Introduction to ITU Focus Group on Autonomous Networks (FG-AN)

ITU Workshop on "Advances in Evolutionary Autonomous Networks: Use Cases, Architecture and PoC "

15th Nov 2022

FG-AN: Overview

- ITU-T Focus Group on Autonomous Networks was established by ITU-T Study Group 13 at its virtual meeting, 17 December 2020.

- The Focus Group will draft **technical reports and specifications** for autonomous networks, including exploratory evolution in future networks, real-time responsive experimentation, dynamic adaptation to future environments, technologies, and use cases.

- The Focus Group will also identify relevant gaps in the standardization of autonomous networks.

The primary objective of the Focus Group is to provide an open platform to perform pre-standards activities related to AN.

FG-AN: Overview

Management team

Chair

- Leon Wong (Rakuten Mobile, Japan)

Vice-chairs

- Xu Dan (China Telecom, China)
- Salih Ergut (OREDATA, Turkey)
- Gyu Myoung Lee (KAIST, Korea)
- Vishnu Ram OV (Independent Expert, India)
- Cao Xi (China Mobile, China)

Working groups

WG1: Use Cases and Requirements Analysis

- Yongsheng, Liu (China Unicom)

WG2: Architecture and Core Technical enablers

- Xiaojia, Song (China Mobile)
- Paul Harvey (University of Glasgow)

WG3: Proof of Concepts

- Shabnam Sultana (highstreet technologies)
- Liya, Yuan (ZTE)

FG-AN: Progress

FG AN Meetings:

- 1st Virtual meeting, 2–4 Feb 2021
- 2nd Virtual meeting, 13-16 Apr 2021
- 3rd Virtual meeting, 15-17 Jun 2021
- 4th Virtual meeting, 1-3 Sept 2021
- 5th Virtual meeting, 3-5 Nov 2021
- 6th Virtual meeting, 26-28 Jan 2022
- 7th Virtual meeting, 30 Mar - 1 Apr 2022
- 8th Virtual meeting, 1-3 Jun 2022
- 9th Virtual meeting, 31 Aug – 2 Sep 2022

Build-a-thon:

Build-a-thon Workshop Kickoff, 3 Jun 2022

Build-a-thon Workshop 2.0, 2 Sep 2022

Build-a-thon Workshop 3.0, 7 Nov 2022

FG-AN: Progress

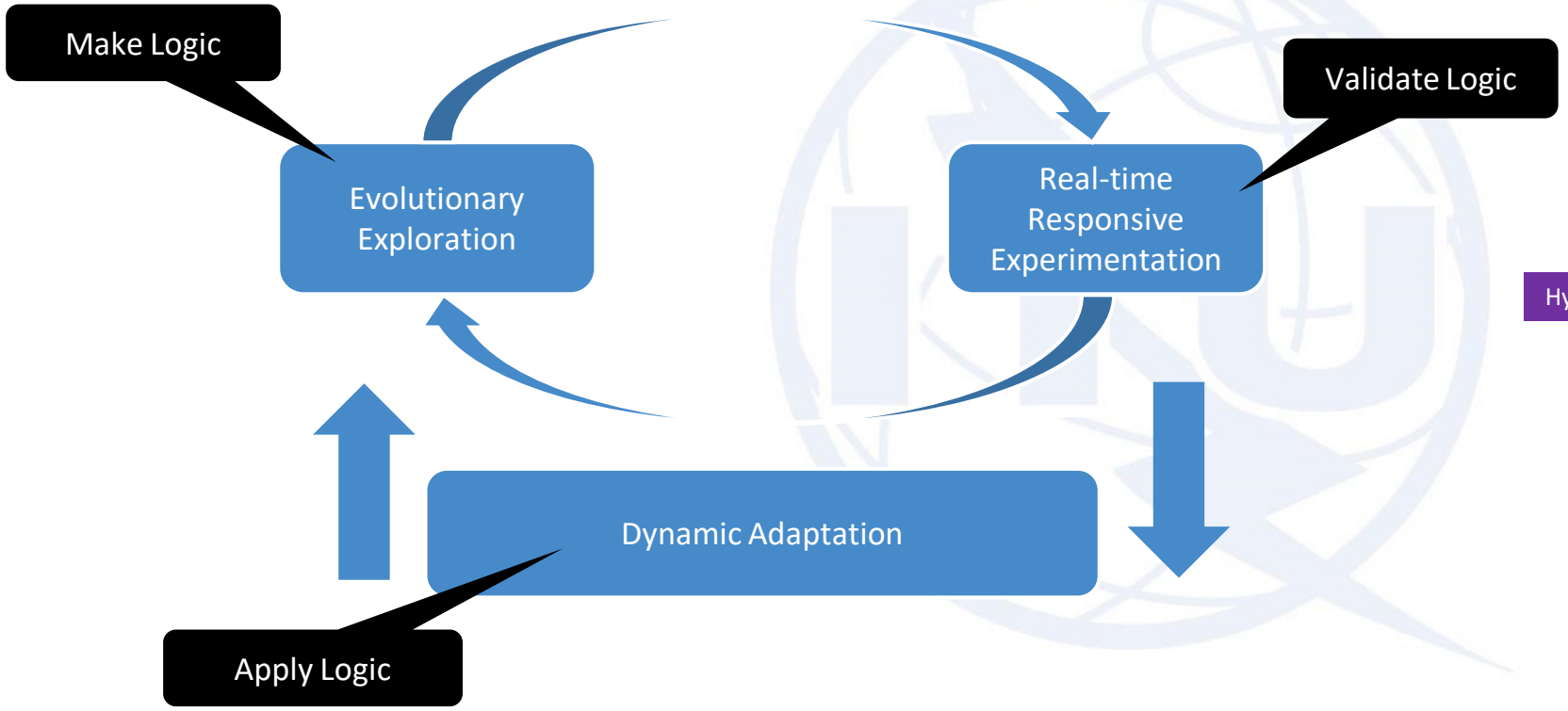
Weekly Meeting every **Thursday 8:00 CET**

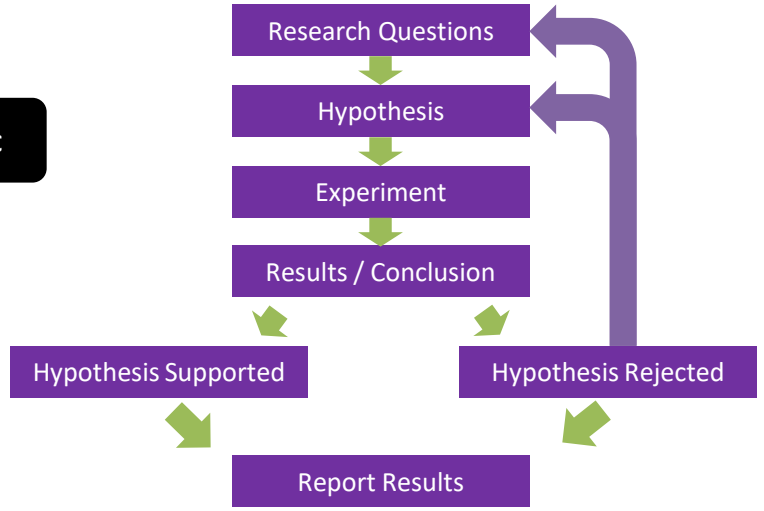
Weekly / Bi-Weekly **Editing sessions** for progressing deliverables

Meetings will cover:

- Use cases document + use case requirements + mappings to other deliverables
- Architecture framework
- Trust in Autonomous Networks
- PoC
- Standards gap analysis
- Discussion with experts from industry & academia

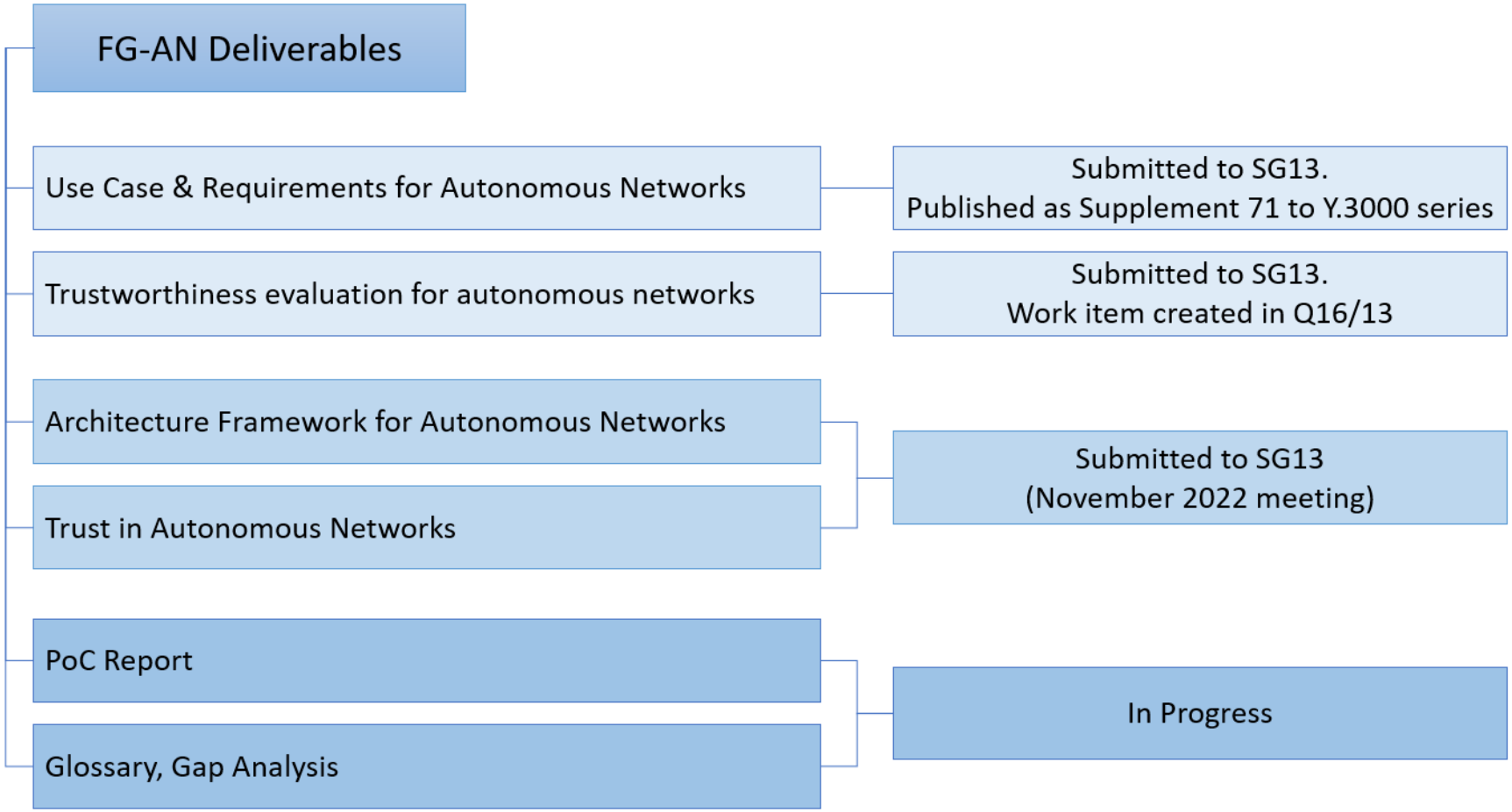
Key Concepts



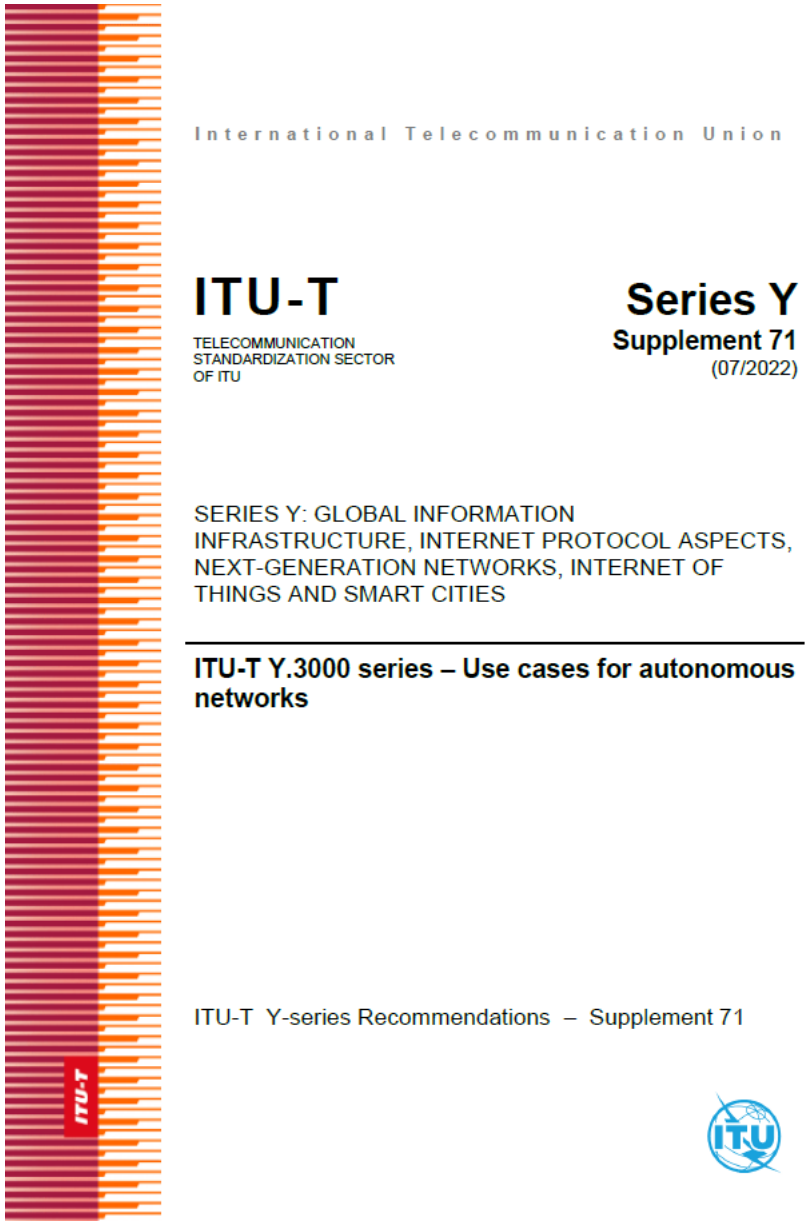


The Interface

FG-AN: Deliverables



FG-AN: Deliverables



Use Cases for Autonomous Networks

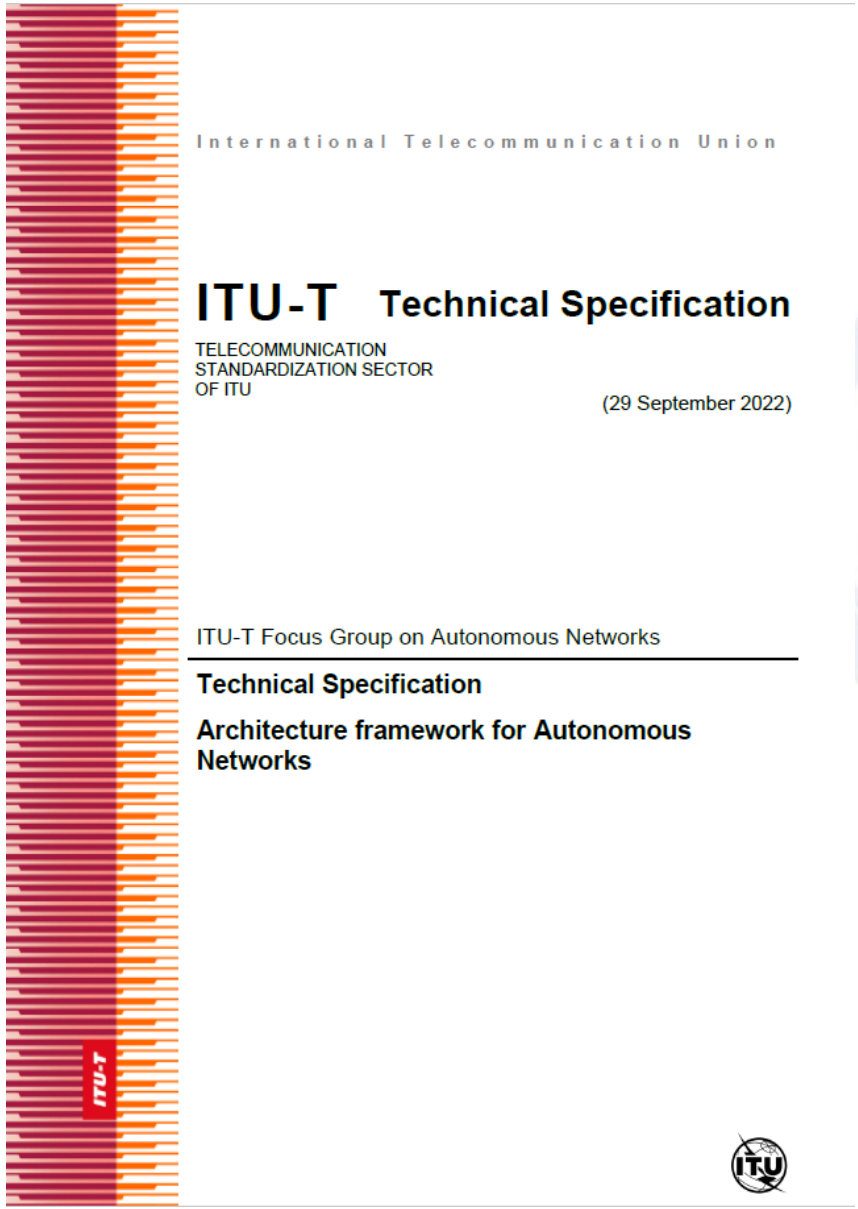
FG-AN output document (FGAN-O-013-R1)

A collection of use cases presented and elaborated during FG-AN meetings.

These use cases were published as a Technical Specification and a draft use case deliverable submitted to ITU-T SG13.

Approved during ITU-T SG13 July 2022 meeting as "Y.Sup71 : ITU-T Y.3000 series - Use cases for autonomous networks"
https://www.itu.int/rec/T-REC-Y.Sup71/en

FG-AN: Deliverables



Architecture Framework of Autonomous Networks

FG-AN output document (FGAN-O-023)

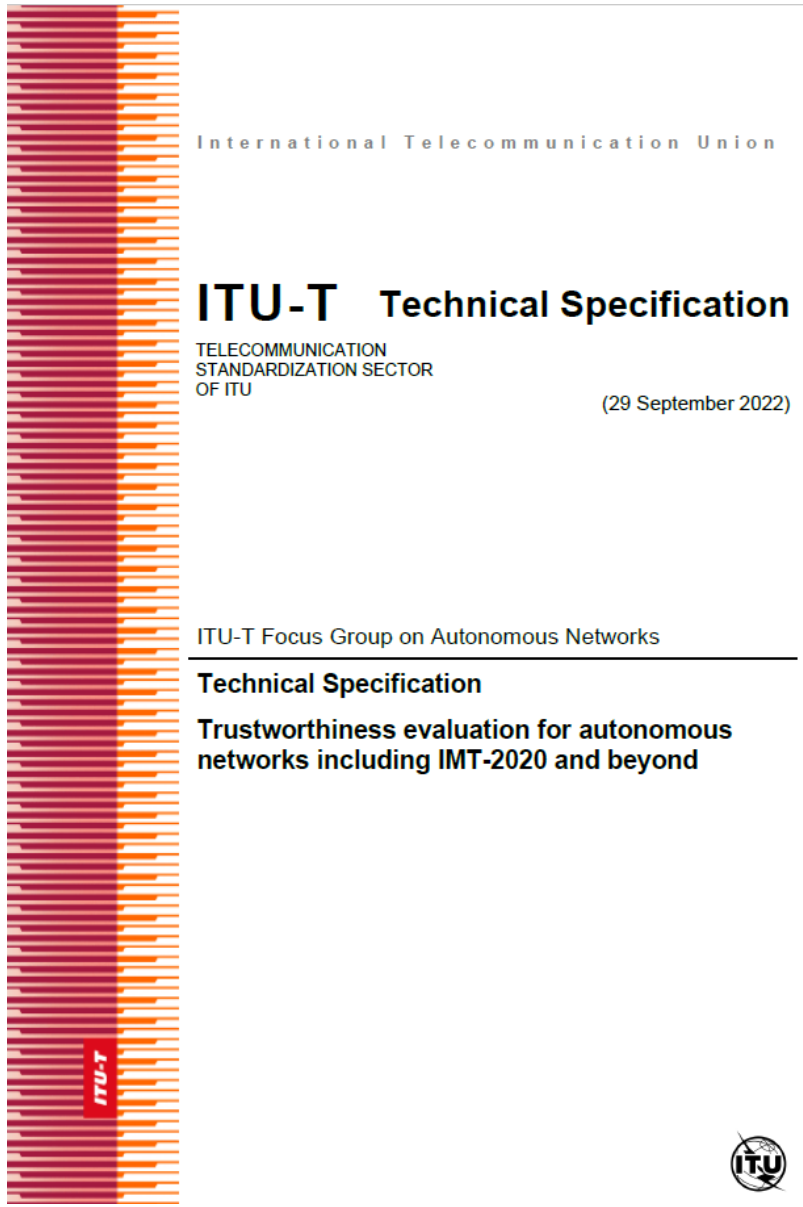
Autonomous Networks (AN) architecture framework in relation to AN concepts.

The scope of this document includes:

- Requirements for the architecture
- Description of the architecture components
- Description of the architecture
- Sequence diagrams explaining the interactions between the architecture components

The technical specification derived from this work has been transmitted to parent ITU-T SG13 as TD63/GEN : https://www.itu.int/md/T22-SG13-221114-TD-GEN-0063/en

FG-AN: Deliverables


International Telecommunication Union

ITU-T Technical Specification

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

(29 September 2022)

ITU-T Focus Group on Autonomous Networks

Technical Specification

Trustworthiness evaluation for autonomous networks including IMT-2020 and beyond

Evaluation of Trustworthiness of Autonomous Networks

FG-AN output document (FGAN-O-024)

Provides the concepts, basic principles, metrics of evaluation, methodology for evaluation and evaluation models and use cases for trust in autonomous network.

The technical specification derived from this work has been transmitted to parent ITU-T SG13 as TD64/GEN: https://www.itu.int/md/T22-SG13-221114-TD-GEN-0064/en

FG-AN: Deliverables

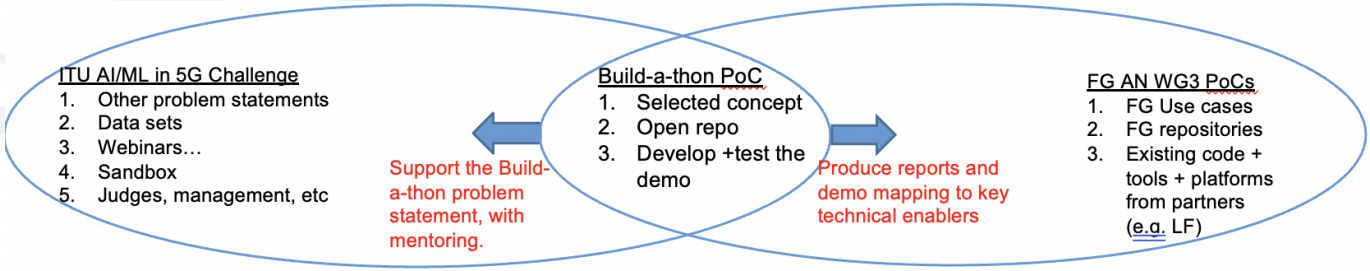
PoC / Build-a-thon 2021 & 2022

Progressing proof of concept activities.
In conjunction with the ITU AI/ML in 5G Challenge under the Build-a-thon initiative.

FG-AN input documents (FGAN-I-289-R5)
Report and progress of the ongoing Build-a-thon activities.

FG-AN input document (FGAN-I-244-R1)
Proof of concept activities progressed

Proving concepts **practically** with codes, test setup and demo setup



FG-AN: Thank you and Invitation to all

- **Homepage**
  - https://www.itu.int/en/ITU-T/focusgroups/an/Pages/default.aspx
- **Weekly meeting**
  - Every Thursday (08:00 CEST)
- **Mailing list**
  - fgan@lists.itu.int