

# Presentation Overview

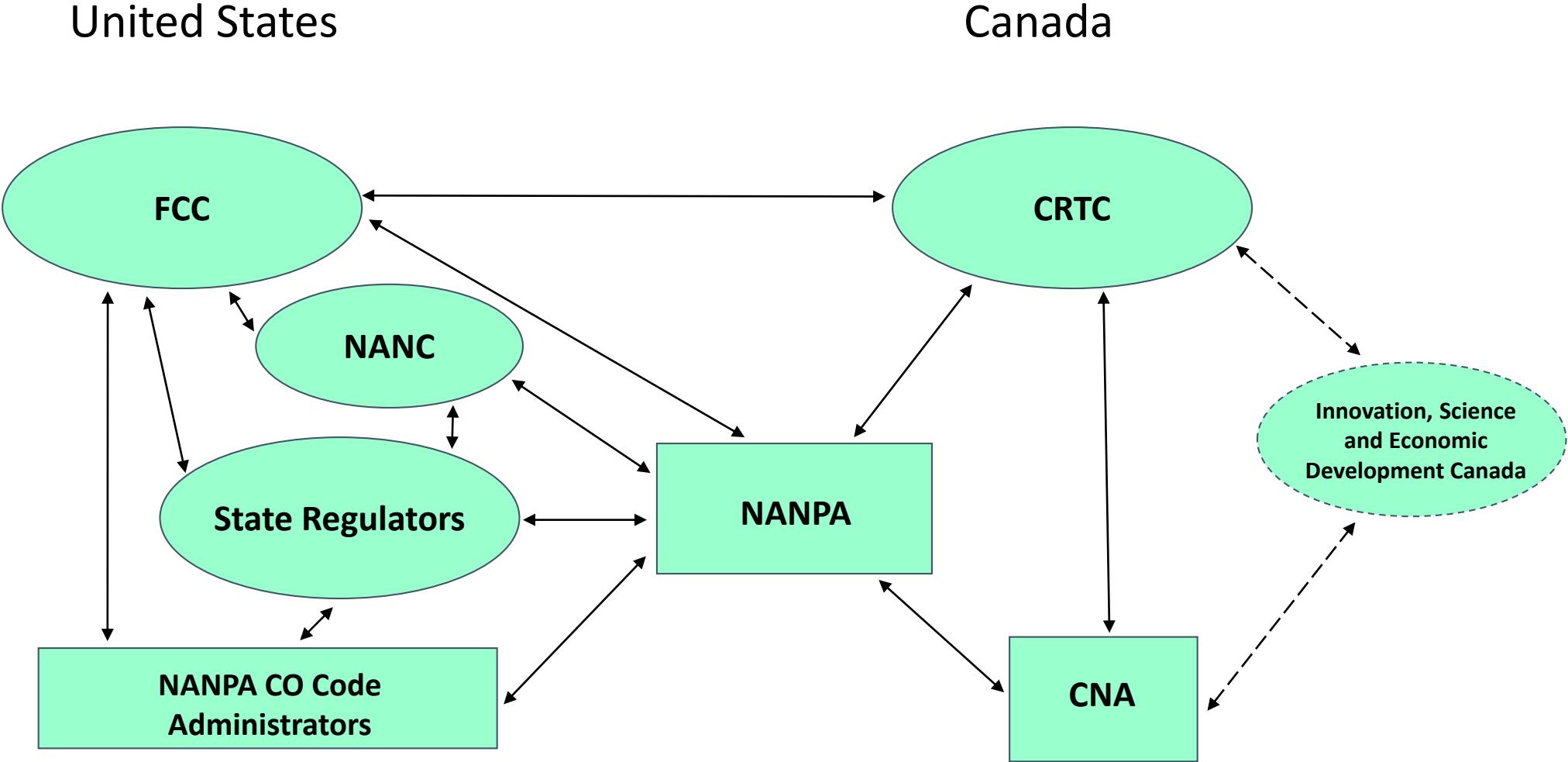
1. An Overview of CNA Operations
2. CNA Organization Chart including positions, roles, and responsibilities and current staff members
3. Demonstration of the CNAS software and related CNA software systems
4. Summary of numbering data to be transferred to the new vendor
5. Information regarding a transition plan for transferring the CNA role to a new vendor by 1 January 2019

# CNA Mandate

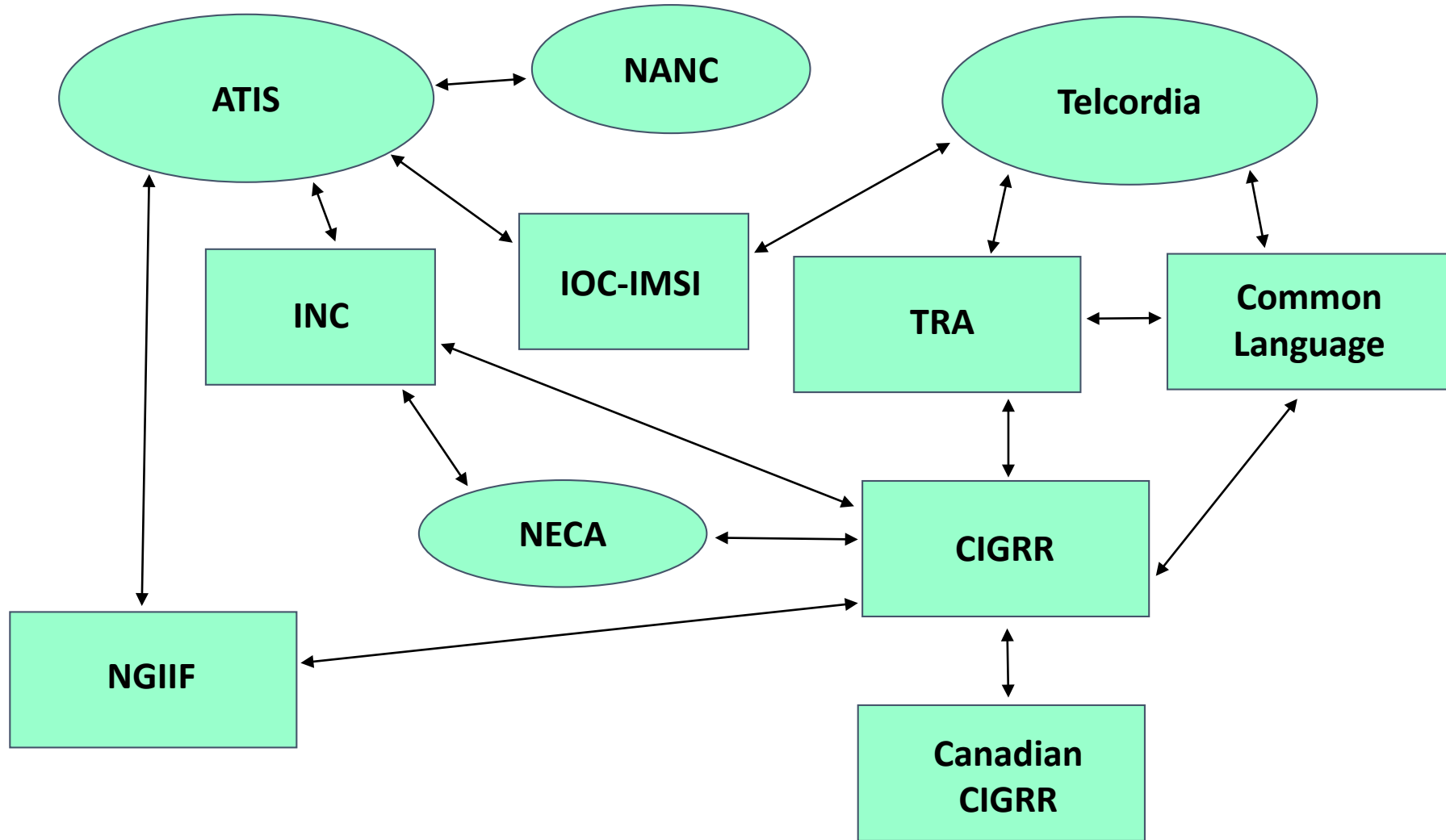
The mandate of the CNA is to provide numbering administration services to the Canadian telecommunications industry under contract to the CNAC. The administration of Canadian numbering resources is under the regulatory oversight of the CRTC.

CNA functions include Canadian numbering resource administration, the processing of applications for NANP resources and other telecommunications numbering resources. The CNA also chairs and is the secretary for the CSCN and the CISC Ad Hoc RPCs.

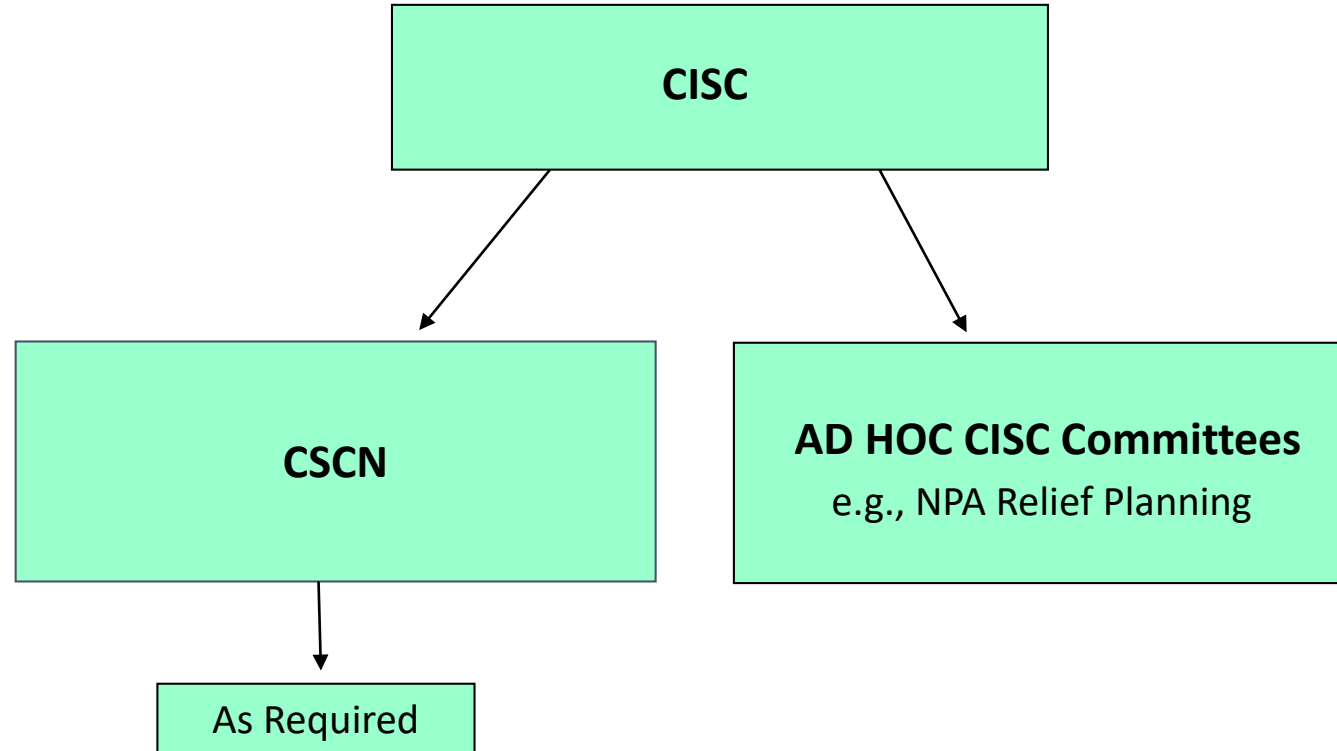
# Numbering Administration



# CNA Related Industry Fora - NANP



# CNA Related Industry Fora - Canada



## Main CNA Functions/Activities

- Administration of:
  - Canadian Numbering Resources
  - NANPA Numbering Resources
  - Non-NANPA Numbering Resources
- NRUF
- NPA Relief Planning
- CSCN
- Industry Notification Service (i.e. AOCN)

## Administration of Canadian Numbering Resources and NPA Relief Planning

The CNA will perform Canadian numbering resource administration functions in accordance with the applicable CRTC-approved guidelines for geographic and non-geographic NPAs assigned for use in Canada including NPA Relief Planning functions.

Other CNA functions include:

- Maintaining and publishing the NNI, which is a report containing assignment information for Canadian numbering resources
- Providing reports to CSCN on various numbering topics upon request
- Providing clarification to interested parties with respect to the application of numbering resource guidelines applicable in Canada
- Investigating number assignment and administration issues, as necessary
- Seeking resolution, as necessary, from CSCN of number assignment and administration issues
- Participating in and providing informational support to the CSCN working groups on request
- Liaising and coordinating the CNA's activities with the **NANPA** to ensure effective and efficient use of NANP resources in Canada
- Liaising and coordinating with the **TRA**, especially during NPA relief
- Establishing and maintaining relationships with Innovation, Science and Economic Development Canada and the CRTC
- Responding to requests from participants in the Canadian telecommunications industry, Innovation, Science and Economic Development Canada, the CRTC and the media about Canadian numbering resources and their administration
- Developing and maintaining knowledge of numbering activities at the **ATIS-INC** and **report to the CSCN** the impacts of ATIS-INC activities on Canadian numbering and CNA functions
- **Being the primary repository for knowledge of numbering information for the Canadian telecommunications industry**

## **Administration of NANPA Administrated Numbering Resources**

- Receive, validate and forward applications from Canadian entities to NANPA for assignment of:
  - NPA codes
  - International Inbound NPA 456 NXX codes
  - PCS/N00 NXX codes (NPA 500 NXXs) reserved for Canadian entities
  - NPA 900 NXX codes
  - NPA 800 855-XXXX line numbers
  - 555-XXXX line numbers (Sunset)
  - Carrier Identification Codes (CICs)
- Maintain records for N11 Service Codes in accordance with CSCN directives

## **Administration of Non-NANPA Administrated Numbering Resources**

- Receive, validate and forward applications for SS7 Network codes (or monitor assignments) and NBGIs from Canadian entities to iconectiv for assignment and maintain the associated records
- Receive, validate and process requests and maintain records for NPA 600 NXX codes; receive, validate and forward applications from Canadian entities to iconectiv for assignment and maintain the associated records



## CSCN/RPC Chair/Secretary

- Attend and chair all meetings
- CSCN face-to-face meetings are hosted by members across the country
- Produce IPD in consultation with ILEC(s)
- Host RPC face-to-face meetings in the NPA complex for which relief planning is taking place
- Participate in CISC (e.g. submit CSCN/RPC chair reports, attend meetings, review CISC documents from other WG, etc.)
- Record the minutes of all CSCN/RPC meetings
- Maintain and edit draft documents (e.g., numbering administration guidelines, correspondence) at CSCN/RPC meetings, upon request
- Assign a number to each CSCN “TIF” and track throughout the CISC process
- Assign a number to each TIF Report approved by the CSCN/RPC and track throughout the CISC process
- Maintain a centralized file/log system
- Establish and maintain a CSCN/RPC Participant List and an associated CSCN/RPC E-mail Address List
- Submit electronic copies of all CSCN meeting minutes and documentation to the CRTC at [procedure@crtc.gc.ca](mailto:procedure@crtc.gc.ca) for publication on the CRTC website at [www.crtc.gc.ca](http://www.crtc.gc.ca)
- **Perform such other duties as may be prescribed from time to time by the CSCN/RPC**
- **Provide guidance to CSCN/RPC based on Canadian telecommunications industry knowledge and experience**

# Industry Notification Service

## (Administrative Operating Company (AOCN))

The CNA shall have the ability to input the rating and routing information set out in Part 2 - Routing and Rating Information Forms in the Canadian Central Office Code (NXX) Administration Guidelines into the iconectiv TRA BIRRDs.

Such service shall be performed at a price to be negotiated with and paid directly by the Code Holder making the request. While the CNA is **required** to offer this service to all Code Holders, individual Code Holders may instead perform the function themselves or have the function performed by an entity other than the CNA.

The CNA shall be solely responsible for billing and collecting any fees charged for Industry Notification Services directly from the TSPs that request such service.

The CNA is a non-voting member of CIGRR and Canadian CIGRR. The new vendor, as an AOCN, will be voting member of both organizations.

CIGRR meets four times a year in different locations throughout the United States.

Canadian CIGRR generally holds four to five conference calls a year with a face-to-face meeting every second year.

Go to CNA website and show the layout:

- Numbering
  - CO Code Assignment section
  - MBI -> Guideline to CRTC webpage
- CSCN
- NRUF
- NPA Relief

# CNA Website

Welcome to the Canadian Numbering Administrator Site - Mozilla Firefox

File Edit View History Bookmarks Tools Help


Welcome to the Canadian N X +

www.cnac.ca/index.htm

Search

CNAS Radar OPL CTV BCM BIRRS T&E CostPoint Workday Fusion: Login Movati Athletic Cognos Dropbox Rogers for Business iCloud Tariff Applications (87... How To Unlock iPhone... Public Skating - Cana...



Select Language



About CNA Numbering NPA Relief CNA Consortium CSCN NRUF Site Map Search Site Links

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## Welcome to the CNA Website

 The CNAC January 2018 Request for Proposal and Media Releases are available [here](#). (updated 2018-01-24) 

You may use the main menu located above to navigate or select a quick link button below.

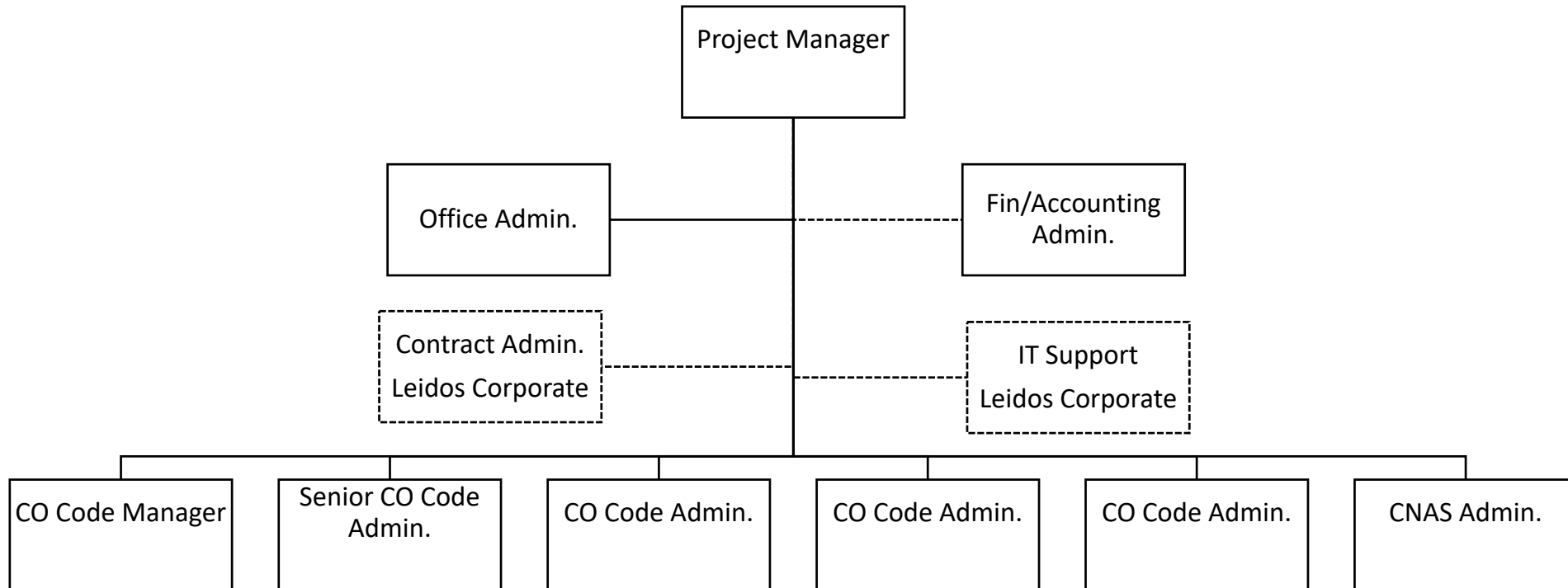
**\*Number Lookup\***  
**NPA-NXX**  
Central Office Code Status  
[CLICK ME!](#)

**Canadian Area Code Map**  
[CLICK ME!](#)

**CNA-Calendar of Activities**  
[CLICK ME!](#)

Note: All dates represented in this style (2018-12-31) will use the format of (YYYY-MM-DD)

## Current CNA Organization Chart



## High Level Roles

- Project Manager
- Senior or Manager of Numbering Resources Administration
- Numbering Resource Specialists
- CSCN chair
- CSCN secretary
- RPC chair
- RPC secretary
- NANPA Resource Administrator
- Non-NANPA Resource Administrator
- CNAS Specialist(s)
- IT Support Specialist(s)
- Webmaster
- GIS Support
- NRUF Specialists
- NPA Relief Planning Manager
- Industry Notification Service
- Office Administrators
- Financial/Accounting Administration
- Contract Administration

# CNAS Software

The CNAS Software is a database developed by Telcordia to assist the CNA in the administration of CO Codes, MBI Blocks, ESRD Blocks and Non-Geographic Codes. The present database size is in the order of 500 MB.

The CNAS Software currently runs on the following platforms:

- Microsoft Windows Server 2012 Standard (Version 6.2)
- Microsoft SQL Server 2012 Standard Edition (Version 11.0)
- Microsoft Internet Information Services Version 8.0
- Is a very valuable tool/database
- Skill and experience required by staff to operate
- User interface allows non-DBAs to enter data in a controlled method
- True value is the data - with industry knowledge/experience and DBA skills it is used to:
  - Assist with identification of primary, secondary and tertiary EAS
  - Used to deal with CO Code assignment issues for the first few years for NPA 289 CO Codes
  - Used during NPA 613 and NPA 819 Phase I to extend the life of 7D (SCOCAPS)
  - Used during NPA 250 relief (SCOCAPS)
  - Troubleshoot data issues between CNA and BIRRDs data
  - Used to build and analyse various NPA relief planning scenarios when coupled with GIS software
  - Used to assist the footprint/growth calculations for NPA relief planning scenarios when coupled with GIS software

# CNA Internet Website

The CNA Internet Website was developed and is maintained using Microsoft Expression Web and published to primary and backup locations using an on-demand implementation of the WinSCP utility, an open-source SCP client.

As a general rule, Word and Excel documents are converted into PDF using the Microsoft Save-as-PDF MS Office add on or Adobe Acrobat Professional prior to publishing to the web site.



# CO Code

CO Code applications are processed using the original CNAS (version 1.0.2.2) as developed by Telcordia.

## **System Requirements**

CNAS Software is a database application developed by Telcordia in Visual Interdev 6 for the following platform:

- Windows NT 4.0 Service Pack 4
- Windows NT 4.0 Option Pack 4 (Microsoft Internet Information Server 4.0, SMTP, Internet Explorer 4.0)
- Microsoft SQL Server 7
- Microsoft Front Page Server Extensions
- Microsoft InterDev 6.0

CNAS Software has been successfully migrated to run on the following platform:

- Microsoft Windows Server 2012 Standard (Version 6.2)
- Microsoft SQL Server 2012 Standard Edition – Service Pack 3 (Version 11.0)
- Microsoft Internet Information Services Version 8.0

# CO Code

## (continued)

### Additional Tools

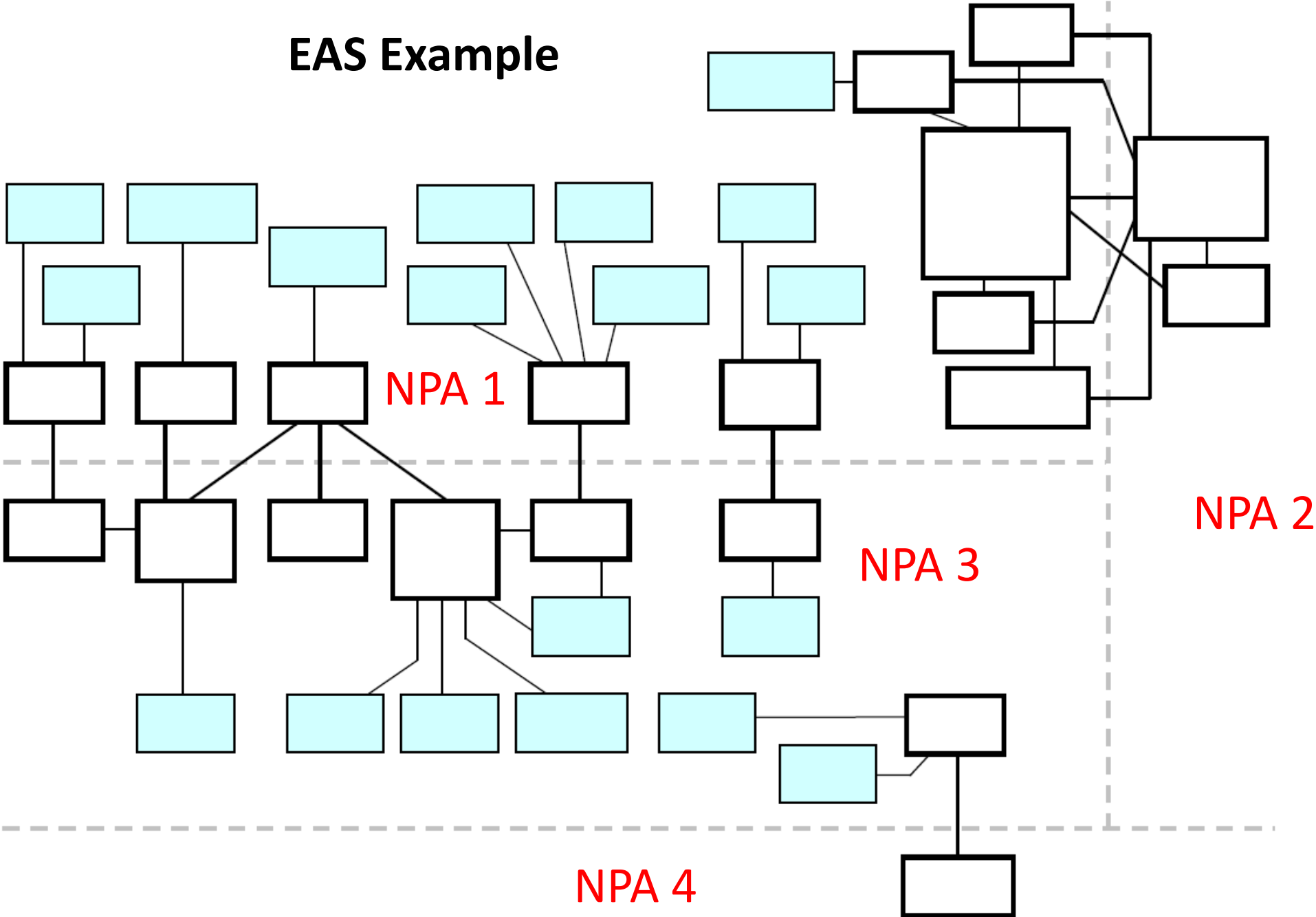
To assist with CO Code assignments the following are used:

- Date Calendar/CNA Date Calendar – 3 applications, one developed in Visual Basic Windows forms for .NET version 4.5 as a desktop app, one in Visual Basic ASP.NET 4.0 as a web application and another in Microsoft Visual Basic 6.0 as another desktop app. It calculates -45, 45, 52, 66, 175 and 227 days for any given input date
- EAS – this application was developed in the Microsoft .NET 1.1 environment and is now targeted to .NET framework 4.0 to find primary, second and tertiary exchanges based on the available tariff data that has been entered into the system
- Tracking system – the Liberum Help Desk (freeware) software built using Active Server Pages (ASP) is used to track the status of various CO Code applications

To publish the CO Code data to the web site the following have been developed:

- A custom C#.NET 4.5 console application that extracts all resource status data from the CNAS database and outputs it into formatted HTML pages for the cnac.ca website
- Scripted WinSCP sessions to secure copy the pages to the primary and backup sites
- BLAT to e-mail administrative staff of any problems with the process

# EAS Example



# MBIs

The MBI application is a web interface using ASP on the following platform:

- Microsoft Windows Server 2012 Standard (Version 6.2)
- Microsoft SQL Server 2012 Standard Edition – Service Pack 3 (Version 11.0)
- Microsoft Internet Information Services Version 8.0

The underlying ASP files were developed using a standard text editor. In some cases these files rely on the use of a crafted stored procedure that resides within the Microsoft SQL Server 2012. The stored procedures were developed using SQL Query Analyzer.

The web interface allows the user to:

- Conduct an MBI database lookup
- Complete an MBI Application - Part 1: Full Block based on NPA-NXX where the user selects the rate centre
- Complete an MBI Application - Part 1: Full Block based on NPA-NXX where no rate centre is selected
- Complete an MBI Application - Part 1: Full Block based on NPA-rate centre
- Complete an MBI Application - Part 1: Partial Blocks based on NPA-NXX where the user selects the rate center
- Complete an MBI In-Service Application - Part 3

To publish the MBI data to the web site the following have been developed:

- A custom C#.NET 4.5 console application that extracts all resource status data from the CNAS database and outputs it into formatted HTML pages for the cnac.ca website
- Scripted WinSCP sessions to secure copy the pages to the primary and backup sites
- BLAT to e-mail administrative staff of any problems with the process

# ESRDs

The ESRD application is a web interface using Visual Basic ASP.NET 4.0 on the following platform:

- Microsoft Windows Server 2012 Standard (Version 6.2)
- Microsoft SQL Server 2012 Standard Edition – Service Pack 3 (Version 11.0)
- Microsoft Internet Information Services Version 8.0

The underlying ASP files were developed using a standard text editor. In some cases these files rely on the use of a crafted stored procedure that resides within the Microsoft SQL Server 2012. The stored procedures were developed using SQL Query Analyzer.

The web interface allows the user to:

- Conduct an ESRD database lookup
- Complete an ESRD Application - Part 1
- Complete an ESRD Application – Part 3

To publish the ESRD data to the web site the following have been developed:

- A custom C#.NET 4.5 console application that extracts all resource status data from the CNAS database and outputs it into formatted HTML pages for the cnac.ca website
- Scripted WinSCP sessions to secure copy the pages to the primary and backup sites
- BLAT to e-mail administrative staff of any problems with the process

# Non-Geographic Codes

The Non-Geographic Codes (e.g., 622) application is a web interface using ASP.NET on the following platform:

- Microsoft Windows Server 2012 Standard (Version 6.2)
- Microsoft SQL Server 2012 Standard Edition – Service Pack 3 (Version 11.0)
- Microsoft Internet Information Services Version 8.0

The application was developed in Microsoft Visual Studio 2012 and targeted for .NET 4.0. In some cases this program relies on the use of a crafted stored procedure that resides within the Microsoft SQL Server 2012. The stored procedures were developed using MS SQL Server Management Studio 2012.

The web interface allows the user to:

- Conduct a Non-Geographic Code database lookup
- Complete a Non-Geographic Code Application – Form A
- Complete a Non-Geographic Code Application – Form C

To publish the Non-Geographic Code data to the web site the following have been developed:

- A custom C#.NET 4.5 console application that extracts all resource status data from the CNAS database and outputs it into formatted HTML pages for the [cnac.ca](http://cnac.ca) website
- Scripted WinSCP sessions to secure copy the pages to the primary and backup sites
- BLAT to e-mail administrative staff of any problems with the process

# Mailing List

- Microsoft Visual Basic .NET 2017 (.NET framework 4.5) database application
- Mailing lists maintained on a Mercury/32 (commercial) mail server
- Scripted WinSCP sessions to secure copy distribution lists on the cnac.ca website.

## New Company

- New Company (Entity) requires a numbering resource
- Assume that we have received all the applicable “paperwork” for them to be given the resource iaw CNACs requirements and the applicable Guideline(s)
- Build the company with main contact
- Build the user(s) for this company
- Have a DBA update MLM company table
- Build Authorized Reps using MLM



## Log into CNAS:

- Discuss Entry Page Menu
- Cannot Go to:
  - Tracking System
  - Past first click for mailing list manager
  - LIR

# Canadian Numbering Administration System

[MAIN MENU](#)

[ENTRY PAGE](#)

[EXIT](#)

**W**elcome to Development CNAS.

**Please enter your CNAS Logon ID and Password....**

User ID:

Password:

If you have trouble logging in, please contact the CNAS Administrator @ 613-563-7242 during weekday business hours (8:00am - 5:00pm EST)

Best when viewed using Microsoft Internet Explorer version 4.0 or higher with 'cookies' and 'request new versions of stored pages always' enabled.



## In CNAS:

- Select CNAS Utilities Menu
- Show screen shot of NPA/NXX Lookup
- Almost everything is linked with LERG data so cannot show
- Can select first level for some of the Query CNAS Information

**CNAS NPA-NXX Query**

Listing for NPA 613 NXX 563 based on 2018-02-07 04:40:18 data

|                                    | CNAS Data            | LERG Data  |
|------------------------------------|----------------------|------------|
| <b>Ticket Number</b>               | [REDACTED]           | [REDACTED] |
| <b>Status</b>                      | In Service           | [REDACTED] |
| <b>Company</b>                     | Bell Canada (8051)   | [REDACTED] |
| <b>EntityID</b>                    | [REDACTED]           | [REDACTED] |
| <b>OCN</b>                         | <a href="#">8051</a> | [REDACTED] |
| <b>Switch (NXX)</b>                | [REDACTED]           | [REDACTED] |
| <b>Switch (Details)</b>            | [REDACTED]           | [REDACTED] |
| <b>WireCentre</b>                  | [REDACTED]           | [REDACTED] |
| <b>RateCentre</b>                  | Ottawa-Hull          | [REDACTED] |
| <b>InService Date (yyyy-mm-dd)</b> | [REDACTED]           | [REDACTED] |
| <b>Effective Date (yyyy-mm-dd)</b> | [REDACTED]           | [REDACTED] |
| <b>Public Remarks</b>              | [REDACTED]           | [REDACTED] |
| <b>CNA Remarks</b>                 | [REDACTED]           | [REDACTED] |
| <b>Stranded Code Comment</b>       | [REDACTED]           | [REDACTED] |

**Note:** A ticket number of [REDACTED] implies we received the CO Code as Assigned or InService. InService Date is not correct under this condition.

In CNAS:

- Show **Security and System Administration Menu**
- Now show screen shots for building Entity/User

### CNAS Entity Security Administration

|                    |                      |                  |                      |
|--------------------|----------------------|------------------|----------------------|
| Entity Name        | <input type="text"/> | Entity Type      | Admin                |
| Entity Contact     | <input type="text"/> | Entity Status    | Active               |
| Entity Address     | <input type="text"/> | Entity Email     | <input type="text"/> |
| Entity City        | <input type="text"/> | Entity Fax       | <input type="text"/> |
| Entity Province    | British Columbia     | Entity Telephone | <input type="text"/> |
| Entity Postal Code | <input type="text"/> | Entity Extension | <input type="text"/> |
|                    |                      | Entity ID        | <input type="text"/> |

[Get Current](#) [Update Current](#) [Add New](#) [Delete Current](#) [Clear Screen](#) [Return](#)

| Entity Name | Type | Status | Contact |
|-------------|------|--------|---------|
| [REDACTED]  |      |        |         |

|< << < > >> >| Page : 1 of 36

### CNAS User Security Administration

|             |   |                |   |
|-------------|---|----------------|---|
| User Name   | <input type="text"/>                              | User Status    | Active <input type="button" value="v"/> |
| Logon ID    | <input type="text"/>                              | User Telephone | <input type="text"/>                    |
| Password    | <input type="text"/>                              | User Extension | <input type="text"/>                    |
| Entity Name | <input type="text"/>                              | User Fax       | <input type="text"/>                    |
| User Type   | Admin <input type="button" value="v"/>            | User Email     | <input type="text"/>                    |
| Address     | <input type="text"/>                              | City           | <input type="text"/>                    |
| Province    | British Columbia <input type="button" value="v"/> | Postal Code    | <input type="text"/>                    |

| User Name | User Logon | Company | Type | Status |
|-----------|------------|---------|------|--------|
|           |            |         |      |        |

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In CNAS:

- DBA adds Entity to MLM
- Show **CNA Contacts & Mailing List Manager**
- Now show screen shots for building Auth. Reps.



## CNA Contacts & Mailing List Manager

Add New Contact Screen

Last Modified - (new user)

Save

|            |                      |                 |  |
|------------|----------------------|-----------------|--|
| Firstname* | <input type="text"/> | Phone           | <input type="text"/>                         |
| Lastname   | <input type="text"/> | Fax             | <input type="text"/>                         |
| Job Title  | <input type="text"/> |                 |  |
| Company*   | <input type="text"/> |                 |  |
| Address    | <input type="text"/> |                 |  |
| City       | <input type="text"/> | Province/State  | <input type="text" value="(not specified)"/> |
| Country    | <input type="text"/> | Postal/Zip Code | <input type="text"/>                         |
| EMail      | <input type="text"/> |                 |  |

Not a member of...

- ▼ CNA-Merged-List
- CIC - General
- CSCN
- J-NRUF
- NPA 204-431

Member of...

- 

\* Required Fields for Members of CSCN lists

[CNA-MLM Menu](#) [Propagate Updates](#) [Quit MLM](#)

CNAS Version Control Information

## CNA Contacts & Mailing List Manager

View Company Authorised Reps Screen

Company

Edit

Not Company Authorised reps...

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

Authorised Reps...

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

>

<

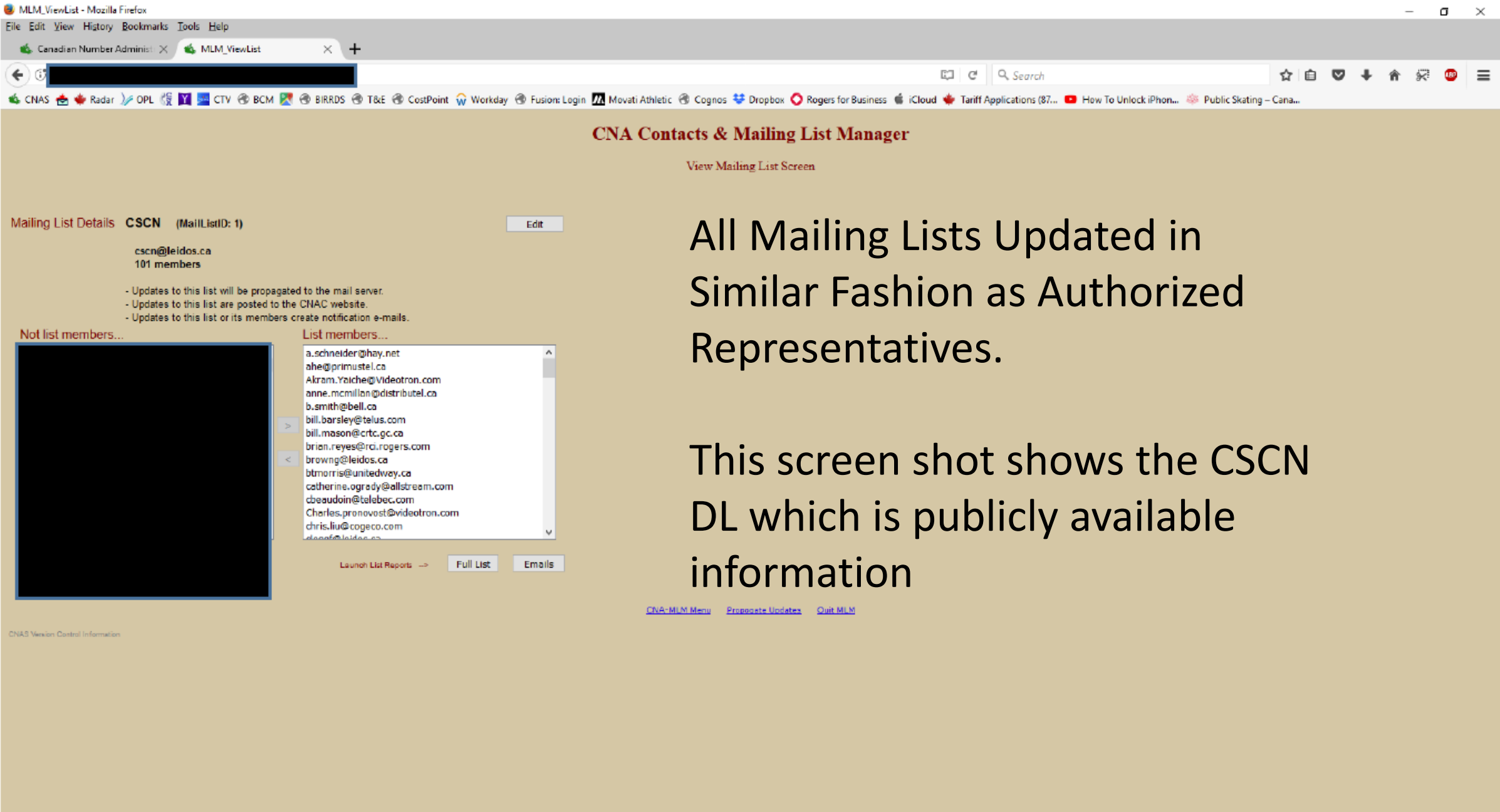
Launch Authorised Rep Reports ->

Full List

Emails

[CNA-MLM Menu](#) [Propagate Updates](#) [Quit MLM](#)

CNAS Version Control Information



All Mailing Lists Updated in Similar Fashion as Authorized Representatives.

This screen shot shows the CSCN DL which is publicly available information

## CO Code Request

- CNA Date Calculator demo
- EAS Check demo
- Part 1 data entry sample
- Part 3 approval
- Part 4 screen (cannot enter due to business rules on dates)

Back into CNAS

## MBIs

- MBI database lookup
- Part 1: Full Block based on NPA-NXX where the user selects the rate centre
- Part 1: Full Block based on NPA-NXX where no rate centre is selected
- Part 1: Full Block based on NPA-rate centre
- Part 1: Partial Blocks based on NPA-NXX where the user selects the rate center
- Part 3

Back into CNAS

## ESRDs

- ESRD database lookup
- ESRD Application - Part 1
- ESRD Application – Part 3



Back into CNAS

## Non-Geographic Codes

- Non-Geographic Code database lookup
- Non-Geographic Code Application – Form A
- Non-Geographic Code Application – Form C

Back into CNAS

# Summary Of Numbering Data To Be Transferred

- Numbering resource data in CNAS and MLM data (except for LERG data)
  - CO Code historical data
  - CO Code Part 1, 3 and 4 data
  - MBI historical data
  - MBI Part 1 and 3 data
  - ESRD historical data
  - ESRD Part 1 and 3 data
  - Non-Geographic Part A and C data
  - Entity, User and Authorized Representative data
  - Mailing list members

# Summary Of “Files” To Be Transferred

(non-exhaustive list)

- Initial data load of CO Code, MBI and ESRD data - mostly spreadsheets but some paper copies
- Correspondence and applications for numbering resources - paper, scanned pdf or pdf portfolio files
- Depending on direction from CNAC full database, CNAS files, stored procedures, DTSX, etc.
- CNA website files
- CSCN documents (e.g., letters, meeting minutes, contributions, TIFs, etc.) - paper, scanned pdf, MS Office
- RPC documents (e.g., letters, meeting minutes, contributions, IPDs, PD, RIP, CATF, NITF, etc.) - paper, scanned pdf, MS Office
- NPA Selection Tool
- NRUF data - paper, scanned pdf, MS Office
- Annual report, INC status reports
- 9YY, 555, CIC, SAC 600, IMSI, etc. - paper, scanned pdf, MS Office

## Summary Of “Files” That May Be Transferred

- Depending on direction from CNAC monthly reports and quarterly NPA Relief Planning Reports

# Transition Planning and Implementation

- Shall assume **all** CNA functions on 1 January 2019 (RFP Requirement)
- Shall submit monthly status reports to CNAC from the date of being selected as the new Vendor
- Shall prepare the final transition plan to CNAC setting out its detailed plans to take over the functions of the CNA (e.g., hire staff, rent premises, purchase equipment and software systems, consulting with the existing CNA vendor regarding systems and data transfers, etc.) and such plan shall be delivered to CNAC no later than 30 working days following the date selected as the new Vendor
- Shall not interfere with ongoing CNA or numbering resource operations
- Shall not interfere with scheduled CSCN, CISC and/or RPC meetings
- Introductions could be provided if new vendor staff are present at any fall meetings/work groups that occur (e.g. CSCN, CISC, RPC, INC, IOC-IMSI, CIGRR, Canadian CIGRR and possibly NANC) unless industry relationships already exist
- If CNAC has determined that a CNAS system needs to be provided, a turnkey system will be made available on a mutually agreeable date
- CNAS data will be made available in a standard industry format on a mutually agreeable date
- CNA files will be made available (e.g., paper, pdf, MS Office) on a mutually agreeable date