CONTRIBUTION: NTCO0736

WORKING GROUP: Network

TIF: NTTF043

TITLE: Request from CSCN regarding assistance with CSCN TIF 112

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RELATED TIFs: CNTF0112 - Address assignment rate of non-Geographic (6YY) CO Codes

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1. Background:

The CRTC Interconnection Steering Committee (CISC) – Canadian Steering Committee on Numbering (CSCN) has asked the CISC-NTWG to assist with CSCN TIF 112. TIF 112 is developing ways to mitigate the exhaust of Canadian Non-Geographic “6YY” Codes, which have been forecasted to exhaust by 2026. The CSCN requires the NTWG to generate more mitigation options and to assess the network impact of each.

Non-Geographic NPAs include 622, 633, 644, 655, 677, and 688. These are referred to as “6YY” NPAs. NXX Codes in the Non-Geographic NPAs may be assigned to Canadian telecommunications Carriers for the provision of NXX Codes in the Non-Geographic NPAs and are not associated with Exchange Areas such as CO Codes in geographic NPAs.

The latest Canadian Non-Geographic Code Assignment Guideline, Version 1.1, was approved by Telecom Decision CRTC 2018-51, dated 6 February 2018 (the “6YY Guideline”). Section 1.4 of the 6YY Guideline defines Non-Geographic Services to include telephone numbers that are accessible from public networks that have arranged to route calls to and from the Non-Geographic NXX codes used for the Non-Geographic Services.

Section 1.5 of the 6YY Guideline goes on to indicate that Machine-to-Machine (M2M) devices that support both data and voice services must be assigned geographic telephone numbers (TNs), to facilitate the correct rating of long-distance voice calls. M2M devices that support only data services may be assigned intra-network TNs or Non-Geographic TNs. Intra-network TNs are TNs that are “not dialable” from the PSTN and are routed only within the Carrier’s network, e.g. telephone numbers that use NPA 010. Non-Geographic TNs support the routing of data calls outside of a Carrier network, between Carriers.

Section 3.6 of the 6YY Guideline specifies that Non-Geographic NXX Code assignments may be any three digit series in the format NXX (where N is any digit between 2-9 and X is any digit between 0-9), except for the following unassignable NXXs :

• 911 (reserved for Emergency Services);

• 555 (reserved for Directory Assistance); and

• 211, 311, 411, 511, 611, 711 and 811.

Hence each 6YY NPA supports a total of 791 non-geographic code blocks (NXXs) and each NXX in turn allows for the assignment of 10,000 telephone numbers.

Developments in NANPA

In the US, the equivalent non-geographic codes assignment guidelines are set out in ATIS-0300052, *Non-Geographic 5XX-NXX Code Assignment Guidelines*. This document is publicly available at the following link:

 <https://access.atis.org/apps/group_public/search.php?search_val=0300052&search_documents=1&x=0&y=0>

Section 1.1 of ATIS-0300052 defines permitted usage of 5XX-NXX codes as follows:

“**1.1**

For the purpose of these assignment guidelines, the 5XX-NXX codes are to be used for applications which are non-geographic in nature, are not assigned to Rate Centers and may or may not traverse the PSTN, but do require an E.164 addressing scheme. Calls to 5XX-NXX codes may not be dialable from the PSTN and route only within the assignee’s network. The use of this NANP numbering resource is to communicate with both fixed and mobile devices, some of which may be unattended. This resource may be used for applications enabling machines, which would include but not be limited to wireless devices and appliances, the ability to share information with back-office control and database systems and with the people that use these. Service is limited only by terminal and network capabilities and restrictions imposed by the service provider.”

While the 6YY Guideline generally deals with the same permitted use as the 5XX guideline as set out in ATIS-0300052, the ATIS description of permitted usage has undergone more refinement, and if the 6YY Guideline is to be re-opened, as recommended below in this contribution, it is suggested that the ATIS usage description for 5XX codes be considered for incorporation into the 6YY Guideline.

More significantly, ATIS-0300052 permits the full assignments of all NXXs within a 5XX NPA except 911 and 555 as follows:

“4.7

The following codes will not be assigned as 5XX-NXX codes:

4.7.1 5XX-911 because of its widespread use for access to public emergency services.

4.7.2 5XX-555 will be reserved to avoid potential routing conflicts for Directory Assistance.

4.7.3 There are no 5XX-NXX codes specifically set aside to be used as standard test codes.”

Additionally, ATIS-0300052 is likely to be reissued to deal with INC Issue 941 to remove the prohibition on assignment of 5XX-555 and will likely read as follows:

“4.7

The 5XX-911 codes will not be assigned as a 5XX-NXX code because of the widespread use of “911” as an abbreviated dialing code for access to public emergency services. There are no 5XX-NXX codes specifically set aside to be used as standard test codes.”

This will allow for 799 NXX codes for every 5XX NPA. Contrast with the 791 NXX codes for every 6YY NPA.

Recommendation

We recommend the following changes to the 6YY Guidelines:

1. Allow for the full use of all NXXs associated with each 6YY NPA with the exception of 6YY-911. This will open eight 6YY-NXX non-geographic codes for each 6YY NPA i.e., eventually allowing an extra 480,000 telephone numbers using the existing six assigned and reserved 6YY NPAs, a small but nonetheless useful increase,
2. Clarify the permitted use of 6YY codes consistent with ATIS-0300052, and
3. Encourage carriers to consider using NPA 010 when possible, instead of 6YY code resources. (NPA 010 code resources do not require CNA assignment of NXX blocks – carriers may manage their own 010-XXX-XXXX numbering space on their network for those types of calls/data sessions that do not require routing to other carriers.)