting ITU’s AI/ML toolkit in 5G networks in the development of end-to-end solutions that will realize the full capabilities of AI/ML models in a 5G network.

5 Participants will be able to solve real world problems, based on standardized technologies developed for ML in 5G networks. Teams will be required to enable, create, train and deploy ML models such that participants will acquire hands-on experience in AI/ML in areas relevant to 5G.

6 The problem statements that participants will be working on will be divided into four technical tracks for four data scenarios:

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| --- | --- | --- | --- | --- |
| **Technical Track** | **Real Data**  **(“secure track”)** | **Open Data** | **Synthetic Data** | **No Data** |
| Network | ✓ | ✓ | ✓ |  |
| Verticals | ✓ | ✓ | ✓ |  |
| Enablers |  |  |  | ✓ |
| Social good | ✓ | ✓ | ✓ | ✓ |

7 The Challenge will consist of three rounds:

**1st round - Regional Round:** It will be conducted in regions/countries. The best projects in each region will advance to the global round. The first round is scheduled for the May – July 2020 timeframe.

**2nd round - Global Round:** The best projects of the Global Round compete for the winning prize in the third round. The second round is scheduled for the August – October 2020 timeframe.

**3rd round – Final Conference:** This round consists of demos and presentations at the Final Conference. Winners of the Challenge will be selected from the best teams at the Final Conference. The Final Conference – the third round of the Challenge – is planned for the end of the year.

From now until the end of April 2020, the Challenge is being promoted and its infrastructure put in place. We are happy to announce that the [*LF AI*](https://lfai.foundation/) *Foundation* is a promotion partner of the ITU AI/ML Challenge in 5G.

8 Participation in the Challenge is free of charge and open to all interested parties from countries that are a member of ITU. If you are interested in one of the following topics below, please signal your interest by filling out the form on the website [[link](https://forms.office.com/Pages/ResponsePage.aspx?id=12TkI-YEh0uRPCS9iSGf0-yqkfLCoQ9IpTbc_XELf95UQUZaMlVDNTgyWVZERTBWODk1MDZRNkVTVS4u)]. We would then arrange a conference call with you to discuss details:

* Who would be your nominee to be part of the Challenge Management Board?
* Would you have additions to the list of problem statements and resources? The current list of problem statements and resources can be found in the document “[Problem Statement and Data Resources](https://www.itu.int/en/ITU-T/AI/challenge/2020/Documents/ML5G-I-223-R1.docx)”, available on the Challenge website.
* Would you be interested in providing data, provided that secure data handling standards are applied?
* Who would be your nominee to be part of the team of judges?
* Who would be your nominee to be part of the mentors for the Challenge?
* What are the toolsets and APIs that you would like to contribute, that the participants of the Challenge could use?
* Would you (as an individual or as member of a team) be interested in competing in the Challenge?

Detailed information about the responsibilities of the Challenge Management Board, mentors and mentorship, team of judges, and data providers can be found in the document “ [ITU AI/ML 5G Challenge – Applying AI/ML in 5G networks. A Primer](https://www.itu.int/en/ITU-T/AI/challenge/2020/Documents/ITU%20ML5G%20Global%20Challenge_proposal_v23.docx)”, available on the Challenge website.

9 We invite sponsorship. Sponsoring this Challenge is an excellent opportunity to position your country, organization or company as a global leader in AI/ML for 5G. The sponsorship packages are available from the Challenge website.

10 Information relating to the Challenge, including a link to the form signalling your interest, is available at [https://www.itu.int/en/ITU-T/AI/challenge/2020](https://www.itu.int/en/ITU-T/AI/challenge/2020/Pages/default.aspx). Please check the Challenge’s homepage periodically for new updates.

11 For additional information and questions relating to the Challenge, please contact: [ai5gchallenge@itu.int](mailto:ai5gchallenge@itu.int).

Yours faithfully,

Chaesub Lee  
Director of the Telecommunication  
Standardization Bureau

1. Supplement 55 to ITU-T Y.3170 series: “Machine learning in future networks including IMT-2020: use cases”; ITU-T Y.3172 “Architectural framework for machine learning in future networks including IMT-2020”; ITU-T Y.3173 “Framework for evaluating intelligence levels of future networks including IMT-2020”; ITU-T Y.3174 “Framework for data handling to enable machine learning in future networks including IMT-2020”. These specifications are publicly available free of charge at <https://www.itu.int/itu-t/recommendations/index.aspx?ser=Y> [↑](#footnote-ref-1)
2. For example, “ML marketplace integration in future networks including IMT-2020”; “Requirements, architecture and design for machine learning function orchestrator”; “Machine Learning Sandbox”; “Serving framework for ML models in future networks including IMT-2020”; “Architecture of machine learning based QoS assurance for IMT-2020 network” and others [↑](#footnote-ref-2)