# Activities relevant to NNAI in ITU

Regional Workshop on Telecom Numbering Planning and Policies for the Arab and Africa Regions

> Tunis, Tunisia, 25 April 2018 ITU TSB



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# Abbreviations (1/2)

- INR: International Numbering Resource
- UIN: Universal International Number
- UIFN: Universal International Freephone
- UISCN: Universal International Shared Cost Number
- UIPRN: Universal International Premium Rage
   Number
- NNAI: Numbering Naming Addressing Identification
- NNP: National Numbering Plan
- SANC: Signalling Area Network Code
- ISPC: International Signalling Point Code
- OID: Object Identifier



# Abbreviations (1/2)

- IDN: Internationalized Domain Name
- OI: Origin Identification
- CLI: Calling Line Identification
- ACP: Alternative Calling Procedure
- TLD: Top Level Domain
- ENUM: tElephone Number Mapping
- IoT: Internet of Things
- USSD: Unstructured Supplementary Service Data
- MSIN: Mobile Subsription Identification Number



## ITU-TSB work on INR (International Numbering Resource)





## List of INRs governed by relevant ITU-T Recommendations

- The international public telecommunication numbering plan: <u>Rec. ITU-T E.164</u>
- The international identification plan for public networks and subscriptions: <u>Rec. ITU-T E.212</u>
- Management of the allocation of terrestrial trunk radio Mobile Country Codes: <u>Rec. ITU-T E.218</u>
- IIN (issuer identifier number): <u>Rec. ITU-T E.118</u>
- SANC and ISPC: Rec. ITU-T Q.708
- ITU IND AESA (ITU International Network Designator ATM End System Address): <u>Rec. ITU-T E.191</u>
- ITU Carrier Codes: <u>Rec. ITU-T M.1400</u>
- Bureaufax Table: <u>Rec. ITU-T F.170</u>
- ITU-T defined codes for non-standard facilities in telematic services: <u>Rec. ITU-T T.35</u>
- ENUM Delegations: TSB circular 105
- Closed User Group Interlock Code: <u>Rec. ITU-T Q.763</u>
- ADMD (Administration Management Domain) Name: <u>Rec. ITU-T F.400/X.400</u>, <u>Rec. ITU-T F.401</u>
- OID assigned under {joint-iso-itu-t(2) country(16)}: <u>Rec. ITU-T X.660</u>
- International Network Identification Codes( E.164 CC+National Network Identifier): <u>Rec. ITU-T</u> X.125
- Telex Destination Codes and Telex Network Identification Codes: <u>Rec. ITU-T F.68</u> and <u>F.69</u>



### **Topics and activities on NNAI in ITU** Numbering Misuse/misappropriation harmonization Allocation and **OI/CLI** delivery ACP Management Best Capacity National Rec guidelines building practices framework other resources, future Traditional resources, Internet resources, such evlolution such as E.164 number as IP address, IDN, ccTLD ITR WCIT Res./WTPR outcomes **ITU PP Res.** WTSA Res./WTDC Res.



## **ITU PP Resolutions related to NNAI**

- Res. 21 Measures concerning alternative calling procedures on international telecommunication networks
- Res. 101 Internet Protocol-based networks
- Res. 102 policy issues pertaining to the Internet and the management of Internet resources, including domain names and addresses
- Res. 133 Role of administrations of Member States in the management of internationalized (multilingual) domain names
- Res. 180 Facilitating the transition from IPv4 to IPv6
- Res. 190 Countering misappropriation and misuse of international telecommunication numbering resources



## **WTSA-16 Resolutions related to NNAI**

- Res. 20 Procedures for allocation and management of international telecommunication numbering, naming, addressing and identification resources
- Res. 29 Alternative calling procedures on international telecommunication networks
- Res. 47 Country code top-level domain names
- Res. 48 Internationalized (multilingual) domain names
- Res. 49 ENUM
- Res. 60 Responding to the challenges of the evolution of the identification/numbering system and its convergence with IP-based systems/networks
- Res. 61 Countering and combating misappropriation and misuse of international telecommunication numbering resources
- Res. 64 Internet protocol address allocation and facilitating the transition to and deployment of IPv6
- Res. 65 Calling party number delivery, calling line identification and origin identification information
- Res. 85 Strengthening and diversifying the resources of the ITU Telecommunication Standardization Sector
- Res. 91 Enhancing access to an electronic repository of information on numbering plans published by the ITU Telecommunication Standardization Sector
- Res. 93 Interconnection of 4G, IMT-2020 networks and beyond



## **WTDC Resolutions related to NNAI**

- Res. 22: Alternative calling procedures on international telecommunication networks, identification of origin and apportionment of revenues in providing international telecommunication services
- Res. 78: Capacity building for countering misappropriation of Recommendation ITU-T E.164 telephone numbers
- Res. 63: IP address allocation and facilitating the transition to IPv6 in the developing countries



## **ITR-2012 sections related to NNAI**

- 3.5 Member States shall endeavour to ensure that international telecommunication numbering resources specified in ITU-T Recommendations are used only by the assignees and only for the purposes for which they were assigned; and that unassigned resources are not used.
- 3.6 Member States shall endeavour to ensure that international calling line identification (CLI) information is provided taking into account the relevant ITU-T Recommendations.



## WCIT-2012 Resolutions related to NNAI

 Resolution 2: Globally harmonized national number for access to emergency services



## **WTPF-13 outcomes related to NNAI**

- OPINION 3: Supporting Capacity Building for the deployment of IPv6
- OPINION 4: In support of IPv6 adoption and transition from IPv4
- OPINION 5: Supporting multi-stakeholderism in Internet Governance



# **Background of ITU-T SG2**



## **ITU-T SG2 Structure**

<b>WP1/2</b>	Numbering, naming, addressing, routing and service provision
<u>Q1/2</u>	Application of numbering, naming, addressing and identification plans for fixed and mobile telecommunication services
<u>Q2/2</u>	Routing and interworking plan for fixed and mobile networks
<u>Q3/2</u>	Service and operational aspects of telecommunications, including service definition
WP2/2	Telecommunication management and network and service operations
<u>Q5/2</u>	Requirements, priorities and planning for telecommunication management and OAM Recommendations
<u>Q6/2</u>	Management architecture and security
<u>Q7/2</u>	Interface specifications and specification methodology
SG2RG-AMR	Regional Group for the Americas
SG2RG-ARB	Regional Group for the Arab Region
SG2RG-EA	Regional Group for East Africa



## About SG2

- Document C.1(<u>https://www.itu.int/md/T17-</u> <u>SG02-C-0001/en</u>)
  - Title
  - Mandate
  - Points of guidance
  - Wording of Questions



# List of Recommendations under the responsibility of ITU-T SG2 in the 2017-2020 study period

- **ITU-T E-series**, except those in conjunction with Study Group 17 or under the responsibility of Study Groups 12 and 16:
  - SG17: ITU-T E.104, ITU-T E.115, ITU-T E.409 (in conjunction with Study Group 2)
  - SG12: ITU-T E.420 ITU-T E.479, ITU-T E.800 ITU-T E.859
  - SG16: ITU-T E.120 ITU-T E.139 (except ITU-T E.129), ITU-T E.161, ITU-T E.180-series, ITU-T E.330-series, ITU-T E.340-series
- ITU-T F-series, except those under the responsibility of Study Groups 13, 16 and 17:
  - SG13: ITU-T F.600-series
  - SG16: ITU-T F.700-series, except those under the responsibility of Study Group 20 (ITU-T F.744, ITU-T F.747.1 ITU-T F.747.8, ITU-T F.748.0 ITU-T F.748.5 and ITU-T F.771), and ITU-T F.900-series
  - SG17: ITU-T F.400-series; ITU-T F.500 ITU-T F.549
- Recommendations of the ITU-T I.220-, ITU-T I.230-, ITU-T I.240-, ITU-T I.250-series and ITU-T I.750-series
- ITU-T G.850-series
- ITU-T M-series
- ITU-T O.220-series
- ITU-T Q.513, ITU-T Q.800 ITU-T Q.849, ITU-T Q.940-series
- Maintenance of the ITU-T S-series
- ITU-T V.51/M.729
- ITU-T X.160-, ITU-T X.170-, ITU-T X.700-series
- ITU-T Z.300-series



## **Main NNAI resources under SG2**

11 nac2 11 4 12 5 m 7218 12 17 5	NUC-Card wool		TUU-T X.121  The second	TSI IRA Subscriber Ide MNC tenserk Code 24 Ireas Husch - Creative	Netwo vorknet - 24hr Sales & Service - 1-1	International Activity of the		+800 +979 +878 <sup>+808</sup>
E.164	E.212	E.118	X.121	E.218	E.191 Serial	M.1400	ENUM delegation	E.168 serial E.169 serial



## SG2 outcomes related to NNAI (2013-2016)

Recommendation	Approval	Status	TAP/ AAP	Title
<u>E.129</u>	2013-01-31	revised	TAP	Presentation of national numbering plans
<u>E.1110</u>	2013-01-31	new	TAP	Allocation and assignment of ITU-T E.164 country code 888
<u>M.1400</u>	2015-04-29	revised	AAP	Designations for interconnections among operators' networks
E.164 supplement2	2014-06-06	Revised	-	Number portability



## SG2 outcomes related to NNAI (March 2017)



## **Calling party number delivery (Res. 65)**

- Relevant documents:
  - Revised E.157 (<u>SG2-TD211</u>);
  - Caller ID spoofing and solutions (<u>SG2-C55</u>);
  - Spoofing, robocalling, etc. and proposed solutions (<u>SG2-TD221</u>);
  - identification of Unknown Numbers in CLI (<u>SG2-C44</u>);
  - Possible work item on applicability of IETF STIR/ Calling number signing (<u>SG2-TD261</u>);
  - Q.SR including SS7 signaling requirements on CLI [from ITU-T SG11] (<u>SG2-TD256</u>)
- Result
  - Work via correspondence: CPND mailing list (<u>t17sg2cpnd</u>)
  - Latest version of E.157: <u>SG2-TD353</u>
  - latest document on spoofing is <u>SG2-TD354</u> "spoofing"
  - to be discussed at the SG2 meeting in July 2018



## Numbering Misuse (Res. 61)

- Relevant document
  - Revised E.156 (<u>SG2-TD210</u>);
  - comments from PITA (<u>SG2-C70</u>)
- Result
  - Work via correspondence: misuse mailing list (<u>t17sg2misuse</u>)
  - Latest version of E.157: SG2-TD353



## **Alternative Calling Procedure (Res. 29)**

- proposed to send liaison to SG3 providing investigation of tariffication mechanisms for alternative calling procedures in telecommunication networks which may be potentially harmful (<u>SG2-C66</u>)
  - liaison (<u>SG2-TD298-R2</u>) was sent to SG3. The meeting advised the contributor of <u>SG2-C66</u> from Russia to contribute directly to SG3.
- SG12 work on QoS and QoE aspects of alternative calling procedures and SIM-boxing [from ITU-T SG12] (SG2-TD219)

- Noted.



## NNAI for IoT (1/5)

### • IoT User ID (<u>SG2-C65</u>);

- New annex on User ID used outside operators' network mapped into E.212 IMSI by OSS/BSS system for payment of call bill and user complaints
- Hexadecimal for IoT for E.164 and E.212 resources (<u>SG2-C64</u>): reservation position
  - noted
- Use cases for IoT/M2M numbering resources (<u>SG2-C38</u>) and Carrier provider switching and End-user portability (<u>SG2-C32</u>);
  - Be included in E.IoT-NNAI in the latest version contained in SG2-TD 198-R1



# NNAI for IoT (2/5)

- In car emergency calls extra territorial numbers (<u>SG2-C35</u>) and new UN regulation on Accident Emergency Call Systems (<u>SG2-TD268</u>);
  - imperative to have the relevant roaming agreements to expect some of the services to work. Raising the need with the relevant UN body UNECE may be done through a liaison at the next meeting



# NNAI for IoT (3/5)

- Evolution of IMSI format and E.212 Recommendation [from GSMA (<u>SG2-</u> <u>TD234</u>)/[from ITU-T SG20](<u>SG2-TD215</u>): Option 1-Keep the current format of MCC, <u>MNC and MSIN</u>
  - The meeting agreed that in light of the elements, option 1 be preferred in progressing the work, so that impacts be kept minimal



# NNAI for IoT (4/5)

- Global Numbering Resources with E.164 Country Code 878 (<u>SG2-C47</u>);
  - global E.164 and E.212 numbers assigned by the ITU-T exist specifically for cross-border use
  - ITU-T would be the body that administers the process of portability/switching of global E.164 numbers
  - Regarding the association of an E.212 global MCC with E.164 Country Code 878, the meeting agreed to consider the option in revising the 878 assignment criteria.
- E.IoT-NNAI (<u>SG2-TD198</u>)

A revised version is contained in (<u>SG2-TD198R1</u>);



# NNAI for IoT (5/5)

- new work item on Technical report on "Global view of the Internet of Things (IoT) identification" (<u>SG2-C42</u>)
  - New work item on Technical report on overview of IoT schemes was agreed.
  - ToR is contained in <u>SG2-TD280-R2</u>
  - Inputs: NNAI for 5G ( SG2-C61)
    - reviews numbering work inside and outside ITU-T concerning 5G
    - the information, and chart contained in C61 and in particular section 15 of the NGNMN architectural framework annexed to C61.
  - Inputs: OIDs in IoT [from ITU-T SG17] (<u>SG2-TD212</u>);
  - Call for contribution to the next SG2 meeting in July 2018



### **Status of NNAI for IoT in SG2**



# Global E.164 Number deployed to support IoT



CC	=	3-digit E.164 Country Code 878
IoTID	=	2 to 4-digit IoT Identifier

IOTSN = 9 or 10-digit IoTSubscriber Number

### Note:

It may be appropriate to consider segregating certain ranges under 878 resources so that different regulatory requirements could be applied. For example,

- *a range XX(X)YYY could be designated for*
- *mandatory routing in all networks because it is used for emergency/safety services.*
- there could be number portability under some ranges and not under others depending on the services being offered

Possible expansion of the numbering range: At present, E.164 numbers are coded and used in software systems. Those systems may be using 4 or even 8 bits for each digit.



## In Car Emergency Communication

- In Car Emergency Communications (ICEC) is a means to improve road safety.
- As ICEC calls can be offered by both Governments, as public services, or privately, as commercially available services. Any application made for a +878 call should describe both the nature of the service, e.g. the set-up of the PSAP, and the relationship that is to be had with the end users.
- The standards that are to be used to underpin the ICEC shall be identified.
- Management of the numbering resources shall ensure their efficient utilisation.
- Processes will exist to manage the complete life cycle of the car, including allocation, transfer and withdrawal.
- A numbering plan shall exist for the use of the global resources that will support national regulatory measures in those geographic countries where the service is deployed.



## Number Portability Considerations for IoT & M2M services (1/2)

- number portability in the context of the use of CC 878 for IoT and M2M based services.
  - Number Portability for IoT/M2M service by E.164 number for global services/networks need separate implementation from existing number portability infrastructure only for domestic use.
  - On the other hand, most users of IoT/M2M services may not need to know what their numbers.
  - In that sense necessity of number portability for IoT number be continuously checked considering the different use cases for IoT number.
- Consideration of these issues raises a related but separate topic, as it appears that there may be a need for universal implementation of non geographic country code numbers. In order for a device to work using the same number, at no extra cost to the end-user, when the device moves (permanently or temporarily) from one geographic area to another, including moving from one country to another, there needs to be assurance that the non geographic country code is widely implemented. This is not the case at present. This work is for further study.



## Number Portability Considerations for IoT & M2M services (2/2)

 Requirements of "move its machines from one geographic area to another without incurring costs or having to reconfigure the machines (in particular, without having to change the SIM cards in the machines), and without having to change the E.164 number of the machine" as well as "change mobile network operators without having to reconfigure the device and without having to notify his/her correspondents that the E.164 number of the device has changed" was raised.

A call for contribution to the text of E.IoT-NNAI was made



## **Carrier Provider Switching**

- The proposed definition is
  - The ability for an IoT/M2M Service Provider to change the provider of connectivity for the service it is providing while using the same number



### **Evolution of E.212 IMSIs for IoT and 5G (1/2)**

- Faced with an increase of demand for IMSIs, the following options were identified:
  - Option 1 No change Keep the current format of MCC, MNC and MSIN and address the new demands with assignments of new MNCs or MCCs and changes to assignment or management practices
  - Option 2 Format extension extend the IMSIs i.e. assess the extent of the demand and adapt the MSIN or the MNC formats
  - Option 3 Use of schemes that may not be backward compatible – keep IMSIs only for legacy services and use "something else" for new services
  - Option 4 Change in encoding keep the current format, but allow for hexadecimal encoding (0-9, A-F)



### Evolution of E.212 IMSIs for IoT and 5G (1/2)

### GSMA response in <u>SG2-TD234</u>

- Keep the current format of MCC, MNC and MSIN and address the new demands with assignments of new MNCs or MCCs and changes to assignment or management practices.
- If in the future the actual IoT/M2M market demand for increased use of IMSIs suggests that exhaustion of the global IMSI numbering reserve is under credible threat, GSMA recommend that a comprehensive impact study for the 3GPP systems would need to be performed.
- The meeting agreed that in light of the elements, option 1 be preferred in progressing the work, so that impacts be kept minimal.



### **Number Portability**

- revised E.164 supplement2- adding Ported Numbers Tone to E.164 supplement 2 (<u>SG2-C45</u>);
  - explore addressing the matter nationally and consider revisiting the contribution for next Study group meeting
- Number portability for IoT/M2M 878 numbers (<u>SG2-C39</u>);
  - Information to be included in E.IoT-NNAI
  - Elements relative for block chain implementation will be provided by VisionNG for future meetings
- Analysis on responses to TSB circular 22 (<u>SG2-C33</u>); Result of TSB circular 22 (<u>SG2-TD167</u>)

Resend the questionnaire via TSB circular <u>TSB Circular 64</u>



## E.164 geographic numbers

- The link between physical location and a geographic number will be lost in all IP (<u>SG2-C34</u>)
  - discusses All-IP use of geographic numbers. The contribution notes that as users are migrated to IP networks, numbers will no longer be associated with physical switches in specific geographies, and the link will be lost unless action is taken to preserve the location significance in the telephone number. The contribution requested review of the issue.
  - During the discussion, various scenarios were described relative to changes of the geographic structure of the national numbering plan. It was also noted that there was an element of trust associated with them and it is important to see how that is preserved. It was also noted that extra-territorial use may be another dimension of the issue at the country code level. The implicit understanding of where a number range is expected to be was also felt to be an important element to take into account in such changes. A call for contribution on how or whether preserving that significance or part of it is desirableon this topic was made.



### **Other topics**

• Revised E.164.1: <u>SG2-C51</u>

 An update on E.164.1 subject to a call after the meeting and will be distributed on the list

- Standardized USSD codes: <u>SG2-C30</u>
  - To be discussed in the next SG2 meeting in July 2018



## **Other topics-cont'**

- New National Numbering Plans repository (<u>SG2-TD233</u>)(Res. 91)
  - TSB to provide an update at the next meeting
- IAB statement on IPv6 [from TSAG] (<u>SG2-TD173)</u>(Res.64)
  - SG2 will consider it in its future work
- ENUM for IMS [from ITU-T SG11] (<u>SG2-TD262</u>)
  - Noted with a reply liaison (SG2-TD301-R1)
- Revised E.217 "Maritime communications Ship Station Identity" (SG2-TD232, SG2-TD231)
  - Determined (SG2-R7)
- Revision of E.118 regarding the international telecommunication charge card to take into account e-UICC Identifier of GSMA and of ISO/IEC 7812-1:2017 (<u>SG2-C36</u>; <u>SG2-C60</u>)
  - Liaisons sent to ISO and GSMA



## International shared codes Assigned by TSB Director

- International E.164 shared Country Code (CC) and associated Identification Code (IC):
  - <u>Recommendation ITU-T E.164.1</u>
  - CC +881/882/883
- International E.212 shared Mobile Country Code (MCC) and Mobile Network Code
  - Annex A of <u>Recommendation ITU-T E.212</u>
  - MCC 901
- Increase in number of applications driven by IoT/M2M applications



## **INR database, NNP&ITU OB**



## Where to find information on INRs

### Numbering Resources

YOU ARE HERE HOME > ITU-T > INTERNATIONAL NUMBERING RESOURCES

International Numbering Resources

#### INR DATABASE

INR Database (Restricted Access)

- ITU-T E.164 Country Codes & International Shared Country Codes New
- ► ITU-T E.118 Issuer Identifier Number (IIN) NEW
- ITU-T E.212 (MCC & MNC)
- ▶ ITU-T E.218 (TMCC) NEW
- ITU-T Q.708 (ISPC & SANC)

Access to this database is restricted to ITU Member States and ITU-T Sector Members only.

#### OPERATIONAL BULLETIN

The ITU Operational Bulletin is a fortnightly publication containing administrative and operational information exchanged between administrations and recognized operating agencies (ROAs) and other service providers, entities and organizations, in respect to international telecommunication services.

### LISTS OF CODES AND NUMBERS

SHARE 🚹 💟 🛅 🖂

#### National Numbering Plans

Administrations are requested to notify ITU about their national numbering plan changes, or to give an explanation of their web page on national numbering plan as well as their contact points, so that the information, which will be available freely to all Administrations/ROAs and service providers, can be posted on ITU-T website.

- National-only numbers linked with emergency services and other services of social value
- ITU Carrier Codes

A centralized List of ITU Carrier Codes (ICCs) has been created with the ITU/TSB as the repository. All domestic and international carriers are expected to register with ITU/TSB for a carrier code.



## **NNP** website

#### National Numbering Plans

- Administrations are requested to notify ITU about their national numbering plan changes, or to give an explanation of their web page on national numbering plan as well
  as their contact points, so that the information, which will be available freely to all Administrations/ROAs and service providers, can be posted on ITU-T website.
- Administrations are requested to use the format as explained in the <u>ITU-T Recommendation E.129</u> for their numbering website, or when sending the information to ITU/TSB; e-mail: <u>tsbtson@itu.int</u>.
  - Example of presentation of E.164 national numbering
  - Example of Number Portability (NP)
  - Notification forms
- The information provided should be in a standard format (Word Rich Text format), so that the TSB has the database without retyping or making format changes.
- · Administrations are reminded that they will be responsible for the timely update of their information.
- The countries/geographical areas are listed below, in English alphabetical order.
- Information has also been added for Global Networks (GN)

#### Subscribe to the Notification Service

Events

Select by country code: 1 (Canada) V Search

### <u>A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | Y | Z | GN</u>

- A -<u>Afqhanistan</u> (+93) <u>Albania</u> (+355) <u>Algeria</u> (+213) <u>American Samoa</u> (+1 684) <u>Andorra</u> (+376) <u>Angola</u> (+244) - M -<u>Macao, China</u> (+853) <u>Madaqascar</u> (+261) <u>Malawi</u> (+265) <u>Malaysia</u> (+60) <u>Maldives</u> (+960) <u>Mali</u> (+223)



### **E.129: Presentation of National Numbering Plans**

- Guidelines for using standardized format to
  - Describe and present E.164 NNPs
  - Timely notifying ITU-T with NNP changes Notification
  - Describe implementation of national Number Portability.
  - Describe implementation of Important numbers<sup>\*</sup> S
- Guidelines to Subscribe to an email exploder list that will announce changes to NNP and information on NP.

	Home : ITU-T : International Numbering Resources : National Numbering Plans	Search					
Information	ITU Sectors   Newsroom   Events   Publications   Statistics   About ITU						
About ITU-T	National Numbering Plans						
Membership							
Strategy F	<ul> <li>Administrations are requested to notify ITU about their national numbering plan changes, or to give an explanation of their web page on national numbering plan well as their contact points, so that the information, which will be available freely to all Administrations/ROAs and service providers, can be noted on TULT we well as their contact points.</li> </ul>	an as					
Working Rules	Her as their contact points, so that the monitation, which mill be available meety to an participations and service providers, can be potted on monitation,	(control)					
External Cooperation	<ul> <li>Administrations are requested to use the format as explained in the <u>ITU-T Recommendation E.129</u> for their numbering website, or when sending the information ITU/TSB; e-mail; tsbtsonmitu.int.</li> </ul>	in to					
Circulars	Example of exceptation of E 164 pational numbering						
Numbering resources	Example of Number Portability (NP)     Example of Number Portability (NP)						
Incident Reporting	Notification_forms						
Standards Q&A	The information provided should be in a standard format (Word Rich Text format), so that the TSB has the database without retyping or making format change	156.					
Contact Us	<ul> <li>Administrations are reminded that they will be responsible for the timely update of their information.</li> </ul>						
ITU-T Site Map	<ul> <li>The countries/geographical areas are listed below, in English alphabetical order.</li> </ul>						
A to Z of ITU-T's Activities	Information has also been added for Global Networks (GN)	Information has also been added for Global Networks (GN)					
Rendentiantion	Subscribe to the Notification Service						
atandardization	3 Events						
ITU-T Recommendations							
WTSA F	Select by country code: 1 (Canada)						
Study Groups/TSAG							
Focus Groups	A BICIDIELEIGIMIIIZIKILMINIQIPIQIRISIIUIVIWIYIZIGN						
		12596					



NP

## **E.129 : NNP Notification Form**

• Standardized form for the presentation of E.164 NNP.



Table 8-1 – Presentation of national numbering plan for country code +\_\_\_\_\_

a) Overview:

The minimum number length (excluding the country code) is \_\_\_\_\_\_ digits. The maximum number length (excluding the country code) is \_\_\_\_\_\_ digits.

 b) Link to the national database (or any applicable list) with assigned ITU-T E.164 numbers within the national numbering plan (if any): (reference of the URL)

- c) Link to the real-time database reflecting ported ITU-T E.164 numbers (if any): (reference of the URL)
- d) Detail of numbering plan:

(1)	(2	.)	(3)	(4)	
Network better the ADC and a Kee	N(S)N num	ber length	Usage of		
digits of national (significant) number (N(S)N))	Maximum length	Minimum length	ITU-T E.164 number	information	



### **E.129: Notifications for NNP Additions or Changes**

- 9.1- Introduction of new resource for NNP
- 9.2- Deletion of an existing resource for NNP
- 9.3- Changes to an existing resource for NNP
- A.1- Important numbers for Emergency service and services of So E.129 le.

Table A.1 – Description of important numbers related to emergency services				
and other services of social value				

Country:				
(1)	(2)	(3)	(4)	(5)
Important number	Service	Allocated or assigned	ITU-T E.164 number or national-only number	Note

### Table 9-1 – Description of introduction of new resource for national numbering plan for country code +\_\_\_\_:

(1)	(	2)	(3)	(4)	
National destination and ADC) on hading	N(S)N nun	nber length	Usage of	Time and date of introduction	
digits of national (significant) number (N(S)N)	Maximum length	Minimum length	ITU-T E.164 number		

#### Table 9-2 – Description of deletion of resource for national numbering plan for country code :

(1)	(2)	(3)
National destination code (NDC ) or leading digits of (N(S)N)	Usage of ITU-T E.164 number	Time and date of deletion

#### Table 9-3 – Description of number change for national numbering plan for country code + :

(1)	(	2)	(3)	(4)		(4)		(5)	(6)
Communicated time and date o	Nati (signi number	ional ficant) · (N(S)N)	Usage of ITU-T E.164 number	Parallel running		Operator	Proposed wording of		
change	Old number	New number		Begins	Ends		announcement		



### **E.129 : Notification for Number Portability**

- B.1 Number Portability Notification.
   (see details in <u>E.129</u>)
- "Description of implementation of number portability (NP) of ITU-T E.164 numbers in the national numbering plan (NNP)"

Table B.1 – Description of implementation of number portability (NP) of ITU-T E.164 numbers in the national numbering plan (NNP)

	Country:			
		Geographic numbers	Non-geographic numbers other than mobile numbers (e.g., premium rate services, freephone services)	Mobile numbers
(1)	State of number portability (NP)			
(2)	Regulatory obligation for operators to implement NP			
(3)	Type of NP implementation			
(4)	NP database solution (if any)			
(5)	Limitations			
(6)	Specifications available on website			
(7)	Contact information for national administration/numbering plan administrator (NPA)			
(8)	Central reference database (CRDB) (if any) managed/operated by			



## **ITU Operational Bulletin**

- The Operational Bulletin is created in 1966 in order to facilitate the exchange of information among administrations/ROAs for the good running of telecommunication services.
- Administrations/ROAs or other service providers may communicate to TSB any kind of official service information which is vital to smooth and efficient operation of international telecommunication services,
- The Bulletin is published on the 1 and 15 of each month in cooperation with the Maritime Section of BR.
- All communications published in the Bulletin should have the approval of the administrations.
- As from 1 January 2010, the Bulletin has been disseminated electronically with free on-line access.



# **Sample ITU Operational Bulletin**

- **ITU Operational Bulletin No. 1087** (1.XI.2015) / <u>1 November 2015</u>
- Contact: tsbtson@itu.int
- Main Content:
  - Lists annexed to previous OBs.
  - Approval of ITU-T Recommendations.
  - Service Restrictions.
  - Call-Back and Alternative Calling Procedures (PP Res. 21).
  - New assignments, changes, deletions of numbering resources.
  - NNPs notifications (details are published in the NNP ITU-T website).

ITU O <sub>l</sub>	perational Bu	lletin
No. <b>1087</b> 1.XI.2015		
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## **Notification forms**

### https://www.itu.int/en/ITU-T/inr/forms/Pages/default.aspx

### Notification Forms

- Assignment of Data Network Identification Codes (DNIC) by the Administrations (According to ITU-T Recommendation X.121 (10/00))
- Assignment or withdrawal of International Signalling Point Codes (ISPC) for Signalling System No. 7 (According to ITU-T Recommendation Q.708 (03/99))
- Assignment or withdrawal of Mobile Network Code (MNC) for the international identification plan for mobile users (According to ITU-T Recommendation E.212)
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- Issuer Identifier Number for the international telecommunication charge card issued by the telecommunication Administrations (According to ITU-T Recommendation E.118 (02/01))
- Names of Administration Management Domains (ADMD) and other information concerning the implementation of Message Handling Services (According to ITU-T F.400 and X.400 series Recommendations)
- Assignment of International Network Identification Codes for Public Frame Relay Data Networks and ATM networks numbered under the E.164 numbering plan (According to ITU-T Recommendation X.125 (09/98))
- Available information regarding the identification of national authorities for the assignment of ITU-T Recommendation T.35 terminal provider codes
- Notification Form of the List of Recognized Operating Agencies (ROAs)
- Notification forms for National Numbering Plan (According to Recommendation ITU-T E.129 (01/2013))



## **Annex to ITU OB**

#### Lists Annexed

OB No.		Position on	Rec.
1125	List of Signalling Area/Network Codes (SANC)	01/06/2017	Q.708
1125	List of terrestrial trunk radio mobile country codes	01/06/2017	E.218 (2017)
1117	List of Mobile Country or Geographical Area Codes	01/02/2017	E.212
1114	List of Recommendation ITU-T E.164 assigned country codes	15/12/2016	E.164
1111	Mobile Network Codes (MNC) for the international identification plan for public networks and subscriptions (According to Recommendation ITU-T E.212 (09/2016))	01/11/2016	E.212
1109	List of International Signalling Point Codes (ISPC) (According to Recommendation ITU-T Q.708 (03/99))	01/10/2016	Q.708

#### List of International Signalling Point Codes (ISPC) for signalling system No. 7 (According to Recommendation ITU-T Q.708 (03/99))

Country/ Geograph	nical Area		
ISPC	DEC	Unique name of the signalling point	Name of the signalling point operator
Afghanis	tan		
4-024-0	8384	AWCC	AWCC
4-024-1	8385	AWCC	AWCC
4-024-2	8386	AWCC	AWCC
4-024-3	8387	Afghan Telecom	Afghan Telecom
4-024-4	8388	Kamss3-TV	MTN
4-024-5	8389	Hemss1-Herat	MTN
4-024-6	8390	Roshan	TDCA (dba Roshan)
4-024-7	8391	Roshan	TDCA (dba Roshan)
4-025-0	8392	Roshan	TDCA (dba Roshan)
4-025-1	8393	Roshan	TDCA (dba Roshan)
4-025-2	8394	Roshan	TDCA (dba Roshan)
4-025-3	8395	AWCC	AWCC
4-025-4	8396	AWCC	AWCC
4-025-5	8397	Afghan Telecom	Afghan Telecom



## Thank you

## **Any questions?**

