**CONTRIBUTION: CNCO248B**

**Working Group**: **Canadian Steering Committee on Numbering (CSCN)**

**Title**: **Proposed Submission**

**DATE: 05 June 2024**

**RELATED TIFs:** **TIF118:** **Recommendations to strengthen the number assignment guidelines, focusing on preserving geographic NANP resources, both while TBP is being implemented and once it is implemented (Paragraph 51, Policy CRTC 2024-26)**

**Source: Bell Canada, KRob Telecom Numbering Solutions, Rogers**

|  |  |  |
| --- | --- | --- |
| Jennifer Mack | Rogers | [jennifer.mack@rci.rogers.com](mailto:jennifer.mack@rci.rogers.com) |
| Ken Shackleton | Rogers | [ken.shackleton@rci.rogers.com](mailto:ken.shackleton@rci.rogers.com) |
| Graham Le Geyt | Rogers | [Graham.LeGeyt@rci.rogers.com](mailto:Graham.LeGeyt@rci.rogers.com) |
| Leo Santoro | Bell | [leo.santoro@bell.ca](mailto:leo.santoro@bell.ca) |
| Karen Robinson | KRob Telecom Numbering Solutions | [karen@krobsolutions.ca](mailto:karen@krobsolutions.ca) |

**Distribution:** CSCN TIF 118 Participants

**Filename:** CNCO243B

**Notice: This contribution has been prepared by Rogers, Bell Canada and KRob Telecom Numbering Solutions for the purposes of discussion in the CSCN, and it is not to be considered a binding proposal on Rogers, Bell Canada and KRob Telecom Numbering Solutions. Rogers, Bell Canada and KRob Telecom Numbering Solutions reserves the right to amend or withdraw statements made in this contribution at any time.**

Canadian Steering Committee on Numbering (CSCN) TIF 118

Contents

[1. Scope 4](#_Toc166662499)

[2. To justify a new request, what consumer demand and number use information, and other information such as details of use associated with previous assignments, should be required (including the level of detail) 4](#_Toc166662500)

[2.1 Utilization Reporting 4](#_Toc166662501)

[2.2 Forecasting 6](#_Toc166662502)

[2.3 Months-to-Exhaust Criteria 7](#_Toc166662503)

[3. Whether a carrier obtaining the numbers for another TSP or wholesale customer should be responsible for reporting on the use of those numbers and, if so, how? 8](#_Toc166662504)

[4. What would trigger escalation of a particular request for numbers to the Commission? 8](#_Toc166662505)

[5. What enforcement powers or tools may be appropriate for the CNA to use to scrutinize requests for numbering resources 8](#_Toc166662506)

[6. The potential use, as recommended in the CSCN Report, of enhanced forecasting tools, such as (i) an incremental linear annual geographic number survey; and (ii) wholesale resale considerations, such as whether third-party number use should become an annual part of the Numbering Resource Utilization Forecast reporting 9](#_Toc166662507)

[7. Any other relevant factor that might be consistent with an increased focus on number preservation 9](#_Toc166662508)

# Scope

In Telecom Regulatory Policy CRTC 2024-26, the Commission requested that the CRTC Interconnection Steering Committee (CISC) provide, by 6 May 2024, recommendations to strengthen the number assignment guidelines, focusing on preserving geographic North American Numbering Plan (NANP) resources, both while Thousands Block Pooling (TBP) is being implemented and once it is implemented. This includes considering the following:

1. to justify a new request, what consumer demand and number use information, and other information such as details of use associated with previous assignments, should be required (including the level of detail);
2. whether a carrier obtaining the numbers for another TSP [Telecommunications Service Provider] or wholesale customer should be responsible for reporting on the use of those numbers and, if so, how;
3. what would trigger escalation of a particular request for numbers to the Commission;
4. what enforcement powers or tools may be appropriate for the CNA [Canadian Numbering Administrator] to use to scrutinize requests for numbering resources;
5. the potential use, as recommended in the CSCN [Canadian Steering Committee on Numbering] Report, of enhanced forecasting tools, such as (i) an incremental linear annual geographic number survey; and (ii) wholesale resale considerations, such as whether third-party number use should become an annual part of the Numbering Resource Utilization Forecast reporting; and
6. any other relevant factor that might be consistent with an increased focus on number preservation.

Each of these considerations is discussed below with proposed recommendations for the Commission.

# To justify a new request, what consumer demand and number use information, and other information such as details of use associated with previous assignments, should be required (including the level of detail)

## Utilization Reporting

In the US, carriers are required to file “Utilization” information semi-annually as part of the General Numbering Utilization Forecast (G-NRUF) process (see FCC form 502[[1]](#footnote-2)). This report allows the FCC, state regulators and the North American Numbering Plan Administrator (NANPA) to scrutinize whether carriers are fulfilling their obligations to return excess inventory to the Thousands-Block Pool associated with each Rate Center. In Canada, Rate Centers are generally referred to as Exchange Areas. These Utilization reports can also be used to measure the effectiveness of the Thousands-Block Pooling regime by examining industry TN utilization over time. The US system requires reporting of utilization at the Thousands-Block level, which, for larger carriers can result in spreadsheets with tens of thousands of rows.

The CSCN believes that Utilization reporting is an important metric for monitoring effectiveness of the Thousands-Block Pooling regime, but that it can occur at the Exchange Area level, thereby reducing the size of the carrier utilization reports while accomplishing the same objectives as the US reporting.

Therefore, the CSCN recommends the following changes be made to Canada’s G-NRUF filing requirements to (i) measure the effectiveness of the Thousands-Block pooling regime over time, and (ii) limit excess assignments of geographic numbering resources.

Recommendation 1: Utilization reports be included as part of the current G-NRUF process at the Exchange Area level. This change should happen before the implementation of TBP so that overall effectiveness of the new TBP regime can be assessed against an initial baseline. Reporting of Utilization shall be at the Exchange Area level of detail. See example in Figure 1.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| NPA Complex | Exchange Area | Assigned TNs | Intermediate  TNs | Aging  TNs | Reserved  TNs | Admin  TNs | Available  TNs | Utilization |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |

**Figure 1: G-NRUF Utilization Reporting by Exchange Area**

Utilization for an Exchange Area shall be defined as follows:

Utilization = Assigned TNs/(Available TNs - Intermediate numbers)

For the Utilization reports to be consistent across all participating carriers, the CSCN recommends the following definitions be used in the Utilization reports:

“Assigned TNs” are defined as numbers working in the Public Switched Telephone Network under an agreement such as a contract or tariff at the request of specific end users or customers for their use, or numbers not yet working but having a customer service order pending. Numbers that are not yet working and have a service order pending for more than five days shall not be classified as assigned numbers.

“Available TNs” are defined as the total number of Thousands-Blocks assigned to a carrier multiplied by 1000 from the Exchange Area specified in the Utilization report.

“End Users” are defined as a residential, business, institutional, or government entity that subscribes to a service, uses that service for its own purposes, and does not resell such services to other entities.

“Intermediate TNs” are defined as numbers that are made available for use by another telecommunications carrier or non-carrier entity for the purpose of providing telecommunications service to an end user or customer. An exception to this requirement is numbers ported for the purpose of transferring an established customer's service to another service provider, in which case the numbers are classified as "Assigned" by the porting carrier and not counted by the receiving carrier. For intermediate numbers provided by carriers to non-carrier entities, the providing carrier must report utilization for these numbers. Numbers assigned to end users by a non-carrier entity should be reported by the providing carrier as "Assigned." Any remaining numbers held by a non-carrier entity that are not assigned to end users shall be reported by the providing carrier as "Intermediate." The sum of numbers reported by the carrier for the non-carrier entity in these two categories should always equal the total of numbers held by the non-carrier entity.

## Forecasting

Exchange Area forecasts are required for the CNA in its capacity of Pool Administrator to manage the inventory levels of available Thousands-Blocks available in each of the Exchange Area pools. However, the CNA’s ability to manage pool inventories is limited to encouragements to carriers to return excess blocks, and to request pool replenishment CO Codes in circumstances where pool inventories are below forecasted Thousands-Block demand. The CNA cannot on its own initiative request a CO code for pool replenishment – only carriers can be assigned CO codes. A desirable goal is to maintain a 6-month supply of Thousands-Blocks in each Exchange Area pool. Therefore, a rule creating greater flexibility for a carrier as to when it may request pool replenishment (instead of being forced to accept current inventory from a Thousands-Blocks pool) can help maintain a readily available 6-months supply of available Thousands-Blocks. Similar pool replenishment flexibility has been granted to carriers in the US.

For example, in the US, if a carrier needs five (5) Thousands-Blocks, and the corresponding pool has sufficient blocks (e.g., eight (8) blocks), but the six-month industry aggregate demand in the Exchange Area is greater than the blocks in the pool (e.g., fifteen (15) blocks), then, a carrier can still request a pool replenishment CO Code, select blocks just from the pool, or request a combination of blocks from the pool replenishment CO Code and blocks from the pool.

Maintaining appropriate Thousands-Block inventory levels can be very efficient from a just-in-time provisioning perspective per Table 1 below.

|  |  |  |
| --- | --- | --- |
| Activity | Block Request | Replenishment CO Code Request |
| CNA/PA Application Processing | 14 calendar days | 14 calendar days |
| AOCN input into BIRRDS | 5 calendar days | 7 calendar days |
| Industry notification interval (allocation date to effective date – BIRRDS rule) | 19 calendar days | 45 calendar days |
| NPAC Processing and download | 2 calendar days |  |
| Total Interval | 33 calendar days | 66 calendar days |

**Table 1 Current US Provisioning Timelines**

Recommendation 3: The existing G-NRUF forecasts be changed to reporting at Exchange Area level instead of NPA complex with forecast quantities specified as the number of Thousands-Blocks required as opposed to CO Codes required. The results can then be rolled-up to the NPA complex for relief planning purposes while at the same time allowing for better Thousands-Block pool management.

Recommendation 4: The frequency of the existing G-NRUF be changed to twice per year so as to have better Exchange Area forecasts for Thousands-Block pool management.

## 2.3 Months-to-Exhaust Criteria

Appendix B to the *Canadian Central Office Code (NXX) Assignment Guideline* is a Months-to-Exhaust certification worksheet. When a carrier requests numbering resources for growth, it must provide 12 months’ forecast of demand (i.e., TNs projected to be assigned in each of the following 12 months). Months-to-Exhaust must be no more than 12 months when no Jeopardy Condition exists, or, when an NPA is in a Jeopardy Condition, no more than 4 months or the period specified by an approved Jeopardy Contingency Plan (see Sections 4.2.1 and 9.5 of the Guideline).

Exhaust occurs in the month when the cumulative growth quantity equals or exceeds the quantity of TNs available for assignment.

Assuming Thousands-Blocks can be activated in a lesser interval (e.g., 33 days v. 66 days) and that available Thousands-Block pool inventories can be maintained at a reasonable level, then the projected Months-to-Exhaust (when no Jeopardy Condition exists) criteria can be reduced to 6 months, thereby moving the industry closer to just-in-time allocation of needed numbering resources.

Recommendation 5: Once Thousands-Block Pooling is in service, then one year later, it is recommended that the requirements for Months-to-Exhaust be reduced from 12 months to 6 months where no Jeopardy Condition exists.

# Whether a carrier obtaining the numbers for another TSP or wholesale customer should be responsible for reporting on the use of those numbers and, if so, how?

The proposal in section 2.1 above contains a recommendation for carriers to go back to the wholesale customers to whom they are providing numbering resources and obtain specific utilization information. If the definition of Intermediate TNs above is adopted along with the associated reporting of Intermediate TNs, it will become readily apparent to the CRTC and the CNA which carriers are holding excess inventory because of wholesale activity (i.e., the quantity of Intermediate TNs will be high). Further actions can be taken where concerns are present.

Recommendation 6: The Canadian industry adopt the reporting of Intermediate TNs as contemplated in section 2.1 above.

# What would trigger escalation of a particular request for numbers to the Commission?

Carriers shall be deemed ineligible for additional geographic numbering resources for growth in an Exchange Area where the carrier’s Appendix B illustrates months to exhaust to be greater than 12 months. Carriers requiring additional geographic TNs that do not meet the Appendix B threshold may apply to the CRTC for an exception.

# What enforcement powers or tools may be appropriate for the CNA to use to scrutinize requests for numbering resources

The CNA is ideally structured to enforce defined eligibility rules. The CNA is also ideally positioned to receive confidential utilization and forecast data from individual carriers and aggregate this data.

With the G-NRUF utilization reporting contemplated in this report, the CNA can detect the following potentially problematic situations concerning individual carriers:

1. large amounts of Intermediate TNs (which by definition are not Assigned by the service provider receiving the numbers).
2. very low utilization of TN number resources in an Exchange Area (not related to the basic requirement to have a footprint Thousands-Block) which could be indicative of a carrier not returning excess inventory to the Thousands-Block pools as appropriate.
3. Poor inventory management as evidenced by no reporting of Aging TNs, Reserved TNs, Intermediate TNs and/or Administrative TNs.

Any reporting anomalies can be challenged by the CNA directly to the carrier in question and escalated as necessary to CRTC staff.

Recommendation 7: The CNA shall review with CRTC staff, on a confidential basis, those carriers that have problematic unresolved utilization issues.

Recommendation 8: The Commission should make it a condition of service that carriers providing TNs to other carriers and non-carriers are responsible for the receiving carriers’ utilization reporting and inventory management practices.

Recommendation 9: CRTC staff be empowered to authorize third party audits of carrier TN inventory management practices where circumstances warrant. Such costs shall be borne by the carrier under audit. The auditors must be qualified to perform process audits and examine provisioning records. Additionally, the auditor may need to examine the business records related to TNs provided by a carrier to other carriers and non-carriers and opine on the level of diligence being used to determine the level of utilization and inventory management practices of the receiving carrier.

# The potential use, as recommended in the CSCN Report, of enhanced forecasting tools, such as (i) an incremental linear annual geographic number survey; and (ii) wholesale resale considerations, such as whether third-party number use should become an annual part of the Numbering Resource Utilization Forecast reporting

Recommendation 10: CSCN develop an annual industry report on Utilization as part of Numbering Resource Utilization Forecast reporting once the first G-NRUFs are submitted with utilization data including with respect to Intermediate TNs.

See Recommendations 6 and 8 concerning wholesale resale considerations.

# Any other relevant factor that might be consistent with an increased focus on number preservation

Further efforts to deal with the use of geographic numbering resources for IoT (i.e., non-geographic applications) is required, including a way to measure such usage over time.

**\*\*\* END OF DOCUMENT \*\*\***

1. <https://nationalnanpa.com/nruf_resources/index.html> [↑](#footnote-ref-2)