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

**Title**: **Draft report for Paragraph 51 of Telecom Regulatory Policy CRTC 2024-26**

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**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)**

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**CONTENT:** The following is another version of the draft report for TIF 118. Changes are shown from the version in CNCO248G.

Text preceded by “NTD” is a placeholder for items that need to be addressed.

Yellow highlights indicate text that needs to be rewritten if/when we reach a conclusion on the subject matter. Given these uncertainties, it has not been redrafted.

Please read the comments.

Canadian Steering Committee on Numbering (CSCN) TIF 118

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# 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.

The recommendations in this report apply to geographic numbering resources unless specifically stated otherwise within the recommendation.

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)?

As part of the transition to TBP, the CSCN has reviewed all its practices related to forecasting and utilization reporting and compared them to US practices. The following sections describe the status and recommended changes for utilization reporting and forecasting and make recommendations regarding the usage and demand criteria for additional code or block assignments.

## Utilization Reporting

The following definitions apply to Utilization reporting as part of the contemplated semi-annual NRUF process:

Utilization for an Exchange Area shall be defined as follows:

Utilization = Assigned TNs/(Available TNs – Unassigned/Unreported Resold TNs TNs)

“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.

“Total TNs” are total Telephone Numbers assigned to the service provider by the CNA/PA in the Exchange Area.

“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.

“Non-carrier” is defined as an entity that receives TNs and is not an End User.

“Unassigned/Unreported Resold TNs” (similar to “Intermediate TNs” in the US) 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, where i) the carrier providing the numbering resources has not obtained utilization information in the format prescribed from the receiving carrier or non-carrier or ii) the received TNs are not assigned to end users. 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 TNs provided by carriers to other carriers or non-carrier entities, the providing carrier must report utilization for these numbers. Numbers assigned to end users by a carrier or non-carrier entity should be reported by the providing carrier as "Assigned" where confirmed by the carrier or non-carrier entity.

Low utilization of numbering resources by a carrier could be a result of overuse of administrative numbers, poor inventory management including but not limited to low Utilization, inability to track categories such as Administrative use, failure to obtain utilization reports from wholesale customers, or providing TNs to wholesale customers who are not adequately utilizing the assigned TNs.

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 Exchanges or 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.

In Canada, utilization reporting is not currently being done. 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. The CSCN is not satisfied that forecasting at the block level provides enough benefit on a general basis. In specific cases, forecasting at the block level could be beneficial. To the extent that utilization is ever used to determine assignment eligibility, the test is conducted at the Exchange Area-level. From a forecasting perspective, the management of pools also requires forecasting be done at the Exchange Area-level.

i) semi-annual utilization reporting.

Today, the G-NRUF is conducted annually and R-NRUFs are conducted semi-annually. The CSCN proposes a) including utilization reporting as a new component of the G-NRUF process, b) providing G-NRUF reports semi-annually, and c) the forecasting and utilization components of the G-NRUF be provided at the Exchange Area level. Supplying the forecasting component of the G-NRUF semi-annually is required for proper management of thousands-block pools. Conducting the utilization component of the G-NRUF semi-annually will allow the CNA to more frequently scrutinize individual carriers’ resource assignment practices.

ii) Months-to-exhaust utilization reporting (Canadian Appendix B)

The CSCN is concerned that the US model lacks sufficient flexibility where a carrier has relatively few numbering resources in an Exchange Area and there is a significant market development. In such cases, a carrier could be barred from obtaining additional numbering resources to meet market demand and thus some flexibility is required. For example, if a carrier only has 1 block in an Exchange Area and already 500 numbers assigned, that means you only have 500 numbers available for assignment. That would amount to less than 75% utilization. If there was a sudden consumer demand of more than 500 numbers, an additional block would be required which would not be allowed without regulatory approval.

The CSCN considers that carriers should have some additional flexibility for obtaining additional numbering resources relative to the US model. Therefore, the process should work as follows: a) that a Utilization number be provided with each new application for growth numbering resources, b) where a carrier’s Utilization is below 75%, the carrier must provide a reasonable explanation, c) the reported Utilization be adjusted to not include numbering resources assigned with the last 90 days, and d) if the CNA does not accept the explanation, the carrier may appeal the decision to the CRTC or CRTC staff.

**Recommendation 1:** The G-NRUF process be amended to include Utilization reporting (as illustrated in Figure 1 below), the details of which will be set out in the amended *Canadian Numbering Resource Utilization Forecast (C-NRUF) Guideline*.

**Recommendation 2:** The Utilization component of the G-NRUF include reporting at the Exchange Area level of detail (as illustrated in Figure 1 below).

**Recommendation 3:** The Utilization component of the G-NRUF be provided to the CNA on a semi-annual basis.

**Recommendation 4:** a) That a Utilization number be provided on the Appendix B with each new application for growth numbering resources, b) where a carrier’s Utilization is below 75%, the carrier must provide a reasonable explanation, c) the reported Utilization be adjusted to not include numbering resources assigned within the last 90 days, and d) carriers should submit their request for additional numbering resources (Part 1) with an Effective Date lead time allowing enough days for the CNA to review their request and CRTC review, if applicable.

**Recommendation 5:** The Utilization component of the new G-NRUF reporting format should be implemented prior to the first implementation of thousands block pooling in order to establish a baseline of the effectiveness of thousands block pooling (e.g. July 2025 assuming the date for implementation of thousands-block pooling does not change).

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| NPA Complex | Exchange Area | Assigned TNs  (A) | Unassigned/Unreported Resold TNs  (B) | Aging  TNs | Reserved  TNs | Admin  TNs | Total TNs  (C) | Utilization  (A/(C-B)) |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |

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

## 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 Figure 2 below.

Actual timelines to be proposed in the updated Guidelines.

|  |  |  |
| --- | --- | --- |
| 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 |

**Figure 2 Current US Provisioning Timelines**

**Recommendation 6:** 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 7:** The frequency of the existing forecasting component of the G-NRUF report be changed to twice per year to have better Exchange Area forecasts for Thousands-Block pool management.

**Recommendation 8:** Carriers provide a rolling monthly forecast for 12 months with each G-NRUF filing to help ensure optimal thousand-block pool management.

2.3 Months-to-Exhaust Criterion

The current “months-to-exhaust” criterion is that additional numbering resources will be assigned to a carrier only if the carrier has forecasted exhaust of its inventory of numbers in the Exchange Area within 12 months of the date of application. (If a jeopardy condition exists, the criterion is 4 months). Exhaust occurs in the month when the cumulative growth quantity equals or exceeds the quantity of TNs available for assignment.

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).

In the US, the Months-to-Exhaust certification worksheet for growth numbering resources requires 6 months to exhaust. A shorter Months-to-Exhaust certification window reduces the amount of number resource warehousing and comes closer to just-in-time resource allocation (which is ideal from an efficiency perspective). Also, in thousands-block pooling, the activation intervals are much shorter and so you should not need as long a forecast window (where there are available blocks in the pool).

A shortened availability interval for additional numbering resources (eg 33 days vs 66 days) is only applicable if there are available thousands-blocks in the Exchange Area pool. However, if the applicant’s request exceeds currently available pool inventory, a new CO code application is required, extending this period to a minimum of 66 days. TSPs should always plan for the longer activation period of 66 days, though it could in some cases, be less.

The CSCN noted that moving from the current 12 months to the proposed 6 months-to-exhaust timeline comes with much higher risks that reduces and limits each carrier’s ability to react and respond independently to its own specific corporate needs. On balance, the risk of running out of numbering resources is greater than the possible benefits from reducing the forecast window for obtaining additional numbering resources from 12 months to 6 months.

**Recommendation 9:** It is recommended that the requirements for Months-to-Exhaust remain at 12 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 Unassigned/Unreported Resold TNs above is adopted along with the reporting of Utilization, 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 Unassigned/Unreported Resold TNs will be high). Further actions can be taken where concerns are present.

**Recommendation 10:** The Canadian carriers with assigned numbering resources to adopt the reporting of Unassigned/Unreported Resold TNs by the time the first Utilization reports are required.

**Recommendation 11:** The CSCN recommends that, prior to the due date of the first G-NRUF utilization reports: i) carriers and non-carriers receiving telephone numbers from another party be required to report utilization to the carrier whose OCN is associated with the received TNs, and ii) the carrier providing the telephone numbers be required to the maximum extent feasible to obtain utilization information from parties to whom it provides numbering resources on a wholesale basis and to include received information about the Assigned TN quantities in their semi-annual utilization reports.

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

Carriers requiring additional geographic TNs that do not meet the criteria for new numbering resources 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 currently is able to scrutinize requests for numbering resources against defined eligibility criteria.

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 Unassigned/Unreported Resold TNs (which by definition are not counted as Assigned TNs by the service provider providing 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, Unassigned/Unreported Resold 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 12:** The CSCN recommends that the CNA review with CRTC staff, on a confidential basis, those carriers that have problematic unresolved utilization issues once the CNA begins receiving Utilization reports.

**Recommendation 13:** The CSCN recommends that the audit Appendix A in the *Central Office Code (NXX) Assignment Guideline* be revisited to specify audit standards, cost of audits, and who can order an audit (i.e. the CRTC) when the *Central Office Code (NXX) Assignment Guideline* is updated for Thousands-block pooling.

# 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 14**: The CSCN recommends that the CNA publish annual industry results on i) Utilization, and ii) Unassigned/Unreported Resold TNs once the first G-NRUFs are submitted with Utilization data.

**Recommendation 15:** The CSCN does not recommend further changes, other than as discussed above in this report, to the G-NRUF filings.

# 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.

The CSCN notes that issues such as “burnt numbers” are issues that exist today independent of thousands-block pooling.

To the extent that TNs are being used by third-parties (e.g. social media services) for user validation or user blocking, and such number is subsequently disconnected by the end-user, it could potentially become undesirable, notwithstanding the aging periods currently in use by the Canadian telecommunications industry. This in turn may cause a demand for fresh numbering resources by some carriers. This problem also exists independent of thousands-block pooling.

At this point, CSCN has not had sufficient time to address these issues other than to note that the reporting of Unassigned/Unreported Resold TNs may partially address the issue of burnt numbers if the parties receiving telephone numbers properly report Assigned TNs.

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

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