

I n t e r n a t i o n a l T e l e c o m m u n i c a t i o n U n i o n

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

WORLD TELECOMMUNICATION STANDARDIZATION
ASSEMBLY
Geneva, 1-9 March 2022

Resolution 92 – Enhancing the standardization activities in the ITU Telecommunication Standardization Sector related to non-radio aspects of international mobile telecommunications

FOREWORD

The International Telecommunication Union (ITU) is the United Nations specialized agency in the field of telecommunications, information and communication technologies (ICTs). The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of ITU. ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The World Telecommunication Standardization Assembly (WTSA), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

RESOLUTION 92 (Rev. Geneva, 2022)

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

(Hammamet, 2016; Geneva, 2022)

The World Telecommunication Standardization Assembly (Geneva, 2022),

considering

- a)* that International Mobile Telecommunications (IMT) is the root name that encompasses all IMT systems and their further development, including IMT-2000, IMT-Advanced and IMT-2020 and beyond, collectively (see Resolution ITU-R 56 (Rev. Geneva, 2015) of the Radiocommunication Assembly);
- b)* that IMT systems (including IMT-2020 and beyond) 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 Recommendation 207 (Rev. Sharm el-Sheikh, 2019) of the World Radiocommunication Conference, on the future development of IMT for 2020 and beyond, is foreseen to enhance, *inter alia*, data rates in comparison with currently deployed IMT systems;
- d)* that there is growing interest in adopting emerging technologies and solutions based on the standards of IMT-based open radio access networks;
- e)* that IMT systems (including IMT-2020 and beyond) are being utilized and will be utilized widely in the near future to build a user-centred information ecosystem, and this will make a positive and important contribution to the United Nations Sustainable Development Goals;
- f)* that the ITU Telecommunication Standardization Sector (ITU-T) is actively continuing its studies on non-radio aspects of standardization for IMT systems (including IMT-2020 and beyond);
- g)* that the development of a roadmap for all standards activities relating to IMT in the ITU Radiocommunication Sector (ITU-R) and ITU-T, in order 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 the ITU-T study groups and ITU-R 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;
- i)* that Resolution 43 (Rev. Buenos Aires, 2017) of the World Telecommunication Development Conference (WTDC) acknowledged the continuous need to promote IMT systems (including IMT-2020 and beyond) throughout the world, and in particular in developing countries¹;

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

- 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 and IMT-Advanced networks, as well as IMT-2020;
- k)* that Study Group 1 of the ITU Telecommunication Development Sector (ITU-D) is 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 systems (including IMT-2020 and beyond), for developing countries;
- l)* that IMT systems (including IMT-2020 and beyond) 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 some ITU-T study groups are conducting work and developing Recommendations related to non-radio aspects of IMT-2020 under the lead of Study Group 13;
- n)* that Study Group 13 has taken a lead role on non-radio aspects of IMT-2020 project management coordination across all ITU-T study groups and progressed the study of network aspects of IMT-2020, which includes studies on network requirements and functional architecture; network softwarization, including software-defined networking, network slicing and orchestration; fixed-mobile convergence; and emerging network technologies for IMT-2020;
- o)* that Study Group 13 established the Joint Coordination Activity for IMT-2020 and beyond (JCA IMT-2020) to coordinate ITU-T's IMT-2020 standardization work with focus on non-radio aspects within ITU-T and to coordinate communication with standards-development organizations (SDOs), consortia and forums also working on IMT-2020-related standards;
- p)* that JCA IMT-2020 is maintaining a roadmap for IMT-2020 standardization which addresses ongoing and published specifications from ITU, other relevant SDOs, consortia and forums;
- q)* that the Focus Group on IMT-2020 (FG IMT-2020) concluded its activities and reported to its parent study group, Study Group 13, on high-level network architecture, network softwarization, end-to-end quality of service (QoS), mobile fronthaul/backhaul and emerging new technologies;
- r)* that Study Group 13 established the Focus Group on Machine Learning for Future Networks including 5G (FG-ML5G) to conduct an analysis of machine learning for future networks in order to identify relevant gaps and issues in standardization activities related to this topic;
- s)* that ITU-T Study Group 11 has progressed the study of signalling and control protocol aspects of IMT-2020, which includes studies on protocols supporting control and management technologies; signalling requirements and protocols for network attachment, including mobility and resource management; protocols supporting distributed content networking and information-centric networking; and protocol testing;
- t)* that ITU-T Study Group 17 has continued addressing threats and vulnerabilities, which affect efforts to build confidence and security in the use of IMT-2020 systems; this includes studies on security and trust frameworks, guidelines and capabilities for IMT-2020 networks and edge computing,

noting

- a) Resolution 18 (Rev. Geneva, 2022) of this assembly, on principles and procedures for the allocation of work to, and coordination between, ITU-R and ITU-T;
- b) WTDC Resolution 59 (Rev. Buenos Aires, 2017), on strengthening coordination and cooperation among the three ITU Sectors on matters of mutual interest,

resolves to invite the Telecommunication Standardization Advisory Group

- 1 to facilitate coordination of the standardization activities related to the non-radio side of IMT systems (including IMT-2020 and beyond) among all relevant study groups, focus groups, joint coordination activities, etc.;
- 2 to strengthen and accelerate activities related to the development and deployment of IMT systems based on standards for open and interoperable network technologies and solutions, such as non-radio aspects of IMT systems for access networks, particularly recognizing challenges in developing countries;
- 3 to ensure collaboration among relevant ITU-T study groups and with relevant SDOs and forums and consortia for open and interoperable network technologies and solutions, including non-radio aspects of IMT systems for access networks;
- 4 to encourage, in cooperation with Study Group 13 and other relevant study groups, collaboration with other SDOs on a wide range of issues associated with the non-radio aspects of IMT systems,

instructs study groups of the ITU Telecommunication Standardization Sector

- 1 to strengthen collaboration and coordination on standardization activities in respect of IMT systems (including IMT-2020 and beyond) with other relevant standards organizations, in order to ensure a productive and practical standards solution for the global ICT industry;
- 2 to promote efficient and effective standardization work on the non-radio aspects of IMT systems, including IMT-2020 and beyond, as well as applications of relevant network technologies;
- 3 to promote ITU-T standardization work on the requirements of developing countries related to IMT in general and IMT-2020 in particular;
- 4 to be responsible for the development and annual reporting of ITU-T's standards strategy on IMT,

instructs Study Group 3 of the ITU Telecommunication Standardization Sector

to consider the ITU-T studies related to, *inter alia*, regulatory and economic questions relevant to IMT systems, including IMT-2020 and beyond, within its mandate,

instructs Study Group 5 of the ITU Telecommunication Standardization Sector

to pursue promoting the studies on standardization activities related to IMT environmental requirements, including energy efficiency,

instructs Study Group 11 of the ITU Telecommunication Standardization Sector

to continue promoting the studies on standardization activities related to the non-radio aspects of IMT signalling requirements, protocols and testing frameworks, specifications, methodologies, capabilities, and interoperability for IMT systems (including IMT-2020 and beyond),

instructs Study Group 12 of the ITU Telecommunication Standardization Sector

to continue promoting the studies on standardization activities of service, QoS and quality of experience related to the non-radio aspects of IMT systems (including IMT-2020 and beyond),

instructs Study Group 13 of the ITU Telecommunication Standardization Sector

1 to maintain the roadmap of, and continue promoting, IMT standardization activities in ITU-T, which should include work items to progress standardization work related to the non-radio aspects of IMT systems (including IMT-2020 and beyond), and share this with relevant groups of ITU-R and ITU-D and external organizations, such as through coordination work ensured by JCA IMT-2020;

2 to maintain and update on an annual basis the supplement to the ITU-T Recommendation containing the current version of the IMT-2020 standardization roadmap;

3 to continue promoting the studies on non-radio aspects of IMT system (including IMT-2020 and beyond) network requirements and architecture, including network softwarization (e.g. non-radio aspects of Cloud radio access network, multi-access edge computing, etc.); network slicing; network capability openness, including open network interconnection and exposure; network management and orchestration; terrestrial (e.g. fixed-mobile) and non-terrestrial (e.g. satellite) convergence; emerging network technology; and the use of machine learning;

4 to promote JCA IMT-2020 and beyond and to continue coordinating the standardization activities of IMT systems (including IMT-2020 and beyond) among all relevant study groups, focus groups and other SDOs,

instructs Study Group 15 of the ITU Telecommunication Standardization Sector

to continue promoting the studies on non-radio aspects of IMT's transport network (e.g. fronthaul and backhaul) standardization activities, including network requirements, architecture, function and performance, characteristics, enabling technologies, management and control, synchronization, etc., for IMT systems (including IMT-2020 and beyond),

instructs Study Group 17 of the ITU Telecommunication Standardization Sector

1 to continue promoting the studies on standardization activities related to network and applications security for IMT-2020 and beyond;

2 to promote coordination and collaboration with ITU-R and other SDOs, such as the 3rd Generation Partnership Project System Aspects working group 3 (3GPP SA3), on security aspects of IMT-2020 and beyond, in the course of development of the relevant specifications or ITU-T Recommendations,

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 continue conducting seminars and workshops on non-radio aspects of IMT, the standards strategy, technical solutions and network applications, taking into account specific national and regional requirements,

encourages the Directors of the three Bureaux

1 to investigate new ways to improve the efficiency of ITU work on IMT, and to examine the possibility of establishing an observatory for IMT-2020 and beyond, including appropriate guidelines if needed, taking into account budgetary considerations;

2 to promote studies on standardization activities related to regulatory and economic questions relevant to accommodating non-radio aspects of IMT-2020 systems and beyond use cases, and to encouraging and supporting market growth, innovation, collaboration and ICT infrastructure investment;

3 to develop guidance on the economic drivers for IMT-2020 deployment,

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 systems (including IMT-2020 and beyond);

2 to share non-radio standards strategy, network evolution experience and application cases of IMT systems (including IMT-2020 and beyond) in relevant seminars and workshop events.