ITUPublications
Resolutions

International Telecommunication Union
Standardization Sector

WORLD TELECOMMUNICATION STANDARDIZATION ASSEMBLY
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Resolution 93 – Interconnection of International Mobile Telecommunications networks

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 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 the World Telecommunication Standardization 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. New Delhi, 2024) of this assembly instructs the Director of the Telecommunication Standardization Bureau, in collaboration with the Director of the Telecommunication Development Bureau, to continue consultations in all regions, taking into account the needs of each region, on implementation of the conformance and interoperability (C&I) action plan endorsed by the ITU Council,

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 C&I 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 organized 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 the European Telecommunications Standards Institute Technical Committee on core network and interoperability testing (ETSI TC INT);

e) the successful work of the ITU-T Focus Group on testbed federations for IMT-2020 and beyond,

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 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 in relation to 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.