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| PROPOSED MODIFICATION TO RESOLUTION 98 |
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| **Abstract:** | This document contains the proposal for modification of WTSA Resolution 98, “Enhancing the standardization of Internet of things and smart cities and communities for global development”. |
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Introduction

According to the standardization progress of ITU-T during study period 2022-2024, as well as the emerging services and technologies relevant to standardization, APT proposes modification/further enhancement to WTSA Resolution 98.

Based on the outcome of WTSA-24 preparatory meetings held during the concluded ITU-T Study Group 20 meeting, 1-12 July 2024, as well as alignment with Resolution 197 (Rev. Bucharest, 2022), APT proposes to replace the word “Smart Cities & Communities (SC&C)” with “Smart Sustainable Cities & Communities (SSC&C)” included in the title and body of WTSA Resolution 98.

Proposal

APT Member Administrations propose to modify Resolution 98.

MOD APT/37A37/1

RESOLUTION 98 (Rev. New Delhi, 2024)

Enhancing the standardization of Internet of Things 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 66-1 (Rev. Sharm el-Sheikh, 2019) 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 SC&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)* Recommendation ITU‑T Y.4000/Y.2060, on 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 (ICTs)";

*g)* Recommendation ITU-T Y.4600, on requirements and capabilities of a digital twin system for smart cities, emphasizing digital twin technology as a foundational enabler for SSC&C,

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)* the importance of IoT in contributing to achievement of the 2030 Agenda for Sustainable Development, in particular recalling Sustainable Development Goal 3 (SDG 3) (Good Health and Well-Being), SDG 4 (Quality Education), SDG 6 (Clean Water and Sanitation), SDG 7 (Affordable and Clean Energy), SDG 9 (Industry, Innovation and Infrastructure), SDG 11 (Sustainable Cities and Communities), SDG 13 (Climate Action), SDG 14 (Life Below Water) and SDG 15 (Life on Land);

*c)* that various industrial sectors, such as energy, transportation, agriculture, manufacturing and mining, and various social sectors such as healthcare, education, environmental protection, banking, citizen-centric e-governance services, etc., are collaborating for the development of IoT and SSC&C applications and services across verticals;

*d)* that IoT 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 & aquaculture, smart manufacturing, smart electric vehicles, smart energy storage, etc., working together with services for the benefit of users;

*e)* that SSC&C can use IoT, digital twins and metaverse to discover and respond to regional and/or global crises such as natural disasters and epidemics/pandemics;

*f)* that research and development in IoT can help to improve global development, delivery of basic services and monitoring and evaluation programmes in different sectors;

*g)* that IoT involves various stakeholders and areas, which may require coordination and cooperation;

*h)* 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;

*i)* that technical standards as well as public-private partnerships should reduce the time and cost for implementing IoT with benefits in terms of economies of scale;

*j)* that ITU‑T should play a leading role in the development of IoT-related and SSC&C‑related standards;

*k)* the importance of collaboratively assessing and standardizing IoT and SSC&C interoperability;

*l)* that IoT and SSC&C may have an impact in many areas, which may require further cooperation between national, regional and international entities concerned on relevant aspects in order to maximize the benefits of IoT;

*m)* that security and privacy aspects are a key component in the development of a reliable and secure IoT ecosystem;

*n)* the potential of IoT generated data in enabling informed decision-making process across sectors, facilitating precision, efficiency, and improved outcomes in various verticals for identification, operation and management;

*o)* the vast amount of data generated by IoT devices in smart cities, requires robust data governance strategies to ensure data integrity, privacy and security;

*p)* citizen collaboration mechanisms are essential for smart cities to enhance engagement and participation, enable innovation, promote collaborative governance, and address challenges through community-driven approaches, integrating these human-centric aspects alongside technological solutions is key to building truly citizen-centric smart cities;

*q)* smart city and IoT solutions should create vibrant and inclusive environments that celebrate creativity, promote cultural events, and enrich the lives of residents while preserving the unique historical, cultural, and artistic identity of the city,

recognizing

*a)* that ICTs are booming, and digital transformation has penetrated into all walks of life, forming a lot of smart city applications, and the corresponding construction of smart city capabilities, including smart city platforms, data management, spatial and temporal geographic information, network connection management, etc., has also become very important to achieve SDG 3, SDG 4, SDG 6, SDG 7, SDG 9, SDG 11, SDG 13, SDG 14 and SDG 15, and facilitate development of green energy, low-carbon society and SSC&C;

*b)* that industry forums, standards-development organizations (SDOs) and partnership projects are developing technical specifications for IoT;

*c)* the role of the ITU Telecommunication Development Sector (ITU-D) in encouraging telecommunication/information and communication technology (ICT) development at the global level, and in particular the relevant work carried out by ITU-D Study Group 2;

*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 and SC&C within ITU, and to seek cooperation from external bodies working in the field of IoT and SC&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 Study Group 20 is responsible for studies and standardization work relating to IoT and SSC&C;

*g)* that 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/Recommendations for IoT and their implementation;

*h)* that the ITU-T Focus Group on metaverse (FG-MV) has explored the role of the metaverse in accelerating digital transformation and achieving the SDGs;

*i)* that United for Smart Sustainable Cities (U4SSC) is supporting cities to leverage the full potential of ICT in sustainable development,

resolves to instruct Study Group 20 of the ITU Telecommunication Standardization Sector

1 to develop ITU‑T Recommendations aimed at implementing IoT and SSC&C, including digital twin and metaverse for SSC&C, and taking into consideration the requirements of 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 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 to facilitate seamless integration of devices and platforms, and the need for IoT and SSC&C to be open, adaptable, sustainable and interoperable, thereby fostering a competitive environment;

3 to collaborate with IoT and SSC&C‑related standard organizations and other stakeholders, 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 development of smart villages with a focus on holistic rural development,

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 and SSC&C;

2 to carry out, in collaboration with Member States and cities, pilot projects in cities related to SSC&C key performance indicator (KPI) assessment activities, aimed at facilitating the deployment and implementation of IoT and SSC&C standards worldwide;

3 to continue to support U4SSC, and share its deliverables with Study Group 20 and other study groups concerned;

4 to promote and encourage the implementation of U4SSC KPIs as a standard for smart sustainable cities' self-assessment in collaboration with Member States;

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 and SSC&C services;

6 to devise strategies for aiding countries in strengthening cybersecurity concerning IoT and SSC&C, in collaboration with other SDOs,

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[[1]](#footnote-1)1 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 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 and SSC&C, as well as organizing forums, seminars, trainings and workshops on the subject, taking into account the needs of developing countries in particular;

5 to support Member States, especially developing countries, in the organization of forums, seminars, trainings and workshops on IoT and SSC&C to promote innovation, development and growth in IoT technologies and solutions;

6 to report to the next world telecommunication standardization assembly on progress made in the organization of forums, seminars, trainings 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 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 and SSC&C being conducted by ITU‑T, including emerging technologies related to IoT and SSC&C;

2 to develop master plans and exchange use cases and best practices in order to promote the IoT ecosystem, as well as SSC&Cs, and to promote social development and economic growth in order to achieve the SDGs;

3 to cooperate and exchange experiences and knowledge related to this topic;

4 to support and organize forums, seminars, trainings and workshops on IoT in order to promote innovation, development and growth in IoT technologies and solutions;

5 to take necessary measures to facilitate the growth of IoT in relation to areas such as the establishment of standards;

6 to encourage and promote the participation of the private sectors in standardization activities to ensure that their experiences, perspectives and opinions are covered in the work of Study Group 20;

7 to promote transformation from research achievements to standard outcomes through a variety of joint researches such as proof of concept (POC), pilot project and test bed validation.

1. 1 These include the least developed countries, small island developing states, landlocked developing countries and countries with economies in transition. [↑](#footnote-ref-1)