



Editor

**DRAFT PRELIMINARY APT COMMON PROPOSAL**

**PROPOSED MODIFICATION TO WTSA-16 RESOLUTION 92**

**ENHANCING THE STANDARDIZATION ACTIVITIES IN THE ITU  
TELECOMMUNICATION STANDARDIZATION SECTOR RELATED TO NON-  
RADIO ASPECTS OF INTERNATIONAL MOBILE TELECOMMUNICATIONS**

**Abstract**

Based on the consideration of the standardization progress of IMT-2020 related subjects, especially in the areas of network, signalling, and security, Resolution 92 is proposed to be revised to enhance the standardization work on networks beyond IMT-2020 related subjects. The main modifications include: describing the standardization progress of IMT-2020 related subjects; studying the new subjects on networks beyond IMT-2020 in ITU-T SG13, SG11 and other SGs; strengthening the role and responsibility of ITU-T SG17 on security aspects of networks beyond IMT-2020; and other editorial changes.

**Introduction**

IMT-2020 is being utilized widely in the emerging networks, making positive and important contribution to the United Nations Sustainable Development Goals (SDGs) and World Summit on the Information Society (WSIS) action lines. The role of ITU-T to advance the standardization work on IMT-2020 has been recognized as important and valuable. In this study period, ITU-T SG13, SG11, SG17 and other study groups have made great progress on the standardization work related to non-radio aspects of IMT-2020.

In the next study period, the scopes of current Questions related to IMT-2020 are planned to be extended by introducing new subjects of study in networks beyond IMT-2020. Some of new subjects of networks beyond IMT-2020 have reached consensus in study groups, including fixed, mobile and satellite convergence and Artificial intelligence (AI) / machine learning (ML). In addition, Industrial Internet Networking and Vehicular Networking are new subjects of networks beyond IMT-2020 which have aroused widespread interest. Standardization activities on these subjects will promote the deployment and evolution of networks beyond IMT-2020 and corresponding emerging network technologies.

Security and trust have become the primary concern in IMT-2020/5G networks. The ITU-T CTO meeting (Budapest, 2019) addressed the IMT-2020/5G security in three priorities, including

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global threat exchange, best practices for operational security, and security incentives. As the lead study group on security, ITU-T SG17 needs to take follow-up activities to implement the priorities described in this CTO Communiqué, and consider conducting security coordination activities in ITU-T with relevant SDOs during the development of security standards for networks beyond IMT-2020, especially between ITU-T SG17 and 3GPP SA3.

## **Proposal**

APT members propose to revise Resolution 92 in following aspects:

- 1) To address the standardization work in the aspects beyond IMT-2020 with the proposed term “networks beyond IMT-2020”. ITU-T SG13 is invited to define the term “networks beyond IMT-2020”.
- 2) To describe the standardization progress of ITU-T on IMT-2020 related subjects in this study period, including the areas of network, signalling, and security.
- 3) To study the new subjects on networks beyond IMT-2020, which may include fixed, mobile and satellite convergence, Industrial Internet Networking, Vehicular Networking, and application of emerging technologies including AI/ML.
- 4) To strengthen the role and responsibility of ITU-T SG17 on security aspects of networks beyond IMT-2020, and to promote the coordination and cooperation on security aspects.

MOD

RESOLUTION 92 (HYDERABAD, 2020)

**Enhancing the standardization activities in the ITU Telecommunication Standardization Sector related to non-radio aspects of international mobile telecommunications**

*(Hammamet, 2016; Hyderabad, 2020)*

The World Telecommunication Standardization Assembly (Hyderabad, 2020),

*considering*

- a) that International Mobile Telecommunications (IMT) is the root name that encompasses IMT-2000, IMT-Advanced and IMT-2020, collectively (see Resolution ITU-R 56 (Rev. Geneva, 2015) of the Radiocommunication Assembly);
- b) that IMT systems have contributed to global economic and social development, and are intended to provide telecommunication services on a worldwide scale, regardless of location, network or terminal used;
- c) that IMT-2020 is being utilized widely to build a user-centred information ecosystem, and it will make a positive and important contribution to the United Nations Sustainable Development Goals (SDGs) and World Summit on the Information Society (WSIS) action lines;
- d) that the ITU Telecommunication Standardization Sector (ITU-T) is actively continuing its studies on mobility and overall network aspects of IMT, and in 2015 initiated the study of non-radio aspects of standardization for IMT-2020;
- e) that the ITU-T study groups and ITU Radiocommunication Sector (ITU-R) Study Group 5 have had, and continue to have, effective informal coordination via liaison activity with respect to the development of Recommendations relating to IMT for both Sectors;
- f) that Recommendation 207 (Rev. WRC-19) of the World Radiocommunication Conference, on the future development of IMT for 2020 and beyond, is foreseen to address the need for higher data rates, corresponding to user needs, as appropriate, than those of currently deployed IMT systems;
- g) that the development of a roadmap for all standards activities relating to IMT in ITU-R and ITU-T, to independently manage and advance their work on IMT and to coordinate it so as to ensure full alignment and harmonization of the work programmes within a complementary framework, is an efficient means of achieving progress in both Sectors, and that such a roadmap concept facilitates the communication of issues relating to IMT with organizations external to ITU;

*h)* that Resolution 43 (Rev. Buenos Aires, 2017) of the World Telecommunication Development Conference (WTDC) acknowledged the continuous need to promote IMT throughout the world, and in particular in developing countries<sup>1</sup>;

*i)* that Resolution 130 (Rev. Dubai 2018) of the Plenipotentiary Conference on Strengthening the role of ITU in building confidence and security in the use of information and communication technologies;

*j)* that the ITU-R Handbook on Global Trends in International Mobile Telecommunications defines IMT and provides general guidance to relevant parties on issues related to the deployment of IMT systems and for the introduction of their IMT-2000, IMT-Advanced and IMT-2020 networks;

*k)* that Study Group 1 of the ITU Telecommunication Development Sector (ITU-D) is currently involved in activities closely coordinated with ITU-T Study Group 13 and ITU-R Study Group 5 in order to identify the factors influencing the effective development of broadband, including IMT, for developing countries;

*l)* that IMT systems are now being evolved to provide diverse usage scenarios and applications such as enhanced mobile broadband, massive machine-type communications and ultra-reliable and low-latency communications, and a substantial number of countries have started implementing these;

*m)* that ITU-T Study Group 13 progressed the study of non-radio aspects of IMT-2020 with the Working Party on IMT-2020 Networks & Systems, which is mandated (1) to develop the network requirements and functional architecture of IMT-2020, (2) to study network softwarization including software-defined networking (SDN), network slicing and orchestration, (3) to study upcoming network technologies including information-centric networking (ICN), (4) to study fixed-mobile convergence (FMC) of IMT-2020, (5) to study quality of service (QoS) of IMT-2020; through addressing the issues of end-to-end cloud management and big data management in the context of IMT-2020 with the Working Party on Cloud Computing & Big Data; with the Focus Group on Machine Learning for Future Networks including 5G (FG-ML5G); also with Joint Coordination Activity on IMT2020 (JCA-IMT2020);

*n)* that ITU-T Study Group 11 progressed the study of signalling and protocol aspects of IMT-2020 with the Working Party on Control and management protocols for IMT-2020, which is mandated (1) to study control and management technologies for IMT-2020 including network slicing, network capability exposure, virtual resource management and orchestration, (2) to study network attachment including mobility and resource management for IMT-2020, (3) to study distributed content networking and ICN for IMT-2020, including end-to-end multi-party communications;

*o)* that Industrial Internet Networking and Vehicular Networking related standardization activities are progressed on the basis of IMT-2020 network in various study groups of ITU-T;

*p)* that ITU-T Study Group 17 is responsible for building confidence and security in the use of ICTs, especially IMT-2020,

*noting*

*a)* Resolution 18 (Rev. Hammamet, 2016) of this assembly, on principles and procedures for the allocation of work to, and coordination between, ITU-R and ITU-T;

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<sup>1</sup> These include the least developed countries, small island developing states, landlocked developing countries and countries with economies in transition.

- b) Resolution 59 (Rev. Buenos Aires, 2017) of WTDC, on strengthening coordination and cooperation among the three ITU Sectors on matters of mutual interest;
- c) Recommendation ITU-T A.4, on the communication process between ITU-T and forums and consortia;
- d) Recommendation ITU-T A.5, on generic procedures for including references to documents of other organizations in ITU-T Recommendations;
- e) Recommendation ITU-T A.6, on cooperation and exchange of information between ITU-T and national and regional standards development organizations;
- f) Recommendation ITU-T A.7, on the establishment and working procedures of focus groups, and Amendment 1: Appendix I Guidelines for the efficient transfer of focus group deliverables to its parent group;
- g) CTO meeting Communiqué (Budapest, 2019), on highlighting the alignment of three priorities on security aspects of IMT-2020 with the priorities of the ITU standardization expert group for security, ITU-T Study Group 17,

*resolves to invite the Telecommunication Standardization Advisory Group*

- 1 to facilitate coordination of the standardization activities related to the non-radio side of IMT (especially networks beyond IMT-2020) among all relevant study groups, focus groups, joint coordination activities, etc.;
- 2 to encourage, in cooperation with Study Group 13 and other relevant study groups, collaboration with other standards development organizations (SDOs) on a wide range of issues associated with the non-radio aspects of networks beyond IMT-2020,

*instructs study groups of the ITU Telecommunication Standardization Sector*

- 1 to strengthen the cooperation and coordination on IMT (especially networks beyond IMT-2020) standardization activities with a positive and double-win spirit, in order to ensure a productive and practical standard solution for the global ICT industry;
- 2 to promote efficiently the standardization research work on the non-radio side network technologies of IMT;
- 3 to be responsible for the research and annual reporting of ITU-T's standards strategy on IMT,

*instructs Study Group 11*

- 1 to promote the studies on signalling requirements and protocols for new subjects under study for networks beyond IMT-2020, which may include Industrial Internet Networking, Vehicular Networking, and application of emerging technologies including artificial intelligence (AI) / machine learning (ML) in signalling and protocol aspects;
- 2 to promote the studies on testing frameworks, specifications, methodologies, capabilities, and interoperability for new subjects under study for networks beyond IMT-2020,

*instructs ITU-T Study Group 12*

to promote the studies on standardization activities related to the non-radio aspects of IMT (especially networks beyond IMT-2020) service, QoS and quality of experience (QoE),

*instructs Study Group 13*

- 1 to maintain the roadmap of IMT standardization activities in ITU-T, which should include work items to progress standardization work related to the non-radio side of IMT, and share this with relevant groups of ITU-R and ITU-D as the mission of the lead group for IMT (especially networks beyond IMT-2020);
- 2 to promote the studies on gap analysis of present and future network requirements and architecture, and the new subjects under study for networks beyond IMT-2020, which may include network function virtualization, network slicing, network capability exposure, fixed, mobile and satellite convergence, Industrial Internet Networking, Vehicular Networking, and application of emerging technologies including ICN and AI/ML in network aspects;
- 3 to promote JCA IMT-2020 and coordinate the standardization activities of IMT (especially networks beyond IMT-2020) among all relevant study groups, focus groups and other SDOs;
- 4 to define the term “networks beyond IMT-2020”, including the features and subjects of such networks,

*instructs Study Group 15*

to promote the studies on IMT's fronthaul and backhaul network standardization activities, including transport network requirements, architecture, characteristics, technologies, management and control, synchronization, etc., especially for networks beyond IMT-2020,

*instructs Study Group 17*

- 1 to promote the studies on standardization activities related to IMT network (especially networks beyond IMT-2020) and applications security;
- 2 to develop the standardization roadmap dedicated to security aspects of networks beyond IMT-2020;
- 3 to explore coordination or collaboration actions with other SDOs such as 3GPP SA3 in the course of development of 3GPP Specifications or ITU-T Recommendations;
- 4 to promote the joint coordination activities for security aspects of networks beyond IMT-2020 with relevant organizations/groups,

*instructs the Director of the Telecommunication Standardization Bureau*

- 1 to bring this resolution to the attention of the Directors of the Radiocommunication Bureau and the Telecommunication Development Bureau;
- 2 to conduct seminars and workshops on the standard strategic, technical solutions and network applications for IMT (especially networks beyond IMT-2020), taking into account specific national and regional requirements,

*encourages the Directors of the three Bureaux*

to investigate new ways to improve the efficiency of ITU work on IMT,

*invites Member States, Sector Members, Associates and academia*

- 1 to participate actively in the standardization activities of ITU-T on developing Recommendations on non-radio aspects of IMT;
- 2 to share standard strategy, network evolution experience and application cases of IMT in relevant seminars and workshop events.