

ITUEvents

Challenge Summary Slides

ITU AI/ML in 5G Challenge

*Applying machine learning in
communication networks*

ai5gchallenge@itu.int

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ITU Global Challenge on AI/ML in 5G

- AI will have profound impact on the world's communication networks –
 - But: how to do it right and scale?
- ITU is at the forefront of exploring how best to use AI in 5G

The ITU Global Challenge on AI/ML in 5G will:

- ❖ Bring together network operators, network manufactures and academia
- ❖ Innovate and solve network problems with AI/ML
- ❖ Apply ITU's AI/ML architecture frameworks in IMT-2020
- ❖ Uncover problems and point to practical solutions

ITU Global Challenge: Technical Tracks and Data

Technical Track	Real Data ("secure track")	Open Data	Synthetic Data	No Data
Network	✓	✓	✓	
Verticals	✓	✓	✓	
Enablers				✓
Social Good	✓	✓	✓	✓

* Secure data handling practices (for real anonymized network data)

Benefit: Unlock AI/ML research using secure data for solving problems in 5G networks.

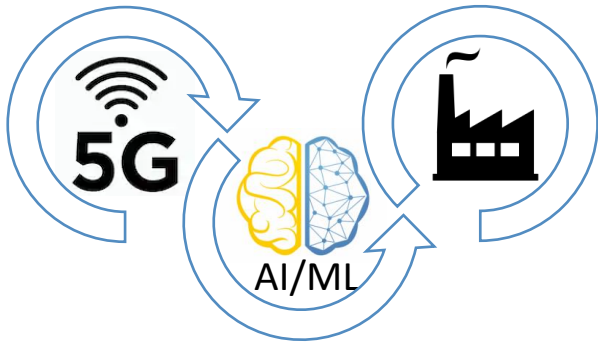


Participation



Students

Students need to be registered as students at a university



Professionals

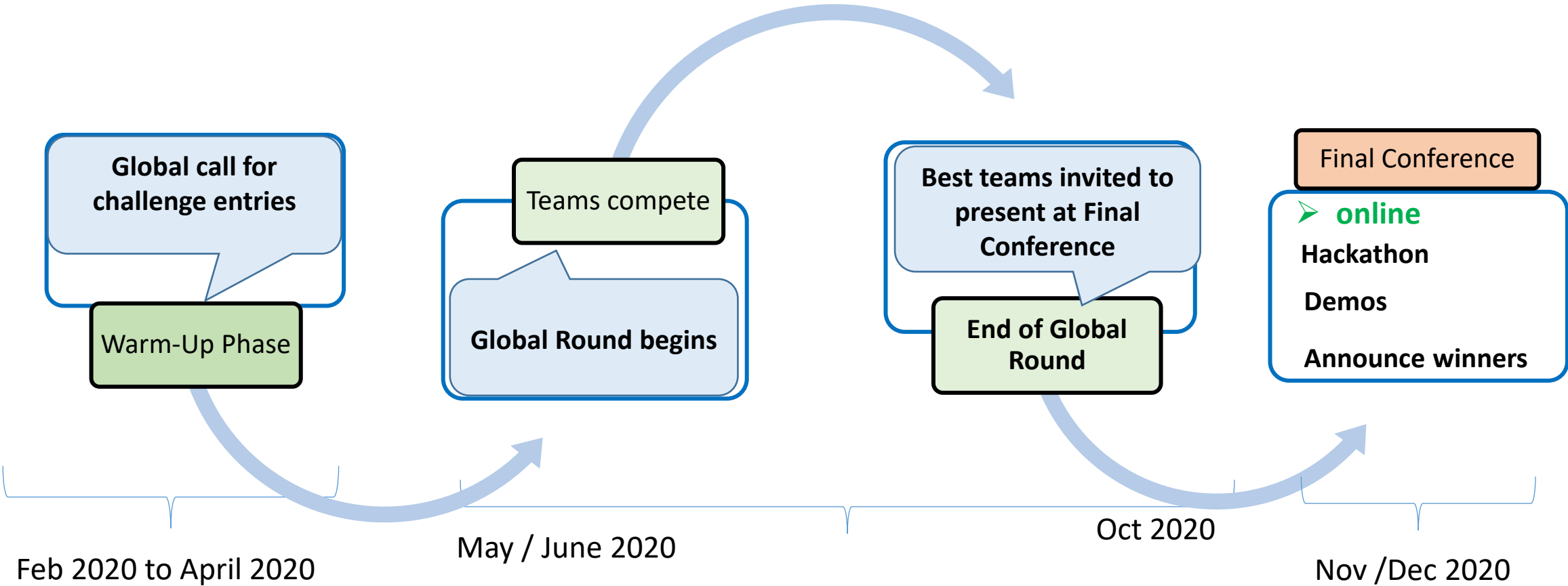
Anyone else is considered a “professional”: a person who has the necessary skills to complete the problem sets they choose to tackle in the Challenge

Note: We encourage participants to submit solutions that are open source implementations, based on (ITU) standards.

Open source implementations will enable industry stakeholders to access outcomes and enhance collaboration.

Benefit: Create a network of innovation to solve 5G and future networks using AI/ML.

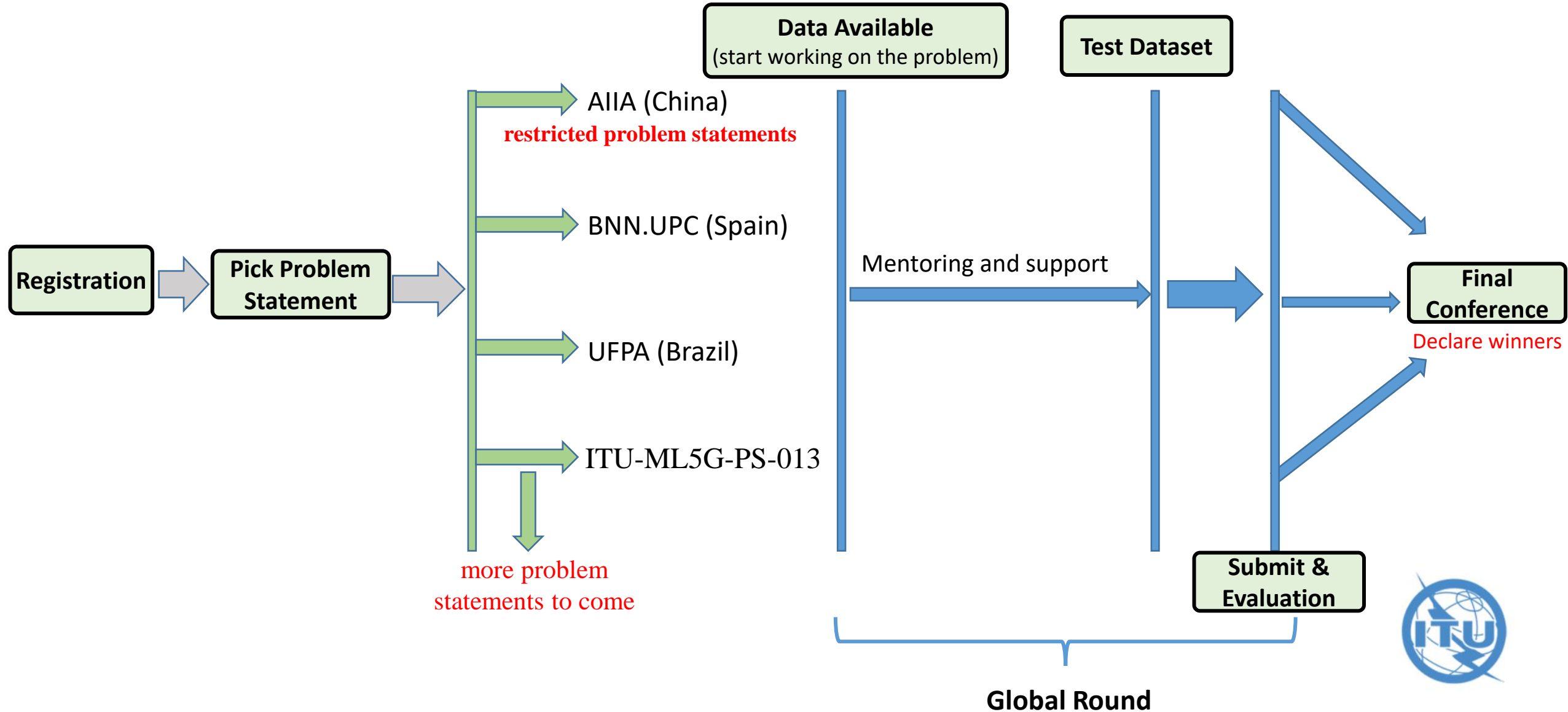
ITU Global Challenge: Timeline



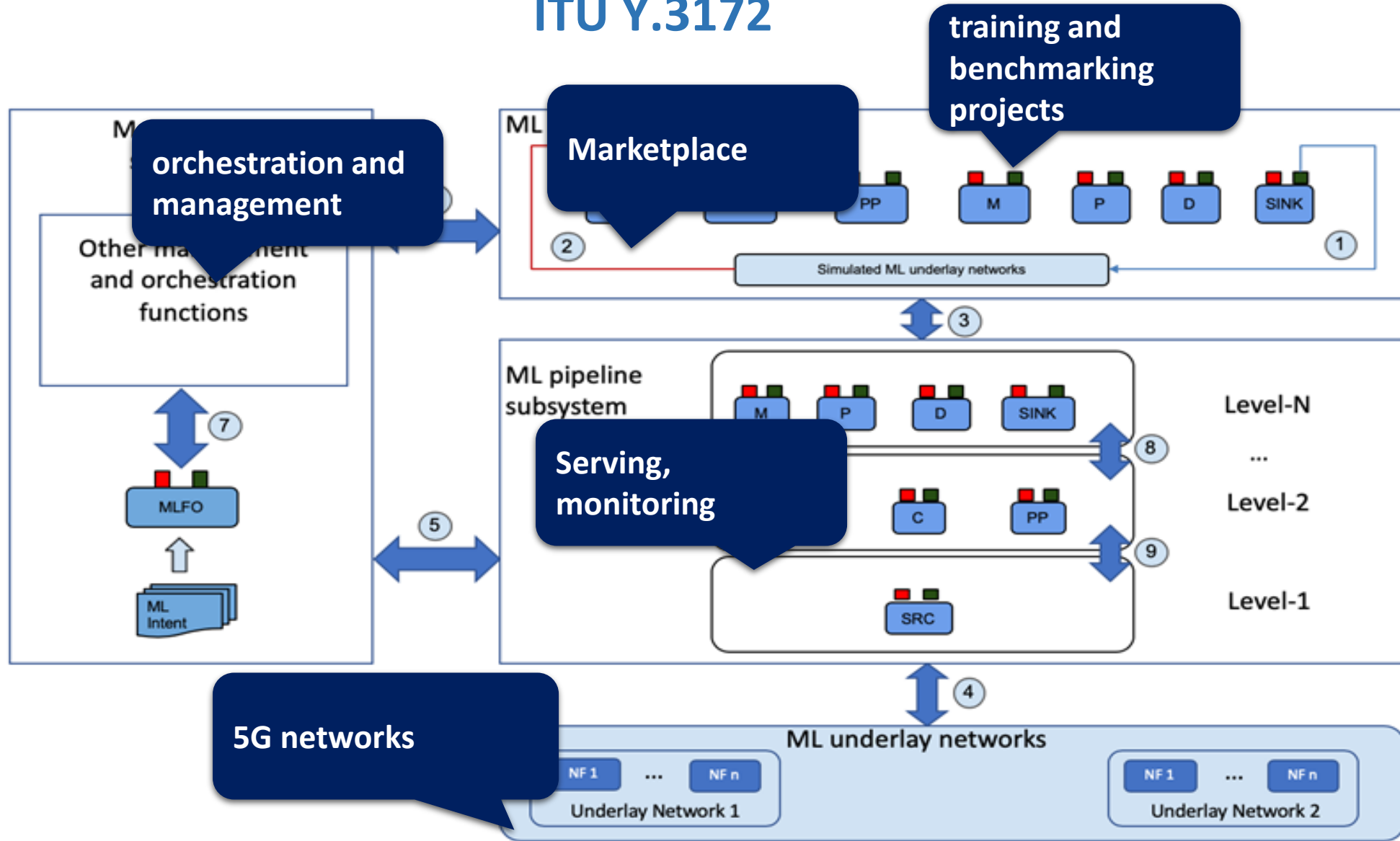
Energize the AI/ML, 5G ecosystem, culminate with focal point of conference.



ITU AI/ML in 5G Challenge: Milestones for Participants



ITU Y.3172



Refer: <https://www.itu.int/rec/T-REC-Y.3172-201906-P>

Benefit: Mapping and application of ITU standards to solve problems in the network using AI/ML.

ITU specifications for collaboration (1/2)

Output Document	Status	Description
Use case document	Approved October 2019, published as ITU-T Y-series Recommendations – Supplement 55 https://www.itu.int/rec/T-REC-Y.Sup55-201910-I/en	<ul style="list-style-type: none">•More than 30 use cases submitted to the FG ML5G•Requirements were analyzed for each, reviewed classified as “critical”, “expected” and “added value”.
Architecture framework	Approved June 2019, published August 2019 as ITU-T Y.3172 https://www.itu.int/rec/T-REC-Y.3172/en	<ul style="list-style-type: none">•20 architectural requirements, derived from use cases•Declarative approach to designing and using ML in the network•Orchestration and management of ML
Data handling framework	ITU Y.3174 – approved 5 February 2020	Includes data broker for mapping data models and APIs between ML overlay and underlay.
Intelligence level framework	ITU Y.3173 – approved 5 February 2020	Includes 5 levels of intelligence of 5G networks and an architecture perspective.
Marketplace document	Ongoing work item	Standard mechanisms for efficient transfer and handling of ML models

ITU specifications for collaboration (2/2)

Output Document	Status	Description
ML Function Orchestration framework	ML5G-I-216 Ongoing work in FG ML5G	•Requirements and architecture for ML function orchestrator.
Model optimization framework	ML5G-I-171-R1 Ongoing work in FG ML5G	•Requirements and architecture for ML model optimization.

Benefit: Joint contributions to ITU, training of students and professionals in AI/ML for 5G

Any Questions?

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