

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

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**Resolution 104 – Promoting and strengthening  
standardization activities for vehicular  
communications**



## 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 104 (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<sup>1</sup>;
- 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, telecommunication/information and communication technology (ICT), electronic, security and energy sectors, which require coordination;

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

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 (IoT)-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 communication technology for automated driving (EG-ComAD), which aims to facilitate the deployment of safe and reliable automated driving systems through advanced communication 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 study 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 organizations (SDOs) 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 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, in particular developing countries, 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 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 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.;
- 4 ITU-T Study Group 20 to leverage the deployment of IoT applications to contribute to a more connected, sustainable and safer transportation, looking in particular into interoperability and backward compatibility issues;
- 5 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;
- 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,

*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.