Question 1/2 – Application of numbering, naming, addressing and identification plans for fixed and mobile telecommunication services

(Continuation of Question 1/2)

1 Motivation

Continuation of studies regarding naming, numbering, addressing, and identification resources within the remit of Study Group 2. A significant amount of this work throughout a study period is the result of future issues presented by its Collaborators. These issues typically resulted in numerous future tasks defined and approved during the previous study periods.

This Question will continue to define, study, and resolve future issues through the approval of additional tasks.

2 Question

How can ITU-T Study Group 2 deal with the issues related to the application of numbering, naming, addressing and identification plans for fixed and mobile telecommunications services including, but not limited to, the Tasks detailed below?

3 Tasks

Tasks include, but are not limited to:

Maintenance of existing ITU-T E-series numbering related Recommendations

Rationale: This task reviews and revises, where and when appropriate, the existing ITU-T numbering, naming, addressing and identification Recommendations of the ITU-T E-series and F series, e.g., E.101, E.118, E.118.1, E.129, E.156, E.157, E.164, E.164.1, E.164.2, E.164.3, E.168, E.168.1, E.169, E.169.1, E.169.2, E.169.3, E.190, E.191, E.191.1, E.193, E.195, E.212, E.213, E.214, E.217, E.218, E.370, E.910, E.1100.

This task will ensure that these Recommendations are updated to reflect the current circumstances of the global telecommunications industry and regulatory environment taking into account the requirements of future telecommunication/ICT architectures, capabilities, applications and services including NGN, IP-based networks or IoT/M2M.

UIFN/UIPRN/UISCN registrar coordination

Rationale: The Question maintains and considers potential evolutions of the use of the resources specified in Recommendations, as well as consulting on an ongoing basis with the Registrar to resolve issues, regarding the administration of Universal International Freephone Numbers (UIFN), Universal International Premium Rate Numbers, Universal International Shared Cost Numbers and ITU-T IND ATM End System Addresses (ITU-T AESAs) as well as network E.164 codes, mobile country codes, issuer identification numbers and terrestrial trunk radio access country codes.

The Question will also provide guidance on the life cycle of the management of resources where a role is identified for the Sector.

Request for numbering resources for future telecommunication/ICT architectures, capabilities, applications and services

Rationale: When future global or regional telecommunication/ICT architectures, capabilities, applications and services are developed and proposed for implementation, this task will review international numbering resource applications whenever necessary as per WTSA Resolution 20. This includes requests for IoT/M2M, in-car emergency calling, UIFS, GMSS, FMSC, CPN etc.

Global evolution of naming, numbering, addressing and identification (NNAI) requirements for telecommunications/ICT architectures capabilities, applications and services

Rationale: This task will study and document the evolution of assigned international numbering, naming, addressing and identification schemes to accommodate current and future telecommunication/ICT architectures, capabilities, applications and services, and will include the convergence with current and future IP-based systems/networks, cloud computing future generations of mobile (including satellite) networks that also includes the future of NNAI. The task will utilize where appropriate NNAI plans that already exist and that are already widely deployed and used in order to identify mechanisms that permit convergence between these different plans, and identify gaps in plans or convergence that need to be addressed, and where appropriate develop future schemes/methodologies.

These studies will review the draft output of other study groups to ensure consistency with work of ITU-T SG2 and that future requirements adhere to basic principles and requirements, as specified in WTSA Resolution 40 (Rev. Geneva, 2022).

Naming, numbering, addressing and identification for convergence between ITU-T E.164 numbering plan-based networks and IP address-based networks

Rationale: Convergence of the existing telecommunication networks, both fixed and wireless, with the current and future IP address-based network requires the continuing development of NNAI mechanisms to develops solutions relating to NNAI for the convergence between the ITU-T E.164 numbering plan-based networks and current and future IP address-based networks.

In addition, this task will continue the identification of future NNAI with respect to the longer-term goal of convergence of the naming and addressing schemes used in international telecommunication networks.

The objective is a Recommendation(s), as appropriate, containing the results of the above work.

Implementation and activation of ITU-T E.164 and E.212 resources

Rationale: The growth of future and existing telecommunication/ICT architectures, capabilities, applications and services as well as the quantity of network operators and service providers due to the evolution of competition in the telecommunications industry, has resulted in the introduction of numerous new geographic and non-geographic numbering resources nationally, internationally and globally. In order for these resources to be activated effectively, new methods are required to increase awareness and implementation of the resources.

This task will study potential awareness and implementation methods as appropriate and, as a result of the study, will publish these methods in the E-series of Recommendations. The study will include means of identifying better communication of the newly created country codes, assigned ranges under shared codes or their use, and making the Operational Bulletin more visible and relevant for the evolving telecoms ecosystem, or improvements to the way the current and potentially future methodologies are used.

Guidelines for effective and efficient national numbering resources administration

Rationale: The administration and evolution of national numbering plans involves a diversity of tasks that depend on the approach of the country to its national telecommunications environment (size, geography, regulation, legal framework, structure of the numbering plan, ecosystem of players, etc.). Consideration of such resources to the provision of future telecommunication/ICT architectures, capabilities, applications and services may benefit from closer cooperation and sharing of the experience of the tasks associated with the national environments between the numbering plan administrations.

This task will consider typical elements to be considered for structuring and administering national numbering plans and possibly define good common practices and guidelines for national numbering plan administrators.

Number portability

Rationale: Update the existing Number Portability Supplement to include the necessary technical requirement for the introduction of number portability, including with respect to IP address-based networks and current and future IP- based technologies.

Future applications for naming, numbering, addressing and identification

Rationale: Over the past few years there has been a growing interest for international resources, including machine-to-machine (M2M) services, that are not tied to a particular country but have a global outreach. Such capabilities, applications and services include (but are not limited to) container tracking, embedded SIMs in various vehicles and machines (vending machines, etc.), extra-territorial use of resources. A number of IoT/M2M service providers, however, rely on international resources in general, and MCC 901 in particular, to deploy such services. Additionally, future types of applications may require NNAI resources (e.g., E.212 MCC + MNC and E.164 CC+IC), both on global and national levels. These types of capabilities, applications and services will put future demands on NNAI resources.

The task will continue to evaluate and respond to applications for NNAI resources, by assessing the associated risks of exhaustion for the NNAI resources along with mitigation measures and provide guidelines to Administrations on the use of national or internationally assigned NNAI resources. The study will also consider means of monitoring the use of the international resources to ensure such resources are used according to their assignments. This will include specification of tools to make such resources globally reachable whenever necessary, templates for assignees to report on the use of such resources, including notification of future use cases, as well as templates for publishing national numbering plan information.

Definitions

Rationale: This task specifies terms and definitions for use in the field of identifiers (e.g., names, numbers, addresses and identifiers (IDs)) for public telecommunication services and networks to have consistent terminology in the E- F-, Q- and X-series. In this task, these terms and definitions have been developed, for the most part, from the practice of the use of IDs in traditional telephone networks such as PSTN, ISDN and PLMN-based networks (e.g., IMT2020 and beyond). These terms will continue to be applicable with their current definitions for future telecommunication/ICT architectures, capabilities, applications and services that includes future networks, PLMNs for future generations of mobile (including satellite), IoT/M2M and future IP-based networks.

An up-to-date status of work under this Question is contained in the SG2 work programme: https://itu.int/ITU-T/workprog/wp_search.aspx?sp=18&q=1/2.

Recommendations and Supplements under responsibility of this Question: ITU-T E.101, E.118, E.112, E.129, E.156, E.157, E.164, E.164.1, E.164.2, E.164.3, E.168, E.168.1, E.169, E.169.1, E.169.2, E.169.3, E.190, E.191, E.191.1, E.193, E.195, E.212, E.213, E.214, E.217, E.218, E.370, E.910, E.1100, E.1110, E.1121.

Texts under development: E.101, E.118, E.118.1, E.156, E.164, E.164.1, E.190, E.1120, E.IoT-NNAI, E.RAA4Q.TSCA, TR.MMWF, TR.OTTnum, TR.OTTNumMgt.

4 Relationships

Recommendations:

– N/A

Questions:

– N/A

Study groups:

– N/A

Other bodies:

– N/A

WSIS Action Lines:

– C2, C6, C10

Sustainable Development Goals:

– 9, 10, 11