Report for July 2023 R- & S-NRUF
to the
Canadian Steering Committee on Numbering (CSCN)

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1. Purpose of R-NRUF

In accordance with the *Canadian Numbering Resource Utilization Forecast (C-NRUF) Guideline* (the Guideline), approved by the Canadian Radio-television and Telecommunications Commission (CRTC) in Telecom Decision CRTC 2015-166 dated 29 April 2015:

> When an NPA is entering the timeframe for NPA Relief Planning (e.g., within or about 72 months before the Projected Exhaust Date), an initial R-NRUF is conducted to obtain actual and forecast annual data at the Exchange Area level of detail. The purpose of the initial R-NRUF is to validate the Projected Exhaust Date for an exhausting NPA, and to provide the CNA with detailed information to be used to identify a potential Relief Date and to prepare the Initial Planning Document as outlined in the Canadian NPA Relief Planning Guideline. Typically, the initial R-NRUF will utilize Format 2 in Appendix A. In general, the CNA will conduct the initial R-NRUF when needed; however, the CNA should attempt to choose dates for the initial and subsequent R-NRUFs that will coincide with the annual G-NRUF and mid-year R/S-NRUF dates (e.g., as of January 1 and July 1 each year).
>
> Subsequent R-NRUFs will be conducted semi-annually to monitor CO Code forecast changes prior to implementing relief. These R-NRUFs shall be conducted until three months of when relief is implemented, or until they are replaced by S-NRUFs or J-NRUFs.

Based on the January 2023 G- and R-NRUF results, the CNA determined that NPAs 236/250/604/672/778, 416/437/647 and 709/879 remain in the 3-year relief planning window and NPAs 249/683/705, 289/365/742/905, 343/613/753, 367/418/581, 368/438/587/780/825 and 782/902 had entered the 6-year R-NRUF window.

2. High Level Summary

The results from the July 2023 R-NRUF are different from the January 2023 R-NRUF results due to various Telecommunications Service Providers (TSPs) submitting updated data. The CNA has verified the input from these TSPs and the variance from previous inputs can be rationalized.

These results were reviewed by the Canadian Steering Committee on Numbering (CSCN) and the Relief Planning Committees during a conference call held on 23 August 2023.

Specific changes are listed below.

NPA	PED from January 2023 NRUF	PED from July 2023 NRUF	Change in PED
236/250/604/672/778	Dec-2025	Nov-2025	Advanced 1 month
249/683/705	Jan-2029	Jun-2029	Delayed 5 months

NPA	PED from January 2023 NRUF	PED from July 2023 NRUF	Change in PED
289/365/742/905	Oct-2028	Jul-2028	Advanced 3 months
343/613/753	Apr-2029	Mar-2029	Advanced 1 month
367/418/581	Jun-2027	Jun-2027	No change
368/403/587/780/825	Jun-2028	Apr-2028	Advanced 2 months
416/437/647	Nov-2025	Dec-2025	Delayed 1 month
709/879	Dec-2024	Oct-2024	Advanced 2 months
782/902	Feb-2028	Feb-2028	No change

The most recent R-NRUF data is summarized in the following chart.

	July 2023 R-NRUF Aggregate results							
	Actuals		Forecast					
NPA / Years	1-Jan. 2023	1-Jul. 2023	2024	2025	2026	2027	2028	2029
236/250/604/672/778	3275	3318	3633	3819	4053	4233	4418	4575
249/683/705	1384	1414	1643	1820	1939	2057	2226	2367
289/365/742/905	2332	2372	2576	2756	2887	3003	3147	3272
343/613/753	1514	1533	1708	1935	2047	2181	2292	2383
367/418/581	1684	1709	1839	2044	2193	2334	2480	2627
368/403/587/780/825	3095	3158	3339	3527	3707	3820	3954	4135
416/437/647	2030	2058	2159	2297	2426	2536	2656	2766
709/879*	624	630	699	836	905	978	1046	1116
782/902	1210	1229	1292	1377	1452	1514	1591	1671

* S-NRUF with Code restrictions

	July 2023 S-NRUF Aggregate results							
	Actuals		Forecast					
NPA / Years	1-Jan. 2023	1-Jul. 2023	2024	2025	2026	2027	2028	2029
6YY (NPA 622/633)**	524	678	877	1328	1835	2623	3165	3674

** S-NRUF

NPA 236/250/604/672/778

NRUF data, including the most recent results, is summarized in the following chart.

NPA 236/250/604/672/778 Summary of Projected Exhaust Dates			
NPA	**Type of C-NRUF**	**Date of Publication**	**Projected Exhaust Date**
236/250/604/672/778	January 2021 G-NRUF	23 February 2021	February 2027
236/250/604/672/778	July 2021 R-NRUF	19 August 2021	March 2027
236/250/604/672/778	January 2021 R-NRUF	01 March 2022	March 2027
236/250/604/672/778	July 2021 R-NRUF	19 August 2022	July 2026
236/250/604/672/778	January 2023 G-NRUF	29 March 2023	December 2025
236/250/604/672/778	July 2023 R-NRUF	18 August 2023	November 2025

NPA 249/683/705

NRUF data, including the most recent results, is summarized in the following chart.

NPA 249/683/705 Summary of Projected Exhaust Dates			
NPA	**Type of C-NRUF**	**Date of Publication**	**Projected Exhaust Date**
249/683/705	January 2023 G-NRUF	29 March 2023	February 2027
249/683/705	July 2023 R-NRUF	18 August 2023	March 2027

NPA 289/365/742/905

NRUF data, including the most recent results, is summarized in the following chart.

NPA 289/365/742/905 Summary of Projected Exhaust Dates			
NPA	**Type of C-NRUF**	**Date of Publication**	**Projected Exhaust Date**
289/365/742/905	January 2023 G-NRUF	29 March 2023	October 2028
289/365/742/905	July 2023 R-NRUF	18 August 2023	July 2028

NPA 343/613/753

NRUF data, including the most recent results, is summarized in the following chart.

NPA 343/613/753 Summary of Projected Exhaust Dates			
NPA	**Type of C-NRUF**	**Date of Publication**	**Projected Exhaust Date**
343/613/753	January 2023 G-NRUF	29 March 2023	April 2029
343/613/753	July 2023 R-NRUF	18 August 2023	March 2029

NPA 367/418/581

NRUF data, including the most recent results, is summarized in the following chart.

NPA 367/418/581 Summary of Projected Exhaust Dates			
NPA	**Type of C-NRUF**	**Date of Publication**	**Projected Exhaust Date**
367/418/581	January 2023 G-NRUF	29 March 2023	June 2027
367/418/581	July 2023 R-NRUF	18 August 2023	June 2027

NPA 368/403/587/780/825

NRUF data, including the most recent results, is summarized in the following chart.

NPA 367/418/581 Summary of Projected Exhaust Dates			
NPA	**Type of C-NRUF**	**Date of Publication**	**Projected Exhaust Date**
368/403/587/780/825	January 2023 G-NRUF	29 March 2023	June 2028
368/403/587/780/825	July 2023 R-NRUF	18 August 2023	April 2028

NPA 416/437/647

NRUF data, including the most recent results, is summarized in the following chart.

NPA 416/437/647 Summary of Projected Exhaust Dates			
NPA	**Type of C-NRUF**	**Date of Publication**	**Projected Exhaust Date**
416/437/647	January 2019 G-NRUF	26 March 2019	January 2024
416/437/647	July 2019 R-NRUF	20 September 2019	June 2025
416/437/647	January 2020 G-NRUF	24 March 2020	January 2025
416/437/647	July 2020 R-NRUF	18 August 2020	November 2025
416/437/647	January 2021 R-NRUF	23 February 2021	July 2026
416/437/647	July 2021 R-NRUF	19 August 2021	September 2025
416/437/647	January 2022 R-NRUF	1 March 2022	March 2026
416/437/647	July 2022 R-NRUF	19 August 2022	November 2026
416/437/647	January 2023 R-NRUF	29 March 2023	November 2025
416/437/647	July 2023 R-NRUF	18 August 2023	December 2025

NPA 709/897

NRUF data, including the most recent results, is summarized in the following chart.

NPA 709/879 Summary of Projected Exhaust Dates			
NPA	**Type of C-NRUF**	**Date of Publication**	**Projected Exhaust Date**
709/879	January 2023 G-NRUF	29 March 2023	December 2024
709/879	July 2023 R-NRUF	18 August 2023	October 2024

NPA 789/902

NRUF data, including the most recent results, is summarized in the following chart.

NPA 789/902 Summary of Projected Exhaust Dates			
NPA	**Type of C-NRUF**	**Date of Publication**	**Projected Exhaust Date**
782/902	January 2023 G-NRUF	29 March 2023	February 2028
782/902	July 2023 R-NRUF	18 August 2023	February 2028

Non-Geo NPA 622/633

NRUF data, including the most recent results, is summarized in the following chart.

Non-Geo NPA 622/633 Summary of Projected Exhaust Dates			
NPA	**Type of C-NRUF**	**Date of Publication**	**Projected Exhaust Date**
622	January 2023 G-NRUF	29 March 2023	Sep 2023
622/633	July 2023 R-NRUF	18 August 2023	July 2025

3. Schedule of Future R-NRUF Activities in the Current Year

No further R-NRUFs are scheduled to take place in this calendar year.

4. R-NRUF Assumptions

The assumptions used for the July 2023 R-NRUF are the assumptions that were provided on 12 October 2022 to the CNA by the Canadian Steering Committee on Numbering (CSCN) for conducting the January 2023 NRUF.

Item 4 of the Attachment to the 12 October 2022 letter states, in part:

> Where the CNA believes, based on its analysis of past growth and NRUF forecast data for an NPA, that the six-year forecast average annual growth may not be the best methodology for that NPA for projecting growth beyond the six-year forecast period, the CNA shall seek guidance from CRTC staff and will advise the CSCN of the alternative method used.

In this instance, the CNA compared the average forecast growth for the next five years, the median forecast growth for the next five years and the median and average historical growth for the past five years. The lowest number resulting from these calculations was the one used to identify the Projected Exhaust Date (PED) for each NPA.

Geographic NPAs	Future PED Method
236/250/604/672/778	Historical Average
249/683/705	Historical Average
289/365/742/905	Historical Average
343/613/753	Historical Average
367/418/581	Historical Average
368/403/587/780/825	Historical Average
416/437/647	Historical Average
709/879	Historical Average
782/902	Historical Average

Non-Geographic NPAs	Future PED Method
622/633	6-year Average

5. Summary of Challenges Encountered during the R-NRUF Process

The CNA sent an e-mail reminder on 21 July 2023 and started contacting individual companies during the first week of August to remind them of the 28 July 2023 due date. Nevertheless, some R-NRUF submissions were a few days late.

6. Conclusion

In accordance with Section 4, Item 6 h) of the *Canadian Numbering Resource Utilization Forecast (C-NRUF) Guideline*, the CNA has conducted assessments, sought clarification and/or explanation from various TSPs to reconcile 2023 growth with current and historical forecasts to determine whether the July 2023 R-NRUF results are reasonable and the PEDs for the impacted NPAs are realistic.

Non-Geographic NPA Growth is realistic, but it may change very quickly as new companies begin to provide IoT/ Machine-to-Machine services.

The CNA believes that emerging technology growth has been responsible for a good part of the recent demand. It is assumed that the introduction of the *Canadian Non-Geographic Code Assignment Guideline*, will alleviate some of the issues associated with Machine-to-Machine demand but it is difficult to quantify. Some TSPs are applying for non-geographic codes.

Based on the data and explanations provided by TSPs in response to the CNA's questions, the NRUF results appear reasonable and the PEDs for Canadian NPAs are generally realistic.