

Canadian Numbering Administrator Annual Report

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Canadian Numbering Administration Consortium (CNAC)

The Canadian Numbering Administration Consortium Inc. (CNAC) was formed in 1998, under the regulatory authority of the Canadian Radio-television & Telecommunications Commission (CRTC), to oversee numbering administration activities in Canada. CNAC is an incorporated entity with a Board of Directors, and shares held by many Canadian Telecommunications Service Providers (TSPs). The primary function of CNAC is to oversee and fund the numbering administration activities of the Canadian Numbering Administrator (CNA).

CRTC Interconnection Steering Committee (CISC)

The CISC is a committee comprised of various industry representatives that facilitates the implementation of Telecom Decision CRTC 97-8 Local Competition and related Commission decisions. The mandate of the CISC is to undertake tasks related to technological, administrative and operational issues on matters assigned by the CRTC or originated by the public, that fall within the CRTC's jurisdiction.

Canadian Steering Committee on Numbering (CSCN)

The CSCN is an open public forum established in 1991 to consider and resolve numbering resource issues. It became a subtending Working Group of the CISC in 1998. In addition to the mandate defined in Appendix 1, Item 6, of the CISC Administrative Guidelines, the CSCN is responsible for:

- a) Developing number planning and implementation strategies for the Canadian telecommunications industry;
- b) Ensuring the equitable assignment of numbering resources in a competitive Canadian telecommunications industry environment;
- c) Ensuring that adequate and appropriate numbering resources are always available for Canadian public telecommunication services and customers;
- d) Ensuring that the administration of numbering resources does not confer an undue advantage upon any entity nor inhibit the timely introduction of new telecommunication services or competition in these services in Canada;
- e) Ensuring the efficient, effective and equitable use of numbering resources in Canada including the assignment, administration, forecasting and conservation of these resources;
- f) Providing input and support on Canadian numbering practices to the CRTC via the CISC process;
- g) Promoting CISC-agreed positions on numbering issues in the North American telecommunications industry fora; and,
- h) Recommending to the CRTC, via the CISC process, allocations of numbering resources for the Canadian telecommunications industry.

Canadian Numbering Administrator (CNA) Organization

The CNA is a project of the Information, Environmental and Engineering Solutions Division of Leidos Canada Inc., Glen Brown serves as both the Division Manager of Leidos Canada Inc. and the Program Manager of the CNA. The CNA is located at 1516 - 60 Queen Street, Ottawa, Ontario.

The CNA's organizational structure is as follows:

- Program Manager, Canadian Numbering Administrator (Glen Brown)

The CNA Project Manager has the overall responsibility for the operation of the Canadian Numbering Administrator. The Project Manager of the CNA is also responsible for the following numbering administration functions:

- Administers in Canada, North American Numbering Plan Administrator (NANPA) and Telcordia™ Technologies, Inc., dba iconectiv, controlled resources;
 - Acts as liaison with Telcordia™ Technologies, Inc., dba iconectiv, Telecom Routing Administration (TRA) and the Common Interest Group on Routing and Rating (CIGRR);
 - Attends numbering fora meetings in Canada and the U.S. as needed;
 - Assists in Code Administration when required;
 - Chairs/facilitates NPA Relief Planning Committee meetings;
 - Acts as liaison with the CNAC Board and Oversight Staff;
 - Chairs the CSCN if no other Chair is appointed;
 - Provides oversight for the management of the Canadian Numbering Administration System (CNAS);
 - Provides oversight for software development and acquisition; and,
 - Provides database support and develops database generated reports.
- Manager, Canadian CO Code Administration (Suresh Khare)

The CO Code Manager reports to the Project Manager of the CNA and is responsible for the following functions:

- Manages the administration of CO Codes across Canada;
- Backup CSCN Chair;
- Backup Relief Planning Committee Chair/Facilitator;
- Acts as Numbering Plan Area (NPA) Code Relief Planner; and,
- Conducts the Canadian Numbering Resource Utilization Forecast (C-NRUF)

- Senior Project Manager Policy and Industry Notification (Fiona Clegg)

The Senior Project Manager Policy and Industry Notification reports to the Project Manager of the CNA and is responsible for the following functions:

- Administers in Canada, North American Numbering Plan Administrator (NANPA) and Telcordia™ Technologies, Inc., dba iconectiv, controlled resources;
 - Manages the Industry Notification Process;
 - Acts as liaison with Telcordia™ Technologies, Inc., dba iconectiv, TRA and the CIGRR;
 - Acts as backup CSCN Secretary and CSCN liaison when required;
 - Backup CSCN Chair;
 - Backup Relief Planning Committee Chair/Facilitator/Secretary;
 - Performs backup NPA Relief Planning Committee Secretary functions; and,
 - Assists in Code Administration when required.
- System Administrators (Kelly Walsh, David Comrie)

The System Administrators report to the Program Manager of the CNA and are responsible for the following functions:

- Manage the Canadian Numbering Administration System (CNAS);
 - Administer software development and acquisition of software and hardware;
 - Provide database support and develops database generated reports; and,
 - Maintain the CNA website.
- CO Code Administrators (Gerry Clermont, David Comrie and Natalie Lessard)

The CO Code Administrators report to the CO Code Manager and assign CO Codes in Canada as well as other administrative and data entry functions.

- CSCN/RPC Secretary (David Comrie)
 - Coordinate document control with internal CNA, CRTC staff and meeting participants;
 - Record meeting notes for CSCN and RPC meetings/conference calls; and,
 - Arrange meetings and conference calls.
- Administrative Support (Sandi Mish)

Provides administrative support to the CNA staff.

Canadian Numbering Administrator Duties and Functions

A) CSCN Secretary

The CNA performs the duties of the CSCN Secretary in accordance with the CSCN Adjunct to the CISC Administrative Guidelines including:

- 1) Attends all meetings of the full CSCN and records the attendance and the proceedings of all such CSCN meetings and conference calls;
- 2) Maintains centralized files, including logs, of all CSCN documents;
- 3) Maintains current and accurate CSCN participant distribution list(s);
- 4) Prepares and ensures the timely distribution of the full CSCN meeting minutes;
- 5) Performs such other duties as may be prescribed from time to time by the CSCN; and,
- 6) Sends CSCN Minutes, Agendas and other documents identified by the CSCN for posting to the CRTC CISC Website.

B) Central Office Code Administration including NPA Relief Planning

The CNA performs CO Code administration functions in accordance with the Canadian Central Office Code (NXX) Assignment Guideline (Canadian COCA Guideline) for geographic NPAs assigned for use in Canada including NPA Relief Planning functions in accordance with the Canadian NPA Relief Planning Guideline and the Canadian Adjunct to the INC NPA Allocation Plan and Assignment Guidelines.

The CNA also performs CO Code administration functions in accordance with the Canadian NPA 600 NXX Code Assignment Guideline and the Canadian Non-Geographic Code Assignment Guideline for non-geographic NPAs assigned for use in Canada (i.e. 6YY).

C) CNA Role in NANPA Administered Resources

The CNA performs the following tasks with respect to North American Numbering Plan (NANP) number resources, which are controlled by the NANPA:

- 1) Receives, validates and forwards applications from Canadian entities to NANPA for assignment of:
 - a) NPA Codes;

- b) International Inbound NPA 456 NXX Codes;
- c) PCS/N00 NXX Codes (NPA 500 NXXs);
- d) NPA 9YY NXX Codes;
- e) NPA 800 855-XXXX line numbers;
- f) 555-XXXX line numbers; and,
- g) Carrier Identification Codes (CICs).

- 2) Reclaims resources in certain circumstances.

D) Administration of Canadian Numbering Resources

The CNA performs the following administrative tasks:

- 1) Receives, validates and processes requests and maintains records for Non-Geographic Code Assignments (e.g., 5XX line numbers, NPA 600 NXX Codes, NPA 6YY and NPA 9YY resources), International Mobile Station Identity (IMSI) Codes, System Identifier Codes (SIDs); Emergency Service Routing Digit (ESRD) Blocks and MIN Block Identifier (MBI) Codes;
- 2) Maintains and publishes lists containing assignment information for Canadian numbering resources and approved applications of N11 codes in Canada;
- 3) Prepares and publishes a CNA Annual Report on the status of Canadian numbering resources;
- 4) Seeks clarification of CRTC-approved and the Alliance for Telecommunications Industry Solutions (ATIS) Industry Numbering Committee (INC) guidelines from the CSCN, CRTC staff or CRTC, as necessary;
- 5) Provides 'on request' reports to CSCN related to various numbering topics and data;
- 6) Provides clarification to interested parties with respect to the application of numbering resource guidelines and CRTC regulations applicable in Canada;
- 7) Participates in the CNA performance review process;
- 8) Investigates number assignment and administration issues, as necessary;
- 9) Seeks resolution, as necessary, from CSCN or CRTC of number assignments and administration issues (including, but not limited to,

frequency, format and content of NRUFs; Relief NPA selection; liaising with other numbering forums in North America);

- 10) Participates in and provides supporting data to the CSCN and CSCN Contribution Development Teams on request;
- 11) Liaises and coordinates the CNA's activities with NANPA to ensure effective and efficient use of NANP resources in Canada;
- 12) Establishes and maintains relationships with Innovation, Science and Economic Development Canada (formerly, Industry Canada) and the CRTC;
- 13) Develops and maintains knowledge of numbering activities at the INC and assesses the impacts of any INC activities on Canadian numbering administration and CNA functions;
- 14) Responds to requests from entities, including but not limited to, participants in the Canadian telecommunications industry, Innovation, Science and Economic Development Canada, the CRTC and the media about Canadian numbering resources and their administration;
- 15) Is the primary repository for numbering resource information for the Canadian telecommunications industry; and,
- 16) Communicates, orally and in writing, in both official languages, English and French.

CSCN Secretary

All of the CSCN secretary activities were carried out as required. Of particular interest, the CNA recorded the minutes and updated documentation for one two-day and two one-day CSCN face-to-face meetings. The dates of the CSCN meetings held in 2016 were 9-10 February, 14 June, and 25 October. Copies of these meeting minutes are located at <http://www.crtc.gc.ca/cisc/eng/cisf3fa.htm#MINUTES>.

In addition to the regular CSCN face-to-face meetings, the CSCN Secretary recorded the minutes and updated documentation for three CSCN agenda-setting teleconferences, and six CSCN teleconferences. These minutes can also be found at the website mentioned above.

CSCN Chair

The CSCN Chair is required to chair all CSCN meetings and teleconferences and attend all CISC Steering Committee meetings and teleconferences as well as prepare and present reports to the CISC concerning CSCN activities. The CSCN Chair also participated in

five CISC walk-around processes or conference calls, two of which required Work Group Status Reports to the CISC.

Central Office (CO) Code Administration

Canada is a member of the NANP. NANP telephone numbers are in the format NXX-NXX-XXXX where N is equal to 2 through 9 and X is equal to 0 through 9. The first NXX in a telephone number is the Numbering Plan Area (NPA) Code or Area Code, the second NXX is the CO Code and the XXXX is the line number.

When an eligible TSP in Canada requires the assignment of a block of telephone numbers, an application is made to the CNA for the assignment of a CO Code and its associated 10,000 line numbers. The CNA reviews the application to ensure that the service provider is eligible for the assignment of the CO Code in accordance with the CRTC-approved Canadian COCA Guideline. Once it is determined that the applicant has met all eligibility criteria and the application is completed with the correct data, a CO Code is selected and the data is entered into the Canadian Numbering Administration System (CNAS) and the Telcordia™ Technologies, Inc., dba iconectiv, Assigned Code Record (ACD) screen. After the data is entered, the applicant is officially notified of the assignment using a Part 3 form. A Part 4 form is submitted to the CNA once the CO Code has been placed in-service by the Code Holder. The CNA subsequently updates the CNAS. The CO Code listings are updated on a daily basis on the CNA website at http://www.cnac.ca/co_codes/co_code_status.htm. The Canadian COCA Guideline, which was developed by the CSCN and approved by the CRTC, may be found at <http://www.crtc.gc.ca/cisc/eng/cisf3fg.htm>.

An applicant is never denied the assignment of a CO Code due to the improper completion of an application. CNA staff members work with the applicant until the application is completed correctly. However, in 2016, eleven applications were denied because the applicants either did not respond to the CNA's requests for additional documentation or had not obtained CRTC Staff approval, within the fourteen calendar day processing period allowed by the Canadian COCA Guideline.

The following table lists the CO Code Administration activity by month in 2016. It should be noted that all CO Code administration activities were completed within the timeframes stipulated in the Canadian COCA Guideline.

CO Code Administration activity in 2016

Month	Part One Initial/ Growth	Part One Update	Bulk A	Bulk B	Reclaimed	Other
January	104	3	0	0	0	0
February	197	4	0	0	1	0
March	293	14	22	0	2	8
April	183	5	0	0	0	0

Month	Part One Initial/ Growth	Part One Update	Bulk A	Bulk B	Reclaimed	Other
May	188	7	0	0	0	0
June	89	5	0	0	4	0
July	109	10	52	0	4	0
August	91	27	18	0	0	0
September	87	30	11	0	10	0
October	92	19	11	0	2	0
November	79	12	36	0	5	9
December	60	9	0	0	4	0
Total	1572	145	150	0	32	17

The following table summarizes CO Code Administration by year from 2001 to 2015.

Historical CO Code Administration

Year	Part One Initial/ Growth	Part One Update	Bulk A	Bulk B	Reclaimed	Other
2001	572	305	110	374	112	56
2002	358	290	0	192	56	68
2003	335	343	0	64	30	21
2004	453	280	13	45	44	88
2005	649	259	116	0	40	30
2006	933	359	330	55	51	41
2007	1028	254	42	0	90	61
2008	992	198	10	0	131	28
2009	645	163	105	19	76	12
2010	1022	180	15	41	54	20
2011	808	214	149	56	29	7
2012	829	122	112	23	27	13
2013	808	134	0	104	48	33
2014	687	167	108	117	63	13
2015	869	103	53	63	36	15

Part One Initial/Growth applications are the quantity of CO Code Applications processed by the CNA that resulted in the assignment of new CO Codes. These would include applications for Initial, Additional Codes for Growth or Additional Codes for a Unique Purpose.

Part One Update applications are the quantity of CO Code Applications processed by the CNA to update data in the CNAS and the ACD Screens. These applications are made using Part 1 - CO Code Assignment, Reservation, Information Change, or Return forms detailing the appropriate changes, for the affected CO Code. This process includes changes such as, but not limited to, the OCN, switching entity/POI and Rate Centre

name.

Part One Bulk A applications are the quantity of CO Code Applications processed by the CNA that are received in volume and require a significantly reduced level of effort to process, compared to the Part 1 applications discussed above. The CNAC Board has agreed that Bulk A applications will meet the following criteria:

- A Part One Application is required in accordance with the Canadian Central Office Code (NXX) Assignment Guideline;
- The Assigned Code Record (ACD) screen must be opened;
- One or two identical changes to the same data element;
- No error checking on the part of the CNA is required;
- Applications relate to updated information only;
- There must be at least ten NXXs involved; and,
- The normal fourteen calendar day processing time does not apply.

Part One Bulk B applications are the quantity of CO Code Applications that are processed by the CNA and are received in volume and meet the following criteria as agreed to by the CNAC Board:

- A Part One Application is required in accordance with the Canadian Central Office Code (NXX) Assignment Guideline;
- The Assigned Code Record (ACD) screen must be opened;
- Three or more changes to the same data elements are required; or
- Identical changes to three or more data elements are required; or
- Differing changes made to three or more or numerous data elements are required;
- Error checking is provided by the CNA;
- Applications relate to updated information only;
- There must be at least ten NXXs involved; and,
- The normal fourteen calendar day processing time does not apply.

Part One Recovered CO Code applications are the quantity of CO Code Applications processed by the CNA to reclaim CO Codes for the following reasons:

- a) The CO Code is no longer required by the Code Holder for the purpose originally assigned;
- b) The service for which the CO Code was assigned is discontinued;
- c) The CO Code Holder has ceased operation;
- d) The CO Code was assigned, but not used in conformance with the Canadian Central Office Code (NXX) Assignment Guideline; or
- e) The CO Code was not placed In-Service within the time frame specified in the Canadian Central Office Code (NXX) Assignment Guideline.

These applications are made using Part 1 - CO Code Assignment, Reservation, Information Change, or Return forms.

The “Other” column is the number of modifications made to the CNAS to correct the data received by the CNA during and since the CO Code Administration transition period.

Numbering Resource Utilization Forecast (NRUF)

Each NPA Code contains approximately 750 assignable CO Codes, depending on the NPA. The CNA is required to determine the approximate date when all assignable CO Codes will exhaust in each NPA to begin NPA relief planning activities to ensure that enough telephone numbers and CO Codes remain available for assignment prior to the introduction of a new NPA. This is achieved by conducting the annual NRUF.

In accordance with the Canadian Numbering Resource Utilization Forecast (C-NRUF) Guideline, during the fourth quarter of each year the CNA requests all existing and prospective CO Code Holders to complete the General Numbering Resource Utilization Forecast (G-NRUF) worksheet and return it to the CNA by February for analysis. On the worksheet, the Code Holders list the number of CO Codes, by NPA, that are assigned to them as well as forecast the number of CO Codes they expect to require, by NPA, in each of the next six years.

During the CNA's analysis of the data provided on the worksheets, any discrepancy between the CNA database and the number of assigned CO Codes that the Code Holder has indicated on the worksheet is discussed with the Code Holder to ensure that the data is correct. The CNA also scrutinizes the Code Holder's forecast data to compare it against previous years' forecasts to detect any large deviations. The CNA contacts the Code Holder to determine why the deviation has occurred and to ensure that no errors were made. Additionally, the CNA verifies any forecasts from new entrants that appear to be inflated. The CNA discusses the forecast with the new entrant and offers educated assistance to ensure that the forecast is valid. Any large discrepancies or unusual forecasts are reported to CRTC staff for their information and action before the final aggregate data is posted on the CNA website and presented to the CSCN. CRTC and CNA staff meet to discuss the NRUF results, in detail, before they are released to the CSCN and NANPA. Once the G-NRUF data is presented to CRTC staff and the CSCN, it is forwarded to the NANPA to be used in its analysis for determining the exhaust date of the NANP.

On 15 December 2015, the CNA requested all existing and prospective CO Code Holders to provide their year 2016 G-NRUF to the CNA by 01 February 2016. The aggregate G-NRUF data was reviewed with the CRTC staff before it was posted to the CNA website on 21 March 2016. It was then presented to the CSCN and forwarded to the NANPA.

The 2016 G-NRUF results indicated that:

- the Projected Exhaust Date (PED) for NPA 709 had advanced to May 2019, and that NPA 709 was in a Jeopardy Condition in accordance with section 8.1 of the Canadian NPA Relief Planning Guideline (Version 6.0) as approved by Telecom Decision CRTC 2014-603;
- the PED for NPA 418/581 had advanced to April 2019 therefore, in accordance with section 8.1 of the Canadian NPA Relief Planning Guideline, NPA 418/581 would be in a Jeopardy Condition by June 2016 and as such an S-NRUF would be conducted;
- the PED for NPA 506 had advanced to February 2021; consequently NPA 506 entered the Relief Planning window; and
- the PED for NPA 236/250/604/778 had advanced to April 2021; consequently NPA 236/250/604/778 entered the Relief Planning window.

The 2016 G-NRUF may be found at

http://www.cnac.ca/co_codes/nruf/latest_forms/nruf_latest_forms.htm#Results.

2016 NRUF Activity

NRUFs	DUE DATE	NPAs
G-NRUF	01 Feb 2016	All geographic NPAs
G-NRUF	01 Feb 2016	Non-Geographic NPAs using numbers in NPAs 5XX, 600 and 9YY
J-NRUF	15 Apr 2016	NPA 709
S-NRUF	15 Apr 2016	NPA 418/581
J-NRUF	29 Jul 2016	NPAs 418/581 and 709
R-NRUF	12 Aug 2016	NPAs 236/250/604/778 and 506
J-NRUF	31 Oct 2016	NPAs 418/581 and 709

NPA Relief Planning

NPA relief planning is a public process that is described in the Canadian NPA Relief Planning Guideline, which may be found at <http://www.crtc.gc.ca/cisc/eng/cisf3fg.htm>. To increase public awareness and participation in the NPA relief planning process, the CRTC has determined that NPA Relief Planning Committees (RPCs) are to be established as ad hoc sub-committees of the CISC. The CNA is required to create and maintain an NPA Relief Planning distribution list, which is frequently updated as participants in the relief planning process are not static.

When the G-NRUF indicates that an NPA will exhaust within or at about 72 months, the CNA informs CRTC staff, who normally initiate the publication of a CRTC Notice of

Public Consultation. The Notice is used to inform the public that NPA relief is required and also solicits interested parties to be part of the NPA Relief Planning Committee. Subsequently, the CNA NPA Relief Planner conducts a Relief NRUF (R-NRUF), which is similar to the annual G-NRUF except that existing CO Code assignments and the forecast CO Code requirements are generally reported at the exchange area level of detail, depending on the applicable CRTC determination and requirements set by the Relief Planning Committee (RPC). During 2016, the CNA conducted an R-NRUF for NPA 236/250/604/778 and NPA 506.

In 2016, as noted in the preceding section, a Jeopardy Condition was declared in NPA 709 immediately after the annual G-NRUF results were released. Consequently, the CNA conducted a J-NRUF in NPA 709 in accordance with the Canadian C-NRUF Guideline.

The results from the 2016 G-NRUF indicated that NPA 418/581 was nearing a Jeopardy Condition. As such, the CNA requested and was granted approval by CRTC staff to conduct an S-NRUF in NPA 418/581. The due date for both the J- and S-NRUF was 15 April 2016. Following the results of the S-NRUF and the release of Telecom Notice of Consultation CRTC 2016-207 on 31 May 2016, the CRTC declared a Jeopardy Condition in NPA 418/581.

The information provided by the NRUFs was used in the development of several viable relief options that were included in the Initial Planning Document (IPD) for each of the NPAs. The IPDs were sent to current and prospective CO Code Holders in the affected NPAs and to any other party that the CNA believed should have an interest in the ensuing NPA relief activities (e.g., municipalities, public interest groups and the Canadian Security Association).

When the IPDs were distributed to the NPA RPC mailing lists, the members were invited to submit contributions suggesting other relief planning options and to attend the first RPC meeting, which is held at a location within the NPA in question. In the case of NPAs 709 and 418/518 the initial face-to-face RPC meetings were conducted in St. John's, Newfoundland and Labrador on 20-22 September and Quebec City, Quebec on 26-28 October, respectively.

The initial and all subsequent RPC meetings are chaired by the CNA, which also supplies the NPA Relief Planner and the RPC secretary.

At the initial meeting, IPDs are discussed in detail so the Committee members can become familiar with the NPA from a geographic, demographic, exchange area and NRUF point of view. Additionally, the relief options contained in the IPD are discussed in detail as are any contributions received by the CNA from any interested party.

During the RPC meetings, the Committee modifies the IPD to become the Planning Document (PD). The Committee will normally come to consensus on a recommended relief option. The recommended relief option will be compared to other relief options

either proposed in the IPD or considered by the RPC and this comparison will be included in the PD, which is forwarded to the CRTC via the CISC process. During 2016 the NPA 709 RPC and NPA 418/581 RPC each recommended a Relief Plan to the CRTC. In addition, both RPCs also created a Relief Implementation Plan for submission to the CRTC via the CISC process.

Once the public process is completed the CRTC may accept the RPC recommendations, alter the recommendations or order a completely different relief plan.

The CRTC had not approved the Relief Plan for either NPA by the end of 2016.

During 2016 the CNA chaired, supplied a Secretary and Relief Planner and prepared minutes for two three-day RPC meetings. Additionally, the CNA maintained four Relief Planning Documents (two Planning Documents and two Relief Implementation Plans) and performed seven Relief, Jeopardy, Special or G-NRUFs as listed above. The CNA was required to develop three NPA Relief Planning Reports for the CSCN.

CNA Role in NANPA Controlled Resources

In addition to NPA Codes, the NANP contains other numbering resources. These numbering resources are also assigned to Canadian telecommunications entities by the NANPA via the CNA. Applications for these resources are received by the CNA and reviewed for accuracy and to ensure that the applicant meets Canadian regulatory requirements. Complete and correct applications are forwarded to the NANPA along with a recommendation for assignment. The CNA will deny the assignment of these resources and return the application where the applicant does not meet Canadian regulatory requirements or the requirements of the applicable assignment guideline or its Canadian adjunct. No application is rejected because it is not completed correctly unless it is impossible to acquire the necessary information from the applicant. The CNA works with the applicant until the application is properly completed. Once the NANPA has assigned a code, it is forwarded to the CNA who informs the applicant of the assignment. The CNA acts as the Canadian telecommunications industry liaison with the NANPA.

The CNA keeps a separate listing of all resources assigned to Canadian entities along with links to the associated Canadian guidelines, Industry Numbering Committee assignment guidelines and the associated Canadian Adjunct to those guidelines. These items may be accessed through the CNA website at <http://www.cnac.ca/> by using the drop down list under the “Numbering” button.

The CNA is required to receive, validate and forward applications from Canadian entities to NANPA for assignment of the following resources:

- NPA Codes;
- International Inbound NPA 456 NXX Codes;
- PCS/N00 NXX Codes (NPA 500 NXXs) reserved for Canadian entities;
- NPA 9YY NXX Codes;

- NPA 800 855-XXXX line numbers;
- 555-XXXX line numbers; and
- Carrier Identification Codes (CICs).

During 2016, one CIC was assigned and two were reclaimed, fifteen 555-XXXX line numbers were reclaimed, one NPA 456 NXX code was reclaimed, five NPA 9YY NXX codes were reclaimed and fourteen were updated.

There were no NPA Codes assigned in 2016.

CNA Role in Telcordia™ Technologies, Inc. dba iconectiv Controlled Resources

In addition to the NANPA controlled resources, SS7 resources are assigned to Canadian telecommunications entities by iconectiv with the assistance of the CNA. iconectiv is under contract by the American National Standards Institute (ANSI) to administer these resources in North America. Applications for these resources are submitted online to iconectiv and require an upfront fee payment before the application is processed. Most applicants require the CNA's assistance to determine if they require a Small Network Code or a Network Code Block and to determine if they meet the regulatory requirements to be eligible for an assignment. The CNA is normally required to assist new applicants to locate the SS7 related website and complete the online form. Once iconectiv has assigned a code, notice of its assignment is forwarded to the CNA and the applicant. The CNA acts as the Canadian telecommunication industry liaison with iconectiv.

A description of SS7 Network Codes and the Global Title Translation (GTT) Point Code Industry Notification Process, which is facilitated by CRTC staff, can be found at the CNA website at <http://www.cnac.ca/> by using the drop down list under the "numbering" button. It should be noted that a list of these resources does not currently appear on the CNA website at the request of the industry.

During 2016, one SS7 Small Network Code and two Network Point Code Blocks were assigned.

Other Administration Activities

The CNA is required to receive, validate and process requests and maintain records for NPA 600 NXX Codes. A description of these resources and a listing of assignments may also be found on the CNA website. One NPA 600 NXX Code was assigned in 2016.

The CNA is required to receive, validate and process requests and maintain records for Canadian Emergency Service Routing Digit (ESRD) Blocks. A description of these resources and a listing of assignments may also be found on the CNA website. There were 1,163 ESRD Blocks assigned during 2016.

The CNA is required to receive, validate and process requests and maintain records for Canadian MIN Block Identifier (MBI) Codes. A description of these resources and a listing of assignments may also be found on the CNA website. During 2016, there were 267 Codes assigned, nine updated and ten reclaimed.

The CNA is required to receive, validate and process requests and maintain records for System Identifier Codes (SIDs). A description of these resources can be found on the CNA website. There were no SID assignments in 2016.

The CNA is required to receive, validate and process requests and maintain records for the Mobile Network Code (MNC) portion of International Mobile Station Identifier Codes (IMSI) used in Canada. A description of these resources and a listing of assignments can be found on the CNA website. Two MNCs were assigned, two were reclaimed, two were transferred and one was updated in 2016.

The CNA is required to seek clarification of CSCN and INC Industry Guidelines from the CSCN or CRTC, as necessary. There have been a number of occasions where this has been required. In 2016, the CNA developed two TIF reports and assisted with the development of another one as a participant in the CSCN. Additionally, the CNA is usually a member of any Contribution Development Team that submits a contribution to the CSCN though there were no Contribution Development Teams active during 2016. The CNA submitted six stand-alone contributions in 2016. The CNA also acted as the Task Sponsor for two new TIFs initiated during 2016 and one TIF that was initiated in 2015 and resolved in 2016.

On 9 January 2015, in Telecom Decision CRTC 2015-4, the CRTC approved the Canadian Non-Geographic Code Assignment Guideline. The Guideline anticipates that one service that could utilize Non-Geographic numbers is Machine-To-Machine (M2M).

The CNA is required to receive, validate and process requests and maintain records for Canadian Non-Geographic Code numbering resources. Canadian Non-Geographic NPAs include 622, 633, 644, 655, 677, and 688. These are referred to as “6YY” NPAs.

During 2016, five Non-Geographic Codes were assigned by the CNA and one was reclaimed. The CNA continues to closely monitor these assignments to ensure that these Codes are put in-service within the appropriate timeframes.

Industry Fora

To ensure that the CNA is up-to-date with CSCN activities and to ensure that the CSCN is able to develop and modify number assignment guidelines, the CNA attends a number of industry fora in the US. The CNA attended Common Interest Group on Routing and Rating (CIGRR) meetings to ensure that the Canadian industry is aware of rating and routing changes in the US that affect Canada and Canadian assignment guidelines. Generally, there is no other Canadian entity attending these meetings. The CNA attended

13 CIGRR meetings and teleconferences in 2016, including attending Canadian CIGRR teleconferences.

The CNA is required to develop and maintain knowledge of numbering activities at the INC and assess the impacts of any INC activities on Canadian numbering and CNA functions. The CNA attended five conference calls, one three-day, three two-day and one one-day face-to-face INC meetings in 2016 and has delivered seven summaries of INC issues that could affect Canadian assignment guidelines to the CSCN following all INC general meetings. No other Canadian entity attends these meetings.

It should also be noted that the CNA attended three North American Numbering Council (NANC) meetings (usually immediately following the INC meetings) due to the volatile regulatory situation in the US concerning numbering issues.

In 2016, the CNA also attended ten Local Number Portability Administration Transition Outreach and Education Planning webcasts.

Canadian CIGRR

The Canadian Common Interest Group on Routing and Rating (CCIGRR) was implemented to ensure that the Canadian industry is aware of rating and routing changes in the US that affect Canada, and to develop Canadian only solutions to rating and routing issues. The CNA attended four teleconferences in 2016.

Website

The CNA is required to establish and maintain a public Internet website. The CNA website contains numbering information, which is unique to Canada, and generally it does not duplicate information that is available on the NANPA website. The CNA website provides a brief description of the information that is contained on the NANPA website, including the NANPA Internet website address.

The following information is available on the CNA Internet website at www.cnac.ca:

- 1) CNA mandate, mailing address, contact names, telephone and facsimile numbers, and E-mail addresses;
- 2) Canadian Numbering Administration Consortium (CNAC) background, mailing address, contact names, telephone and facsimile numbers, and E-mail addresses;
- 3) Canadian Geographic NPA Information including a Map of Canada showing Canadian geographic NPAs and a list of CO Codes and the status of each (e.g., assigned, reserved, protected, test, available) in a downloadable spreadsheet file format;

- 4) Canadian Non-Geographic NPA and CO Code information. Non-Geographic NPA CO Codes are not associated with Exchange Areas and cannot be shown on a map. A list of Non-Geographic CO Codes and the status of each (e.g., assigned, reserved, protected, test, available) in a downloadable spreadsheet file format is available;
- 5) A list of Canadian National Numbering Resources;
- 6) Unique CRTC-approved Number Resource Assignment Guidelines, including CSCN Administrative Guidelines and links to the CRTC website;
- 7) List of INC Number Resource Assignment Guidelines which apply in Canada plus the address of the website where copies may be obtained;
- 8) Other CNA information or reports as directed by CNAC and the CRTC;
- 9) CNA Annual Reports;
- 10) CSCN Information;
- 11) CSCN Membership List including company name, contact name, mail address, telephone and facsimile number, and e-mail address;
- 12) Current Schedule of CSCN meetings and conference calls;
- 13) Most recent Draft CSCN Meeting Minutes;
- 14) Applicable NPA Relief Planning documentation; and,
- 15) Historical NRUF results and the latest NRUF forms and instructions.

This information is updated on a timely basis when the CNA receives new information and at a minimum of once every week. The cnac.ca website had 219,999 sessions comprising 393,881 page views in 2016.