

# Autonomous Networks (AN) activities in ITU-T SG13 Question 20

5 minutes report to the TMForum Multi SDO  
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# ITU-T SG13 structure in 2022-2024 Study Period

WP	Title	Questions
1	IMT-2020 and Beyond: Networks & Systems	Q6: Networks beyond IMT2020: Quality of service (QoS) mechanisms
		<b>Q20: Networks beyond IMT-2020 and machine learning: Requirements and architecture</b>
		Q21: Networks beyond IMT-2020: Network softwarization
		Q22: Networks beyond IMT-2020: Emerging network technologies
		Q23: Networks beyond IMT-2020: Fixed, mobile and satellite convergence
2	Cloud Computing & Data Handling	Q7: Future Networks: Deep packet inspection and network intelligence
		Q17: Future Networks: Requirements and capabilities for computing including cloud computing and data handling
		Q18: Future Networks: Functional architecture for computing including cloud computing and data handling
		Q19: Future Networks: End-to-end management, governance, and security for computing including cloud computing and data handling
3	Network Evolution, Trust and Quantum Enhanced Networking	Q1: Future Networks: Innovative service scenarios, including environmental and socio economical aspects
		Q2: Next-generation network (NGN) evolution with innovative technologies including software-defined networking (SDN) and network function virtualization (NFV)
		Q5: Applying Future Networks and innovation in developing countries
		<b>Q16: Future Networks: Trustworthy and Quantum Enhanced Networking and Services – NOTE – It is also progressing AN work items (trust aspects), but these are not addressed in this presentation</b>

# ITU-T Q20/13 “Networks beyond IMT-2020 and machine learning: Requirements and architecture”

## Study of the requirements, architecture and use of technologies including artificial intelligence (AI)/machine learning (ML) to realize networks beyond IMT-2020

- The integration of emerging network capabilities in IMT-2020 networks and beyond, in particular how to take benefit of capabilities enabled by emerging technologies such as AI/ML and others
- The integration of AI/ML capabilities is one of the key architectural aspects to consider for networks beyond IMT-2020. The complexity coming from distributed architecture and heterogeneous nature of use cases makes it imperative to study the requirements and overheads related to the deployment of AI/ML capabilities in IMT-2020 networks and beyond.
- A comprehensive study of the impact, KPIs and evaluation of AI/ML (in perspective, including generative AI and AI-native network capabilities) is a must for the design of a network architecture.
- Test methodologies and deployment guidelines for AI/ML capabilities in the networks.

### Among the study items:

- Key requirements and capabilities of networks beyond IMT-2020 incl. AI/ML based on emerging service scenarios
- Framework and architecture to realize networks beyond IMT-2020 incl. AI/ML based on requirements and capabilities
- Key technologies incl. AI/ML to realize networks beyond IMT-2020
- How to incorporate network intelligence from AI/ML into networks beyond IMT-2020
- How to enable AI/ML support to the integration of other technologies into networks beyond IMT-2020

# Q20/13's AN activities - based on FG-AN deliverables and Q20/13 contribs – 1/2

Work item	Status	Timing	Approval process	Liaison relationship	Title
<a href="#">Supplement 71 to ITU-T Y.3000-series Recommendations (ex Y.Supp-AN-Use Cases)</a>	Agreed 2022-07-15	2022-Q3	Agreement	ITU-T SG2, SG3, SG5, SG9, SG11, SG12, SG15, SG16, SG17, SG20, 3GPP, GSMA, IEEE, ETSI, TMF, IETF, IRTF, Linux Foundation Networking, LF AI & Data Found	<b>Use Cases for Autonomous Networks</b>  NOTE – Based on a transferred deliverable of the FG-AN
<a href="#">Y.3061 (ex Y.AN-Arch-fw)</a>	Approved 2023-12-14	2023-Q4	AAP	TSAG, ITU-T SG2, SG3, SG5, SG9, SG11, SG12, SG15, SG16, SG17, SG20, 3GPP, GSMA, IEEE, ETSI, TMF, IETF, IRTF, ISO/IEC JTC1/SC42, Linux Foundation Networking, LF AI & Data Foundation, O-RAN Alliance, NGMN	<b>Autonomous Networks: Architecture Framework</b>  NOTE – Based on a transferred deliverable of the FG-AN
<a href="#">TR.AN-gaps</a>	Under study (initiated March 2024)	2025-Q1	Agreement	ITU-T SG2, SG11, SG16, IEEE KG_WG and ETSI ENI	Gap analysis for Autonomous Networks NOTE – Based on a transferred deliverable of the FG-AN
<a href="#">TR.AN-PoC</a>	Under study (initiated March 2024)	2025-Q1	Agreement	ITU-T SG2, SG11, SG16, IEEE KG_WG and ETSI ENI	Proof of Concept activities for Autonomous Networks NOTE – Based on a transferred deliverable of the FG-AN

# Q20/13's AN activities - based on FG-AN deliverables and Q20/13 contribs – 2/2

Work item	Status	Timing	Approval process	Liaison relationship	Title
<u>Y.3127 (ex-IMT2020-SOCN-req-frame)</u>	Approved 2023-12-14	2023-Q4	AAP	ITU-T SG11, ITU-R SG5, 3GPP SA2, 3GPP SA5	Future networks including IMT-2020: requirements and framework for self-organizing core network
<u>Y.ICI-AN-reqts</u>	Under study (initiated March 2024)	2025-Q4	AAP	ITU-T SG16, ETSI ENI, TM Forum, ISO/IEC JTC1/SC42	Scenarios and Requirements of intelligent controller interaction for autonomous network in future networks including IMT-2020
<u>Y.KM-AN</u>	Under study (initiated March 2024)	2025-Q2	AAP	ITU-T SG2, SG11, SG16, IEEE KG_WG and ETSI ENI	Knowledge management for autonomous networks  NOTE – Based on a transferred deliverable of the FG-AN
<u>Y.IMT2020-MEVE-req-frame</u>	Under study	2024-Q4	AAP	3GPP, TM Forum, ISO/IEC JTC1, IEC SyC COMM	Future networks including IMT-2020: requirements and framework for measurement of effectiveness and value evaluation of autonomous networks

# Thank you

**Q20/13 work programme**

[https://www.itu.int/ITU-T/workprog/wp\\_search.aspx?isn\\_sp=8265&isn\\_sg=8272&isn\\_qu=8354&isn\\_status=-1,8,1,3,7,2&details=0&field=acdefghijo](https://www.itu.int/ITU-T/workprog/wp_search.aspx?isn_sp=8265&isn_sg=8272&isn_qu=8354&isn_status=-1,8,1,3,7,2&details=0&field=acdefghijo)