



# Telecom Notice of Consultation CRTC 2023-92

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Ottawa, 23 March 2023

*Public record: 1011-NOC2023-0092*

## Call for comments – Implementing thousand-block pooling

**Deadline for submission of interventions: 24 April 2023**

**Deadline for submission of replies: 8 June 2023**

[\[Submit an intervention or view related documents\]](#)

### Summary

In recent years, an increase in mobile phone, voice over IP (VoIP), and Internet of Things (IoT) services has meant that telecommunications service providers have needed more telephone numbers to serve Canadians. Data provided by the telecommunications industry shows that the Commission may need to adjust its policies to ensure that there are enough phone numbers in the future.

As a result, the Commission is considering what it can do to conserve and maximize the use of available telephone numbers. The Commission is of the preliminary view that a thousand-block pooling mechanism should be implemented in Canada.

The Commission is asking interested persons to provide comments on whether it should implement thousand-block pooling (and if so, how) or other potential solutions for number exhaust.

### Introduction

1. Telephone numbers are a finite resource and a key building block at the heart of our modern communications system. The Commission administers telephone numbers and other numbering resources under the *Telecommunications Act*, working with several other stakeholders in Canada and internationally within the North American Numbering Plan (NANP).<sup>1</sup>

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<sup>1</sup> Canada participates in the NANP with the United States and 18 Caribbean nations. The NANP consists of telephone numbers made up of 10 digits in the NPA-NXX-XXXX format, where NPA is the regional Numbering Plan Area (NPA) or area code (assigned to a region of Canada), NXX is the central office (CO) code (assigned to a telecommunications carrier serving that region), and XXXX is the line number (assigned by a carrier to one of its customers within that region).

2. Long-standing policies and processes—put in place to benefit, among other things, local and long-distance competition—have led to telephone number assignment rules that do not always favour number preservation. Currently, for example, when a telecommunications service provider elects to extend services to consumers in a new area, it may be assigned an entire block of 10,000 geographic telephone numbers without regard to population, leading to many numbers being unused.
3. While this may not have been a concern in the past, growth in mobile telephony and data, voice over IP (VoIP), and Internet of Things (IoT) services has led to a proliferation of connected devices to which telephone numbers are assigned for addressing<sup>2</sup> and other purposes.
4. The increased rate of implementation of Numbering Plan Areas (NPAs), also known as area codes, across Canada in recent years and current industry number utilization forecasts indicate that the need for geographic NPAs<sup>3</sup> in coming years will exceed what is assigned to Canada under the NANP. As a result of previous assignments, the current Canadian inventory of available NPAs is down to eight to be assigned in the coming years, which could result in number exhaust before 2030.<sup>4</sup> The Commission therefore needs to address this important issue and take steps to conserve and maximize the use of NPAs and telephone numbers to help extend the lifespan of the current numbering system.

### **Canadian Steering Committee on Numbering report**

5. On 22 June 2022, the Canadian Steering Committee on Numbering (CSCN) of the CRTC Interconnection Steering Committee (CISC) submitted [\*CNRE135A – Potential Remedies for CO \[Central Office\] Code and NPA Exhaust\*](#), in which the CSCN noted that increased consumption of geographic NPAs is due to many factors.<sup>5</sup> The CSCN

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<sup>2</sup> Addressing in this context refers to when a telephone number serves as an address or an identifier that enables carriers to exchange voice and data traffic in an orderly way.

<sup>3</sup> NANP telephone resources can be either geographic (assigned to correspond to discrete geographic areas, such as NPA 613 being assigned to the Ottawa region), or non-geographic (not assigned to correspond to discrete geographic areas but instead assigned for services with attributes, functionalities, or requirements that transcend specific geographic boundaries, such as 622, 633, 644, 655, 677, and 688).

<sup>4</sup> In Telecom Decision 2022-308, the Commission set aside five of the eight remaining NPAs for future relief of specific areas, leaving three NPAs for unforeseen exhaust in the coming years.

<sup>5</sup> Factors identified in the report included the following:

- wireless, VoIP, and IoT services creating new demand for telephone numbers and more carriers entering the market;
- technology advances increasing the consumption of telephone numbers from one per residence or business to one per person or even one per connected device, such as a parking meter;
- rules for assigning number blocks extracted from Commission policy and reflected in numbering guidelines being followed;
- the size of telephone number blocks being provided to carriers; and

indicated that the combination of large telephone number blocks assigned to small geographic areas uses an exceptionally high quantity of CO codes, which in turn drives NPA exhaust.

6. The CSCN identified potential measures that could be taken to increase the effective utilization rate of telephone numbers. It noted that by undertaking measures to prevent excessive CO code assignment, or by assigning number blocks smaller than 10,000, NPAs would exhaust at a slower rate.

### **Assigning smaller number blocks**

7. After considering the CSCN report, the Commission considers that there are two options identified in the report that would have the most immediate and significant impact on preserving geographic NPAs, CO codes, and telephone numbers: CO code sharing and thousand-block pooling.<sup>6</sup>
8. Both of these options would allow for the assignment of blocks of telephone numbers smaller than 10,000 in order to effectively increase telephone number utilization.
9. While both CO code sharing and thousand-block pooling would require some system and process updates, the nature and scope of this issue necessitates that the industry invest in an effective solution.
10. The CO code-sharing option as described in the CSCN report would depend on carriers being willing to participate in the number-sharing process, exchanging information about their requirements for numbers, and initiating number porting through the existing bulk-porting process. This option may lead to a more cumbersome, largely voluntary system that could prove to be inefficient and ineffective at preserving numbers.
11. In contrast, thousand-block pooling could be mandatory and apply to all carriers, which would be automatically assigned blocks of 1,000 numbers instead of 10,000. Thousand-block pooling relies on an approach that has been used in the United

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- the number of telephone exchanges occurring per NPA.

<sup>6</sup> The other options identified in the report would have a smaller impact (e.g., making administrative codes assignable, which could still be pursued by the CSCN through a self-initiated task) or would be enormous undertakings requiring several years to implement (e.g., exchange consolidation or obtaining a new country code). With respect to reliance on non-geographic numbering resources, recent forecasts have indicated that these resources are being depleted very quickly due to IoT growth. There is currently a separate CSCN initiative to resolve the concern with non-geographic resources so that the exhaust of non-geographic numbers does not exacerbate the issue related to geographic numbers. A report is expected shortly from the CSCN.

States with positive results. The CSCN indicated, for example, that it expected that significantly fewer CO codes would be required in rural areas with this option.

12. In light of the above, the Commission is of the preliminary view that thousand-block pooling should be implemented in Canada.

### **Call for comments**

13. While thousand-block pooling appears to be the appropriate solution to help conserve geographic NPAs, CO codes, and telephone numbers, there are various operational and implementation matters that need to be resolved to mitigate against number exhaust.

14. Accordingly, the Commission invites parties and interested persons to comment on the matter of implementing thousand-block pooling in Canada and on the specific questions identified below. The Commission requests that each party set out its responses separately to each issue, but in one document, indicating which issue it is addressing at the beginning of each response. Parties with similar views are encouraged to file a joint submission.

15. As a result of this proceeding, the Commission may impose obligations on some or all telecommunications service providers regardless of whether they choose to actively participate in this proceeding.

16. Parties should provide comprehensive answers, including all necessary rationale and supporting evidence, to the following questions:

Q1. Are there any barriers or obstacles to the implementation of thousand-block pooling in Canada? If yes, what are they, and how can these concerns be resolved or mitigated?

Q2. If number pooling were implemented in Canada, what would be the optimal size of the block of numbers (e.g., 1,000 or some other size)?

- i. Could the size of the assigned block vary depending on the exchange (e.g., assigning smaller blocks—for example, 500 or 100—in rural exchanges)?
- ii. What would be the appropriate criteria to decide on the block size for a given exchange?
- iii. Should carriers have to justify the number of blocks they require prior to any assignment?

Q3. What would be the key milestones and timeline for the implementation of thousand-block pooling in Canada?

Q4. What would be the key roles and responsibilities associated with the implementation and operation of thousand-block pooling?

- i. What should be the role of CISC working groups and any other relevant stakeholders?

Q5. What system changes would be required to support thousand-block pooling in Canada?

- i. Are there some existing equipment (including software), databases, systems, or processes that can be used?<sup>7</sup>

Q6. Is there a need for a neutral administrator for thousand-block pooling?

- i. If an administrator is required, how should this function be administered and funded?
- ii. Should this function be a separate entity from the existing Canadian Numbering Administrator (CNA)?

Q7. Would any changes be required to the governing agreements of the CNA if it acts as a thousand-block pooling administrator?

Q8. Could previously assigned CO codes that include large quantities of unused numbers be added to the number pooling inventory to ensure optimal results?

- i. If so, how and what would be the criteria? If not, why not?
- ii. Should the inclusion of previously assigned CO codes be part of the initial implementation of thousand-block pooling, or should this be considered in a follow-up phase?
- iii. Should a mechanism be put in place to protect against inefficient assignment of numbers, even in the event that thousand-block pooling is in place (e.g., a carrier asks for multiple blocks of numbers but ends up using less)?

Q9. Whether or not thousand-block pooling is implemented, what would be other ways to make unused numbers from previous CO code assignments available for new assignment to carriers?

- i. For example, would it be feasible to have a CO code-sharing process relying on the bulk-porting process, or some other process, functioning in addition to thousand-block pooling?
- ii. What would be the key milestones, timelines, and roles and responsibilities associated with a process aimed at making unused numbers from previous CO code assignments available for new assignment to carriers?

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<sup>7</sup> For instance, the CSCN indicated in its report that Neustar Inc. already has thousand-block pooling software from the United States and a pooling administration system.

Q10. What regulatory policy changes would be needed to support thousand-block pooling and a more efficient use of telephone numbers in Canada?

- i. Are there specific Commission decisions or guidelines that should be nullified, changed, or adjusted? If so, how and what would be the impact of the change, including possible unintended consequences? (When responding, provide all the details required to specifically identify the decision or guideline, including decision number, link to the document, relevant paragraph number, and what specific adjustments should be made.)
- ii. Are new rules needed, such as rules to limit the use of geographic or non-geographic numbers to certain services or reserve both those types of numbers for certain circumstances?
- iii. Are new rules needed to promote the use of non-NANP resources (e.g., a carrier-specific numbering scheme or other numbering resources) for certain telecommunications traffic or services to ensure a more efficient use of NANP resources?
- iv. Are new rules needed to enforce a more efficient use of geographic and non-geographic NANP resources in Canada? Consider the General Administrative Monetary Penalties Scheme in the *Telecommunications Act*<sup>8</sup> in your response.

Q11. If thousand-block pooling is not an appropriate mechanism to deal with any concerns arising from the depletion of the Canadian pool of available geographic NPAs, what other approach should the Commission consider to effectively address these concerns?

17. The Commission recognizes that the measures being contemplated in this notice of consultation are intended to stem the current rate of number exhaust, thus providing the Commission and the telecommunications industry more time to ensure there is a sustainable and reliable pool of telephone numbers available for use within Canada over the long term. The Commission expects to work closely with the industry and the NANP in this endeavour over the coming years.

## Procedure

18. The *Canadian Radio-television and Telecommunications Commission Rules of Practice and Procedure* (the Rules of Procedure) apply to this proceeding. The Rules of Procedure set out, among other things, the rules for the content, format, filing, and service of interventions, answers, replies, and requests for information; the procedure for filing confidential information and requesting its disclosure; and the conduct of public hearings. Accordingly, the procedure set out below must be read in conjunction with the Rules of Procedure and related documents, which can be found on the Commission's website at [www.crtc.gc.ca](http://www.crtc.gc.ca), under "[Statutes and regulations](#)."

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<sup>8</sup> See sections 72.001 to 72.0093 of the *Telecommunications Act*.

The guidelines set out in Broadcasting and Telecom Information Bulletin 2010-959 provide information to help interested persons and parties understand the Rules of Procedure so that they can more effectively participate in Commission proceedings.

19. The Canadian Numbering Administration Consortium, the Canadian Local Number Portability Consortium, Neustar Inc., and all local exchange carriers registered with the Commission are made parties to this proceeding and may file interventions with the Commission by **24 April 2023**.
20. Interested persons who wish to become parties to this proceeding must file an intervention with the Commission regarding the above-noted issues by **24 April 2023**. The intervention must be filed in accordance with section 26 of the Rules of Procedure.
21. Parties are permitted to coordinate, organize, and file, in a single submission, interventions by other interested persons who share their position. Information on how to file this type of submission, known as a joint supporting intervention, as well as a [template](#) for the accompanying cover letter to be filed by parties, can be found in Telecom Information Bulletin 2011-693.
22. All documents required to be served on parties to the proceeding must be served using the contact information contained in the interventions.
23. All parties may file replies to interventions with the Commission by **8 June 2023**.
24. The Commission may request information, in the form of interrogatories, from any party to the proceeding.
25. The Commission encourages interested persons and parties to monitor the record of this proceeding, available on the Commission's website at [www.crtc.gc.ca](http://www.crtc.gc.ca), for additional information that they may find useful when preparing their submissions.
26. Submissions longer than five pages should include a summary. Each paragraph of all submissions should be numbered, and the line **\*\*\*End of document\*\*\*** should follow the last paragraph. This will help the Commission verify that the document has not been damaged during electronic transmission.
27. Pursuant to Broadcasting and Telecom Information Bulletin 2015-242, the Commission expects incorporated entities and associations, and encourages all Canadians, to file submissions for Commission proceedings in accessible formats (for example, text-based file formats that enable text to be enlarged or modified, or read by screen readers). To provide assistance in this regard, the Commission has posted on its website [guidelines](#) for preparing documents in accessible formats.
28. Submissions must be filed by sending them to the Secretary General of the Commission using **only one** of the following means:

**by completing the**  
[\[Intervention form\]](#)

or

**by mail to**  
CRTC, Ottawa, Ontario K1A 0N2

or

**by fax to**  
819-994-0218

29. Parties who send documents electronically must ensure that they will be able to prove, upon Commission request, that filing, or where required, service, of a particular document was completed. Accordingly, parties must keep proof of the sending and receipt of each document for 180 days after the date on which the document is filed or served. The Commission advises parties who file or serve documents by electronic means to exercise caution when using email for the service of documents, as it may be difficult to establish that service has occurred.
30. In accordance with the Rules of Procedure, a document must be received by the Commission and all relevant parties by 5 p.m. Vancouver time (8 p.m. Ottawa time) on the date it is due. Parties are responsible for ensuring the timely delivery of their submissions and will not be notified if their submissions are received after the deadline. Late submissions, including those due to postal delays, will not be considered by the Commission and will not be made part of the public record.
31. The Commission will not formally acknowledge submissions. It will, however, fully consider all submissions, which will form part of the public record of the proceeding, provided that the procedure for filing set out above has been followed.
32. The Commission expects to publish a decision on the issues raised in this notice within four months of the close of record.

### **Important notice**

33. All information that parties provide as part of this public process, except information designated confidential, whether sent by postal mail, fax, email, or through the Commission's website at [www.crtc.gc.ca](http://www.crtc.gc.ca), becomes part of a publicly accessible file and will be posted on the Commission's website. This includes all personal information, such as full names, email addresses, postal/street addresses, and telephone and fax numbers.
34. The personal information that parties provide will be used and may be disclosed for the purpose for which the information was obtained or compiled by the Commission, or for a use consistent with that purpose.



35. Documents received electronically or otherwise will be posted on the Commission's website in their entirety exactly as received, including any personal information contained therein, in the official language and format in which they are received. Documents not received electronically will be available in PDF format.
36. The information that parties provide to the Commission as part of this public process is entered into an unsearchable database dedicated to this specific public process. This database is accessible only from the web page of this particular public process. As a result, a general search of the Commission's website with the help of either its search engine or a third-party search engine will not provide access to the information that was provided as part of this public process.

### **Availability of documents**

37. Links to interventions, replies, and answers filed for this proceeding, as well as other documents referred to in this notice, are available on the Commission's ["Consultations and hearings: have your say"](#) page.
38. Documents are available upon request during normal business hours by contacting:

Documentation Centre  
[Examinationroom@crtc.gc.ca](mailto:Examinationroom@crtc.gc.ca)  
Tel.: 819-997-4389  
Fax: 819-994-0218

Client Services  
Toll-free telephone: 1-877-249-2782  
Toll-free TTY: 1-877-909-2782

Secretary General

### **Related documents**

- *CISC Canadian Steering Committee on Numbering – Consensus report CNRE134A regarding setting aside five area codes for future relief of exhausting area code complexes*, Telecom Decision CRTC 2022-308, 8 November 2022
- *Filing submissions for Commission proceedings in accessible formats*, Broadcasting and Telecom Information Bulletin CRTC 2015-242, 8 June 2015
- *Filing of joint supporting interventions*, Telecom Information Bulletin CRTC 2011-693, 8 November 2011
- *Guidelines on the CRTC Rules of Practice and Procedure*, Broadcasting and Telecom Information Bulletin CRTC 2010-959, 23 December 2010