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International Telecommunication Union
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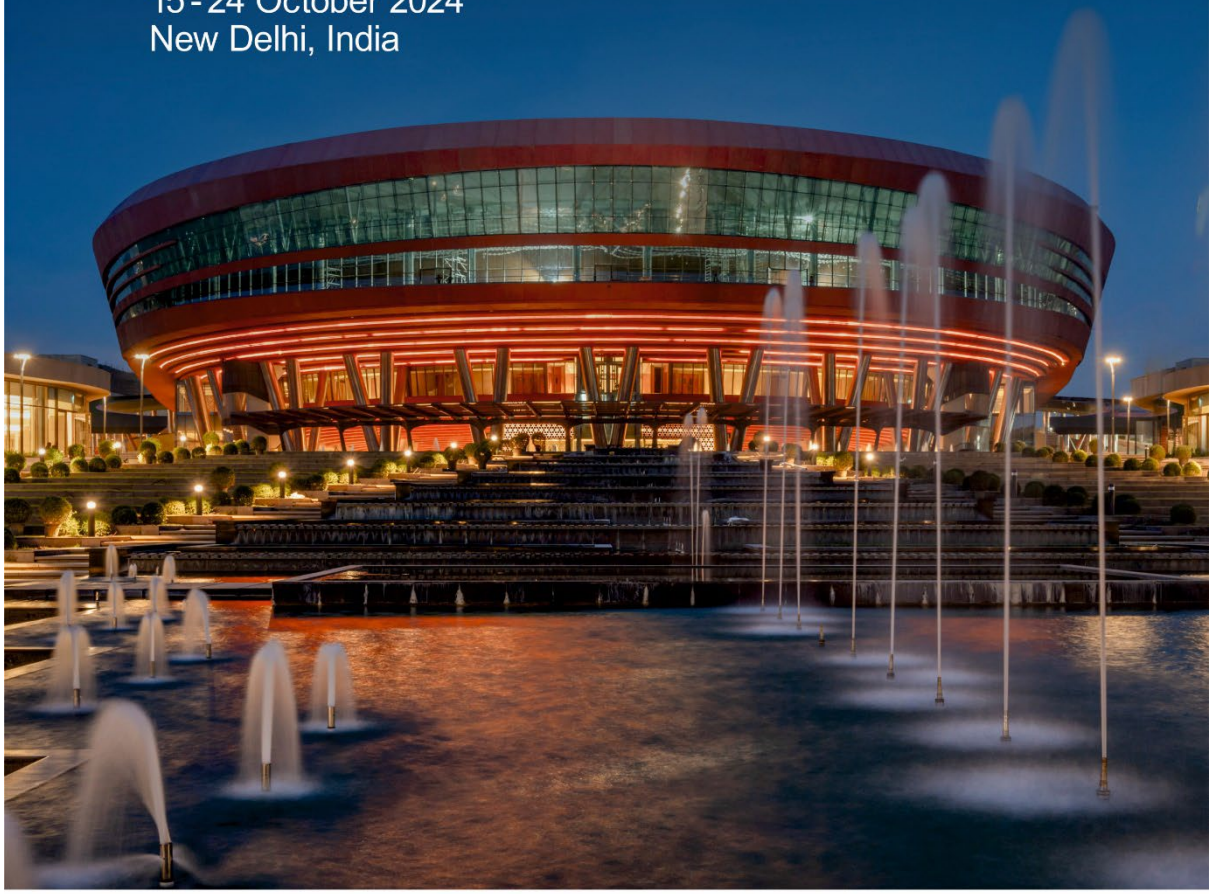

ITUWTSA
NEW DELHI2024

Parts 1 and 2

RESOLUTIONS
and
RECOMMENDATIONS

MOD

RESOLUTION 2 (Rev. New Delhi, 2024)

Scope and mandate of the ITU Telecommunication Standardization Sector study groups

(Helsinki, 1993; Geneva, 1996; Montreal, 2000; Florianópolis, 2004; Johannesburg, 2008; 2009[1]; Dubai, 2012; 2015[2]; 2016[3]; Hammamet, 2016; Geneva, 2022; New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024),

recognizing

a) that the ITU Telecommunication Standardization Sector (ITU-T) is entitled to study and develop outputs on technical, economic and policy issues related to the telecommunication/information and communication technology (ICT) field, as stated in Articles 17, 18, 19, 20 of the ITU Constitution and Articles 13, 14, 14A, 15 and 20 of the ITU Convention;

b) relevant resolutions of the ITU Plenipotentiary Conference which mandate ITU-T to study and develop outputs, including Recommendations, in many areas;

c) that new and emerging technologies will have a noticeable impact on telecommunications/ICTs;

d) the resolutions adopted by this assembly, which contain many instructions and implications for the work of the relevant study groups,

considering

a) that the mandate for each study group needs to be clearly defined in order to ensure the coherence of the overall work programme of ITU-T and to minimize duplication of studies undertaken by ITU-T and by the other Sectors;

b) that ITU-T has to evolve in order to stay relevant to the changing telecommunication environment and to its membership interests;

c) that collocation of study group, working party or rapporteur group meetings has also been a means to minimize duplication of work and to improve efficiency of work;

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1 Changes to the ITU-T Study Group 5 mandate agreed by TSAG on 30 April 2009.

2 Creation of ITU-T Study Group 20 by TSAG on 5 June 2015.

3 Changes to the ITU-T Study Group 20 lead study group role agreed by TSAG on 5 February 2016.

d) that the World Telecommunication Standardization Assembly (WTSA), through Resolution 22, assigns authority to the Telecommunication Standardization Advisory Group (TSAG) in the interval between WTSAs to restructure and establish ITU-T study groups in response to changes in the telecommunication marketplace,

noting

that the study group structure, responsibilities and mandates agreed at WTSA may be modified in the interval between WTSAs, and that the current study group structure, responsibility and mandates may be found on the ITU-T website or obtained from the Telecommunication Standardization Bureau (TSB),

resolves

1 that the mandate of each study group, which it shall use as the basis for organizing its study programme, taking into account *recognizing a), b), c),* and *d)* above, shall consist of:

– a general area of responsibility, as set out in Annex A to this resolution, within which the study group may develop new Recommendations and amend existing Recommendations, in collaboration with other groups, as appropriate; and

– a set of Questions related to particular areas of study, which are compatible with the general area of responsibility and which should be results-oriented (refer to Section 7 of Resolution 1 (Rev. Geneva, 2022) of this assembly);

2 to encourage the study groups to consider collocation (e.g. of study group plenaries, working parties or rapporteur meetings) as a means to improve cooperation in some areas of work; the study groups involved will need to identify the areas in which they need to cooperate, based on their mandates, and keep TSAG and TSB informed;

3 that the ITU-T study groups should consider the outputs and materials of the other two Sectors and the ITU Council relevant to a study group's terms of reference;

4 ITU-T study groups should collaborate with other ITU groups on issues of mutual interest;

5 to encourage ITU-T study groups to conduct work on how to ensure wider implementation of ITU-T Recommendations at the national level in collaboration with the study groups of the ITU Telecommunication Development Sector.

ANNEX A
(to Resolution 2 (Rev. New Delhi, 2024))

PART 1 – GENERAL AREAS OF STUDY

ITU-T Study Group 2

Operational aspects of telecommunications and ICTs

ITU-T Study Group 2 is responsible for studies relating to operational aspects of telecommunications and ICTs, which include studies related to procedures, actions or processes to manage telecommunication/ICT services and networks. This comprehensive endeavour, which considers ongoing coordination within ITU-T and other standards-development organizations (SDOs), encompasses the following aspects:

- international telecommunication/ICT numbering, naming, addressing, and identification (NNAI) resources;
- the deployment of NNAI requirements, along with resource allocation and management, incorporating criteria and procedures for reservation, assignment and reclamation; additionally, there is a focus on the evolution and specification of NNAI requirements and resource assignment for future telecommunication/ICT architectures, capabilities, applications and services;
- the principles governing the administration of international NNAI resources;
- the principles of service provision, definition and operational requirements for both current and future telecommunication/ICT architectures, capabilities, applications and services;
- the operational impact of factors such as the Internet, convergence (services or infrastructure), quality of service (QoS), and emerging services, such as over-the-top (OTT), on international telecommunication services and networks;
- both operational and managerial dimensions of networks, such as network traffic management, designations, and transport-related operational procedures; the systematic evaluation of feedback from operators, manufacturing entities, and users, spanning various facets of network operation; the management of forthcoming telecommunication/ICT architectures, capabilities, applications, and services; and the evolution of the management interface specification methodology and the specification of interfaces for management systems, which are crucial for supporting the communication of identity information within or between organizational domains;
- interworking, by developing the scope, principles, and operational facets of routing, interworking, number portability, billing, and carrier switching; the operational aspects of interworking between conventional telecommunication networks and continually evolving telecommunication/ICT architectures, capabilities, applications, and services;

- telecommunications for disaster relief by leading ITU's work on developing standards in support of telecommunications for disaster relief/early warning, network resilience and recovery, such as with Recommendation ITU-T E.106, on international emergency preference scheme for disaster relief operations, which specifies means of prioritizing calls in disaster situations, ensuring that telecommunication networks remain available for urgent communications by clearing non-urgent calls;
- emergency telecommunication service provision.

ITU-T Study Group 3

Tariff and accounting principles and international telecommunication/ICT economic and policy issues

ITU-T Study Group 3 is responsible, *inter alia*, for studying international telecommunication/ICT policy and economic issues and tariff and accounting matters (including costing principles and methodologies), with a view to informing the timely development of enabling regulatory models and frameworks for universal connectivity and sustainable digital transformation. To this end, ITU-T Study Group 3 shall foster collaboration among its participants with a view to promoting affordable rates through service competition and with due consideration to cost modelling. Additionally, ITU-T Study Group 3 will study the economic impact, and the policy and regulatory aspects of the Internet, new and emerging technologies, convergence (services or infrastructure) and new services, such as OTT, pertaining to international telecommunication/ICT services and networks.

ITU-T Study Group 5

Environment, climate action, circular economy and electromagnetic fields

ITU-T Study Group 5 is responsible for the development of standards on the environmental aspects of telecommunications/ICTs (including new and emerging) and protection of the environment, including electromagnetic phenomena and climate change.

ITU-T Study Group 5 will study how these telecommunications/ICTs and digital transformation can be shaped to ensure they support transitions towards more sustainable societies.

ITU-T Study Group 5 will also study issues related to resistibility, human exposure to electromagnetic fields (EMF), circular economy, energy efficiency and climate-change adaptation and mitigation. It will develop international standards (ITU-T Recommendations), supplements and technical reports that support the sustainable use and deployment of new and emerging telecommunications/ICTs. Additionally, it will evaluate the environmental performance, including impacts on environment, climate and biodiversity, of new and emerging telecommunications/ICTs.

ITU-T Study Group 5 is also responsible for studying design methodologies and frameworks to reduce the volume and adverse environmental effects of e-waste and to support the transition towards a circular economy.

ITU-T Study Group 5 will also develop international standards (ITU-T Recommendations), supplements and technical reports to use the enablement effect of telecommunications/ICTs to reduce the climate impact of other sectors (e.g. energy, manufacturing industry, transportation and construction). Additionally, it will study evaluation metrics and methods for a sustainable digital transition, focusing on industries with high greenhouse gas emissions.

ITU-T Study Group 5 has an extended role in evaluating the impact of ICTs in accelerating climate-change adaptation and mitigation actions, particularly in industries (including the ICT sector), cities, rural areas and communities. To this end, it is also working to develop standards and guidelines for building resilient ICT infrastructures, as well as to develop assessment methodologies for the trajectories of the ICT sector in connection with the United Nations Sustainable Development Agenda 2030 and the Paris Agreement.

In addition to its climate-focused activities, ITU-T Study Group 5 has five other important objectives:

1) to protect ICT (including telecommunication equipment and installations) against damage and malfunction due to electromagnetic phenomena, such as lightning, as well as from particle radiations;
2) to ensure the safety of personnel and users of networks in relation to electrical hazards existing in telecommunication/ICT networks;
3) to improve confidence in the use of radio frequencies by developing standards to assess EMF levels and to verify compliance with the World Health Organization (WHO) recommended human exposure guidelines and limits;
4) to enhance the reliability and safety of telecommunication/ICT networks, by providing requirements on resistibility and electromagnetic compatibility, and addressing the effect of particle radiation;
5) to ensure that the functionality of telecommunication/ICT equipment is not compromised by electromagnetic interference related to radiated and conducted disturbances emitted by other electrical or communication systems.

ITU-T Study Group 5 is responsible for studies on how to use new and emerging telecommunications/ICTs to tackle environmental challenges in line with the Sustainable Development Goals (SDGs).

ITU-T Study Group 11

Signalling requirements, protocols, test specifications and combating counterfeit telecommunication/ICT devices

ITU-T Study Group 11 has been attributed the responsibility for studies related to signalling-system architecture, signalling requirements and protocols, for all types of networks such as future networks (FN), cloud-computing networks, VoLTE/ViLTE/VoNR/ViNR-based network interconnection, virtual networks, multimedia, next-generation networks (NGN), signalling for legacy network interworking, satellite-terrestrial networks, software-defined networking (SDN) technologies, network function virtualization (NFV) technologies, IMT systems including IMT-2030 networks (non-radio part), quantum key distribution network (QKDN) and related technologies, and augmented reality.

ITU-T Study Group 11 is also responsible for studies to combat counterfeiting, tampering and theft of telecommunication/ICT devices, counterfeiting and tampering of telecommunication/ICT software, and the negative impacts of these issues.

ITU-T Study Group 11 will also develop test specifications for testing conformance and interoperability (C&I) for all types of networks, technologies and services, a testing methodology and test suites for standardized network parameters in relation to the framework for Internet-related performance measurement, as well as for existing and emerging technologies.

In addition, ITU-T Study Group 11 maintains and improves a testing laboratory recognition procedure in ITU-T through the work of the ITU-T Conformity Assessment Steering Committee (CASC).

ITU-T Study Group 12

Performance, quality of service and quality of experience

ITU-T Study Group 12 is responsible for Recommendations on performance, quality of service (QoS) and quality of experience (QoE) for the full spectrum of terminals, networks, services and applications ranging from speech over fixed circuit-based networks to multimedia applications over networks that are mobile- and packet-based. Included in this scope are the operational aspects of performance, QoS and QoE; the end-to-end quality aspects of interoperability; and the development of multimedia quality assessment methodologies, both subjective and objective.

ITU-T Study Group 13

Future networks and emerging network technologies

ITU-T Study Group 13 is responsible for studies relating to the requirements, architectures, capabilities and application programming interfaces (APIs), softwarization, orchestration, and the use of AI, including machine learning of future networks (FN). It develops standards related to information-centric networking (ICN). Regarding the IMT systems, including IMT-2030, it particularly focuses on non-radio related parts. Study Group 13's responsibility also includes project coordination on FNs across all ITU-T study groups, and release planning. Moreover, it includes the study on the integration of computing and networking from the viewpoint of FN.

ITU-T Study Group 13 is also responsible for studies relating to future computing, including cloud computing and data handling in telecommunication networks. This covers capabilities and technologies from the network side to support data utilization, exchange, sharing, and data quality assessment, as well as end-to-end awareness, control and management of future computing, including cloud, cloud security and data handling.

ITU-T Study Group 13 studies aspects relating to fixed, mobile and satellite convergence for multi-access networks, including various ways to manage them, and enhancements to existing ITU-T Recommendations on mobile communications, including the energy-saving aspects.

ITU-T Study Group 13 develops standards for quantum networks and their related technologies including networking aspects of quantum key distribution networks (QKDN).

ITU-T Study Group 13 further studies concepts and mechanisms to enable trusted ICT, including framework, requirements, capabilities, architectures and implementation scenarios of trusted network infrastructures and trusted cloud solutions in coordination with all study groups concerned. In this context, digital asset treatment over FNs is also a study target.

ITU-T Study Group 15

Networks, technologies and infrastructures for transport, access and home

ITU-T Study Group 15 is responsible in ITU-T for the development of standards for the optical transport network, access network, home network and power utility network infrastructures, systems, equipment, optical fibres and cables. This includes related installation, maintenance, management, test, instrumentation and measurement techniques, and control plane technologies to enable the evolution toward intelligent transport networks, including the support of smart-grid applications.

ITU-T Study Group 17

Security

ITU-T Study Group 17 is responsible for developing international standards to enhance confidence, security and trust in the use of telecommunications/ICTs, in the context of an ever-growing attack surface and confronted with an unbalanced threat landscape.

While providing security by ICTs and ensuring security for ICTs are both major study areas for ITU-T Study Group 17, it is recognized that the other ITU-T study groups may study security aspects within their mandates.

The increase of compliance requirements and the ongoing coordination among ITU-T Study Group 17 and the other ITU-T study groups, as well as other standards-development organizations (SDOs), require a comprehensive and transformative approach to consider the following areas.

Security model, framework, architecture and lifecycle: this includes studies of cybersecurity, wholistic security approaches spanning development, deployment, and operation phases, managed security services, and security automation. In particular, it delves into both security models, such as zero trust for network infrastructure, and, at the same time, supply chain security, especially concerning software.

Cybersecurity and service: this includes adapting to the evolving threat landscape (targeted attacks and ransomware); understanding the characteristics of emerging malware types; addressing and managing cybersecurity incidents; identifying security requirements and core cybersecurity solutions; exchanging threat intelligence; combating spam; endpoint detection and response; and developing new simulation and prediction capabilities. It also includes services and their organizations, such as the development of cybersecurity centres, incident response teams (IRTs) and managed security services.

Security management: this includes information security management, identity solutions and management, authentication mechanisms and telebiometrics, all stimulated by new and emerging security technologies.

It also includes studying appropriate technical standardization solutions for child online protection.

End-device, edge, network, cloud, and application security: this addresses security in the context of end-devices, edge, networks, cloud, applications, and services, which is of paramount importance. It considers aspects of endpoint security; smart devices and Internet of Things (IoT) devices; networks ranging from IMT-2020/5G and beyond and IMT-2030/6G; and intelligent transport system (ITS) security, which extends to vehicle-to-vehicle (V2X) communication and autonomous driving. Additionally, it also considers multifaceted approaches of security for smart cities and communities, verticals including smart grid, smart factory and digital health, industrial control systems (ICS), terrestrial-satellite and satellite-satellite network convergence, radio navigation satellite service (RNSS), automatic identification system (AIS), software-defined networking (SDN), network function virtualization (NFV), Internet Protocol television (IPTV), web services, over-the-top (OTT), metaverse, digital twin technology, cloud computing, in-network computing, big data analytics, and digital financial system (DFS).

Data protection techniques: in the pursuit of building confidence, security and trust in the use of telecommunications/ICTs, ITU-T Study Group 17 is deeply involved in safeguarding sensitive data, including protecting personally identifiable information (PII). This involves various technical and operational aspects of data protection using federated learning, synthetic data generation, differential privacy and data masking, to ensure confidentiality, integrity and availability of PII.

New and emerging security technologies: this includes studying how artificial intelligence (AI) can bolster security measures, how secure AI systems and AI-based applications can be achieved in support of telecommunications/ICTs, how to counteract the growing threat landscape fuelled by AI advances, including addressing unintended consequences of generative AI, quantum-based security, including Quantum Key Distribution (QKD) and the use of post-quantum cryptography (PQC) algorithms. It also examines security considerations related to distributed ledger technology (DLT), and also the utilization of cryptographic schemes and protocols, such as homomorphic algorithms, zero-knowledge proofs, and secure multi-party computation (MPC).

Open systems interconnection (OSI) and technical languages: ITU-T Study Group 17 is also responsible for the application of OSIs, which includes managing directories and object identifiers, such as public key infrastructure (PKI) and distributed PKI (DPKI). It extends to addressing technical languages such as Abstract Syntax Notation one (ASN.1) and the use of JavaScript Object Notation (JSON). Ensuring proper methods for their application and addressing software-related issues in telecommunication systems is a key focus. Additionally, it encompasses enhancing Recommendations in support of conformance testing.

ITU-T Study Group 20

Internet of Things, digital twins and smart sustainable cities and communities

ITU-T Study Group 20 is responsible for the development of innovative standards (ITU-T Recommendations), guidelines, reports, methodologies, and best practices for the Internet of Things (IoT), digital twins, metaverse, and smart sustainable cities and communities (SSC&C), with the goal of accelerating digital transformation in both urban and rural areas. This includes studies on digital services, SSC&C applications, systems and services, interoperability and interworking, digital twins, requirements, capabilities, and architectural frameworks of IoT and SSC&C across verticals, and human-centric approaches enabled by IoT and SSC&C, in particular in digital health, accessibility, and inclusion.

Additionally, ITU-T Study Group 20 addresses architectures, functionalities, and protocols in applications of verticals and infrastructures of IoT and SSC&C, decentralized/distributed IoT, and data analytics, data sharing, data processing and management, including big data aspects of IoT and SSC&C. The study group also focuses on terminology and definitions, the study and research of emerging digital technologies (e.g. metaverse and AI), security, privacy, trustworthiness, and identification of IoT and SSC&C, as well as the evaluation and assessment of SSC&C and related digital services.

By developing robust standards and best practices, ITU-T Study Group 20 aims to foster global innovation for IoT and SSC&C in line with the Sustainable Development Goals.

ITU-T Study Group 21

Technologies for multimedia, content delivery and cable television

Study Group 21 of the ITU Telecommunication Standardization Sector (ITU-T) is responsible for studies relating to multimedia technologies, capabilities, systems, applications and services for existing and future networks, including Internet Protocol (IP)-based and cable-based networks.

This encompasses studies relating to:

- information and communication technologies (ICTs) for multimedia systems, applications, services, terminals and delivery platforms; accessibility for digital inclusion; ICTs for active assisted living; human interfaces; multimedia aspects of distributed ledger technologies (DLTs); media and signal coding and systems; digital multimedia services to support various verticals (e.g. digital health, digital culture, and mobility); and multimedia aspects of metaverse-related issues;
- use of telecommunication systems for a) contribution, primary distribution and secondary distribution of audiovisual content (including television programmes and related data services, and advanced capabilities, e.g. ultra-high definition, high-dynamic range), and b) multimedia applications providing immersive experiences, virtual reality, augmented reality and multiview, including 3D (stereoscopy type and holographic type);

- use of telecommunication networks, e.g. coaxial cable, optical fibre, hybrid fibre-coaxial and IP networks, to also provide integrated broadband services including interconnection with other types of networks such as fixed wireless access networks (e.g. radio local access network, private International Mobile Telecommunications-2020 (IMT-2020) network and beyond);

  NOTE 1 – Private IMT-2020 network is intended to refer to private wireless networks specifically designed for supplementing a cable TV access network;

  NOTE 2 – The cable network, primarily designed for audiovisual content delivery to the home, also carries time-critical services such as voice, gaming, video-on-demand, interactive and multiscreen services, to customer premises equipment in the home or enterprise;

- use of cloud computing, artificial intelligence (AI) and other advanced technologies to enhance multimedia applications and services, and integrated broadband services over telecommunication networks.

NOTE 3 – When ITU-T Study Group 16 was created in 1996, one of its mandates was to continue ITU-T Study Group 1's studies on multimedia services. Accordingly, references to "services" in the context of ITU-T Study Group 21's mandate are to be understood as "multimedia services".

PART 2 – LEAD ITU-T STUDY GROUPS IN SPECIFIC AREAS OF STUDY

SG2	Lead study group on numbering, naming, addressing and identification Lead study group on administration of international numbering, naming, addressing and identification resources Lead study group on routing and interworking Lead study group on number portability and carrier switching Lead study group on operational aspects of telecommunication/ICT capabilities and applications Lead study group on telecommunication/ICT service definition Lead study group on telecommunications/ICTs for disaster relief/early warning, network resilience and recovery Lead study group on emergency services provision, definition and deployment Lead study group on telecommunication/ICT management Lead study group on operational aspects of identity management Lead study group on operational aspects of Internet of Things identification
SG3	Lead study group on tariff and accounting principles relating to international telecommunications/ICT Lead study group on economic issues relating to international telecommunications/ICT Lead study group on policy issues relating to international telecommunications/ICT

SG5	Lead study group on electromagnetic compatibility (EMC), resistibility and lightning protection Lead study group on soft error caused by particle radiations Lead study group on human exposure to electromagnetic fields (EMF) Lead study group on circular economy and e-waste management Lead study group on ICTs related to the environment, energy efficiency, clean energy and sustainable digitalization for climate actions
SG11	Lead study group on signalling and protocols Lead study group on establishing test specifications, conformance and interoperability testing for all types of networks, technologies and services that are the subject of study and standardization by all ITU-T study groups Lead study group on combating counterfeiting and tampering of ICT devices Lead study group on combating the use of stolen ICT devices
SG12	Lead study group on quality of service and quality of experience Lead study group on performance and quality assessment of speech and multimedia communication systems, including vehicle communication systems Lead study group on video quality assessment of communications, applications and system components
SG13	Lead study group on future networks such as IMT systems, including IMT-2030 networks (non-radio related parts) Lead study group on fixed-mobile and satellite convergence Lead study group on computing, including cloud computing and data handling Lead study group on artificial intelligence, including machine learning for future networks
SG15	Lead study group on access network transport Lead study group on home networking Lead study group on optical technology
SG17	Lead study group on security Lead study group on identity management Lead study group on directory, PKI, formal languages and object identifiers
SG20	Lead study group on Internet of Things and its applications Lead study group on smart sustainable cities and communities and related digital services, including effective energy management, digital twins and the citiverse Lead study group for Internet of Things identification Lead study group on digital health related to Internet of Things and smart sustainable cities and communities

SG21	Lead study group on multimedia technologies, applications, systems and services Lead study group on integrated broadband cable networks Lead study group on audiovisual content processing and delivery over multimedia distribution systems, including cable networks, IP-based television services and digital signage Lead study group on human factors and ICT accessibility for digital inclusion Lead study group on multimedia aspects of automotive-related intelligent services Lead study group on multimedia aspects of digital health Lead study group on digital culture Lead study group on multimedia aspects of DLT and its applications Lead study group on immersive multimedia technologies including metaverse

ANNEX B
(to Resolution 2 (Rev. New Delhi, 2024))

Points of guidance to the study groups of the ITU Telecommunication Standardization Sector for the development of the post-2024 work programme

B.1 This annex provides points of guidance to study groups of the ITU Telecommunication Standardization Sector (ITU-T) for the development of post-2024 study Questions in accordance with their proposed structure and general areas of responsibility. The points of guidance are intended to clarify, where appropriate, interaction between study groups in certain areas of common responsibility, and are not intended to provide a comprehensive list of such responsibilities.

B.2 This annex will be reviewed by the Telecommunication Standardization Advisory Group (TSAG) as necessary to facilitate interaction between study groups, to minimize duplication of effort and to harmonize the overall ITU-T work programme.

ITU-T Study Group 2

ITU-T Study Group 2 is the lead study group for operational aspects of telecommunications/ICTs including numbering, naming, addressing and identification (NNAI), service provisioning, network management, interworking, and disaster relief (see Annex A). ITU-T Study Group 2 will continue to be responsible for creating principles of service and operational requirements, including NNAI aspects, for current and evolving telecommunication/ICT architectures, capabilities, applications, networks, and services. This includes reviewing the output of other ITU-T study groups where such output is the responsibility of ITU-T Study Group 2, or impacts the responsibilities of ITU-T Study Group 2, as they are identified in part 2 of this Resolution.

ITU-T Study Group 2 is responsible for studying, developing and recommending:

- general principles of NNAI;
- routing for all types of future and evolving telecommunication/ICT architectures, capabilities, applications and services, which encompasses operational aspects relating to end-to-end routing for all types of current and future networks;
- general principles and operational aspects related to interworking, number portability and carrier switching;
- services and capabilities from a user's point of view to facilitate global interconnection and interoperation and, to the extent practicable, ensure compatibility with the International Telecommunication Regulations and related intergovernmental agreements taking due account of national sovereignty;
- development of requirements for registrars and operating agencies (operators) which maintain NNAI resource databases and coordination with international registrars and operators of such databases;
- measures to be taken to ensure operational performance of all networks (including network management) to meet the requisite in-service network performance and quality of service;
- identify service-provider and network-operator requirements and priorities for fault, configuration, accounting, performance and security management (FCAPS) interfaces between network elements and management systems, and between management systems; transmission interfaces between network elements;
- priorities for telecommunication/ICT network management including management framework currently based on telecommunication management network (TMN), next-generation network (NGN), software-defined networking (SDN) and network function virtualization (NFV), IMT-2020 and beyond, concepts, and address the management of NGN;
- priorities for operational aspects of new and emerging telecommunication/ICT architectures, capabilities, applications and services, including cloud computing and distributed ledger technology (DLT);

- FCAPS interface solutions that will specify reusable management information definitions via protocol-neutral techniques, continue management information modelling for the major telecommunication technologies, such as optical and IP-based networking, and extend management technology choices consistent with market needs, industry recognized value, and major emerging technical directions; and
- additional studies will also cover network and service operational requirements and procedures, including support for network traffic management, support for the Service and Network Operations (SNO) group, and designations for interconnections among network operators.

ITU-T Study Group 2 will work on relevant identification and operational aspects in collaboration with other Study Groups as per the mandate of each study group and will strengthen the collaborative relationships with standards-development organizations, forums, consortia and other experts as appropriate in support of activity on telecommunication/ICT management.

The chair of ITU-T Study Group 2 (or, if necessary, the chair's delegated representative), and the designated advisers through the Numbering Coordination Team (NCT), shall provide technical advice to the Director of TSB concerning general principles for NNAI, allocation, assignment, reassignment, management and/or reclamation of international NNAI assigned resources and routing, and the effect on the allocation of NNAI resources. Such advice will be in accordance with the relevant ITU-T E- and F-series Recommendations, taking into account the results of any ongoing studies, or requests raised by NCT.

ITU-T Study Group 3

ITU-T Study Group 3 should study, review and/or develop Recommendations, and technical reports/papers, handbooks and other non-normative publications for members to respond positively and proactively to the development of international telecommunication/ICT markets, to ensure that policy and regulatory frameworks remain supportive of innovation, competition and investment, for the inclusive benefit of users and the global economy.

In particular, ITU-T Study Group 3 should ensure that tariffs, economic policies and regulatory frameworks related to international telecommunication/ICT services and networks are forward-looking and serve to encourage service uptake and use, as well as industry innovation and investment. Furthermore, these frameworks need to be adequately flexible to adjust to rapidly evolving markets, distinct circumstances of individual Member States, technologies, and business models, while ensuring the necessary competitive safeguards and the protection of consumers.

In this context, the work of ITU-T Study Group 3 should also consider new and emerging technologies and services so its work will help drive new economic opportunities and enhance inclusive societal benefits in different areas, including health care, education, and sustainable development.

ITU-T Study Group 3 should study and develop appropriate instruments, with a view to creating an enabling policy and regulatory environment for the transformation of markets and industries, through the promotion of open, innovation-driven and accountable institutions.

All study groups shall notify ITU-T Study Group 3 at the earliest opportunity of any development that may have an impact on tariff and accounting principles and international telecommunication/ICT economic and policy issues.

ITU-T Study Group 5

ITU-T Study Group 5 will develop Recommendations, supplements and other publications to:

- study the environmental performance of new and emerging telecommunications/ICTs and their effects on climate change, biodiversity and other environmental impacts;
- accelerate climate-change adaptation and mitigation actions through the use of telecommunications/ICTs (including new and emerging technologies);
- study the environmental aspects of new and emerging telecommunications/ICTs, including issues related to electromagnetic fields (EMF), electromagnetic compatibility (EMC), energy feeding and efficiency, and resistibility;
- play an active role in reducing the volume of e-waste and facilitate its management, in order to enhance the transition to a circular economy;
- study lifecycle and rare-metal recycling approaches for ICT equipment to minimize the environmental and health impact of e-waste;
- achieve energy efficiency and sustainable clean energy use in new and emerging telecommunications/ICTs, including, but not limited to, labelling, procurement practices, standardized power supplies/connectors, eco-rating schemes;
- build resilient and sustainable ICT infrastructures in urban and rural areas, as well as in cities and communities;
- study the role of ICTs and new and emerging telecommunications/ICTs in climate-change adaptation and mitigation;
- reduce the volume of e-waste and its environmental impacts (including the environmental impact of counterfeit devices);
- study the transition to a circular economy and implementing circular actions in cities;
- study the role of new and emerging telecommunications/ICTs to achieve Net Zero within the ICT sector and other sectors, as well as in cities;
- develop methodologies for assessing the environmental impact of new and emerging telecommunications/ICTs;

- develop standards and guidelines for using new and emerging telecommunications/ICTs in an eco-friendly way and enhancing rare-metal recycling and energy efficiency of ICT, including infrastructures/facilities;
- develop standards, guidelines and metrics/key performance indicators (KPIs) for aligning the environmental performance of the ICT sector and new and emerging telecommunications/ICTs with the United Nations Sustainable Development Agenda 2030, the Paris Agreement and the Connect 2030 Agenda;
- develop energy efficiency/performance metrics/KPIs and related measurement methodologies for new and emerging telecommunications/ICTs, including infrastructures and facilities;
- develop tools and guidance on proper, effective and simple communication to reach out to the general public on environmental issues, including EMF, EMC, resistibility, climate-change adaptation and mitigation, etc.;
- study methodologies for assessing the environmental impact of ICT, in terms of both its own emissions and power usage and the savings created through ICT applications in other industry sectors;
- study power-feeding methodologies that effectively reduce power consumption and resource usage, increase safety and increase global standardization for economic gains;
- set up a low-cost sustainable ICT infrastructure to connect the unconnected;
- study how to use ICTs to help countries and the ICT sector to adapt and build resilience to the effects of environmental challenges, including climate change;
- assess the sustainability impact of ICT to promote the Sustainable Development Goals (SDGs);
- study the protection of ICT networks and equipment from interference, lightning and power faults;
- develop standards related to the assessment of human exposure to EMF produced by ICT installations and devices;
- develop standards related to safety and implementation aspects related to ICT powering and to powering through networks and sites;
- develop standards related to components and application references for protection of ICT equipment and the telecommunication network;
- develop standards related to EMC, particle radiation effects, and assessment of human exposure to EMF produced by ICT installations and devices, including cellular phones, IoT devices and radio base stations;
- develop standards on the reutilization of the existing copper network outside plant and related indoor installations; and

- develop standards to guarantee good reliability and low latency for high-speed network services by providing requirements on resistibility and EMC.

The meetings of ITU-T Study Group 5 and its working parties/Questions should, as far as practicable, be collocated with other study groups/working parties/Questions involved in the study of environment, circular economy, energy efficiency and climate change to address the SDGs.

ITU-T Study Group 11

ITU-T Study Group 11 will develop Recommendations on the following subjects:

- network signalling and control architectures in existing and emerging telecommunication environments (e.g. software-defined networking (SDN), network function virtualization (NFV), future networks (FN), cloud computing, VoLTE/ViLTE/VoNR/ViNR, IMT systems including IMT-2030 networks (non-radio part), quantum key distribution networks (QKDN) and related technologies, etc.);
- signalling requirements and protocols for services and applications;
- security of signalling protocols;
- session control and signalling requirements and protocols;
- resource control and signalling requirements and protocols;
- signalling and control requirements and protocols to support attachment in emerging telecommunication environments;
- signalling and control requirements and protocols to support broadband network gateways;
- signalling and control requirements and protocols to support emerging multimedia services, including those for the metaverse;
- signalling and control requirements and protocols to support emergency telecommunication services (ETS);
- signalling requirements for establishing the interconnection of packet-based networks, including VoLTE/ViLTE/VoNR/ViNR-based networks, IMT systems including IMT-2030 networks (non-radio part);
- test methodologies and test suites as well as monitoring of parameters set for emerging network technologies and their applications, including cloud computing, SDN, NFV, IoT, VoLTE/ViLTE, IMT systems including IMT-2030 networks (non-radio part), etc., to enhance interoperability;
- conformance, interoperability testing and network/system/service/device testing, including benchmark testing, a testing methodology and testing specification of standardized network parameters in relation to the framework for Internet-related performance measurement, etc.;
- combating counterfeiting and tampering of ICT devices; and
- combating the use of stolen ICT devices.

ITU-T Study Group 11 is to lend assistance to developing countries in the preparation of technical reports and guidelines on the deployment of packet-based networks as well as emerging networks.

The development of signalling requirements, protocols and test specifications will be as follows:

- Study and develop signalling requirements;
- Develop protocols to meet the signalling requirements;
- Develop protocols to meet the signalling requirements of new services and technologies, including those for the metaverse;
- Develop protocol profiles for the existing protocols;
- Study existing protocols to determine if they meet the requirements, and work with the relevant standards-development organizations to avoid duplication and for necessary enhancements or extensions;
- Study existing open-source codes from open-source communities (OSCs) to support the implementation of ITU-T Recommendations;
- Develop signalling requirements and relevant test suites for interworking between new signalling protocols and existing ones;
- Develop signalling requirements and relevant test suites for interconnection between packet-based networks (e.g. VoLTE/ViLTE/VoNR/ViNR-based networks, IMT systems including IMT-2030 networks (non-radio part); and
- Develop test methodologies and test suites for the relevant signalling protocols.

ITU-T Study Group 11 will collaborate with ITU-T Study Group 17 on security matters.

ITU-T Study Group 11 is to work on enhancements to existing Recommendations on signalling protocols of legacy networks and new networks to ensure signalling security. The objective is to satisfy business needs of member organizations that wish to offer new features and services using networks based on existing Recommendations.

ITU-T Study Group 11 is to continue coordination with the International Laboratory Accreditation Cooperation (ILAC) on the ITU Testing Laboratories recognition procedure and establishing collaboration with existing conformance assessment programmes.

ITU-T Study Group 11 is to continue its work on any test specifications for use in benchmarks testing and testing specification for standardized network parameters in relation to the framework for Internet-related measurements.

ITU-T Study Group 11 is to continue its work with relevant standards organizations and forums on subject areas established by the cooperation agreement.

ITU-T Study Group 11 is to continue its work in developing ITU-T Recommendations, technical reports and guidelines to assist ITU Member States in combating counterfeiting, tampering and theft of ICT equipment and the adverse implications thereof.

ITU-T Study Group 12

A particular focus of ITU-T Study Group 12 is on the end-to-end quality (as perceived by the customer) delivered using a path that, with increasing frequency, involves complex interactions between terminals and network technologies (e.g. mobile terminals, gateway and network signal processing equipment, and IP-based networks).

As the lead study group for quality of service (QoS) and quality of experience (QoE), ITU-T Study Group 12 coordinates QoS and QoE activities not only within ITU-T, but also with other standards-development organizations and forums, and develops frameworks to improve collaboration.

ITU-T Study Group 12 is the parent group for the Quality of Service Development Group (QSDG); the Regional Group of ITU-T Study Group 12 on QoS for the Africa region (SG12RG-AFR) and the Regional Group of ITU-T Study Group 12 for the Americas (SG12RG-AMR).

Examples of the work ITU-T Study Group 12 plans to undertake:

- QoS and QoE assessment for multimedia services, applications and technologies (e.g. video streaming, video gaming, telemeetings, metaverse, extended reality (XR), virtual reality (VR) and augmented reality (AR));
- end-to-end QoS planning, focusing on all-packet networks, but also considering hybrid IP/digital circuit-based paths;
- QoS operational aspects and related interworking guidance and resource management to support QoS;
- technology-specific (e.g. IP, Ethernet, multiprotocol label switching (MPLS)) performance guidance;
- application-specific (e.g. smart grid, Internet of Things (IoT), machine-to-machine (M2M), home network (HN), over-the-top (OTT)) performance guidance;
- definition of QoE requirements, influencing factors and performance targets, and associated evaluation methodologies, for multimedia services;
- definition of objective prediction models based on subjective assessment methodologies, data collection via crowdsourcing and customer surveys;
- definition of crowdsourcing-based methodologies for the assessment of QoS and QoE;
- subjective quality assessment methodologies for existing and emerging technologies (e.g. telepresence, XR, VR and AR);

- quality modelling (psychophysical models, parametric models, intrusive and non-intrusive methods, opinion models) for multimedia and speech;
- speech-based services involving vehicle terminals;
- speech terminal characteristics and electro-acoustic measurement methods;
- definition of QoS parameters and assessment methods related to artificial intelligence (AI) and machine learning;
- development of test specifications for ITU-T Recommendations on performance, QoS and QoE;
- perceptual and field assessment principles for QoS and QoE of digital financial services (DFS); and
- development, validation and adaptation of subjective and objective speech quality assessment techniques for systems and applications where AI-based speech processing techniques (e.g. coding, noise reduction) are applied.

ITU-T Study Group 13

The key areas of competence of ITU-T Study Group 13 include:

- IMT-2030 network aspects: Studies on the requirements and capabilities for the non-radio part of networks based on the service scenarios of IMT-2030. This includes development of Recommendations on the framework and architecture design, including also network-related aspects of reliability, performance and security. Furthermore, it includes interworking with current networks including IMT-Advanced, IMT-2020, etc.
- Application of artificial intelligence (AI) technology including machine learning aspects for future networks: Studies on how to incorporate network intelligence into IMT-2030. Development of Recommendations on overall requirements, functional architecture and application support capabilities for networks, which include artificial intelligence and machine learning mechanisms.
- Software-defined networking (SDN), network slicing and orchestration, computing and networking integration aspects: Studies on SDN and programmability to support functions such as network virtualization and network slicing necessary for exploding and diversifying services taking into account scalability, security and distribution of functions, and on the integration of computing and networking over variety types of future networks. Development of Recommendations on the orchestration and related management-control continuum capabilities/policies of network function components, softwarized network and network slices, including enhancement and support of distributed networking capabilities.
- Information-centric networking (ICN) aspects: Studies related to analysis of ICN applicability to IMT-2030 networks. Development of new Recommendations on the requirements, functional architecture and mechanisms of ICN networking and use-case specific mechanisms and architectures, including deployment of corresponding identifiers. Development of Recommendations on the enhancement of ICN for incorporating emerging technologies.

- Fixed, mobile and satellite convergence aspects: Studies related to access-agnostic core, which integrates fixed, mobile and satellite, and the application of innovative technologies to enhance such convergence, such as AI/machine learning, etc. This also includes the development of Recommendations on full connectivity for various types of user equipment.
- Knowledge-centric trustworthy networking and services aspects: Studies related to requirements and functions to support the building of trusted ICT infrastructures, including digital asset treatment
- Quantum networks and relevant technologies: Studies related to quantum networks, including networking aspect of quantum key distribution networks (QKDN). Furthermore, development of new Recommendations related to user networks interacting with quantum networks.
- Aspects related to future computing, including cloud computing and data handling in telecommunication networks: Studies of the requirements, functional architectures and their capabilities, mechanisms and deployment models of future computing, including cloud computing and data handling, covering inter- and intra-cloud scenarios as well as the applications of future computing in vertical domains. Studies include the development of technologies from the network side to support end-to-end awareness, control and management of future computing, including cloud, cloud security and data handling.

ITU-T Study Group 13 activities will also cover regulatory implications, including deep packet inspection, and lower energy consumption networks. Furthermore, it includes activities related to innovative service scenarios, deployment models and migration issues based on future networks.

In order to assist countries with economies in transition, developing countries and especially the least developed countries in the application of networks of the future, including IMT-2030 and other innovative technologies, ITU-T Study Group 13 maintains a dedicated Question on this topic, and its regional group for Africa. Consultations should thereby be enabled with representatives of the ITU Telecommunication Development Sector (ITU-D) with a view to identifying how this assistance might best be provided through an appropriate activity conducted in conjunction with ITU-D.

Joint rapporteur group activities of different study groups shall be seen as complying with the WTSA expectations for collocation.

ITU-T Study Group 15

ITU-T Study Group 15 is the focal point in ITU-T for the development of standards on networks, technologies and infrastructures for transport, access and home. This encompasses the development of related standards for the customer premises, access, metropolitan and long-haul sections of communication networks.

Particular emphasis is given to providing global standards for a high-capacity (terabit) optical transport network (OTN) infrastructure, and for high-speed (multi-Gbit/s) network access and home networking. This includes the related work on modelling for network, system and equipment management (including the use of open-source tools), transport network architectures, support of network slicing (including orchestration and capability exposure), layer interworking and the application of artificial intelligence/machine learning (AI/ML) to move towards self-managed autonomous networks.

Special consideration is being given to the changing telecommunication environment, for example, supporting the evolving needs of mobile communication networks (e.g. support of IMT-2020/5G and the evolution to IMT-2030/6G), data centres, cloud computing and the metaverse.

Access network technologies addressed by the study group include passive optical network (PON), point-to-point optical, and copper-based digital subscriber line (DSL) technologies. These access technologies find application in their traditional uses as well as in backhaul and fronthaul networks for emerging services such as broadband wireless and data centre interconnect. Home networking technologies include wired broadband, wired narrowband, wireless narrowband, optical fibre and free-space optical communications. Both access and home networking for smart-grid applications are supported.

Network, system and equipment features covered include: routing, switching, interfaces, multiplexers; secure transport; network synchronization (including frequency, time and phase); cross-connect (including optical cross-connect (OXC)), add/drop multiplexers (including fixed or reconfigurable optical add/drop multiplexers (ROADM)), amplifiers, transceivers, repeaters, regenerators; multilayer network protection switching and restoration; operations, administration and maintenance (OAM); transport resource management and control capabilities to enable increased transport network agility, resource optimization, and scalability (e.g. the application of software-defined networking (SDN) to transport networks, together with enabling the use of artificial intelligence /machine learning (AI/ML) to support the automation of transport network operations). Many of these topics are addressed for various media and transport technologies, such as metallic and terrestrial/submarine optical fibre cables, dense and coarse wavelength-division multiplexing (DWDM and CWDM) optical systems for fixed and flex-grid networks, optical transport network (OTN), including the evolution of OTN beyond 1 Tbit/s rates, Ethernet and other packet-based data services.

The study group will handle the entire range of fibre and cable performance (including test methods), field deployment and installation, taking into account the need for additional specifications driven by new optical fibre technologies and new applications. The activity on field deployment and installation will address reliability, security aspects and social issues, such as the reduction of excavation, the problems caused to traffic and the generation of construction noise, and will include the investigation and standardization of new techniques allowing faster, cost-effective and safer cable installation. Planning, construction, maintenance and management of the physical infrastructure will take into account the advantages of emerging technologies. Approaches that improve network resilience and recovery from disasters will be studied.

In its work, ITU-T Study Group 15 should take into account related activities in other ITU study groups, standards-development organizations, forums and consortia, and will collaborate with them to avoid duplication of effort and identify any gaps in the development of global standards.

ITU-T Study Group 15 should develop standards on networks, technologies and infrastructures for transport, access and home related to Action Line C2 (Information and communication infrastructure) of the World Summit on the Information Society (WSIS) and United Nations Sustainable Development Goal 9 (Industry, innovation and infrastructure).

ITU-T Study Group 17

ITU-T Study Group 17 is responsible for developing international standards in supporting building confidence, security and trust in the use of telecommunications/ICTs.

To this end, this includes studies relating to security, including cybersecurity, countering spam, wholistic security approaches spanning development, deployment, and operation phases, managed security services and security automation, identity and authentication management. It also includes security architecture, model, and framework, security management, supply chain security concerning software, and security of end-devices, networks, applications and services such as endpoint security, including endpoint detection and response, the smart devices including smart phones, Internet of Things (IoT), intelligent transport systems (ITS), secure application services, cloud computing, distributed ledger technology (DLT) and telebiometrics.

ITU-T Study Group 17 is also responsible for the application of open systems interconnection, including directory and object identifiers, and for technical languages such as Abstract Syntax Notation One and use of JSON, the method for their usage and other issues related to the software aspects of telecommunication systems, and for conformance testing to improve the quality of Recommendations.

ITU-T Study Group 17's role is to provide technical solutions for addressing security for ICTs and ensuring security by ICTs. Studies focus especially on security for new emerging areas, such as security for IMT-2020/5G and beyond, IMT-2030/6G, IoT, smart cities, in-network computing, converged networks, metaverse, digital twin, DLT, big data analytics, ITS including V2X and autonomous driving, security for artificial intelligence (AI) used in ICT/Telecommunication, AI to improve security capabilities, the implications of generative AI on the threat landscape to ICT/Telecommunication and quantum-related technologies such as QKD (quantum key distribution) and use of post quantum cryptography (PQC). Its study areas also include use of cryptographic algorithms and protocols such as homomorphic algorithms, zero-knowledge proofing and multiparty secret sharing, safeguarding sensitive data and the management of personally identifiable information (PII), such as technical and operational aspects of data protection with respect to ensuring confidentiality, integrity and availability of PII, using federated machine learning, synthetic data generation, differential privacy, and data masking techniques.

In the area of security, ITU-T Study Group 17 is responsible for developing the core international standards on ICT security, such as new security architecture/frameworks/model, zero trust for network infrastructure; the fundamentals related to cybersecurity, including threats, vulnerabilities and risks, and incident handling/response; and security management.

ITU-T Study Group 17 provides overall coordination of security work in ITU-T in its capacity as lead study group on security, on identity management, and on directory, public key infrastructure (PKI), formal languages and object identifiers.

In addition, ITU-T Study Group 17 is responsible for developing the core Recommendations on security for DLT, security for ITS including V2X and autonomous driving, security aspects of applications and services in the areas of Internet Protocol television (IPTV), various kinds of networks, including IMT-2020/5G and beyond and IMT-2030/6G, smart entities including smart grid, smart factory and digital health, industrial control systems (ICS), IoT and smart cities, terrestrial-satellite and satellite-satellite network convergence, radio navigation satellite service (RNSS), automatic identification system (AIS), software-defined networking (SDN), network function virtualization (NFV), metaverse, digital twin, cloud computing, in-network computing, big data analytics, smartphones, digital financial systems (DFS) and telebiometrics.

ITU-T Study Group 17 is also responsible for developing the core Recommendations on a generic identity and authentication management model that is independent of network technologies and supports the secure exchange of identity information between entities. This work also includes studying the process for discovery of authoritative sources of identity information; generic mechanisms for the bridging/interoperability of a diverse set of identity information formats; identity management threats; the mechanisms to counter these threats; the protection of PII; and the development of mechanisms to ensure that access to PII is only authorized when appropriate. Additionally, this work also includes studying appropriate technical standardization solutions for child online protection.

In the area of open systems interconnection, Study Group 17 is responsible for Recommendations in the following areas:

- directory services and systems, including PKI and distributed public key infrastructure (DPKI) (ITU-T F.500- and ITU-T X.500-series);
- object identifiers (OIDs) and associated registration authorities (ITU-T X.660/ITU-T X.670-series);
- open systems interconnection (OSI), including Abstract Syntax Notation One (ASN.1) (ITU-T F.400-, ITU-T X.200-, ITU-T X.400-, ITU-T X.600-, ITU-T X.800-series); and
- open distributed processing (ODP) (ITU-T X.900-series).

In the area of languages, ITU-T Study Group 17 is responsible for studies on modelling, specification and description techniques, which includes languages such as ASN.1, SDL, MSC, URN and TTCN-3.

ITU-T Study Group 17 coordinates security work across all study groups in ITU-T. This work will be developed in line with the requirements of, and in cooperation with, the relevant study groups such as ITU-T Study Groups 2, 3, 11, 13, 15, 20 and 21.

ITU-T Study Group 17 will work on relevant identity management aspects in collaboration with ITU-T Study Group 20 and ITU-T Study Group 2, as per the mandate of each study group.

ITU-T Study Group 20

ITU-T Study Group 20 will work on the following items:

- framework and roadmaps for the harmonized and coordinated development of the Internet of Things (IoT), machine-to-machine (M2M) communications, ubiquitous sensor networks, and relevant emerging digital technologies, which will be done in close cooperation with relevant ITU Telecommunication Standardization Sector (ITU-T), ITU Radiocommunication Sector (ITU-R) and ITU Telecommunication Development Sector (ITU-D) study groups and other regional and international standards organizations and industry forums;
- guidelines, methodologies and best practices related to standards to help cities, communities, and rural areas deliver solutions and services using emerging digital technologies—also known as smart sustainable cities and communities (SSC&C), which will be done in close cooperation with relevant ITU-T, ITU-R and ITU-D study groups and other regional and international standards organizations and industry forums;
- requirements and capabilities of IoT and SSC&C including verticals;
- definitions and terminology for IoT and SSC&C;
- IoT and SSC&C infrastructure (in collaboration with ITU-T Study Group 13, as appropriate), connectivity and devices, and digital services and applications, including architectures and frameworks of IoT and SSC&C;
- decentralized/distributed IoT;
- the evaluation, assessment, service analysis and infrastructure of emerging digital technologies (e.g. digital twins, AI, metaverse, decentralized/distributed IoT) for SSC&C including verticals;
- identification aspects of IoT and SSC&C in collaboration with other study groups, as appropriate;
- protocols and interfaces of IoT and SSC&C systems, services and applications;
- IoT and SSC&C platforms including digital twins;
- metaverse for SSC&C (citiverse);
- interoperability of IoT and SSC&C systems, services and applications;
- quality of IoT and SSC&C systems, services and applications;

- security, privacy[4] and trustworthiness4 of IoT and SSC&C systems, services and applications;
- data processing and management, including data analytics, big data aspects, and AI-enabled applications of IoT and SSC&C;
- datasets, data models and semantics-based capabilities of IoT and SSC&C including verticals; and
- database maintenance of IoT and SSC&C standards.

ITU-T Study Group 21

ITU-T Study Group 21 will work on the following items:

- terminology for various multimedia services;
- operation of multimedia systems and applications, including interoperability, scalability and interworking over different networks;
- ubiquitous multimedia services and applications;
- multimedia aspects of digital services;
- development of multimedia end-to-end architectures, including vehicle gateway for intelligent transport systems (ITS);
- high-layer protocols and middleware for multimedia systems and applications, including Internet Protocol (IP)-based television services (managed and non-managed networks), Internet-based streaming media services and digital signage;
- media and signal coding;
- multimedia and multimode terminals;
- human-machine interaction;
- signal processing network equipment and terminals, gateway implementations, and characteristics;
- quality of multimedia technology applications and of content delivery multimedia systems;
- security and trust of multimedia systems and services;
- secured audiovisual content contribution and distribution, for example conditional access (CA) systems and digital rights management (DRM), over cable networks;
- multimedia aspects of distributed ledger technology (DLT) and its applications;
- digital multimedia services and applications in various vertical industries;
- multimedia aspects of metaverse technologies, applications, systems and services, including functional architecture, and platform interoperability;

[4] Some relevant aspects of this term may be considered differently from one Member State to another. The use of this term is framed in terms of international telecommunication standardization.

- audiovisual content systems for contribution and distribution, including broadcasting, over telecommunication networks, e.g. coaxial cable, optical fibre, hybrid fibre coaxial (HFC), IP networks, which could be applied also to satellite and/or terrestrial content distribution;
- interconnection between cable networks and other types of networks such as fixed wireless access network (e.g. radio local access network, private IMT-2020 network and beyond);
- the use of IP or other appropriate protocols, middleware and operating systems to provide time-critical services, services on demand, interactive services or service migrations from radio frequency (RF) to IP over cable distribution networks;
- procedures for the operation of audiovisual content delivery over cable networks;
- AI-enabled multimedia systems and applications, including AI-assisted delivery and transmission for audiovisual content and other data services, taking into account responsible/trustworthy/explainable AI principles;
- cable network terminals and related interfaces (e.g. interfaces to home network devices, such as IoT devices, interfaces to the cloud);
- end-to-end integrated platforms for cable networks;
- advanced, interactive, time-critical and other services and applications over cable networks;
- cloud-based systems for audiovisual content services and control over cable networks;
- multimedia content processing and delivery, including extended reality (e.g. augmented reality, virtual reality and mixed reality), immersive environments, virtual worlds, and metaverse;
- multimedia system, service and application accessibility for digital inclusion;
- common user profile and participation taxonomy for broadband cable-TV accessibility.

ITU-T Study Group 21 will work collaboratively with all stakeholders working in the standardization areas within its mandate, in particular with other ITU study groups, other United Nations agencies, international and regional standards-development organizations, industry forums and consortia.

ITU-T Study Group 21 will coordinate with ITU-T Study Group 17 on security aspects of the multimedia domain.

ITU-T Study Group 21 will develop and maintain implementation guidelines to support the deployment of its Recommendations in developing countries[5].

ITU-T Study Group 21 is responsible for coordination with the ITU Radiocommunication Sector (ITU-R) on broadcasting matters.

Inter-Sector rapporteur group activities of different Sectors and/or joint rapporteur group activities of different study groups shall be seen as complying with the WTSA expectations for collaboration and coordination.

ANNEX C
(to Resolution 2 (Rev. New Delhi, 2024))

List of Recommendations under the responsibility of the respective study groups of the ITU Telecommunication Standardization Sector and the Telecommunication Standardization Advisory Group in the 2025-2028 study period

ITU-T Study Group 2

ITU-T E-series, except those in conjunction with ITU-T Study Group 17 or under the responsibility of ITU-T Study Groups 3, 12 and 21

ITU-T F-series, except those under the responsibility of ITU-T Study Groups 13, 17 and 21

ITU-T G.850-series

Recommendations of the ITU-T I.220-, ITU-T I.230-, ITU-T I.240-, ITU-T I.250-series and ITU-T I.750-series

ITU-T M-series

ITU-T O.220-series

ITU-T Q.513, ITU-T Q.800 — ITU-T Q.849, ITU-T Q.940-series

Maintenance of the ITU-T S-series

ITU-T V.51/M.729

ITU-T X.160-, ITU-T X.170-, ITU-T X.700-series

ITU-T Z.300-series

ITU-T Study Group 3

ITU-T D-series

ITU-T D.103/E.231

ITU-T D.104/E.232

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

ITU-T D.1140/X.1261

ITU-T Study Group 5

ITU-T K-series

ITU-T L.1 — ITU-T L.9, ITU-T L.18 — ITU-T L.24, ITU-T L.32, ITU-T L.33, ITU-T L.71, ITU-T L.75, ITU-T L.76, ITU-T L.1000-series

ITU-T Study Group 11

ITU-T Q-series, except those under the responsibility of ITU-T Study Groups 2, 13, 15, 20 and 21

Maintenance of the ITU-T U-series

ITU-T X.290-series (except ITU-T X.292) and ITU-T X.600 – ITU-T X.609

ITU-T Z.500-series

ITU-T Study Group 12

ITU-T E.420 – ITU-T E.479, ITU-T E.800 – ITU-T E.859

ITU-T G.100-series, except ITU-T G.160- and ITU-T G.180-series

ITU-T G.1000-series

ITU-T I.350-series (including ITU-T G.820/I.351/Y.1501), ITU-T I.371, ITU-T I.378, ITU-T I.381

ITU-T J.140-, ITU-T J.240- and ITU-T J.340-series

ITU-T P-series

ITU-T Y.1220-, ITU-T Y.1530-, ITU-T Y.1540-, ITU-T Y.1550- and ITU-T Y.1560-series

ITU-T Study Group 13

ITU-T F.600-series

ITU-T G.801, ITU-T G.802, ITU-T G.860-series

ITU-T I-series, except those under the responsibility of ITU-T Study Groups 2, 12 and 15, and those having double/triple numbering in other series

ITU-T Q.933, ITU-T Q.933*bis*, ITU-T Q.10xx-series and ITU-T Q.1700-series

ITU-T X.1 – ITU-T X.25, ITU-T X.28 – ITU-T X.49, ITU-T X.60 – ITU-T X.84, ITU-T X.90 – ITU-T X.159, ITU-T X.180 – ITU-T X.199, ITU-T X.272, ITU-T X.300-series

ITU-T Y-series, except those under the responsibility of ITU-T Study Groups 12, 15, 20 and 21

ITU-T Study Group 15

ITU-T G-series, except those under the responsibility of ITU-T Study Groups 2, 12, 13 and 21

ITU-T I.326, ITU-T I.414, ITU-T I.430-series, ITU-T I.600-series and ITU-T I.700-series, except ITU-T I.750-series

ITU-T J.185, ITU-T J.186, ITU-T J.190 and ITU-T J.192

ITU-T L-series, except those under the responsibility of ITU-T Study Group 5

ITU-T O-series (including ITU-T O.41/ITU-T P.53), except those under the responsibility of ITU-T Study Group 2

ITU-T Q.49/O.22 and ITU-T Q.500-series, except ITU-T Q.513

Maintenance of the ITU-T R-series

ITU-T X.50-series, ITU-T X.85/ Y.1321, ITU-T X.86/ Y.1323, ITU-T X.87/Y.1324

ITU-T V.38, ITU-T V.55/ O.71, ITU-T V.300

ITU-T Y.1300 – ITU-T Y.1309, ITU-T Y.1320 – ITU-T Y.1399, ITU-T Y.1501 and ITU-T Y.1700-series

ITU-T Study Group 17

ITU-T D.267 (in conjunction with ITU-T Study Group 3)

ITU-T E.104, ITU-T E.115, ITU-T E.409 (in conjunction with ITU-T Study Group 2)

ITU-T F.400-series; ITU-T F.500 – ITU-T F.549

ITU-T X-series, except those under the responsibility of ITU-T Study Groups 2, 3, 11, 13, 15 and 21

ITU-T Z-series, except ITU-T Z.300-series and ITU-T Z.500-series

ITU-T Study Group 20

ITU-T F.744, ITU-T F.747.1 – ITU-T F.747.8, ITU-T F.748.0 – ITU-T F.748.5 and ITU-T F.771

ITU-T H.621, ITU-T H.623, ITU-T H.641, ITU-T H.642.1, ITU-T H.642.2 and ITU-T H.642.3

ITU-T L.1600, ITU-T L.1601, ITU-T L.1602, ITU-T L.1603

ITU-T Q.3052

ITU-T Y.4000-series, ITU-T Y.2016, ITU-T Y.2026, ITU-T Y.2060 – ITU-T Y.2070, ITU-T Y.2074 – ITU-T Y.2078, ITU-T Y.2213, ITU-T Y.2221, ITU-T Y.2238, ITU-T Y.2281 and ITU-T Y.2291

NOTE – Recommendations transferred from other ITU-T study groups have double numbers in the Y.4000-series.

ITU-T Study Group 21

ITU-T E.120 – ITU-T E.139 (except ITU-T E.129), ITU-T E.161, ITU-T E.180-series, ITU-T E.330-series, ITU-T E.340-series

ITU-T F.700-series, except those under the responsibility of ITU-T Study Group 20, and ITU-T F.900-series

ITU-T G.160-series, ITU-T G.710 – ITU-T G.729 (except ITU-T G.712), ITU-T G.760-series (including ITU-T G.769/Y.1242), ITU-T G.776.1, ITU-T G.799.1/ Y.1451.1, ITU-T G.799.2, ITU-T G.799.3

ITU-T H-series, except those under the responsibility of ITU-T Study Group 20

ITU-T J-series, except those under the responsibility of ITU-T Study Groups 12 and 15

ITU-T N-series

ITU-T T-series

ITU-T Q.50-series, ITU-T Q.115-series

ITU-T V-series, except those under the responsibility of ITU-T Study Groups 2 and 15

ITU-T X.26/V.10 and ITU-T X.27/V.11

TSAG

ITU-T A-series Recommendations

MOD

RESOLUTION 7 (Rev. New Delhi, 2024)

Collaboration with the International Organization for Standardization and the International Electrotechnical Commission

(Malaga-Torremolinos, 1984; Helsinki, 1993; Geneva, 1996; Montreal, 2000; Florianópolis, 2004; Johannesburg, 2008; Dubai, 2012; Hammamet, 2016; Geneva, 2022; New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024),

considering

a) Articles 1 and 50 of the ITU Constitution;

b) Articles 2 and 20 of the Statutes of the International Organization for Standardization (ISO);

c) Article 2 of the Statutes and Rules of Procedure of the International Electrotechnical Commission (IEC);

d) the mandate of the ITU Telecommunication Standardization Sector (ITU-T) as set forth in the basic instruments of the Union, notably Chapter III of the Constitution and Section 6 of the ITU Convention;

e) the interest of both ISO and IEC in some aspects of telecommunications/information and communication technologies (ICTs);

f) the common interest of ISO and IEC on the one hand and ITU-T on the other in the development of their respective standards in telecommunications/ICTs, which take full account of the needs of all interested stakeholders, including manufacturers, users and those responsible for communication systems and services;

g) the need for mutual agreements on many areas of standardization activity of common interest;

h) the existing cooperation within the framework of the World Standards Cooperation (WSC), established in 2001 by ITU, ISO and IEC in order to advance the development of voluntary consensus-based international standards in ITU, ISO and IEC;

i) that the Standardization Programme Coordination Group (SPCG) shares information, discusses and reviews new subject areas of strategic interest and proposals for new fields of technical activity under consideration in IEC, ISO and ITU-T for the strategic coordination of future standardization work;

j) the relevance of the ITU conformance and interoperability (C&I) programme and its four pillars, and the action plan for the C&I programme (reviewed by the ITU Council at its 2017 session),

noting

a) that the working methods and standards-development time-frames of the organizations concerned are not the same;

b) that the document-sharing mechanisms and requirements differ among the three organizations;

c) the importance of shared documents being accessible among the three organizations during the development of the work;

d) the increasing financial burdens on the professional experts who participate in the development of standards in these three organizations;

e) the coordination meeting established between the three organizations through their top management;

f) the progress made on the basis of existing procedures in the alignment of technical Recommendations with ISO, IEC and ISO/IEC Joint Technical Committee 1 (JTC 1) in areas of joint interest, thanks to the spirit of cooperation which has prevailed;

g) the principles of collaboration established between ISO and IEC and particularly with ISO/IEC JTC 1 on information technology as contained in Recommendation ITU-T A.23 and in the ISO/IEC JTC 1 Directives;

h) that other standardization activities of a collaborative nature may require coordination;

i) the increasing cost of developing international standards and Recommendations;

j) the role of the Common Patent Policy for ITU-R/ITU-T/ISO/IEC in furthering common approaches between ITU-T, ISO and IEC on certain standards-related intellectual property rights issues;

k) the value of identifying and setting priorities for cooperation between ITU-T, ISO and IEC,

recognizing

that the collaboration between ITU-T on the one hand and ISO and IEC on the other is on the basis of the principles of overall win and mutual benefit to best serve international standardization efforts,

resolves

1 to request the Director of the Telecommunication Standardization Bureau (TSB) to report regularly to the Telecommunication Standardization Advisory Group (TSAG) on the status of collaboration with ISO and IEC;

2 to continue inviting ISO and IEC to examine, through TSAG, the ITU-T study programme, in the early stages of its studies, and vice versa, and to further examine such programmes to take into account ongoing changes, in order to identify subjects where coordination seems desirable for common and complementary work, and which would benefit the membership, and to inform the Director of TSB;

3 to request the Director of TSB, after consultation with the study group management team concerned, to reply, and to furnish any additional information requested by ISO and IEC, as it becomes available;

4 to invite the Director of TSB, at the request of Member States and Sector Members, in consultation with TSAG, to review the agreement between ISO/IEC and ITU-T, with a view to exploring options for accessing and publishing common texts, with a possible unified approach;

5 to request the Director of TSB to examine and update the programme of cooperation and priority of the study items among ITU-T, ISO and IEC and highlight this information on the ITU-T website on a regular basis;

6 to request the Director of TSB, the study groups and TSAG, as appropriate, to consider and propose further improvements to the procedures for cooperation between ITU-T and ISO and IEC;

7 that the necessary contacts with ISO and/or IEC (including ISO/IEC JTC 1) at the appropriate levels and coordination methods should be mutually agreed and regular coordination events arranged:

- for work where text should be drawn up mutually and kept aligned, procedures in accordance with Recommendation ITU-T A.23 and the Guidelines for Cooperation therein apply;
- for other activities where coordination between ITU-T and ISO and IEC is required (for example in relation to any mutual agreements, such as the Memorandum of Understanding on standardization in the field of electronic business), clear means of coordination shall be established and regular coordination contacts made;
- in order to continue collaboration and communication between ITU-T, IEC and ISO through all existing mechanisms, including SPCG, by facilitating communication, information sharing and the identification of areas of common interest;

8 to request the chairs of study groups to take into account the related work programmes and the progress of projects in ISO, IEC and ISO/IEC JTC 1; further, to cooperate with these organizations as widely as possible and by appropriate and balanced means, in order to:

- ensure that the specifications which have been jointly drawn up remain aligned;
- collaborate in drawing up other specifications in fields of shared interest;

9 that, for reasons of economy, any necessary collaborative meetings take place to the extent possible in association with other relevant meetings;

10 that the report concerning such coordination indicate the status of alignment and compatibility of draft texts on points of shared interest, in particular identifying cases where cross-referencing would be helpful to users of published International Standards and Recommendations;

11 to invite administrations to contribute significantly to the coordination between ITU-T on the one hand and ISO and IEC (including ISO/IEC JTC 1) on the other by ensuring adequate coordination of national activities associated with the three organizations.

MOD

RESOLUTION 11 (Rev. New Delhi, 2024)

Collaboration with the Universal Postal Union in the study of services concerning both the postal and the telecommunication sectors

(Malaga-Torremolinos, 1984; Helsinki, 1993; Geneva, 1996; Montreal, 2000; Florianópolis, 2004; Johannesburg, 2008; Dubai, 2012; Hammamet, 2016; New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024),

considering

a) that within the United Nations system, both ITU and the Universal Postal Union (UPU), as organizations specialized in communications, have been collaborating to identify synergies with a view to achieving the objectives of the World Summit on the Information Society, each within its specific sphere of competence;

b) that postal and telecommunication administrations, the relevant operating agencies authorized by Member States and service providers need to keep themselves informed of technical progress liable to improve or harmonize existing services in both the postal and telecommunication sectors;

c) the usefulness of examining jointly the implications of any new Recommendations or modifications to current Recommendations made in this connection,

recognizing

a) the cooperation that has existed between the two organizations in regard, *inter alia,* to the use of new technologies by the postal sector and the fostering of its role in projects on the introduction and sustainable deployment and use of telecommunication/information and communication technology (ICT) infrastructure, cybersecurity and digital financial services;

b) that the changes in postal and telecommunication services in recent years have increased the synergies between the two sectors and consequently the need for greater coordination and joint work between both organizations,

recalling

that, under No. 9 of the ITU Constitution, one of the purposes of the Union is "to promote, at the international level, the adoption of a broader approach to the issues of telecommunications in the global information economy and society, by cooperating with other world and regional intergovernmental organizations and those non-governmental organizations concerned with telecommunications",

observing

that it is necessary to update the topics of interest with a view to developing common activities between both organizations in order to optimize the use of their resources and maximize their contribution to sustainable and inclusive socio-economic goals,

resolves

that the relevant study groups of the ITU Telecommunication Standardization Sector (ITU-T) should continue to collaborate with the Postal Operations Council (POC) committees as necessary, on a reciprocal basis and with a minimum of formality, in particular by investigating issues of common interest such as ICT-related economic and policy issues, environment and circular economy, electronic services and security, digital financial services, new and emerging telecommunications/ICTs, including applications of artificial intelligence (AI) in telecommunication/ICT networks,

instructs study groups of the ITU Telecommunication Standardization Sector

to report periodically on the collaboration activities between ITU-T and UPU to the Telecommunication Standardization Advisory Group,

instructs the Director of the Telecommunication Standardization Bureau

1 to encourage and assist this collaboration between the two organs particularly through facilitating participation of ITU officials in relevant POC meetings;

2 to consult with UPU on the establishment of a joint working group between ITU-T and UPU on standards collaboration in the areas of common interest, such as ICT-related economic and policy issues, environment and circular economy, electronic services and security, digital financial services, new and emerging telecommunications/ICTs, including applications of AI in telecommunication/ICT networks;

3 to support the organization of any events and activities related to enhancing the efficiency and effectiveness of postal services through new and emerging telecommunications/ICTs.

MOD

RESOLUTION 18 (Rev. New Delhi, 2024)[1]

Strengthening coordination and cooperation among the three ITU Sectors on matters of mutual interest

(Helsinki, 1993; Geneva, 1996; Montreal, 2000; Florianópolis, 2004; Johannesburg, 2008; Dubai, 2012; Hammamet, 2016; Geneva, 2022; New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024),

recalling

a) that the responsibilities of the ITU Radiocommunication (ITU-R), Telecommunication Standardization (ITU-T) and Telecommunication Development (ITU-D) Sectors are enshrined in the ITU Constitution and Convention, in particular No. 119 of the Constitution and Nos. 151 to 154 (relating to ITU-R), No. 193 (relating to ITU-T), Nos. 211 and 214 (relating to ITU-D) and No. 215 of the Convention;

b) Resolution 191 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on strategy for the coordination of efforts among the three Sectors of the Union;

c) Resolution ITU-R 75 (Dubai, 2023) of the Radiocommunication Assembly, on strengthening coordination and cooperation among the three ITU Sectors on matters of mutual interest;

d) Resolution 59 (Rev. Kigali, 2022) of the World Telecommunication Development Conference (WTDC), on strengthening coordination and cooperation among the three ITU Sectors on matters of mutual interest;

e) Resolution 44 (Rev. [Geneva, 2022]) of th[e World Telecommunication Standardization Assembly], on bridging the standardization gap between developing and developed countries;

f) Resolution 5 (Rev. Kigali, 2022) of WTDC, on enhanced participation by developing countries in the activities of the Union,

considering

a) that a basic principle for cooperation and collaboration among ITU-R, ITU-T and ITU-D is the need to avoid duplication of activities of the Sectors, and to ensure that work is undertaken efficiently and effectively, respecting the specific functions defined in the ITU Constitution and Convention for each Sector;

b) that there are a growing number of issues of mutual interest and concern to all Sectors, in accordance with Resolution 191 (Rev. Bucharest, 2022);

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[1] This resolution should also be brought to the attention of the ITU Radiocommunication and Telecommunication Development Sectors.

c) that the Inter-Sector Coordination Group on issues of mutual interest (ISCG), which is composed of representatives from the three advisory groups, works to identify subjects of common interest and mechanisms to enhance collaboration and cooperation among the Sectors and the General Secretariat, and considers reports from the Directors of the Bureaux and the Inter-Sectoral Coordination Task Force (ISC-TF) on options for improving cooperation and coordination within the secretariat,

recognizing

a) that there is a need to improve the participation of developing countries[2] in the work of ITU, as outlined in Resolution 5 (Rev. Kigali, 2022) of WTDC;

b) that one such mechanism – the Inter-Sectoral Emergency Communications Team – has been established to ensure close collaboration within the Union as a whole, as well as with interested entities and organizations outside ITU, on this key priority issue for the Union;

c) that all the advisory groups are collaborating in the implementation of Resolution 123 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on bridging the standardization gap between developing and developed countries;

d) that interaction and coordination in the joint holding of seminars, workshops, forums, symposia and so forth have yielded positive results in terms of saving financial and human resources;

e) that electronic remote participation will reduce travel costs and facilitate wider participation of developing countries in the work of ITU-T meetings that require their attendance,

taking into account

a) the expanding sphere of joint studies between the three Sectors and the need for coordination and cooperation among them in this regard;

b) the growing number of issues of mutual interest and concern to the three Sectors,

noting

that Resolution ITU-R 75 (Dubai, 2023) provides mechanisms for ongoing review of the allocation of work and cooperation between ITU-R and ITU-T,

resolves

1 that the Radiocommunication Advisory Group (RAG), the Telecommunication Standardization Advisory Group (TSAG) and the Telecommunication Development Advisory Group (TDAG), meeting jointly as necessary, shall continue the review of new and existing work and its distribution among ITU-R, ITU-T and ITU-D, for approval by Member States in accordance with the procedures laid down for the approval of new and/or revised Questions, as provided for by Resolution 191 (Rev. Bucharest, 2022);

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

2 that, if considerable responsibilities in any two or all Sectors in a particular subject are identified:

i) the procedure given in Annex A to this resolution should be applied; or

ii) the matter should be studied by relevant study groups of the Sectors involved, with appropriate coordination and matching of relevant Question topics of interest to the study groups in ITU-T, ITU-D and ITU-R (see Annexes B and C to this resolution); or

iii) a joint meeting may be arranged by study groups and/or the Directors of the Bureaux;

3 to continue facilitating the participation of developing countries through extensive use of remote participation by electronic means, as appropriate, at meetings of ITU-T study groups, working parties and task groups;

4 to cooperate with the Director of the Telecommunication Development Bureau (BDT) in enhancing the ability of the ITU regional and area offices to provide support for study group activities, as well as the necessary expertise, in order to strengthen cooperation and coordination with the relevant regional organizations and to facilitate the participation of all Member States and Sector Members in the activities of ITU-T;

5 that the Director of the Telecommunication Standardization Bureau (TSB) shall cooperate with the Directors of the other two Bureaux on activities relating to the development and updating of handbooks and reports with the view to avoiding duplication of efforts, and on the implementation of outcomes of ITU-T activities,

invites

1 TSAG, RAG and TDAG to continue to assist ISCG in the identification of subjects of mutual interest to the three Sectors and mechanisms to enhance their cooperation and collaboration;

2 the Directors of the Radiocommunication Bureau, TSB and BDT and ISC-TF to report to ISCG and the respective Sector advisory groups on options for improving cooperation at the secretariat level to ensure that close coordination is maximized,

instructs

1 the ITU-T study groups to continue cooperation with the study groups of the other two Sectors in order to avoid duplication of effort and make proactive use of the outcomes of the study groups of those two Sectors;

2 the Director of TSB to report annually to TSAG on the implementation of this resolution,

instructs the study groups of the ITU Telecommunication Standardization Sector and the Director of the Telecommunication Standardization Bureau

to take all appropriate actions for the implementation of this resolution,

invites Member States and Sector Members

1 to support efforts to improve inter-Sector coordination, including taking an active part in groups established by the Sector advisory groups for coordination activities;

2 to actively participate in the implementation of this resolution by, *inter alia*: providing experts to assist developing countries; contributing to information meetings, seminars and workshops; providing the necessary expertise in matters under consideration by the ITU-D study groups; and hosting trainees from developing countries.

ANNEX A
(to Resolution 18 (Rev. New Delhi, 2024))

Procedural method of cooperation

With respect to *resolves* 2 i), the following procedure should be applied:

a) The joint meeting of the advisory groups referred to in *resolves* 1 will nominate the Sector which will lead the work and will finally approve the deliverable.

b) The lead Sector will request the other Sectors to indicate those requirements which it considers essential for integration in the deliverable.

c) The lead Sector will base its work on these essential requirements and integrate them in its draft deliverable.

d) During the process of development of the required deliverable, the lead Sector shall consult with the other Sectors if it has difficulties with these essential requirements. In the event of agreement on revised essential requirements, the revised requirements shall be the basis for further work.

e) When the deliverable concerned comes to maturity, the lead Sector shall once more seek the views of the other Sectors.

In the determination of the work responsibility, it may be appropriate to progress the work by drawing jointly on the skills of the Sectors involved.

ANNEX B
(to Resolution 18 (Rev. New Delhi, 2024))

Coordination of radiocommunication, standardization and development activities through inter-Sector coordination groups

With respect to *resolves* 2 ii), the following procedure shall be applied:

a) The joint meeting of the advisory groups referred to in *resolves* 1 may, in exceptional cases, establish an inter-Sector coordination group (ICG) to coordinate the work of the Sectors involved and to assist the advisory groups in coordinating the related activity of their respective study groups.

b) The joint meeting shall, at the same time, nominate the Sector which will lead the work.

c) The mandate of each ICG shall be clearly defined by the joint meeting, based on the particular circumstances and issues at the time the group is established; the joint meeting shall also establish a target date for termination of the ICG.

d) The ICG shall designate a chair and a vice-chair, one representing each Sector.

e) The ICG shall be open to members of the participating Sectors in accordance with Nos. 86-88, 110-112 and 134-136 of the Constitution.

f) The ICG shall not develop Recommendations.

g) The ICG shall prepare reports on its coordinating activities to be presented to each Sector's advisory group; these reports shall be submitted by the Directors to the participating Sectors.

h) An ICG may also be established by the World Telecommunication Standardization Assembly or by the Radiocommunication Assembly or by the World Telecommunication Development Conference following a recommendation by the advisory group(s) of the other Sector(s).

i) The cost of an ICG shall be supported by the participating Sectors on an equal basis and each Director shall include budgetary provisions for such meetings in the budget of his or her Sector.

ANNEX C
(to Resolution 18 (Rev. New Delhi, 2024))

Coordination of radiocommunication, telecommunication standardization and development activities through inter-Sector rapporteur groups

With respect to *resolves* 2 ii), the following procedure shall be applied when work on a specific subject could be best performed by bringing together technology experts from the study groups or working parties concerned of either two or three Sectors to cooperate on a peer-to-peer basis in a technical group:

a) The study groups or working parties concerned in each Sector may, in special cases, agree by mutual consultation to establish an inter-Sector rapporteur group (IRG) to coordinate their work on a specific technical subject, informing RAG, TSAG and TDAG of this action through a liaison statement.

b) The study groups or working parties concerned in each Sector shall, at the same time, agree on clearly defined terms of reference for the IRG, and establish a target date for completion of the work and termination of the IRG.

c) The study groups or working parties concerned in each Sector shall also designate the chair (or co-chairs) of the IRG, taking into account the requested specific expertise and ensuring equitable representation of each Sector.

d) Being a rapporteur group, the IRG shall be regulated by the provisions applicable to rapporteur groups, given in the most recent versions of Resolution ITU-R 1, Recommendation ITU-T A.1 and Resolution 1 of the World Telecommunication Development Conference; participation is limited to members of the Sectors involved.

e) In fulfilling its mandate, an IRG may develop draft new Recommendations or draft revisions to Recommendations, as well as draft technical reports or draft revisions to technical reports, to be submitted to its parent study groups or working parties for further processing as appropriate.

f) The results of the IRG's work should represent the agreed consensus of the IRG or reflect the diversity of views of the participants in the IRG.

g) An IRG shall also prepare reports on its activities, to be submitted to each meeting of its parent study groups or working parties.

h) An IRG shall normally work by correspondence and/or by teleconference; however, it may occasionally take the opportunity of a meeting of its parent study groups or working parties to hold short face-to-face concurrent meetings, if this is feasible without support by the Sectors.

MOD

RESOLUTION 20 (Rev. New Delhi, 2024)

Procedures for allocation and management of international telecommunication numbering, naming, addressing and identification resources

(Helsinki, 1993; Geneva, 1996; Montreal, 2000; Florianópolis, 2004; Johannesburg, 2008; Dubai, 2012; Hammamet, 2016; Geneva, 2022; New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024),

recognizing

a) the relevant rules of the International Telecommunication Regulations (Dubai, 2012) regarding the integrity and use of numbering resources and calling line identification;

b) the instructions in the resolutions adopted by plenipotentiary conferences relevant for the stability of numbering and identification plans, especially the ITU-T E.164 and ITU-T E.212 plans, and in particular in Resolution 133 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, where it resolves to instruct the Secretary-General and the Directors of the Bureaux: "to take any necessary action to ensure the sovereignty of ITU Member States with regard to Recommendation ITU-T E.164 numbering plans whatever the application in which they are used";

c) Resolution 49 ([Rev. Hammamet, 2016]) of th[e World Telecommunication Standardization Assembly], on ENUM;

d) that international telecommunication numbering, naming, addressing and identification (NNAI) resources and related codes are crucial to maintain global interoperability;

e) the impact of new and emerging telecommunications/information and communication technologies (ICTs) on the allocation and management of international telecommunication NNAI resources;

f) that there is a need for both flexibility and adaptability in a timely fashion by regulators in managing international telecommunication NNAI for different resources related to voice services using new telecommunications/ICTs and innovative services;

g) the need to have transparency and interoperability across telecommunication applications using new telecommunications/ICTs and innovative services that have become ubiquitous and essential globally to meet the evolving needs of users, such as for increased financial inclusion;

h) that international telecommunication NNAI resources are becoming global identifiers of users and different services, not limited to telecommunication services,

noting

a) that the procedures governing the allocation and management of international telecommunication NNAI resources and related codes (e.g. new telephone country codes, telex destination codes, signalling area/network codes, data country codes, mobile country codes, identification), including ENUM, are laid down in the relevant Recommendations in the ITU-T E-, ITU-T F-, ITU-T Q-, ITU-T X- and ITU-T Y-series;

b) that the principles concerning future NNAI plans to deal with emerging services or applications and relevant NNAI resource allocation procedures to meet international telecommunication needs will be studied in accordance with this resolution and the work programme approved by this assembly for study groups of the ITU Telecommunication Standardization Sector (ITU-T);

c) the deployment of current and future telecommunications/ICTs, including Internet Protocol (IP)-based networks to support new and innovative services that may require NNAI resources;

d) that several international telecommunication NNAI resources are developed and maintained by ITU-T study groups and are in widespread use;

e) that the national authorities responsible for allocation of NNAI resources, including those covered by Recommendation ITU-T Q.708, on specifications of Signalling System No. 7 – Message transfer part (MTP), Recommendation ITU-T E.164, on the international public telecommunication numbering plan, and Recommendation ITU-T E.212, on the international identification plan for public networks and subscriptions, normally participate in ITU-T Study Group 2;

f) that it is in the common interest of ITU Member States and Sector Members that the Recommendations and guidelines for international telecommunication NNAI resources should:

i) be known, recognized and applied by all;

ii) be used to build and maintain confidence of all in the related services;

iii) address deterrence of misuse of such resources;

iv) be governed and administered in a consistent and appropriate manner;

g) Articles 14 and 15 of the ITU Convention, relating to the activities of ITU-T study groups and the responsibilities of the Director of the Telecommunication Standardization Bureau (TSB), respectively;

h) No. 196 of the Convention, which stipulates that "In the performance of their studies, the telecommunication standardization study groups shall pay due attention to the study of questions and to the formulation of recommendations directly connected with the establishment, development and improvement of telecommunications in developing countries at both the regional and international levels. They shall conduct their work giving due consideration to the work of national, regional and other international standardization organizations, and cooperate with them, keeping in mind the need for the Union to maintain its pre-eminent position in the field of worldwide standardization for telecommunications.",

considering

a) that the assignment of international telecommunication NNAI resources is a responsibility of the Director of TSB and the relevant administrations;

b) the evolution of telecommunication services, and the requirements for NNAI resources to support new telecommunications/ICTs and innovative services, including the use of telecommunication NNAI resources for the provision of non-telecommunication services;

c) the impact of the growing demand of machine-to-machine (M2M) and Internet of Things (IoT) services for international telecommunication NNAI resources;

d) the ongoing cooperation between ITU-T and several consortia and standards entities in the allocation and management of international telecommunication NNAI resources as referred to in Supplement 3 to the ITU-T A-series Recommendations;

e) that the assignment of international mobile subscriber identity numbers has become more dynamic with technological advancements, e.g. embedded SIM cards (eSIMs),

resolves to instruct the Director of the Telecommunication Standardization Bureau

1 before assigning, reassigning and/or reclaiming international telecommunication NNAI resources, to consult:

i) ITU-T Study Group 2 to clarify requirements as specified in relevant ITU-T Recommendations in order to provide advice to the Director of TSB, according to the mandate of Study Group 2; and

ii) the relevant administration(s); and/or

iii) the authorized applicant/assignee when direct communication with TSB is required in order to perform its responsibilities;

in the Director's deliberations and consultations, the Director will consider the general principles for the allocation of NNAI resources, and the provisions of the relevant Recommendations in the ITU-T E-, ITU-T F-, ITU-T Q-, ITU-T X- and ITU-T Y-series, and those to be further adopted;

2 in close collaboration with ITU-T Study Group 2, and any other relevant study groups, to follow up with the administrations involved on the misuse of any international telecommunication NNAI resources, and inform the ITU Council accordingly;

3 to encourage ITU-T Study Group 2 to coordinate with all relevant study groups when studying the impact of new and emerging telecommunications/ICTs on the allocation and management of international telecommunication NNAI resources, including for the provision of non-telecommunication services;

4 to take the appropriate measures and actions where ITU-T Study Group 2, in liaison with the other relevant study groups, has provided information, advice and guidance in accordance with *resolves to instruct the Director of Telecommunication Standardization Bureau* 2 and *instructs Study Group 2 of the ITU Telecommunication Standardization Sector* of this resolution,

instructs Study Group 2 of the ITU Telecommunication Standardization Sector

1 in liaison with other relevant study groups, to provide the Director of TSB with advice on technical, functional and operational aspects in the assignment, reassignment and/or reclamation of international telecommunication NNAI resources in accordance with the relevant Recommendations, taking into account the results of any ongoing studies, information and guidance in cases of reported complaints about misuse of international telecommunication NNAI resources;

2 to continue to study necessary action to ensure that the sovereignty of ITU Member States regarding country-code NNAI plans is fully maintained, as enshrined in Recommendation ITU-T E.164 and other relevant Recommendations and procedures; this shall cover ways and means to address and counter any misuse of any international telecommunication NNAI resources,

invites Member States

to participate in relevant activities in ITU-T study groups and share their experiences regarding the implementation of this resolution.

MOD

RESOLUTION 22 (Rev. New Delhi, 2024)

Authorization for the Telecommunication Standardization Advisory Group to act between world telecommunication standardization assemblies

(Geneva, 1996; Montreal, 2000; Florianópolis, 2004; Johannesburg, 2008; Dubai, 2012; Hammamet, 2016; Geneva, 2022; New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024),

considering

a) that, under the provisions of Article 14A of the ITU Convention, the Telecommunication Standardization Advisory Group (TSAG) is to review priorities, programmes, operations, financial matters and strategies for activities in the ITU Telecommunication Standardization Sector (ITU-T) and provide guidelines for the work of study groups and recommend measures to foster coordination and cooperation with other standards bodies;

b) that Resolution 122 (Rev. Guadalajara, 2010) of the Plenipotentiary Conference resolves that the World Telecommunication Standardization Assembly (WTSA) shall continue, in accordance with its responsibilities, and subject to available financial resources, to promote the continued evolution of the standardization sector and adequately address strategic issues in standardization by means such as, but not limited to, the strengthening of TSAG;

c) that Resolution 122 (Rev. Guadalajara, 2010) instructs the Director of the Telecommunication Standardization Bureau (TSB) to continue, in consultation with relevant bodies, and the ITU membership, and in coordination with the ITU Radiocommunication Sector (ITU-R) and the ITU Telecommunication Development Sector (ITU-D), as appropriate, to organize a Global Standards Symposium (GSS);

d) that GSS was held in conjunction with this assembly to consider bridging the standardization gap and examining global ICT standards challenges;

e) that TSAG continues to make proposals for enhancing the operational efficiency of ITU-T, for improving the quality of ITU-T Recommendations and for methods of coordination and cooperation;

f) that TSAG helps to improve coordination of the study process and provide improved decision-making processes for the important areas of ITU-T activities;

g) that flexible administrative procedures, including those related to budgetary considerations, are needed in order to adapt to rapid changes in the telecommunication/ICT environment;

h) that it is desirable for TSAG to consider the implications of new and emerging technologies for the standardization activities of ITU-T related to technical, operating and tariff questions, on the basis of contributions submitted by the membership, and how such technologies can be included within the ITU-T work programme;

i) that TSAG plays an important role in ensuring coordination between study groups, as appropriate, on standardization issues, including, as required, avoiding duplication of work and identifying linkages and dependencies between related work items;

j) that TSAG, in providing advice to study groups, may take account of the advice of other groups;

k) that there is a need to continue improving coordination and collaboration with other relevant bodies, within ITU-T, with ITU-R and ITU-D and the General Secretariat, and with other standardization organizations, forums and consortia outside of ITU, and relevant entities;

l) that effective coordination between study groups is critical to ITU-T's ability to meet emerging standardization challenges and the needs of its membership,

noting

a) that ITU-T is one of the pre-eminent global standardization bodies, comprising administrations, equipment vendors, operators and regulators, universities and research institutes;

b) that No. 191C of the Convention allows WTSA to assign specific matters within its competence to TSAG indicating the action required on those matters, while also noting the importance of TSAG acting between WTSAs in order to meet the needs of the marketplace in a timely manner;

c) that TSAG meets at least on a yearly basis;

d) that TSAG has already exhibited the capability to act effectively on matters assigned to it by WTSA;

e) that WTSA Resolution 68 (Rev. [New Delhi], [2024])) instructs the Director of TSB to organize meetings for high-level industry executives, e.g. chief technology officer meetings, in order to assist in identifying and coordinating standardization priorities and subjects and minimize the number of forums and consortia;

f) that effective coordination can be achieved by means of joint coordination activities, joint rapporteur group meetings, liaison statements between study groups and the study group chair's meetings organized by the Director of TSB to meet emerging standardization challenges and the needs of the ITU-T membership,

recognizing

a) that Nos. 191A and 191B of the Convention allow WTSA to maintain, establish or terminate other groups as needed, as well as their mandates;

b) that coordination should serve to improve the effectiveness of ITU-T activities and should not limit the work of each study group to develop Recommendations;

c) that the tasks undertaken in ITU-T cover technical, operating and tariff questions,

resolves

1 to assign to TSAG the following specific matters within its competence between this assembly and the next assembly, to act in the following areas in consultation with the Director of TSB:

a) maintain and provide up-to-date, efficient and flexible working guidelines;

b) promote high-priority standardization activities related to technical, operating and tariff questions on the basis of contributions submitted by the membership from a global viewpoint and coordinate among ITU-T study groups in this regard;

c) assume responsibility, including development and submission for approval under appropriate procedures, for the ITU-T A-series Recommendations and their supplements;

d) restructure and establish ITU-T study groups, taking into account the needs of the ITU-T membership and in response to changes in the telecommunication/ICT marketplace, and assign chairs and vice-chairs to act until the next WTSA, in accordance with Resolution 208 (Rev. Bucharest, 2022) of the Plenipotentiary Conference;

e) issue advice on study group schedules to meet standardization priorities;

f) while recognizing the primacy of the study groups in carrying out the activities of ITU-T, create, terminate or maintain other groups, including focus groups, appoint their chairs and vice-chairs, and establish their terms of reference with a defined duration, in accordance with Nos. 191A and 191B of the Convention, in order to enhance and improve the effectiveness of ITU-T's work as well as promoting flexibility in responding rapidly to high-priority issues; such groups shall not adopt Questions or Recommendations, in accordance with Article 14A of the Convention, but work on a specific mandate;

g) identify changing requirements and provide advice on appropriate changes to be made to the priority of work in ITU-T study groups, planning and allocation of work between study groups, having due regard for the cost and availability of resources;

h) take an active role in ensuring coordination among ITU-T activities, including identifying requirements and appropriate changes to be made where overlap occurs, including, but not limited to, the mandating of a study group to lead coordination work;

i) review reports of coordination groups and other groups and consider appropriate proposals made by those groups, including the implementation of those that are agreed;

j) establish the appropriate mechanism and encourage the utilization, for example, of coordination groups or other groups to address key topics of work which span several study groups, with a view to ensuring effective coordination of standardization topics in order to achieve suitable global solutions;

k) review progress in the implementation of the ITU-T work programme and overall activities of ITU-T study groups, including the attendance status of chairs and vice-chairs in accordance with Resolution 208 (Rev. Bucharest, 2022) of the Plenipotentiary Conference and Resolution 1 (Rev. Geneva, 2022) of WTSA;

l) cooperate and coordinate with ITU-R and ITU-D, considering Resolution 18 (Rev. [Geneva, 2022]) of th[is assembly];

m) advise the Director of TSB on financial and other matters, including enhancing the participation of entities and organizations in ITU-T;

n) approve the programme of work arising from the review of existing and new Questions and determine the priority, urgency, estimated financial implications and time-scale for the completion of their study;

o) group, as far as practicable, Questions of interest to developing countries[1] in order to facilitate their participation in these studies taking into account their interests and the need to encourage and facilitate their involvement in these activities;

p) address other specific matters within the competence of WTSA, subject to the approval of Member States, using the approval procedure contained in Resolution 1 (Rev. Geneva, 2022) of this assembly, Section 9;

q) review annually the use of all six official languages of the Union on an equal footing in ITU-T publications and on ITU-T websites;

2 that TSAG examine implementation of the actions and achievement of the goals as reflected in the annual ITU-T operational plan and in the WTSA-20 Action Plan, which includes the WTSA resolutions, for the purpose of identifying possible difficulties and possible strategies for implementing key elements, and recommending solutions to the Director of TSB regarding them;

3 that revisions to the relevant procedures for the adoption of Questions and Recommendations by study groups, other than those referred to in Nos. 246D, 246F and 246H of the Convention, may be initiated by TSAG for approval by Member States between WTSAs, using the approval procedure contained in Resolution 1 (Rev. Geneva, 2022), Section 9;

4 that TSAG foster coordination and collaboration with other relevant bodies outside ITU, such as standardization organizations, forums and consortia, and provide liaison on its activities to those organizations in consultation with the Director of TSB, as appropriate;

5 that TSAG establish a mechanism to facilitate and coordinate standardization development strategies that in particular, will provide support for:

– the identification of new and emerging telecommunications/ICTs, considering their drivers in the fields of activity relevant to the mandate of ITU-T; and

– the identification and examination of possible topics and issues for consideration in ITU-T's standardization development strategies;

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

6 that TSAG consider the result of this assembly concerning GSS and take follow-up actions, as appropriate;

7 that a report on the above TSAG activities shall be submitted to the next WTSA,

instructs the Director of the Telecommunication Standardization Bureau

1 to take into consideration the advice and guidance of TSAG in order to improve the effectiveness and efficiency of ITU-T;

2 to provide to each TSAG meeting a report on:

– the implementation of WTSA resolutions and actions to be undertaken pursuant to their operative paragraphs;

– the progress of the ITU-T annual operational plan and WTSA-20 Action Plan, identifying difficulties, if any, that hinder the progress, and possible solutions;

3 to provide information about any work item that has not given rise to any contribution in the time interval of the previous two study group meetings through the Director's report on study group activity;

4 to report to TSAG on the experience in the implementation of the A-series Recommendations for consideration by the ITU-T membership;

5 to publish draft reports no later than 30 calendar days before the opening of a TSAG meeting in order to ensure their careful consideration by members.

MOD

RESOLUTION 29 (Rev. New Delhi, 2024)

Alternative calling procedures on international telecommunication networks

(Geneva, 1996; Montreal, 2000; Florianópolis, 2004; Johannesburg, 2008; Dubai, 2012; Hammamet, 2016; Geneva, 2022; New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024),

recalling

a) Resolution 1099, adopted by the Council at its 1996 session, concerning alternative calling procedures on international telecommunication networks, which urged the ITU Telecommunication Standardization Sector (ITU-T) to develop, as soon as possible, the appropriate Recommendations concerning alternative calling procedures;

b) Resolution 22 (Rev. Kigali, 2022) of the World Telecommunication Development Conference, on alternative calling procedures on international telecommunication networks, identification of origin and apportionment of revenues in providing international telecommunication services;

c) Resolution 21 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on measures concerning alternative calling procedures on international telecommunication networks;

d) Resolution 60 (Rev. Geneva, 2022) of the World Telecommunication Standardization Assembly (WTSA), on responding to the challenges of the evolution of the identification/numbering system and its convergence with Internet Protocol (IP)-based systems/networks;

e) Recommendation ITU-T E.370, on interconnection between IP-based networks and legacy networks;

f) Recommendation ITU-T E.157, on international calling party number (CPN) delivery;

g) Resolution 65 (Rev. Geneva, 2022) of WTSA, on CPN delivery, calling line identification (CLI) and origin identification (OI) information,

recognizing

a) that alternative calling procedures, which may be potentially harmful, are not permitted in many countries and permitted in some others;

b) that although alternative calling procedures may be potentially harmful, and could be used to conduct unsolicited activities, they may be attractive for some users due to some benefits over traditional/existing calling procedures;

c) that alternative calling procedures, which may be potentially harmful and may impact the revenue of international telecommunication operators or operating agencies authorized by Member States, may seriously hamper, in particular, the efforts of developing countries[1] for the sound development of their telecommunication networks and services;

d) that distortions in traffic patterns resulting from some forms of alternative calling procedures, which may be potentially harmful, may impact traffic management and network planning;

e) that some forms of alternative calling procedures may seriously degrade the performance and quality of telecommunication networks or quality of user experience;

f) that the ubiquity of IP-based networks, including the Internet, in the provision of telecommunication services has impacted the ways and means of alternative calling procedures, and that it is becoming necessary to identify and redefine these procedures;

g) that having different (alternate) calling procedures may create inconsistency in the user experience;

h) that possible alternative calling procedures may provide opportunities and challenges for connectivity in the provision and use of services on international telecommunication networks, according to national regulatory requirements,

considering

a) that any calling procedure should aim to maintain acceptable levels of quality of service (QoS) and quality of experience (QoE), in accordance with relevant ITU-T Recommendations;

b) that any calling procedure should aim to enable CPN,CLI and/or OI information in accordance with relevant ITU-T Recommendations,

reaffirming

a) that it is the sovereign right of each country to regulate its telecommunications;

b) that the ITU Constitution, in its Preamble, gave regard to "the growing importance of telecommunication for the preservation of peace and the economic and social development of all States", and that Member States agreed in the Constitution with "the object of facilitating peaceful relations, international cooperation among peoples and economic and social development by means of efficient telecommunication services",

noting

that, in order to minimize the effect of alternative calling procedures:

i) international telecommunication operators or operating agencies authorized by Member States should, within their national law, make every effort to establish the level of collection charges on a cost-oriented basis, taking into account Article 6.1.1 of the International Telecommunication Regulations and Recommendation ITU-T D.5;

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

ii) administrations and international telecommunication operators or operating agencies authorized by Member States should follow the guidelines developed by Member States on the measures to be applied to deter the impact of alternative calling procedures on other Member States,

resolves

1 to continue identifying and defining all forms of alternative calling procedures against traditional calling procedures on telephone networks, to study their impact on all parties, and to develop appropriate Recommendations concerning alternative calling procedures;

2 that administrations and international telecommunication operators or operating agencies authorized by Member States should take, to the furthest extent practicable, all measures to suspend the methods and practices of any form of alternative calling procedures which seriously degrade the QoS and QoE of telecommunication networks, or prevent the delivery of CPN, CLI or OI information;

3 that administrations and international telecommunication operators or operating agencies authorized by Member States should take a cooperative approach to respect the national sovereignty of others, and suggested guidelines for this collaboration are attached;

4 to instruct ITU-T Study Group 2 to study other aspects, forms and definition of alternative calling procedures in accordance with *resolves* 1, including those associated with the interworking of legacy and IP-based infrastructures, and the consequent instances of hindrance, obscuring or spoofing of OI, CPN or CLI information, and the evolution of alternative calling procedures, including the use of over-the-top (OTT) applications that use telephone numbers, which may give rise to instances of fraudulent practices and in some national environments, failing to comply with the national regulations governing access to public switched telephone networks, and to develop appropriate Recommendations and guidelines;

5 to instruct ITU-T Study Group 3 to continue studying the economic effects of alternative calling procedures as defined by ITU-T Study Group 2, origin non-identification or spoofing and OTT applications that use telephone numbers on the efforts of developing countries for continued development of their local telecommunication networks and services, and to develop appropriate Recommendations and guidelines;

6 to instruct ITU-T Study Group 12 to develop guidelines regarding the minimum QoS and QoE threshold to be fulfilled during the use of alternative calling procedures;

7 to instruct ITU-T Study Groups 2, 3 and 12 to continue the ongoing collaboration in studying issues related to alternative calling procedures on public switched telephone networks,

instructs the Director of the Telecommunication Standardization Bureau

to continue to cooperate with the Director of the Telecommunication Development Bureau in order to facilitate the participation of developing countries in these studies and to make use of the results of the studies, and in the implementation of this resolution,

invites Member States

1 to adopt national legal and regulatory frameworks requesting administrations and international telecommunication operators or operating agencies authorized by Member States to avoid using alternative calling procedures that degrade the level of QoS and QoE, to encourage the delivery of international CLI and OI information, at least to the destination operating agency, and to ensure the appropriate charging, taking into account the relevant ITU-T Recommendations;

2 to contribute to this work;

3 to share their best practices in developing the minimum requirements and methods to differentiate the alternative calling procedures from traditional calling procedures.

ATTACHMENT
(to Resolution 29 (Rev. New Delhi, 2024))

Suggested guidelines for administrations and international telecommunication operators or operating agencies authorized by Member States for consultation on alternative calling procedures

In the interest of global development of international telecommunications, it is desirable for administrations and international telecommunication operators or operating agencies authorized by Member States to cooperate with others and to take a collaborative approach to ensure connectivity of country codes, where a preferable option is the selective blocking of particular international numbers, authorized on a case-by-case basis by national regulators.

Any cooperation and any subsequent actions would have to take account of the constraints of national laws. The following guidelines regarding alternative calling procedures (ACP) are recommended to be applied in country X (the location of the ACP user) and country Y (the location of the ACP provider). When ACP traffic is destined to a country other than countries X or Y, the sovereignty and the regulatory status of the destination country should be respected.

Country X (location of ACP user)	Country Y (location of ACP provider)
A generally collaborative and reasonable approach is desirable	A generally collaborative and reasonable approach is desirable
Administration X, wishing to restrict or prohibit ACP, should establish a clear policy position	
Administration X should make known its national position	Administration Y should bring this information to the attention of international telecommunication operators or operating agencies authorized by Member States and ACP providers in its territory using whatever official means are available
Administration X should instruct operating agencies authorized by Member States operating in its territory as to the policy position, and those operating agencies authorized by Member States should take steps to ensure that their international operating agreements comply with that position	Operating agencies authorized by Member States in Y should cooperate in considering any necessary modifications to international operating agreements
	Administration Y and/or operating agencies authorized by Member States in Y should seek to ensure that ACP providers establishing an operation in their territory are aware that: *a)* ACP should not be provided in a country where it is expressly prohibited, and *b)* the ACP configuration must be of a type which will not degrade the quality and performance of the international public switched telephone network
Administration X should take all reasonable steps within its jurisdiction and responsibility to stop the offering and/or usage of ACP in its territory which is: *a)* prohibited; and/or *b)* harmful to the network. Operating agencies authorized by Member States in country X will cooperate in the implementation of such steps.	Administration Y and operating agencies authorized by Member States in Y should take all reasonable measures to stop ACP providers in its territory offering ACP: *a)* in other countries where it is prohibited; and/or *b)* which is harmful to the networks involved.

NOTE 1 – For relations between countries which regard ACP as an "international telecommunication service" as defined in the International Telecommunication Regulations, bilateral operating agreements should be required between the operating agencies authorized by Member States concerned as to the conditions under which ACP will be operated.

NOTE 2 – All forms of ACP should be defined by ITU-T Study Group 2 and documented in the appropriate ITU-T Recommendation (e.g. call-back, over-the-top, refiling).

MOD

RESOLUTION 32 (Rev. New Delhi, 2024)

Strengthening electronic working methods for the work of the ITU Telecommunication Standardization Sector

(Montreal, 2000; Florianópolis, 2004; Johannesburg, 2008; Dubai, 2012; Hammamet, 2016; New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024),

considering

a) the rapid pace of technology change and the consequent need for improved and more rapid standards development;

b) that electronic working methods (EWM) enable open, rapid and easy collaboration between participants in the activities of the ITU Telecommunication Standardization Sector (ITU-T);

c) that the implementation of EWM capabilities and associated arrangements will have significant benefits for the ITU-T membership, including resource-limited individuals, organizations and states, by allowing them timely and effective access to standards information and the standards-making and approval process;

d) that EWM will be advantageous in improving communication among members of ITU-T and between other relevant standardization organizations and ITU, towards globally harmonized standards;

e) the key role of the Telecommunication Standardization Bureau (TSB) in providing support to EWM capabilities;

f) the decisions contained in Resolution 66 (Rev. Bucharest, 2022) of the Plenipotentiary Conference;

g) the budgetary difficulty developing countries[1] have in participating actively in face-to-face ITU-T meetings;

h) Resolution 167 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on strengthening and developing ITU capabilities for fully virtual meetings and physical meetings with remote participation, and the electronic means to advance the work of the Union;

i) Resolution 154 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on the use of the six official languages of the Union on an equal footing,

noting

a) the desire of members to receive documents in electronic format in a timely manner and the need to reduce the increasing amount of hard-copy documentation generated during meetings and dispatched by mail;

b) that many forms of EWM have already been implemented by ITU-T, such as electronic document submission and the electronic forum service;

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

c) that there are still some difficulties in conducting e-meetings, due to persistent or intermittent deterioration in quality of service, in particular in meetings with live interpretation;

d) the desire of ITU-T members to conduct electronic meetings;

e) the increasing use of mobile devices by members in meetings and elsewhere;

f) the advantage to the membership of facilitating greater electronic participation in the development and approval of Recommendations, in particular by members unable to participate in study group meetings in Geneva and elsewhere;

g) the difficulties in terms of bandwidth availability and other constraints, particularly in developing countries;

h) the difficulties in searching for documents and/or information relevant to a specific subject, topic or issue in any of the six official languages, and the need for a smart solution for classification and easy mining of such documents and/or information;

i) the economies possible from enhancing ITU-T EWM capabilities (e.g. reduced costs for distribution of paper documentation, travel costs and ITU-T logistics costs);

j) the encouragement by other telecommunication standardization organizations of collaboration using EWM;

k) that the alternative approval process (AAP) (Recommendation ITU-T A.8) is conducted primarily by electronic means;

l) that ITU-T should serve as a prime example in leveraging technologies to carry out its functions,

resolves

1 that the principal EWM objectives of ITU-T are:

- that collaboration between members on development of Recommendations should be by electronic means;
- that TSB, in close collaboration with the ITU Telecommunication Development Bureau (BDT), should provide facilities and capabilities for EWM at ITU-T meetings, workshops and training courses, particularly to assist developing countries that have bandwidth limitations and other constraints, including remote participation and electronic access, such as via secured and available open-source-based platforms;
- to encourage electronic participation of developing countries in ITU-T meetings, by providing simplified facilities and guidelines, and by waiving any expenses for those participants, other than the local call or Internet connectivity charges;

- that TSB, in close collaboration with BDT, should provide facilities and capabilities for EWM at ITU-T meetings, workshops and training courses, and encourage participation of developing countries, by waiving, within the credits that the Council is empowered to authorize, any expenses for those participants, other than the local call or Internet connectivity charges;
- that TSB should provide all members of ITU-T with appropriate and ready access to electronic documentation for their work, including a global, unified and consolidated view of document traceability;
- that TSB should provide appropriate systems and facilities to support the conduct of ITU-T's work by electronic means, including ones aimed at supporting accessibility (Resolution 70 (Rev. [Geneva, 2022]) of th[is assembly]);
- that all activities, procedures, studies and reports of ITU-T study groups be posted on the ITU-T website so as to facilitate navigation to find all relevant information;
- to consider developing a mobile-friendly version of the ITU-T website to facilitate easy access by smart mobile devices to information; and
- to simplify and facilitate enhanced searching for documents and/or information;

2 that these objectives should be systematically addressed in an EWM Action Plan, including individual action items identified by the ITU-T membership or TSB, and prioritized and managed by TSB with the advice of the Telecommunication Standardization Advisory Group (TSAG),

instructs

1 the Director of TSB to:

- maintain the EWM Action Plan to address the practical and physical aspects of increasing the EWM capability of ITU-T;
- identify and review costs and benefits of the action items on a regular basis;
- report to each meeting of TSAG on the status of the Action Plan, including the results of the cost and benefit reviews described above;
- provide the executive authority, budget within TSB, and resources to execute the Action Plan with all possible speed;
- develop and disseminate guidelines for the use of ITU-T EWM facilities and capabilities;
- seek possibilities to provide, at a minimum, real-time webcast services for all meetings during WTSA so that online participants can follow the discussions;
- take action, in order to provide appropriate electronic participation or observation facilities (e.g. webcast, audioconference, webconference/document sharing, videoconference, etc.) in ITU-T meetings, workshops and training courses for delegates unable to attend events in person, enabling online participants to actively engage in the activities of TSAG, study groups, focus groups and other ITU-T groups;

- provide an ITU-T website that is easy to navigate to find all relevant information; and in particular a classification mechanism and an enhanced search engine to extract documents and/or information that are related to a specific subject, topic or issue; and
- provide a mobile-friendly version of the ITU-T website that accommodates diverse working styles, and seek possibilities for it to support the six official languages of the Union;
- coordinate with the Directors of the other two Bureaux to explore how EWM tools can promote cooperation and collaboration among ITU-R, ITU-T and ITU-D in order to avoid duplicating activities, and ensure that work is undertaken efficiently and effectively;

2 TSAG to continue to:

- act as the point of contact between the ITU-T membership and TSB on EWM matters, in particular providing feedback and advice on the contents, prioritization and implementation of the Action Plan;
- identify user needs and plan the introduction of suitable measures through appropriate subgroups and pilot programmes;
- request study group chairs to identify EWM liaisons;
- encourage participation by all participants in the work of ITU-T, especially EWM experts from TSAG, the study groups, TSB and appropriate ITU Bureaux and departments;
- continue its work electronically outside TSAG meetings as necessary to carry out its objectives.

MOD

RESOLUTION 34 (Rev. New Delhi, 2024)

Voluntary contributions

(Montreal, 2000; Florianópolis, 2004; Johannesburg, 2008; Dubai, 2012; Geneva, 2022; New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024),

considering

a) Resolution 71 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on the strategic plan for the Union for 2024-2027, targeting ambitious strategic goals and targets which concern the activities of the ITU Telecommunication Standardization Sector (ITU-T);

b) Resolution 123 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, which invites Member States and Sector Members to make voluntary contributions (financial and in kind) to the fund for bridging the standardization gap;

c) Decision 5 (Rev. Bucharest, 2022) of the Plenipotentiary Conference and the annexes thereto, limiting expenses of the Union for the period 2024-2027;

d) Resolution 44 (Rev. [Geneva, 2022]) of th[is assembly], on bridging the standardization gap between developed and developing countries[1], which describes the sources from which funds will be raised for the purpose of bridging the standardization gap,

recalling

a) that the ITU Constitution, Convention and Financial Regulations stipulate that the Secretary-General may accept voluntary financial contributions in cash or in kind, in addition to the regular contributions from the Member States, Sector Members and Associates;

b) that expenditures under voluntary contributions are outside the limits of expenditure set by ITU plenipotentiary conferences;

c) that important voluntary contributions made to ITU-T in the past permitted ITU-T to make significant progress in its work,

considering further

that voluntary contributions are valuable, rapid and efficient instruments in the financing of extra activities for the Sector,

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

resolves

1 to encourage the financing of specific projects, focus groups, regional groups of ITU-T study groups or other new initiatives, including any activities which help achieve the objectives of Resolution 44 (Rev. [Geneva, 2022]), on bridging the standardization gap, by means of voluntary contributions in cash or in kind[2];

2 to invite Sector Members and Associates to finance voluntarily the participation of developing countries, and in particular remote participation using electronic working methods, in ITU-T meetings and workshops;

3 to invite Member States, Sector Members and Associates from both developing and developed countries to make voluntary contributions in cash or in kind and to submit to the Director of the Telecommunication Standardization Bureau projects and other initiatives of interest for ITU-T to be financed under voluntary contributions.

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2. For in-kind contribution guidelines, see recommendation § 8.11 of, and Annex D to, the Report by the Chair of the Standing Committee on Administration and Management to the Plenary Meeting of the 2024 session of the ITU Council (Document C24/109-Rev.1).

MOD

RESOLUTION 40 (Rev. New Delhi, 2024)

Regulatory and policy aspects of the work of the ITU Telecommunication Standardization Sector

(Montreal, 2000; Florianópolis, 2004; Johannesburg, 2008; Dubai, 2012; Hammamet, 2016; Geneva, 2022; New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024),

recognizing

a) the provisions of Nos. 246D to 246H of the ITU Convention;

b) Resolution 20 (Rev. [Geneva, 2022]) of th[is assembly], on the procedures for allocation and management of international telecommunication numbering, naming, addressing and identification (NNAI) resources;

c) the importance of promoting innovation and creating an enabling environment for the introduction and utilization of new and emerging telecommunications/information and communication technologies (ICTs) through the establishment of international technical standards,

considering

a) that the tasks undertaken in the ITU Telecommunication Standardization Sector (ITU-T) cover both technical matters and matters having policy or regulatory implications;

b) that rules pertaining to certain aspects of the Sector's work are being framed in terms that will rely upon clear and certain identification of the boundary between technical matters and matters having policy or regulatory implications;

c) that administrations are encouraging a larger role for Sector Members in the work of ITU-T, particularly on technical matters;

d) that many matters having policy or regulatory implications may involve technical implementation and therefore need to be considered in appropriate technical study groups,

noting

a) that the ITU Member States have identified significant policy responsibilities in Chapter VI of the ITU Constitution (Articles 33-43) and in Chapter V of the Convention (Articles 36-40), and in relevant resolutions of plenipotentiary conferences;

b) that the International Telecommunication Regulations further describe policy and regulatory obligations incumbent upon Member States;

c) that No. 191C of the Convention empowers the World Telecommunication Standardization Assembly (WTSA) to assign matters within its competence to the Telecommunication Standardization Advisory Group (TSAG), indicating the action required on those matters;

d) the need to increase collaboration among all stakeholders, each within its responsibilities, to address regulatory and policy implications,

resolves

that, when determining whether new work items, Questions or Recommendations have policy or regulatory implications, study groups shall consider possible topics mentioned, in *noting*, *inter alia*:

– the right of the public to correspond;

– protection of telecommunication channels and installations;

– NNAI resources;

– secrecy, availability and authenticity of telecommunications;

– safety of life and safety of environment;

– practices applicable to competitive markets; and

– any other relevant matters, including those identified by a decision of Member States, or recommended by TSAG, or Questions or Recommendations where there is any doubt about their scope, such as matters related to quality of service/quality of experience and performance requirements,

invites Member States

1 to contribute actively to the work to be carried out on this matter;

2 to maintain the ongoing collaboration with Sector Members to ensure a broad range of perspectives and expertise when addressing policy and regulatory implications.

MOD

RESOLUTION 43 (Rev. New Delhi, 2024)

Regional preparations for world telecommunication standardization assemblies

(Florianópolis, 2004; Johannesburg, 2008; Dubai, 2012; Geneva, 2022; New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024),

recalling

a) Resolution 58 (Rev. Busan, 2014) of the Plenipotentiary Conference, on strengthening of relations between ITU and regional telecommunication organizations and regional preparations for the Plenipotentiary Conference;

b) Resolution 25 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on strengthening the ITU regional presence,

considering

a) that many regional telecommunication organizations and the six principal regional telecommunication organizations, namely the Asia-Pacific Telecommunity (APT), the European Conference of Postal and Telecommunications Administrations (CEPT), the Inter-American Telecommunications Commission (CITEL), the African Telecommunications Union (ATU), the Council of Arab Ministers of Telecommunication and Information represented by the Secretariat-General of the League of Arab States (LAS) and the Regional Commonwealth in the field of Communications (RCC), seek close cooperation with the Union and have coordinated their preparations for this and preceding assemblies;

b) that many common proposals have been submitted to this and preceding assemblies from administrations participating in the preparatory work of regional telecommunication organizations;

c) that this consolidation of views at regional level, together with the opportunity for interregional discussions prior to the assembly, has eased the task of reaching a consensus during the assembly;

d) that the burden of preparation for future assemblies is likely to increase;

e) that the coordination of preparations at regional level is consequently of great benefit to the Member States and Sector Members;

f) that greater efficiency of regional coordination and interaction at interregional level prior to future assemblies will help ensure their success;

g) that there is a need for regional telecommunication organizations to collaborate closely with relevant subregional organizations within their region;

h) that some regional organizations lack the necessary resources to organize adequately and participate in such preparations;

i) that there is a need for overall coordination of the interregional consultations,

recognizing

a) the benefits of regional coordination as already experienced in the preparation of plenipotentiary conferences, world radiocommunication conferences and world telecommunication development conferences;

b) the benefits of interregional coordination and preparation, as practised prior to plenipotentiary conferences, in developing regional cooperation in areas of common interest, facilitating coordination among all regions on major issues, opening lines of communication between Member States' coordinators and allowing for negotiations to begin prior to the assembly;

c) that regional preparatory meetings for the World Telecommunication Standardization Assembly (WTSA) have helped in identifying and coordinating regional views on issues considered to be of particular relevance to each region, and in developing common regional proposals for submission to WTSAs,

taking into account

the efficiency benefits that WTSAs have gained from an increased amount and level of prior preparation by the Member States,

noting

a) that many regional telecommunication organizations have expressed the need for the Union to cooperate more closely with them;

b) that the relationship between ITU regional offices and regional telecommunication organizations has proved to be of great benefit,

resolves to instruct the Director of the Telecommunication Standardization Bureau

a) to maintain the organization, within the financial limitations established by the Plenipotentiary Conference, of at least one regional preparatory meeting per region, in close coordination with relevant regional organizations, with the assistance of regional offices when necessary, covering all Member States of ITU without exception, even if they do not belong to any of the six regional telecommunication organizations; the regional preparatory meetings should be the closest in time possible to the next WTSA, followed by an informal meeting of the chairs and vice-chairs of the regional preparatory meetings and other interested parties, to be held not earlier than six months prior to WTSA;

b) to support the organization of briefings and training sessions during regional preparatory meetings in order to provide information on the assembly, nomination and document processes and rules of procedure,

invites the Secretary-General, in cooperation with the Directors of the Bureaux of the three Sectors

1 to consult with Member States and regional and subregional telecommunication organizations on the means by which assistance can be provided in support of their preparations for future WTSAs, including support for the organization of a "Bridging the Standardization Gap Forum" per region to address major issues of the next WTSA of interest to developing countries[1];

2 on the basis of such consultations, to assist Member States and regional and subregional telecommunication organizations in such areas as:

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

i) the organization of informal regional and interregional preparatory meetings, and formal regional preparatory meetings if a region so requests;

ii) the identification of major issues to be resolved by the next WTSA;

iii) the development of coordination methods;

iv) the organization of information sessions on expected work for WTSA;

3 to submit, no later than the session of the ITU Council following WTSA, a report on feedback from Member States concerning WTSA regional preparatory meetings, their results and the application of this resolution,

invites Member States

to participate actively in the implementation of this resolution,

invites regional and subregional telecommunication organizations

1 to participate in coordinating and harmonizing the contributions of their respective Member States in order to generate common proposals where possible;

2 to take an active part in the preparation and holding of regional preparatory meetings for WTSA;

3 to take part in the preparatory meetings of other regional telecommunication organizations, at their invitation, and to convene, if possible, informal interregional meetings in order to exchange information and to arrive at interregional common proposals.

MOD

RESOLUTION 44 (Rev. New Delhi, 2024)

Bridging the standardization gap between developing and developed countries

(Florianópolis, 2004; Johannesburg, 2008; Dubai, 2012; Hammamet 2016; Geneva, 2022; New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024),

considering

a) that Resolution 71 (Rev. Bucharest, 2022) of the Plenipotentiary Conference includes under objectives that relate to the activities of the ITU Telecommunication Standardization Sector (ITU-T) the promotion of active participation of the membership, in particular developing countries[1], and the definition and adoption of international telecommunication/information and communication technology (ICT) standards and regulations with a view to bridging the standardization gap;

b) Resolution 123 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on bridging the standardization gap between developing and developed countries;

c) Resolution 139 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on use of telecommunications/ICTs to bridge the digital divide and build an inclusive information society;

d) Resolution 154 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on use of the six official languages of the Union on an equal footing;

e) Resolution 169 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on admission of academia to participate in the work of the Union;

f) Resolution 191 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on strategy for the coordination of efforts among the three Sectors of the Union;

g) Resolution 195 (Busan, 2014) of the Plenipotentiary Conference, on the implementation of the Smart Africa Manifesto;

h) Resolution 74 (Rev. [Geneva, 2022]) of th[is assembly], on enhancing participation of Sector Members from developing countries in the work of ITU-T;

i) Resolution 197 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on facilitating the Internet of Things and smart sustainable cities and communities;

j) Resolution 5 (Rev. Kigali, 2022) of the World Telecommunication Development Conference (WTDC), on enhanced participation by developing countries in the activities of the Union;

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

k) Resolution 34 (Rev. [Geneva, 2022]) of th[is assembly], on voluntary contributions;

l) Resolution 67 (Rev. [Geneva, 2022]) of th[is assembly], on use in ITU-T of the six official languages of the Union on an equal footing and the Standardization Committee for Vocabulary,

recognizing

a) that the harmonious and balanced development of worldwide telecommunication facilities and services is of mutual advantage to the developing as well as the developed countries;

b) that there is a need to reduce the cost of equipment and of rolling out networks and facilities taking into account the needs and requirements of developing countries;

c) that the disparity between developing and developed countries in standardization has five components: disparity of voluntary standardization, disparity of mandatory technical regulations, disparity of conformity assessment, disparity in human resources skilled in standardization and disparity in effective participation in ITU-T activities;

d) that it is of high importance for developing countries to increase their participation in the establishment and widespread use of telecommunication standards, and to enhance their contribution in ITU-T study groups and their regional groups;

e) that developing countries would benefit from effective participation by their operators in ITU-T activities and that this participation by operators would contribute to enhancing capacity building in the developing countries, increase their competitiveness and support innovation in the markets of developing countries;

f) that coordination at national level in many developing countries needs to be more developed to handle ICT standardization activities in order to contribute to work in ITU-T and the regional groups of ITU-T study groups;

g) that the development of guidelines and the establishment of national standardization secretariats could enhance standardization activities at national level and the participation and contribution of developing countries in ITU-T study groups;

h) that developing countries would benefit from new services and applications enabled by the digital transformation provided by the emergence of key technologies, and from the building of the information society and progress towards sustainable development;

i) that interpretation service needs to be provided in some ITU-T meetings so as to contribute to bridging the standardization gap and ensure maximum involvement of all delegates, in particular those from developing countries, and help them to be fully aware of and engaged in standardization decisions that are taken in ITU-T meetings,

recognizing further

a) that the achievements of ITU-T in the standardization of transformative digital technologies will contribute towards achievement of the United Nations 2030 Agenda for Sustainable Development;

b) that while ITU has made significant progress in defining and bridging the standardization gap, developing countries are still encountering multifarious difficulties in ensuring their efficient participation in the work of ITU-T, in particular engaging in and following up the work of the ITU-T study groups, especially given budgetary limitations;

c) that actual participation by developing countries in ITU-T study group activities has been progressively increased, but it is often limited to the final approval and implementation stages, rather than the preparation of proposals elaborated in the various working groups;

d) that coordination at national level in many developing countries needs to be improved to handle ICT standardization activities in order to contribute to work in ITU-T;

e) that the biennial budget structure includes a separate expenditure line item for bridging the standardization gap activities, while at the same time voluntary contributions are being encouraged, and a management mechanism for this line item has been implemented by the Telecommunication Standardization Bureau (TSB) in close coordination with Telecommunication Development Bureau (BDT);

f) that ITU's programmes for fostering partnerships, under the patronage of ITU-T, continue to strengthen and expand the assistance ITU provides to its members, particularly developing countries;

g) the importance of having appropriate consultative frameworks for developing countries for the formulation and study of Questions, the preparation of contributions and capacity building;

h) that the structure and working methods of ITU-T study groups could serve to improve the level of developing-country participation in standardization activities;

i) that joint meetings of regional groups of different ITU-T study groups, in particular if concatenated with a regional workshop and/or a meeting of a regional standardization body and also meetings of regional telecommunication organizations, such as the Inter-American Telecommunication Commission (CITEL), the Regional Commonwealth in the field of Communications (RCC), the African Telecommunications Union (ATU), the Council of Arab Ministers of Telecommunication and Information represented by the Secretariat-General of the League of Arab States (LAS), the Asia-Pacific Telecommunity (APT) and the European Conference of Postal and Telecommunications Administrations (CEPT), will encourage the participation of developing countries in these meetings and increase the effectiveness of such meetings;

j) that holding ITU-T study group meetings in developing countries has shown potential to increase the participation of ITU-T members from the region in these meetings;

k) that ITU can further improve the active participation of developing countries in the standardization work of ITU-T in terms of both quality and quantity, through the role of the Telecommunication Standardization Advisory Group (TSAG) and ITU-T study group vice-chairs and chairs who are appointed on the basis of regional representation and can be charged with specific responsibilities;

l) that a mentor role in ITU-T study groups was created by TSAG for coordination with representatives from developed and developing countries with the objective of sharing information and best practices with regard to the application of ITU-T Recommendations in order to enhance standardization activities in developing countries and in the regional groups,

recalling

a) that Resolution 1353 of the ITU Council, adopted at its 2012 session, recognizing that telecommunications/ICTs are essential components for developed and developing countries for achieving sustainable development, instructs the Secretary-General, in collaboration with the Directors of the Bureaux, to identify new activities to be undertaken by ITU to support the developing countries to achieve sustainable development through telecommunications and ICTs;

b) the relevant conclusions of the Global Standards Symposium;

c) that in certain regions there are regional institutions or organizations that undertake standardization work;

d) that some developing countries are unable to participate in the work of regional standardization organizations,

resolves

1 that the action plan annexed to this resolution, having the objective of bridging the standardization gap between developed and developing countries, should be continued and be reviewed on an annual basis to take into account the requirements of developing countries;

2 that ITU-T, in collaboration with the other Sectors, especially the ITU Telecommunication Development Sector (ITU-D), as appropriate, shall develop a programme to:

i) assist developing countries in developing strategies and methods that facilitate the process of linking their challenges and innovations to the standardization process in support of the digital transformation of society;

ii) assist developing countries in developing means to align their national industrial and innovation strategies towards the goal of achieving highest impact on their socio-economic ecosystems;

iii) assist developing countries in developing strategies for establishing test laboratories which are nationally, regionally and internationally recognized for emerging technologies;

3 that, subject to Council approval, there should be free online access to the manuals, handbooks, directives and other ITU material related to understanding and implementation of ITU-T Recommendations, particularly in the area of developing planning, operation and maintenance of telecommunication equipment and networks, and also in thematic areas of new and emerging telecommunications/ICTs;

4 to support, within available or otherwise contributed resources, and on a case-by-case basis, the coordinated creation of regional groups of ITU-T study groups, in accordance with the approval or procedures set forth in Resolution 54 (Rev. Geneva, 2022) of this assembly, and encourage cooperation and collaboration of these groups with other regional standardization entities and regional telecommunication organizations;

5 to maintain in the annual budget of the Union a separate expenditure line item for bridging the standardization gap activities, while at the same time voluntary contributions should be further encouraged;

6 that interpretation shall be provided, based on the requests of participants, at all study group and working party plenary meetings and the entire meeting of TSAG;

7 to encourage the participation of members, particularly Academia and the next generation, from developing countries in ITU-T standardization activities,

further resolves that ITU regional offices

1 be engaged in the activities assigned by TSAG in order to further enhance the implementation of the action plan annexed to this resolution, promoting and coordinating standardization activities in their regions, including raising awareness among prospective Sector Members, Associates and Academia from developing countries, and providing the necessary assistance to the regional groups of ITU-T study groups;

2 assist, within the offices' budgets, the vice-chairs of TSAG and ITU-T study groups appointed with specific responsibilities, including, among others, the following:

i) closely work with ITU members in the region in order to mobilize them, including the next generation, to participate in ITU standardization activities to assist in bridging the standardization gap;

ii) make mobilization and participation reports to the ITU body concerning the region;

iii) prepare and submit a mobilization programme for the regions that they represent at the first meeting of TSAG or a study group, and send a report to TSAG;

iv) inform ITU members of programmes and initiatives within ITU-D that could assist in bridging the standardization gap;

3 organize and coordinate the activities of the regional groups of ITU-T study groups,

invites the ITU Council

1 in view of the above *resolves*, in particular *resolves* 6, to increase the ITU-T budgetary provisions for fellowships, interpretation and translation of documents for meetings of TSAG, ITU-T study groups and regional groups of ITU-T study groups;

2 to consider exemption from payment of the membership fees for a limited time of up to one full study period for new Academia members from developing countries in order to encourage them to get involved in ITU-T activities and the standardization process,

instructs the Director of the Telecommunication Standardization Bureau, in collaboration with the Directors of the Radiocommunication Bureau and the Telecommunication Development Bureau

within available resources,

1 to continue implementing the objectives of the action plan annexed to this resolution;

2 to encourage the formation of partnerships under the patronage of ITU-T as one of the means for financing and implementing the objectives of the action plan annexed to this resolution;

3 to consider, whenever possible, holding workshops concurrently with the meetings of their respective regional groups of ITU-T study groups, or organizing other workshops or events in coordination and collaboration with the Director of BDT and ITU regional offices alongside these meetings;

4 to assist developing countries with their studies, particularly in respect of their priority questions and towards developing and implementing ITU-T Recommendations;

5 to continue the activities of the implementation group established within TSB to organize work, mobilize resources, coordinate efforts and monitor work related to this resolution and the associated action plan;

6 to continue to carry out the necessary studies on the role of innovation management and innovation stimulation programmes on bridging the standardization gap between the developed and developing countries;

7 to include in the TSB budget proposal to the Council funds identified for the implementation of this resolution, taking into account financial constraints and existing and planned BDT activities;

8 to report on the implementation of this plan to future world telecommunication standardization assemblies and plenipotentiary conferences, with a view to reviewing this resolution and introducing the appropriate amendments in the light of implementation outcomes, as well as the budgetary adjustments needed;

9 to provide support and assistance to developing countries, if requested, in drafting/developing a set of guidelines on the application of ITU-T Recommendations at the national level in order to enhance their participation in ITU-T study groups, with the assistance of the ITU regional offices, for bridging the standardization gap;

10 to enhance the use of electronic channels such as webinars or e-learning for education and training on the implementation of ITU-T Recommendations, in close collaboration with the ITU Academy and other capacity-building initiatives of BDT;

11 to provide all necessary support and take all necessary measures for creating and ensuring the smooth functioning of the regional groups, and to facilitate the organization of regional group meetings and workshops for disseminating information and increasing understanding of new Recommendations, in particular for developing countries;

12 to report to the Council on the effectiveness of the regional groups of ITU-T study groups;

13 to conduct workshops, seminars and training programmes, including in-person, as appropriate and within available resources, for disseminating information and increasing understanding of new ITU-T Recommendations and implementation guidelines for Recommendations, in particular for developing countries;

14 to ensure equal access to the ITU electronic meetings to the maximum extent possible and to provide remote participation, where possible, for more ITU-T workshops, seminars and forums, encouraging greater participation by developing countries;

15 to leverage existing ITU-D tools in order for developing countries to have greater involvement in ITU-T's standardization work;

16 to study the possibility of generating additional revenue for ITU-T activities on bridging the standardization gap, through identifying new financial resources not related to the voluntary contributions mentioned above;

17 to support mentorship efforts in ITU-T standardization activities to guide representatives of developing countries in enhancing their understanding and participation in ITU-T activities;

18 consider the conducting of Bridging the Standardization Gap (BSG) training courses in developing countries; these courses should be split in order to cater for a wider audience according to skill level,

instructs study groups of the ITU Telecommunication Standardization Sector and the Telecommunication Standardization Advisory Group

1 to be actively involved in the implementation of the programmes set forth in the action plan annexed to this resolution;

2 to consider including implementation guidelines for ITU-T Recommendations where these could provide advice to assist developing countries in adopting them, with emphasis on Recommendations having regulatory and policy implications;

3 to coordinate joint meetings of regional groups of ITU-T study groups,

further instructs the study groups

1 to take account of the specific characteristics of the telecommunication/ICT environment of the developing countries in establishing standards in the fields of planning, services, systems, operation, tariffs and maintenance, and to provide solutions relevant to developing countries wherever possible;

2 to take appropriate steps to have studies carried out on questions connected with standardization which are identified by WTDC or which are identified via specific studies or surveys targeting developing countries carried out by other ITU-T study groups;

3 to continue liaising with ITU-D study groups, where appropriate, when developing new or revised ITU-T Recommendations, on the specific needs and requirements of developing countries, in order to broaden the appeal and applicability of the Recommendations in those countries;

4 to identify, in collaboration with developing countries, the challenges that they are facing with a view to bridging the standardization gap among Member States,

invites the Director of the Telecommunication Standardization Bureau

1 to work closely with the Directors of BDT and the Radiocommunication Bureau (BR) in order to encourage the formation of partnerships under the patronage of ITU-T as one of the means for financing the action plan;

2 to encourage Sector Members from the developed countries to promote the participation in ITU-T activities of their subsidiaries based in developing countries;

3 to develop mechanisms to support the effective participation by members, including telecommunication operators, from developing countries in standardization activities;

4 to collaborate with relevant standards-development organizations (SDOs) to assist developing countries in implementing telecommunication/ICT standards to address their challenges and priorities;

5 to consider, whenever possible, holding meetings of ITU-T study groups in developing countries;

6 to report annually to TSAG on the implementation and progress of the action plan in relation to the BSG programme, and to make the report available to members;

7 to consider the provision of fellowships, within available resources, to attend study group meetings,

instructs the Director of the Telecommunication Standardization Bureau, in collaboration with the Director of the Telecommunication Development Bureau

to promote awareness and assist in the implementation of ITU-T standards in developing countries, considering countries' specific needs, in collaboration with the regional telecommunication organizations and ITU regional offices, as appropriate,

invites regions and their Member States

1 to pursue, if necessary, the creation of regional groups of ITU-T study groups in accordance with Resolution 54 (Rev. Geneva, 2022);

2 to take an active part in the activities of the regional groups of ITU-T study groups and support regional telecommunication organizations in setting up regional frameworks for the development of standardization activities;

3 to create regional standardization bodies, as appropriate, and encourage joint and coordinated meetings of such bodies with the regional groups of the ITU-T study groups in the respective regions, so that these standardization bodies act as an umbrella for such regional group meetings;

4 to develop draft terms of reference and working methods for regional groups, for approval by the parent study group;

5 to share information on utilizing ITU-T Recommendations;

6 to encourage the participation of their Sector Members and Associates, especially industry from developing countries, in ITU-T activities;

7 to host regional group and study group meetings and other ITU-T events in particular in developing countries,

encourages Member States and Sector Members

1 to communicate their standardization priorities via contributions and responses to ITU-T surveys;

2 to take the objectives set out in the action plan in the annex to this resolution into account in their participation in ITU-T.

ANNEX
(to Resolution 44 (Rev. New Delhi, 2024))

Action plan for the implementation of Resolution 123 (Rev. Bucharest, 2022) of the Plenipotentiary Conference

I Programme 1: Strengthening standards-making capabilities

1) Objective

- To improve the standards-making capabilities of developing countries.

2) Activities

- Developing guidelines to assist developing countries in their involvement in ITU Telecommunication Standardization Sector (ITU-T) activities, covering, but not limited to, ITU-T working methods, formulating draft Questions and making proposals.

- Creating methods to increase the access of developing countries to essential technical information in order to enhance their knowledge and capacity (i) to implement global standards, (ii) to effectively contribute to the work of ITU-T, (iii) to include their own specificities and necessities in the global standards-making process, and (iv) to influence global standards-making discussions by having active roles in ITU-T study groups, in close collaboration with other Telecommunication Development Bureau (BDT) capacity-building initiatives.
- Improving procedures and tools for remote participation via electronic means so as to enable experts in developing countries to participate actively in ITU-T meetings (including the Telecommunication Standardization Advisory Group (TSAG), study groups, focus groups, joint coordination activities, among others), workshops and training, from their own countries.
- Conducting consultancy projects designed to support developing countries in the development of standardization plans, strategies, policies, etc. The outputs should be further transformed into best practices.
- Developing methods, tools and indicators for accurate measurement of the results and the level of effectiveness of the efforts and activities applied in bridging the standardization gap and providing statistics on the involvement of developing countries in the work and meetings of TSAG, ITU-T focus groups, ITU-T study groups and regional groups in addition to other ITU-T events.
- Working with Sector Members, and in particular manufacturers, academia and research and development organizations, on exchanging information on new technologies and requirements of developing countries, and on providing technical assistance to encourage the establishment of standardization programmes in academia and research and development organizations in the field of ICT.

II Programme 2: Assisting developing countries with respect to the application of standards

1) Objective

- To assist developing countries in:
  - Having a clear understanding of ITU-T Recommendations;
  - Enhancing the application of ITU-T Recommendations in developing countries.

2) Activities

- Assisting developing countries in:
  - Establishing a standardization secretariat to coordinate standardization activities and participation in ITU-T study groups;
  - Determining whether their existing national standards are consistent and in accordance with the current ITU-T Recommendations.

- Actions to be performed by the Telecommunication Standardization Bureau (TSB) with BDT cooperation:
  - Developing guidelines on the application of ITU-T Recommendations, in particular on manufactured products and interconnection, with emphasis on Recommendations having regulatory and policy implications.
  - Providing advice and assistance for better utilization and adoption of ITU-T Recommendations in national standards.
  - Compiling and maintaining the ITU-T Recommendation database with information on new standardized technologies and lists of ITU-T Recommendations on thematic areas.
  - Organizing capacity-building events that enable better application of specific Recommendations and on methods of examining compliance of manufactured products with these Recommendations, in close collaboration with other BDT capacity-building initiatives.
  - Promoting the use of a standardization forum for "questions and answers on standards" where developing countries can raise questions concerning the understanding and application of Recommendations and seek advice from study group experts.
  - Providing assistance to developing countries in developing strategies for establishing test laboratories which are nationally, regionally and internationally recognized for emerging technologies, in coordination with other related actions in other ITU Sectors, especially the ITU Telecommunication Development Sector.
  - Continuing launching ITU-T initiatives and programmes that focus on the implementation of existing ITU-T Recommendations while exploring new topics of study, and encouraging the participation of developing countries in these initiatives and programmes.

III Programme 3: Human resources capacity building

1) Objective

- To increase the human resources capacity of developing countries in ITU-T and national standardization activities.

2) Activities

- Promoting the organization of events, seminars, workshops and study group meetings at the regional and global levels in order to promote standardization capacity building and the development of telecommunications/ICT in developing countries, in close collaboration with other BDT capacity-building initiatives.
- In close collaboration with BDT and the Radiocommunication Bureau, providing training courses on standardization to national experts and the next generation in developing countries.
- Providing more internship, secondment and short-term employment, etc. opportunities for developing countries at ITU.

- Encouraging the election of more candidates from developing countries to TSAG and ITU-T study group chairship and vice-chairship positions.
- Encouraging secondment and short-term employment opportunities for experts from developing countries in test laboratories of international standards-development organizations and manufacturers, in particular in the area of conformance and interoperability testing.
- Organizing in-depth tutorials on understanding and implementation of ITU-T Recommendations.
- Providing guidance and support material to developing countries to assist them in developing and providing undergraduate and postgraduate courses on standardization in their universities.
- Offering, to the extent possible, through TSB, a greater number of fellowships to eligible developing countries to attend relevant ITU-T meetings.
- The Bridging the Standardization Gap (BSG) programme should take actions to ensure more participation of women and girls, and vulnerable groups, in standards-development in order to capture their requirements in standardization activities, especially in respect of emerging technologies, taking into account geographical and regional balance.

IV Programme 4: Fundraising for bridging the standardization gap

a) Contributions to the action plan through the following forms of partnerships and other means:

- Partnership contributions
- Additional budget allocated by ITU
- Voluntary contributions by developed countries
- Voluntary contributions by the private sector
- Voluntary contributions by others.

b) Management of funds by TSB:

- The Director of TSB, in close coordination with the Director of BDT, shall be responsible for the management of funds raised as above, which shall be used principally for achieving the objectives of these programmes.

c) Principles for the use of funds:

- Funds are to be used for ITU-related activities including, but not limited to, assistance and consultation, training of representatives of developing countries in ITU-T activities, as well as studying compliance examination, interconnection and interoperability programmes for developing countries.

MOD

RESOLUTION 48 (Rev. New Delhi, 2024)

Internationalized (multilingual) domain names

(Florianópolis, 2004; Johannesburg, 2008; Dubai, 2012, Geneva 2022; New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024),

recognizing

a) relevant parts of Resolution 102 (Rev. Bucharest, 2022) of the Plenipotentiary Conference;

b) Resolution 133 (Rev. Bucharest, 2022) of the Plenipotentiary Conference;

c) Resolution 82 (Rev. Kigali, 2022) of the World Telecommunication Development Conference;

d) relevant outcomes of the two phases of the World Summit on the Information Society (WSIS);

e) WSIS Action Line C8 (Cultural diversity and identity, linguistic diversity and local content);

f) the evolving role of the World Telecommunication Standardization Assembly, in accordance with Resolution 122 (Rev. Guadalajara, 2010) of the Plenipotentiary Conference;

g) the important role of multilingualism in enabling the full participation of all countries in the work of ITU, in building a global information society that is open to all, and in achieving the goals and objectives of WSIS;

h) the role of industry, relevant technical and international organizations, and the top-level domain (TLD) operator communities in continuing to advance the use of internationalized (multilingual) domain names (IDNs) in the Domain Name System (DNS);

i) that, while significant progress in the technical development and availability of IDNs in the DNS has been made, universal acceptance remains the primary challenge;

j) the lack of multilingualism on the Internet, which contributes to a significant digital divide;

k) that the adoption of IDNs will promote multilingualism on the Internet and support meaningful connectivity for much of the world;

l) the work of the domain name industry and relevant regional and international organizations and initiatives, such as the Coalition for Digital Africa, to increase the availability of IDNs,

considering

a) that there needs to be further in-depth discussion of the political, economic and technical issues related to IDNs arising out of the interaction between national sovereignty and the need for international coordination and harmonization;

b) that intergovernmental organizations have had, and should continue to have, a facilitating role in the coordination of Internet-related public policy issues;

c) that international organizations have also had, and should continue to have, an important role in the development of Internet-related technical standards and relevant policies;

d) that the ITU Telecommunication Standardization Sector (ITU-T) has a record of successfully handling similar issues in a timely manner, especially as to the use of non-Latin character sets;

e) that relevant regional and international organizations are working to increase the deployment of IDNs;

f) that despite the growing adoption of IDNs, enhancing user awareness of the availability of IDNs and challenges of universal acceptance is required to ensure their continued growth;

g) the ITU Telecommunication Development Sector (ITU-D) can be a leader in building capacity to expand multilingualism on the Internet, including through the promotion of universal acceptance;

h) the ongoing activities of other relevant organizations,

resolves to instruct Study Group 21 of the ITU Telecommunication Standardization Sector and other relevant study groups

to continue to study IDNs, and to continue to liaise and cooperate with appropriate entities, whether intergovernmental or non-governmental, in this area,

instructs the Director of the Telecommunication Standardization Bureau

1 to promote the universal acceptance of IDN and to collaborate and cooperate in enabling their usage on the Internet;

2 to raise awareness among Member States and ITU-T Sector Members of the challenges facing universal acceptance and IDNs by actively participating in relevant activities, such as Universal Acceptance Day and engaging with local universal acceptance ambassadors;

3 to support ITU-D in engaging stakeholders, raising awareness and incentivizing progress within the ITU-D membership, including Member States and Sector Members, in order to support and promote multilingualism on the Internet;

4 to continue to collaborate with relevant organizations to facilitate the adoption of IDNs and promote universal acceptance; and to support organizations such as the United Nations Educational, Scientific and Cultural Organization (UNESCO) in facilitating WSIS Action Line C8;

5 to take appropriate action to facilitate the above and to report to the ITU Council annually regarding the progress achieved in this area,

invites the Director of the Telecommunication Development Bureau

to continue to cooperate with the Director of the Telecommunication Standardization Bureau on these issues in the spirit of "One ITU",

invites Member States, Sector Members and regional groups concerned

1 to contribute to these activities, including by working with relevant regional and international organizations and participating in Universal Acceptance Day;

2 to share the efforts, best practices and global developments of industry and regional and international organizations.

MOD

RESOLUTION 50 (Rev. New Delhi, 2024)

Cybersecurity

(Florianópolis, 2004; Johannesburg, 2008; Dubai, 2012; Hammamet, 2016; Geneva, 2022; New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024),

recalling

a) Resolution 130 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on strengthening the role of ITU in building confidence and security in the use of information and communication technologies (ICTs);

b) Resolution 174 (Rev. Busan, 2014) of the Plenipotentiary Conference, on ITU's role with regard to international public policy issues relating to the risk of illicit use of ICTs;

c) Resolution 179 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on ITU's role in child online protection;

d) Resolution 181 (Guadalajara, 2010) of the Plenipotentiary Conference, on definitions and terminology relating to building confidence and security in the use of ICTs;

e) Resolutions 55/63 and 56/121 of the United Nations General Assembly (UNGA), which established the legal framework on countering the criminal misuse of information technologies;

f) UNGA Resolution 57/239, on the creation of a global culture of cybersecurity;

g) UNGA Resolution 64/211, on the creation of a global culture of cybersecurity and the protection of essential information infrastructures;

h) UNGA Resolution 41/65, on principles relating to remote sensing of the Earth from outer space;

i) UNGA Resolution 76/19, on developments in the field of information and telecommunications in the context of international security;

j) UNGA Resolution 70/125, on the outcome document of the high-level meeting of the General Assembly on the overall review of the implementation of the outcomes of the World Summit on the Information Society (WSIS);

k) Resolution 45 (Rev. Kigali, 2022) of the World Telecommunication Development Conference (WTDC), on mechanisms for enhancing cooperation on cybersecurity, including countering and combating spam;

l) Resolution 52 (Rev. [Hammamet, 2016]) of th[e World Telecommunication Standardization Assembly], on countering and combating spam;

m) Resolution 58 (Rev. [Geneva, 2022]) of th[is assembly], on encouraging the creation of national computer incident response teams (CIRTs), particularly in developing countries[1];

n) that ITU is the lead facilitator for WSIS Action Line C5 in the Tunis Agenda for the Information Society (Building confidence and security in the use of ICTs);

o) the cybersecurity-related provisions of the WSIS outcomes,

considering

a) the crucial importance of telecommunication/ICT infrastructure and its application to practically all forms of social and economic activity;

b) that the legacy public switched telephone network has a level of inherent security properties because of its hierarchical structure and built-in management systems;

c) that Internet Protocol (IP) networks provide reduced separation between user components and network components if adequate care is not taken in the security design and management;

d) that the converged legacy networks and IP networks are therefore potentially more vulnerable to intrusion if adequate care is not taken in the security design and management of such networks;

e) that cybersecurity is a cross-cutting issue, and the cybersecurity landscape is complex and dispersed, with many different stakeholders at the national, regional and global levels with responsibility for identifying, examining and responding to issues related to building confidence and security in the use of telecommunications/ICTs;

f) that the considerable and increasing losses which users of telecommunication/ICT systems have incurred from the growing problem of cybersecurity alarm all developed and developing nations of the world without exception;

g) that the fact, *inter alia*, that critical telecommunication/ICT infrastructures are interconnected at the global level means that inadequate infrastructure security in one country could result in greater vulnerability and risks in others and, therefore, cooperation is important;

h) that the number and methods of cyberthreats and cyberattacks are growing, as is dependence on the Internet and other networks that are essential for accessing services and information;

i) that standards can support the security aspects of all telecommunications/ICTs;

j) that ensuring the safety and security of emerging telecommunications/ICTs is vital for a secure cyberspace, making the development of security standards for them essential;

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

k) that in order to protect global telecommunication/ICT infrastructures from the threats and challenges of the evolving cybersecurity landscape, coordinated national, regional and international action is required for prevention, preparation, response and recovery in respect of cybersecurity incidents;

l) the work undertaken and ongoing in ITU, including in ITU Telecommunication Standardization Sector (ITU-T) Study Group 17 and ITU Telecommunication Development Sector (ITU-D) Study Group 2, and under the Kigali Action Plan adopted by WTDC (Kigali, 2022);

m) that ITU-T has a role to play, within its mandate and competencies, in regard to *considering k)*,

considering further

a) that Recommendation ITU-T X.1205 provides a definition, a description of technologies, and network protection principles;

b) that Recommendation ITU-T X.805 provides a systematic framework for identifying security vulnerabilities, and Recommendation ITU-T X.1500 provides the cybersecurity information exchange (CYBEX) model and discusses techniques that could be used to facilitate the exchange of cybersecurity information;

c) that ITU-T and the Joint Technical Committee for information technology (JTC 1) of the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC), as well as several consortia and standards-development entities already have a significant body of published materials and ongoing work that is directly relevant to this topic, which needs to be considered;

d) the importance of considering security in the use of telecommunications/ICTs as a continuous and iterative process, built into products from the beginning and continuing throughout every phase of their lifetime;

e) that an iterative, risk-based approach incorporating a combination of technological, process and human-based factors is key to strengthening security and resilience in the use of telecommunications/ICTs – by enabling cybersecurity practices to be developed and applied as needed to address constantly evolving threats and vulnerabilities – while also supporting innovation and emerging telecommunications/ICTs,

recognizing

a) the operative paragraph of Resolution 130 (Rev. Bucharest, 2022) instructing the Director of the Telecommunication Standardization Bureau (TSB) to intensify work within existing ITU-T study groups;

b) that Resolution 71 (Rev, Bucharest, 2022) of the Plenipotentiary Conference adopted the strategic plan for the Union for 2024-2027, including Strategic Goal 1 (Universal Connectivity: Enable and foster universal access to affordable, high-quality and secure telecommunications/ICTs), under which the Union will focus on achieving universally accessible, affordable, high-quality, interoperable and secure telecommunication/ICT infrastructure, services and applications;

c) that standards are a key component of Pillar 2 (technical and procedural measures) of the ITU Global Cybersecurity Agenda (GCA), which promotes international cooperation aimed at proposing strategies for solutions to enhance confidence and security in the use of telecommunications/ICTs, considering security aspects throughout the whole lifecycle of the standards-development process;

d) the challenges that States, in particular in developing countries, face in building confidence and security in the use of telecommunications/ICTs,

recognizing further

a) that an increasing range and variety of cyberattacks, such as phishing, pharming, scan/intrusion, distributed denials of service, web-defacements, unauthorized access, etc., are emerging, evolving and having significant impacts;

b) that a range of vectors may be used to distribute bot-malware and carry out cyberattacks;

c) that sources of attacks are sometimes difficult to identify;

d) that critical cybersecurity threats in software and hardware may require timely vulnerability management, timely hardware and software updates and appropriate assignment of access rights to prevent attacks;

e) that securing data is a key component of cybersecurity as data are often the target in cyberattacks;

f) that cybersecurity is a fundamental element of building confidence and security in the use of telecommunications/ICTs;

g) the increasingly widespread access to telecommunications/ICTs worldwide, in particular the Internet, and use thereof by underage individuals,

noting

a) the vigorous activity and interest in the development of telecommunication/ICT security standards and Recommendations in ITU-T Study Group 17, the lead ITU-T study group on security and identity management, and in other standardization bodies, including the Global Standards Collaboration (GSC) group;

b) that there is a need for national, regional and international strategies and initiatives to be harmonized to the extent possible, in order to avoid duplication and to optimize the use of resources;

c) that, in addition to other cyberthreats, the cybersecurity aspects of protection of data and personally identifiable information (PII) have emerged as a major issue for Member States;

d) the significant and collaborative efforts by and among governments, the private sector, civil society, the technical community and academia, within their respective roles and responsibilities, to build confidence and security in the use of telecommunications/ICTs,

resolves

1 to continue to give this work high priority within ITU-T, in accordance with its competencies and expertise, including promoting common understanding among governments and other stakeholders of building confidence and security in the use of telecommunications/ICTs at the national, regional and international level;

2 that ITU-T study groups continue to evaluate existing and evolving Recommendations, according to their mandates in Resolution 2 (Rev. [Geneva, 2022]) of th[is assembly], and refer security issues with respect to robustness of design and operation, and potential for exploitation by malicious parties, to ITU-T Study Group 17 for consideration, and take into account new and emerging telecommunication/ICT services and technologies to be supported by the global telecommunication/ICT infrastructure;

3 that ITU-T continue to raise global awareness of security in telecommunications/ICTs, through the development of Recommendations and technical reports, within its mandate and competencies, which support cybersecurity procedures, technical policies and standards frameworks, and of the importance of protecting telecommunications/ICTs against cyberthreats and malicious cyberactivity, in order to enhance organizations' development of security-related capabilities among personnel, and also continue to promote cooperation among appropriate international and regional organizations in order to enhance exchange of technical information in the field of telecommunication/ICT security, with the twin objectives of managing cybersecurity risks and protecting telecommunications/ICTs;

4 that ITU-T should consider the needs of users and developers when developing outputs that could be used to promote cybersecurity for emerging technologies for telecommunications/ICTs;

5 that ITU-T should consider the importance of capacity building in facilitating the adoption of standards to support cybersecurity, in particular, but not exclusively, for developing countries;

6 that ITU-T should coordinate and collaborate with ITU-D in this regard, both within the context of ITU-D Study Question 3/2 (Securing information and communication networks: Best practices for developing a culture of cybersecurity) and within the context of the capacity-building work of the Telecommunication Development Bureau (BDT);

7 that relevant ITU-T study groups should keep pace with the development of new and emerging telecommunication/ICT services and technologies, according to their mandates, in order to alert ITU-T Study Group 17 to areas that may require new Recommendations, supplements and technical reports to address challenges related to cybersecurity and its aspects of data and PII protection;

8 that ITU-T continue work on the development and improvement of terms and definitions related to building confidence and security in the use of telecommunications/ICTs, including the term cybersecurity;

9 that global, consistent and interoperable processes for sharing information related to incident response should be promoted;

10 that ITU-T study groups continue to liaise with standards organizations and other bodies active in this field and encourage the engagement of experts in ITU's activities in the area of building confidence and security in the use of telecommunications/ICTs;

11 that security aspects should be considered throughout the ITU-T standards-development process;

12 that secure, trusted and resilient telecommunication/ICT networks and services should be developed and maintained to enhance confidence in the use of telecommunications/ICTs;

13 that the cyber-resilience of telecommunication/ICT networks and systems should be considered a priority in telecommunication/ICT network infrastructure and application development,

instructs Study Group 17 of the ITU Telecommunication Standardization Sector

1 to promote studies on cybersecurity, including its aspects of data and PII protection for new and emerging telecommunication/ICT services and technologies, in order to counter vulnerabilities in the use of the global telecommunication/ICT infrastructure, by developing Recommendations, supplements and technical reports, as appropriate;

2 to support the Director of TSB to maintain the ICT Security Standards Roadmap, which should include work items to progress standardization work related to cybersecurity, and its aspects of data and PII protection, and the security compendium, which should include the list of Recommendations and terms and definitions, and share this with relevant groups of the ITU Radiocommunication Sector (ITU-R) and ITU-D as the mission of the ITU-T lead study group for security;

3 to lead joint coordination activities on confidence and security among all relevant ITU study groups and other standards-development organizations, as appropriate;

4 to collaborate closely with all other ITU-T study groups, establish an action plan for assessing existing, evolving and new ITU-T Recommendations to address constantly evolving security threats and vulnerabilities to encourage resilience of telecommunication/ICT networks from cyberattacks, and continue to provide regular reports on security of telecommunications/ICT to the Telecommunication Standardization Advisory Group;

5 to continue to define a general/common set of security capabilities throughout every phase of the development lifecycle, such as requirements, design, implementation, verification, release and maintenance, of information system/network/application/service products, including organizations' development of security-related capabilities among personnel, so that consequently security by design (security capabilities and features available by design) could be achieved for systems/networks/applications from day one;

6 to continue to design one or more security frameworks or reference architectures with security functional components, including considering security interoperability among different types of systems, which could be considered as the basis of security architecture design for various systems/networks/applications in order to improve the quality of Recommendations on security, and provide security design references for potential applications in global telecommunications/ICT infrastructure;

7 to continue to develop and support cooperative cybersecurity analysis and tools for incident management, in order to support the work of CIRTs, in particular in developing countries;

8 to consider meeting requirements, as they are established, to develop technical standards in support of efforts for enhancing cybersecurity for minors;

9 to consider ongoing changes in telecommunications/ICTs and regularly review and revise existing Recommendations related to network security, in order to adapt to new security requirements and respond to new network security threats;

10 to provide the best practices for evaluating and improving cybersecurity, including its aspects of data and PII protection, in evolving telecommunication/ICT infrastructure;

11 to conduct an assessment on the impact of new and emerging telecommunications/ICTs, from the perspective of cybersecurity, identifying gaps and recommending strategies for secure adoption and use,

instructs the Director of the Telecommunication Standardization Bureau

1 to continue to maintain, in building upon the information base associated with the telecommunication/ICT Security Standards Roadmap and ITU-D efforts on cybersecurity, and with the assistance of other relevant organizations, an inventory of national, regional and international initiatives and activities to promote, to the maximum extent possible, the worldwide harmonization of strategies and approaches in this critically important area, including the development of common approaches in the field of cybersecurity;

2 to contribute to annual reports to the ITU Council on building confidence and security in the use of telecommunications/ICTs, as specified in Resolution 130 (Rev. Bucharest, 2022);

3 to report to the Council on the progress of activities on the telecommunication/ICT Security Standards Roadmap;

4 to continue to recognize the role played by other organizations with experience and expertise in the area of cybersecurity including, *inter alia*, the cybersecurity aspects of the data and PII protection standards, and coordinate with those organizations as appropriate;

5 to continue the implementation and follow-up of relevant WSIS activities on building confidence and security in the use of telecommunications/ICTs, in collaboration with the other ITU Sectors and in cooperation with other organizations and all relevant stakeholders, as a way to share information and best practices on national, regional and international non-discriminatory cybersecurity-related initiatives globally;

6 to cooperate with the Secretary-General's GCA and other global or regional cybersecurity projects, as appropriate, in promoting capacity building and developing relationships and partnerships with various regional and international cybersecurity-related organizations and initiatives, as appropriate, and to invite all Member States, particularly developing countries, to take part in these activities and to coordinate and cooperate with these different activities;

7 to support the Director of BDT in overseeing the development of Recommendations and potentially other tools that the Member States, in particular developing countries, can use to anticipate rapid responses in the event of major incidents, and in helping these bodies to propose action plans using a suitable framework, as appropriate and upon request, to increase their protection, taking into account mechanisms and partnerships;

8 to support relevant ITU-T Study Group 17 activities related to strengthening and building confidence and security in the use of telecommunications/ICTs, and to coordinate this work with the ITU-D study groups and with the relevant programme activities;

9 to disseminate information to all stakeholders and increase stakeholders' understanding of cybersecurity through the organization of training programmes, forums, workshops, seminars, etc., as appropriate, on ITU-T Recommendations and implementation guidelines for policy-makers, regulators, operators and other stakeholders, especially from developing countries, to raise awareness and identify needs in collaboration with the Director of BDT;

10 to work with the regional telecommunications organizations in order to deliver knowledge and expertise to wider audiences more effectively;

11 to consider, whenever possible, to raise awareness by holding workshops concurrently with the meetings of the respective regional groups of ITU-T study groups, or events in coordination and collaboration with the Director of BDT and ITU regional offices alongside these meetings, where appropriate,

invites Member States, Sector Members, Associates and Academia, as appropriate

1 to collaborate closely in strengthening regional and international cooperation and support, taking into account Resolution 130 (Rev. Bucharest, 2022), with a view to enhancing confidence and security in the use of telecommunications/ICTs, in order to mitigate risks and address threats;

2 to cooperate and participate actively in the implementation of this resolution and the associated actions;

3 to participate in relevant ITU-T study group activities to develop cybersecurity standards and guidelines in order to build confidence and security in the use of telecommunications/ICTs;

4 to utilize relevant ITU-T Recommendations, technical reports and supplements;

5 to continue to contribute to ITU-T Study Group 17 work on cybersecurity risk and cyberdefence management approaches, within the remit of ITU;

6 to continue to engage in initiatives to encourage the active participation of women in ITU-T cybersecurity-related activities and leadership roles;

7 to adopt and support the implementation of cybersecurity measures for new and emerging telecommunication/ICTs within their jurisdictions, encouraging a secure and resilient environment for all users.

MOD

RESOLUTION 52 (Rev. New Delhi, 2024)

Countering and combating spam

(Florianópolis, 2004; Johannesburg, 2008; Dubai, 2012; Hammamet, 2016; New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024),

recalling

a) relevant provisions of the basic instruments of ITU;

b) that the Declaration of Principles of the World Summit on the Information Society (WSIS) states in § 37 that "Spam is a significant and growing problem for users, networks and the Internet as a whole. Spam and cybersecurity should be dealt with at appropriate national and international levels";

c) that the WSIS Plan of Action states in § 12 that "Confidence and security are among the main pillars of the information society", and calls for "appropriate action on spam at national and international levels";

d) the relevant parts of Resolutions 130 (Rev. Bucharest, 2022) and 174 (Rev. Busan, 2014) of the Plenipotentiary Conference;

e) the report of the chair of the two ITU WSIS thematic meetings on countering and combating spam, which advocated a comprehensive approach to combating spam, namely:

i) strong legislation

ii) the development of technical measures

iii) the establishment of industry partnerships to accelerate the studies

iv) education

v) international cooperation;

f) the relevant parts of Resolution 45 (Rev. Kigali, 2022) of the World Telecommunication Development Conference;

g) Decision 630 of the ITU Council, adopted at its 2023 session, on informational resources to help Member States build their cybersecurity and cyber-resilience capacity,

recognizing

a) that spammers are increasingly exploiting the cross-border nature of the Internet and communications;

b) that the absence of a simple remedy to combat spam underscores the need for a multifaceted, collaborative approach alongside cooperation among public and private entities;

c) that international cooperation is essential for developing a comprehensive and impactful strategy against spam;

d) that spam is used for both commercial and non-commercial purposes;

e) that the rapid growth of telecommunications/information and communication technologies (ICTs) has provided users with new and advanced messaging solutions and introduced new challenges for combating spam,

considering

a) that exchanging e-mails, texts, multimedia messaging and other telecommunications over the Internet has become one of the main means of communication between people around the world;

b) that there are currently a variety of definitions for the term "spam" and the scope of spam has been greatly expanded with the development of new and emerging telecommunications/ICTs;

c) that the meaning of the word "spam" can vary and evolve as telecommunications/ICTs develop, providing novel opportunities for misuse of electronic communications;

d) that spam has become a widespread problem causing potential loss of revenue to Internet service providers, telecommunication operators, mobile telecommunication operators and business users;

e) that countering spam by technical means burdens affected entities, including network operators and service providers, as well as users who unwillingly receive such spam, with significant investments in networks, facilities, terminal equipment, and applications;

f) that all stakeholders – including governments, regulators, network operators, Internet service providers and online service providers, the Internet technical community, business and consumer advocacy groups, antispam coalitions and working groups, civil society, computer incident response teams – have a role to play in the effective reduction of spam;

g) that spam may be used for malicious activity creating problems for telecommunication/ICT network security for organizations and individuals and may result in significant financial implications;

h) that spamming is used for criminal, fraudulent or deceptive activities;

i) that spam is a global problem, with different characteristics in different regions, which affects many stakeholders and, therefore, requires collaborative work and international cooperation to address it and find solutions;

j) that addressing the issue of spam is a matter of urgency;

k) that many countries, in particular developing countries[1], need help when it comes to countering spam;

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

l) that relevant Recommendations of the ITU Telecommunication Standardization Sector (ITU-T) and relevant information from other international bodies are available which could provide guidance for future development in this area, particularly with regard to lessons learned;

m) that technical measures to counter spam represent one of the elements of the approach mentioned in *recalling e)* above;

n) that a risk-based approach incorporating a combination of technological and process-based approaches can assist in effectively countering spam;

o) that capacity building to counter spam, including awareness raising and training in countries, should be taken into account in collaboration with the ITU Telecommunication Development Sector (ITU-D),

noting

a) the important technical work carried out to date in ITU-T Study Group 17, and ITU-D Study Question 3/2 on securing information and communication networks;

b) that new and emerging telecommunications/ICTs have been leveraged to fuel the proliferation of spam operations, resulting in the development of novel spamming techniques,

resolves to instruct Study Group 17 of the ITU Telecommunication Standardization Sector

1 to continue to support work related to countering spam, such as e-mail, text and multimedia messaging and other telecommunications over the Internet, in order to address existing and future threats within the remit and expertise of ITU-T, as appropriate, including but not limited to:

i) updating definitions to reflect emerging forms of spam, such as SMS and voice call spam and spam facilitated by new and emerging telecommunications/ICTs;

ii) clarifying terminology related to spamming activities and countermeasures to ensure consistency and clarity in interpretation;

2 to report regularly to the Telecommunication Standardization Advisory Group on progress under this resolution;

3 to enhance research on the application of new and emerging telecommunications/ICTs in countering spam;

4 to collaborate with ITU-D and with the relevant organizations, including other relevant standards organizations and development partners, in order to continue developing, as a matter of urgency, technical Recommendations with a view to awareness raising, sharing best practices, policy dialogue and providing technical training through workshops, in partnership with beneficiary Member States and other stakeholders, such as network operators, Internet service providers and online service providers, the Internet technical community, business associations and civil society;

5 to consider risk-based approaches in relevant Recommendations, supplements and technical reports aimed at countering spam, incorporating a combination of technological and process-based approaches;

6 to support ITU-D Study Group 2 on countering and combating spam in its work providing technical training sessions and workshop activities in different regions related to spam policy, regulatory and economic issues and their impact for the benefit of regulators and telecommunication operators;

7 to continue to update a study – including by sending a questionnaire to the ITU membership – indicating the volume, types (e.g. e-mail spam, SMS spam, spam in IP-based multimedia applications) and features (e.g. different major routes and sources) of spam traffic, in order to help Member States and relevant operating agencies identify routes, sources and volumes of spam and estimate the amount of investment required in facilities and other technical means to counter and combat such spam, taking into account work that has already been carried out and the threat landscape for spam;

8 to continue its work on developing Recommendations, supplements, technical reports and other related publications,

instructs the Director of the Telecommunication Standardization Bureau

1 to provide all necessary assistance with a view to expediting such efforts, working collaboratively with relevant parties to combat spam with a view to identifying opportunities, raising awareness for such activities and identifying possible collaboration, as appropriate;

2 to work with Member States at national, regional and international levels of cooperation to implement global initiatives countering and combating spam that include coordination with government/industry partnerships, outreach to civil society and consumers and provision of tools and resources, as appropriate;

3 to contribute to the development of an informational resource platform, based on the provisions of Council Decision 630 (C23), that includes and maintains a repository of best practices and solutions for countering spam, with the aim of sharing those resources among all ITU members;

4 to support relevant ITU-T Study Group 17 activities related to countering and combating spam;

5 to continue to recognize the role played by other international organizations with expertise in this area and promote collaboration and cooperation on combating spam;

6 to continue to cooperate with the Secretary-General's initiative on cybersecurity and with the Telecommunication Development Bureau in relation to any item concerning cybersecurity under Resolution 45 (Rev. Kigali, 2022), and to ensure coordination among these different activities;

7 to contribute to the report of the Secretary General to the ITU Council on the implementation of this resolution,

invites Member States, Sector Members, Associates and Academia

1 to contribute to this work and collaboratively implement this resolution;

2 to continue promoting awareness among all stakeholders, including organizations and individual users, of the importance of countering and combating spam, including the implementation of basic safeguards,

further invites Member States

1 to participate at national, regional and international levels of cooperation on standards-related matters in countering and combating spam in telecommunications/ICTs;

2 to take steps to encourage adoption of appropriate and effective measures within national and legal frameworks to combat spam and its propagation;

3 to work collaboratively with all stakeholders to counter and combat spam;

4 to promote collaboration with international counterparts in addressing global spam activities and its proliferation;

5 to share experiences in standardization efforts on countering and combating spam.

MOD

RESOLUTION 54 (Rev. New Delhi, 2024)

Regional groups of study groups of the ITU Telecommunication Standardization Sector

(Florianópolis, 2004; Johannesburg, 2008; Dubai, 2012; Hammamet 2016; Geneva, 2022; New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024),

considering

a) that Article 14 of the ITU Convention authorizes the creation of study groups with a view to standardizing telecommunications on a worldwide basis;

b) that Article 17 of the ITU Constitution states that "the functions of the Telecommunication Standardization Sector shall be, bearing in mind the particular concerns of the developing countries, to fulfil the purposes of the Union relating to telecommunication standardization ...";

c) that Resolution 58 (Rev. Busan, 2014) of the Plenipotentiary Conference resolves that ITU should continue developing stronger relations with regional telecommunication organizations, including the organization of six ITU regional preparatory meetings for plenipotentiary conferences, as well as other Sector conferences and assembles as necessary;

d) that Resolution 123 (Rev. Bucharest, 2022) of the Plenipotentiary Conference instructs the Secretary-General and the Directors of the three Bureaux to work closely with each other in pursuing initiatives that assist in bridging the standardization gap between developing[1] and developed countries, and to further collaborate with relevant regional organizations and support their work in this area;

e) that Resolution 191 (Rev. Bucharest, 2022) of the Plenipotentiary Conference considers that a basic principle of cooperation and collaboration among the Sectors is the need to avoid duplication of the Sectors' activities and to ensure that work is undertaken efficiently and effectively;

f) the following outcome for the ITU Telecommunication Standardization Sector (ITU-T) in the strategic plan for the Union for 2020-2023, adopted in Resolution 71 (Rev. Dubai, 2018) of the Plenipotentiary Conference, focused on the promotion of active participation of the membership, in particular developing countries, in the definition and adoption of non-discriminatory international standards with a view to bridging the standardization gap:

– increased participation in the ITU-T standardization process, including attendance of meetings, submission of contributions, taking leadership positions and hosting of meetings/workshops, especially from developing countries;

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

g) that the work of certain ITU-T study groups, particularly in relation to, among other things, tariff and accounting principles, international telecommunication/information and communication technology (ICT) economic and policy issues, next-generation networks, Internet of things and future networks, security, quality, mobility and multimedia, continues to be of considerable strategic significance for developing countries,

recognizing

a) that Article 43 of the Constitution (No. 194) states that "Member States reserve the right to convene regional conferences, to make regional arrangements and to form regional organizations, for the purpose of settling telecommunication questions which are susceptible of being treated on a regional basis ...";

b) that Article 14A of the Convention and Resolution 1 (Rev. Geneva, 2022) of this assembly both affirm the principal duties of the Telecommunication Standardization Advisory Group (TSAG) to "review priorities, programmes, operations, financial matters and strategies for activities in the Telecommunication Standardization Sector", "provide guidelines for the work of study groups" and "recommend measures, *inter alia*, to foster cooperation and coordination with other relevant bodies";

c) that Resolution 1 (Rev. Geneva, 2022) of the World Telecommunication Standardization Assembly establishes the rules of procedure of ITU-T;

d) that Resolution 22 (Rev. [Geneva, 2022]) of th[is assembly] authorizes TSAG to act between world telecommunication standardization assemblies and assigns TSAG responsibility for the ITU-T A-series Recommendations (Organization of the work of ITU-T);

e) the growing level of participation and involvement of developing countries in all the ITU-T study groups;

f) that regional groups, and their activities, have been successfully established within ITU-T Study Groups 2, 3, 5, 11, 12, 13, 17 and 20, have become increasingly important and cover a growing number of issues, and have yielded satisfactory results within the framework of the parent study group’s activities;

g) that meetings of the above-mentioned regional groups of ITU-T study groups are held by ITU and can be supported by regional organizations and/or regional standardization bodies,

noting

a) the need to address standardization gaps, which requires boosting the participation of developing countries in ITU-T study groups, improving the working methods of the ITU-T study groups and addressing budgetary constraints that limit the attendance of developing countries at ITU-T events of specific interest to them;

b) the importance of having appropriate consultative frameworks for the formulation and study of Questions, the preparation of contributions and capacity building;

c) the need to encourage more inclusive participation in the work of ITU-T, e.g. by Academia, in accordance with Resolution 169 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, the private sector and experts working in the field of international standardization of telecommunications/ICTs, particularly from developing countries,

bearing in mind

that the six principal regional telecommunication organizations, namely the Asia-Pacific Telecommunity (APT), the European Conference of Postal and Telecommunications Administrations (CEPT), the Inter-American Telecommunications Commission (CITEL), the African Telecommunications Union (ATU), the Council of Arab Ministers of Telecommunication and Information represented by the Secretariat-General of the League of Arab States (LAS) and the Regional Commonwealth in the field of Communications (RCC), seek close cooperation with the Union, as delineated in Resolution 58 (Rev. Busan, 2014),

taking into consideration

a) the experiences and lessons learned by ITU-T study groups and their regional groups regarding the operational and organizational set-up and working methods, consistent with the ITU-T rules of procedure in Resolution 1 (Rev. Geneva, 2022), which could serve to expand and improve the level of developing-country participation in international standardization activities and contribute to achieving the objectives of Resolution 123 (Rev. Bucharest, 2022);

b) the specific process for approving Recommendations foreseen for the regional groups of ITU-T Study Group 3 in clause 9.2.1.1 of Resolution 1 (Rev. Geneva, 2022),

recognizing further

a) that a common and coordinated approach to international standardization can promote standardization activities in developing countries;

b) that joint meetings of regional groups of different ITU-T study groups, in particular if concatenated with a regional workshop and/or a meeting of a regional organization and/or regional standardization body, could encourage the participation of developing countries in these meetings and increase the effectiveness of such joint meetings;

c) that, in developing countries, a few standardization experts are usually responsible for handling numerous standardization areas within their administrations, including issues that concern Questions under study simultaneously by a number of ITU-T study groups,

resolves

1 to support, on a case-by-case basis, to the extent practicable, the coordinated creation of regional groups of ITU-T study groups, with at least two supporting members from the region concerned that are committed to contributing actively on the topics assigned to the regional groups;

2 that the terms of reference and working methods for these regional groups should be consistent with and approved by the parent study group;

3 that the composition of regional groups of ITU-T study groups is consistent with considering *c)* and *recognizing a)* of this resolution, and supported by the regional telecommunication organizations identified under *bearing in mind* of this resolution;

4 that representatives of Member States and Sector Members which belong to the region concerned may participate fully in the regional groups of ITU-T study groups;

5 that representatives of Associates and Academia that belong to a parent ITU-T study group, and belong to the region concerned, may participate in regional groups of that ITU-T study group, but should not participate in any decision-making or liaison activity, taking into account Resolution 169 (Rev. Bucharest, 2022);

6 that meetings of regional groups of other ITU-T study groups shall, in principle, be limited to delegates and representatives from Member States, Sector Members, Academia and Associates of the ITU-T study group concerned in the region; however, each regional group may invite other participants to attend all or part of a meeting, to the extent that these other participants would be eligible to attend the meetings of the full study group;

7 to encourage cooperation of regional groups of ITU-T study groups with regional standardization entities (regional telecommunication organizations, regional standardization bodies, and so forth), especially with the regional telecommunication organizations identified under *bearing in mind* in this resolution, as well as the holding of meetings of regional groups of ITU-T study groups jointly with ITU workshops in the region,

invites the regions and their Member States

1 to pursue the creation of regional groups of parent ITU-T study groups in their respective regions, in accordance with *resolves* of this resolution, and to support meetings and activities of the regional groups, as appropriate, in coordination with the Telecommunication Standardization Bureau;

2 to develop draft terms of reference and working methods for these regional groups;

3 to create regional standardization bodies, as appropriate, and encourage joint and coordinated meetings of such bodies with the regional groups of ITU-T study groups in their respective regions, so that these standardization bodies act as an umbrella for such regional group meetings; the regional group meetings should be held jointly with thematic ITU workshops being conducted in the region, whenever possible;

4 to propose candidates for regional group chairships and vice-chairships;

5 to encourage the candidacy of women for the regional group management positions;

6 to encourage eligible ITU-T members from the respective region to participate in the meetings of their regional groups, and to consider terminating a regional group when it is no longer required,

invites the regional groups of ITU Telecommunication Standardization Sector study groups thus created

1 to disseminate information about telecommunication standardization and encourage the involvement of developing countries in standardization activities in their regions, and to submit written contributions to the parent study group in which they work in accordance with approved terms of reference reflecting the priorities of their respective regions;

2 to cooperate closely with the relevant respective regional telecommunication organizations, standardization bodies and ITU regional offices, to create possible synergies and to report on their work in their regions to the relevant parent ITU-T study group,

instructs the study groups of the ITU Telecommunication Standardization Sector

to inform TSAG about the creation of regional groups of ITU-T study groups for coordination among study groups,

instructs study groups of the ITU Telecommunication Standardization Sector and the Telecommunication Standardization Advisory Group

1 to coordinate joint meetings of the regional groups of ITU-T study groups;

2 to consider and identify Questions of greatest interest to Member States and Sector Members from developing countries with a view to keeping them updated on the development of international standards in the context of the regional groups of ITU-T study groups,

instructs the Director of the Telecommunication Standardization Bureau, in collaboration with the Director of the Telecommunication Development Bureau

within the allocated or contributed resources that are available,

1 to provide all necessary support for creating and ensuring the smooth functioning of the regional groups of the ITU-T study groups;

2 to consider, whenever possible, holding events (workshops, forums, seminars, training, etc.) concurrently with meetings of the regional groups of ITU-T study groups, in the relevant regions, and vice versa;

3 to take all necessary measures to facilitate the organization of meetings of the regional groups of ITU-T study groups and workshops in the relevant regions,

calls upon the Director of the Telecommunication Standardization Bureau

to cooperate with the Director of the Telecommunication Development Bureau and with the Director of the Radiocommunication Bureau, as appropriate, in order to:

i) continue to provide specific assistance to regional groups of ITU-T study groups;

ii) encourage the use of electronic working methods to assist the members of the regional groups;

iii) take appropriate steps to facilitate meetings of regional groups in order to promote the necessary synergies among the three Sectors and thereby improve the effectiveness and efficiency of the ITU-T study groups.

MOD

RESOLUTION 55 (Rev. New Delhi, 2024)

Mainstreaming gender equality in ITU Telecommunication Standardization Sector activities

(Florianópolis, 2004; Johannesburg, 2008; Dubai, 2012; Hammamet, 2016; Geneva, 2022; New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024),

considering

a) that, while standardization plays an important role in globalization and the effective development of information and communication technologies (ICTs), complete gender equality in participation in international standardization processes has still not been achieved, and that the effort of pursuing the goal of mainstreaming gender equality can contribute positively to all aspect of ITU activities and processes, in particular in the international standardization sector;

b) that the standardization work of ITU Telecommunication Standardization Sector (ITU-T) can be advanced most effectively through the active inclusion of women, providing them necessary support and recognizing their efforts and contributions;

c) that there is a need to enhance and promote the active and meaningful participation of women in all ITU-T activities;

d) that the Telecommunication Standardization Bureau (TSB) established the ITU Women in Standardization Expert Group (WISE) subsequently renamed the Network of Women (NoW) in ITU-T, launched at the meeting of the Telecommunication Standardization Advisory Group (TSAG) in February 2016, dedicated to promoting women in standardization, telecommunications/ICTs and related fields and recognizing both men and women who have made remarkable contributions in advocating for women and supporting their work in these fields,

noting

a) that ITU has adopted a Gender Equality and Mainstreaming (GEM) Policy, with the aim of becoming a model organization for gender equality that leverages the power of telecommunications/ICTs to empower both women and men;

b) the progress made by ITU in raising awareness on gender issues, specifically over the last decade, in increasing women's participation in and contribution to international forums, in studies, projects and training, and in the establishment of an internal Gender Task Force, as well as the successful establishment by ITU of an international "Girls in ICT" day to be held every year on the fourth Thursday of April;

c) Resolution 1187 of the ITU Council, adopted at its 2001 session, on a gender perspective in ITU human resources management, policy and practice, which requests the Secretary-General to allocate appropriate resources, within existing budgetary limits, to establish a gender unit with full-time dedicated staff;

d) Resolution 1327 of the Council, adopted at its 2011 session, on ITU's role in ICTs and the empowerment of women and girls;

e) that the Secretary-General has issued an updated ITU English Language Style Guide, which addresses the use of non-discriminatory language;

f) the recommendation in the 2016 United Nations Joint Inspection Unit report that the Secretary-General present to the Council for endorsement at its 2017 session an action plan to complement the Gender Equality and Mainstreaming Policy, with specific targets, indicative timelines and monitoring measures to improve gender balance, especially at senior management levels, within each component of the Union, and report annually to the Council on its implementation;

g) priority measures to accelerate progress towards the achievement of Sustainable Development Goal (SDG) 5, as contained in the report *Progress towards the Sustainable Development Goals – The Gender Snapshot 2023*, produced jointly by the United Nations Entity for Gender Equality and the Empowerment of Women (UN-Women) and the United Nations Department of Economic and Social Affairs;

h) Recommendations of the ITU/United Nations Educational, Scientific and Cultural Organization (UNESCO) Broadband Commission for Sustainable Development on SDG 5 on gender equality;

i) that TSAG in January 2024 launched the Network of Women for WTSA-24 (NOW4WTSA24) campaign aiming to promote gender equality for the World Telecommunication Standardization Assembly (New Delhi, 2024) (WTSA-24),

recalling

a) that a fundamental principle of the United Nations Charter adopted by world leaders in 1945 is "equal rights of men and women";

b) United Nations Economic and Social Council (ECOSOC) Resolution E/2012/L.8, on mainstreaming a gender perspective into all policies and programmes in the United Nations system, which welcomed the development of the United Nations System-Wide Action Plan on Gender Equality and the Empowerment of Women (UN-SWAP), and the relevant report on ITU’s performance on UN-SWAP 2.0 indicators for 2021;

c) the relevant conclusions of the United Nations Commission on the Status of Women sessions;

d) the EQUALS Global Partnership, of which ITU is a founding member, which is made up of other United Nations agencies, governments, the private sector, academia and civil-society organizations, and which aims to reduce the gender digital divide in the world;

e) the United Nations International Gender Champion initiative and the ITU's Secretary-General's commitment to promote the Panel Parity Pledge;

f) the ITU/UN-Women Gender Equality and Mainstreaming – Technology (GEM-TECH) awards, which celebrate exceptional personal or institutional achievement and innovative strategies that harness ICTs for women's empowerment;

g) Resolution 70 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on mainstreaming a gender perspective in ITU and promoting gender equality and the empowerment of women and girls through telecommunications/ICTs;

h) Resolution 48 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on human resources management and development;

i) Resolution 55 (Rev. Kigali, 2022) of the World Telecommunication Development Conference, on mainstreaming a gender perspective in ITU to enhance women's empowerment through telecommunications/ICTs;

j) Resolution 72 (Dubai, 2023) of the Radiocommunication Assembly, on promoting gender equality and equity and bridging the contribution and participation gap between women and men in ITU Radiocommunication Sector activities,

recognizing

a) that society as a whole, particularly in the context of the information and knowledge society, will benefit from equal participation of women and men in policy-making and decision-making and from equal access to communication services for both women and men;

b) that the outcomes of WSIS, namely the Geneva Declaration of Principles, the Geneva Plan of Action, the Tunis Commitment and the Tunis Agenda for the Information Society, outlined the concept of the information society, and that continued efforts must be undertaken in this context to bridge the gender digital divide;

c) that enhancing women's and girls' education and their participation in ICTs also contributes to the achievement of United Nations Sustainable Development Goal 5 (Achieve gender equality and empower all women and girls);

d) the 2013 report of the Working Group on Broadband and Gender of the Broadband Commission for Sustainable Development: Doubling digital opportunities – Enhancing the inclusion of women and girls in the information society,

resolves

1 that ITU-T continue efforts to ensure that all its policies, work programmes, information dissemination activities, publications, study groups, seminars, courses, assemblies and conferences reflect the commitment to gender equality, and promote gender balance:

i) for posts, including those at the Professional and higher levels in TSB;

ii) in the selection of chairs, vice-chairs and rapporteurs of the ITU-T study groups and TSAG, and also in the selection of WTSA committee chairs and vice-chairs;

2 that high priority be accorded to gender mainstreaming in the management, staffing and operation of ITU-T, while taking into account geographical representation;

3 that ITU-T continue to support NoW in ITU-T,

instructs the Director of the Telecommunication Standardization Bureau

1 to take the necessary steps to continue implementing the ITU GEM Policy, including, supporting the implementation of recommendations from the Joint Inspection Unit relevant to gender mainstreaming, supporting the Gender Focal Points for ITU-T, and encouraging TSB staff to undertake relevant training sessions;

2 to accelerate the integration of a gender perspective in the work of TSB in accordance with the principles already applied in ITU;

3 to accord high priority to gender mainstreaming in ITU-T management, financial assistance, staffing and operation;

4 to conduct an annual review on progress made in the Sector in advancing gender mainstreaming, including by circulating questionnaires and by collecting and reviewing statistics on ITU-T standardization activities by gender and region, in order to identify challenges to women's participation and subsequent solutions; and to share findings with TSAG and the next world telecommunication standardization assembly on the implementation of this resolution;

5 to encourage the participation of women in all aspects of ITU-T activities, and particularly the opportunity to participate in meetings, and support an increase in the number of women from all regions in ITU-T leadership positions by:

i) encouraging the membership to include women on their delegations, by, *inter alia*, including in all circulation letters the statement, "The membership is invited to include women on their delegations whenever possible ";

ii) making the selection of women for TSB positions at the Professional and higher levels a top priority;

iii) providing training on participation in meetings, writing contributions and chairing meetings;

iv) launching a dedicated set of NoW4WTSA activities prior to each WTSA, encouraging the participation and nomination of women to leadership positions for the next study period and at the assembly, taking into account Resolution 208 (Rev. Bucharest, 2022) of the Plenipotentiary Conference;

6 to enhance the ongoing work of NoW in ITU-T to ensure that all women have an opportunity to develop as ITU-T leaders;

7 to continue posting on a public-facing NoW in ITU-T webpage current information on the number of women attending Sector events, including administration or Sector Member affiliation and study group distribution, and identify the study groups in which women hold leadership positions;

8 to include gender balance as a factor in the distribution of financial assistance to attend ITU-T meetings where resources are available;

9 to join the ITU Secretary-General in participating in the Planet 50/50 initiative sponsored by UN Women to tackle invisible gender bias as a Geneva Gender Champion on behalf of ITU-T;

10 to inform TSAG on the appointment of the regional representatives and activities of NoW in ITU-T,

invites the Secretary-General

1 to comply with the reporting obligations, as required by UN-SWAP, on ITU-T activities aimed at promoting gender equality and the empowerment of women;

2 to continue encouraging ITU staff to take account of the gender-neutral guidelines in the ITU English Language Style Guide and to avoid, as much as possible, the use of gender-specific terms,

invites Member States and Sector Members

1 to submit candidatures for chair/vice-chair posts in order to support the active involvement of women as well as men in standardization groups and activities and in their own administrations and delegations, in accordance with Resolution 208 (Rev. Bucharest, 2022);

2 to actively support and participate in the activities of TSB, including the nomination of experts and regional representatives for the NoW in ITU-T through collaboration with the regional telecommunication organizations, and to further promote the use of ICTs for the socioeconomic empowerment of women and girls;

3 to encourage and actively support ICT education that encourages girls' and women's participation, and support all measures that will help increase the interest of, and opportunities for, women and girls in professional ICT standardization careers, as well as advocate for initiatives that will make ICT-related career fields more accessible for girls;

4 to encourage greater participation of women delegates and foster their expertise;

5 to encourage the adoption of proven measures to increase globally the number of women pursuing academic degrees at all levels in STEM fields, particularly those related to telecommunication/ICT standardization;

6 to take advantage of NoW in ITU-T initiatives and activities to help build the capacity of women in telecommunication/ICT Standardization, in particular in developing countries;

7 to consider integrating gender-equality strategies into national sustainable development frameworks on telecommunication/ICT development so as to accelerate achievement of gender equality;

8 to assess the challenges that may hinder female participation in ITU-T activities;

9 to advocate for the participation of more women in ITU-T by contributing to their capacity building in order to equip them with the necessary knowledge and skills;

10 to continue supporting voluntary mentorship programmes in ITU-T.

MOD

RESOLUTION 58 (REV. New Delhi, 2024)

Encouraging the creation and enhancement of national computer incident response teams, particularly for developing countries

(Johannesburg, 2008; Dubai, 2012; Geneva, 2022; New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024),

recalling

a) Resolution 130 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on strengthening the role of ITU in building confidence and security in the use of information and communication technologies (ICTs);

b) that Resolution 123 (Rev. Bucharest, 2022) of the Plenipotentiary Conference instructs the Secretary-General and the Directors of the three Bureaux to work closely with each other in pursuing initiatives that assist in bridging the standardization gap between developing[1] and developed countries,

recognizing

a) the highly satisfactory results obtained by the regional approach within the framework of Resolution 54 (Rev. New Delhi, 2024) of this assembly;

b) the high-priority work within the ITU Telecommunication Standardization Sector (ITU-T) on Resolution 50 (Rev. [New Delhi, 2024]) of th[is assembly] on cybersecurity, carried out in accordance with its competencies and expertise, including promoting common understanding among governments and other stakeholders of how to build confidence and security in the use of ICTs at the national, regional and international levels;

c) the increasing level of digital transformation and dependency on ICTs within developing countries;

d) the increasing complexity of managing cyber defence infrastructure, tools, personnel, and security services due to the growing severity and sophistication of cyberthreats and cyberattacks on telecommunication/ICT networks in all countries;

e) that, as telecommunication/ICT infrastructure services and technologies continue to evolve, cyberthreats and cyberattacks are also evolving, and spreading through a variety of means, such as mobile devices, servers, networks, and even operational technology;

f) the work carried out by the ITU Telecommunication Development Sector (ITU-D) under former Question 22/1 of ITU-D Study Group 1 and current Question 3/2 of ITU-D Study Group 2 on this subject,

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

noting

a) that there is still a low level of cybersecurity emergency preparedness within many countries, particularly developing countries;

b) that the high level of interconnectivity of ICT networks could be affected by the launch of an attack from networks of the less-prepared countries and regions;

c) the importance of having an appropriate level of cybersecurity emergency preparedness in all countries;

d) the need for and benefits of the establishment of computer incident response teams/cybersecurity incident response teams/cyber incident response teams (CIRTs) on a national basis, for instance, by providing a single point of contact for collaboration and communication between countries, and for helping to coordinate different entities (e.g. sectoral CIRTs) within a country;

e) that, as cybersecurity issues become more complex, it may become necessary for CIRT capabilities to evolve;

f) that CIRT is a term that refers to a broad set of institutions that perform cybersecurity incident response functions, such as cyber security centre (CSC), security operation centre (SOC), computer emergency response team (CERT), and computer security incident response team (CSIRT),

considering

the work of Study Group 17 of ITU-T in the area of national CIRTs and in other security teams or entities such as those covered in Recommendation ITU-T X.1060, particularly for developing countries, and cooperation between them, as contained in the outputs of the study group,

bearing in mind

that well-functioning CIRTs in developing countries will serve to improve the level of developing countries' participation in global cybersecurity emergency response activities thereby contributing to achieving an effective and secure global telecommunication/ICT infrastructure and cybersecurity expertise,

resolves

1 to support the creation and enhancement of national CIRTs in Member States where support is requested and promote the related operating framework of CIRTs in Member States where CIRTs are established, if applicable;

2 to encourage ITU-T to develop tools to support CIRTs in improving information sharing for cybersecurity incident response with a view to raising the level of cybersecurity emergency preparedness, in particular in developing countries;

3 to engage ITU regional offices in the implementation of this resolution and raise awareness of the importance of CIRTs to Member States through related ITU-T activities,

instructs Study Group 17 of the ITU Telecommunication Standardization Sector

1 to continue to develop Recommendations, supplements and potentially tools that guide the creation of CIRTs and promote a CIRT operating framework that national CIRTs worldwide can use to develop their capacity;

2 to proactively explore partnerships and promote collaboration with other standards-development organizations and forums to develop these tools;

3 to collaborate with ITU-D in its work on the creation and enhancement of national CIRTs, as appropriate;

4 to promote the studies on national CIRT frameworks;

5 to support the Director of the Telecommunication Standardization Bureau (TSB) in initiatives that assist in bridging the standardization gap between developing and developed countries for national CIRTs, which should include studies on CIRT frameworks, and share results with relevant groups of ITU-D as the mission of the lead group for security,

instructs the Director of the Telecommunication Standardization Bureau

to inform the Telecommunication Standardization Advisory Group annually on the implementation of this resolution,

instructs the Director of the Telecommunication Standardization Bureau, in collaboration with the Director of the Telecommunication Development Bureau

1 to identify where national CIRTs are needed, particularly in developing countries, and encourage their establishment;

2 to collaborate with international experts and bodies to help countries establish and enhance national CIRTs, through improving and accelerating the development of ITU-T Recommendations, supplements and technical reports in this domain;

3 to support the promotion of national, regional and international best practices for establishing CIRTs by providing Recommendations, supplements and technical reports;

4 to raise awareness of ITU-T Study Group 17's outputs such as Recommendations, supplements and technical reports for the establishment and enhancement of CIRTs, including the related operating framework;

5 to provide support, as appropriate, within existing budgetary resources;

6 to facilitate collaboration between national CIRTs, such as capacity building and exchange of information, within an appropriate framework;

7 to take necessary action to progress implementation of this resolution,

invites the Member States

1 to consider the creation and enhancement of a national CIRT as a high priority;

2 to collaborate with other Member States and with Sector Members;

3 to consider how ITU-T Study Group 17 can inform ITU members' understanding of the roles and responsibilities of CIRTs, and take action as appropriate;

4 to encourage collaboration networks and participate in international organizations in order to enhance global cybersecurity capabilities and incident response collaboration,

invites Member States, Sector Members, Associates and Academia, as appropriate

1 to consider engaging in the improvement and development of Recommendations, supplements and technical reports in order to support the effective creation and operation of national CIRTs;

2 to cooperate closely with ITU-T, ITU-D and ITU regional offices in this regard.

MOD

RESOLUTION 60 (Rev. New Delhi, 2024)

Responding to the challenges of the evolution of the identification/numbering system and its convergence with Internet Protocol-based systems/networks

(Johannesburg, 2008; Dubai, 2012; Geneva, 2022; New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024),

recognizing

a) Resolution 133 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, with regard to the continuing progress towards integration of telecommunications and the Internet;

b) Resolutions 101 and 102 (Rev. Bucharest, 2022) of the Plenipotentiary Conference;

c) the evolving role of the World Telecommunication Standardization Assembly, as reflected in Resolution 122 (Rev. Guadalajara, 2010) of the Plenipotentiary Conference,

noting

a) the work in Study Group 2 of the ITU Telecommunication Standardization Sector (ITU-T), on investigating the evolutionary aspect of numbering, naming, addressing and identification (NNAI) systems, as applicable to future networks;

b) that the transition from traditional networks to Internet Protocol (IP)-based networks is taking place at a fast pace, whilst there is a transition to future networks;

c) the emerging issues concerning administrative control for international telecommunication service-based numbers;

d) the forthcoming issues concerning the convergence of NNAI systems along with the development of future networks, and associated issues concerning security, signalling, portability, migration, international roaming and interconnection of future networks;

e) the growing demand for NNAI resources for communications referred to as machine-to-machine (M2M) and ongoing studies in ITU-T Study Group 2;

f) the need for continued studies on the evolution of international telecommunication resources, which would be expected to help the timely, predictable deployment of advanced identification technologies,

resolves to instruct Study Group 2 of the ITU Telecommunication Standardization Sector, within the Sector's mandate

1 to continue studying, in liaison with the other relevant study groups, the necessary requirements for the structure and maintenance of telecommunication NNAI resources in relation to the deployment of future telecommunications/information and communication technologies (ICTs), including IP-based networks;

2 to ensure the continued development of the administrative requirements for the use of existing NNAI resource management systems;

3 to continue developing guidelines, as well as a framework, for the evolution of the international telecommunication NNAI system and its convergence with IP-based systems and use for emerging telecommunications/ICTs and services, in coordination with related study groups and associated regional groups, so that a basis for any new application can be provided,

instructs relevant study groups, and in particular Study Group 13 of the ITU Telecommunication Standardization Sector

1 to support the work of ITU-T Study Group 2, through collaboration, in order to ensure that such applications are based on appropriate guidelines, as well as a framework, for the evolution of the international telecommunication numbering/identification system to meet the needs of emerging telecommunications/ICTs and services;

2 to assist the work of ITU-T Study Group 2 by investigating the impact and requirements of emerging telecommunications/ICTs and services on the numbering/identification system,

instructs the Director of the Telecommunication Standardization Bureau

to take appropriate action to facilitate the foregoing work regarding the evolution of the international telecommunication NNAI system and its applications,

invites Member States and Sector Members

1 to contribute to these activities, taking into consideration their national concerns and experiences;

2 to participate in and to contribute to regional groups discussing the issue and to promote the participation of developing countries[1] in those discussions;

3 to exchange experiences and best practices in support of the evolution of the international telecommunication NNAI system and its convergence with IP-based systems.

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

MOD

RESOLUTION 61 (Rev. New Delhi, 2024)

Countering and combating misappropriation and misuse of international telecommunication numbering, naming addressing and identification resources

(Johannesburg, 2008; Dubai, 2012; Geneva, 2022; New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024),

recalling

a) Resolution 190 (Busan, 2014) of the Plenipotentiary Conference, on countering misappropriation and misuse of international telecommunication numbering resources, which urged the ITU Telecommunication Standardization Sector (ITU-T) to continue to study ways and means to improve the understanding, identification and resolution of misappropriation and misuse of ITU-T E.164 telephone numbers;

b) Resolution 29 (Rev. [Geneva, 2022]) of th[is assembly], on alternative calling procedures on international telecommunication networks, which (citing ITU Council Resolution 1099) urges ITU-T to develop, as soon as possible, the appropriate Recommendations concerning alternative calling procedures;

c) Recommendation ITU-T E.156, which sets out guidelines for ITU-T action on reported misuse of ITU-T E.164 numbering resources, Recommendation ITU-T E.156 Supplement 1, which provides a best-practice guide on countering misuse of ITU-T E.164 numbering resources, and Recommendation ITU-T E.156 Supplement 2, which provides a set of possible actions to counter misuse;

d) that one of the purposes of the Union is to foster collaboration among the membership for the harmonious development of telecommunications and to enable the offering of services at lowest cost,

noting

the number of cases reported, so far, to the Director of the Telecommunication Standardization Bureau (TSB) regarding misappropriation and misuse of ITU-T E.164 numbers,

recognizing

a) that the fraudulent misappropriation and misuse of national telephone numbers and country codes are harmful and impact revenue, quality of service, credibility, customer confidence, and access to emergency services;

b) that the blocking of calls by barring the country code to a country in order to avoid fraud is harmful;

c) that inappropriate activities causing loss of revenue are an important issue to continue to be studied;

d) relevant provisions of the Preamble to the ITU Constitution, which recognizes the sovereign right of each State to regulate its telecommunications;

e) that disputes regarding misuse and misappropriation of international numbering resources for geographic areas administered by Member States are for the Member States involved to resolve, with the assistance of the Director of TSB on request,

resolves to invite Member States

1 to ensure that ITU-T numbering, naming, addressing and identification (NNAI) resources are used only by the assignees and only for the purposes for which they were assigned, and that unassigned resources are not used;

2 to endeavour to ensure that operating agencies authorized by Member States release routing information to duly authorized agencies in cases of fraud or NNAI misuse/misappropriation, in accordance with national law;

3 to encourage administrations, operating agencies and national regulators to collaborate and share information on fraudulent activities related to misappropriation and misuse of international NNAI resources, and to collaborate to counter and combat such activities;

4 to encourage all international telecommunication operators to enhance the effectiveness of ITU's role and to give effect to its Recommendations, particularly those of ITU-T Study Group 2, in order to promote a new and more effective basis to counter, combat and address fraudulent activities due to misappropriation and misuse of NNAI resources, which would help mitigate them and limit the negative effects of these fraudulent activities and the blocking of international calls;

5 to encourage administrations and international telecommunication operators to implement ITU-T Recommendations in order to mitigate the adverse effects of fraudulent number misappropriation and misuse, including blocking of calls to certain countries;

6 to encourage administrations to periodically review and update national regulations, and to share best practices in their national approaches towards countering and combating misappropriation and misuse of international telecommunication NNAI resources,

further resolves

1 that administrations and operating agencies authorized by Member States take, to the furthest extent practicable, all reasonable measures to provide information necessary to address issues related to NNAI misappropriation and misuse;

2 that administrations and operating agencies authorized by Member States should take note of and consider, to the furthest extent practicable, the suggested guidelines for regulators, administrations and operating agencies authorized by Member States for dealing with NNAI misappropriation, in accordance with the process defined in Recommendation ITU-T E.156;

3 that Member States and national regulators should proactively take note of instances of activities related to misappropriation and misuse of NNAI resources that are notified through relevant ITU-T resources (e.g. the ITU-T Operational Bulletin) or directly to them;

4 to request ITU-T Study Group 2 to continue to study all aspects and forms of misappropriation and misuse of NNAI resources within its mandate, in particular of international country codes, with a view to amending Recommendation ITU-T E.156 and its supplements and guidelines to identify means to support countering and combating these activities;

5 to request ITU-T Study Group 3, in collaboration with ITU-T Study Group 2, to develop definitions for inappropriate activities, including inappropriate activities causing loss of revenue, related to misappropriation and misuse of international NNAI resources specified in the relevant ITU-T Recommendations, and to continue to study such matters;

6 to request ITU-T Study Group 3 to continue to study the economic effects resulting from misappropriation and misuse of numbering resources, including call blocking,

invites Member States

to develop public awareness-raising campaigns on NNAI misuse and misappropriation, and share best practices on public reporting mechanisms for NNAI misuse and misappropriation.

MOD

RESOLUTION 64 (Rev. New Delhi, 2024)

Promoting, facilitating and accelerating the transition to and deployment of Internet Protocol version 6

(Johannesburg, 2008; Dubai, 2012; Hammamet, 2016; Geneva, 2022; New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024),

recognizing

a) Resolutions 101 (Rev. Bucharest, 2022), 102 (Rev. Bucharest, 2022) and 180 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, and Resolution 63 (Rev. Kigali 2022) of the World Telecommunication Development Conference;

b) that the exhaustion of Internet Protocol version 4 (IPv4) addresses and their limitations, call for promoting, facilitating and accelerating the transition to and deployment of Internet Protocol version 6 (IPv6), which has become an important issue for Member States and Sector Members;

c) the result of the ITU IPv6 Group, which has carried out the work that was assigned to it;

d) that future work on IPv6 human capacity building is to be continued and led by the Telecommunication Development Bureau (BDT), in collaboration with other relevant organizations, if required,

noting

a) that Internet Protocol (IP) addresses are fundamental resources that are essential for the future development of IP-based networks and information and communication technology (ICT) services and for the world economy;

b) that many countries believe that there are historical imbalances related to IPv4 allocation;

c) that large contiguous blocks of IPv4 addresses are no longer available to many users and that it is urgent to promote, facilitate and accelerate the transition to and deployment of IPv6;

d) the ongoing collaboration and coordination between ITU and relevant organizations on IPv6 capacity building in order to respond to the needs of Member States and Sector Members;

e) the progress towards adoption of IPv6 that has been made over the last few years;

f) that the regional Internet registries (RIRs) are key players in establishing coherent policies and promoting best practices for the Internet,

considering

a) that, among the relevant stakeholders in the Internet community, there is a need to continue discussions related to IPv6 deployment and disseminate information and build human capacity in this regard;

b) that the promotion, facilitation and acceleration of IPv6 deployment is an important issue for Member States and Sector Members;

c) that many developing countries[1] are still facing challenges in the IPv4 to IPv6 transition process, including due to limited technical skills and human capacity in this area and the costs involved;

d) that there are Member States with sufficient technical skills in IPv6 that are nevertheless encountering a delay in the IPv4 to IPv6 transition due to various reasons;

e) that Member States have an important role to play in promoting the deployment of IPv6;

f) that prompt deployment of IPv6 is increasingly urgent on account of the rapid rate of depletion of IPv4 addresses;

g) that public procurement frameworks and market mechanisms can encourage the deployment of IPv6;

h) that the depletion of IPv4 addresses and the delay in the deployment of the IPv6 may hinder new and emerging telecommunications/ICTs;

i) that many developing countries want the ITU Telecommunication Standardization Sector (ITU-T) to become a registry of IP addresses in order to give the developing countries the option of obtaining IP addresses directly from ITU, while other countries prefer to use the current system;

j) that deployment of IPv6 facilitates Internet of things (IoT) solutions, which require a huge amount of IP addresses;

k) that the deployment of IPv6 is an important enabler of digital transformation and of digital innovation;

l) that new communication infrastructure such as 4G/LTE and 5G networks will require IPv6 support for better communication,

resolves

1 to instruct ITU-T Study Groups 2 and 3, each according to its mandate, to analyse statistics for the purpose of assessing the pace and geography of IPv6 address allocation and registration for interested members and, especially, developing countries, in collaboration with all relevant stakeholders;

2 to enhance the exchange of experiences and information with all stakeholders regarding all aspects of the deployment of IPv6, with the aim of creating opportunities for collaborative efforts and the enhancement of technical skills, and to ensure that feedback exists to enrich ITU efforts to promote, facilitate and accelerate the transition to and deployment of IPv6,

instructs the Director of the Telecommunication Standardization Bureau, in close collaboration with the Director of the Telecommunication Development Bureau

1 to continue the ongoing activities between the Telecommunication Standardization Bureau and BDT, taking into consideration the involvement of those partners willing to participate and bring their expertise to assist developing countries with IPv6 transition and deployment, and respond to their regional needs as identified by BDT, taking into account Resolution 63 (Rev. Kigali, 2022);

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

2 to maintain, update, and enhance the website which provides information about global activities related to IPv6, including hyperlinks to monitoring and tracking initiatives, in order to facilitate awareness-raising and highlight the importance of IPv6 deployment for the entire ITU membership and interested entities, as well as information related to training events being undertaken by ITU and relevant organizations (e.g. regional Internet registries (RIRs), network operator groups and the Internet Society (ISOC));

3 to promote awareness of the importance of IPv6 deployment, facilitate human capacity building through joint training activities, involving appropriate experts from the relevant entities, provide information, including roadmaps and guidelines, and technical assistance in the continued establishment of IPv6 test-bed laboratories in developing countries in collaboration with appropriate relevant organizations, and to promote awareness of the need for IPv6 deployment with regard to IoT given the substantial demand for IP addresses for IoT devices;

4 to promote the best practices of government programmes, including procurement, in order to facilitate the transition to and deployment of IPv6;

5 to promote discussions between ITU Member States, Sector Members and relevant regional and international organizations on the transition to and deployment of IPv6;

6 to support BDT in relevant IPv6 training for engineers, network operators, content providers and service providers, mainly in developing countries, that can enhance their skills and which they can further apply to planning, deployment and operation at their respective organizations,

further instructs the Director of the Telecommunication Standardization Bureau

1 to report to the ITU Council and also to the 2028 world telecommunication standardization assembly, regarding the progress on action taken with respect to *resolves* above;

2 to collaborate with relevant stakeholders to promote network devices and customer *p*remises *e*quipment (CPE) with dual-stack, especially in developing countries,

invites Member States and Sector Members

1 through the knowledge gained under this resolution, to promote specific initiatives at the national level which foster interaction with governmental, private and academic entities and civil society for the purposes of the information exchange necessary for the deployment of IPv6 in their respective countries;

2 to ensure that newly deployed network equipment, computer equipment and software have IPv6 capability, and to collaborate with relevant international organizations in this regard;

3 to consider committing to IPv6 deployment and communicating progress;

4 to build relevant IPv6 deployment plans;

5 to make use of the ITU website, which provides information about global activities related to IPv6;

6 to consider how public procurement frameworks and market mechanisms can promote, facilitate and accelerate deployment,

invites Member States

1 to develop national policies to promote the technological update of systems, in order to ensure that the public services provided utilizing the IP protocol and the communications infrastructure, websites and relevant applications of the Member States are compatible with IPv6;

2 to consider the possibility of national programmes to encourage Internet service providers (ISPs) and other relevant organizations to deploy IPv6;

3 to encourage, with support from the ITU regional offices, the RIRs and other regional organizations in coordinating research, dissemination and training actions with participation by governments, industry and the academic community in order to facilitate the deployment and adoption of IPv6 within their countries and in their region, and to coordinate initiatives between regions to promote its deployment worldwide;

4 to consider using government procurement requirements to encourage deployment of IPv6 among ISPs and other relevant organizations, if appropriate;

5 to share best practices, experiences, knowledge and expertise regarding IPv6 deployment;

6 to consider ways, such as initiating stakeholder consultations, to encourage, promote, facilitate and accelerate the transition to and deployment of IPv6.

MOD

RESOLUTION 65 (Rev. New Delhi, 2024)

Calling party number delivery, calling line identification and origin identification information

(Johannesburg, 2008; Dubai, 2012; Hammamet, 2016; Geneva, 2022; New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024),

concerned

a) that there appears to be a trend to either suppress or amend the transmission across international boundaries of calling party number (CPN), calling line identification (CLI) and origin identification (OI) information, in particular the country code and the national destination code;

b) that such practices have an unfavourable effect on security and economic issues, in particular for developing countries[1];

c) about the number of cases reported to the Director of the Telecommunication Standardization Bureau (TSB) on ITU-T E.164 numbering misappropriation and misuse related to CPN non-delivery or spoofing for which there is no indication that the problem has completely stopped;

d) that previous generation signalling protocols and telecommunication networks need to consider emerging requirements;

e) that there is an ever-increasing use of spoofed CPN and CLI, short-message service (SMS) interception, voice cloning technologies, etc.;

f) that work on this topic in Study Group 2 of the ITU Telecommunication Standardization Sector (ITU-T) needs to be expedited and expanded to cater for the changing environment of service delivery and network infrastructures, including emerging telecommunications/information and communication technologies and services, such as next-generation networks and future networks,

noting

a) No. 32 (Article 3.6) of the International Telecommunication Regulations (Dubai, 2012) (ITRs) regarding the provision of international CLI by the signatory Member States to the ITRs;

b) relevant resolutions:

i) Resolution 61 (Rev. [Geneva, 2022]) of th[is assembly], on misappropriation and misuse of international telecommunication numbering resources;

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

ii) Resolution 21 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on measures concerning alternative calling procedures on international telecommunication networks;

iii) Resolution 29 (Rev. [Geneva, 2022]) of th[is assembly], on alternative calling procedures on international telecommunication networks;

c) relevant ITU-T Recommendations,

noting further

a) that some countries and regions have adopted national laws, directives and recommendations regarding CPN non-delivery and spoofing, and/or on ensuring confidence in OI, and that some countries have national data-protection and data-privacy laws, directives and recommendations;

b) that the CPN makes it possible to identify the party responsible for making the call;

c) that the presence of verification mechanisms for the various calling party identifiers may increase the reliability of the information transmitted;

d) that the implementation of the reference architecture specified in Recommendation ITU-T Q.3057 and other relevant ITU-T Recommendations for the interconnection between trustable network entities may ensure the security of signalling information transmitted over telecommunication networks;

e) that digital signatures (digital certificates) used in signalling exchanges should be globally interoperable;

f) that users should be aware that CPN/OI may be spoofed,

reaffirming

that it is the sovereign right of each country to regulate its telecommunications and, as such, regulate the provision of CLI, CPN delivery and OI information, taking into account the Preamble to the ITU Constitution and the relevant provisions of the ITRs related to the provision of CLI information,

resolves

1 that international CPN delivery shall be provided on the basis of the relevant ITU-T Recommendations;

2 that international CLI and OI delivery shall be provided on the basis of the relevant ITU-T Recommendations where technically possible;

3 that the delivered CPN should contain at least either the calling party number or the specially allocated number of the operator/service provider responsible for making the call, so that a terminating country can identify the operator/service provider of the outgoing call, or identify the terminal that originates the call, before it is delivered from the originating country to that terminating country;

4 that the delivered CPN and the CLI, if delivered, shall include sufficient information to allow proper billing and accounting, for each international call;

5 that the OI information in a heterogeneous networking environment shall, where technically possible, be an identifier assigned to a subscriber by the originating service provider, or be replaced by a default identifier by the originating provider to identify the origin of the call, if specified by the administration;

6 that the CPN, CLI and OI information shall be transmitted transparently by transit networks (including hubs);

7 to encourage operators/service providers to make OI information, wherever applicable, CPN and CLI reliable and verifiable in order to combat spoofing and other forms of numbering misuse,

instructs

1 ITU-T Study Group 2, ITU-T Study Group 3 and, where required, ITU-T Study Groups 11 and 17 to strengthen cooperation on and further study the emerging issues of CPN delivery, CLI and OI information, in particular for a heterogeneous networking environment, including security methods and possible validation techniques;

2 ITU-T Study Group 2, in close collaboration with ITU-T Study Group 11, to develop, deploy and maintain a procedure, in accordance with ITU-T Recommendations, for selecting registration authorities, including the selection of trusted signalling certification authorities, to support the allocation of digital public certificates to be used in the signalling exchange of telecommunication networks;

3 the study groups concerned to expedite work on Recommendations that would provide additional detail and guidance for the implementation of this resolution,

instructs the Director of the Telecommunication Standardization Bureau

1 to report on the progress achieved by the study groups in implementing this resolution, which is intended to improve security and minimize fraud, and minimize technical harm as called for by Article 42 of the Constitution;

2 to share information on country experiences regarding the implementation of this resolution, in a centralized location;

3 in collaboration with ITU-T Study Groups 2 and 3, to review the current reporting mechanism and to promote awareness among all Member States affected by the misuse of numbering resources,

encourages the Director of the Telecommunication Standardization Bureau

to urge the regional groups of ITU-T Study Group 2 to organize workshops that focus on the various reports aimed at encouraging increased awareness and enhancing strategies to address the misuse of numbering resources,

invites Member States, Sector Members and Associate Members

1 to contribute to this work, to share information regarding their experiences in implementing this resolution and to cooperate in the implementation of this resolution;

2 to consider developing, within their national regulatory and legal frameworks, guidelines or other means for implementing this resolution;

3 to encourage service providers to utilize public-key certificates (e.g. ITU-T X.509) in order to sign CLI and other information in the signalling exchange;

4 to encourage all stakeholders to make efforts towards the early implementation of the trust framework and signalling security mechanisms specified in Recommendation ITU-T Q.3057 and other relevant ITU-T Recommendations;

5 to collaborate on public awareness-raising campaigns aimed at educating users about spoofing tactics and the importance of verifying CPN;

6 to develop CPN delivery within their national regulatory and legal frameworks.

MOD

RESOLUTION 67 (Rev. New Delhi, 2024)

Use in the ITU Telecommunication Standardization Sector of the six official languages of the Union on an equal footing and the Standardization Committee for Vocabulary

(Johannesburg, 2008; Dubai, 2012; Hammamet, 2016; Geneva, 2022; New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024),

recognizing

a) the adoption by the Plenipotentiary Conference of Resolution 154 (Rev. Bucharest, 2022), on use of the six official languages of the Union on an equal footing, which instructs the ITU Council and the ITU General Secretariat on how to achieve equal treatment of the six languages and which appreciated the work accomplished by the ITU Coordination Committee for Terminology (ITU CCT) on the adoption and agreement of terms and definitions in the field of telecommunications/information and communication technologies in all the official languages of the Union;

b) Council Resolution 1386, adopted by the Council at its 2017 session and last modified at its 2024 session, on ITU CCT, which consists of the Coordination Committee for Vocabulary (CCV) of the ITU Radiocommunication Sector (ITU-R) and the Standardization Committee for Vocabulary (SCV) of the ITU Telecommunication Standardization Sector (ITU-T) functioning in accordance with the relevant resolutions of the Radiocommunication Assembly and the World Telecommunication Standardization Assembly (WTSA), respectively, and representatives of ITU Telecommunication Development Sector (ITU-D), in close collaboration with the secretariat;

c) Resolution 208 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on the appointment and maximum term of office for chairs and vice-chairs of Sector advisory groups, study groups and other groups;

d) Resolution 1 (Rev. [Geneva, 2022]) of th[is assembly], on ITU-T rules of procedure;

e) the decisions of the Council centralizing the editing functions for languages in the General Secretariat (Conferences and Publications Department), calling upon the Sectors to provide the final texts in English only (this applies also to terms and definitions),

considering

a) that, under Resolution 154 (Rev. Bucharest, 2022), the Council is instructed to maintain the Council Working Group on Languages, in order to monitor progress and report to the Council on the implementation of that resolution;

b) the importance of providing information in all the official languages of the Union on an equal footing on ITU-T webpages;

c) that Council Resolution 1386 (C17, last modified C24) considers the importance of collaborating with other interested organizations about terms and definitions, symbols and other means of expression, units of measurement, etc., with the objective of standardizing such elements;

d) the difficulty of achieving agreement on definitions when more than one ITU study group is involved;

e) that there is an ongoing need for publication of the terms and definitions required for the work of ITU-T,

noting

a) that SCV was established in accordance with Resolution 67 (Johannesburg, 2008) of WTSA, on the initiation of SCV;

b) that SCV is a part of the joint ITU CCT in accordance with Council Resolution 1386 (C17, last modified C24),

resolves

1 that the ITU-T study groups, within their terms of reference, should continue their work on technical and operational terms and their definitions in English only;

2 that the work of standardizing vocabulary within ITU-T shall be based on the proposals made by the study groups in the English language, with the consideration and adoption of the translation into the other official languages as proposed by the General Secretariat, and that this shall be ensured by ITU CCT, which is composed of experts fluent in the official languages from all ITU Sectors, and persons designated by interested organizations and other participants in the work of ITU, in close collaboration with the General Secretariat (Conferences and Publications Department) and the Telecommunication Standardization Bureau (TSB) editor for the English language, taking into account *recognizing e)* above;

3 that, when proposing terms and definitions, the ITU-T study groups shall use the guidelines given in Annex B to the "Author's guide for drafting ITU-T Recommendations";

4 that, where more than one ITU study group is defining the same terms and/or concept, efforts should be made within ITU-T to select a single term and a single definition which is acceptable to all of the ITU study groups concerned;

5 that each study group should appoint a rapporteur for vocabulary to coordinate efforts on terms and definitions and related subjects and to act as an SCV contact person for the study group in this field;

6 that the responsibilities of the rapporteur for vocabulary will be developed by SCV;

7 that TSB should collect all new terms and definitions which are proposed by the ITU study groups in consultation with ITU CCT, enter them in the online ITU Terms and Definitions database, and provide a search mechanism based on time ranges;

8 that the chair and six vice-chairs of SCV, each representing one of the official languages, should be nominated by WTSA, in accordance with Resolution 208 (Rev. Bucharest, 2022);

9 that the terms of reference of SCV are given in the annex to this resolution,

instructs the Director of the Telecommunication Standardization Bureau

1 to continue to translate all Recommendations approved under the traditional approval process (TAP), and all ITU-T A-series Recommendations (ITU-T working methods), in all the official languages of the Union;

2 to translate all reports of the Telecommunication Standardization Advisory Group (TSAG), and the reports of study group plenary meetings, in all the official languages of the Union;

3 to translate documents relating to the mandates and working methods of the Director of TSB's ad-hoc groups;

4 to include in the circular that announces the approval of a Recommendation an indication of whether it will be translated;

5 to continue the practice of translating ITU-T Recommendations approved under the alternative approval process (AAP), up to 2 000 pages, within the financial resources of the Union;

6 to monitor the quality of translation and associated expenses;

7 to bring this resolution to the attention of the Directors of the Radiocommunication Bureau and the Telecommunication Development Bureau;

8 to continue to explore all possible options for the provision of interpretation and the translation of available ITU documentation, in order to promote the use of the official languages of the Union on an equal footing during official meetings of ITU-T, in particular during study group meetings;

9 to ensure that ITU-T webpages are updated in a timely manner in all the official languages of the Union,

invites Member States

to cooperate with ITU in the refinement of the official language translation of terms and definitions at the request of ITU CCT,

instructs the Telecommunication Standardization Advisory Group

1 to consider the best mechanism for deciding which Recommendations approved under AAP shall be translated, in light of the relevant Council decisions;

2 to annually consider the use of all the official languages of the Union on an equal footing in ITU publications and on ITU websites, including in the ITU Terms and Definitions database.

ANNEX
(to Resolution 67 (Rev. New Delhi, 2024))

Terms of reference for the Standardization Committee for Vocabulary

1 To represent the interests of the ITU Telecommunication Standardization Sector (ITU-T) in the ITU Coordination Committee for Terminology (ITU CCT).

2 To provide, through ITU CCT, consultation on terms and definitions for vocabulary work for ITU-T in the official languages, in close collaboration with the General Secretariat (Conferences and Publications Department), the Telecommunication Standardization Bureau editor for the English language as well as the relevant study group rapporteurs for vocabulary, and to seek harmonization among all ITU-T study groups concerned regarding terms and definitions.

3 To liaise, through ITU CCT, with other organizations dealing with vocabulary work in the telecommunication field, for example the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC) as well as the ISO/IEC Joint Technical Committee for information technology (ISO/IEC JTC 1), in order to eliminate duplication of terms and definitions.

4 To inform the Telecommunication Standardization Advisory Group (TSAG) at each TSAG meeting of its activities and to report its results to the next world telecommunication standardization assembly.

MOD

RESOLUTION 68 (Rev. New Delhi, 2024)

Evolving role of industry in the ITU Telecommunication Standardization Sector

(Johannesburg, 2008; Dubai, 2012; Hammamet, 2016; New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024),

considering

a) that Resolution 122 (Rev. Guadalajara, 2010) of the Plenipotentiary Conference, on the evolving role of the World Telecommunication Standardization Assembly (WTSA), called also for the organization of the Global Standards Symposium (GSS);

b) the objective of Resolution 123 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on bridging the standardization gap between developed and developing countries[1];

c) Resolution 44 (Rev. [New Delhi, 2024]) of th[is assembly], on bridging the standardization gap between developing and developed countries;

d) that Resolution 209 (Rev. Bucharest, 2022) of the Plenipotentiary Conference outlines the conditions and financial obligations of small and medium enterprises in the work of ITU, which are under ongoing review by the ITU Council;

e) Resolution 22 (Rev. [Geneva, 2022]) of th[is assembly], on authorization of the Telecommunication Standardization Advisory Group (TSAG) to act between world telecommunication standardization assemblies;

f) that the ITU Telecommunication Standardization Sector (ITU-T) is a unique international standardization organization comprising 194 Member States, and over 700 Sector Members, Associates and academia from all over the world;

g) that the engagement and participation of industry has become an important strategic objective;

h) the important objectives and conclusions of GSS (New Delhi, 2024);

i) that, since 2009, the Director of the Telecommunication Standardization Bureau (TSB) has organized meetings of high-level private-sector executives, such as chief technology officers (CTOs) or chief executive, financial or other officers (CxOs), to discuss the standardization landscape, coordinate standards priorities, find the best ways to address the needs of the private sector and to explore new industry dynamics;

j) that the conclusions of CTO/CxO meetings have been reflected in official ITU-T communiqués and, when relevant, taken into account by TSAG,

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

recognizing

a) that developing countries primarily engage in the standardization activities of ITU-T, but they often face challenges in participating in the growing number of global and/or regional standards development organizations (SDOs), industry forums and consortia, including in attending their meetings;

b) that ITU-T should continue to strengthen and evolve the role of the World Telecommunication Standardization Assembly, as required by Resolution 122 (Rev. Guadalajara, 2010), and should call on private-sector executives to reconvene their meetings, given their significance, in a similar format to GSS but exclusively for the private sector, with the objective of strengthening the role of ITU-T by addressing the specific requirements and priorities identified by those executives for standardization activities, and also considering the needs and concerns of developing countries;

c) that ITU-T should also encourage cooperation with other relevant SDOs,

recognizing further

a) that, in 2023, TSAG also approved an industry engagement action plan to attract intensive industry participation from both developed and developing countries in order to take account of the latest technical trends and market needs;

b) that TSAG also agreed to organize a workshop with three principal goals aligned with that action plan:

i) to attract industry decision-makers to discuss, *inter alia*, how ITU-T can provide value on the overall standardization landscape;

ii) to contribute to dialogue among all parties;

iii) provide valuable feedback on the action plan; and

iv) identify value propositions to enhance participation and retention of industry as Sector Members and Associates, including small and medium enterprises (SMEs), in ITU-T,

noting

a) that building close collaboration between governments and industry is essential and important for the work of ITU-T to progress;

b) that, to encourage industry participation in ITU-T, standards-making should appropriately respond to the needs of the industry in a coordinated way and take the outcomes of CTO/CxO meetings as input into ITU-T activities;

c) that Recommendations proposed in response to those coordinated needs will enhance ITU's credibility by effectively addressing the requirements of countries through the deployment of optimized technical solutions and reduction of the proliferation of uncoordinated Recommendations, which offer economic benefits, in particular for developing countries;

d) that representatives of the telecommunication/ICT industry play an essential role in the development of technical standards, such as ITU-T Recommendations;

e) that new and emerging telecommunications/ICTs are essential for the industry for all ITU-T stakeholders and lay the foundation for growth and transformation in other sectors of industry;

f) that TSAG has recognized that the input of industry is highly desired,

resolves to instruct the Director of the Telecommunication Standardization Bureau

1 to continue to organize CTO/CxO meetings and expand them to represent a more diverse stakeholder view than the current CTO/CxO meetings, in order to assist in identifying and coordinating standardization priorities and subjects, taking into account new and emerging technologies, while ensuring participation at the level of industry executives;

2 to address the needs of developing countries at those meetings by consulting such countries prior to the meetings, and to encourage the participation of local industry representatives;

3 to encourage participation, preferably in-person but also remotely, in CTO/CxO meetings of a wide representation of industry, including from SMEs, micro enterprises and developing countries from all regions;

4 to continue to organize workshops and similar events where Member States and ITU-T Sector Members are able to discuss the future of ITU-T and consider the Sector's overall structure and functioning and set goals for the Sector;

5 to engage industry, including SMEs and large organizations, from all regions, including representatives of developing countries, in the activities of ITU-T in line with relevant provisions of the ITU Constitution and Convention, WTSA resolutions and Plenipotentiary Conference resolutions;

6 to organize CTO/CxO meetings in diverse, suitable locations, bearing in mind the relevance of worldwide centres of expertise in new and emerging telecommunications/ICTs, which are a priority for ITU-T;

7 to develop effective mechanisms to facilitate industry participation in those meetings, motivate a stable group composition and ensure regular participation by CTOs or their alternates;

8 to ensure that the agendas for CTO/CxO meetings are aligned with the overall strategic objectives of ITU-T and the ongoing work of TSAG;

9 to encourage industry engagement meetings to be made subject-specific, by focusing, for example, on health, transportation or education, in order to maximize interest and potential participation;

10 to continue to include the conclusions of CTO/CxO meetings in an official ITU-T communiqué;

11 to video record the presentations of CTO/CxO meetings for sharing, including with regional standardization bodies and regional telecommunication organizations for dissemination to industry representatives unable to attend, in order to raise awareness and encourage their participation in future meetings;

12 to include the conclusions of CTO/CxO meetings in a report to TSAG, considering each topic, its progression/evolution in the lifecycle and how it was addressed by previous CTO/ CxO meetings;

13 to take the conclusions of CTO/CxO meetings into account in ITU-T work;

14 to produce a regular report to TSAG on the follow-up of CTO/CxO meeting conclusions;

15 to produce a report to the next WTSA, assessing the outcomes of CTO/CxO meetings over the period and examining the need to continue or enhance its activities,

resolves to instruct the Telecommunication Standardization Advisory Group

1 to continue to evaluate the CTO/CxO meeting process;

2 to consider how future industry engagement workshops could be organized, including their preferred timeframe and objectives;

3 to evaluate the results of industry engagement workshops and similar events on an ongoing basis;

4 to evaluate occurrences of low participation by ITU-T Sector Member and non-member industry representatives in ITU-T activities,

encourages all Members States from developed countries

to promote participation by their Sector Members in ITU-T activities, including CTO/CxO meetings,

encourages Sector Members and Associates, including small and medium enterprises, from developed and developing countries

1 to participate at the level of their executives in CTO/CxO meetings, and to raise proposals in regard to their priority standardization areas as well as standardization needs and interests;

2 to engage actively in the implementation of the industry engagement action plan, including by organizing and participating in future workshops and similar events.

MOD

RESOLUTION 70 (Rev. New Delhi, 2024)

Telecommunication/information and communication technology accessibility for persons with disabilities and persons with specific needs

(Johannesburg, 2008; Dubai, 2012; Hammamet, 2016; Geneva, 2022; New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024),

recognizing

a) Resolution 175 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on telecommunication/information and communication technology (ICT) accessibility for persons with disabilities, including age-related disabilities, and persons with specific needs;

b) Resolution 58 (Rev. Kigali, 2022) of the World Telecommunication Development Conference (WTDC), on telecommunication/ICT accessibility for persons with disabilities and persons with specific needs, and WTDC Resolution 17 (Rev. Kigali, 2022), on implementation of and cooperation on approved regional initiatives at the national, regional, interregional and global levels;

c) Resolution ITU-R 67-2 (Rev. Dubai, 2023) of the ITU Radiocommunication Assembly, on telecommunication/ICT accessibility for persons with disabilities and persons with specific needs;

d) the mandate of the Joint Coordination Activity on Accessibility and Human Factors (JCA-AHF) for the purposes of awareness-raising, advice, assistance, collaboration, coordination and networking and the work developed, in particular the ITU Telecommunication Standardization Sector (ITU-T) efforts to increase cooperation with other United Nations organizations and activities, as well as all United Nations specialized agencies, in order to raise awareness about ICT accessibility in the framework of standardization, and ITU-T efforts aimed at upholding JCA-AHF;

e) studies carried out by ITU-T study groups, in particular ITU-T Study Group 21, on the accessibility of multimedia systems and services for persons with disabilities and persons with specific needs;

f) studies under Question 7/1 of the ITU Telecommunication Development Sector (ITU-D), on access to telecommunication/ICT services by persons with disabilities and other persons with specific needs;

g) the studies carried out by the Intersector Rapporteur Group on audiovisual media accessibility (IRG-AVA) on audiovisual content accessibility and by Working Group 8, under the ITU-T Focus Group on metaverse (FG-MV), on sustainability, accessibility and inclusion;

h) the activity carried out by the Internet Governance Forum (IGF) Dynamic Coalition on Accessibility and Disability (DCAD) for the purposes of maximizing the benefits of electronic communications and online information through the Internet for all sectors of the global community;

i) the activity carried out by the Council Working Group on international Internet-related public policy issues on issues related to access to the Internet for persons with disabilities and specific needs;

j) the publication by the Telecommunication Standardization Advisory Group (TSAG) of the guide for ITU study groups: Considering end-user needs in developing Recommendations;

k) the publication of Recommendation ITU-T F.930, on multimedia telecommunication relay services;

l) the publication of Recommendation ITU-T F.790, on telecommunications accessibility guidelines for older persons and persons with disabilities,

considering

a) that the World Health Organization estimates that more than one billion of the world's population live with some form of disability, of whom almost 200 million experience considerable difficulty in their daily lives, and it is to be expected that, in the future, disabilities will rise because of the increasing population of older persons and the risk that disability is greater among older persons;

b) that maximizing the accessibility and usability of telecommunication/ICT services, products and terminals through universal design will increase their uptake by all persons, including persons with disabilities and older persons, and thereby increase revenues;

c) the importance of enhancing accessibility in emerging telecommunications/ICTs;

d) that United Nations General Assembly (UNGA) Resolution 61/106, adopting the Convention on the Rights of Persons with Disabilities, requests the United Nations Secretary-General "… to implement progressively standards and guidelines for the accessibility of facilities and services of the United Nations system, taking into account relevant provisions of the Convention, in particular when undertaking renovations";

e) the importance of cooperation between governments, the private sector and relevant organizations to promote affordable access to technologies,

recalling

a) § 18 of the Tunis Commitment, made at the second phase of the World Summit on the Information Society (Tunis, 2005): "We shall strive unremittingly, therefore, to promote universal, ubiquitous, equitable and affordable access to ICTs, including universal design and assistive technologies, for all people, especially those with disabilities, everywhere, to ensure that the benefits are more evenly distributed between and within societies, …";

b) the Phuket Declaration on Tsunami Preparedness for Persons with Disabilities (Phuket, 2007), which emphasizes the need for inclusive emergency warning and disaster management systems using telecommunication/ICT facilities based on open, non-proprietary, global standards;

c) Article 12 of the International Telecommunication Regulations,

taking into account

a) Resolution 44 (Rev. [Geneva, 2022]) of th[is assembly], on bridging the standardization gap between developing[1] and developed countries, and Resolution 18 (Rev. [Geneva, 2022]) of th[is assembly], on strengthening coordination and cooperation among the three ITU Sectors on matters of mutual interest;

b) Resolution GSC-17/26 (revised), on user needs, considerations and involvement, agreed upon at the 17th Global Standards Collaboration meeting (Jeju, Republic of Korea, 2013);

c) publications of the Special Working Group on Accessibility (ISO/IEC JTC 1 SWG – Accessibility) of the Joint Technical Committee for information technology (JTC 1) of the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC), as well as the Mandate 376 project teams, identifying user needs and developing a comprehensive inventory of existing standards as part of the ongoing effort to identify areas where research or new standards work is needed;

d) the activities of ITU-T Study Group 21, which is the lead study group on human factors and ICT accessibility for digital inclusion;

e) activities relating to the development of new standards (e.g. ISO TC 159, JTC 1 / SC35, IEC TC100, ETSI TC HF, and W3C WAI), and the implementation and maintenance of existing standards (e.g. ISO 9241-171);

f) the joint efforts of ITU and the Global Initiative for Inclusive ICTs (G3ICT), including the development of the Model ICT accessibility policy;

g) the outcome report on ITU-D Question 7/1, on access to telecommunications/ICTs for persons with disabilities and other persons with specific needs (July 2021), and the ITU-D report *Aging in a digital world – from vulnerable to valuable* (May 2021);

h) various international, regional and national efforts to develop or revise guidelines and standards for telecommunication/ICT accessibility, compatibility and usability by persons with disabilities,

resolves

1 that ITU-T Study Group 21 shall continue giving high priority to work on the relevant Questions, Recommendation ITU-T F.790 on telecommunication accessibility guidelines for older persons and persons with disabilities, and Recommendation ITU-T F.791, on accessibility terms and definitions;

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

2 that ITU-T study groups should continue developing standards on emerging ICTs for accessibility;

3 that ITU-T Study Group 21 should continue developing standards on accessibility of distribution systems for enabling seamless user experience for persons with disabilities and persons with specific needs;

4 that ITU-T study groups consider incorporating universal design principles into their work, including the drafting of non-discriminatory standards, service regulations and measures for all persons, including persons with disabilities and older persons, with cross-cutting user-protection actions;

5 that all ITU-T study groups utilize the Telecommunications Accessibility Checklist, which makes it possible to incorporate the principles of universal design and accessibility to support persons with disabilities and persons with specific needs;

6 that ITU workshops be held to inform about the progress in the work and the results achieved by the study groups in charge of ICT accessibility before the next world telecommunication standardization assembly,

instructs the Director of the Telecommunication Standardization Bureau

1 to report to the ITU Council on the implementation of this resolution;

2 to contribute to the development of an ITU-wide internship programme for persons with disabilities who have expertise in the field of ICTs, so as to build capacity among persons with disabilities in the standards-making process and to raise awareness within ITU-T of the needs of persons with disabilities;

3 that ITU-T employ the technical papers FSTP-AM "Guidelines for accessible meetings" and FSTP-ACC-RemPart "Guidelines for supporting remote participation for all", as appropriate, to make it possible for persons with disabilities to be able to attend ITU meetings and events;

4 to encourage the development of Recommendations within study groups aimed at providing ICT and assistive solutions covering a wider range of disabilities,

invites the Director of the Telecommunication Standardization Bureau

1 to work collaboratively on accessibility-related activities with the Directors of the Radiocommunication Bureau and the Telecommunication Development Bureau, taking into account JCA-AHF, in particular concerning awareness and mainstreaming of telecommunication/ICT accessibility standards, reporting findings to the Council as appropriate;

2 to work collaboratively on accessibility-related activities with ITU-D, in particular developing programmes that enable developing countries to implement services that enable persons with disabilities to utilize telecommunication services effectively;

3 to work collaboratively and cooperatively with other standardization organizations and entities, in particular in the interest of ensuring that ongoing work in the field of accessibility is taken into account, in order to avoid duplication and facilitate the exchange of best practices and promote efficiency in the development of standards and norms related to accessibility of telecommunications/ICTs;

4 to work collaboratively, cooperatively and closely with disability organizations in all regions to ensure that the needs of persons with specific needs are taken into account in all standardization matters;

5 to continue JCA-AHF, and any other accessibility coordination functions and advisory function within ITU-T, in order to assist the Director of the Telecommunication Standardization Bureau in reporting the findings of the review of ITU-T services and facilities;

6 to consider using accessibility resources in the meetings organized by ITU-T in order to encourage the participation of persons with disabilities and persons with specific needs in the standardization process, with the aim of facilitating their access to and participation in the development of standards and regulations, thus ensuring more inclusive and equitable representation;

7 to consider the possibility of organizing, jointly with ITU-D and with the involvement of other standardization organizations and entities, coaching and training for developing countries on working with disability organizations;

8 to identify and document examples of best and good practices for accessibility in the field of telecommunications/ICTs for dissemination among ITU Member States and Sector Members, and to share knowledge and successful experiences, thus facilitating the adoption of effective measures to promote the accessibility of telecommunications/ICTs;

9 to review the accessibility of ITU-T services and facilities, and consider making changes, where appropriate, pursuant to UNGA Resolution 61/106, in the Convention on the Rights of Persons with Disabilities, and report to the Council on these matters,

instructs the Telecommunication Standardization Advisory Group

1 to revise the guide for ITU study groups: Considering end-user needs in developing Recommendations;

2 to consider how study groups can facilitate, in their respective work, the effective implementation of new software, services and proposals that enable all persons with disabilities and persons with specific needs to use telecommunication/ICT services, and relevant guidelines for end-user needs, in order specifically to include the needs of persons with disabilities and persons with specific needs, and to update the guide on a regular basis, based on contributions from Member States and Sector Members as well as the ITU-T study groups, as appropriate, to reflect progress in accessibility,

invites Member States and Sector Members

1 to consider developing, within their respective national legal frameworks, guidelines or other mechanisms aimed at improving the accessibility, compatibility and usability of telecommunication/ICT services, products and terminals;

2 to encourage relevant telecommunication/ICT stakeholders to adhere to respective developed national guidelines and other pertinent mechanisms, as considered above;

3 to support the introduction of services or programmes, including telecommunication relay services[2], in order to enable persons with hearing and speech disabilities to utilize telecommunication services that are functionally equivalent to telecommunication services for persons without disabilities;

4 to support the introduction of telecommunications/ICTs, including new and emerging technologies, in order to enable persons with a wide range of disabilities, including mobility and cognitive disabilities, to access telecommunication/ICT services that are functionally equivalent to telecommunication/ICT services for persons without disabilities;

5 to participate actively in accessibility-related studies in ITU-R, ITU-T and ITU-D, and to promote the effective representation of persons with disabilities in the standardization process so as to ensure their experiences, views and opinions are taken into account in all the work of study groups;

6 to encourage persons with disabilities to use telecommunication/ICT products and services in their daily and working lives;

7 to consider designating focal points for the implementation and monitoring of this resolution, in order to enable its effective application and monitoring;

8 to encourage the provision of differentiated and affordable service plans for persons with disabilities in order to increase the accessibility and usability of telecommunications/ICTs for these persons;

9 to encourage the development of applications for telecommunication products and terminals to increase the accessibility and usability of telecommunications/ICTs for persons with visual, auditory, verbal and other physical and cognitive disabilities;

10 to encourage regional telecommunication organizations to contribute to this work and to consider implementing the results achieved in the study groups and the workshop on this topic;

11 to encourage the development of accessibility features for audiovisual content of websites and online meeting systems;

12 to encourage industry to consider accessible features when designing telecommunication devices and services.

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[2] Telecommunication relay services enable users of different modes of communication (e.g. text, sign, speech) to interact by providing convergence between the modes of communication, usually through human operators called communication assistants.

MOD

RESOLUTION 72 (Rev. New Delhi, 2024)

Measurement and assessment concerns related to human exposure to electromagnetic fields

(Johannesburg, 2008; Dubai, 2012; Hammamet, 2016, Geneva, 2022, New Delhi, 2024))

The World Telecommunication Standardization Assembly (New Delhi, 2024),

recalling

a) Resolution 176 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on measurement and assessment concerns related to human exposure to electromagnetic fields (EMF);

b) Resolution 62 (Rev. Kigali, 2022) of the World Telecommunication Development Conference, on assessment and measurement of human exposure to EMF,

considering

a) the importance of telecommunications/information and communication technologies (ICTs) for political, economic, social and cultural progress;

b) that, in the framework of telecommunications/ICTs to help bridge the digital divide between developed and developing countries[1], a significant part of the infrastructure needed involves various wireless technologies and the installation of base stations in the appropriate measure to ensure quality of service;

c) that, with the significant advancements in telecommunications technology, the use of telecommunication/ICT user equipment by humans has also greatly increased;

d) that there is a need to inform the public of the levels of EMF from different radio-frequency (RF) sources, and of the limits of safe exposure from these sources, in a scientific and objective manner through measurements and other standardized methodologies, as well as of the potential effects of EMF exposure;

e) that an enormous amount of research has been carried out regarding wireless systems and health, and many independent expert committees have reviewed this research;

f) that the World Health Organization (WHO) has the expertise and competency in the health field to assess the impact of EMF on the human body;

g) that WHO advocates exposure limits that were established by international organizations such as the International Commission on Non-Ionizing Radiation Protection (ICNIRP);

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

h) that ITU works closely with WHO on matters related to human exposure to EMF;

i) that ITU has a mechanism for verifying compliance with radio-signal levels by calculating and measuring the field strength and power density of these signals;

j) that the International Electrotechnical Commission (IEC) and the Institute of Electrical and Electronics Engineers (IEEE) and other relevant organizations develop measurement standards for the Specific Absorption Rate (SAR) of the human body;

k) that the considerable increase in the use of telecommunication/ICT equipment has resulted in an increase in the sources of EMF emission, including simultaneous exposure from multiple sources, with a potential impact on exposure levels;

l) that regulatory authorities in many developing countries urgently need information on methods of assessing and measuring human exposure to RF-EMF, in order to put in place national regulations to protect populations;

m) that ICNIRP[2] and IEEE[3] have developed guidelines and recommendations for EMF exposure limits and that many administrations have adopted national regulations based on those guidelines;

n) that IEC has developed methods for determining the parameters of EMF affecting health;

o) that most developing countries do not have the necessary tools to measure and assess the impact of radio waves on the human body;

p) relevant resolutions, recommendations and reports of the ITU Telecommunication Standardization Sector (ITU-T), the ITU Radiocommunication Sector (ITU-R) and the ITU Telecommunication Development Sector (ITU-D) related to human exposure to EMF;

q) that there is continuous advancement in wireless communication technologies, such as those using millimetre waves and reconfigurable intelligent surfaces, and ongoing work in the ITU Sectors related to such advancements and also the concomitant EMF exposure aspect, and that active coordination and collaboration between the Sectors and other specialized and expert organizations in this field are important to avoid duplication of efforts;

r) that modelling and assessment of human exposure to EMF can be facilitated by advances such as artificial intelligence,

recognizing

a) the work done within ITU-R study groups on radio-wave propagation, electromagnetic compatibility and related aspects, including measurement methods;

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2 ICNIRP Guidelines for limiting exposure to EMF (100 kHz to 300 GHz), 2020.

3 IEEE Std C95.1™-2019, IEEE Standard for safety levels with respect to human exposure to electric, magnetic and electromagnetic Fields, 0 Hz to 300 GHz.

b) the work done within ITU-T Study Group 5 on techniques for RF measurement and assessment;

c) that ITU-T Study Group 5, in establishing methodologies for assessing human exposure to RF EMF, cooperates with many participating standards organizations;

d) that the ITU EMF Guide, in its digital version, also available in a mobile-phone application, is updated as ITU and/or WHO receive information and/or results of research;

e) that ITU-T Study Group 5 regularly updates existing ITU-T Recommendations related to human exposure to RF EMF in response to advancements in telecommunications/ICTs, taking into consideration emerging concerns, accurate information, methodologies and new scientific research, etc.,

recognizing further

a) that some publications about EMF effects on health create doubt among the population, increasing the perception of the risk that they involve;

b) that, in the absence of appropriate regulation and accurate, complete information and public awareness, some people become concerned about long-term exposure to EMF, due to their perception of risk, and are likely to oppose the deployment of radio installations in their neighbourhoods, demanding the enactment of restrictive municipal rules that affect the deployment of wireless networks;

c) that ITU-T Study Group 5, in particular, has elaborated Recommendations on the technical measurement and environment management of EMF that help to diminish risk perception within the population;

d) that the development of these Recommendations has made it possible to significantly decrease the cost of measurement equipment and to leverage the results through social communication;

e) that advanced equipment used for measuring human exposure to RF energy is expensive, in particular for developing countries;

f) that implementing such measurement and assessment is essential for many regulatory authorities, in particular in developing countries, in order to monitor the limits for human exposure to RF energy, and that they are called upon to ensure those limits are met in order to license different services;

g) the importance of EMF emission assessment when implementing policies in some countries,

noting

a) that other national, regional and international standards-development organizations (SDOs) are carrying out activities related to human exposure to EMF;

b) the urgent need for regulatory bodies in many developing countries to obtain information on EMF measurement and assessment methodologies in regard to human exposure to RF energy, in order to establish or reinforce national regulations to protect their citizens;

c) that collaborative efforts between stakeholders are key in fostering adequate public awareness on EMF and health;

d) that, so far, the studies and assessments conducted by various countries, using the appropriate methodologies, and shared with ITU-T Study Group 5, have not indicated any exceedance of the exposure limits set under the ICNIRP guidelines,

resolves

to invite ITU-T, in particular ITU-T Study Group 5, within its mandate, to expand and continue its work and support in this domain, including, but not limited to:

i) developing new and/or updating existing reports and ITU-T Recommendations, taking into account the advancements in wireless technologies, advances in measurement/assessment methodologies and best practices, in close coordination with other ITU Sectors and relevant specialized organizations in this field;

ii) developing technical reports and Recommendations, if necessary, to support countries in formulating guidelines on EMF exposure;

iii) publishing and disseminating its technical reports, as well as developing ITU-T Recommendations to address these issues;

iv) developing, promoting and disseminating information and training resources related to this topic through the organization of international and regional training programmes, workshops, forums and seminars for regulators, operators and any interested stakeholders from developing countries;

v) studying EMF exposure assessment from both intentional and unintentional sources, including multiple sources such as wireless power transfer and other RF technologies, associated with new and emerging technologies, including Internet of Things and International Mobile Telecommunications systems, as well as the results of measurement, evaluation, monitoring, calculations and overview of the impact on EMF levels;

vi) continuing to cooperate, collaborate and coordinate with other organizations such as WHO, ICNIRP, IEEE, International Organization for Standardization (ISO)/IEC and other relevant organizations working on this topic, and to leverage their work (ICNIRP, 2020; IEEE C95.1, 2019), in particular with a view to assisting developing countries in the establishment of standards and in monitoring compliance with these standards, especially on telecommunication installations and terminals;

vii) collaborating with ICT experts, the research community and other relevant stakeholders to study the EMF aspects of telecommunications/ICTs, including emerging ones, potentially also using emerging ICT technologies to study these EMF aspects;

viii) cooperating on these issues with ITU-R study groups, and with ITU-D Study Group 2 in the framework of EMF measurements to assess human exposure and other relevant issues;

ix) coordinating and cooperating with various international organizations specialized in health matters, SDOs and organizations recognized by United Nations agencies dealing with the harmonization of exposure guidelines, in order to generate consistent protocols for assessing exposure to RF-EMF;

x) encourage collaboration with SDOs on simplifying the testing process for measuring and assessing exposure to EMF, in order to make it more accessible and cost-effective for developing countries,

instructs the Director of the Telecommunication Standardization Bureau, in close collaboration with the Directors of the other two Bureaux

within the available financial resources,

1 to support the development of reports identifying the needs of developing countries on the issue of assessing human exposure to EMF, and to submit the reports as soon as possible to ITU-T Study Group 5 for its consideration and action in accordance with its mandate;

2 to regularly update the ITU-T portal on EMF activities, including, but not limited to, the ITU EMF Guide, its mobile application, links to websites, the global portal on ICTs and the environment and flyers, as well as information intended for the general public;

3 to hold workshops in developing countries with presentations and training on the use of equipment employed in assessing human exposure to RF energy, including SAR;

4 to appoint experts in the field of assessment and measurement of exposure to EMF to assist developing countries in the formulation of their strategies and standardization activities in this area;

5 to extend support for developing countries while they establish their national and/or regional centres equipped with test benches for continuous monitoring of EMF levels, especially in selected areas where the public has concerns, and transparently provide the data to the general public, using, among other things, the modalities set out in Resolutions 44 (Rev. New Delhi, 2024) and 76 (Rev. New Delhi, 2024) of this assembly and Resolution 177 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, in the context of the development of regional test centres;

6 to invite ITU-T Study Group 5 to coordinate and cooperate with various international organizations such as WHO, ICNIRP, IEC, ISO, IEEE and other relevant international and regional organizations in the harmonization of exposure thresholds globally and to generate consistent measurement protocols;

7 to report to the next world telecommunication standardization assembly on measures taken to implement this resolution,

invites Member States and Sector Members

1 to contribute actively to the work of ITU-T Study Group 5 by providing relevant and timely information, in order to assist developing countries in providing information and addressing measurement and assessment concerns related to human exposure to EMF radiated by intentional and unintentional sources;

2 to conduct periodic reviews and take the appropriate measures to ensure that ITU-T Recommendations and other relevant international organization guidelines related to exposure to EMF are followed by entities concerned;

3 to cooperate and share expertise and resources between developed and developing countries in order to help government administrations, especially in developing countries, to reinforce or establish an appropriate regulatory framework for protecting people and the environment from non-ionizing radiation from intentional and unintentional sources;

4 to encourage the use of ITU-T Recommendations, in particular the K-series and its supplements, to build national standards for measuring and assessing EMF levels, and to inform the public of compliance with those standards through all appropriate channels and means of communication;

5 to carry out awareness-raising campaigns among the general public on exposure to EMF sources, in order to improve access to reliable technical data, such as the results of measurements and assessments, and the factors affecting EMF from RF stations and devices, with a view to mitigating concerns about the effects of EMF,

further invites Member States

1 to adopt suitable measures included in the relevant ITU Recommendations and international standards in order to ensure compliance with exposure limits to protect health against the adverse effect of EMF exposure;

2 to encourage administrations to follow the latest updated ICNIRP Guidelines and relevant standards of other SDOs;

3 to assess the impact and potential changes in accordance with the relevant ITU Recommendations and international standards on measuring and assessing human exposure to EMF.

MOD

RESOLUTION 73 (Rev. New Delhi, 2024)

Information and communication technologies, environment, climate change and circular economy

(Johannesburg, 2008; Dubai, 2012; Hammamet, 2016; Geneva, 2022; New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024),

recalling

a) Resolution 66 (Rev. Kigali, 2022) of the World Telecommunication Development Conference, on information and communication technology (ICT), environment, climate change and circular economy;

b) Resolution 79 (Rev. [New Delhi, 2024]) of th[is assembly], on the role of telecommunications/ICTs in handling and controlling e-waste from telecommunication/ICT equipment and methods of treating it;

c) Resolution 70/1 of the United Nations General Assembly (UNGA), on transforming our world: the 2030 Agenda for Sustainable Development;

d) UNGA Resolution 75/231, which recognizes the potential benefits for countries to transform their economies to promote sustainable consumption and production patterns, by engaging with partners to integrate or implement concepts such as circular economy and Industry 4.0 for more sustainable industrial activity and manufacturing systems, according to national plans and priorities;

e) Resolution 182 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on the role of telecommunications/ICTs in regard to climate change and the protection of the environment;

f) Resolution 1429 of the ITU Council, adopted at its 2024 session, on ITU's role in facilitating ICTs' contribution to sustainability and climate action;

g) the outcomes of conferences under the United Nations Framework Convention on Climate Change (UNFCCC);

h) the importance of climate change and biodiversity challenges as stressed by the Intergovernmental panel on climate change (IPCC) in its report "Global Warming of 1.5°C" (2018) and the report of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) *The global assessment report on biodiversity and ecosystem services – Summary for policymakers* (2019), describing the severity of biodiversity loss and damages, and planetary limit assessments;

i) that ITU is already a partner in the Coalition for Digital Environmental Sustainability, mandated by the United Nations Secretary-General to advance environmental digital sustainability by providing resources and opportunities to establish priorities, take concerted action and develop capacities for an inclusive sustainability-driven digital transition;

j) the Lisbon Declaration adopted on 1 July 2022 at the United Nations Ocean Conference, in order to support implementation of Sustainable Development Goal (SDG) 14 of the 2030 Agenda for Sustainable Development,

noting

a) ITU activities on climate change and environmental sustainability, such as Green Digital Action and other relevant multi-stakeholder initiatives;

b) the joint statement by the World Standards Cooperation (ITU, the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC)) on the importance of sustainability being built into technical standards by design,

recognizing

a) that ICTs are essential for monitoring climate, monitoring and protecting natural ecosystems, data gathering, rapid information transfer and managing the risks of climate change, and that adequate telecommunication networks and information technologies are essential in ensuring that communications reach people and the appropriate relief organizations;

b) that ICTs are also critical in accelerating the transition to circular economy, which could not only support greenhouse gas (GHG) emission reduction but also curb biodiversity loss and pollution;

c) that there is growing research considering the environmental impact of ICTs; however, it is still difficult to estimate the total net impact of ICTs on climate change, i.e. including both positive and negative aspects, while the direct effects of ICTs are rising from production use and end-of-life of ICT products and digitalization in other sectors can contribute to decreasing GHG emissions and other environmental impacts;

d) that the increasing, dynamic pace of the ICT sector poses both opportunities for innovation, including the promotion of sustainable ICT solutions, and challenges for addressing its adverse environmental effects;

e) that, since ICTs also contribute to climate change through GHG and other emissions, the necessary priority must be given to reducing GHG emissions through "sufficiency policies", according to IPCC 6th Assessment Report, which identifies sufficiency policies as a set of measures and daily practices that avoid demand for energy, materials, land and water, while delivering human well-being for all within planetary boundaries;

f) that other environmental impacts associated with the use of ICTs are worth considering, in particular resource depletion and other measures in-line with circular economy principles, energy efficiency and decarbonization of the energy mix;

g) that low-cost safe and sustainable-by-design ICT solutions with reduced carbon footprint are an urgent requirement;

h) that climate change is particularly detrimental to:

i) countries that are susceptible to wildfires, drought, floods and other disasters exacerbated by climate change;

ii) countries whose economies rely on agricultural investments;

iii) countries with weak capacity or lack of meteorological-support infrastructure and technical systems for the mitigation of climate-change effects,

i) that other technologies are currently being developed and deployed for climate monitoring, including, but not limited to, oceanic sensing technologies, for better knowledge of climate evolution; and that such technologies benefit from technical standardization, which enables their global development and implementation,

resolves

1 to continue and further develop the ITU-T work programme initially launched in December 2007 on ICTs, climate change and circular economy, as a high priority, in order to contribute to the wider global efforts to mitigate climate change, as part of the United Nations processes;

2 to take into account the progress already made in the international symposia on ICTs, environment, climate change and circular economy, held in various parts of the world[1], by distributing their outcomes as widely as possible;

3 to continue to maintain and update the ITU-T Global Portal on Environment and Sustainable Digital Transformation, extending its features by developing an electronic and interactive forum to share information and to disseminate ideas, standards and best practices on the relationships between ICTs and environmental sustainability, experiences and practices for disclosure, labelling schemes and recycling facilities;

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[1] Kyoto, Japan, 15-16 April 2008; London, United Kingdom, 17-18 June 2008; Quito, Ecuador, 8-10 July 2009; Seoul Virtual Symposium, 23 September 2009; Cairo, Egypt, 2-3 November 2010; Accra, Ghana, 7-8 July 2011; Seoul, Republic of Korea, 19 September 2011; Montreal, Canada, 29-31 May 2012, Turin, Italy, 6-7 May 2013; Kochi, India, 15 December 2014; Nassau, Bahamas, 14 December 2015; and Kuala Lumpur, Malaysia, 21 April 2016.

4 to promote the development and adoption of ITU-T Recommendations for enhancing the use of ICTs to serve as a potent and cross-cutting tool to assess and reduce GHG emission and promote circularity in other sectors such as energy, manufacturing industries, transportation, buildings and agriculture to achieve the SDGs;

5 to work towards minimizing the ICT sector environmental impact including GHG emissions, nature monitoring optimization, conservation and restoration, including promoting modular designs for devices and components, reuse as well as its replacements, reduce non-renewable natural resource use (fossil energy sources, minerals and metals) and water consumption, increase energy efficiency and improve e-waste management and circularity across economic and social activities;

6 to develop ITU-T Recommendations and technical reports on the use of new and emerging telecommunications/ICTs to facilitate adaptation to climate change and to combat it;

7 to work towards a reduction of the negative environmental impact of materials used in ICT products, encouraging use of recycled/recyclable and/or reusable material and disclosures in respect of the use of such material in ICT products, promotion of sustainable procurement and supply chain management;

8 to work towards promoting industrial approaches in telecommunications/ICTs, such as the reduction and utilization of e-waste and infrastructure-sharing models, in order to advance the use of circular economy;

9 to increase awareness and promote information sharing on the role of ICTs in enhancing environmental sustainability, in particular by promoting the use of more environmental, resource- and energy-efficient[2] devices, infrastructure, networks and ICT products/services, more efficient working methods and processes, and ICTs that can be used to replace or displace technologies/uses that have higher energy consumption;

10 to work towards the reductions in emissions of GHGs arising from the use of ICTs that are necessary to meet the goals of the UNFCCC;

11 to promote the development and adoption of ITU-T Recommendations for smart energy solutions, which promote the application of renewable energy or alternative low-carbon energy sources within the ICT and other sectors;

12 to bridge the standardization gap by providing technical assistance to countries in developing their national green ICT action plans, and develop a reporting mechanism in order to support countries in implementing their plan;

13 to set up e-learning programmes on ITU-T Recommendations related to ICTs, environment, climate change and circular economy;

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[2] With respect to efficiency, promotion of efficient use of materials used in ICT devices and network elements should also be a consideration.

14 to work towards supporting cities, communities and the ICT sector in harnessing ICTs to combat climate change, adopt sustainable practices and circularity to reach net zero;

15 to work towards identifying the environmental protection requirements of ICTs and developing strategic frameworks for assessing their environmental impacts;

16 to support using ICTs to facilitate climate-change mitigation and adaptation efforts as well as building climate-resilient infrastructures;

17 to improve the methodological anchoring of studies devoted to measuring the environmental impact of ICTs through the promotion of ITU-T Recommendations,

instructs the Telecommunication Standardization Advisory Group

1 to coordinate the activities of ITU-T study groups in relation to their review of relevant standardization activities of other standards-development organizations (SDOs) and facilitate collaboration between ITU and those SDOs in order to avoid duplication of, or overlap in, international standards;

2 to ensure that ITU-T study groups continuously carry out a review of all ITU-T Recommendations in order to assess their implications and the application of best practices from the standpoint of protection of the environment, climate change and circular economy;

3 to consider further possible changes to working procedures in order to meet the objective of this resolution, including extending the use of electronic working methods to reduce the impact on climate change, such as paperless meetings, virtual conferencing and teleworking,

instructs all study groups of the ITU Telecommunication Standardization Sector

1 to cooperate with ITU-T Study Group 5 to develop appropriate ITU-T Recommendations on ICTs, environment and climate-change issues within the mandate and competence of ITU-T, including, for example, telecommunication networks used for monitoring and adapting to climate change, transition to circular economy, disaster preparedness, protection of biodiversity, signalling and quality of service issues, taking into account any economic impact on all countries and in particular on developing countries[3];

2 to identify best practices and opportunities for new applications, new and emerging telecommunications/ICTs, including existing solutions, in order to foster environmental sustainability, including both material and energy efficiency, to assess their environmental efficiency based on key performance indicators and evaluation and measurement methodologies in line with ITU-T Recommendations, and to identify appropriate actions;

3 to identify and promote best practices towards implementing environmentally sustainable policies and practices, and to share use cases and key success factors;

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

4 to identify initiatives which support consistently successful and sustainable approaches that will result in cost-effective application, including low-cost technologies and digitalization of services;

5 to identify and promote successful new energy-efficient technologies using renewable energy or alternative energy sources that are proven to work for both urban and rural telecommunication sites;

6 to liaise with the relevant study groups of the ITU Radiocommunication Sector and the ITU Telecommunication Development Sector and promote liaison with other SDOs and forums in order to avoid duplication of work, optimize the use of resources and accelerate the availability of global standards,

instructs the Director of the Telecommunication Standardization Bureau, in collaboration with the Directors of the other Bureaux

1 to report on progress on the application of this resolution annually to the Council and to the next world telecommunication standardization assembly;

2 to keep up to date the calendar of events relevant to ICTs, environment, climate change and circular economy, based on proposals by the Telecommunication Standardization Advisory Group and in close collaboration with the other two Sectors;

3 to launch pilot projects, aimed at bridging the standardization gap, on environmental sustainability issues, in particular in developing countries;

4 to support the development of reports on ICTs, environment, climate change and circular economy, taking into consideration relevant studies, in particular the ongoing work of ITU-T Study Group 5, including issues related to, *inter alia*, circular economy, sustainable eco-design of equipment and ICT solutions, green data centres, smart buildings, green ICT procurement, cloud computing, energy efficiency, smart transportation, smart logistics, smart grids, water management, adaptation to climate change and disaster preparedness, biodiversity protection, in cooperation with other expert bodies in these domains, and how the ICT sector contributes to annual reductions in GHG emissions, and submit the reports as soon as possible to ITU-T Study Group 5 for its consideration;

5 to organize forums, workshops and seminars for developing countries in order to raise awareness and identify their particular needs and challenges in regard to environmental, climate-change and circular-economy issues;

6 to develop, promote and disseminate information and training programmes on ICTs, climate change, environment and circular economy;

7 to report on progress of the Joint Task Force of ITU, the World Meteorological Organization (WMO) and the United Nations Educational, Scientific and Cultural Organization Intergovernmental Oceanographic Commission (IOC-UNESCO) to investigate the potential of using submarine telecommunication cables for ocean and climate monitoring and disaster warning;

8 to promote the ITU-T Global Portal on Environment and Sustainable Digital Transformation and its use as an electronic forum for the exchange and dissemination of ideas, experience and best practices on ICTs, environment, climate change and circular economy;

9 to assist countries that are vulnerable to climate-change impact, with specific emphasis on developing countries:

i) that are susceptible to wildfires, drought, floods, and other disasters exacerbated by climate change;

ii) whose economies rely on agricultural investments;

iii) with weak capacity or lack of meteorological-support infrastructure and technical systems for the mitigation of climate-change effects,

invites the Secretary-General

to continue to cooperate and collaborate with other entities within the United Nations in formulating future international efforts to address climate change and protection of the environment and biodiversity, and to support vulnerable countries in projects towards mitigation, adaptation and resilience efforts as well as climate-change preparedness plans, contributing to the achievement of the goals of the 2030 Agenda for Sustainable Development,

invites Member States, Sector Members and Associates

1 to continue to contribute actively to ITU-T Study Group 5 on ICTs, environment, climate change and circular economy on topics including, but not limited to, environmental efficiency, e-waste management, circularity, smart energy solutions, GHG emission accounting, the construction of climate-resilient infrastructures, and ICT enablement for other sectors;

2 to continue or initiate public and private programmes that include ICTs, environment, climate change and circular economy, giving due consideration to relevant ITU-T Recommendations and relevant work;

3 to share best practices and raise awareness of the benefits associated with the use of environmentally sustainable ICTs in accordance with relevant ITU-T Recommendations;

4 to promote the integration of ICT, climate, environmental and energy policies in order to improve environmental performance and enhance energy efficiency and resource management;

5 to integrate the use of ICTs into national adaptation plans so as to make use of ICTs as an enabling tool for addressing the effects of climate change;

6 to adopt and implement ITU-T Recommendations to tackle environmental challenges and achieve sustainable digital transformation;

7 to promote the collection of standardized environmental data for the telecommunication/ICT sector and ensure their harmonization across domestic data systems for easier analysis;

8 to liaise with their national counterparts responsible for environmental issues in order to support and contribute to the wider United Nations process on climate change, by providing information and developing common proposals related to the role of telecommunications/ICTs in mitigating and adapting to the effects of climate change, so that they can be taken into consideration within UNFCCC.

MOD

RESOLUTION 74 (Rev. New Delhi, 2024)

Enhancing participation of Sector Members[1] from developing countries in the work of the ITU Telecommunication Standardization Sector

(Johannesburg, 2008; Dubai, 2012; Geneva, 2022, New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024),

recalling

a) Resolution 71 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on the strategic plan for the Union for 2024-2027;

b) the spirit of Resolution 123 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on bridging the standardization gap between developing[2] and developed countries;

c) the objectives of Resolutions 44 and 54 (Rev. [Geneva, 2022]) of th[is assembly];

d) Resolution 59 (Rev. Kigali, 2022) of the World Telecommunication Development Conference, on strengthening coordination and cooperation among the three ITU Sectors on matters of mutual interest;

e) Resolution 25 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on strengthening the ITU regional presence;

f) Resolution 30 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on special measures for the least developed countries, small island developing states, landlocked developing countries and countries with economies in transition;

g) Resolution 68 (Rev. [New Delhi, 2024]) of th[is assembly],

taking into account

that Resolution 170 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on admission of Sector Members from developing countries to participate in the work of the ITU Radiocommunication Sector (ITU-R) and the ITU Telecommunication Standardization Sector (ITU-T), which sets the level of financial contribution for Sector Members from developing countries at one sixteenth of the value of a contributory unit for Sector Members for defraying Union expenses,

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[1] Such Sector Members from developing countries shall not be affiliated in any way to any Sector Member of a developed country, and shall be limited to those Sector Members of developing countries (including the least developed countries, small island developing states, landlocked developing countries and countries with economies in transition) having an income per capita according to the United Nations Development Programme not exceeding a threshold to be determined.

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

recognizing

a) that the participation by operators, service providers, industries and other Sector Members from developing countries in standardization activities is low;

b) that the majority of these operators are subsidiaries of developed countries' telecommunication companies which are already Sector Members;

c) that the strategic objectives of Sector Members from developed countries participating in ITU-T activities do not necessarily include the participation of their subsidiary entities;

d) that those developing country telecommunication operators are placing particular emphasis on information and communication technology operation and infrastructure deployment, instead of active participation in standardization activities;

e) that Article 1 of the ITU Constitution establishes that the Union will facilitate the worldwide telecommunication standardization process with a satisfactory quality of service, and will promote and enhance participation of entities and organizations in the activities of the Union and foster fruitful cooperation and partnership between them and Member States for the fulfilment of the overall objectives as embodied in the purposes of the Union,

considering

a) that relevant entities or organizations from developing countries are interested in ITU-T standardization work, and would be willing to join if more relevant information on ITU-T work is available to them and favourable financial conditions existed for their participation in the work of ITU-T;

b) that the aforementioned entities or organizations could have a relevant role in research and development of new technologies, and that the participation of entities from developing countries in the work of ITU-T helps to bridge the standardization gap;

c) that this participation by Sector Members, in particular leading companies, would contribute to enhancing capacity building in the developing countries, increase their competitiveness, and support innovation in the markets of developing countries,

resolves

1 to encourage the adoption of the necessary measures and mechanisms to enable new Sector Members from developing countries to join ITU-T and to be entitled to take part in the work of the ITU-T study groups, in particular, their regional groups, and other groups within ITU-T;

2 to encourage Sector Members from developed countries to promote the participation in ITU-T activities of their subsidiaries established in developing countries,

instructs the Director of the Telecommunication Standardization Bureau

1 to report to the Telecommunication Standardization Advisory Group annually on the implementation of this resolution, including the assessment on the participation of Sector Members from developing countries in all ITU-T activities;

2 to continue enhancing ITU's web-based tools, in an effort to make it easier to locate and promote guidelines, Recommendations, technical reports, best practices and use cases developed by ITU-T, as well as identifying strategies and mechanisms to help and allow Sector Members from developing countries to proactively use these tools to speed up the transfer of knowledge,

instructs the Director of the Telecommunication Standardization Bureau, in close collaboration with the Director of the Telecommunication Development Bureau

within available resources,

1 to organize workshops, preferably back-to-back with meetings of regional groups of ITU-T study groups or other ITU regional events, and develop programmes on awareness campaigns on the benefits for operators, service providers, industries and other Sector Members from developing countries to participate in ITU-T activities aimed at in particular:

i) enhancing the relevance of ITU-T and the importance of their participation in standardization activities;

ii) identifying their standardization priorities, needs and concerns with respect to, in particular, telecommunication/ICT trends;

2 to develop relevant metrics to measure the participation of Sector Members from developing countries in ITU-T activities,

instructs the Telecommunication Standardization Advisory Group

to continually encourage the participation of Sector Members from developing countries and report to the next world telecommunication standardization assembly on the implementation of this resolution,

further resolves that ITU regional offices

be engaged in the implementation of this resolution,

invites Member States

1 to encourage Sector Members from developing countries to enhance their participation in ITU-T activities;

2 to share relevant information from ITU-T activities with potential new Sector Members from developing countries;

3 to support initiatives on enhancing participation of Sector Members from developing countries in ITU-T activities.

MOD

RESOLUTION 76 (Rev. New Delhi, 2024)

Conformance and interoperability testing, assistance to developing countries, and a possible future ITU Mark programme

(Johannesburg, 2008; Dubai, 2012; Hammamet, 2016; Geneva 2022; New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024),

recalling

a) that Resolution 123 (Rev. Bucharest, 2022) of the Plenipotentiary Conference instructs the Secretary-General and the Directors of the three Bureaux to work closely with each other in order to step up intended actions and to reduce the standardization gap between developing[1] and developed countries;

b) that Article 17 of the ITU Constitution, while providing that the functions of the ITU Telecommunication Standardization Sector (ITU-T) shall fulfil the purposes of the Union relating to telecommunication standardization, stipulates that ITU-T perform such functions "bearing in mind the particular concerns of the developing countries";

c) the work carried out by ITU-T Study Group 11 on conformance and interoperability (C&I) programmes, including on the Conformity Assessment Steering Committee (CASC);

d) Resolution 177 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on C&I;

e) Resolution 47 (Rev. Kigali, 2022) of the World Telecommunication Development Conference, on enhancement of knowledge and effective application of ITU Recommendations in developing countries, including C&I testing of systems manufactured on the basis of ITU Recommendations,

recognizing

a) that interoperability of international telecommunication networks is one of the main goals in the ITU strategic plan;

b) that emerging technologies such as Internet of Things (IoT), International Mobile Telecommunications-2020 (IMT-2020) and beyond, have increasing requirements for C&I testing;

c) that conformity assessment is the accepted way of demonstrating that a product adheres to an international standard or technical regulation and conformity assessment continues to be important in the context of World Trade Organization members' commitments under the Agreement on Technical Barriers to Trade regarding international standardization;

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

d) that conformance testing does not guarantee interoperability but could increase the chance of interoperability of equipment that conforms to ITU-T Recommendations, particularly during the development phase;

e) that technical training and institutional capacity development for conformance testing and certification are essential issues for countries to improve their conformity assessment processes, to promote the deployment of advanced telecommunication networks and to increase global connectivity;

f) that it is not appropriate for ITU itself to enter into certification and conformance testing of equipment and services that many regional and national bodies also provide for conformance testing;

g) that, along with ITU-T Recommendations, there are testing specifications for C&I developed by other conformity assessment bodies and standards-development organizations, forums and consortia;

h) that CASC has developed a procedure for the appointment of ITU experts, as well as a procedure for recognizing competent testing laboratories;

i) that ITU-T has a Product Conformity Database and is progressively populating it with details of ICT equipment having undergone testing for conformity with ITU-T Recommendations;

j) that the ITU C&I programme contains four pillars namely: 1) conformity assessment, 2) interoperability events, 3) human resource capacity building, and 4) assistance in the establishment of test centres and C&I programmes in developing countries;

k) that testing for conformity with ITU-T Recommendations could help in efforts to address combating counterfeit ICT products;

l) that enhancing Member States' capabilities for conformance assessment and testing and the availability of national and regional conformance assessment testing facilities may help combat counterfeit telecommunication/ICT products,

considering

a) that Resolution 177 (Rev. Bucharest, 2022) recognized further that a decision concerning the implementation of the ITU Mark would be postponed until Pillar 1 (conformity assessment) has reached a more mature stage of development;

b) that there are concerns that equipment is often not fully interoperable with other equipment;

c) that interoperability testing could increase the chances of end-to-end interoperability of equipment from different manufacturers, and would assist developing countries in the choice of solutions;

d) the importance, especially to developing countries, of ITU assuming a leading role in the implementation of the ITU C&I programme, with ITU-T taking lead responsibility for Pillars 1 and 2, and the ITU Telecommunication Development Sector (ITU-D) for Pillars 3 and 4;

e) that the remote conformance testing of equipment and services using virtual laboratories may enable countries, especially those with economies in transition and developing countries, to conduct C&I testing, while at the same time facilitating the exchange of experience among technical experts taking into account the positive results achieved in implementing the ITU pilot project for the creation of such laboratories,

noting

a) that C&I requirements to support testing are essential components for developing interoperable equipment that is based on ITU-T Recommendations;

b) that considerable practical experience exists within the ITU-T membership regarding the production of relevant testing requirements and the testing procedures on which the actions proposed in this resolution are based;

c) the need to assist developing countries in facilitating conformity and interoperability, which can help in reducing the cost of systems and equipment procurement by operators, particularly in the developing countries;

d) that when interoperability experiments or testing are not performed, users may suffer from the lack of interconnection performance between equipment from different manufacturers;

e) that availability of equipment tested as per ITU-T Recommendations for C&I may provide the basis for achieving a greater choice of solutions, greater competitiveness and more economies of scale,

taking into account

a) that some ITU-T members carry out testing activities, including ITU-T study group pilot projects, to assess C&I;

b) that ITU standardization resources are limited, and that it would be beneficial if regional and national accreditation and certification bodies and accredited testing laboratories conducted the C&I testing, with the involvement of the ITU C&I programme;

c) that a diverse set of expertise is required for developing C&I test suites, C&I testing standardization, product development and product testing;

d) that it is of advantage if duly recognized regional and national accreditation and certification bodies accredit testing laboratories and third-party certification bodies to certify C&I test results;

e) that collaboration with a range of external conformity assessment bodies (including accreditation and certification) is necessary;

f) that some forums, consortia and other organizations have already established C&I testing and certification programmes,

resolves

1 to continue working on the pilot projects that encourage conformity assessment with ITU-T Recommendations, in order to gain experience and identify requirements and methodologies in the development of test suites;

2 that ITU-T Study Group 11 continue to undertake activities within the C&I programme, including pilot projects on conformance/interoperability testing, and coordinate the Sector's activities related to the ITU C&I programme across all ITU-T study groups;

3 to continue working with accreditation bodies to recognize testing laboratories with competence in conformance testing in accordance with ITU-T Recommendations;

4 to encourage collaboration with other organizations active in C&I and conformance testing programmes;

5 to encourage collaboration between ITU-T and ITU-D on the four pillars of the ITU C&I programme, each according to its responsibilities;

6 that conformance testing requirements shall provide for verification of the parameters defined in the current and future ITU-T Recommendations as determined by the study groups developing the Recommendations, and for interoperability testing to take into account user needs and consider market demand, as appropriate;

7 to continue to develop a set of methodologies and procedures for remote testing using virtual laboratories, including federated testbeds;

8 that ITU, being a world standardization body, can address the impediments to harmonization and growth of worldwide telecommunications and promote the visibility of ITU standards (ensure interoperability), by means of having an ITU testing mark regime, taking into account the technical and legal implications, if any, and/or any revenue-generating possibilities, and taking into consideration *recognizing f)*,

invites Member States and Sector Members of the ITU Telecommunication Development Sector

1 to evaluate and assess the risks and various costs resulting from the lack of C&I tests, particularly in developing countries, and share necessary information and recommendations to avoid losses, based on best practices;

2 to collaborate at regional level (especially developing countries) on the establishment of C&I test facilities through having different testing facilities located in different countries and making use of mutual recognition agreements and arrangements;

3 to develop technical skills and institutional capacity for C&I testing;

4 to strengthen initiatives for technical training and institutional capacity building in developing countries by supporting testing centres and conducting hands-on training and workshops on C&I testing,

instructs the Director of the Telecommunication Standardization Bureau

1 in collaboration with the Director of the Telecommunication Development Bureau (BDT), to continue consultations in all regions, taking into consideration the needs of each region, on implementation of the action plan endorsed by the ITU Council;

2 to support the Director of BDT in human capacity building and assistance in order to establish testing facilities in developing countries;

3 to implement the action plan agreed by the Council at its 2012 session and revised at its 2014 session, in cooperation with the Director of BDT;

4 considering *resolves* 8, to accelerate the implementation of Pillar 1, so as to ensure gradual and smooth accomplishment of the other three pillars and the possible implementation of the ITU Mark;

5 in collaboration with the Director of the BDT, and in consultation with each region, to continue implementing the ITU C&I programme, including the testing laboratory database and informative pilot conformity product database, identifying product conformance and origin;

6 to publish an annual plan of C&I activities which could attract more members' participation;

7 to facilitate implementation of the ITU-T C&I testing laboratory recognition procedure;

8 to facilitate the interoperability testing events in order to achieve the interoperability of equipment conforming to ITU-T Recommendations;

9 to maintain the ITU C&I portal, which highlights outcomes on the implementation of ITU C&I programme, allowing members to continually assess the effectiveness of initiatives developed by ITU and to contribute towards its improvement,

instructs the study groups of the ITU Telecommunication Standardization Sector

1 to accelerate accomplishing the pilot projects started by ITU-T study groups and continue to identify existing ITU-T Recommendations that are candidates for C&I testing, taking into account the needs of the membership, and that are capable of providing end-to-end interoperable services on a global scale, adding to their content, if necessary, specific requirements within their scope;

2 to prepare the ITU-T Recommendations identified in *instructs the study groups* 1 above, with a view to C&I test suites conducting C&I tests as appropriate;

3 to continue and enhance cooperation, as appropriate, with interested stakeholders, including other standards-development organizations, forums and consortia, in order to optimize studies to prepare test specifications, taking into account user needs and in consideration of the market demand for a conformity assessment programme;

4 to submit to CASC a list of ITU-T Recommendations which could be candidates for the certification scheme, taking into account market needs,

instructs the ITU Telecommunication Standardization Sector Conformity Assessment Steering Committee

1 to maintain the procedure to appoint ITU-T technical experts for involvement in the testing laboratories' assessment teams of existing conformity assessment programmes, for the assessing/checking of the competence of testing laboratories;

2 to maintain a procedure for recognizing testing laboratories competent to test conformance according to ITU-T Recommendations, in collaboration with existing accreditation bodies,

invites the Director of the Telecommunication Standardization Bureau in collaboration with the Director of the Telecommunication Development Bureau

to collaborate with Member States and Sector Members in order to assist in the development and deployment of virtual laboratories to carry out remote testing in developing countries,

invites Member States, Sector Members and Associates

1 to contribute to the implementation of this resolution by, including, but not limited to:

i) actively providing requirements for testing activities on C&I through contributions to related study groups;

ii) considering potential collaboration on future C&I activities;

iii) contributing to the Product Conformity Database and the Testing Laboratory Database;

iv) encouraging small and medium enterprises to be involved in C&I activities;

2 to encourage national and regional C&I entities to assist ITU-T in implementing this resolution;

3 to promote the use of C&I by organizations/enterprises.

MOD

RESOLUTION 77 (Rev. New Delhi, 2024)

Enhancing the standardization work in the ITU Telecommunication Standardization Sector for software-defined networking

(Dubai, 2012; Hammamet, 2016; New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024),

considering

a) that, with the development and trend towards maturity of software-defined networking (SDN) technologies, many organizations are involved in SDN standardization, including those developing related open-source solutions;

b) the fact that SDN is profoundly changing the telecommunication and information and communication technology (ICT) industry's landscape, and brings multiple benefits to the telecommunication/ICT industry;

c) the rapidly growing interest of a significant number of ITU members in the application of SDN in the telecommunication/ICT industry;

d) that the SDN orchestrator provides the important bond between a wide range of technologies that enable cloud-based network and telecommunication services, at the same time recognizing the work of other organizations,

noting

a) that ITU-T should play an important role in the development of deployable SDN standards in collaboration with other standards development organizations (SDOs);

b) that an SDN standards ecosystem should be well coordinated, with ITU-T at its centre;

c) that network softwarization is defined in Recommendation ITU-T Y.3100, and that SDN is an example of network softwarization technology,

recognizing

a) that ITU-T has unmatched advantages when it comes to requirements and architecture standards;

b) that a solid foundation is required to continue developing and enhancing SDN requirements and architecture standards, so that the whole set of standards may be built through an industry-wide synergy;

c) that Resolution 90 (Hammamet, 2016) of WTSA addresses open source,

resolves to instruct the study groups of the ITU Telecommunication Standardization Sector

1 to continue and enhance collaboration and cooperation with different standards development organizations (SDOs), industry forums, and open-source software projects on SDN, as appropriate, taking into account the outcome of Telecommunication Standardization Advisory Group (TSAG) work on open source;

2 to continue to expand and accelerate the work on SDN standardization, especially carrier SDN, taking into consideration *noting c)*;

3 to develop implementation guidelines for relevant ITU-T SDN Recommendations, including those that are beneficial to developing countries[1];

4 to consider the potential implications of the SDN orchestrator layer for ITU-T operation supporting system (OSS) related work,

instructs the Telecommunication Standardization Advisory Group

to examine the matter, to consider the input of study groups, to continue coordination and collaboration on technical issues, and to take the necessary actions, as appropriate, with a view to deciding on the necessary SDN standardization activities in ITU-T,

instructs the Director of the Telecommunication Standardization Bureau

1 to provide the necessary assistance with a view to expediting such efforts, in particular using any opportunity within the allocated budget to exchange opinions with the telecommunication/ICT industry, including through the chief technology officer (CTO) meetings under Resolution 68 (Rev. New Delhi, 2024) of this assembly, and in particular to promote participation of the industry in SDN standardization work in ITU-T;

2 to conduct workshops, with other relevant organizations, for capacity building on SDN, so that the gap in technology adoption in developing countries may be bridged at the early stages of implementation of SDN networks; to organize SDN workshops with open-source solutions representation to share the progress in SDN standards and real experiences; and to promote SDN networks, including in developing countries in collaboration with the Telecommunication Development Bureau,

invites Member States, Sector Members, Associates and academia

to submit contributions for developing SDN standardization in ITU-T.

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

MOD

RESOLUTION 78 (Rev. New Delhi, 2024)

Information and communication technology applications and standards for improved access to e-health services

(Dubai, 2012; Hammamet, 2016; Geneva, 2022; New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024),

recalling

a) Resolution 183 (Rev. Busan, 2014) of the Plenipotentiary Conference, on telecommunication/information and communication technology (ICT) applications for e-health;

b) Resolution 65 (Rev. Dubai, 2014) of the World Telecommunication Development Conference, on improving access to health-care services by using ICTs;

c) United Nations General Assembly Resolution 70/1, on transforming our world: the 2030 Agenda for Sustainable Development,

recognizing

a) Goal 3 of the Sustainable Development Goals (SDG 3): To ensure healthy lives and promote well-being for all, at all ages;

b) the World Health Organization (WHO) Global Strategy on Digital Health 2020-2025, on leveraging digital technologies to achieve universal health coverage and improve health outcomes;

c) that innovative approaches, using advances in ICTs, can also greatly facilitate the implementation of SDG 3, particularly for rural, remote and underserved areas, and in developing countries[1];

d) that ICTs are transforming the delivery of health care through low-cost e-health applications that provide health-care access for the ageing population and the poor;

e) the importance of safeguarding patients' rights and privacy;

f) that there are national legislative and regulatory discussions relating to e-health and e-health applications and that this is an area of rapid evolution;

g) that new and emerging telecommunications/ICTs for metaverse and artificial intelligence (AI) applications have the potential to be applied in various industries and service areas, including e-health,

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

considering

a) that the World Summit on the Information Society, which was held in two phases (Geneva, 2003 and Tunis, 2005), included e-health in the Geneva Plan of Action as one of the important ICT applications, and stated the following: "Promote collaborative efforts of governments, planners, health professionals, and other agencies along with the participation of international organizations for creating a reliable, timely, high-quality and affordable health care and health information systems and for promoting continuous medical training, education, and research through the use of ICTs, while respecting and protecting citizens' right to privacy. … Encourage the adoption of ICTs to improve and extend health care and health information systems to remote and underserved areas and vulnerable populations, recognizing women's roles as health providers in their families and communities";

b) that WHO approved in May 2005 Resolution WHA58.28 on e-health, stressing: "… that e-health is the cost-effective and secure use of information and communication technologies in support of health and health-related fields, including health-care services, health surveillance, health literature, and health education, knowledge and research";

c) that WHO and ITU have a key role in strengthening coordination between interested parties in all technical areas for the standardization of e-health applications and uses of e-health protocols;

d) the pressing need for the provision of safe, prompt, efficient and effective health care through the use of telecommunications/ICTs in e-health;

e) that e-health applications and the ICT applications supporting them are already extensive, but far from fully optimized and integrated, especially for rural, remote and underserved areas;

f) the importance of maintaining momentum so that the potential advantages of telecommunication/ICT technologies in the health-care sector are supported by appropriate and secure regulatory, legal and policy frameworks in both the telecommunication and the health sectors,

noting

a) ongoing work and studies in Study Group 2 of the ITU Telecommunication Development Sector (ITU-D) under Question 2/2, on telecommunications/ICTs for e-health;

b) ongoing work and studies in Study Group 21 of the ITU Telecommunication Standardization Sector (ITU-T) under Question [28]/21, on multimedia framework for e-health applications;

c) the work completed and deliverables developed by the Focus Group on AI for health (FG-AI4H), a partnership between ITU and WHO to establish a standardized assessment framework for the evaluation of AI-based methods for health, diagnosis, triage or treatment decisions;

d) the launch of the United Nations Global Initiative on AI for Health (GI-AI4H) by ITU, WHO and the World Intellectual Property Organization (WIPO) on 5 July 2023 during the AI for Good Global Summit, transitioning from the FG-AI4H;

e) that ICT standards relating to health care have to be adapted as needed to suit the conditions in each Member State, and this will require strengthening of capacity building and increased support;

f) ongoing work in ITU-D to reduce the digital divide in the area of e-health;

g) ongoing work and studies in ITU-T Study Group 20, related to e-health;

h) ongoing work in relevant standards-development organizations, including the International Organization for Standardization Technical Committee on health informatics (ISO TC 215), in the area of e-health;

i) that the development and pilot applications of health-care use cases and solutions are progressing in the metaverse environment,

recognizing further

a) the importance of telecommunication/ICT standardization in e-health services to promote interoperability to make health care more inclusive and to realize the full potential of ICTs in strengthening health-care systems and applications;

b) that new and emerging telecommunications/ICTs could strengthen e-health capabilities by providing more efficient and effective health-care delivery;

c) that the integration of e-health applications and services with digital identity platforms may provide easier access to e-health services without compromising patients' rights and privacy;

d) that, for health-care providers, system interoperability between information systems is critical and fundamental, in particular in developing countries, for delivering quality health care and reducing its costs;

e) that telecommunications/ICTs play significant roles in providing quality e-health services to rural, remote and underserved areas, and in addressing challenges in public health emergencies,

resolves to instruct the Director of the Telecommunication Standardization Bureau, in collaboration with the Director of the Telecommunication Development Bureau and the Director of the Radiocommunication Bureau

1 to consider with priority the enhancement of telecommunication/ICT initiatives in e-health and to coordinate their related standardization activities;

2 to continue and further develop ITU activities on telecommunication/ICT applications for e-health in order to contribute to the wider global efforts concerning e-health;

3 to work collaboratively with WHO, WIPO, academia and other relevant organizations on activities related to e-health in general and to this resolution in particular;

4 to organize seminars and workshops on e-health for developing countries and gauge the needs of the developing countries, which are the countries with the greatest need for e-health applications;

5 to encourage the standardization work based on the deliverables of FG-AI4H.

instructs Study Groups 20 and 21 of the ITU Telecommunication Standardization Sector, each according to its mandate, in collaboration with the relevant study groups, particularly Study Groups 11 and 17 of the ITU Telecommunication Standardization Sector

1 to identify and document examples of best practice for e-health in the field of telecommunications/ICTs, for dissemination among ITU Member States and Sector Members;

2 to coordinate activities and studies relating to e-health among the relevant study groups, focus groups and other relevant groups in ITU-T, the ITU Radiocommunication Sector (ITU-R) and ITU-D, in order to foster awareness of telecommunication/ICT standards pertaining to e-health;

3 for ensuring the broad deployment of e-health services in diverse operating conditions, to study communication protocols relating to e-health, especially among heterogeneous networks;

4 to develop ITU-T Recommendations and non-normative documents that enable secure, trusted and resilient telecommunication/ICT applications and services for e-health;

5 to study standards-based solutions that provide secure, interoperable and immersive e-health services in environments based on AI and metaverse;

6 within the current mandate of the ITU-T study groups, to give priority to the study of security standards (e.g. for communications, services, network aspects and service scenarios for databases and record handling, identification, authentication, integrity, and for the protection of patients' rights and privacy) relating to e-health, taking into account *recognizing e);*

7 to cooperate with the relevant standards-development organizations that are actively in support of this resolution, with a view to minimizing the duplication of effort and ensuring an efficient use of resources,

instructs the Director of the Telecommunication Standardization Bureau to collaboratively work with the Director of the Telecommunication Development Bureau

to support awareness-raising campaigns, developed by the Telecommunication Development Bureau upon request, that sensitize populations to the use of e-health applications such as telemedicine in developing countries, within available resources,

invites Member States

to consider, as appropriate, the development and/or enhancement of frameworks, which may include legislation, regulations, standards, codes of practice and guidelines, to enhance the development of telecommunication/ICT services, products and terminals for e-health and e-health applications, particularly to address public health emergencies,

encourages Member States, Sector Members, Associates and Academia

1 to participate actively in ITU-T studies on e-health, including effective solutions for addressing public health emergencies, and to support e-health services for ageing populations, persons with disabilities and persons with specific needs, through the submission of contributions and by other appropriate means;

2 to promote the development of sustainable, environmentally friendly and safe e-health technologies and solutions;

3 to promote the implementation of FG-AI4H and GI-AI4H e-health deliverables;

4 to actively engage with the GI-AI4H global community, which fosters knowledge-sharing and facilitates accessible and impactful solutions in the e-health field.

MOD

RESOLUTION 79 (Rev. New Delhi, 2024)

Role of telecommunications/information and communication technologies in handling and controlling e-waste from telecommunication and information technology equipment and methods of treating it

(Dubai, 2012; Geneva, 2022; New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024),

recalling

a) Resolution 182 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on the role of telecommunications/information and communication technologies (ICTs) in regard to climate change and the protection of the environment;

b) Resolution 66 (Rev. Kigali, 2022) of the World Telecommunication Development Conference, on ICT, environment, climate change and circular economy;

c) Resolution 73 (Rev. [New Delhi 2024]) of th[e World Telecommunication Standardization Assembly], on ICTs, environment, climate change and circular economy;

d) § 19 of the Hyderabad Declaration (2010), stating that the formulation and implementation of policies for proper disposal of e-waste are of great importance;

e) the Basel Convention (March, 1989) on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, which characterizes certain wastes resulting from electrical and electronic assemblies as hazardous;

f) § 20 of Action Line C7 (E-environment) of the Geneva Plan of Action of the World Summit on the Information Society (Geneva, 2003), calling for governments, civil society and the private sector to be encouraged to initiate actions and implement projects and programmes for sustainable production and consumption and the environmentally safe disposal and recycling of discarded hardware and components used in ICT;

g) the Nairobi Declaration on the Environmentally Sound Management of Electrical and Electronic Waste, and the adoption by the ninth Conference of the Parties to the Basel Convention of the Work Plan for the Environmentally Sound Management of E-waste, focusing on the needs of developing countries[1],

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

considering

a) that, the amount of e-waste generated is rising in line with increased demand and consumption of increasingly affordable telecommunication/ICT equipment;

b) that only a small part of e-waste is being properly collected and recycled, causing a negative impact on the environment and public health, in particular in developing countries;

c) that ITU and relevant stakeholders (such as the United Nations Environment Programme and the United Nations Development Programme for the Basel Convention, United Nations Institute for Training and Research and other relevant organizations) have a key role in strengthening coordination between interested parties to study the effects of e-waste;

d) Recommendation ITU-T L.1000 of the ITU Telecommunication Standardization Sector (ITU-T), on the universal power adapter and charger solution for mobile terminals and other handheld ICT devices, Recommendation ITU-T L.1100, on the procedure for recycling rare metals in ICT goods, the ITU-T L.1020 series of Recommendations, on circular economy and circularity, Recommendation ITU-T L.1031, on the guideline for the development of an e-waste management system and achieving the e-waste targets of the Connect 2030 Agenda, and Recommendation ITU-T L.1070, on global digital sustainable product passport opportunities to achieve a circular economy;

e) that telecommunication/ICT equipment may be used internationally and that there is a need for an international approach on e-waste management,

recognizing

a) that governments have an important role to play in limiting the impact of e-waste by formulating appropriate strategies and policies and promoting circularity of telecommunication/ICT equipment;

b) that the growing availability and reliability of data can help to develop efficient policies for environmentally sustainable telecommunication/ICT equipment lifecycle management;

c) that most of the e-waste from the telecommunication/ICT sector may end up in the informal sector without formal disposal procedures;

d) that telecommunication/ICT stakeholders, including manufacturers, can make a major contribution to alleviating the impact of e-waste, such as by planning for future recycling at the design stage;

e) that ongoing work and studies in ITU-T Study Group 5 under Question [F]/5, on e-waste, circular economy and sustainable supply-chain management, may include aspects of environmental protection and sustainable design/manufacture, recycling of ICT equipment/facilities and secondary raw materials;

f) the various and current efforts in developing countries and regions related to e-waste management, notwithstanding the challenges that still persist;

g) the need to increase awareness of effective management of e-waste in developing countries;

h) the impact of counterfeit ICT devices on e-waste generation;

i) the role of the circular economy in reducing the global volume of e-waste and moving from the traditional linear production/consumption pattern to one that is sustainable;

j) that there is a lack of tools for monitoring, measuring and assessing the environmental impacts of both e-waste and telecommunications/ICTs;

k) that the informal sector remains the predominant sector for handling e-waste in developing countries;

l) that sustainable management of e-waste is essential to achieve the United Nations Sustainable Development Goals;

m) ongoing work in Study Group 2 of the ITU Telecommunication Development Sector (ITU-D) under Question 6/2, on ICTs and the environment, studying strategies to develop a responsible approach to, and comprehensive treatment of, telecommunication/ICT waste;

n) that digitalization through ICTs can be a useful way of optimizing e-waste management to achieve net zero targets;

o) the benefits of repurposing telecommunication/ICT devices for new uses extends their lifespan,

recognizing further

a) that large quantities of used, old, obsolete and unserviceable telecommunication/ICT hardware and equipment are exported to developing countries for supposed reuse;

b) that many developing countries are suffering from severe environmental hazards, such as water pollution and health risks, due to e-waste, including from the influx of new telecommunications/ICTs;

c) that children, pregnant women and people working in recycling are particularly vulnerable to the negative health impacts of e-waste exposure;

d) that the availability of counterfeit telecommunication/ICT hardware and equipment in developing countries exacerbates the challenge of handling and controlling e-waste;

e) that countries are striving to establish effective strategies for e-waste management and promote circularity within the ICT sector,

resolves to instruct the Director of the Telecommunication Standardization Bureau, in collaboration with the Director of the Telecommunication Development Bureau

1 to pursue and strengthen the development of ITU activities in regard to handling and controlling e-waste from telecommunication and information technology equipment and methods of treating it, in particular in developing countries;

2 to assist developing countries to undertake proper assessment of the magnitude/quantity of e-waste generated in a harmonized manner;

3 to address the handling and controlling of e-waste and to contribute to global efforts designed to deal with the increasing hazards which arise therefrom;

4 to work in collaboration with the relevant stakeholders, including academia and relevant organizations, and to coordinate activities relating to e-waste among the ITU study groups, focus groups and other relevant groups;

5 to organize seminars and workshops to enhance awareness of the hazards and sustainable management of e-waste, particularly in developing countries, and gauge the needs of the developing countries, which are the countries that suffer most from the hazards of e-waste;

6 to assist developing countries and facilitate their work in the implementation of circular-economy principles;

7 to continue promoting e-waste data collection and global databases on e-waste, in collaboration with relevant stakeholders, in order to support effective formulation of regional and national policies and strategies,

instructs Study Group 5 of the ITU Telecommunication Standardization Sector, in collaboration with the relevant ITU study groups

1 to develop and document examples of best practice for handling and controlling e-waste resulting from telecommunications/ICT and methods of treating and recycling it, for dissemination among ITU Member States and Sector Members;

2 to develop Recommendations, methodologies and other publications relating to sustainable and reliable management of e-waste resulting from telecommunication/ICT equipment and products, and appropriate guidelines on implementation of these Recommendations

3 to study and develop ITU-T Recommendations and reports on methodologies for estimating the lifespan of telecommunication/ICT equipment and collection systems for e-waste in all geographic areas;

4 to study and develop ITU-T Recommendations and reports, and to promote best practices for recycling and reuse of e-waste and promote the use of secondary/recycled materials;

5 to study the impact of used telecommunication/ICT equipment and products brought into developing countries and give appropriate guidance, taking into account *recognizing further* above, to assist developing countries,

invites Member States

1 to take all necessary measures to handle and control e-waste in order to mitigate the hazards which can arise from used telecommunication/ICT equipment;

2 to cooperate with each other in this area and promote international collaboration;

3 to incorporate e-waste management policies/processes, including their tracking, collection and disposal, in their national ICT policies and strategies, and take adequate measures in this regard;

4 to include both prevention of exposure to the environmental hazards of e-waste and treatment of e-waste in relevant policies/strategies;

5 to raise public awareness about the means and methods available for the general public to recycle e-waste in an environmentally sustainable way;

6 to promote the circular utility of e-waste through reuse and recycling;

7 to collaborate with relevant stakeholders in developing sustainable and comprehensive e-waste management frameworks by adopting relevant ITU-T Recommendations and other international standards;

8 to encourage manufacturers to design durable devices with longer lifespans and further encourage consumers to participate in circular economy by reusing and maintaining user devices,

encourages Member States, Sector Members and Academia

1 to participate actively in ITU-T studies and activities on e-waste, through the submission of contributions and by other appropriate means;

2 to implement ITU-T Study Group 5 Recommendations on sustainable management of e-waste and circularity;

3 to share best practices and raise awareness of the benefits associated with e-waste management, in accordance with relevant ITU-T Recommendations.

MOD

RESOLUTION 84 (Rev. New Delhi, 2024)

Studies concerning the protection of users of telecommunication/information and communication technology services

(Hammamet, 2016; Geneva, 2022; New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024),

recalling

a) Resolution 196 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on protecting telecommunication service users/consumers;

b) Resolution 188 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on combating counterfeit telecommunication/information and communication technology (ICT) devices;

c) Resolution 189 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on assisting Member States to combat and deter mobile device theft;

d) Resolution 174 (Rev. Busan, 2014) of the Plenipotentiary Conference, on ITU's role with regard to international public policy issues relating to the risk of illicit use of ICTs;

e) Resolution 181 (Guadalajara, 2010) of the Plenipotentiary Conference, on definitions and terminology relating to building confidence and security in the use of ICTs;

f) Resolutions 55/63 and 56/121 of the United Nations General Assembly (UNGA), which established the legal framework on combating the criminal misuse of information technologies;

g) Resolution 64 (Rev. Kigali, 2022) of the World Telecommunication Development Conference, on protecting and supporting users/consumers of telecommunication/ICT services;

h) the International Telecommunication Regulations,

recognizing

a) the United Nations Guidelines for Consumer Protection;

b) that, in order to achieve its own objectives, the Union must, among other things, promote standardization of telecommunications worldwide, ensuring a satisfactory quality of service (QoS);

c) § 13 *e)* of the Geneva Plan of Action of the World Summit on the Information Society, which states that governments should continue to update their domestic consumer-protection laws to respond to the new requirements of the information society;

d) that the Tunis Agenda for the Information Society called for the development of national consumer-protection laws and practices, and enforcement mechanisms where necessary,

considering

a) that counterfeit telecommunication/ICT devices may negatively impact on security and QoS for users;

b) that consumer-related laws, policies and practices limit fraudulent, deceitful and unfair business conducts, and such protections are indispensable for building consumer trust and establishing a more equitable relationship between telecommunication/ICT entrepreneurs and consumers;

c) that the Internet permits the introduction of new applications in telecommunication/ICT services based on new and emerging technologies, which continue to record high levels of use, even though there are challenges regarding QoS and uncertainty of origin;

d) that the QoS of networks should be consistent with ITU Telecommunication Standardization Sector (ITU-T) Recommendations and other recognized international standards;

e) that telecommunications/ICTs can offer new and substantial benefits to consumers, including convenience and access to a broad range of goods and/or services, and the ability to collect and compare information about these goods and/or services;

f) that consumer trust in telecommunications/ICTs is bolstered by the continuous development of transparent, effective consumer-protection mechanisms that limit the presence of fraudulent, deceitful or unfair business practices;

g) that education and dissemination of information on the consumption and use of telecommunication/ICT products and services must be encouraged;

h) that access to telecommunications/ICTs must be open and affordable;

i) that a number of countries are introducing conformity-assessment regimes and procedures based on applicable ITU-T Recommendations, leading to better QoS/quality of experience, and to higher probability of interoperability of equipment, services and systems;

j) that digital transformation and the adoption of future networks will affect point of interconnection, QoS and other operational aspects, which will also have an effect on costs to the end user,

noting

a) the importance of keeping users and consumers informed about the basic characteristics, quality, security and rates of the different services offered by operators, and of other protection mechanisms promoting consumer and user rights;

b) the importance of addressing trust in the use of telecommunication/ICT services, considering both the benefits and potential deceptive practices generated from the increased use of emerging applications and technologies by telecommunication/ICT services, and the importance of building confidence and security in the use of telecommunications/ICTs in the context of user protection;

c) that landlocked countries pay higher overall costs for access than neighbouring countries in coastal areas;

d) that the issue of accessibility of telecommunication/ICT services and the establishment of fair costs depend on different factors;

e) that end users are increasingly aware of the importance of their data and how they are being used and protected,

resolves

1 to continue developing relevant ITU-T Recommendations in order to provide solutions ensuring and protecting the rights of users/consumers of telecommunication/ICT services, notably in the areas of quality, security and tariff mechanisms, taking into account the challenges and solutions offered by new telecommunication/ICT technologies;

2 that ITU-T, through its study groups, continue close collaboration with the ITU Telecommunication Development Sector (ITU-D) and its study groups on issues associated with protection of telecommunication/ICT service users/consumers, as appropriate;

3 that the study groups concerned should expedite work on Recommendations that would provide additional detail and guidance for the implementation of this resolution;

4 that ITU-T Study Group 3, where appropriate with relevant ITU-T study groups, within their mandates, should carry out studies on standards for protection and user-centric considerations to build and protect consumer confidence, and improve convenience and access for users/consumers of telecommunication/ICT services;

5 that ITU-T Study Group 3 should liaise with ITU-D Study Group 1 on the issues associated with best practices in the field of protection of users/consumers of telecommunication/ICT services,

instructs the Director of the Telecommunication Standardization Bureau, in collaboration with the Director of the Telecommunication Development Bureau

1 to make efforts to implement Resolution 196 (Rev. Bucharest, 2022);

2 to encourage active participation of developing countries[1] in the relevant ITU-T study groups and strengthen relations with other standards-development organizations involved in resolving issues associated with protection of telecommunication/ICT service users/consumers;

3 to contribute to the relevant initiatives on the protection of users/consumers, provided that this does not overlap with or duplicate activities of the other Sectors,

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

invites Member States

to consider the creation of an enabling environment in which telecommunication/ICT services are provided to users, with the appropriate level of quality, confidence and security and accessibility, which stimulates competitive, fair and affordable prices, in order in general to protect users/consumers of telecommunication/ICT services and to foster a consumer-centric telecommunication/ICT ecosystem,

invites Member States, Sector Members, Associates and Academia

1 to contribute to this work by submitting contributions to the relevant ITU-T study groups on Questions related to the protection of users of telecommunication/ICT services, and to collaborate on implementing this resolution;

2 to collaborate and promote cooperation with relevant stakeholders, at regional and international levels, while promoting user-centric considerations on matters associated with protection of users/consumers of telecommunication/ICT services.

MOD

RESOLUTION 88 (Rev. New Delhi, 2024)

International mobile roaming

(Hammamet, 2016; New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024),

considering

a) the results of the ITU High-Level Workshop on international mobile roaming (IMR), held in Geneva on 23-24 September 2013;

b) the results of the ITU Global Dialogue on IMR, held in Geneva on 18 September 2015;

c) that the tasks undertaken in the ITU Telecommunication Standardization Sector (ITU-T) cover Recommendations, conformity assessment and matters having policy or regulatory implications;

d) that the economy is increasingly dependent on reliable, cost-effective, competitive and affordable mobile communications technology on a global scale;

e) that wholesale IMR tariffs are decoupled from underlying costs, which may have an effect on retail rates, including inconsistent and arbitrary charges;

f) that a competitive international telecommunication market may not exist if significant differences persist between national prices and IMR prices;

g) that there are differences in costs between countries and regions;

h) that the adoption and usage of International Mobile Telecommunications (IMT) has grown manyfold,

considering further

a) the strong growth of IMT systems and other technologies, and the role of Internet of Things (IoT) and machine-to-machine (M2M) roaming arrangements in helping to facilitate this development;

b) the ITU-T technical report on roaming aspects of IoT and M2M, which emphasized the fundamental differences between traditional telecommunication services and IoT/M2M services, such as their connected elements and connections, core services, average revenue per user, and business models;

c) the ITU high-level workshop on IMR noted that, "in relation to M2M roaming, it was important to distinguish M2M roaming from traditional consumer voice and data roaming, as the issues and implications arising were quite different and the problems associated with consumer roaming prices did not materialize ",

noting

a) that Recommendation ITU-T D.98 is an agreement concluded between Member States and Sector Members in 2012;

b) that Recommendation ITU-T D.97 contains possible approaches to the reduction of excessive roaming rates, highlighting the need to encourage competition in the roaming market, educate consumers and consider appropriate regulatory actions such as the introduction of caps on roaming rates,

noting further

a) the ongoing work in ITU-T Study Group 3 on the roaming aspects of IoT and M2M;

b) the range of commercial agreements and other mechanisms that have supported the successful global deployment of IoT/M2M services,

resolves

1 that ITU-T Study Group 3 continue to study the economic effects of IMR rates, including principles and methodologies for facilitating fair and reasonable IMR arrangements;

2 that ITU-T Study Group 3 continue to study the roaming aspects of IoT/M2M services,

instructs the Director of the Telecommunication Standardization Bureau

1 to organize initiatives, in collaboration with the Director of the Telecommunication Development Bureau (BDT), to raise awareness of the benefits to the consumer of lowering IMR rates;

2 to propose cooperative approaches to foster the implementation of Recommendations ITU-T D.98 and ITU-T D.97, and to lower IMR rates among the Member States, by promoting capacity-building programmes, workshops and guidelines for international cooperation agreements,

invites Member States

1 to take measures towards the implementation of Recommendations ITU-T D.98 and ITU-T D.97;

2 to collaborate in the efforts to lower IMR rates by taking regulatory measures when applicable.

MOD

RESOLUTION 89 (Rev. New Delhi, 2024)

Promoting the use of information and communication technologies to bridge the financial inclusion gap

(Hammamet, 2016; Geneva, 2022; New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024),

recalling

a) that financial inclusion is a key enabler for reducing poverty and boosting prosperity: around 1.4 billion people globally do not have access to formal financial services and women account for 55 per cent of the unbanked;

b) that, according to the Global Findex Report of the World Bank, 46 per cent of adults in developing countries[1] were still without accounts in 2021 and, moreover, the gender gap in bank-account ownership is not significantly narrowing: in 2011, 47 per cent of women and 54 per cent of men had an account; in 2014, 58 per cent of women had an account, compared with 65 per cent of men; and in 2017, 65 per cent of women had an account, compared with 72 per cent of men; and in 2021, 74 per cent of women had an account, compared with 78 per cent of men;

c) that one way to bridge this financial inclusion gap is through information communication technology (ICT), particularly mobile technologies;

d) that digital financial services have resulted in a dramatic increase in financial inclusion;

e) that digital financial services increase income and social participation in developing countries for women, girls and vulnerable groups, thereby reducing inequalities;

f) Resolution 55 (Rev. [Geneva, 2022]) of th[is assembly], on promoting gender equality in ITU Telecommunication Standardization Sector (ITU-T) activities;

g) that the purposes of the Union include fostering collaboration among the membership for the harmonious development of telecommunications, sharing of best practices and enabling services to be offered at lowest possible cost;

h) the persistence of the digital divide and the financial inclusion gap;

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

i) Resolution 1353, adopted by the ITU Council at its 2012 session, which recognizes that telecommunications/ICTs are essential components for developed and developing countries in achieving sustainable development, and instructs the Secretary-General, in collaboration with the Directors of the Bureaux, to identify new activities to be undertaken by ITU to support developing countries in achieving sustainable development through telecommunications/ICTs;

j) Resolution 70 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on mainstreaming a gender perspective in ITU and promoting gender equality and the empowerment of women and girls through telecommunications/ICTs;

k) Resolution 175 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on telecommunication/ICT accessibility for persons with disabilities and persons with specific needs;

l) Resolution 184 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on facilitating digital inclusion initiatives for indigenous peoples;

m) Resolution 204 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on use of ICTs to bridge the financial inclusion gap,

recognizing

a) that ITU-T Study Group 3 has been involved in the study of mobile financial services through its Rapporteur Group on mobile financial services in collaboration with relevant standards-development organizations (SDOs);

b) the work undertaken by the ITU-T Focus Group on Digital Financial Services and the ITU-T Focus Group on Digital Currency including Digital Fiat Currency;

c) the work done by relevant ITU-T study groups on digital financial services during the last study periods,

considering

a) that the issue of access to financial services is one of global concern and requires global collaboration;

b) United Nations General Assembly Resolution 70/1, on transforming our world: the 2030 Agenda for Sustainable Development, recognizing that it builds on the Millennium Development Goals and seeks to complete their unfinished business, and stressing the importance of the implementation of this new ambitious agenda, which has poverty eradication at its core and aims at promoting the economic, social and environmental dimensions of sustainable development;

c) that this Agenda, *inter alia*, undertakes the adoption and implementation of policies to increase financial inclusion and therefore integrates financial inclusion into several targets associated with the Sustainable Development Goals and their means of implementation;

d) that stable digital financial services are important for expanding financial inclusion, and this requires cooperation, as relevant, from consumers, businesses, policy-makers and regulators;

e) the need for regulators from the telecommunication and financial services sectors to collaborate with one another and with, *inter alia,* their finance ministries and other stakeholders, and to share best practices, since digital financial services encompass areas which fall under the purview of all parties,

noting

a) the target of universal financial access set by the World Bank, and that this goal had not been achieved globally by 2020, yet providing access to a transaction account or electronic instrument to store money and send and receive payments is a basic building block for people to manage their financial lives;

b) that interoperability is, *inter alia*, an important element in enabling electronic payments in a convenient, affordable, fast, seamless and secure way through a transaction account: indeed, the need for interoperability was also one of the findings of the Task Force on payment aspects of financial inclusion convened by the Committee on Payments and Market Infrastructures and the World Bank Group, which identified required improvements to existing payment systems and services in order to further increase financial inclusion, recognizing that implementation of existing standards and best practices should be a priority;

c) that, despite the increase in financial inclusion and scaling up of mobile-money services in emerging economies in recent years, digital financial inclusion still remains a challenge and efforts to roll out standards and systems to support digital financial services will thus need to be continued and accelerated;

d) the importance of affordability of digital financial services, especially for developing countries and people in low-income households, for achieving financial inclusion;

e) the increased interest in using mobile financial services and digitizing government-to-person payments and applications of emerging technologies to advance financial inclusion to better target those in need,

resolves

1 to continue and further develop the ITU-T work programme, including the ongoing work in relevant ITU-T study groups, in order to contribute to the wider global efforts to enhance financial inclusion, as part of the United Nations processes;

2 to conduct studies and develop standards and guidelines in the areas of interoperability, digitization of payments, consumer protection, quality of service, big data, security of digital financial service transactions, and telecommunications/ICTs related to digital financial services where such studies, standards and guidelines do not duplicate efforts taking place in other institutions and relate to the mandate of the Union;

3 to encourage collaboration between telecommunication regulators and financial services authorities to develop and implement standards and guidelines, including consumer-protection guidance;

4 to encourage the use of innovative digital tools and technologies, as appropriate, to advance financial inclusion;

5 to encourage collaboration between governments, telecommunication companies and financial institutions in applying mechanisms, as appropriate, in order to ensure the necessary financial resources for the required infrastructure,

instructs the Director of the Telecommunication Standardization Bureau, in collaboration with the Directors of the other Bureaux

1 to report on progress on the implementation of this resolution annually to the Council, and to the World Telecommunication Standardization Assembly;

2 to support the development of reports and best practices on digital financial inclusion, taking into consideration relevant studies, where clearly within the mandate of the Union and not duplicative of work for which other SDOs and institutions are responsible;

3 to establish a platform or, where possible, connect to those already existing, for peer learning, dialogue and experience-sharing in digital financial services among countries and regions, regulators from the telecommunication and financial services sectors, industry experts and international and regional organizations;

4 to organize workshops and seminars for the ITU membership in collaboration with other relevant SDOs, academia and institutions with primary responsibility for standards-development, implementation and capacity building in the area of financial services, in order to raise awareness and identify regulators' particular needs and challenges in enhancing financial inclusion and in respect of applications of emerging technologies in digital finance, and to share lessons learned from different regions,

instructs the relevant study groups of the ITU Telecommunication Standardization Sector

1 to organize the necessary work and studies in order to expand and accelerate the work on digital financial services, starting with their first meeting in the next study period;

2 to coordinate and collaborate with other relevant SDOs and institutions with primary responsibility for standards development, implementation and capacity building in the area of financial services, and with other groups within ITU;

3 to develop technical standards and guidelines that will help developing countries take advantage of emerging technologies related to digital financial services;

4 to develop technical standards and guidance for developing countries to assess the security of their digital financial service infrastructure related to telecommunications,

invites the Secretary-General

to continue to cooperate and collaborate with other entities within the United Nations and other relevant entities in formulating future international efforts for effectively addressing financial inclusion,

invites Member States, Sector Members and Associates

1 to continue to contribute actively to ITU-T study groups on issues related to use of ICTs to enhance financial inclusion, within the mandate of the Union;

2 to promote the integration of ICTs, financial services and consumer protection policies in order to enhance usage of digital financial services with the objective of increasing financial inclusion,

invites Member States

1 to develop and implement national strategies to address financial inclusion as a matter of priority and to leverage ICTs to bring financial services to the unbanked;

2 to include policies for women and girls and vulnerable groups on financial inclusion and security for digital financial services in their national telecommunication/ICT and financial inclusion strategies;

3 to undertake reforms that will leverage ICTs to achieve gender equality within the objectives of this resolution and enhance financial inclusion for women and girls and vulnerable groups;

4 to increase coordination, as appropriate, among national regulatory authorities, in order to remove obstacles preventing non-bank service providers from accessing payment system infrastructures and financial service providers from accessing communications channels, and to foster conditions for affordable and more secure transfers of remittances in both source and recipient countries, including by promoting competitive and transparent market conditions;

5 to contribute to global efforts designed to deal with enhancing the cybersecurity and resilience of the digital finance ecosystem through adoption of international standards and industry best practices;

6 to share international experiences in the use of the telecommunication/ICT-related unique identifiers and improve national identification systems, noting that such systems can allow people who lack formal education and/or are undocumented to establish a unique digital identity that a financial institution can use;

7 to consider eliminating or reducing regulatory fees and levies in the cost of ownership of a mobile connection for the poorest households, thereby ensuring that hard-to-reach populations, such as women and girls and vulnerable groups, have affordable access to mobile connections for the use of financial services;

8 to encourage telecommunication/ICT-related measures facilitating interoperability of digital financial services;

9 to develop digital and financial literacy programmes to bridge the financial inclusion gap;

10 to support programmes to help developing countries build the technical expertise and regulatory frameworks necessary for secure and inclusive financial services.

MOD

RESOLUTION 91 (Rev. New Delhi, 2024)

Enhancing access to an electronic repository of information on numbering plans published by the ITU Telecommunication Standardization Sector

(Hammamet, 2016; Geneva, 2022; New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024),

considering

a) that electronic access to information on certain numbering plans has been implemented by the Telecommunication Standardization Bureau (TSB);

b) that enhancing electronic access would be advantageous for Member States and international telecommunication operators or operating agencies, to help improve the reliability of telecommunication networks and services they carry and help improve revenue assurance for operators, and may assist in countering misuse of international telecommunication numbering resources,

noting

a) that the ITU Telecommunication Standardization Sector (ITU-T) must play a lead role in the development and maintenance of the electronic repository referred to in this resolution;

b) that requirements have to be studied and established for populating such an electronic repository;

c) that Recommendation ITU-T E.129 invites all national regulatory bodies to inform ITU of their national numbering plans (that is, allotted and allocated resources);

d) that all national regulatory bodies are responsible for numbering plan information;

e) the high demand for numbering, naming, addressing and identification (NNAI) resources due to the advent of new and emerging technologies and applications (e.g. Internet of Things, machine-to-machine communication and innovative global networks and services);

f) that reliable information about reserved, assigned and allocated NNAI resources for each country is an important issue for ensuring global telecommunication interconnectivity,

resolves to instruct Study Group 2 of the ITU Telecommunication Standardization Sector

to study this matter on the basis of contributions received and information from TSB and to organize the necessary work in order to determine the requirements for electronic access to a repository of numbering resources reserved, assigned or allocated to each operator/service provider (to the extent available) within every country, including presentation of E.164 national numbering plans on the basis of Recommendation ITU-T E.129, and international numbering resources assigned by the Director of TSB,

instructs the Director of the Telecommunication Standardization Bureau

1 to provide the necessary assistance for ITU members by furnishing details of existing information resources relating to the presentation of national numbering plans and international numbering resources;

2 based on the results of the above-mentioned ITU-T Study Group 2 studies, to organize and maintain such an electronic repository as described above, within the allocated budget,

invites Member States, Sector Members, Associates and Academia

1 to submit, to meetings of ITU-T Study Group 2 and the Telecommunication Standardization Advisory Group (TSAG), contributions with a view to the organization of such an electronic repository;

2 to submit to meetings of ITU-T Study Group 2 and TSAG contributions on the requirements for electronic access to the repository of national numbering resources maintained by ITU-T,

encourages Member States

pursuant to the relevant ITU-T Recommendations, to present information on their national numbering plans and amendments thereto in a timely manner, and as per the format provided for in Recommendation ITU-T E.129, so as to ensure that the electronic repository remains in order and up to date.

MOD

RESOLUTION 92 (Rev. New Delhi, 2024)

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

(Hammamet, 2016; Geneva, 2022; New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024),

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, IMT-2020 and IMT-2030, collectively (see Resolution ITU-R 56 (Rev. Dubai, 2023) 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 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 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 (SDGs);

f) that the ITU Telecommunication Standardization Sector (ITU-T) is actively continuing its studies on non-radio aspects of standardization for IMT systems;

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 throughout the world, and in particular in developing countries[1];

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 the Report ITU-R M.2516-0 provides a broad view of future technical aspects of terrestrial IMT systems, and Recommendation ITU-R M.2160-0 sets the basis for the future development of IMT-2030;

l) 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, for developing countries;

m) that ITU-T 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 and IMT-2030, which includes studies on network requirements and functional architecture, network softwarization, fixed, mobile and satellite convergence, network performance, and their application for developing countries;

n) that ITU-T Study Group 13 established the Joint Coordination Activity for IMT-2020 and beyond (JCA-IMT2020) to coordinate ITU-T's IMT-2020 standardization work with focus on non-radio aspects of IMT-2020 and IMT-2030 within ITU-T and to coordinate communication with standards-development organizations (SDOs), consortia and forums also working on IMT-2020- and IMT-2030-related standards;

o) that JCA-IMT2020 is maintaining a roadmap for IMT-2020 and IMT-2030 standardization which addresses ongoing and published specifications from ITU, other relevant SDOs, consortia and forums;

p) 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;

q) that ITU-T Study Group 11 established the Focus Group on testbed federations for IMT-2020 and beyond (FG-TBFxG) to develop the required application program interfaces (APIs);

r) that ITU-T Study Group 21 has progressed the study of Vehicle-to-Everything (V2X) using IMT systems;

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

s) 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;

t) that the ITU Radiocommunication Sector (ITU-R) is working on the development of IMT-2030,

noting

Resolution 18 (Rev.[New Delhi, 2024]) of th[is assembly], on principles and procedures for the allocation of work to, and strengthening coordination and cooperation among the three ITU Sectors,

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 IMT-2030) 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 ITU-T 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 IMT-2030) with other relevant standards organizations, in order to ensure a productive and practical standards solution for the global telecommunication/information and communication technology (ICT) industry;

2 to advance efficient and effective standardization work on the non-radio aspects of IMT systems as well as applications of relevant network technologies to achieve the SDGs;

3 to promote ITU-T standardization work on the requirements of developing countries related to IMT in general and IMT-2020 and IMT-2030 in particular, while keeping a focus on bridging the digital divide;

4 to be responsible for the development and annual reporting of ITU-T's standards strategy on IMT;

5 to promote standardization work on non-radio aspects of IMT systems to support verticals, such as intelligent manufacturing, improving energy efficiency and reducing network complexity,

instructs Study Group 2 of the ITU Telecommunication Standardization Sector

to continue studies on standardization activities related to non-radio aspects of IMT network management,

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 within its mandate,

instructs Study Group 5 of the ITU Telecommunication Standardization Sector

to continue the studies on standardization activities related to IMT environmental requirements,

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,

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,

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, and share this with relevant groups of ITU-R and ITU-D and external organizations, such as through coordination work ensured by JCA-IMT2020;

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

3 to continue promoting the studies on non-radio aspects of IMT system network requirements and architecture, including network softwarization (e.g. non-radio aspects of cloud radio access network and multi-access edge computing.); network slicing; network capability openness, including open network interconnection and exposure; network management and orchestration; fixed, mobile and satellite convergence; network performance; digital twins; autonomous networks; emerging network technologies; and the application of artificial intelligence and machine learning;

4 to promote JCA-IMT2020 and beyond and to continue coordinating the standardization activities of IMT systems 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,

instructs Study Group 17 of the ITU Telecommunication Standardization Sector

1 to continue promoting the studies on standardization activities related to security and resilience for end-devices, network and applications for IMT systems;

2 to maintain the IMT security standardization roadmap;

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

instructs Study Group 20 of the ITU Telecommunication Standardization Sector

to continue addressing non-radio aspects of IMT related to standardization requirements of Internet of Things (IoT) technologies, including IoT applications in smart sustainable cities and communities (SSC&C),

instructs Study Group 21 of the ITU Telecommunication Standardization Sector

to consider any relevant impact of future vehicular multimedia systems on the standardization of non-radio aspects of IMT systems,

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, enabling technologies and network applications, taking into account specific national and regional requirements, while promoting the participation of developing countries in standardization activities,

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 systems, 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 use cases, and to encouraging and supporting market growth, innovation, collaboration and telecommunication/ICT infrastructure investment;

3 to develop guidance on the economic drivers and sustainability for non-radio aspects of IMT system 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;

2 to share non-radio standards strategy, network evolution experience, application cases, efficient deployment and operation, implementation and best practices of IMT systems in relevant seminars and workshop events, especially in developing countries.

MOD

RESOLUTION 93 (Rev. New Delhi, 2024)

Interconnection of International Mobile Telecommunications networks

(Hammamet, 2016; New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024),

recognizing

a) that, currently, most of the telecommunication operators in the world are migrating from circuit-switched networks to packet-switched networks, and most of them have already established Internet protocol (IP)-based networks for delivering most of their services using a new concept "all over IP";

b) that, currently, International Mobile Telecommunications (IMT) standards are used on the access stratum of operators' networks as one of the ways for delivering voice-over-IP services;

c) that network architectures, roaming principles, numbering issues and charging and security mechanisms that are being used in circuit-switched networks are in most cases not suitable for interconnection of IP-based networks (e.g. 4G, IMT-Advanced, IMT-2020 and beyond) to be used for providing voice, data and video services;

d) that the interconnection of IP-based networks needs to be agreed among all Member States in order to prevent the appearance of new issues related to numbering, roaming, charging, quality of service and security, to name a few;

e) that IP-based voice and video interconnection of IMT systems may require translation from ITU-T E.164 number format to the Universal Resource Identifier (URI);

f) that ENUM is one of the possible solutions to be used for E.164/URI translation for such interconnections;

g) that Resolution 49 (Rev. [Hammamet, 2016]) of th[is assembly] instructs Study Group 2 of the ITU Telecommunication Standardization Sector (ITU-T) to study how ITU could have administrative control over changes that could relate to the international telecommunication resources (including naming, numbering, addressing and routing) used for ENUM;

h) that Resolution 133 (Rev. Bucharest, 2022) of the Plenipotentiary Conference instructs the Secretary-General and the Directors of the Bureaux to take any necessary action to ensure the sovereignty of ITU Member States with regard to Recommendation ITU-T E.164 numbering plans, whatever the application in which they are used;

i) that Resolution 76 (Rev. Hammamet, 2016) of the World Telecommunication Standardization Assembly instructs the Director of the Telecommunication Standardization Bureau to continue to conduct as necessary exploratory activities in each region in order to identify and prioritize the problems faced by developing countries[1] related to achieving interoperability of telecommunication/information and communication technology (ICT) equipment and services,

considering

a) that ENUM is not commonly used around the globe for E.164/URI transfer, and some operators have their private solutions;

b) that some alliances of operators are developing guidelines for interconnection of IMT networks and there are some options available;

c) that the development of interconnection procedures for IMT networks needs to be carried out on an international basis;

d) that development of the conformance and interoperability requirements to support testing of protocols and technologies used for such interconnection is an essential component for developing interoperable equipment that is based on ITU-T Recommendations,

taking into account

a) that, according to the communiqué of the chief technology officers (CTO) meeting which ITU-T conducted in Budapest (October 2015), "*CTOs encouraged ITU-T to initiate studies – including studies on accessibility, data formats, and control and management aspects – with the goal of enabling the global interoperability of such high-quality services, inviting contributions to these studies from operators and related industry experts as well as relevant SDOs*";

b) that, according to the summary report of the ITU Workshop on voice and video services interoperability over fixed-mobile hybrid environments, including IMT-Advanced (LTE) (December 2015, Geneva), "*further ITU standardization activities should focus on the deployment of signalling protocols for VoLTE interconnection, emergency calls on VoLTE-based networks and numbering issues*";

c) the work of ITU-T Study Group 11 on a framework for interconnection of VoLTE/ViLTE-based networks, which aims to specify common requirements regarding the interconnection of VoLTE/ViLTE-based networks;

d) that the development of standards relating to a framework for interconnection of VoLTE/ViLTE-based networks is one of the subjects of the established collaboration agreement between ITU-T Study Group 11 and ETSI TC INT;

e) the successful work of the ITU-T Focus Group on testbed federations for IMT-2020 and beyond,

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

resolves

that ITU-T Recommendations to address network architectures, roaming principles, numbering issues, charging, quality of service, network performance and security mechanisms, as well as interoperability and conformance testing for interconnection of IMT networks shall be progressed as quickly as possible,

instructs the Director of the Telecommunication Standardization Bureau

1 to continue to conduct, as necessary, exploratory activities among telecommunication operators in order to identify and prioritize the problems related to achieving interconnection of IP-based networks such as IMT networks;

2 to submit the results of these activities to the ITU Council for its consideration and required action,

instructs the study groups of the ITU Telecommunication Standardization Sector

1 to identify as soon as possible future ITU-T Recommendations that need to be developed associated with the interconnection of IMT networks;

2 to cooperate, as appropriate, with interested stakeholders and alliances in order to optimize studies on this particular subject,

instructs Study Group 11 of the ITU Telecommunication Standardization Sector

to develop ITU-T Recommendations which specify the framework and signalling architectures to be used for establishing interconnection of IMT networks to achieve interoperability worldwide,

instructs Study Group 2 of the ITU Telecommunication Standardization Sector

to develop ITU-T Recommendations which specify the ENUM architecture to be used for interconnection of IMT networks, including administrative control that could relate to the international telecommunication resources (including naming, numbering, addressing and routing),

instructs Study Group 3 of the ITU Telecommunication Standardization Sector

to study charging options for IP-based voice and video interconnection of IMT networks,

invites Member States and Sector Members

1 to share their experiences regarding interconnection of IMT networks;

2 to contribute to the implementation of this resolution,

invites Member States

to encourage telecommunication operators to assist ITU-T in implementing this resolution.

MOD

RESOLUTION 94 (Rev. New Delhi, 2024)

Standardization work in the ITU Telecommunication Standardization Sector for cloud-based event data technology

(Hammamet, 2016; New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024)

recalling

the relevant provisions of Article 1 of the ITU Constitution, in particular No. 17, which stipulates that the Union is to promote the adoption of measures for ensuring the safety of life through the cooperation of telecommunication services,

considering

a) the growing interest in event data recorders (EDR) to improve the safety and quality of life in all industries, e.g. EDR for the aviation industry, for transportation (automated driving), digital fault recorder (DFR) for utilities (smart grid, smart water management), and cardiac event recorder (CER) for healthcare (connected medical devices/implants);

b) the important role of cloud computing as an enabler of network access to a scalable and elastic pool of shareable physical or virtual resources with self-service provisioning and administration on demand;

c) the need for ensuring security in cloud computing, and in new and emerging telecommunications/information and communication technologies (ICTs);

d) the growing use of cloud-based event data technology in Internet of Things (IoT) for sustainable development,

noting

a) that the ITU Telecommunication Standardization Sector (ITU-T) should play a leading role in the development of standards for EDR application in cloud computing and in new and emerging telecommunications/ICTs;

b) that a standards ecosystem should be created, with ITU-T at its centre,

recognizing

a) the recommendations made by the ITU-T Focus Group on aviation applications of cloud computing for flight data monitoring (FG-AC), studying the feasibility of using cloud computing in an aviation context and of streaming flight data;

b) the relevant achievements in previous study periods of ITU-T Study Groups 13 (cloud computing, big data analytics), 16 (intelligent transport systems (ITS), connected healthcare/e-health), 17 (cloud-computing security) and 20 (IoT and its applications, with an initial focus on smart cities and communities);

c) that ITU-T has unmatched advantages when it comes to requirements and architecture standards;

d) that foundation work on EDR requirements and architecture standards be initiated so that a set of standards may be developed through industry-wide synergy;

e) that real-time cloud-based event data processing technologies can provide benefits in terms of availability, reliability, scalability and cost-effectiveness,

resolves to instruct Study Groups 13, 20 and 21 of the ITU Telecommunication Standardization Sector, each within their mandates

1 to further study and evaluate existing, evolving and new Recommendations with respect to cloud-based event data technology, including event data handling;

2 to make recommendations to the Telecommunication Standardization Advisory Group on how to address the topics that are outside the mandate of the study groups,

instructs Study Group 17 of the ITU Telecommunication Standardization Sector

to develop Recommendations and technical reports on the end-to-end security of cloud-based event data technology, including event data handling,

instructs the Telecommunication Standardization Advisory Group

to drive a concerted effort across relevant study groups to accelerate standardization work on cloud-based event data technology,

instructs the Director of the Telecommunication Standardization Bureau

1 to provide the necessary assistance to speed up standardization work on cloud-based event data technology and to encourage participation and contributions from Member States, particularly developing countries;

2 to organize (a) workshop(s) to collect requirements and inputs on cloud-based event data technology from a wide range of various stakeholders;

3 to assist Member States through knowledge-sharing and capacity building on cloud-based event data technology,

invites Member States, Sector Members, Associates and Academia

to submit contributions for developing standards for cloud-based event data technology.

MOD

RESOLUTION 96 (Rev. New Delhi, 2024)

ITU Telecommunication Standardization Sector studies for combating counterfeit and tampered telecommunication/information and communication technology devices

(Hammamet, 2016; New Delhi, 2024)

The World Telecommunication Standardization Assembly (Rev. New Delhi, 2024),

recalling

a) Resolution 188 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on combating counterfeit and tampered telecommunication/information and communication technology (ICT) devices;

b) Resolution 177 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on conformance and interoperability (C&I);

c) Resolution 176 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on measurement and assessment concerns related to human exposure to electromagnetic fields (EMF);

d) Resolution 79 (Rev. Kigali, 2022) of the World Telecommunication Development Conference (WTDC), on the role of telecommunications/ICTs in combating and dealing with counterfeit and tampered telecommunication/lCT devices;

e) Resolution 47 (Rev. Kigali, 2022) of WTDC, on enhancement of knowledge and effective application of ITU Recommendations in developing countries[1], including C&I testing of systems manufactured on the basis of ITU Recommendations;

f) Resolution 72 (Rev. [Geneva, 2022]) of th[is assembly], on measurement and assessment concerns related to human exposure to EMF;

g) Resolution 62 (Rev. Kigali, 2022) of WTDC, on assessment and measurement of human exposure to EMF;

h) Resolution 182 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on the role of telecommunications/ICTs in regard to climate change and the protection of the environment;

i) Resolution 76 (Rev. [Geneva, 2022]) of th[e World Telecommunication Standardization Assembly (WTSA)], on studies related to C&I testing, assistance to developing countries, and a possible future ITU Mark programme;

j) Resolution 84 (Rev. Kigali, 2022) of WTDC, on combating mobile telecommunication device theft,

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

recognizing

a) the negative impact of counterfeit and tampered telecommunication/lCT devices on governments, manufacturers, vendors, operators, consumers and the environment, such as: loss of revenues, erosion of brand value/intellectual property rights and reputation, network disruptions, poor quality of service (QoS), loss/theft of user information and potential hazard to public health and safety, as well as the generation of e-waste and discouraging efforts aimed at enhancing service affordability;

b) that counterfeit and tampered telecommunication/lCT devices may negatively impact on security and privacy for users;

c) that counterfeit and tampered telecommunication/ICT devices often contain illegal and unacceptable levels of hazardous substances, threatening consumers and the environment;

d) that some countries have conducted awareness campaigns on counterfeit and tampered device issues and deployed successful solutions including regulations in their markets to deter the spread of counterfeit and tampered telecommunication/lCT devices, which could be taken by other countries as useful experiences and case studies;

e) that countries face significant challenges in finding effective solutions to combat counterfeit and tampered telecommunication/ICT devices, given the innovative and creative ways used by persons engaged in this illicit activity to evade enforcement/legal measures;

f) that ITU's Conformity and Interoperability and Bridging Standardization Gap programmes are intended to add value, by bringing clarity to standardization processes and product conformity with international standards;

g) that providing interoperability, safety and reliability should be a key objective of ITU Recommendations;

h) the ongoing work of ITU Telecommunication Standardization Sector (ITU-T) Study Group 11 as the leading expert in the study of combating counterfeit and tampered telecommunication/ICT devices at ITU, and also the related work and studies, in particular those of ITU-T Study Groups 5, 17 and 20 and ITU Telecommunication Development Sector (ITU-D) Study Group 2;

i) that industry initiatives have been created to coordinate activity between operators, manufacturers and consumers,

recognizing further

a) that some countries rely on unique device identifiers, such as International Mobile Equipment Identity (IMEI) in the Equipment Identity Register (EIR), to limit and deter the proliferation of counterfeit and tampered telecommunication/ICT devices;

b) that, as stated in Resolution 188 (Busan, 2014), Recommendation ITU-T X.1255, which is based on the digital object architecture, provides a framework for discovery of identity management information,

noting

a) that individuals or entities engaged in manufacturing and trading of counterfeit and tampered telecommunication/ICT devices are continually developing and enhancing their capabilities and means of illegal activities to circumvent Member States' and other affected parties' legal and technical efforts to combat counterfeit and tampered products and telecommunication/ICT devices;

b) that supply and demand economics for counterfeit and tampered telecommunication/ICT devices complicate attempts to tackle the global illegal market, and that no single solution is easily envisaged,

aware

a) of the current work and outputs of ITU-T Study Group 11, namely Recommendations ITU-T Q.5050 series and other ongoing studies such as guidelines and best practices, including the use of unique telecommunication/ICT device identifiers, for combating counterfeit and tampered telecommunication/ICT devices;

b) of the current work and studies in ITU-T Study Group 20, on Internet of things (IoT), IoT identity management and the increasing importance of IoT devices to society;

c) of the ongoing work and studies in ITU-T Study Group 2, on operational aspects of service provision and telecommunication management, and the importance of identity management for telecommunications;

d) that there is ongoing cooperation with standards development organizations (SDOs), the World Trade Organization (WTO), the World Intellectual Property Organization (WIPO), the World Health Organization (WHO) and the World Customs Organization (WCO) on matters related to counterfeit and tampered products;

e) that governments play an important role in combating the manufacture and international trade of counterfeit and tampered products including telecommunication/ICT devices, by formulating and applying the appropriate strategies, policies and legislation;

f) that tampering with unique telecommunication/ICT device identifiers diminishes the effectiveness of solutions adopted by countries;

g) of the current related work and studies in ITU-T study groups on emerging technologies, including distributed information-sharing solutions,

considering

a) that, in general, telecommunication/ICT devices that do not comply with a country's applicable national conformity processes and regulatory requirements or other applicable legal requirements should be considered unauthorized for sale and/or activation on telecommunication networks of that country;

b) that a counterfeit telecommunication/ICT device is a product that explicitly infringes the trademark, copies hardware or software designs, or infringes brand or packaging rights of an original or authentic product and, in general, infringes applicable national and/or international technical standards, regulatory requirements or conformity processes, manufacturing licensing agreements, or other applicable legal requirements;

c) that a reliable unique identifier shall be unique for each equipment it aims to identify, can only be assigned by a responsible management entity and should not be changed by unauthorized parties;

d) that a tampered (making unauthorized changes to) telecommunication/ICT device has components, software, a unique identifier, items protected by intellectual property rights, or trademark tentatively or effectively altered without the explicit consent of the manufacturer or its legal representative;

e) that some countries have started implementing measures that aim to deter counterfeit and tampered telecommunication/ICT devices based on an identification mechanism, which can also be effective for the control of tampered telecommunication/ICT devices;

f) that tampering telecommunication/ICT devices, especially the ones that clone a legitimate identifier, may diminish the effectiveness of solutions adopted by the countries when addressing counterfeiting;

g) that a framework for discovery and management of identity information can assist in combating counterfeiting and tampering of telecommunication/ICT devices;

h) that ITU and other relevant stakeholders have key roles to play in fostering coordination between the parties concerned in order to study the impact of counterfeit and tampered telecommunication/ICT devices and the mechanism for limiting their use, and to identify ways of dealing with them both internationally and regionally;

i) the importance of maintaining user connectivity,

resolves

1 to explore ways and means, within the scope of ITU, to combat and deter counterfeiting and tampering of telecommunication/ICT devices in order to protect governments, telecommunication providers, industry and consumers from the negative impacts of counterfeit and tampered telecommunication/ICT devices;

2 that ITU-T Study Group 11 should be the lead study group in the area of combating counterfeit and tampered telecommunication/ICT devices;

3 to consider solutions to be used in order to differentiate between authentic/genuine and counterfeit or tampered telecommunication/ICT devices,

instructs the Director of the Telecommunication Standardization Bureau, in close collaboration with the Director of the Telecommunication Development Bureau

1 to organize workshops and events across the ITU regions to promote the work in this field, involving all stakeholders and raising awareness of the impact of counterfeit and tampered telecommunication/ICT devices;

2 to assist developing countries in preparing human resources to combat the spread of counterfeit and tampered telecommunication/ICT devices, by providing capacity-building and training opportunities based on different technological solutions;

3 to work in close collaboration with relevant stakeholders, such as WTO, WIPO, WHO and WCO, on activities relating to combating counterfeit and tampered telecommunication/ICT devices, including restricting the trading, export and circulation of these telecommunication/ICT devices internationally;

4 to coordinate activities relating to combating counterfeit and tampered telecommunication/ICT devices through ITU-T Study Group 11 and focus groups;

5 to assist Member States in taking the necessary actions to apply relevant ITU-T Recommendations for combating counterfeit and tampered telecommunication/ICT devices, including the use of conformity assessment systems;

6 to promote and share information on best practices and emerging trends developed by industry and governments in combating counterfeit and tampered telecommunication/ICT devices,

instructs the Director of the Telecommunication Standardization Bureau

1 to collaborate with industry associations, consortia and forums to identify possible technological measures, both software and hardware, that may be developed to deter tampering and the use and spread of counterfeit and tampered telecommunication/ICT devices;

2 to submit the results of these activities to the ITU Council for its consideration and required action;

3 to involve experts and external entities as appropriate,

instructs the Director of the Telecommunication Standardization Bureau, in close collaboration with the Directors of the Radiocommunication and Telecommunication Development Bureaux

1 to assist Member States in addressing their concerns with respect to counterfeit and tampered telecommunication/ICT devices, through information sharing at regional or global level, including conformity assessment systems;

2 to assist all the membership, considering relevant ITU-T Recommendations, in taking the necessary actions to prevent or detect the tampering (making unauthorized changes to) and/or replication of unique telecommunication/ICT device identifiers, and interacting with other SDOs related to these matters,

instructs Study Group 11 of the ITU Telecommunication Standardization Sector, in collaboration with other study groups concerned

1 to continue developing Recommendations, technical reports and guidelines to address the problem of counterfeit and tampered telecommunication/ICT devices and to support the Member States in anti-counterfeiting/tampering activities on different types of devices;

2 to collect, analyse and exchange information about counterfeiting and tampering trends in the telecommunications/ICT sector, study on use of emerging technologies and relevant solutions in combating counterfeit and tampered telecommunication/ICT devices;

3 to study secure identifiers and their potential to be used in combating counterfeit and tampered telecommunication/ICT devices, in collaboration with ITU-T Study Groups 2, 17 and 20;

4 to study methods of assessing and verifying identifiers used for purposes of combating counterfeit and tampered telecommunication/ICT devices;

5 with the involvement of relevant standardization organizations, to develop mechanisms as appropriate for identifying counterfeit and tampered telecommunication/ICT devices, by means of unique identifiers that are resistant to replication and respond to confidentiality/security requirements;

6 to study possible solutions, including frameworks to discover identity management information, that could support combating of counterfeit and tampered telecommunication/ICT devices;

7 to identify a list of technologies/products, used for testing conformance with ITU-T Recommendations, in order to help in efforts to combat counterfeit ICT production,

invites Member States

1 to take all necessary measures, including collaboration, cooperation and exchange of experiences and expertise with other Member States, to combat counterfeit and tampered telecommunication/ICT devices in a country/region, as well as globally;

2 to promote the adoption of national legal and regulatory frameworks to combat counterfeit and tampered telecommunication/ICT devices;

3 to consider measures to mitigate the import, circulation, advertisement and sale of counterfeit and tampered telecommunication ICT/devices from the market;

4 to consider solutions to be used to differentiate between authentic/genuine and counterfeit or tampered telecommunication/ICT devices, e.g. establishing national reference databases of authorized equipment and strengthening support for industry initiatives;

5 to conduct awareness campaigns for consumers on the adverse impact of counterfeit and tampered products and telecommunication/ICT devices on the environment and on their own health, as well as on the degraded reliability, QoS and performance of such telecommunication/ICT devices;

6 to consider making available means for consumers to verify the authenticity of telecommunication/ICT devices,

invites Sector Members

to collaborate with governments, administrations and telecommunication regulators in combating counterfeit and tampered telecommunication/ICT devices,

invites all the membership

1 to participate actively in ITU studies relating to combating counterfeit and tampered telecommunication/lCT devices by submitting contributions;

2 to take the necessary actions to prevent or detect tampering of unique telecommunication/ICT device identifiers, in particular regarding cloned telecommunication/ICT devices;

3 to collaborate and share expertise in this area.

MOD

RESOLUTION 97 (Rev. New Delhi, 2024)

Combating mobile telecommunication device theft

(Hammamet, 2016; Geneva, 2022; New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024),

recalling

a) Resolution 196 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on protecting telecommunication service users/consumers;

b) Resolution 189 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on assisting Member States to combat and deter mobile device theft;

c) Resolution 188 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on combating counterfeit and tampered telecommunication/information and communication technology (ICT) devices;

d) Resolution 174 (Rev. Busan, 2014) of the Plenipotentiary Conference, on ITU's role with regard to international public policy issues relating to the risk of illicit use of ICTs;

e) Resolution 79 (Rev. Kigali, 2022) of the World Telecommunication Development Conference (WTDC), on the role of telecommunications/ICTs in combating and dealing with counterfeit and tampered telecommunication/ICT devices;

f) Resolution 64 (Rev. Kigali, 2022) of WTDC, on protecting and supporting users/consumers of telecommunication/ICT services,

recognizing

a) that governments and industry have implemented actions to deter and combat mobile device theft;

b) that the theft of user-owned mobile devices may lead to the criminal use of telecommunication/ICT services, applications and user information resulting in economic losses for the lawful owner and user;

c) that measures to combat mobile device theft adopted by some countries rely on unique device identifiers, such as International Mobile Equipment Identity (IMEI), and therefore tampering with (changing without authorization) unique identifiers can diminish the effectiveness of these solutions;

d) that some solutions to combat counterfeit telecommunication/ICT devices can also be used to combat the use of stolen telecommunication/ICT devices, in particular those devices whose unique identifiers have been tampered with for the purpose of re-introducing them to the market;

e) that studies on combating counterfeiting, including of telecommunication/ICT devices, and the systems adopted on the basis on those studies, can facilitate the detection and blocking of devices and prevention of their further use,

considering

that technological innovation driven by ICTs has significantly modified the ways in which people access telecommunications,

aware

a) of the related ongoing work in ITU Telecommunication Standardization Sector (ITU-T) Study Group 11 on combating counterfeit and mobile device theft;

b) of the related ongoing work in ITU-T Study Group 17 on security;

c) of the related ongoing work in ITU-T study groups on applying emerging technologies for distributed information sharing solutions,

resolves

1 that ITU-T should explore all applicable solutions and develop ITU-T Recommendations to combat and deter mobile device theft and its negative effects, offering all interested parties a forum for encouraging discussion, member cooperation, the exchange of best practices and guidelines and the dissemination of information on combating mobile device theft;

2 that ITU-T should, in collaboration with the relevant standards organizations, develop solutions to address the problem of replication of unique identifiers;

3 that ITU-T Study Group 11 should be the lead study group in ITU-T on activities relating to combating mobile telecommunication device theft,

instructs the Director of the Telecommunication Standardization Bureau, in collaboration with the Directors of the Radiocommunication Bureau and Telecommunication Development Bureau

1 to compile and share information on best practices developed by industry or governments and promising trends in combating mobile device theft, especially from regions where the rate of mobile phone theft has fallen, including statistics on their effectiveness;

2 to facilitate, in collaboration with industry organizations and standards-development organizations (SDOs), the standardization and dissemination of Recommendations, technical reports and guidelines to combat mobile device theft and its negative effects, specifically regarding the exchange of identifiers of mobile devices reported stolen or lost, and to prevent lost or stolen mobile devices from accessing mobile networks;

3 to consult with the Sector's relevant study groups, manufacturers of mobile devices, manufacturers of telecommunication network components, operators, telecommunication SDOs as well as developers of promising technologies related to these matters, in order to identify existing and future technological measures, both software and hardware, to mitigate the consequences of the use of stolen mobile devices;

4 to provide assistance, within ITU-T's expertise and within available resources, as appropriate, in cooperation with relevant organizations, to Member States, if so requested, in order to reduce mobile device theft and the use of stolen mobile devices in their countries;

5 to share information and experiences on how to control tampering (unauthorized changing) of unique mobile telecommunication/ICT device identifiers and prevent tampered devices from accessing mobile networks,

instructs Study Groups 11 and 17 of the ITU Telecommunication Standardization Sector, within their mandates and in collaboration with other interested study groups

1 to develop Recommendations, technical reports and guidelines to address the problem of mobile telecommunication device theft and its negative effects;

2 to study any possible solutions to combat the use of stolen mobile telecommunication devices with tampered (changed without authorization) identities and to prevent them from accessing the mobile network;

3 to study the existing and emerging technologies that can be used as a tool for combating mobile telecommunication device theft;

4 to draw up a list of identifiers used in mobile telecommunication/ICT devices,

invites Member States and Sector Members

1 to take all necessary measures, including raising awareness, in order to combat mobile telecommunication device theft and its negative effects;

2 to cooperate and share expertise, use cases and best practices in this area on ongoing efforts to combat and prevent mobile telecommunication device theft;

3 to collaborate with industry and other stakeholders to share best practices and solutions for user information protection;

4 to participate actively in ITU studies relating to the implementation of this resolution by submitting contributions;

5 to take the necessary actions to prevent or discover and control tampering (unauthorized changing) of unique mobile telecommunication/ICT device identifiers and prevent tampered and stolen devices from accessing mobile networks.

MOD

RESOLUTION 98 (Rev. New Delhi, 2024)

Enhancing standardization of Internet of Things, digital twins, and smart sustainable cities and communities for global development

(Hammamet, 2016; Geneva, 2022; New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024),

recalling

a) Resolution 197 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on facilitating the Internet of things (IoT) and smart sustainable cities and communities (SSC&C);

b) Resolution 66 (Rev. Dubai, 2023) of the Radiocommunication Assembly, on studies related to wireless systems and applications for the development of IoT;

c) Resolution 85 (Rev. Kigali, 2022) of the World Telecommunication Development Conference, on facilitating IoT and SSC&C for global development;

d) the Global Pulse initiative launched by the United Nations Secretary-General to promote opportunities to use big data for sustainable development and humanitarian action;

e) the objectives of the ITU Telecommunication Standardization Sector (ITU-T) in Resolution 71 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, which emphasizes collaboration and international cooperation in fulfilling the ITU-T's mission;

f) Resolution 123 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on bridging the standardization gap between developing[1] and developed countries, which in particular highlights the need to extend and facilitate cooperation with international, regional and national standardization bodies;

g) the relevant ITU-T Y.4000 series Recommendations that address IoT, digital twins, and SSC&C;

h) Recommendation ITU-T Y.4000, on the overview of IoT, which defines IoT as "a global infrastructure for the information society, enabling advanced services by interconnecting (physical and virtual) things based on existing and evolving interoperable information and communication technologies";

i) Recommendation ITU-T Y.4600, on the requirements and capabilities of a digital twin system for smart cities, emphasizing digital twin technology as a foundational enabler for SSC&C;

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

j) Recommendation ITU-T Y.4900, on overview of key performance indicators in smart sustainable cities, which defines smart sustainable cities[2];

k) Recommendation ITU-T Y.4903, on key performance indicators for smart sustainable cities to assess the achievement of sustainable development goals (SDGs),

considering

a) that it is expected that the development of IoT technologies will make it possible to connect billions of devices to the network, impacting almost all aspects of daily life;

b) that IoT devices connected to these networks collect and transmit vast amounts of data, which might include personal data that can present security challenges and vulnerabilities;

c) the importance of IoT and digital twins in contributing to the achievement of the relevant SDGs;

d) that digital twins can be used to achieve specific goals of SSC&C by conducting simulations;

e) that various sectors, such as energy, transportation, health, agriculture, education, environmental protection, and electronic public services, are collaborating for the development of IoT, digital twins, and SSC&C applications and services across verticals;

f) that IoT, digital twin, and SSC&C can be key enablers for the information society and offer the opportunity to transform the urban and rural infrastructure, taking advantage, among other things, of the efficiencies of smart buildings, smart hospitals, intelligent transport systems, smart energy management, smart water management, smart education, smart agriculture and aquaculture, smart manufacturing, electric vehicles, and smart energy storage, working together with services for the benefit of users;

g) that a multistakeholder approach (which includes government, academia, industry and civil society) is crucial to planning for and building truly people-centred smart cities;

h) that citizen engagement is crucial for smart cities, fostering participation, empowering citizens, stimulating innovation, and resolving issues through public initiatives;

i) that SSC&C can use IoT and digital twin to discover and respond to regional and/or global crises such as natural disasters and epidemics/pandemics;

j) that research and development of new and emerging telecommunication/ICT aspects of IoT, artificial intelligence (AI), digital twins, metaverse and citiverse can help to improve global development, delivery of basic services and monitoring and evaluation programmes in different sectors;

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[2] A smart sustainable city is an innovative city that uses information and communication technologies (ICTs) and other means to improve quality of life, efficiency of urban operation and services and competitiveness, while ensuring that it meets the needs of present and future generations with respect to economic, social, environmental, as well as cultural aspects." (Note: City competitiveness refers to policies, institutions, strategies and processes that determine the city's sustainable productivity)

k) that IoT has evolved into a wide variety of applications with different aims and requirements, as a result of which it is necessary to work in coordination with other international standardization bodies and other related organizations in order to integrate better standardization frameworks;

l) that standards as well as public-private partnerships should reduce the time and cost for implementing IoT and digital twins with benefits in terms of economies of scale;

m) that interoperability is a necessary enabler for the development of IoT systems and services on a global scale;

n) that ITU-T should play a leading role in the development of IoT, digital twins, and SSC&C-related standards;

o) the importance of collaboratively assessing and standardizing IoT, digital twins, and SSC&C data interoperability;

p) that in IoT, digital twins, and SSC&C environments, connected devices and applications represent a diverse range of ecosystems;

q) that security aspects are a key component in the development of a reliable and secure IoT ecosystem;

r) that, as the citiverse extends beyond the physical boundaries of a city into the digital realm, further analysis and research are required on both the technological standardization and the effective management of citiverse applications;

s) that the evaluation and assessment of SSC&C and their digital transformation can help measure the implementation and success of SSC&C goals;

t) that open source is important for SSC&C in developing smart sustainable solutions,

recognizing

a) that industry forums, standards-development organizations (SDOs) and partnership projects are developing technical specifications for IoT;

b) the role of the ITU Radiocommunication Sector (ITU-R) in conducting studies on the technical and operational aspects of radio networks and systems for IoT;

c) the role of the ITU Telecommunication Development Sector (ITU-D) in encouraging telecommunication/ICT development at the global level, and in particular the relevant work carried out by ITU-D study groups;

d) that the purpose of the Joint Coordination Activity on Internet of things and smart cities and communities (JCA-IoT and SC&C), under the leadership of ITU-T Study Group 20, is to coordinate the work on IoT, digital twins, and SSC&C within ITU, and to seek cooperation from external bodies working in the field of IoT, digital twins, and SSC&C;

e) that much progress has been made in efforts to develop collaboration between ITU-T and other organizations, such as, but not limited to, active participation in different committees and working groups of Joint Technical Committee 1 of the International Organization for Standardization and the International Electrotechnical Commission (ISO/IEC JTC 1) and of the European Telecommunications Standards Institute (ETSI), and there has also been collaboration with forums such as oneM2M, the Alliance for Internet of Things Innovation and the LoRa Alliance, and collaboration on intelligent transport system (ITS) communication standards;

f) that ITU-T Study Group 20 is responsible for studies and standardization work relating to IoT, digital twins, and SSC&C, including related digital services, such as effective energy management, digital health, and citiverse;

g) that ITU-T Study Group 20 is also working on standardization, security, privacy, trust, and identification issues related to IoT, digital twins, and SSC&C in collaboration with ITU-T Study Groups 17 and 2, in accordance with their mandates as specified in Resolution 2 (Rev. New Delhi, 2024) of this assembly;

h) that ITU-T Study Group 20 is also a platform where the ITU-T membership, including Member States, Sector Members, Associates and Academia, can come together to exert an impact on the drafting of international standards for IoT and their implementation;

i) that United for Smart Sustainable Cities (U4SSC) is a United Nations initiative coordinated by ITU, the United Nations Economic Commission for Europe (UNECE), United Nations Environment Programme (UNEP),the United Nations Human Settlements Programme (UN-Habitat) and supported by 19 United Nations entities to achieve the SDGs, including SDG 11 (Make cities and human settlements inclusive, safe, resilient and sustainable);

j) that U4SSC is supporting cities and countries in leveraging the full potential of digital transformation and the SDGs;

k) that the ITU Focus Group on metaverse (FG-MV) has explored the role of metaverse in accelerating digital transformation and achieving the SDGs;

l) the significant challenges that developing countries face in implementing and maintaining telecommunications and IoT technologies for SSC&C;

m) the Global Initiative on Virtual Worlds – Discovering the CitiVerse[3] has been launched by ITU, United Nations International Computing Centre (UNICC) and Digital Dubai during the first UN Virtual Worlds Day to foster open, interoperable and innovative virtual worlds that can be used safely and with confidence in SSC&C;

n) the importance of engaging with the work of the Global Initiative on Virtual Worlds – Discovering the CitiVerse;

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[3] The Global Initiative on Virtual Worlds – Discovering the CitiVerse aims to explore and harness the potential of virtual worlds and citiverse. This initiative serves as a global platform that aims at fostering open, interoperable and innovative virtual worlds that can be used safely and with confidence by people, businesses and public services.

o) that the Digital Transformation Dialogues webinars (DTD)[4] provide an avenue for disseminating knowledge and expanding the understanding about the rapidly evolving landscape of new and emerging telecommunications/ICTs and standardization, including IoT, AI, digital twins, and metaverse for SSC&C,

resolves to instruct Study Group 20 of the ITU Telecommunication Standardization Sector

1 to develop ITU-T Recommendations focused on IoT, digital twins, and SSC&C, addressing a broad range of areas, including, but not limited to, new and emerging telecommunications/ICTs, such as metaverse for SSC&C, and digital services and solutions for vertical industries;

2 to continue, within its mandate, to work with a special focus on the design of a roadmap and harmonized and coordinated international telecommunication standards for the development of IoT, digital twins, and SSC&C, taking into account the needs of each region and Member States, as well as the wide variety of use cases and applications, while ensuring that IoT, digital twins, and SSC&C are open, adaptable, sustainable and interoperable, thereby fostering a competitive environment and facilitating the seamless integration of devices and platforms;

3 to collaborate with IoT-, digital twins-, and SSC&C-related standards organizations and other stakeholders such as industry forums and associations, consortia, SDOs and United Nations entities, as well as other relevant ITU-T study groups, taking into account relevant work;

4 to collate, evaluate, assess and share IoT use cases from the interoperability and standardization standpoints for data and information exchange;

5 to develop ITU-T Recommendations aimed at using IoT for the development of smart communities with a focus on holistic rural development;

6 to develop implementation guidelines aimed at assisting developing countries based on ITU-T Study Group 20 deliverables related to the creation of SSC&C;

7 to leverage the use of open source in the development and implementation of IoT and digital twins standards in SSC&C;

8 to explore and study the concepts and frameworks of citiverse in order to enhance urban planning, sustainability, and citizen engagement,

resolves to instruct Study Groups 20, 17 and 2 of the ITU Telecommunication Standardization Sector, in accordance to their scope and mandate as specified in Resolution 2

to develop ITU-T Recommendations on security, privacy, trust, and identification standards to address specific requirements for IoT, digital twins, and SSC&C, taking into consideration existing Recommendations, increasing emerging security threats and loss of credit or trust,

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[4] The Digital Transformation Dialogues webinars (DTD) offer a dynamic platform to facilitate a deeper understanding of new and emerging telecommunications/ICTs to reshape traditional processes, improve operational efficiency and unlock new possibilities for innovation and standardization.

instructs the Director of the Telecommunication Standardization Bureau

1 to provide necessary assistance in order to take advantage of every opportunity, within the assigned budget, to promote quality standardization work in a timely manner, and to communicate with telecommunication and ICT industries in order to promote their participation in ITU-T's standardization activities on IoT, digital twins, and SSC&C;

2 to carry out, in collaboration with Member States and cities, pilot projects in cities and communities related to SSC&C key performance indicator (KPI) assessment activities, aimed at facilitating the deployment and implementation of IoT, digital twins, and SSC&C standards worldwide;

3 to continue to support U4SSC, and share its deliverables with ITU-T Study Group 20 and other study groups concerned;

4 to accelerate the implementation of U4SSC KPIs as a standard for smart sustainable cities' self-assessment in collaboration with Member States, Sector Members, Associates and Academia to promote the deployment of the U4SSC KPIs and their implementation worldwide;

5 to continue encouraging cooperation with other international SDOs, industry forums, other related organizations, and global projects and initiatives, in order to increase the development of international telecommunication standards and reports that facilitate the interoperability of IoT, digital twins, and SSC&C services;

6 to support the ITU membership in developing strategies and best practices related to strengthening the cybersecurity aspects of IoT, digital twins, and SSC&C, in collaboration with other relevant SDOs, industry forums and consortia;

7 to continue organizing DTD webinars with a special focus on IoT, digital twins, and SSC&C in order to disseminate knowledge on new and emerging telecommunications/ICTs and related international standards;

8 to encourage the development of eco-friendly, and efficient IoT solutions that promote environmental sustainability in urban and rural communities,

instructs the Director of the Telecommunication Standardization Bureau, in collaboration with the Directors of the Telecommunication Development Bureau and the Radiocommunication Bureau

1 to prepare reports considering, in particular, the needs of developing countries in terms of the study of IoT and its applications, sensor networks, services and infrastructure, taking into account the results of work being done in ITU-R and ITU-D to ensure coordination of efforts;

2 to provide support to Member States in implementing U4SSC KPIs for smart sustainable cities;

3 to foster joint work among ITU Sectors in order to discuss the various aspects related to the development of the IoT, digital twins ecosystem and solutions for SSC&C, in the context of the achievement of the SDGs and within the framework of the World Summit on the Information Society;

4 to continue disseminating ITU publications on IoT, digital twins, and SSC&C;

5 to organize forums, seminars, training programmes and workshops including DTD webinars, and to support Member States, in particular developing countries;

6 to report to the next world telecommunication standardization assembly on progress made in the organization of forums, seminars, training programmes and workshops dedicated to developing the capacity of developing countries;

7 to assist developing countries in the implementation of Recommendations, technical reports and guidelines related to IoT, digital twins, and SSC&C,

invites the ITU Telecommunication Standardization Sector membership

1 to submit contributions and continue participating actively in the work of Study Group 20 and in the studies on IoT, digital twins, and SSC&C being conducted by ITU-T, including new and emerging telecommunications/ICTs related to IoT, digital twins, and SSC&C;

2 to consider developing frameworks, guidelines and other mechanisms to enhance the deployment, accessibility, and usability of IoT, digital twins, and SSC&C, thereby making cities and communities inclusive for persons with disabilities and persons with specific needs;

3 to develop master plans and exchange use cases and best practices in order to promote the IoT and digital twin ecosystem, as well as SSC&Cs, and to promote social development and economic growth in order to achieve the SDGs;

4 to cooperate and exchange experiences and knowledge related to this topic;

5 to support the organization of forums, seminars workshops and training programmes on IoT, digital twins, and SSC&C in order to promote innovation, development and growth in IoT, digital twins, and SSC&C;

6 to take necessary measures to facilitate the growth of IoT, digital twins, and SSC&C in the implementation of standards;

7 to participate in U4SSC initiative and Global Initiative on Virtual Worlds – Discovering the CitiVerse,

invites Member States, Sector Members, Associates and Academia, as appropriate

to cooperate and participate actively in the implementation of this resolution.

MOD

RESOLUTION 99 (Rev. New Delhi, 2024)

Restructuring of the ITU Telecommunication Standardization Sector study groups

(Geneva, 2022; New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024),

recalling

a) No. 105 of the ITU Constitution and No. 197 of the ITU Convention;

b) Resolution 151 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on improvement of results-based management in ITU,

considering

a) the provisions of the Constitution and Convention related to strategic goals and objectives of the Union;

b) the strategic goals and thematic priorities of the Union, as set out in the strategic plan for the Union for 2024-2027, contained in Annex 1 to Resolution 71 (Rev. Bucharest, 2022) of the Plenipotentiary Conference;

c) Resolution 122 (Rev. Guadalajara, 2010) of the Plenipotentiary Conference, on the evolving role of the World Telecommunication Standardization Assembly (WTSA);

d) Resolution 2 (Rev. [New Delhi, 2024]) of th[is assembly], on ITU-T study group responsibilities and mandates;

e) § 44 of the Declaration of Principles of the World Summit on the Information Society, emphasizing that standardization is one of the essential building blocks of the information society,

recognizing

a) that, since the standardization landscape continues to evolve, ITU-T should consider how to adapt to rapidly changing circumstances in line with the expectations of public and private-sector participants through, among other aspects, through ongoing review of the study group structure using evidence-based principles continued analysis of restructuring of ITU-T study groups;

b) that the restructuring of study groups requires that it be a consequence and the result of a clear and a thorough analysis that will allow mandates to address the evolution of telecommunications/information and communication technologies and increase the efficiency and effectiveness of ITU and its collaboration with other organizations;

c) that possible changes to the ITU-T study group structure require an evidence-based approach and agreed foundational principles in order to avoid fragmentation and achieve coherent outcomes,

noting

a) that the Telecommunication Standardization Advisory Group (TSAG) has progressed the action plan for the analysis of ITU-T study group restructuring in accordance with the instruction of WTSA-20;

b) that discussions in the TSAG Rapporteur Group on work programme and restructuring (RG-WPR) have demonstrated that this work should continue,

resolves

1 to continue analysing ITU-T study group restructuring within TSAG using an evidence-based approach, taking into account the action plan referred to above;

2 that TSAG has the responsibility to manage the analysis of ITU-T study group restructuring based upon contributions to TSAG from Member States and ITU-T Sector Members,

instructs the Telecommunication Standardization Advisory Group

1 to undertake, monitor and guide the work through a rapporteur group or other appropriate group, and make a progress report on the implementation of an action plan for the analysis of ITU-T study group restructuring at each TSAG meeting;

2 to provide a progress report on the analysis to the study groups after each TSAG meeting;

3 to submit a report with recommendations for consideration by the next WTSA,

instructs the study groups of the ITU Telecommunication Standardization Sector

to consider, review and share feedback, as appropriate, on the progress reports to and from TSAG,

instructs the Director of the Telecommunication Standardization Bureau

to provide the necessary assistance to TSAG in the implementation of this resolution,

invites ITU Member States and Sector Members

to participate in and contribute to the implementation of this resolution.

MOD

RESOLUTION 100 (Rev. New Delhi, 2024)

A common emergency number for Africa

(Geneva, 2022; New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024),

recalling

a) that Resolution 136 (Rev. Bucharest, 2022) of the Plenipotentiary Conference encourages Member States to explore the possibility of introducing a globally harmonized emergency number to supplement existing domestic emergency numbers, taking into account the relevant Recommendations of the ITU Telecommunication Standardization Sector (ITU-T);

b) that Recommendation ITU-T E.161.1 provides that a Member State that is planning to introduce an emergency number could use either 112 or 911; and that a Member State that is planning to introduce a second alternative emergency number could use either 112 or 911, or both, which should be routed to the existing emergency number;

c) that Resolution 34 (Rev. Kigali, 2022) of the World Telecommunication Development Conference invites Member States to consider introducing, in addition to their existing emergency numbers, a harmonized national/regional number for access to emergency services, taking into account the relevant ITU-T Recommendations,

considering

the progress made in the implementation of this resolution during the period 2022-2024, and the report of the Director of the Telecommunication Standardization Bureau (TSB) to this assembly, which show:

i) that not all Member States in Africa are using 112 as the single emergency number selected for the first time;

ii) that not all Member States in Africa are using 911 as a secondary alternative emergency number;

iii) that some Member States in Africa have not implemented Recommendation ITU-T E.161.1;

iv) that there appears to be a trend to use numbers other than 112 and/or 911 for emergency communication by Member States in Africa;

v) that such practices have an unfavourable effect on ease of access to emergency services for citizens of the African continent who move from one country to another;

vi) that such practices have an unfavourable effect on ease of access to emergency services for citizens from other parts of the world, since the numbers being used to access emergency services are not similar to what they are used to, i.e. 112 or 911,

noting

a) relevant ITU-T Recommendations, in particular:

i) Recommendation ITU-T E.161.1: Guidelines to select Emergency Number for public telecommunication networks;

ii) Recommendation ITU-T E.161.1 Amendment 1 (2009): Guidelines to select Emergency Number for public telecommunication networks;

iii) Recommendation ITU-T E.101: Definitions of terms used for identifiers (names, numbers, addresses and other identifiers) for public telecommunication services and networks in the ITU-T E-series Recommendations;

iv) ITU-T Q-series Recommendations – Supplement 47: Emergency services for IMT-2000 networks – Requirements for harmonization and convergence;

v) Recommendation ITU-T E.164 – Supplement 6: Guidelines for identifying and selecting globally harmonized numbers;

b) relevant resolutions:

i) Resolution 136 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on use of telecommunications/information and communication technologies for humanitarian assistance and for monitoring and management in emergency and disaster situations, including health-related emergencies, for early warning, prevention, mitigation and relief, in particular *encourages Member States* 9;

ii) Resolution 2 (Dubai, 2012) of the World Conference on International Telecommunications, on globally harmonized national number for access to emergency services,

noting further

a) that some countries and regions have adopted national laws, directives and recommendations regarding the use of emergency numbers;

b) that some mobile devices have been hard-coded with either 112 and/or 911;

c) that there is no provision for TSB to provide assistance to countries trying to implement Recommendation ITU-T E.161.1;

d) that there is no provision for TSB to provide technical assistance to countries trying to set up emergency numbers,

reaffirming

that it is the sovereign right of each country to regulate its telecommunications and, as such, regulate the provision of emergency services,

resolves to instruct the Director of the Telecommunication Standardization Bureau in cooperation with the Director of the Telecommunication Development Bureau

1 to continue to provide technical assistance to Member States in Africa, within available resources and existing budgetary limits, in the implementation of a common emergency number in line with Recommendation ITU-T E.161.1;

2 to report to the World Telecommunication Standardization Assembly on the progress achieved in implementing this resolution, which is intended to improve access to emergency services,

invites Member States particularly in the Africa region

1 to implement the provisions of Recommendation ITU-T E.161.1 and, in particular, to consider 112 for use as a primary emergency number and 911 for use as a secondary, alternative emergency number;

2 that have not implemented a common emergency number in line with Recommendation ITU-T E.161.1 to seek technical assistance from TSB;

3 to consider having mechanisms or guidelines that would assist in the implementation of this resolution;

4 to share their updated numbering plan information, including emergency numbers, in accordance with Recommendation ITU-T E.129.

ADD

RESOLUTION COM4/DPI (New Delhi, 2024)

Enhancing standardization activities on digital public infrastructure

(New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024),

recalling

a) No. 13 of Article 1 of the ITU Constitution, which establishes that the Union shall in particular facilitate the worldwide standardization of telecommunications, with a satisfactory quality of service;

b) that the strategic plan for the Union for 2024-2027, approved by means of Resolution 71 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, establishes sustainable digital transformation as a strategic goal of the Union in facilitating progress towards the implementation of the World Summit on the Information Society (WSIS) action lines and the United Nations 2030 Agenda for Sustainable Development;

c) that ITU is co-leading the High-Impact Initiative on Digital Public Infrastructure (Scaling inclusive and open digital ecosystems for the Sustainable Development Goals (SDGs)) with the United Nations Development Programme,

recognizing

a) that relevant ITU-T study groups have been involved in activities related to telecommunication/information and communication technology (ICT) standardization aspects of digital public infrastructure;

b) that development of standards for the telecommunication/ICT aspects of digital public infrastructure building blocks contribute to the development of an open and interoperable digital public infrastructure ecosystem,

considering

a) that accelerating progress towards the SDGs requires inclusive digital transformation, and that digital public infrastructure could maximize the opportunities for digitalization to support the SDGs;

b) that the availability and accessibility of high-quality digital connectivity based on high-performance, secure and resilient digital public infrastructure is critical for the future;

c*)* that there is also a need to extend and facilitate international collaboration on standards for digital public infrastructure among standards-development organizations (SDOs), academia and institutions with primary responsibility for standards development, within their respective mandates, with a view to minimizing duplication of work and achieving efficient use of resources,

taking into account

a) that developing countries[1] could benefit from the application and development of telecommunication/ICT standards that enable digital public infrastructure;

b) the work of the GovStack Global Initiative in the ITU Telecommunication Development Sector, towards development of technical specifications for components of the digital public infrastructure,

resolves

to foster cooperation and collaboration with relevant stakeholders to share knowledge and best practices, and explore common understandings on the technical requirements and standardization aspects of digital public infrastructure,

instructs the Director of the Telecommunication Standardization Bureau

1 to compile a repository of technical requirements, use cases and standardization aspects related to digital public infrastructure which can support the implementation of digital public infrastructure, in particular in developing countries;

2 to undertake a gap analysis, within available resources, to identify where ITU-T study groups could pursue studies, within their existing mandates, on the telecommunication/ICT standardization aspects of digital public infrastructure, and report on the results to the Telecommunication Standardization Advisory Group for further consideration;

3 to promote the participation of the membership in ITU-T's activities on digital public infrastructure, including through the integration of dialogues to share experiences and lessons learned,

instructs the Director of the Telecommunication Standardization Bureau, in collaboration with the Secretary-General and the Director of the Telecommunication Development Bureau

to collaborate with other relevant United Nations agencies and other international and regional multistakeholder and intergovernmental organizations that are assisting countries in implementing digital public infrastructure, and with countries that have lessons learned to share in this regard,

instructs the Director of the Telecommunication Standardization Bureau, in collaboration with the Director of the Telecommunication Development Bureau

1 to collaborate with other relevant SDOs, academia and organizations with responsibility for standards development, implementation and capacity building in the telecommunication/ICT aspects of digital public infrastructure, in order to support the membership in developing and deploying digital public infrastructure initiatives, taking into consideration the particular needs of developing countries;

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

2 to organize workshops for the ITU membership in collaboration with other relevant SDOs, academia and institutions with primary responsibility for digital public infrastructure implementation, in order to raise awareness and identify opportunities and challenges in the telecommunication/ICT standardization aspects of digital public infrastructure, in particular for developing countries,

instructs the Telecommunication Standardization Advisory Group

to coordinate standards-development activities across the relevant ITU-T study groups on the telecommunication/ICT aspects of digital public infrastructure, in the light of the results of the gap analysis conducted in accordance with the *instructs Director of Telecommunication Standardization Bureau* 1 of this resolution,

instructs the study groups of the ITU Telecommunication Standardization Sector

1 to assist the Director of Telecommunication Standardization Bureau by compiling relevant existing work that could support digital public infrastructure;

2 to develop ITU-T Recommendations, and other ITU-T deliverables, within their existing mandates, that can lead to the sustainable, interoperable, inclusive and efficient adoption of digital public infrastructure,

invites Member States, Sector Members, Associates and Academia

1 to engage in relevant telecommunication/ICT standards-development activities in the area of digital public infrastructure and share lessons learned;

2 to participate in capacity-building programmes in telecommunication/ICT standards development, relevant to the area of digital public infrastructure;

3 to consider appropriate measures that enable the successful implementation of digital public infrastructure.

ADD

RESOLUTION COM4/MV (New Delhi, 2024)

Promoting and strengthening metaverse standardization

(New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024),

recalling

a) the relevant provisions of Article 1 of the ITU Constitution, in particular Nos. 6 and 13, which stipulate that one of the purposes of the Union is to promote the extension of the benefits of the new telecommunication technologies to all the world's inhabitants, and that, to that end, it shall facilitate the worldwide standardization of telecommunications, with a satisfactory quality of service;

b) Resolution 70/1 of the United Nations General Assembly (UNGA), on transforming our world: the 2030 Agenda for Sustainable Development;

c) Resolution 70/125 of UNGA, on the outcome document of the high-level meeting of the General Assembly on the overall review of the implementation of the outcomes of the World Summit on the Information Society (WSIS);

d) Resolution 139 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on use of telecommunications/information and communication technologies (ICTs) to bridge the digital divide and build an inclusive information society;

e) Resolution 140 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on ITU's role in implementing the outcomes of WSIS and the 2030 Agenda for Sustainable Development, as well as in their follow-up and review processes;

f) Resolution 209 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on encouraging the participation of small and medium enterprises (SMEs) in the work of the Union;

g) Resolution 87 ([Hammamet, 2016]) of th[e World Telecommunication Standardization Assembly], on participation of the ITU Telecommunication Standardization Sector (ITU-T) in the periodic review and revision of the International Telecommunication Regulations,

considering

a) that metaverse is rapidly eroding the boundaries between the physical and digital realms, delivering immersive experiences that blend the virtual and real worlds; this convergence is changing our daily lives and professional landscapes and is poised to be a mainstay of future telecommunications and ICTs, applications revolutionizing our societies and industries economically, socially, and culturally;

b) that fully realizing the benefits of metaverse will require bridging digital divides and achieving universal access to telecommunications/ICTs;

c) that metaverse is not a new technology but a platform which combines various technologies, and it can be implemented most effectively when these technologies are developed to be interoperable;

d) that metaverse is spurring innovation in a wide range of verticals, creating new business models and markets;

e) that the challenges of inconsistent understanding, non-standardized applications and prominent ethical issues hinder the development of metaverse, and metaverse standardization is essential to foster the healthy development of metaverse industry;

f) that research and development on metaverse can contribute to advancements in various sectors and accelerate the achievement of the Sustainable Development Goals (SDGs) and WSIS outcomes;

g) that metaverse, together with new trends in other technologies vis-à-vis emerging telecommunications/ICTs, is creating a paradigm shift in the way people live and this shift is having a tremendous impact on communities bringing new borderless and improved experiences;

h) that security threats and privacy challenges are expected to evolve in metaverse and that there is a need to address these challenges effectively;

i) that metaverse is bringing significant benefits to society, and there is a need to develop a metaverse that is equitable and inclusive,

noting

a) that metaverse is becoming a key driver of social and economic changes beyond just technological advancement;

b) that metaverse is not recognized as a new technology in itself but rather as a combination of various emerging telecommunications/ICTs, and it can be implemented by converging various fundamental technologies and standards from many relevant standards-development organizations (SDOs);

c) that concerns related to inconsistent understanding and non-standardized applications are hampering the development of metaverse, while metaverse standardization is necessary to promote the healthy development of the metaverse ecosystem;

d) that major SDOs around the world have recognized the need for and importance of metaverse standardization and are actively participating in, and promoting, standards-development work;

e) that ITU forums on metaverse, United Nations Virtual Worlds Day, and the United Nations Think-a-thon provide a platform for advancing the shared vision of an open, interoperable, secure, trusted, inclusive, accessible and sustainable metaverse with many stakeholders around the world;

f) that ITU-T also needs to further promote and strengthen the standardization of future telecommunication/ICT applications and services related to the metaverse;

g) that ITU-T should continue metaverse standardization work and further strengthen it;

h) that lots of stakeholders in metaverse are SMEs,

recognizing

a) the successful conclusion of the ITU Focus Group on metaverse (FG-MV);

b) the tasks executed by the ITU FG-MV based on 52 deliverables enumerated as the output of the pre-standardization activities;

c) the relevant achievements of ITU-T study groups, in particular those related to metaverse;

d) the studies conducted by relevant ITU study groups on topics related to metaverse;

e) the importance of engaging with United Nations organizations by means of initiatives such as the ITU Forums on metaverse, United Nations Virtual Worlds Day, United Nations Think-a-thon among others;

f) the Global Initiative on Virtual Worlds – Discovering the CitiVerse, which was launched by ITU, the United Nations International Computing Centre (UNICC) and Digital Dubai during the first United Nations Virtual Worlds Day, to serve as a global platform for fostering open, interoperable and innovative virtual worlds that can be used safely and with confidence by people, businesses and public services and for exploring and harnessing the potential of virtual worlds and citiverse,

bearing in mind

a) that metaverse is a key enabler for enhancing the value of future telecommunication/ICT applications and services;

b) that it is necessary for standardization work to ensure that the various telecommunication/ICT components of metaverse can be effectively integrated and interoperated;

c) that, owing to the impact metaverse may have on people's lives, it is necessary to develop technical standards that respect and promote fundamental human rights, such as security, privacy, inclusion, accessibility and protection,

resolves

1 to carry out standardization work to ensure that the various telecommunication/ICT components of metaverse can be effectively integrated and interoperated, including architectures, requirements, protocols, systems and services;

2 to promote and strengthen the ITU-T study groups' standardization work related to enabling technologies, systems, applications, services, protocols, security, accessibility and sustainability for metaverse, considering market requirements to provide enhanced value of ITU-T deliverables;

3 to work collaboratively and cooperatively with other SDOs, recognized external organizations, industry and relevant entities to promote cooperation and complementarity in the development of international standards for metaverse applications, systems and services, and to ensure interoperability, with the goal of avoiding duplication;

4 to promote the potential of an accessible and sustainable metaverse, including for enhancing the value of future telecommunication/ICT applications and services;

5 to take necessary steps to achieve a comprehensive understanding of threats and foster cooperation among different stakeholders to develop a safe and secure metaverse environment that enhances the well-being of users;

6 to ensure trust, confidence and security in metaverse applications and services, thereby providing a safe and secure environment for all users;

7 to establish a joint coordination activity on metaverse (JCA-MV) under the Telecommunication Standardization Advisory Group (TSAG) to coordinate standardization activities on metaverse and to maintain a standardization roadmap for the purpose of having coordination across relevant ITU-T study groups and with related SDOs and relevant parties outside ITU-T;

8 that ITU forums be held to present progress in the work and the results achieved by the ITU-T study groups in charge of metaverse standardization before the next world telecommunication standardization assembly (WTSA),

instructs the Director of the Telecommunication Standardization Bureau

1 to work collaboratively with the Directors of the ITU Radiocommunication Sector (ITU-R) and the ITU Telecommunication Development Sector (ITU-D) on metaverse-related activities, with a focus on developing deliverables that ensure interoperability and can be applied to the relevant applications and services of other sectors;

2 to ensure that the implementation of Recommendations, technical reports and guidelines related to metaverse is reflected in Telecommunication Standardization Bureau initiatives on bridging the standardization gap aimed at assisting developing countries[1];

3 to encourage Member States, Sector Members, Associates and Academia to share information relating to metaverse standardization between relevant groups in ITU-T, ITU-R and ITU-D, and to disseminate best practices on metaverse, including systems, applications and services;

4 within available resources, to organize workshops and forums, as appropriate, in collaboration with relevant SDOs and United Nations entities to gather inputs from a wide range of stakeholders, and to continue collaboration in the context of the ITU-UNICC-Digital Dubai Global Initiative on Virtual Worlds – Discovering the CitiVerse, which aims to foster open, interoperable, and secure virtual worlds for people, businesses and public services;

5 to report to the ITU Council and TSAG on the progress of the Global Initiative;

6 to provide the necessary assistance to foster standardization work on metaverse and to encourage participation and contributions from the ITU membership, in particular from developing countries and SMEs;

7 to report to the Council, TSAG and WTSA on progress in implementing this resolution,

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

instructs the relevant study groups of the ITU Telecommunication Standardization Sector, each within their mandate

1 to consider the deliverables developed by the ITU-T FG-MV, taking into account the guidance from TSAG on conducting a gap analysis to scope the work and minimize overlap with other SDOs;

2 to undertake pre-standardization work as necessary;

3 to develop standardization work, as appropriate to their respective study Questions;

4 to study metaverse-related standardization work, taking into consideration the need for interoperability between different metaverse applications, systems and services,

invites Member States, Sector Members, Associates and Academia

1 to assist ITU-T in implementing this resolution;

2 to submit contributions and continue participating actively in the standardization work of all ITU-T study groups and in ITU's metaverse-related activities;

3 to share use cases and best practices in order to promote metaverse and social development and economic growth with a view to achieving the SDGs;

4 to encourage the active participation of interested and relevant SMEs and vertical industries in the relevant metaverse activities of ITU;

5 to contribute to discussions on new challenges for metaverse-enabling technologies and on how those technologies may contribute to the achievement of the 2030 Sustainable Development Agenda within the mandate of the Union.

ADD

RESOLUTION COM4/SDT (New Delhi, 2024)

Enhancing standardization activities on sustainable digital transformation

(New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024),

recalling

a) that the strategic plan for the Union for 2024-2027, approved by means of Resolution 71 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, establishes sustainable digital transformation as a strategic goal of the Union in facilitating progress towards the implementation of the World Summit on the Information Society (WSIS) action lines and the United Nations 2030 Agenda for Sustainable Development;

b) Resolution 44 (Rev. [New Delhi, 2024]) of th[is assembly], on bridging the standardization gap between developing and developed countries;

c) Resolution 89 (Kigali, 2022) of the World Telecommunication Development Conference (WTDC), on digital transformation for sustainable development;

d) Resolution 73 (Rev. [New Delhi, 2024]) of th[is assembly], on information and communication technologies (ICTs), environment, climate change and circular economy;

e) Resolution 2 (Rev. Kigali, 2022) of WTDC, describing the scope of ITU Telecommunication Development Sector (ITU-D) study groups and indicating that the focus of ITU-D Study Group 2 is digital transformation,

considering

a) that digital transformation through utilizing new and emerging telecommunications/ICTs, enabling new services and applications and promoting the information society is a key enabler for making progress towards sustainable development, which shall be taken into account in the work of the ITU Telecommunication Standardization Sector (ITU-T);

b) that there is a need to rapidly develop high-quality, demand-driven, interoperable, and non-discriminatory ITU-T Recommendations and guidelines and exchange best practices to support and facilitate telecommunication/ICT activities that support and facilitate sustainable digital transformation in a timely manner, in particular for developing countries[1] at the initial stage of their introduction;

c) that there is also a need to extend and facilitate cooperation among standards-development organizations (SDOs) on sustainable digital transformation to avoid duplication of work and achieve efficient use of resources,

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

considering further

that ITU-T Recommendations, guidelines and best practices that support and facilitate sustainable digital transformation will contribute towards achievement of the 2030 Agenda for Sustainable Development and the WSIS Outcomes,

noting

that the Telecommunication Standardization Advisory Group (TSAG) created the Rapporteur Group on sustainable digital transformation (RG-DT) in June 2023,

taking into account

a) that ITU-T members could enable, and benefit from, sustainable digital transformation by developing and applying ITU-T Recommendations;

b) that development and implementation of ITU-T Recommendations require broad participation and collaboration among all relevant stakeholders;

c) the need to closely coordinate and collaborate with ITU-D study groups to promote sustainable digital transformation for developing countries,

resolves

1 to effectively consolidate guidelines, Recommendations, technical reports, best practices and use cases developed by ITU-T which could facilitate global sustainable digital transformation, through the use of the ITU global resource hub;

2 to foster cooperation and collaboration within the Union and with other relevant stakeholders to share knowledge and best practices, and explore common understandings on telecommunication/ICT standardization aspects of sustainable digital transformation;

3 to promote the timely development of implementation guidelines to assist with the adoption of ITU-T Recommendations, particularly those related to telecommunications/ICTs that enable sustainable digital transformation and its evaluation, and build capacity in the implementation of such ITU-T Recommendations;

4 to encourage the participation of members, particularly Academia and developing countries, in ITU-T's activities on sustainable digital transformation,

resolves to instruct the Telecommunication Standardization Advisory Group

to take all necessary steps to promote and enhance telecommunication/ICT standardization activities that support and facilitate sustainable digital transformation, including continuation of RG-DT,

resolves to instruct the Director of the Telecommunication Standardization Bureau

to provide developing countries with assistance to enhance capacity building in telecommunication/ICT standardization activities on sustainable digital transformation, including through collaboration with the relevant academia, expert communities, SDOs and other stakeholders,

instructs the study groups of the ITU Telecommunication Standardization Sector, within their existing mandates

1 to develop ITU-T Recommendations, guidelines and best practices that will help the membership, in particular developing countries, to take advantage of new and emerging telecommunications/ICTs in order to support sustainable digital transformation across different industries and telecommunications/ICTs within ITU's mandate;

2 to coordinate and collaborate with other groups within ITU and recognized SDOs and institutions with primary responsibility for standards development and capacity building in the area of sustainable digital transformation;

3 to develop and promote Recommendations to leverage digital technologies, applications, services, and platforms related to telecommunications/ICTs, to drive sustainable digital transformation,

invites Member States, Sector Members, Associates and Academia

to contribute to studies and development of ITU-T Recommendations, guidelines and best practices related to telecommunications/ICTs in support of sustainable digital transformation.

ADD

RESOLUTION COM3/APT-NG (New Delhi, 2024)

Enhancing the engagement of next-generation experts in the standardization activities of the ITU Telecommunication Standardization Sector

(New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024),

recalling

a) Resolution 198 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on empowerment of youth through telecommunication/information and communication technology (ICT);

b) Resolution 76 (Rev. Kigali, 2022) of the World Telecommunication Development Conference, on promoting ICTs among young women and men for social and economic empowerment;

c) Resolution 123 (Rev. Bucharest, 2022) of the Plenipotentiary Conference and Resolution 44 (Rev. [New Delhi, 2024]) of th[is assembly], on bridging the standardization gap between developing[1] and developed countries;

d) Resolution 34 (Rev. [New Delhi, 2024]) of th[is assembly], on voluntary contributions,

recognizing

a) that the next generation of experts includes not only young professionals interested in participating in standardization activities, but also experienced professionals interested in this field;

b) that the standardization gap is not only between developing and developed countries, but also between generations of experts;

c) that capacity building, including training programmes, may foster an understanding of telecommunication/ICT standardization as a career priority;

d) that existing programmes of the ITU Telecommunication Standardization Sector, such as the Bridging the Standardization Gap (BSG) programme, Kaleidoscope academic conferences and newcomer sessions, help promote ITU-T's role in telecommunication/ICT standardization among the next generation of experts,

resolves

to promote the general concept, basic knowledge and benefit of telecommunication/ICT standardization in order to encourage the engagement of the next generation of experts in ITU-T,

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

instructs the Director of the Telecommunication Standardization Bureau, in collaboration with the Director of the Telecommunication Development Bureau

1 to reuse BSG content in close collaboration with the ITU Academy and other capacity-building initiatives of the Telecommunication Development Bureau to attract the next generation of experts across developed and developing countries;

2 to request voluntary contributions from the membership to develop enhanced training materials on telecommunication/ICT standardization for the next generation of experts, and to promote and disseminate these deliverables;

3 to evaluate opportunities, such as awards, for recognizing the next generation of experts, and thereby help to advance the standardization work of ITU-T;

4 to report to the Telecommunication Standardization Advisory Group annually on the implementation of this resolution,

invites Member States, Sector Members, Associates and Academia

1 to support ITU-T activities promoting the engagement, and associated benefits, of the next generation of experts in telecommunication/ICT standardization using voluntary contributions and sponsorships;

2 to include the next generation of experts in their delegations to ITU-T meetings and to support their integration through mentorship programmes,

invites Academia

1 to support and engage the next generation of experts in ITU-T standardization, including through access to information, fellowships and recognition for participation in ITU-T activities;

2 to involve early-career researchers and students in relevant ITU-T activities and empower their effective participation therein;

3 to collaborate closely with ITU-T in order to promote the concept of standardization in academic curricula.

ADD

RESOLUTION COM4/VC (New Delhi, 2024)

Promoting and strengthening standardization activities for vehicular communications

(New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024),

recalling

a) Resolution 70/1 of the United Nations General Assembly (UNGA), on transforming our world: the 2030 Agenda for Sustainable Development;

b) Resolution 74/299 of UNGA, on improving global road safety, which set a goal of reducing road traffic deaths and injuries by at least 50 per cent by the end of 2030;

c) relevant United Nations Sustainable Development Goals (SDGs), in particular SDG 3 with respect to substantially reducing the number of global deaths and injuries from road traffic accidents, SDG 7 with respect to increasing the global rate of improvement in energy efficiency, and SDG 11 with respect to providing access to safe, affordable, accessible and sustainable transport systems for all;

d) Resolution 37 (Rev. Kigali, 2022) of the World Telecommunication Development Conference, on bridging the digital divide,

considering

a) that supporting vehicular communications, such as vehicle-to-everything (V2X), and intelligent transport systems (ITS) will enhance road safety, improve traffic efficiency and reduce carbon emissions, and also enable infrastructure upgrades to accelerate the development of the digital economy, which will in turn promote the digital transformation of developing countries;

b) the rapid development of connected and automated vehicles (CAV), and the fact that many organizations are engaged in the standardization of vehicular communications, such as V2X, and ITS;

c) that United Nations Economic Commission for Europe (UNECE) World Forum for Harmonization of Vehicle Regulations (WP.29) established the Task Force on Vehicular Communications to identify the potential role of WP.29 in vehicular communications, in particular in improving sustainability, enhancing safety, supporting automated driving and other related aspects;

d) that the development of CAV, V2X and ITS involves different stakeholders and industries, including automotive, transportation, traffic management, telecommunications/information and communication technologies (ICTs), electronic, security and energy sectors, which require coordination;

e) that the development of CAV, V2X and ITS affects many fields and in-depth cooperation on relevant aspects may be necessary among relevant countries, regions and international entities in order to achieve maximum benefits from related applications,

noting

a) that study groups of the ITU Telecommunication Standardization Sector (ITU-T) initiated studies on V2X and ITS aspects of identification, quality of service (QoS) for speech and audio, vehicle emergency calls, vehicular multimedia and information and entertainment systems, security (such as over-the-air secure software updates and network communication) and Internet of Things-related applications;

b) the work of previous ITU-T focus groups on vehicular multimedia (FG-VM) and on artificial intelligence (AI) for autonomous and assisted driving (FG-AI4AD);

c*)* that the Collaboration on ITS Communication Standards (CITS) is a recognized international open platform that maintains a global online free database of ITS standards and provides a venue to exchange information and coordinate international standardization on V2X and ITS among national, regional and international standardization organizations;

d) that CITS established the Expert Group on communications technology for automated driving (EG-ComAD), which aims to facilitate the deployment of safe and reliable automated driving systems through advanced communications technology;

e) that ITU-T, in collaboration with UNECE, jointly organizes the Future Networked Car Symposium, which has become a key forum for discussing and examining the latest advances in vehicle connectivity, automated mobility and the role of AI in the transport sector,

noting further

a) that the ITU Radiocommunication Sector (ITU-R), and in particular ITU-R Study Group 5, is responsible for the radiocommunication aspects, spectrum requirements and technical and operational characteristics in order to achieve the harmonization of the radio spectrum for vehicular communications, such as V2X, ITS, automotive radar and CAV;

b) that Study Group 2 of the ITU Telecommunication Development Sector (ITU-D) focuses on digital transformation, in particular under Question 1/2, aiming to study problems in promoting smart sustainable cities and communities, sharing experiences on improving connectivity and underlying infrastructures to support smart societies and smart transportation,

recognizing

a) that ITU-T should play a role within the ICT sector in developing standards for vehicular communications, such as V2X, and ITS;

b) that a coordinated telecommunication/ICT standard framework for vehicular communications, such as V2X, and ITS is needed, including cooperation with other standards development organisations active in these areas, such as International Organization for Standardization Technical Committee 204 (ISO/TC 204), European Telecommunications Standards Institute Technical Committee on ITS (ETSI TC ITS), Third Generation Partnership Project (3GPP), Institute of Electrical and Electronics Engineers (IEEE), European Committee for Standardization Technical Committee 278 (CEN/TC 278) and the Internet Engineering Task Force (IETF);

c) that a multi-stakeholder approach is essential to enable the standardization and deployment of vehicular communications, such as V2X, and ITS and that the collaboration and partnership of ITU and UNECE, with UNECE defining the regulatory requirements and ITU the telecommunication/ICT standards that may meet those requirements, should be leveraged for this purpose,

resolves

1 to support the coordination function of CITS in order to foster international telecommunication standards on vehicular communications, such as V2X, and ITS, including vehicular communications to support automated driving, while considering the needs of various regions and Member States;

2 to collaborate with other standards-development organizations (SDOs), UNECE and other stakeholders, such as industry forums, associations and company alliances, as well as relevant ITU-T and ITU-R study groups, on vehicular communications, such as V2X, and ITS, including vehicular communications to support automated driving;

3 to organize, evaluate and assess application scenarios and case studies of vehicular communications, such as V2X, and ITS, and share with relevant stakeholders,

instructs the Director of the Telecommunication Standardization Bureau

1 to provide necessary assistance in utilizing all available resources within the allocated budget to promote relevant high-quality standardization work in a timely manner, maintaining related promotional webpages to enhance communication with the automotive and telecommunication/ICT industries, and to encourage their participation in ITU-T standardization activities related to vehicular communications, such as V2X, and ITS, including vehicular communications to support automated driving, in relation to their telecommunication and ICT aspects;

2 to leverage the partnership with UNECE through the Future Networked Car Symposium and related events, and to support the meetings of CITS in order to enable collaboration with other SDOs, industry forums and other relevant organizations and initiatives to promote development of international telecommunication/ICT standards and other deliverables to achieve interoperability of vehicular communications, such as V2X, and ITS, including vehicular communications to support automated driving,

instructs the Director of the Telecommunication Standardization Bureau in cooperation with the Director of the Telecommunication Development Bureau

1 to support Member States in implementing applications and deployments of vehicular communications, such as V2X, and ITS, including vehicular communications to support automated driving;

2 to support Member States, especially developing countries[1], in organizing forums, seminars, and workshops on vehicular communications, such as V2X, and ITS, including vehicular communications to support automated driving, in order to promote innovation, development, and growth of technology and solutions, provided the availability of suitable programmes and budget;

3 to assist developing countries in implementing vehicular communications, such as V2X, and ITS, including vehicular communications to support automated driving, through ITU-T Recommendations, technical reports and guidelines, in relation to their telecommunication and ICT aspects,

instructs

1 ITU-T Study Group 2 to foster standardization activities related to numbering, naming, addressing and identification (NNAI) issues related to vehicular communications, such as V2X, and ITS, including vehicular communications to support automated driving;

2 ITU-T Study Group 12 to foster standardization activities of QoS and quality of experience in relation to vehicular communications, such as V2X, and ITS, including vehicular communications to support automated driving;

3 ITU-T Study Group 21 to develop ITU-T Recommendations aimed at implementing vehicular communications, such as V2X, and ITS, including vehicular communications to support automated driving, covering requirements, use cases, functional architecture, interfaces, standards roadmaps, etc., taking into account the study outcomes of CITS/EG-ComAD and the outcomes of ITU-R Study Group 5 on spectrum requirements;

4 ITU-T Study Group 17 to foster standardization activities related to security for vehicular communications, such as V2X, and ITS, including vehicular communications to support automated driving, covering comprehensive security solutions, security communication mechanisms, etc.;

5 ITU-T Study Group 20 to leverage the deployment of Internet of Things applications to contribute to a more connected, sustainable and safer transportation, looking in particular into interoperability and backward compatibility issues;

6 relevant ITU-T study groups to determine and assess the standardization landscape for vehicular communications, such as V2X, and ITS, including vehicular communications to support automated driving, while ensuring collaboration and avoiding overlap with other SDOs,

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

invites Member States, Sector Members, Associates and Academia

1 to submit contributions and actively participate in ITU-T research on vehicular communications such as V2X and ITS, including vehicular communications to support automated driving;

2 to make overall plans, exchange use cases and share best practices in order to promote the ecosystem of vehicular communications, such as V2X, and ITS, including vehicular communications to support automated driving, and facilitate social development and economic growth to achieve the SDGs;

3 to organize forums, seminars and workshops on vehicular communications, such as V2X, and ITS, in order to promote and support innovation, research, development, and growth of technologies and solutions;

4 to take necessary measures to promote and implement the standardization of vehicular communications, such as V2X, and ITS.

ADD

RESOLUTION COM3/SP (New Delhi, 2024)

Strategic planning in ITU Telecommunication Standardization Sector

(New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024),

recalling,

a) Resolution 71 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on the strategic plan for the Union for 2024-2027;

b) Resolution 151 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on improvement of results-based management (RBM) in ITU;

c) Resolution 68 (Rev. [Hammamet, 2016]) of th[is assembly], on evolving role of industry in the ITU Telecommunication Standardization Sector (ITU-T);

d) Resolution 99 ([Geneva, 2022]) of th[is assembly], on consideration of organizational reform of the ITU-T study groups;

e) Resolution 2 (Rev. [New Delhi, 2024]) of th[is assembly], on ITU-T study group responsibilities and mandates;

f) Resolution 22 (Rev.[Geneva, 2022]) of th[is assembly], on authorization for the Telecommunication Standardization Advisory Group (TSAG) to act between world telecommunication standardization assemblies,

recognizing

a) that the enhancement in ITU's organizational excellence has been highlighted in the strategic plan for the Union for 2024-2027 and Decision 5 (Rev. Bucharest, 2022) of the Plenipotentiary Conference;

b) that Resolution 71 (Rev. Bucharest, 2022) has acknowledged the need for ITU to provide membership with services of the highest quality and efficiency while achieving tangible results, optimizing the value of membership investments, streamlining cost structures, and upholding the highest standards of transparency and accountability;

c) that, in order for ITU-T to remain relevant in the international standardization landscape, there is a need to integrate strategic planning and a culture of continuous evolution and improvement as a key management process, including support for the ITU-T study groups;

d) that a comprehensive approach to strategic planning will help ensure that ITU-T continues to evolve to meet the principles of excellence, cost-effectiveness, attractiveness, and strategic prioritization of activities that provide significant value and impact to ITU-T membership, including the industry component;

e) that mainstreaming this strategic planning approach in ITU-T is becoming more critical than ever for a very fast changing, demanding ITU-T membership and industry and for achieving the Sustainable Development Goals;

f) that strategic planning in ITU-T should be part of a broader process of the implementation of the strategic plan of the Union and ITU-T operational plan, while reflecting the RBM approach;

g) that ITU-T strategic planning needs to be undertaken with the involvement of the ITU-T membership,

noting

a) that effective and efficient working methods and work programmes are key enablers for a fit-for-purpose ITU-T;

b) the efforts across TSAG rapporteur groups in making ITU-T more relevant and fit-for-purpose, such as industry engagement, ITU-T study group restructuring, high-level, private-sector executive meeting assessment process, and also noting that they would benefit from a more holistic, integrated and results-based approach in ITU-T;

c) that a vision is needed to guide the overall strategic planning of the ITU-T, which includes continuous progress and improvement not only of working methods, study group restructuring and industry engagement, but also of the processes to evaluate work item proposals, so that ITU-T can focus on activities and initiatives that have the most impact on achieving ITU's strategic goals and increase responsiveness to membership needs;

d) Supplement 6 to the A-series Recommendations, on guidelines for the development of a standardization gap analysis, which aims to enhance a common understanding of necessary work, identify competitive advantages and uncover strategic standardization opportunities, while optimizing allocation of resources;

e) that there is a critical need for ITU-T to align its strategic planning with financial, operational and human resources planning,

resolves

1 to integrate a strategic approach into ITU-T processes in order to enhance and position the standardization sector as fit-for purpose, thus contributing to the achievement of overall ITU strategy;

2 to develop a strategy for ITU-T's continuous evolution and improvement in alignment with the strategic plan for the Union, to ensure that ITU-T remains relevant and effective in an ever-changing telecommunication landscape, considering the needs of all ITU membership,

instructs the Telecommunication Standardization Advisory Group

1 to develop a vision, strategic priorities and action plan, including an ITU-T value proposition, to reflect a strategic approach for ITU-T continuous evolution and improvement, in collaboration with all the ITU-T stakeholders including the Telecommunication Standardization Bureau (TSB);

2 as an output of the ITU-T strategic approach,

a) to continue improving the alignment between ITU-T operational plan and the strategic plan of the Union;

b) to provide appropriate input from TSAG for consideration of the ITU Council Working Group for strategic and financial plans (CWG-SFP),

3 to include in the operational plan consideration of key enablers of success in the ITU-T results framework, including industry engagement, a fit-for-purpose ITU-T study groups structure and work programmes, effective promotion and coordination, reinvigorated high-level, private-sector executive meetings, TSB secretariat support, ITU-T website, effective and up-to-date ITU-T electronic meeting platforms and related governance and management, business continuity, among others;

4 to review the implementation of strategic planning in ITU-T based on reports from TSB and relevant TSAG rapporteur groups in order to assess effectiveness and provide guidance on ongoing improvements,

resolves to instruct the Director of the Telecommunication Standardization Bureau

1 to mainstream RBM in ITU-T, including through a results-based operational plan aligned with ITU strategy, while considering TSB support for the regional presence, and providing regular reporting to TSAG, CWG-SFP and to the Council, on actions planned and undertaken in that regard;

2 to support strategic planning of ITU-T by developing an ITU-T risk management approach that considers strategic and operational risks and associated mitigation measures,

instructs the study groups of the ITU Telecommunication Standardization Sector

to actively participate in the ITU-T strategic planning processes,

invites Member States and Sector Members

to contribute to the process of ITU-T strategic planning.

ADD

RESOLUTION COM4/AI (New Delhi, 2024)

Standardization activities of the ITU Telecommunication Standardization Sector on artificial intelligence technologies in support of telecommunications/information and communication technologies

(New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024),

recalling

a) Resolution 214 (Bucharest, 2022) of the Plenipotentiary Conference, on artificial intelligence (AI) technologies and telecommunications/information and communication technologies (ICTs);

b) United Nations General Assembly (UNGA) Resolution 78/265, on seizing the opportunities of safe, secure and trustworthy AI systems for sustainable development, and UNGA Resolution 78/311, on enhancing international cooperation on capacity-building of AI;

c) relevant World Summit on the Information Society (WSIS) action lines and relevant United Nations Sustainable Development Goals (SDGs), in particular SDG 9, on building resilient infrastructure, promoting inclusive and sustainable industrialization and fostering innovation, and SDG 17, on strengthening the means of implementation and revitalizing the Global Partnership for Sustainable Development;

d) the experience of collaboration among the relevant study groups of the ITU Telecommunication Standardization Sector (ITU-T) and other relevant organizations and standards-development organizations (SDOs), including the International Electrotechnical Commission (IEC) and the International Organization for Standardization (ISO), with the aim of building synergies and sharing information among IEC, ISO and ITU-T,

recognizing

a) the role of ITU-T in developing international standards for telecommunications/ICTs in support of ITU's strategic goals of universal connectivity and sustainable digital transformation;

b) the necessity for global collaboration and dialogue among Member States, Sector Members and other stakeholders in addressing opportunities and potential challenges of AI regarding its role in telecommunications/ICTs, including aspects of trustworthiness;

c) that studies related to AI in ITU-T have advanced telecommunication/ICT standardization, including through, *inter alia*, study groups and focus groups in various areas and various AI initiatives, including AI for Good;

d) ITU's collaboration with other United Nations agencies and organizations through the Inter-Agency Working Group on AI, co-chaired by ITU and the United Nations Educational, Scientific and Cultural Organization (UNESCO), which combines the technological pillars of the United Nations to provide a solid foundation for system-wide efforts on AI;

e) the importance of the fifth Global Standards Symposium (GSS), convened on 14 October 2024, in New Delhi, India, and the first International AI Standards Summit from 14-18 October 2024, also in New Delhi,

noting

a) the increasing relevance of AI and the consequent need for robust technical standards on AI-enabled telecommunications/ICTs in order to enhance their efficiency, capabilities and trustworthiness;

b) that many other SDOs, consortia and stakeholders are developing standards, specifications, best practices and guidance for AI technologies, systems and services, within their mandates;

c) that ITU has partnered with more than 40 other United Nations agencies to convene the AI for Good platform, which seeks to identify practical applications of AI in order to advance progress on the SDGs and scale those solutions for global impact,

considering

that the development and many use cases of AI technologies can be a key enabler for telecommunications/ICTs to contribute to universal sustainable digital connectivity and to achieve the SDGs,

resolves to instruct study groups of the ITU Telecommunication Standardization Sector, within their mandates

1 to continue work on applying AI to telecommunications/ICTs when developing ITU-T Recommendations, guidelines, best practices and assessment procedures, such as those related to telecommunication operation, management, energy aspects, reliability, security, AI-enabled networks and protocols, and services and applications, the Internet of Things, and tools to enhance the efficiency and capabilities of AI-enabled telecommunications/ICTs;

2 to periodically review and update AI-related ITU-T Recommendations in relation to telecommunications/ICTs in view of technological progress and emerging opportunities and challenges,

instructs the Director of the Telecommunication Standardization Bureau

to facilitate information-sharing among ITU membership on ITU-T work on AI in relation to telecommunications/ICTs, in order to build understanding, in particular for developing countries[1], in relation to the deployment of AI technologies in support of telecommunications/ICTs and the associated opportunities and challenges,

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

instructs the Director of the Telecommunication Standardization Bureau, in collaboration with the Secretary-General and the Directors of the Telecommunication Development and Radiocommunication Bureaux

1 to support the work of the AI for Good platform in identifying practical applications of AI in order to advance progress on the SDGs and scale those solutions for global impact;

2 to identify opportunities, as appropriate, for cooperation in international standardization efforts and for collaboration with relevant stakeholders on AI in relation to telecommunications/ICTs;

3 to provide technical guidance, in particular to developing countries, on implementing international standards on AI in telecommunications/ICTs,

invites ITU Member States, Sector Members, Associates and Academia

1 to promote the development and adoption of ITU-T Recommendations related to the deployment of AI technologies in telecommunications/ICTs;

2 to share their experiences and contribute to international multistakeholder standardization efforts on AI technologies, including efforts by international organizations, the private sector, civil society, academia, small and medium enterprises and technical organizations;

3 to engage in the ITU Council Working Group on WSIS and SDGs, providing guidance on capacity-building efforts for the use of AI in achieving the SDGs, and to monitor the actions taken by ITU with respect to AI, with a view to enhancing inter-Sectoral coordination, regional empowerment and membership engagement.

ADD

RESOLUTION COM4/CLI-CL (New Delhi, 2024)

Provision of handset-derived caller location information for emergency communications

(New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024),

considering

a) that information and communication technologies (ICTs) are an essential enabler for public safety by providing a primary means of access to emergency services;

b) that modern smartphones can use measurements from global navigation satellite systems (GNSS), Assisted-GNSS, Wi-Fi and location information from mobile networks to calculate location estimates, which are usually more accurate than network-provided locations, and which can then be transmitted to emergency services to help ensure swift and effective emergency interventions;

c) that effective emergency interventions require the provision of emergency assistance to citizens who need help in the shortest possible amount of time in order to reduce instances of serious injury or fatality;

d) that the provision of accurate and reliable caller location information to the emergency services has a direct and significant positive impact on the timeliness of an emergency intervention;

e) that, since 2016, significant developments in technical solutions for the provision of handset-derived caller location information have taken place and successful deployments have been made around the world;

f) that handset-derived caller location information could save numerous lives and positively impact many more, while also generating substantial economic benefits;

g) that the global smartphone penetration is expected to reach billions of end-users in the near future, with the vast majority of these smartphones capable of providing handset-derived caller location information to emergency services;

h) the work of Study Groups 2 and 11 of the ITU Telecommunication Standardization Sector (ITU-T) on emergency communication services,

noting

a) that standards have been developed by several standards-development organizations (SDOs), including the European Telecommunications Standards Institute (ETSI) (technical specification 103 625), the 3rd Generation Partnership Project (3GPP) (technical specification 32.271) and the World Wide Web Consortium (W3C) (hypertext markup language (HTML) 5 living standard), to facilitate the transmission of handset-derived caller location information through public telecommunication networks to emergency services;

b) that the provision of handset-derived caller location information is already a regulatory requirement in many countries, such as through Directive 2018/1972 of the European Parliament and of the European Council;

c) the importance of safeguarding data privacy in the transmission of handset-derived caller location information, with appropriate measures to ensure user protection,

resolves to instruct

1 ITU-T Study Group 2, as the lead study group on this issue, to study, in collaboration with other ITU-T study groups, in particular Study Groups 11 and 17, and in cooperation with organizations with specific expertise in this area, the necessary requirements for establishing and transmitting handset-derived caller location information to emergency services; and to consider a gap analysis of standardization activities at other SDOs;

2 ITU-T Study Group 2 and other relevant ITU-T study groups to develop operational recommendations for the deployment of technical solutions for establishing and transmitting handset-derived caller location information in ITU Member States in coordination with associated regional groups, so that a common basis for deployment can be established;

3 ITU-T Study Group 2 and other relevant ITU-T study groups, in collaboration with the ITU Telecommunication Development Sector (ITU-D), to promote the concept and benefits of handset-derived caller location information in improving public safety,

instructs the Director of the Telecommunication Standardization Bureau

1 to promote collaboration with ITU-D and the ITU Radiocommunication Sector and to take appropriate action in order to facilitate the aforementioned work on the deployment of technical solutions for establishing and transmitting handset-derived caller location information for emergency communications;

2 to cooperate, collaborate and raise awareness with other entities within the United Nations in formulating future international efforts to promote the deployment of technical solutions for establishing and transmitting of handset-derived caller location information for emergency communications,

invites Member States, Sector Members and Associates

to actively engage within the relevant ITU-T study group(s) to develop operational recommendations for the deployment of technical solutions, and to raise awareness and promote the deployment of technical solutions for establishing and transmitting handset-derived caller location information for emergency communications.

MOD

Recommendation ITU-T A.25

Generic procedures for incorporating text between ITU-T and other organizations

1 Scope

This Recommendation provides generic procedures for incorporating (in whole or in part, with or without modification) the documents of other organizations (including consortia, forums, and national and regional standards development organizations) in ITU-T Recommendations (or other ITU-T documents) and provides guidance for other organizations on how to incorporate ITU-T Recommendations (or other ITU-T documents), in whole or in part, in their documents. These procedures are applied each time a proposal for incorporation is made.

The case of normatively referencing the documents of other organizations in ITU-T Recommendations is addressed in [ITU-T A.5].

2 References

The following ITU-T Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published. The reference to a document within this Recommendation does not give it, as a stand-alone document, the status of a Recommendation.

[ITU-T A.5]	Recommendation ITU-T A.1 (2022), *Generic procedures for including references to documents of other organizations in ITU-T Recommendations.*
[PP Res. 66]	Plenipotentiary Conference Resolution 66 (Rev. Dubai, 2018), *Documents and publication of the Union*.

3 Definitions

3.1 Terms defined elsewhere

This Recommendation uses the following terms defined elsewhere:

3.1.1 approved document [ITU-T A.5]: An official output (such as a standard, a specification, an implementation agreement, etc.) which has been formally approved by an organization.

3.1.2 non-normative reference [ITU-T A.5]: The whole or parts of a document where the referenced document has been used as supplementary information in the preparation of the Recommendation or to assist the understanding or use of the Recommendation, and to which conformance is not necessary.

3.1.3 normative reference [b-ITU-T A.1]: The whole or parts of another document where the referenced document contains provisions which, through reference to it, constitute provisions to the referring document.

3.2 Terms defined in this Recommendation

This Recommendation defines the following term:

3.2.1 draft document: An output from an organization, which is still in draft form.

4 Abbreviations and acronyms

This Recommendation uses the following abbreviations and acronyms:

TSB Telecommunication Standardization Bureau

5 Conventions

None.

6 Generic procedures for incorporating text of other organizations in ITU-T documents

This clause addresses the process of incorporating text (in whole or in part) from another organization into an ITU-T document (see the diagram in Appendix I). This process is expected to be rarely used because ITU-T study groups are encouraged to rather use the normative reference process explained in [ITU-T A.5].

6.1 Process for incorporation

6.1.1 An ITU-T study group or ITU-T members may identify the need to specifically incorporate text (in whole or in part, with or without modification) from a draft or approved document from another organization within a draft ITU-T Recommendation (or another draft ITU-T document). The need to incorporate text may also be identified by the organization itself. ITU-T study groups are strongly encouraged to incorporate approved text rather than draft text from other organizations and, whenever possible, to incorporate text without modification.

6.1.2 Information to explain why incorporation was chosen over a normative reference should be provided in a TD (or a contribution), as outlined in clauses 6.1.2.1 to 6.1.2.10 (see also Appendix II).

6.1.2.1 Description of the referenced document (incl. full copy): A clear description of the document considered for incorporation (type of document, title, number, version, date, etc.). (See also clause 6.2.2.)

6.1.2.2 Status of approval: Incorporating text that has not yet been approved by the organization can lead to confusion; thus, incorporating is usually limited to approved documents. If absolutely necessary, incorporation of text from a draft document can be made where cooperative work requiring cross-incorporation is being approved by ITU-T and another organization in approximately the same time-frame.

6.1.2.3 Justification for the specific incorporation, including why it is inappropriate to reference the text in the draft ITU-T Recommendation (or other draft ITU-T document).

6.1.2.4 Intellectual property rights[1] (patents, copyrights for software or texts, marks) issues, if any, related and specific to the proposed text for incorporation: See clauses 6.2 and 6.3. Relevant documents should be attached.

6.1.2.5 Other information that might be useful in describing the "quality" of the document (e.g. whether products have been implemented using it, whether conformance requirements are clear, whether the specification is readily and widely available).

6.1.2.6 Degree of stability or maturity of the document (e.g. length of time it has existed).

6.1.2.7 Relationship with other existing or emerging documents.

6.1.2.8 List of normative references within the incorporated document: All normative references within the incorporated document should be listed (see also clause 6.2.2 c).

6.1.2.9 Qualification of the organization (per Annex B of [ITU-T A.5]): This needs to be done only the first time a document from the organization is being considered for incorporation, and only if such qualification information has not been already documented. Qualification of an organization is reviewed on a regular basis (any study group willing to incorporate a document from the organization may perform the review). In particular, if the patent policy of that organization has changed, it is important to check that the new patent policy is consistent with the Common Patent Policy for ITU-T/ITU-R/ISO/IEC and the Guidelines for the Implementation of the Common Patent Policy for ITU-T/ITU-R/ISO/IEC.

NOTE – In case of a partnership project that is not a legal entity, qualification (per Annex B of [ITU-T A.5]) is required for each organization in the partnership project.

6.1.2.10 Document maintenance process: Approved Recommendations need to be reviewed and maintained over time. This may require collaborative effort with the other organization. Depending on new agreements reached between the ITU-T study group and the other organization, new versions of the incorporated text can be produced by the ITU-T study group or by the other organization. Therefore, it shall be clarified if maintenance of the text is a shared responsibility between the ITU-T study group and the organization (see [b-ITU-T A.Sup5], in particular clause 10), or if the organization is responsible of producing new versions of the incorporated text.

6.1.3 As soon as the documents to be incorporated are received (see clause 6.2.2), they are made available, with the agreement of the study group chair, and subject to the permission arrangements set out in clause 6.2 and to the copyright arrangements set out in clause 6.3, for advance consideration by the relevant group. They are issued, together with information about them (see clause 6.1.2), as a TD at a study group or working party meeting, normally at least one month before the start of the meeting at which the ITU-T Recommendation (or other ITU-T document) is planned for determination for TAP consultation, or consent for AAP last call (or agreement). When the other organization is responsible of producing new versions of the text (see clause 6.1.2.10), the draft resulting ITU-T Recommendation is notified by a circular at least three months before the start of the meeting at which the Recommendation is planned for determination for TAP consultation or consent for AAP last call.

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[1] See: https://www.itu.int/ipr

6.1.4 The study group (or working party) evaluates this information (see clause 6.1.2) and decides whether to make the incorporation. The format for documenting the study group or working party decision is given in Appendix II.

6.1.5 When an ITU-T study group decides to incorporate text (in whole or in part, with or without modification) from another organization in its own document, it notifies the organization about the actions taken concerning this text. The use, acceptance or reproduction of such text by the ITU-T study group is subject to the permission arrangements set out in clause 6.2 and to the copyright arrangements set out in clause 6.3.

6.1.6 The resulting ITU-T Recommendation (or ITU-T document) shall identify the incorporated text, and shall provide a bibliographic reference to the document of the organization and to its particular version. In case the text of another organization is incorporated in whole and without modification, the bibliographic reference in the ITU-T Recommendation is followed by a note indicating that the referenced text is technically equivalent to the ITU-T Recommendation.

6.1.7 The cover sheet of the resulting ITU-T Recommendation will draw the attention of implementers to potential notices of intellectual property received by the other organization as they may also apply to the ITU-T Recommendation.

6.2 Permission arrangements

6.2.1 At the earliest possible moment (see clause 6.1.3), upon the request of the study group or working party, the Telecommunication Standardization Bureau (TSB) will ensure that the organization (or designated contact point for a joint collaboration arrangement – see clause 7.3 of [ITU-T A.5]) has provided a written statement in which it agrees to:

– the distribution of the material for discussions within the appropriate groups, and

– its possible use (in whole or in part, with or without modification) in any resulting ITU-T Recommendations (or other ITU-T documents) that are published (see [PP Res. 66]).

6.2.2 TSB will also get from the organization a full copy of the existing document, preferably in electronic format (see clause 6.1.3). No reformatting is necessary. The objective is to have referenced documents available via the web at no cost, so that the study group (or working party) may proceed with its evaluation. Accordingly, if a document to be incorporated in whole or in part is available in this manner, it is sufficient to provide its exact location on the web. The document should conform to the following criteria:

a) should contain no confidential information;

b) should indicate the source within the organization (e.g. committee, subcommittee, etc.);

c) should differentiate between normative references and non-normative references.

6.2.3 Should the organization decline to provide such statement or fail to do so, the incorporation shall not be made. In this case, the decision to incorporate the reference (according to [ITU-T A.5]) instead of the text shall be made by consensus.

6.3 Copyright arrangements

The subject of modifications to texts and arrangements for royalty-free copyright licences, including the right to sub-license, for texts accepted by ITU-T, is a matter to be agreed upon between TSB and the particular organization. However, the originating organization retains the copyright and change control for its texts, unless explicitly relinquished. (See also clauses 6.1.2.10, 6.1.6 and 6.2.1.)

7 Generic procedures for incorporating text of ITU-T documents in the documents of other organizations

Organizations are strongly encouraged to reference approved ITU-T documents as appropriate to progress their work. This clause addresses the process of incorporating text (in whole or in part, with or without modification) from an ITU-T document in a document of another organization. This process is expected to be rarely used.

7.1 Documents sent to other organizations

7.1.1 An organization may incorporate text (in whole or in part, with or without modification) from a draft or approved ITU-T Recommendation (or of other documents produced by ITU-T), as all or part of the text of its draft document. Organizations are strongly encouraged to incorporate approved text rather than draft text from ITU-T and, whenever possible, to incorporate text without modification.

7.1.2 When an organization decides to accept ITU-T text, it notifies TSB about the actions taken concerning this text. The use, acceptance or reproduction of such text by the qualified organization is subject to the permission arrangements set out in clause 7.2 and to the copyright arrangements set out in clause 7.3.

7.2 Permission arrangements

7.2.1 At the earliest possible moment, the organization will ensure that the TSB has provided a written statement that it agrees to the distribution of the material for discussions within the appropriate groups and possible use (in whole or in part, with or without modification) in any documents of the organization.

7.2.2 Should the ITU decline to provide such statement, or fails to do so, the incorporation shall not be made.

7.3 Copyright arrangements

The subject of modifications to texts and arrangements for royalty-free copyright licences, including the right to sub-license, for texts accepted by qualified organizations and their publishers and others, is a matter to be agreed upon between TSB and the particular organization. However, the ITU retains the copyright and change control for its texts, unless explicitly relinquished.

APPENDIX I

Workflow for incorporating text of another organization

(This appendix does not form an integral part of this Recommendation.)

Figure I.1 describes the workflow for incorporating text of another organization.

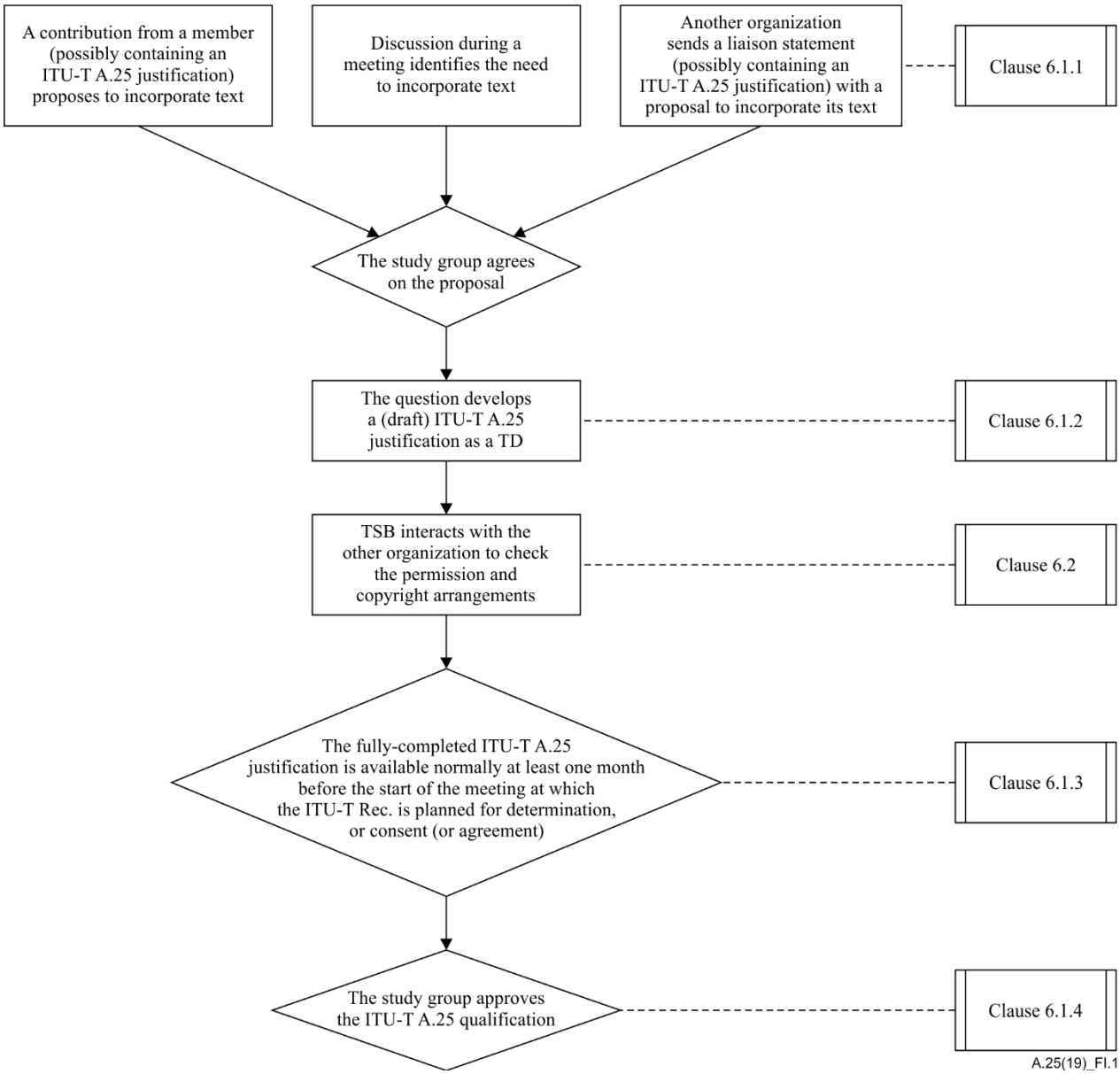

Figure I.1 – Workflow for incorporating text of another organization

APPENDIX II

Format for documenting a study group or working party decision

(This appendix does not form an integral part of this Recommendation.)

II.1 Description of the referenced document (incl. full copy)

[Insert clear description of the document considered for incorporation, e.g., type of document, title, number, version, date, etc.]

[Insert number of the TD containing the document or URL to the document on the website of the other organization]

NOTE – No reformatting is necessary. The objective is to have referenced documents available via the web at no cost, so that the study group (or working party) may proceed with its evaluation. Accordingly, if a document to be incorporated in whole or in part is available in this manner, it is sufficient to provide its exact location on the web. On the other hand, if the document is not available in this manner, a full copy must be provided (preferably in electronic format).

II.2 Status of approval

NOTE – Incorporating text that has not yet been approved by the organization can lead to confusion; thus, incorporating is usually limited to approved documents. If absolutely necessary, incorporation of text from a draft document can be made where cooperative work requiring cross-incorporation is being approved by ITU-T and another organization in approximately the same time-frame.

[Choose status of approval from the drop-down list]

II.3 Justification for the specific incorporation

[Insert justification, including why it is inappropriate to reference the text in the draft ITU-T Recommendation or other draft ITU-T document]

II.4 Intellectual property rights (patents, copyrights for software or text, marks) issues, if any, related to the proposed text for incorporation

[Insert current information, if any, about patents, copyrights for software or text, marks, etc. Relevant documents should be attached]

II.5 Proper names and trademarks of specific companies/organizations, products or services.

[Insert all proper names and trademarks of specific companies/organizations, products or services contained in the proposed text. This information should be provided on a best effort basis, and no search is required]

II.6 Other information

[Insert other information that might be useful in describing the "quality" of the document, e.g., whether products have been implemented using it, whether conformance requirements are clear, whether the specification is readily and widely available]

II.7 Stability or maturity of the document

[Insert degree of stability or maturity, e.g., length of time it has existed]

II.8 Relationship with other existing or emerging documents

[Insert relationship]

II.9 List of normative references within the incorporated document

NOTE – When text from a document is to be incorporated in an ITU-T Recommendation, all normative references within the incorporated document should be listed. The document should differentiate between normative references and non-normative references.

[List all normative references]

II.10 Qualification of the organization (per Annex B of [ITU-T A.5])

NOTE – This needs to be done only the first time a document from the organization is being considered for incorporation, and only if such qualification information has not been already documented. Qualification of an organization is reviewed on a regular basis (any study group willing to incorporate a document from the organization may perform the review). In particular, if the patent policy of that organization has changed, it is important to check that the new patent policy is consistent with the Common Patent Policy for ITU-T/ITU-R/ISO/IEC and the Guidelines for the Implementation of the Common Patent Policy for ITU-T/ITU-R/ISO/IEC. In case of a partnership project that is not a legal entity, qualification (per Annex B of [ITU-T A.5]) is required for each organization in the partnership project.

[Insert number of the TD containing the A.5 qualification of the organization if it is not yet qualified]

II.11 Document maintenance process

NOTE – Approved Recommendations need to be reviewed and maintained over time. This may require collaborative effort with the other organization. Depending on new agreements reached, new versions of the incorporated text can be produced by the ITU-T study group or by the other organization. Therefore, it shall be clarified if maintenance of the text is a shared responsibility between the ITU-T study group and the organization (see [b-ITU-T A.Sup5], in particular clause 10), or if the organization is responsible of producing new versions of the incorporated text.

[Describe the maintenance process]

Bibliography

[b-ITU-T A.1] Recommendation ITU-T A.1 (2019), *Working methods for study groups of the ITU Telecommunication Standardization Sector*.

[b-ITU-T A.Sup5] ITU-T A-series Recommendations – Supplement 5 (2016), *Guidelines for collaboration and exchange of information with other organizations*.

SUP

RESOLUTION 80 (Rev. Hammamet, 2016)

Acknowledging the active involvement of the membership in the development of ITU Telecommunication Standardization Sector deliverables

(Dubai, 2012; Hammamet, 2016)

The World Telecommunication Standardization Assembly (Hammamet, 2016),

Part 3
ACTIONS

Number	Action
COM3/1	**Actions related to Resolution 68** WTSA-24 invites the Director of the Telecommunication Standardization Bureau: 1. to come up with an action in the industry engagement action plan so as to promote and enhance the participation of MSMEs and startups in the ITU-T standardization process. 2. to survey in the industry engagement action plan.
COM3/2	**Actions related to Resolution 85** WTSA-24 requests the Director of the Telecommunication Standardization Bureau, in collaboration with TSAG, to: 1. participate actively in the development and implementation of the ITU-wide resource mobilization strategy by exploring potential new measures for generating additional revenue for the ITU-T, including international numbering resources (INRs), stakeholder partnerships, and alternative funding models for standardization purposes, taking in account the interest of Sector Members, 2. explore current and possible new models, in particular to support the transfer of work to ITU-D to promote the implementation of ITU-T standards 3. encourage ITU-T Study Groups to develop Recommendations that are more likely to be adopted by the industry, and 4. submit a report on the above analysis to the ITU Council, and WTSA-28.
COM3/3	**Actions related to Resolution 90** WTSA-24 requests TSB Dir 1 to implement Res 90 instructs the TSB Dir 1, and provide clarification of various open-source concepts and their use in ITU-T. WTSA-24 requests TSAG 1. To survey on the practices and needs in use of open source in ITU-T groups. 2. To survey on the usage of open source in relation to the implementation of ITU-T Recommendations by ITU-T members. 3. Use the outcome of the surveys as input to the open source training referred to in instructs the TSB Dir 1
COM3/4	**Action related to Resolution 1** 1 WTSA-24 requests TSAG to discuss possible revision of Resolution 1 in the upcoming Study Period and submit the updates that reach consensus to next Assembly in 2028 taking into consideration the proposals submitted to WTSA-24 to revise Resolution 1 (ATU/35A1/1, APT/37A1/1and RCC/40A30/1) as well as their related discussions found in WTSA-24 TD-140.
COM4/1 (ex WTSA-24 Action SGs 1)	WTSA-24 instructs Study Groups 17 and 20 to establish a joint coordination or agreement mechanism between the study groups to determine a demarcation line on the topic of IoT security, and report to TSAG.
COM4/2 (ex WTSA-24 Action SGs 2)	WTSA-24 instructs ITU-T study groups, inter alia Study Groups 13, 17 and 20, to establish a coordination mechanism amongst the study groups in order to deliberate on the topic of "trust" (including trusted information) and "trustworthiness", and report to TSAG.
COM4/3	WTSA-24 instructs ITU-T Study Groups 2 and 20 to establish a joint coordination or agreement mechanism between the study groups to determine a demarcation line for IoT identification and NNAI aspects, and report to TSAG.

Number	Action
(ex WTSA-24 Action SGs 3)	
COM4/4 (ex WTSA-24 Action SGs 4)	WTSA-24 instructs TSAG to study the concept and effectiveness of Lead Study Groups used in Resolution 1 §2.1.5, e.g., to clarify criteria for determination of lead roles, harmonize the description of lead SGs and improve the collaboration amongst ITU-T SGs, taking into consideration inter alia WTSA Resolution 99 (rev. New Delhi, 2024), and report the conclusions to the next WTSA. The ITU-T SGs should be involved in this process to already take this review process into consideration during the preparations for the next study period.
COM4/5 (ex WTSA-24 Action DI1)	With reference to the APT contribution, APT 37A40, that acknowledges the importance of ongoing work and standardization efforts for digital identities and credentials occurring in a number of SDOs and standards bodies, including ITU-T, WTSA-24 instructs Study Group 17, as part of its Resolution 2 mandate as the Lead Study Group for Identity Management (IdM), to continue to develop the necessary Recommendations, Supplements, and Technical Reports for identity management and verifiable credentials. WTSA-24 also encourages Study Group 17 to further study new areas of identity management and verifiable credential standardization topics and to coordinate and promote standardization activities. This action may help to ensure synergies, enhance coordination, and minimize duplicative efforts between ITU-T and other SDOs.
COM4/6 (WTSA-24 Action DRM 1)	With reference to the ARB contribution, ARB/36A33/1, WTSA-24 instructs the TSB Director to inform Study Groups about: – the interoperability challenges faced with the implementation of disaster risk management for all types of systems and devices, including but not limited to, user equipment, IMT technologies, IoT, and multi-modal telecommunications; – the rapid growth of real-time data collection and communication in early warning systems; – new emerging technologies related to telecommunications/ICTs including AI, support emergency and disaster risk management and preparedness, for early warning, risk reduction, mitigation and relief.
COM4/7 (ex WTSA-24 Action DRM 2)	With reference to the ARB contribution, ARB/36A33/1, WTSA-24 invites Member States, Sector Members, Academia and Associates to contribute to the development of standards to address the points above.
COM4/8 (ex WTSA-24 Action PQC	Recognizing the importance of promoting the migration to, and utilization of Post-Quantum Cryptography (PQC) within telecommunication/ICT networks, presented in APT/37A42/1, WTSA-24 instructs ITU-T SG17 to continue to develop the necessary Recommendations, Technical Reports and other ITU-T publications (including guidelines and best practices) to promote the migration to, and utilization of PQC within the remit of the Resolution 2 mandate as the lead study group on Security; and invites Membership to actively contribute to this work.
COM4/9 (ex WTSA-24 Action OTTs)	With reference to the ARB and ATU contributions, ARB/36A31/1 and ATU/35A35/1, WTSA-24, in line with Resolution 68, requests the Director of TSB to convene workshops preferably back to back with relevant Study Group meetings that bring together stakeholders in the OTT ecosystem, aiming to facilitate collaboration, knowledge sharing, and consideration of diverse stakeholders' interests, while identifying and proposing innovative solutions to address their needs and interests wherever possible and report progress of workshop outcomes to TSAG.
COM4/10	Recognizing the contribution that NGSO satellite systems can make to global connectivity, especially for regions lacking traditional internet infrastructure, raised

Number	Action
(ex WTSA-24 Action NGSO 1)	in, ATU/35A34/1, WTSA-24 invites TSAG to examine areas of overlap between work of the ITU-T and the work of other ITU sectors and international bodies over the next study period and provide guidance as to how ITU-T should address telecommunications standardization matters related to NGSO satellite systems within the mandates of its study groups outlined in WTSA Resolution 2 (Rev. New Delhi, 2024) and consistent with WTSA Resolution 18 (Rev. New Delhi, 2024) on allocation of work among the sectors.
COM4/11 (ex WTSA-24 Action NGSO 1)	Recognizing the contribution that NGSO satellite systems can make to global connectivity, especially for regions lacking traditional internet infrastructure, raised in, ATU/35A34/1, WTSA-24 invites Member States, Sector Members, Associates and Academia to actively contribute in the relevant study groups on standardization matters related to NGSO satellite systems-based telecommunication services, consistent with WTSA-24 Action COM4/10 towards a more connected and inclusive world.

Part 4
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PART 5
QUESTIONS

1 Study Group 2

Question number	Question title	Status
A/2	Application of numbering, naming, addressing and identification plans for fixed and mobile telecommunication services	Continuation of Question 1/2
B/2	Routing and interworking plan for current and future networks	Continuation of Question 2/2
C/2	Service and operational aspects of telecommunications, including service definition	Continuation of Question 3/2
D/2	Requirements, priorities and planning for telecommunication/ICT management and operation, administration and maintenance (OAM) Recommendations	Continuation of Question 5/2
E/2	Architecture, security, and evaluation of networks for operations, management and maintenance	Continuation of Question 6/2
F/2	Interface specifications and specification methodology	Continuation of Question 7/2

2 Study Group 3

Question number	Question title	Status
A/3	Development of charging and accounting/settlement mechanisms for current and future international telecommunication/ICT services and networks	Continuation of Question 1/3
B/3	Study of economic and policy factors relevant to the efficient provision of international telecommunication services	Continuation of Question 3/3
-	Regional studies for the development of cost models together with related economic and policy issues	Deletion of Question 4/3
C/3	International Internet fibre cables and satellite Internet connectivity including relevant aspects of Internet protocol (IP) peering, regional traffic exchange points, fibre cables optimization, cost of provision of services and impact of Internet protocol version 6 (IPv6) deployment	Continuation of Question 6/3
D/3	International mobile roaming issues (including charging, accounting and settlement mechanisms and roaming at border areas)	Continuation of Question 7/3
E/3	Economic aspects of alternative calling procedures in the context of international telecommunications/ICT services and networks	Continuation of Question 8/3
F/3	Economic and policy aspects of the Internet, convergence (services or infrastructure) and OTTs in the context of international telecommunication/ICT services and networks	Continuation of Question 9/3
G/3	Competition policy and relevant market definitions related to the economic aspects of international telecommunication services and networks	Continuation of Question 10/3

Question number	Question title	Status
H/3	Economic and policy aspects of big data and digital identity in international telecommunications services and networks	Continuation of Question 11/3
I/3	Economic and policy issues pertaining to international telecommunication/ICT services and networks that enable Mobile Financial Services (MFS)	Continuation of Question 12/3

3 Study Group 5

Question number	Question title	Status
A/5	Electrical protection, reliability, safety, and security of telecommunications/ICT systems	Continuation of part of Q1/5 and part of Q2/5
B/5	Equipment specification and component/device for protection against lightning and other phenomena	Continuation of part of Q1/5 and part of Q2/5
C/5	Assessment of human exposure to electromagnetic fields (EMFs)	Continuation of Q3/5
D/5	Electromagnetic compatibility (EMC) aspects in telecommunications/ICTs	Continuation of Q4/5
E/5	Environmental efficiency of telecommunications/ICTs	Continuation of Q6/5, part of Q11/5 and part of Q12/5
F/5	E-waste, circular economy, and sustainable supply chain management	Continuation of Q7/5 and part of Q13/5
G/5	Guidance and terminology on environment	Continuation of Q8/5
H/5	Assessing the impact of telecommunications/ICTs on climate change, biodiversity and the environment - including the influence on other sectors	Continuation of Q9/5
I/5	Climate change mitigation and smart energy solutions	Continuation of part of Q11/5
J/5	Climate actions and adaptation to climate change through sustainable and resilient telecommunications/ICTs (including new and emerging)	Continuation of part of Q12/5 and Q13/5

4 Study Group 11

Question number	Question title	Status
A/11	Signalling and protocol architectures for telecommunication networks and guidelines for implementations with emerging technologies	Continuation of Q1/11
B/11	Signalling requirements and protocols for services and applications in telecommunication environments	Continuation of Q2/11

Question number	Question title	Status
C/11	Signalling requirements and protocols for emergency telecommunications	Continuation of Q3/11
D/11	Protocols for control, management and orchestration of network resources	Continuation of Q4/11
E/11	Signalling requirements and protocols for border network gateway in the context of network virtualization and intelligentization	Continuation of Q5/11
F/11	Protocols supporting control and management technologies for International Mobile Telecommunications networks	Continuation of Q6/11
G/11	Signalling requirements and protocols for network attachment and edge computing for future networks, IMT-2020 network and beyond	Continuation of Q7/11
H/11	Protocols supporting distributed content networking, information centric network (ICN) technologies for future networks, IMT-2020 network and beyond	Continuation of Q8/11
I/11	Testing of internet of things, its applications and identification systems	Continuation of Q12/11
J/11	Monitoring and measuring parameters for protocols used in emerging networks, including cloud/edge computing and software-defined networking/network function virtualization (SDN/NFV)	Continuation of Q13/11
K/11	Testing of cloud/edge computing, SDN and NFV	Continuation of Q14/11
L/11	Combating counterfeit and stolen telecommunication/ICT devices and its software	Continuation of Q15/11 and Q17/11
M/11	Test specifications for protocols, networks and services for emerging technologies, including benchmark testing and federated testbeds	Continuation of Q16/11

5 Study Group 12

Question number	Question title	Status
A/12	SG12 work programme and quality of service/quality of experience (QoS/QoE) coordination in ITU-T	Continuation of Question 1/12
B/12	Definitions, guides and frameworks related to quality of service/quality of experience (QoS/QoE)	Continuation of Question 2/12
C/12	Objective methods for speech and audio evaluation in vehicles	Continuation of Question 4/12
D/12	Telephonometric methodologies for handset and headset terminals	Continuation of Question 5/12
E/12	Analysis methods for speech and audio using complex measurement signals	Continuation of Question 6/12

Question number	Question title	Status
F/12	Methodologies, tools and test plans for the subjective assessment of speech, audio and audiovisual quality interactions	Continuation of Question 7/12
G/12	Perceptual-based objective methods and corresponding evaluation guidelines for voice and audio quality measurements in telecommunication services	Continuation of Question 9/12
H/12	Conferencing and telemeeting assessment	Continuation of Question 10/12
I/12	Operational aspects of telecommunication network service quality and end-to-end performance considerations	Continuation of Question 12/12
J/12	Quality of experience (QoE), quality of service (QoS) and performance requirements and assessment methods for multimedia applications	Continuation of Question 13/12
K/12	Development of models and tools for multimedia quality assessment of packet-based video services	Continuation of Question 14/12
L/12	Parametric and E-model-based planning, prediction and monitoring of conversational speech and audio-visual quality	Continuation of Question 15/12
M/12	Performance of packet-based networks and other networking technologies	Continuation of Question 17/12
N/12	Objective and subjective methods for evaluating perceptual audiovisual quality in multimedia and television services	Continuation of Question 19/12
O/12	Perceptual and field assessment principles for quality of service (QoS) and quality of experience (QoE) of digital financial services (DFS)	Continuation of Question 20/12

6 Study Group 13

Question number	Question title	Status
A/13	International mobile telecommunications (IMT) networks and quantum communications: Quality of service (QoS) mechanisms	Continuation of Q6/13
B/13	International mobile telecommunications (IMT) networks and artificial intelligence/machine learning: Requirements and architecture	Continuation of Q20/13
C/13	Network softwarization	Continuation of Q21/13
D/13	Enhanced information-centric networking (ICN) and emerging network technologies	Continuation of Q22/13

Question number	Question title	Status
E/13	Fixed, mobile and satellite convergence	Continuation of Q2313
F/13	Network awareness and network intelligence including big data driven networking and human-like networking	Continuation of Q7/13
G/13	Requirements and capabilities for computing including cloud computing and data handling	Continuation of Q17/13
H/13	Functional architecture for computing including cloud computing and data handling	Continuation of Q18/13
I/13	End-to-end management, governance, and security for computing including cloud computing and data handling	Continuation of Q19/13
J/13	Innovative convergence service including service model, scenarios, technical aspects in future network	Continuation of Q1/13
K/13	Next-generation network (NGN) evolution by adoption of emerging network technologies	Continuation of Q2/13
L/13	Applying future networks and innovation in developing countries	Continuation of Q5/13
16/13	Future networks: Trustworthy and quantum enhanced networking and services	Continuation of Q16/13

7 Study Group 15

Question number	Question title	Status
A/15	Optical systems for fibre access networks	Continuation of Question 2/15 and part of Question 1/15
B/15	Technologies for in-premises networking and related access applications	Continuation of Question 3/15 and part of Question 1/15
C/15	Broadband access over metallic conductors	Continuation of Question 4/15
D/15	Characteristics and test methods of optical fibres and cables, and installation guidance	Continuation of Question 5/15
E/15	Characteristics of optical components, subsystems and systems for optical transport networks	Continuation of Question 6/15
F/15	Connectivity, operation and maintenance of optical physical infrastructures	Continuation of Question 7/15
G/15	Characteristics of optical fibre submarine cable systems	Continuation of Question 8/15
H/15	Interfaces, interworking, OAM, protection and equipment specifications for packet-based transport networks	Continuation of Question 10/15

Question number	Question title	Status
I/15	Signal structures, interfaces, equipment functions, protection and interworking for optical transport networks	Continuation of Question 11/15
J/15	Transport network architectures	Continuation of Question 12/15
K/15	Network synchronization and time distribution performance	Continuation of Question 13/15
L/15	Management and control of transport systems and equipment	Continuation of Question 14/15

8 Study Group 17

Question number	Question title	Status
A/17	Security standardization strategy, incubation and coordination	Continuation of Q1/17
B/17	Security architecture and network security	Continuation of Q2/17
C/17	Telecommunication information security management and security services	Continuation of Q3/17
D/17	Cybersecurity and countering spam	Continuation of Q4/17
E/17	Security for telecommunication services, Internet of Things (IoTs), digital twin, and metaverse	Continuation of Q6/17
F/17	Secure application services	Continuation of Q7/17
G/17	Cloud computing and big data infrastructure security	Continuation of Q8/17
H/17	Identity management and telebiometrics architecture and mechanisms	Continuation of Q10/17
I/17	Generic technologies to support secure applications	Continuation of Q11/17
J/17	Intelligent transport system (ITS) and Connected Autonomous Vehicle (CAV) security	Continuation of Q13/17
K/17	Distributed Ledger Technology (DLT) security	Continuation of Q14/17
L/17	Quantum-based security	Continuation of Q15/17

9 Study Group 20

Question number	Question title	Status
A/20	Requirements, capabilities and architectural frameworks of IoT and SSC&C across verticals	Continuation of Q2/20
B/20	Human-centric digital services enabled by IoT and SSC&C related to digital health, accessibility and inclusion	New
C/20	Security, privacy, trustworthiness, and identification of IoT and SSC&C	Continuation of Q6/20
D/20	Data analytics, sharing, processing and management, including big data aspects, of IoT and SSC&C	Continuation of Q4/20
E/20	Decentralized/distributed IoT	New
F/20	Architectures, functionalities, and protocols in applications of verticals and infrastructures of IoT and SSC&C	Continuation of Q3/20
G/20	Evaluation and assessment of smart sustainable cities and communities and digital services	Continuation of Q7/20
H/20	Interworking between smart city platforms including digital twins	Continuation of Q1/20
I/20	Terminology and definitions, study and research of emerging digital technologies	Continuation of Q5/20

10 Study Group 21

Question number	Question title	Status
A/9	Transmission and delivery control of television and sound programme signal for contribution, primary distribution and secondary distribution	Continuation of Q1/9
B/9	Methods and practices for conditional access and content protection	Continuation of Q2/9
C/9	AI-enabled enhanced functions over integrated broadband cable network	Continuation of Q3/9
D/9	Guidelines for developing countries to implement and deploy digital cable television networks	Continuation of Q4/9
E/9	Software frameworks and architectures for advanced content distribution services over integrated broadband cable networks	Continuation of Q5/9
F/9	Functional requirements for terminal devices of the integrated broadband cable networks	Continuation of Q6/9
G/9	Transmission control and interfaces (MAC layer) for IP and/or packet-based data over integrated broadband cable networks	Continuation of Q7/9

Question number	Question title	Status
H/9	The Internet Protocol (IP) enabled multimedia applications and services for cable television networks enabled by converged platforms	Continuation of Q8/9
I/9	Requirements, methods, and interfaces of the advanced service platforms to enhance the delivery of audiovisual content, and other multimedia interactive services over integrated broadband cable networks	Continuation of Q9/9
B/16	Artificial intelligence-enabled multimedia applications	Continuation of Q5/16
C/16	Visual, audio and signal coding	Continuation of Q6/16
D/16	Immersive live experience systems and services	Continuation of Q8/16
E/16	Multimedia systems, terminals, gateways and data conferencing	Continuation of Q11/16
F/16	Intelligent visual systems and services	Continuation of Q12/16
G/16	Multimedia streaming-related systems and services including content delivery, application platforms and end systems	Continuation of Q13/16
H/16	Multimedia framework, applications and services	Continuation of Q21/16
I/16	Multimedia aspects of distributed ledger technologies and related services	Continuation of Q22/16
J/16	Digital culture-related systems and services	Continuation of Q23/16
K/16	Human factors for intelligent user interfaces and services	Continuation of Q24/16
M/16	Vehicular multimedia communications, systems, networks, and applications	Continuation of Q27/16
N/16	Multimedia framework for digital health applications	Continuation of Q28/16
Q.Coord/C	Coordination and planning	Continuation of Q10/9 and Q1/16
Q.Acc/C	Multimedia system, service and application accessibility for digital inclusion	Continuation of Q11/9 and Q26/16