

WORLD TELECOMMUNICATION STANDARDIZATION
ASSEMBLY
New Delhi, 15-24 October 2024

Resolution 105 – Promoting and strengthening metaverse standardization



FOREWORD

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

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

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

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

RESOLUTION 105 (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 the World Telecommunication Standardization Assembly (WTSA), 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; and that this convergence is changing our daily lives and professional landscapes and is poised to be a mainstay of future telecommunications/ICTs, with 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 metaverse;
- g) that ITU-T should continue and further strengthen metaverse standardization work;
- 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 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 and 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 WTSA,

instructs the Director of the Telecommunication Standardization Bureau

1 to work collaboratively with the Directors of the Radiocommunication Bureau and the Telecommunication Development Bureau 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 ITU-T Recommendations, technical reports and guidelines related to metaverse is reflected in Telecommunication Standardization Bureau initiatives on bridging the standardization gap aimed at assisting developing countries¹;

3 to encourage Member States, Sector Members, Associates and Academia to share information relating to metaverse standardization between relevant groups in ITU-T, the ITU Radiocommunication Sector and the ITU Telecommunication Development Sector, 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,

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 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 Agenda for Sustainable Development within the mandate of the Union.