



## Telecom Decision CRTC 2022-181

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Ottawa, 6 July 2022

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### Updates to the Canadian International Mobile Subscription Identify Assignment Guideline

#### Summary

The Commission **approves** the CRTC Interconnection Steering Committee's Task Information Form consensus report CNRE133A and the revised Canadian International Mobile Subscription Identity Assignment Guideline.

#### Application

1. On 10 March 2022, the Canadian Interconnection Steering Committee (CISC), on behalf of the Canadian Steering Committee on Numbering (CSCN), submitted Task Information Form (TIF) consensus report [CNRE133A](#), dated 22 December 2021, for Commission approval. This TIF consensus report proposed changes to the [Canadian International Mobile Subscription Identity \(IMSI\) Assignment Guideline](#) (the Guideline).

#### Background

2. The CSCN initiated a review of the Guideline with [TIF 104](#), dated 6 March 2019. This TIF was initiated in recognition of the limited supply of suitable assignable mobile network codes (MNCs) within the Canadian mobile country code (MCC) 302. The CSCN was concerned that there is the potential for a rapid increase in demand by various entities, such as full mobile virtual network operators (MVNOs) and private long-term evolution (LTE) radio network operators, which could quickly deplete the pool of assignable MNCs that are useful to mobile carriers. The purpose of the TIF was to recommend appropriate steps that could be taken before the industry runs out of suitable assignable MNCs. The TIF also included procedures for applications for incremental Canadian MCC plus MNC combinations to uniquely identify wireless carriers and their subscribers, and added monitoring and relief planning procedures to the Guideline.
3. As the CSCN was nearing completion of its proposed changes to, and recommendations for, the Guideline, the Commission issued *Review of mobile wireless services*, Telecom Regulatory Policy CRTC 2021-130, 15 April 2021 (the Decision) in which it stated, in paragraphs 617 and 618, the following:

617. The Commission considers that granting the CEA [Canadian Electricity Association]<sup>1</sup> and the RAC's [Railway Association of Canada] request<sup>2</sup> would have clear benefits to the public interest, because it would lead to more reliable, innovative, and integrated networks for CIOs [Critical Infrastructure Operators]. However, MNCs are a finite resource that must be allocated carefully and used responsibly.

618. As a result, the Commission considers that the CSCN should explore ways to allocate MNCs to CIOs, with a view toward striking the appropriate balance between network complexity and efficiency, while mitigating the potential risk to MNC supply, and make a recommendation to the Commission in this regard.

4. On 28 July 2021, the CSCN expanded the scope of TIF 104 to include the Commission's request that the CSCN explore ways that CIOs could be allocated MNCs in an efficient manner that considers the limited supply of assignable MNCs, and that it submit the amended IMSI Assignment Guideline to the Commission for approval.
5. In the Decision, the Commission requested that the CSCN report and amended Guideline should be filed by the CSCN within 120 days from the date of the Decision (by 13 August 2021). However, due to scheduling delays and coordination requirements to develop alternative contributions, the CSCN came to the conclusion that it would be unable to complete its work by the deadline. Consequently, the CSCN prepared TIF Report CNRE132A in which it requested an extension of four months, bringing the deadline to 13 December 2021, to finalize changes to the Guideline. However, this request became moot since the CSCN completed its report and proposed changes to the Guideline in December 2021.

### **TIF Report CNRE133A**

6. The CSCN noted in the TIF Report that of the 100 MNCs ending in 0 available to mobile carriers, approximately 50 have been assigned, leaving an assignable pool of approximately 50 MNCs. In recognition of the limited quantity of available assignable MNCs, the CSCN initiated a TIF to update the Guideline and to recommend the appropriate steps that could be taken to ensure the efficient use of MNCs suitable for mobile carriers and their subscribers before the industry runs out of MNCs. Changes also included the addition of monitoring, relief, and jeopardy procedures. Further, the Guideline was expanded to allow the assignment of MNCs to electrical and railway infrastructure operators per the Decision.

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<sup>1</sup> In March 2022, the Canadian Electrical Association became Electricity Canada. For ease of reference, "Electricity Canada" is used in this decision.

<sup>2</sup> The request was for these organizations to have their own MNC assignments. Having their own MNCs would give these organizations more flexibility in provisioning their networks and would facilitate such things as moving between networks for such services as machine-to-machine applications or smart grids, amongst other applications.

7. In the TIF Report, the CSCN noted that during its discussions it became evident to some CSCN participants that Electricity Canada's initial proposal to the CSCN stating which CIO entities should be eligible to be granted MNCs was too broad. It also noted that the term "CIO" was nebulous (encompassing thousands of entities) and could result in confusion and include numerous entities that do not qualify for an MNC. Electricity Canada and the RAC agreed to revisit their CIO definition and submit an alternative definition for further CSCN discussions.
8. Electricity Canada and the RAC subsequently proposed that the term Railway and Electrical Operators (REO) be used in place of CIO. The CSCN accepted this proposal and incorporated REO into the Guideline.
9. The CSCN consulted with Innovation Science and Economic Development Canada (ISED) while developing the exhaust procedure to understand the process for Canada to acquire an additional MCC.
10. The CSCN also reviewed and revised the Guideline in its entirety to improve its clarity. Some of the significant updates include:
  - changing the term "wireless carrier" to "mobile carrier" and revising the definitions for them;
  - differentiating MNC requirements and assignment principles between mobile carriers and wireless (fixed) carriers;
  - adding the ability for REOs to obtain MNCs;
  - adding procedures for recovering MNCs; and
  - changing the process to be followed for acquiring an additional MCC when another MCC is required, due to an exhaust of the current MCC in the future.
11. The updated Guideline was attached to the TIF Report.

### **Commission's analysis**

12. While there is, theoretically, a large number of MNCs (1,000) available for assignment, there are many different types of entities that require MNCs. However, there are limitations on what types of MNCs can be used by some carriers that reduces the actual number of useable MNCs. For instance, mobile carriers that require roaming capabilities outside of Canada are limited to 100 MNCs that end in 0. As such, it is important that the remaining MNCs be assigned appropriately in order to maximize the utilization of the Canadian MCC. The CSCN proposed revisions to the Guideline by differentiating between fixed wireless carriers and mobile carriers. Some fixed wireless carriers use protocols, such as LTE radios that require an MNC, but their subscribers do not roam onto networks outside of Canada. In these situations, MNCs ending in 0 are not required and MNCs ending in 1 to 9 can be used.

13. The Commission is of the view, as noted by the CSCN that the use of the term “CIO” in the Guideline could be problematic, as it could cause confusion in determining whether an entity is eligible for an MNC or the type of MNC. The result could be the premature exhaust of Canada’s MCC.
14. The Commission considers that the use of the more precise term “REO” is a suitable approach, as these are the entities that have been identified as requiring MNCs in the proceeding leading to the Decision. They are also the entities that participated in and provided input to the CSCN Guideline review. Their participation has allowed the CSCN to develop a clear criterion that will allow the Canadian Numbering Administrator (CNA), as the IMSI administrator, to determine if an IMSI code applicant should be assigned an MNC and what type of MNC should be assigned (i.e., an MNC ending with 1 to 9 or one ending in 0). The Commission notes that other types of CIOs, if any were to come forward in the future, could be considered on a case-by-case basis, or the Commission’s policy could be re-evaluated at that time.
15. A CSCN concern was how a REO would demonstrate its eligibility for an MNC, since the CNA indicated that it does not have the expertise to make such assessments. This concern was addressed by adding a certification process in Appendix 3 to the Guideline that sets out attestations that must be submitted to the CNA by a REO to demonstrate its eligibility for an MNC assignment. Under the attestations that must be included with an MNC application, REOs must
- be regulated in Canada as an operator in the electrical or railway sectors;
  - own and operate core network capabilities separate from other MNC assignees that is used for non-public wireless communications services;
  - have a service profile management system for end-user devices; and
  - hold a spectrum license or an executed wireless network access agreement with a Canadian MNC assignee that is a mobile carrier.
16. With the potential increased demand for MNCs and a limited pool of assignable MNCs, the CSCN recognized that at some point, Canada will need to obtain a second MCC from the International Telecommunication Union – Telecommunication Standardization Sector (ITU-T). As ISED is responsible for representing Canada at the ITU-T, the CSCN consulted with ISED on the relief planning process that the CSCN and the IMSI Administrator (i.e., the CNA) should follow. This process has been added to the Guideline in an MCC Relief Planning section. The Commission notes that this process includes the CNA conducting an industry audit on MNC utilization, with the resultant information to be provided to ISED and the Commission.
17. The Commission considers that the proposed modification to the Guideline will permit the IMSI Administrator to assign the remaining MNCs with increased efficiency. The Commission further considers that the manner in which the Guideline has been modified to allow REOs to obtain MNCs satisfies the Commission’s request

in the Decision. The changes to the Guideline allow those CIOs, namely the REOs, which have identified themselves as requiring MNCs to obtain them as needed. The Commission notes that no other types of CIOs have come forward requesting MNC assignments. Also, by identifying REOs as eligible for MNC assignments along with the attestation process, the Guideline provides the IMSI Administrator the clarity and certainty it requires to assign the appropriate MNCs so that MNCs are assigned efficiently depending on their intended use.

## Conclusion

18. The Commission **approves** TIF Report CNRE133A and the revised Canadian IMSI Assignment Guideline.

## Policy Directions

19. In accordance with subparagraph 1(b)(1) of the 2006 Policy Direction,<sup>3</sup> the approval of the TIF report will advance the policy objectives set out in paragraphs 7(a), (f), and (g) of the *Telecommunications Act*.<sup>4</sup>
20. In accordance with the 2019 Policy Direction,<sup>5</sup> this decision will promote competition, affordability, consumer interests, and innovation by providing more clarity on the assignment of limited IMSI MNCs to carriers and other entities that require them for their wireless networks in order to support and provide their services. The changes to the Guideline also endeavour to ensure that MNCs are used as efficiently as possible in order to avoid a premature requirement for the assignment of another MCC to Canada by the ITU-T. Additionally, these changes to the Guideline should lead to the deployment of innovative telecom services by REOs that will modernize their operations and benefit the Canadian economy and Canadians more generally.

Secretary General

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<sup>3</sup> *Order issuing a Direction to the CRTC on Implementing the Canadian Telecommunications Policy Objectives*, SOR/2006-355, 14 December 2006

<sup>4</sup> The cited policy objectives are: 7(a) to facilitate the orderly development throughout Canada of a telecommunications system that serves to safeguard, enrich and strengthen the social and economic fabric of Canada and its regions; 7(f) to foster increased reliance on market forces for the provision of telecommunications services and to ensure that regulation, where required, is efficient and effective; and 7(g) to stimulate research and development in Canada in the field of telecommunications and to encourage innovation in the provision of telecommunications services.

<sup>5</sup> *Order Issuing a Direction to the CRTC on Implementing the Canadian Telecommunications Policy Objectives to Promote Competition, Affordability, Consumer Interests and Innovation*, SOR/2019-227, 17 June 2019