



ITRANS 2.0

Technical Reference for Dental Software Vendors

UPDATED FOR ICD v4

Revision History

Date	Revision	Changes	ICD Version
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2018-08-20	1.01	<ul style="list-style-type: none"> Document review with minor formatting changes Integrate items from original Overview doc 	1.0
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2023-08-05	1.4	<ul style="list-style-type: none"> Updated for ICD v4 Added new information for ICD sending directly to networks as CCDWS is no longer required for Dentists Addition of CDA Services tray application New section 6: Non-dental offices 	4.0.0

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1 Introduction

1.1 Purpose of this Document

This document provides dental software vendors with technical information to assist in the installation, integration, maintenance, configuration, and troubleshooting of ITRANS 2.0 modules.

1.2 Additional Documentation

Additional vendor documentation is available. This includes:

- ITRANS 2.0 – Getting Started for Dental Software Vendors: instructions on how to install, configure, and run the ICD and communication agents.
- CDAnet Development Tools – Contains details for connecting to the CDAnet Messaging Simulator using ITRANS 2 for end-to-end transaction testing.
- CCDWS – Common Communication Driver for Web Services, Technical Reference and Operating Manual: information for installing, configuring, and operating the CCDWS communication agent.

1.3 ITRANS 2.0 Terms

There are a small number of acronyms and terms used in this document that vendors should be familiar with:

- PMS (Practice Management System): This is the dental software provided by certified CDAnet software vendors to support the dental practice.
- N-CPL (Network Claims Processor List): This is a structured list of all CDAnet claims processors, their supported transaction types, contact information, and the networks that carry them. The ICD uses this as a basis for routing claims, and the PMS can use it for numerous things as adding and maintaining carrier configuration, contact information for submitting manual claims, and information on how to implement coordination of benefits transactions.
- ICD (ITRANS 2.0 Claims Director): This is the integrating component that is installed on a dental host and acts as a broker between the PMS software and the network/carrier.
- ITS (ITRANS 2.0 Transaction Storage): This is the host that receives de-identified copies of CDAnet transactions that are sent between the ICD and claims processors. It can be accessed by dental offices and vendors for troubleshooting purposes.

1.4 Contact Information

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2 ITRANS 2.0 Claims Director (ICD)

2.1 Installation Instructions

The basic installation steps for ITRANS 2.0 as listed below. Detailed installation instructions are available in the document *ITRANS 2 Vendor Getting Started*. This document and the most recent ICD installer are available at www.cda-adc.ca/get.

2.1.1 Basic Installation Steps

Below are the steps to follow:

1. Determine which Windows user account will have access to all of the dentists' CDA Digital IDs, and have rights to run the ICD service. This could be an existing user account, or a new account created specifically for this purpose.
2. Log into the PC as that user.
3. If not already available to the account to be used, install the CDA Digital ID for each dentist while logged in as the user noted above.
4. If the installation will be for dental offices containing non-dentist provider types (denturists and dental hygienists), install the CCDWS software.
5. Install the ICD software.
6. In your PMS software:
 - a. Document the current configuration on where claim files are written to and read from for each network – this is in case you need to rollback the installation.
 - b. Adjust the claims configuration to write and read the claim files for all networks to c:\ICD (assuming default locations are accepted).
7. Installation is complete. Test.
8. Rollback if needed – in your PMS software, return the claims configuration to the settings documented in step 6a above.

2.1.2 User Account for CDA Digital IDs, ITRANS 2.0

The ITRANS 2.0 ICD software is designed to be run as a Windows service. This service needs access to the CDA Digital IDs for the dentists in the clinic. This means the user account the CDA Digital IDs are installed under must be the same account the ICD service is running under. For the machine transmitting claims, a solid approach is to log in with administrator credentials and install the CDA Digital IDs and ICD with those credentials. The server can then be operated under other non-administrator credentials, but the ICD service will be able to access the CDA Digital IDs. If the password for the account the service is running under expires, an administrator will need to update the password in the services console for the ICD service.

NOTE: Existing CDA Digital IDs can be exported from a current user account, and imported to a different user account. This may be simpler than retrieving new CDA Digital IDs for each dentist at the office.

To export certificates, login to the machine as the user with the certificates to be exported. In the Manage Use Certificates control panel, under personal certificates, shift-click to select the certificates you want to export, right-click and from the context menu choose All Tasks>Export. Follow the export wizard using the default settings. Select a location for the export file the import user will be able to access (e.g. c: drive root or USB key). All the certificates will be exported to a single file. Logout of Windows, and then login as the user you want to move the certificates to. Double-click the export file and Windows will launch the import wizard. Select installation under Certificates – Current User > Personal. The CDA Digital IDs will be installed, and accessible for that logged in user.

2.2 Automatic Updates

Upon installation, the ICD will be configured for automatic updates. The ICD will check for updates at the times configured during the installation process.

IT departments that require the ability to review changes before they are put into production can modify the configuration file to disable auto updates. Auto updates can be disabled by setting “AutoUpdateICD=false” in the ICD.ini file located in the installation directory. The computer must be turned on and have the service running at the specified update time for an update to occur. The account the service is running under must have rights to stop and start the ICD service for the update to proceed.

2.3 Role of the CCDWS

The CCDWS is software provided by the insurance industry and works with the ITRANS ICD software in offices where claims are being transmitted by non-dentist providers: denturists and independent dental hygienists. The ITRANS software only transmits dentist claims and authenticates dentists with the CDA Digital ID. When the ITRANS software receives a claim for a non-dentist, it passes the claim to the CCDWS for transmission to the network/carrier. The CCDWS provides the response back to the ICD which then provides it to the PMS. This feature solves for “hybrid” offices that include dentists and other provider types. Also, the ITRANS ICD can be installed in non-dentist offices so the PMS can take advantage of the N-CPL to configure the carrier information.

2.4 Working with CDA Digital IDs

2.4.1 How Digital IDs work

CDA Digital IDs are SSL/TLS certificate/key pairs used to authenticate the dental practitioner submitting claims with the ICD or submitting transaction details to the ITS.

When the communication agent receives a request, it extracts the dentist UIN and office ID values and uses these to look up a certificate in the certificate repository. If the certificate is found, then the communication agent connects to the remote host. Upon connection, the remote host will send

its certificate back. The ICD will authenticate this certificate using the CA certificate obtained from the CA certificate repository.

Once the server certificate is authenticated, the ICD will send the CDA Digital ID (the client certificate) to the remote host for authentication.

Upon successful authentication of both the client and server certificates, communications will proceed.

2.4.2 Obtaining a CDA Digital ID for use with ICD

To obtain a CDA Digital ID for a dentist, the dentist or a delegated staff member should login into the CDA Practice Support Services website (<https://services.cda-adc.ca>) or contact the CDA Practice Support Services Help Desk at 1-866-788-1212.

2.4.3 Certificate Repositories

In Windows operating systems, digital IDs are stored as certificate/key pairs in the "Current User" store of the certificate repository associated with the user that the communication agent is logged in as. For non-Windows environments this will be the java keystore file named *providerkeys*.

CA Root Certificates used to authenticate remote certificates are stored in the Trusted Root Certification store, with CA intermediate authorities stored in the Intermediate Certificate Authorities store. For non-Windows environments, both root and intermediate CA authority certificate chains are in the java keystore file named *cacerts*.

2.4.4 Certificate Auto-Updates

The ICD will check for CDA Digital IDs that will expire within 60 days when ICD starts and every 24 hours thereafter and retrieves updated certificates automatically if needed. The timeframe can be configured using the "CertificatePreRenewalDays" ini value to renew the certificate in advance from its expiry date. Specific details can be found in [Automatic Certificate Handling](#)

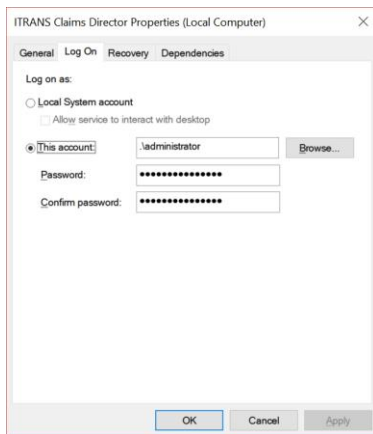
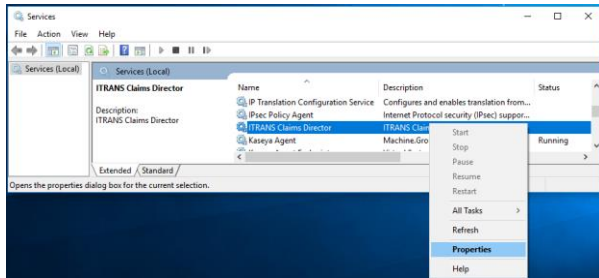
2.5 ICD Operations

Once installed, the ICD behaves as a broker between vendor software and the Network. Additionally, it maintains a Network-Claims Processor List (N-CPL) used for routing transactions, and sends transaction messages and exceptions to the ITRANS Transaction Storage (ITS) to allow for reporting and troubleshooting.

2.5.1 ICD Service: Starting and Stopping

The ICD is designed to be installed as a Windows service. If installed in this way in the Windows environment, the Services tool can be used to start and stop it. Additionally, it can be used to configure the user account it runs under. The Services tool can be located in the Administrative Tools section of the Control Panel.

To change the user account the service runs under, in the Services control panel, right-click the service ITRANS Claims Director and select Properties, then select the Log On tab.



2.5.2 Submitting Claims and other messages and Retrieving Responses

2.5.2.1 File Method

The File Method for submitting transactions to the ICD is the “traditional” method for handing CDAnet message off to a communication agent: text files containing the messages are written to the specified hard drive folder. Carrier response messages are written back to the same folder, and the vendor software watches the folder for updates.

With the file method, the ICD monitors the file location specified during installation. When a new request is recognized, the carrier is determined, along with the correct network. The ICD then transmits the request to the Network’s endpoint.

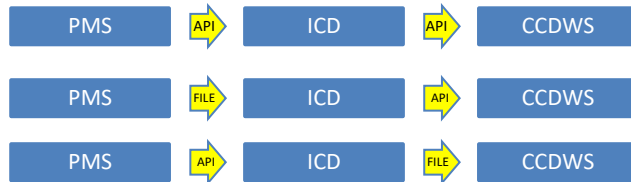
When a response is returned, the response file is created in the ICD folder, where the dental software will retrieve it.

The default and recommended ICD folder is C:\ICD

2.5.2.2 The API Method

The ICD hosts a restful API and transactions are submitted from the PMS to the ICD via posting to the API. For the API technical specifications, see Appendix 4.

In addition, if a recent version of the CCDWS is installed for transmitting non-dentist claims, the exchange of CDAnet message between the ICD and the CCDWS can occur via either the file method or an API. The ICD and CCDWS API functionality can be configured in all combinations:



2.5.3 Routing Transactions to Correct Network

Routing for transactions is determined entirely by the ICD using the N-CPL. When a request is detected in the ICD's input/output directory, it extracts the carrier ID (BIN) and uses this as an input to determine the carrier. The carrier element contains one or more network elements. If there are multiple network elements, then it randomly selects one of these networks based on a load weighting for those networks as provided to CDA by the carrier. Once the network is selected, the ICD then submits the request to the communication agent for that network.

2.5.4 Submitting Messages and Exceptions to ITS

Upon receiving a request, the ICD will submit it to the ITRANS Transaction Storage (ITS). When a transaction is complete, the response will also be sent. If an exception occurs, the ICD will send an exception report. For details concerning ITS transmission, see section 4.

2.5.5 Retrieving an Updated N-CPL

When the ICD starts up, it calculates a hash value of the existing N-CPL and keeps it in memory. Upon submission of claim or exception details to the ITS, the hash value of the current version is returned. If they differ, then the ICD will automatically retrieve and store the latest version. In most cases, this will ensure that the most recent version is available both to the ICD, and to vendor software.

It is also possible to force the ICD to retrieve a copy of the N-CPL. To do so, with the ICD running run the following command from a DOS window:

```
"C:\Program Files (x86)\CDA\ICD\ITRANS Claims Director.exe" --getncpl
```

Note that the path and executable are delimited by quotation marks, and the getncpl parameter is preceded by two dashes. This will download and save the N-CPL file, n-cpl.json, to the NCPLFilePath in the ICD.ini file.

2.5.6 Restricted Providers

The ICD will reject the transactions from providers that are not authorized to access CDAnet. When a restricted provider attempts to send a transaction, a rejection response with error code 47 and a

disposition message will automatically be returned. ICD refreshes its cache of restricted providers on startup and on an interval configured by the “RestrictedListUpdateTimeInMinutes” ini value.

2.5.7 Automatic Digital ID Handling

There are few actions to keep providers certificates up-to-date which will be handled by ICD when it starts up and every 24 hours after than until it is stopped.

2.5.7.1 Removal of Expired Digital IDs

All expired CDA Digital IDs will be removed from the certificate repository to clean up the repository.

2.5.7.2 Renewal of Expiring Digital IDs

CDA Digital IDs installed in the repository check in, and those that are about to expire soon get automatically renewed if the provider is eligible. Renewed Digital IDs are not removed from the certificate repository until they have expired.

2.5.7.3 Digital IDs for API Method Renewal

The CDA Digital IDs used by the ICD and CCDWS for their respective API methods to encrypt traffic is checked and installed or updated if necessary.

2.6 Security

The retrieval process is performed over a secure SSL/TLS layer. No client certificate or password is required to connect or retrieve the data.

2.7 Firewalls

Communications between the ICD and external sites (for retrieval of the N-CPL, storage to the ITS, and software updates) are performed over the standard http port 80 and standard https port 443. Most firewalls will permit outgoing communications to hosts on these ports, so it is unlikely that changes must be made.

2.8 Non-Dental Claims

The ICD will accept and switch claims for other provider types (denturists and dental hygienists) to the CCDWS using the appropriate network folder. This capability is required when claims for other provider types are sent from the same PMS as claims from dentists. Note that these claims and the responses to them will not be transmitted to the ITS and therefore will not be visible on the CDA Practice Support Services website or the CDA Help Desk. Also note that other provider types use a different (file-based) certificate solution – consult the CCDWS documentation for details on this.

2.9 Configuration Reference

The configuration of the ICD is managed by the ICD.ini file. This section outlines the configurable values that are set in the ICD.ini file.

2.9.1 [Authentication] Section

ProviderCertIssuedBy: The name of the issuer of the CDA Digital ID. Default value is “CanDentAssocCA”.

CertStore: The name of the windows certificate store the ICD should use when looking for CDA Digital IDs. Default value is “My”.

CertLocation: The location of the windows certificate store the ICD should use when looking for CDA Digital IDs. Valid values are “CurrentUser” or “LocalMachine”. Default value is “CurrentUser”.

UseJavaKeyStore: Enable use of the java key store. Valid values are “true” or “false”. Set to true for non-Windows environments only. Default value is “false”.

2.9.2 [ICD] Section

LogRetentionDays: The number of days logs are retained. Default value is “7”.

NCPLDownloadRetryInterval: The number of seconds the ICD will wait to retry to download the N-CPL if the download is unsuccessful. Default value is “30”.

EnableDebugLogs: Enable debug level logs to be written to the log file. Valid values are “true” and “false”. Default value is “false”.

LogLevel: The level of logging the ICD should write to the log file. Valid values are Debug, Info, Warn, and Error. Default value is “Info”.

AutoRefreshIni: Enables automatic refreshing of the ICD.ini file, allowing for configuration changes without the need to restart the ICD Service. Valid values are “true” and “false”. Default value is “true”.

NCPLBaseUrl: The URL the ICD will download the N-CPL from. Default value is “https://n-cpl.cda-adc.ca/api”.

```
Default ICD.ini v3.1.0
[Authentication]
ProviderCertIssuedBy=CanDentAs
    socCA
CertStore=My
CertLocation=CurrentUser
UseJavaKeyStore=false

[ICD]
LogRetentionDays=7
NCPLDownloadRetyInterval=30
LogLevel=Info
AutoRefreshIni=true
NCPLBaseUrl=https://n-cpl.cda-
    adc.ca/api
ITSBaseUrl=https://its.contino
    vation.com/
ITSTimeout=60000
NCPLFilePath=C:\Program Files
    (x86)\CDA\ICD\n-cpl.json
OutputFileName=output
InputFileName=input
ClaimsFolder=C:\ICD\
CCDWSAPICertificate=CDA ITRANS
    Security
CCDWSLocation=C:\ccd\ccdws.exe
CCDWSAPIUrl=https://localhost:
    9000/dentalClaim
InstallationID=26E64BAB-AE9A-
    49E6-B132-0C205A627FB1
RenewalOnly=false
FileLockTimeoutInSeconds=5

[AutoUpdateSettings]
TimeToCheckUpdate=03:00
AutoUpdateICD=true
[Networks]
MBC=C:\ccd\mbc\
V2ROT=C:\ccd\telusa\
INS=C:\ccd\instream\
TGB=C:\ccd\telusb\
TGA=C:\ccd\telusa\
ABC=C:\ccd\abc\
[DigitalId]
CertificatePreRenewalDays=30
DigitalIdWebServiceUrl=https://
    /cdaservices.continovati
    on.com
Language=EN
ProviderCertIssuedBy=CanDentAs
    socCA
[WebInterface]
AgentResponseTimeOut=90000
CertificateIssuedBy=CanDentAss
    ocCA
CertificateIssuedTo=CDA
    Practice Support
    Services
Port=9660
```

ITSBaseUrl: The URL for the ITS the ICD will be sending de-identified claims and exceptions to. Default value is “https://its.continovation.com/ITS/”.

ITSTimeout: The number of milliseconds the ICD should wait for a response from the ITS before timing out. Default value is “60000”.

NCPLFilePath: The file path the ICD will store the N-CPL. Default value is “C:\Program Files (x86)\CDA\ICD\n-cpl.json”.

OutputFileName: The file name the ICD will use for the responses received from the communication agents. Default value is “output”.

InputFileName: The name of the files containing claims the ICD should be monitoring for. Default value is “input”.

ClaimsFolder: The folder the ICD will monitor for incoming claims. This folder can be configured during installation. The default and recommended value is “C:\ICD”.

CCDWSAPICertificate: Subject of the CCDWS certificate, will be used when locating the CCDWS certificate from the Windows User certificate store or from Java KeyStore. Default: “CDA ITRANS Security”

CCDWSLocation: Location of the CCDWS executable application, will be used in the Metadata when sending the claims/exceptions to the ITS as well as when making a call to Auto Updater for future ICD updates. Default: “C:\ccd\ccdws.exe”

CCDWSAPIUrl: Url endpoint if the CCDWS installed version supports API to receive claims from ICD. Default: <https://localhost:9000/dentalClaim>

InstallationID: A unique Guid value which will be used to identify each installation, On Windows if it is not found in registry, one will be generated during the installation and gets added to the registry as well as saved to the ini file. The registry location is: Computer\HKEY_LOCAL_MACHINE\SOFTWARE\WOW6432Node\ICD. On non-windows, it will be generated during installation process and saved to the ini file.

RenewalOnly: This value determines if the ICD should run in renewal only mode (Only automates the certificate renewal for provider certificates, would not install new ICD or CCDWS certificates even if it does not exist but will renew it if it exists and needs to be renewed) or full mode (Processing of the claim files as well as automates the certificate handling including ICD and CCDWS certificates). Value values are: “true” and “false”, Default value is “false”

FileLockTimeoutInSeconds: Number of seconds to wait for the file lock to be released. Default is “5”
UseCCDWSAPI: When routing to the CCDWS, use the API instead of the file folder. Valid values are “true” and “false”. Default value is “false”.

NetworkEndpointTimeout: The timeout in seconds to wait for a network to response to a transaction. Default value is 60

CCDWSProviderPrefix: A comma separated list of provider number prefixes that indicate the provider is not a dentist provider type (denturist and hygienist). If the provider number in a claim begins with one of these prefixes, it will be routed to the CCDWS instead of sent to the network directly. Default values is “8,202”

CCDWSTimeout: The timeout in milliseconds to wait for the CCDWS to respond to a transaction. Default value is 120000

MaxFileActionAttempts: The number of times to try writing a file when the file is locked. Default value is 5

LoggerName: The name of the logger that will appear in the log file. Default value is “ICD”

BlankPrefixOverride: The value to override black prefix (A01) fields before sending to Networks. Default value is “HD*”

2.9.3 [AutoUpdateSettings] Section

TimeToCheckUpdate: The time the automatic update check will occur each day. Format is HH:mm using 24h time. Can be configured during installation Default: 03:00

AutoUpdateICD: Enable checking for updates to the ICD automatically. Valid values are “true” or “false”. Default value is “true”.

2.9.4 [DigitalId]

CertificatePreRenewalDays: Number of days from current UTC time, to determine if the certificate falls within the update window, default: 30

DigitalIdWebServiceUrl: Digital Id web service url to handle certificates and restricted providers list, default: <https://cdaservices.continovation.com>

Language: Language to use for the CDA Practice Support application runtime UI. Valid values are “EN” or “FR”. Default value: “EN”

ProviderCertIssuedBy: Certificate issuer value using which provider certificates are fetched from Windows User certificate store or Java KeyStore in order to be checked in or to renew. Default value: “CanDentAssocCA”

2.9.5 [WebInterface] Section

The web interface refers to settings to use the ICD API to send and receive CDAnet transactions, rather than writing files to folders.

Port: Port for connecting to ICD via Restful API. Default value is “9660”

CertificateIssuedBy: Certificate Issues of the ICD certificate. Default value is “CanDentAssocCA”

CertificateIssuedTo: Certificate issued to, will be used when fetching the ICD certificate from a Windows user certificate store or from a Java KeyStore. Default value is “CDA Practice Support Services”

NOTE: As the value of **CertificateIssuedTo** would not match the “localhost” domain endpoint of the ICD when using RESTful API to handle claims, the vendor software will need to override the server certificate validation check on their side to trust the certificate.

AgentResponseTimeOut: Time to wait for connection before timing out, in milliseconds. Default is “90000” (1.5 Minutes)

2.9.6 [ABC], [INS], [MBC], [TGA], [TGB], [SIM], [V2ROT] Sections

The section is named for each of the various network codes available in the N-CPL

Endpoints: The URL the ICD will send the transaction to for claims going to the given Network.

2.9.7 [Networks] Section

ABC: The folder for the communication agent used by the ABC network. Default and recommended value is “C:\ccd\abc”.

INS: The folder for the communication agent used by the instream network. Default and recommended value is “C:\ccd\instream”.

PBC: The folder for the communication agent used by the PBC network. Default and recommended value is “C:\ccd\pbc”.

TGA: The folder for the communication agent used by the Telus Group A network. Default and recommended value is “C:\ccd\telusa”.

TGB: The folder for the communication agent used by the Telus Group B network. Default and recommended value is “C:\ccd\telusb”.

V2ROT: The folder for the communication agent used for sending CDAnet Version 2 Request for Outstanding Transactions claims (type 04). Default and recommended value is “C:\ccd\telusa”.

2.10 Troubleshooting

This section outlines some cases that may result in failed transactions, along with their resolutions. It is helpful for troubleshooting to set logging to a higher level and review the resulting log files. This will require restarting the services. When finished troubleshooting, remember to set logging back to the original levels and again restart the services.

The following section outlines some failure conditions and possible means to resolve them.

2.10.1 ICD Service Fails to Start

- Check if the service is running as a valid user with the correct password.
- Check that .Net Framework 4.6.2 is completely installed, and is not waiting for a computer restart

2.10.2 Request is not Processed (Timeout)

- check if untouched claim resides in ICD input/output
 - is ICD service running?
 - is ICD properly configured to monitor its I/O?
 - are there any error messages in the ICD log file?
- check if untouched claim resides in the CCDWS folder
 - is CCDWS service running?
 - is CCDWS properly configured to monitor I/O directories?
 - are there any error messages in the CCDWS log files?

2.10.3 Request Fails with an Error Code

Error codes are helpful indicators of where problems lie. In general, error codes less than 2000 are generated by communication agents. See [Appendix C](#) for error codes and their descriptions for a general understanding of the errors that occur along with descriptions.

3 Network Claims Processor List (N-CPL)

The N-CPL is a new feature that vendors can use to auto-configure CDAnet insurance companies. This means when there is a change to an insurance company, or a new insurance company, it will be automatically and instantly updated.

3.1 Definition

The N-CPL is a dataset that contains information about the CDAnet carriers, claims processors and networks. These are defined as follows:

- **Carrier** is the organizations that provides the benefits to the plan member.
- **Network** is the organization that receives CDAnet messages from dental offices and forwards them to the claims processor.
- **Claims processor** is the organization that receives and processes the CDAnet electronic messages.

The table below shows that in a given transaction, these roles can be held by three, two or one organization, depending on how the carrier and claims processor choose to organize their business.

Carrier, Network, Claims Processors Examples

Example	Carrier	Network	Claims Processor
1	Co-operators	instream	NexgenRX
2	Great West Life	TELUS Group A	Great West Life
3	Alberta Blue Cross	Alberta Blue Cross	Alberta Blue Cross

The N-CPL lists for each CDAnet carrier the related network(s) and claims processor, even if it is the carrier itself. Other information in the N-CPL includes:

- A record for each CDAnet Claims Processor and how that claims processor receives CDAnet messages, via the instream network, the TELUS network, or directly.
- The correct network to deliver the claim to
- For each Carrier, the CDAnet message types that are supported.
- For each Carrier, specific information on how it supports Coordination of Benefits situations, if at all.
- For each Carrier, if available, the street address(es) where paper claims are to be sent.
- An array of network and claims processors IDs to be used for the efficient retrieval of outstanding transactions.

The N-CPL configuration information for carriers does routinely change. Carriers will change the CDAnet messages they support, the claims processor they use, and the network they use. Also, new carriers are added. A key feature of providing the N-CPL electronically to PMS vendors is to enable rapid updates for dental offices when carriers change or are added to CDAnet. To enable this, the N-CPL data is also available to the PMS vendor via the ICD. It may be used to:

- Provide configuration information for each CDAnet carrier.
- Provide the mailing address data to the PMS for printing on paper claim forms (if available).

- Provide messaging to the end user on whether secondary insurance can be transmitted electronically.
- Determine the most efficient manner to retrieve outstanding transactions from networks and Claims Processors.

3.2 Transfer and Storage Format

The N-CPL data will be transferred and stored as a JSON structure. For details, see the schemas in Appendix A – N-CPL JSON Schema. The following is a simple example of this, showing only a single carrier for simplicity. It has been formatted for easier viewing. Normally, white space between elements is removed when transferring and storing.

```
{
  "carriers": [
    {
      "name": {
        "en": "Carrier English Name",
        "fr": "Nom Français du Transporteur"
      },
      "change_date": "2016-10-10",
      "telephone": [
        {
          "name": {
            "en": "Main",
            "fr": "Principale"
          },
          "change_date": "2016-10-10",
          "value": "1-800-661-7871"
        },
        {
          "name": {
            "en": "Alternative Number",
            "fr": "Numéro alternatif"
          },
          "change_date": "2016-12-05",
          "value": "1-800-567-8104"
        }
      ],
      "bin": "000090",
      "versions": ["2", "4"],
      "batch": "N",
      "age_days": 7,
      "policy_number": {
        "en": "1-5 digits, alphanum",
        "fr": "1-5 digits, alphanum"
      },
      "division_number": {
        "en": "1-3 digits, alphanum",
        "fr": "1-3 digits, alphanum"
      },
      "certificate_number": {
        "en": "1-10 digits, alphanum",
        "fr": "1-10 digits, alphanum"
      },
      "claim_01": "Y",
    }
  ]
}
```

```

"claim_11": "Y",
"claim_21": "X",
"reversal_02": "Y",
"reversal_12": "Y",
"predetermination_03": "Y",
"predetermination_13": "Y",
"predetermination_23": "X",
"predetermination_multi": "Y",
"outstanding_04": "Y",
"outstanding_14": "Y",
"summary_reconciliation_04": "N",
"summary_reconciliation_15": "N",
"summary_reconciliation_06": "N",
"summary_reconciliation_16": "N",
"cob_07": "X",
"eligibility_08": "N",
"eligibility_18": "N",
"attachment_09": "Y",
"attachment_19": "Y",
"cob_instructions": {
  "en": "Use message 07 for all COB claims",
  "fr": "Utiliser le message 07 pour toutes les demandes de COB"
},
"notes": {
  "en": "Misc notes",
  "fr": "Notes diverses"
},
"claims_processor": {
  "change_date": "2016-12-20",
  "name": {
    "en": "Express Scripts",
    "fr": "Express Scripts"
  },
  "short_name": {
    "en": "ESC",
    "fr": "ESC"
  }
},
"address": [
  {
    "street1": "Blue Cross Place",
    "street2": "10009 108 Street NW",
    "city": "Edmonton",
    "province": "AB",
    "postal_code": "T5J 3C5",
    "attention": "Claims Processing",
    "notes": {
      "en": "Office hours Mon-Fri 8:30am - 5:00pm Mountain Time",
      "fr": "Heures Lun-Ven de 8h30 à 17h00 Heure de montagne"
    }
  }
],
"network": [
  {
    "network_folder": "ABC",
    "name": {
      "en": "Alberta Blue Cross",
      "fr": "Croix Bleue Alberta"
    },
    "change_date": "2016-10-10",
    "telephone": [

```

```

        {
            "name":{
                "en":"Main",
                "fr":"Principale"
            },
            "change_date":"2016-12-05",
            "phone":"123-456-7890"
        }
    ],
    "load":{
        "change_date":"2016-12-20",
        "percent":100
    }
}
]
}
],
"rot_bins": [
    "999998",
    "999999",
    "123456"
],
"change_log": [
    {
        "change_date":"2016-12-05",
        "description":{
            "en":"Change description",
            "fr":"Changer la description"
        }
    }
]
}

```

3.3 Using the N-CPL

The ICD uses the N-CPL to determine the appropriate network to send a transaction to a claims processor. However, there is information that vendor software can make available to users.

3.3.1 Provide Claims Process Configuration Information

The N-CPL identifies various types of configuration information for claims processors such as:

- What transactions are accepted
- Capabilities of specific transactions, such as whether predeterminations return multi-page responses
- Policy, division, and certificate number formatting details
- There are various elements under the carriers array element that may be referenced.

3.3.2 Claims Mailing Address Information

When a paper claim form must be printed, the N-CPL may provide mailing address information that can be printed on the paper claim form or displayed on screen. There can be more than one address, with related notes. See the carriers[n].address[n] element.

3.3.3 Information on Coordination of Claims

A key focus of the N-CPL is the coordination of benefits between a primary benefit plan and a secondary benefit plan. The intent is to answer for the end user this question:

“Can I send the secondary benefit claim electronically?”

See Appendix B for detailed information on this.

3.3.4 Information to Retrieve all Outstanding Transactions

A list of BINs is provided for retrieval of all outstanding response transactions. Making a type 04 request to each of the supplied BINs will ensure that all outstanding mailboxes are cleared. See the `rot_bins` array element.

~~Version 2 retrieval of outstanding transactions is done by sending a type 04 request to a TELUS Group A claims processor, based on the prefix field being set to '@'. This is no longer required with the Telus A network being inactive.~~

3.4 Updating

Upon startup, and after every transaction or exception is sent to the ITS, the ICD ensures that the N-CPL is current. Thus, at most, the N-CPL will be outdated for only a single transaction. There may be times when vendor software will want to ensure the latest version is in place. This is done using the instructions in section 2.5.5. N-CPL can be force updated using CDA Practice Support application as well. Specific details can be found in [CDA ITRANS Claims Service](#)

4 ITRANS 2.0 Transaction Storage (ITS)

4.1 Definition

The ITS stores all ITRANS transactions for the purpose of providing the CDA Practice Support Services Help Desk and website with visibility of the CDAnet activity from the office. Before transactions are sent to the ITS, all patient information is de-identified to ensure patient confidentiality.

Additionally, for troubleshooting purposes, the ITS also stores exceptions that may be generated by the communication agents or from the ICD itself.

Along with both transaction and exception data, some metadata are also stored.

4.2 Data Transmission

Upon each request submission, response retrieval, and communications exception, the ICD securely transmits data to the ITS. To do this, it uses a web service.

For each submission, along with the payload, the following elements are also sent:

- Operating System
- ICD Version
- CCDWS Version
- Internal IP v4 address
- ICD Installation ID

Successful submissions will result in a response that contains the N-CPL hash value that the ICD will compare with its existing value to determine if a new N-CPL must be retrieved. If so, this is done before the next transaction is processed.

4.3 Security

In addition to de-identification of data, security is provided by using certificates during data transmission and username/password for access to transmission history.

4.3.1 Data Transmission Security

When transmitting requests and responses to the ITS, the dentist UIN and office ID are used to select the appropriate CDA Digital ID that is stored in the certificate store. If it cannot be found, then the log file will indicate an error. If found, then it is used when establishing the TLS layer for sending payloads. In the case of exceptions, the dentist UIN and office ID are not known, so the first valid CDA Digital ID found is used.

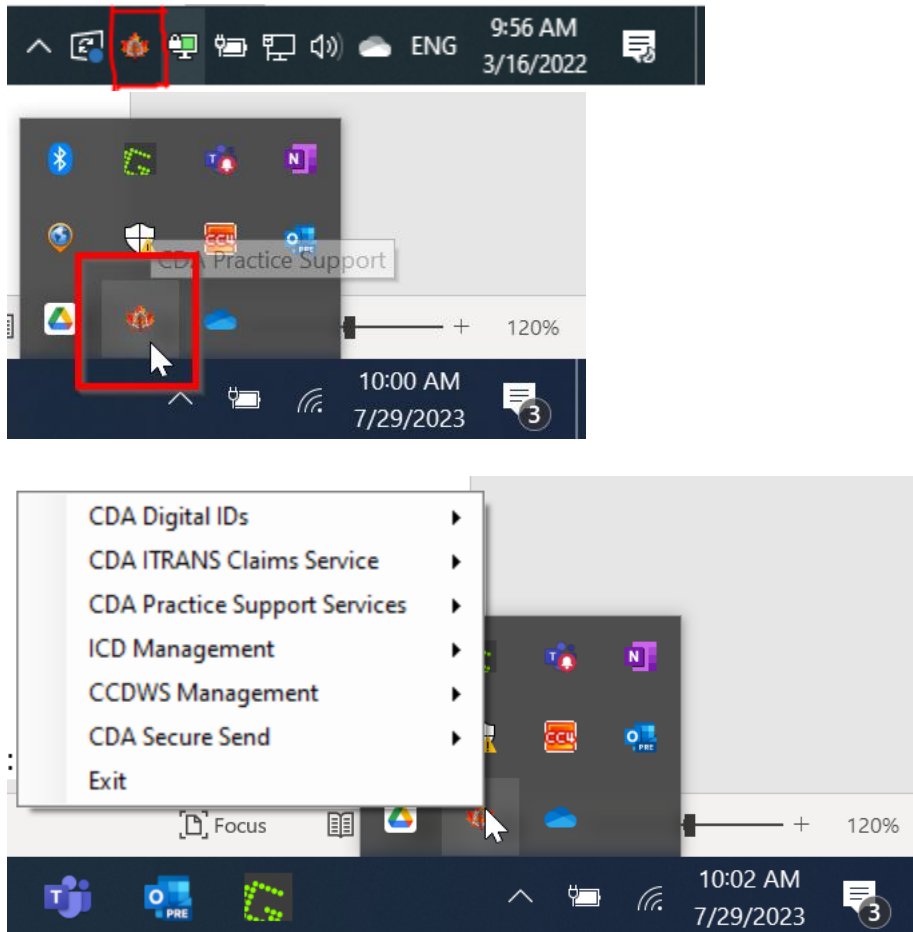
In case of an error detected during ITS transmission, ensure that the relevant dentist's certificate is installed for the user id that the ICD is running under.

4.3.2 Transaction Review Security

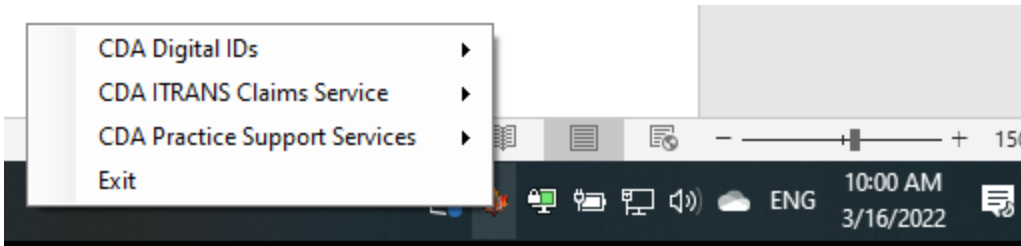
Dental office staff will be able to view the de-identified transmitted transactions on the CDA Practice Support Services website under a new tab called "ITRANS". Access to the site requires the same validation and credentials as the rest of the PSS site where CDA services are subscribed to, and the CDA Digital ID is accessed.

5 CDA Practice Support

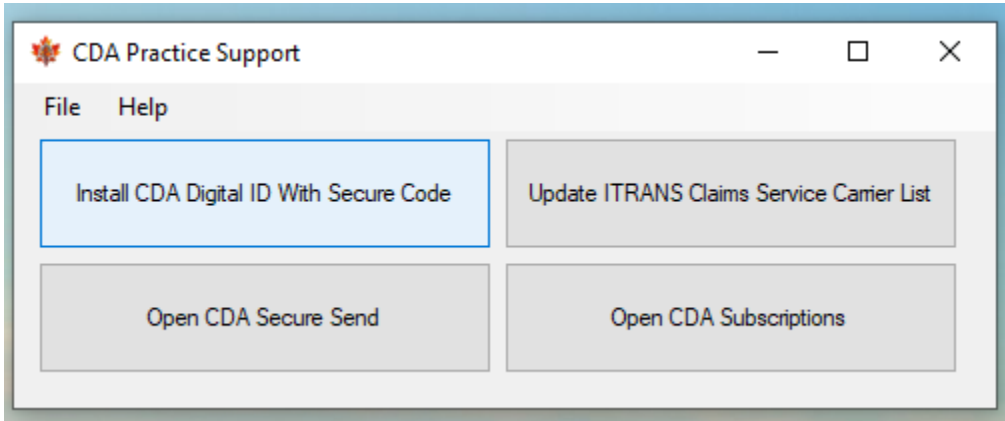
CDA Practice support application will be installed along ICD 3.1.0 and a shortcut will be created under the Start Menu on Windows machines. The application can be used to install provider certificate using an Access Code, force update the n-cpl file, or to redirect to various services available on the CDA website. The application will be running in the System Tray in Windows once launched by user and will display an icon as below. The application can be launched from the installation directory directly or by the shortcut created under Start Menu. The ICD.ini file will be shared for configuration between ITRANS Claims Director and CDA Practice Support application.



User can access the functionalities directly by right clicking on the tray icon as below:

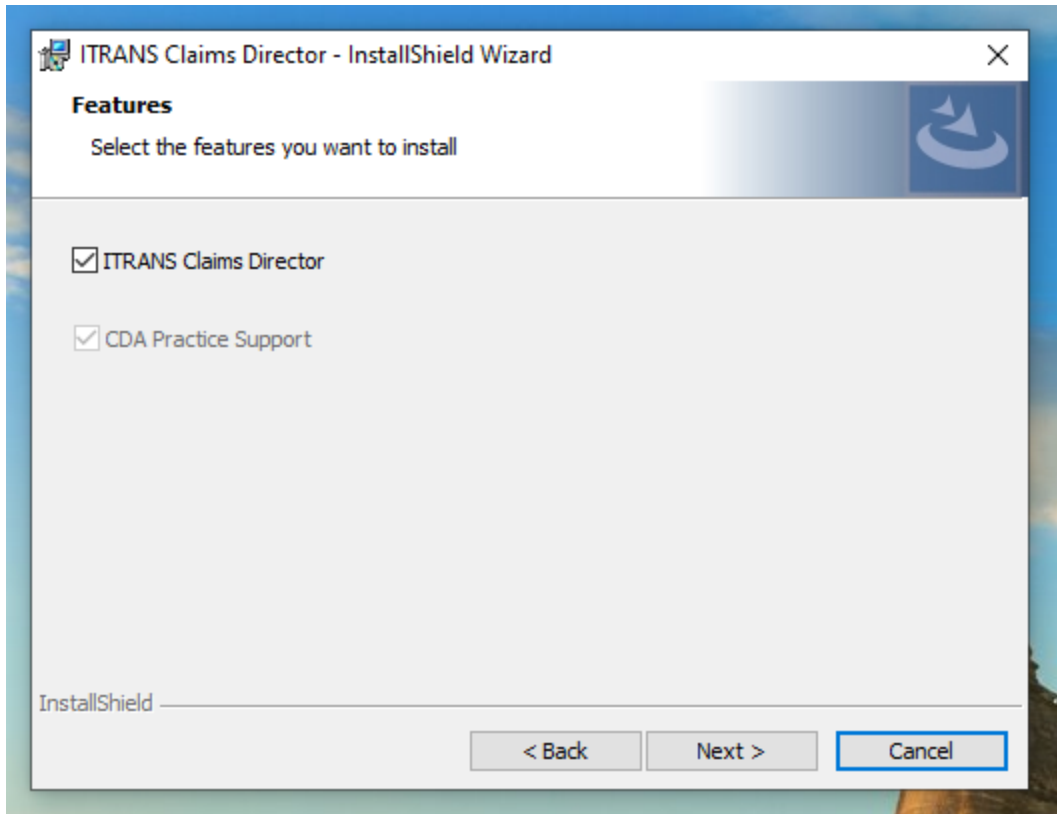


User can also open the application in full Window mode by double-clicking on the tray icon as below:



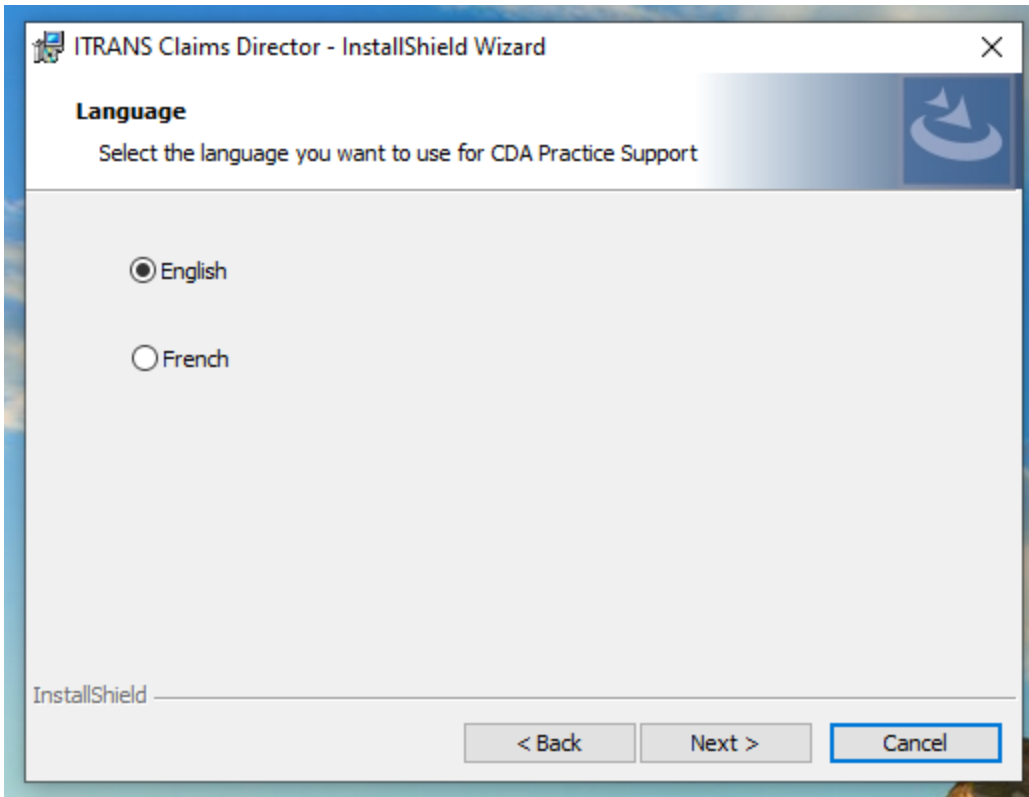
5.1 Installation Instruction

When installing ICD 3.1.0 or newer, CDA Practice Support will be installed by default and a user can not choose not to install, though he can choose to install the CDA Practice Support only and not install the ICD by unchecking the ITRANS Claims Director checkbox on the “Features” window during installation as below.



There is also an option for the user to install both CDA Practice Support and the ITRANS Claims Director but use the ITRANS Claims Director in renewal only mode which will only take care of certificate auto renewal process and does not handle any claims at all. By setting the value of `RenewalOnly=true` under the ICD section in ini file, the service will run in renewal only mode.

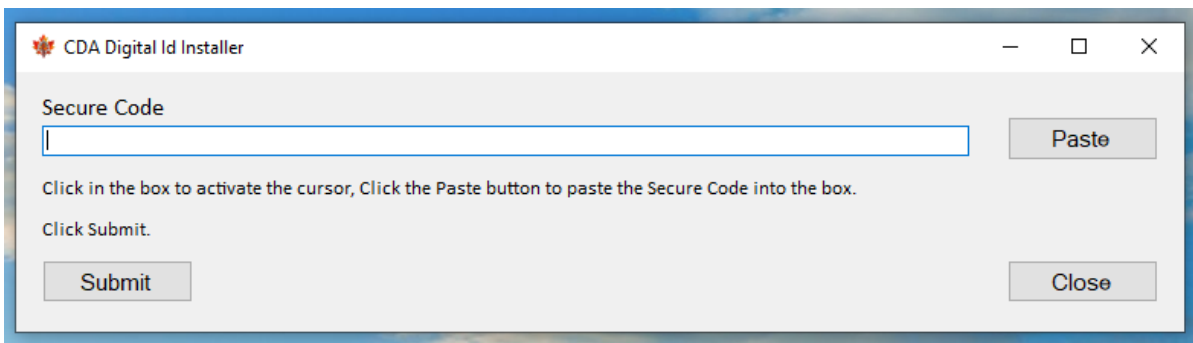
User can also choose which language to use when running the CDA Practice Support application on the “Language” window during the installation process as below:



5.2 CDA Digital Ids

This option will allow user to install a CDA Digital ID for a provider using a secure code provided by CDA. For more information, please refer to [Working with CDA Digital IDs](#)
User will get a window as below upon selecting the option: CDA Practice Support > CDA Digital Ids > Install with Secure Code

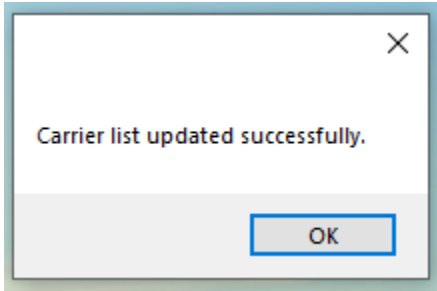
A new certificate will be installed using provided secure code if the secure code is valid. User can paste the secure code from clipboard by clicking on paste button, then click Submit.



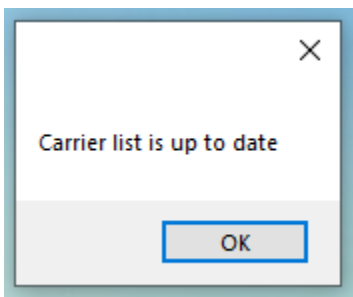
5.3 CDA ITRANS Claims Service

The user can force update their n-cpl file configured by the value of “NCPLFilePath” under ICD section of ini file. The carrier list can be updated by using option: CDA Practice Support > CDA ITRANS Claims Service > Update Carrier List

User will get a message box as below once the carrier list has been updated successfully.



If the carrier list is up-to-date and does not need to be updated user will get a message box as below.



5.4 CDA Practice Support Services

There are also options given to navigate to CDA website for different products. User can redirect to various CDA Services in web browser window when selecting options below:

- CDA Practice Support > CDA Practice Support Services > Open CDA Secure Send: This option will take the user to their Secure Send on CDA’s website.
- CDA Practice Support > CDA Practice Support Services > Open CDA Subscriptions: This option will take the user to their subscription management on the CDA’s website

Appendix A – N-CPL JSON Schema

```
{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "type": "object",
  "properties": {
    "carriers": {
      "type": "array",
      "items": {
        "type": "object",
        "properties": {
          "name": {
            "type": "object",
            "properties": {
              "en": {
                "type": "string"
              },
              "fr": {
                "type": "string"
              }
            }
          }
        }
      },
      "change_date": {
        "type": "string",
        "pattern": "[0-9]{4}-[0-9]{2}-[0-9]{2}"
      },
      "telephone": {
        "type": "array",
        "items": [
          {
            "type": "object",
            "properties": {
              "name": {
                "type": "object",
                "properties": {
                  "en": {
                    "type": "string"
                  },
                  "fr": {
                    "type": "string"
                  }
                }
              },
              "change_date": {
                "type": "string",
                "pattern": "[0-9]{4}-[0-9]{2}-[0-9]{2}"
              },
              "value": {
                "type": "string"
              }
            }
          }
        ]
      },
      {
        "type": "object",
        "properties": {
          "name": {
            "type": "object",
            "properties": {
              "en": {
                "type": "string"
              }
            }
          }
        }
      }
    }
  }
}
```

```

        },
        "fr": {
            "type": "string"
        }
    },
    "change_date": {
        "type": "string",
        "pattern": "[0-9]{4}-[0-9]{2}-[0-9]{2}"
    },
    "value": {
        "type": "string"
    }
}
]
},
"bin": {
    "type": "string"
},
"versions": {
    "type": "array",
    "items": {
        "enum": [
            "2",
            "4"
        ]
    }
},
"batch": {
    "enum": [
        null,
        "N",
        "Y"
    ]
},
"age_days": {
    "type": "integer",
    "minimum": 1
},
"policy_number": {
    "type": "object",
    "properties": {
        "en": {
            "type": "string"
        },
        "fr": {
            "type": "string"
        }
    }
},
"division_number": {
    "type": "object",
    "properties": {
        "en": {
            "type": "string"
        },
        "fr": {
            "type": "string"
        }
    }
}
}

```

```

},
"certificate_number": {
  "type": "object",
  "properties": {
    "en": {
      "type": "string"
    },
    "fr": {
      "type": "string"
    }
  }
},
"claim_01": {
  "enum": [
    null,
    "N",
    "Y"
  ]
},
"claim_11": {
  "enum": [
    null,
    "N",
    "Y"
  ]
},
"claim_21": {
  "enum": [
    null,
    "N",
    "X",
    "Y"
  ]
},
"reversal_02": {
  "enum": [
    null,
    "N",
    "Y"
  ]
},
"reversal_12": {
  "enum": [
    null,
    "N",
    "Y"
  ]
},
"predetermination_03": {
  "enum": [
    null,
    "N",
    "Y"
  ]
},
"predetermination_13": {
  "enum": [
    null,
    "N",
    "Y"
  ]
}

```



```

},
"predetermination_23": {
  "enum": [
    null,
    "N",
    "X",
    "Y"
  ]
},
"predetermination_multi": {
  "enum": [
    null,
    "N",
    "Y"
  ]
},
"outstanding_04": {
  "enum": [
    null,
    "N",
    "Y"
  ]
},
"outstanding_14": {
  "enum": [
    null,
    "N",
    "Y"
  ]
},
"summary_reconciliation_04": {
  "enum": [
    null,
    "N",
    "Y"
  ]
},
"summary_reconciliation_15": {
  "enum": [
    null,
    "N",
    "Y"
  ]
},
"payment_reconciliation_06": {
  "enum": [
    null,
    "N",
    "Y"
  ]
},
"payment_reconciliation_16": {
  "enum": [
    null,
    "N",
    "Y"
  ]
},
"cob_07": {
  "enum": [
    null,

```

```

        "N",
        "X",
        "Y",
        "Z"
    ]
},
"eligibility_08": {
    "enum": [
        null,
        "N",
        "Y"
    ]
},
"eligibility_18": {
    "enum": [
        null,
        "N",
        "Y"
    ]
},
"attachment_09": {
    "enum": [
        null,
        "N",
        "Y"
    ]
},
"attachment_19": {
    "enum": [
        null,
        "N",
        "Y"
    ]
},
"cob_instructions": {
    "type": "object",
    "properties": {
        "en": {
            "type": "string"
        },
        "fr": {
            "type": "string"
        }
    }
},
"notes": {
    "type": "object",
    "properties": {
        "en": {
            "type": "string"
        },
        "fr": {
            "type": "string"
        }
    }
},
"claims_processor": {
    "type": "object",
    "properties": {
        "change_date": {
            "type": "string",

```

```

    "pattern": "[0-9]{4}-[0-9]{2}-[0-9]{2}"
  },
  "name": {
    "type": "object",
    "properties": {
      "en": {
        "type": "string"
      },
      "fr": {
        "type": "string"
      }
    }
  },
  "short_name": {
    "type": "object",
    "properties": {
      "en": {
        "type": "string",
        "maxLength": 5
      },
      "fr": {
        "type": "string",
        "maxLength": 5
      }
    }
  }
},
"address": {
  "type": "array",
  "items": {
    "type": "object",
    "properties": {
      "street1": {
        "type": "string"
      },
      "street2": {
        "type": "string"
      },
      "city": {
        "type": "string"
      },
      "province": {
        "enum": [
          "AB",
          "BC",
          "MB",
          "NB",
          "NL",
          "NS",
          "NT",
          "NU",
          "ON",
          "PE",
          "QC",
          "SK",
          "YT"
        ]
      },
      "postal_code": {
        "string": "string",

```

```

    "pattern": "[A-Za-z][0-9][A-Za-z] ?[0-9][A-Za-z][0-9]"
  },
  "attention": {
    "type": "string"
  },
  "notes": {
    "type": "object",
    "properties": {
      "en": {
        "type": "string"
      },
      "fr": {
        "type": "string"
      }
    }
  }
}
},
"network": {
  "type": "array",
  "items": {
    "type": "object",
    "properties": {
      "network_folder": {
        "type": "string"
      },
      "name": {
        "type": "object",
        "properties": {
          "en": {
            "type": "string"
          },
          "fr": {
            "type": "string"
          }
        }
      }
    }
  },
  "change_date": {
    "type": "string",
    "pattern": "[0-9]{4}-[0-9]{2}-[0-9]{2}"
  },
  "telephone": {
    "type": "array",
    "items": {
      "type": "object",
      "properties": {
        "name": {
          "type": "object",
          "properties": {
            "en": {
              "type": "string"
            },
            "fr": {
              "type": "string"
            }
          }
        }
      }
    },
    "change_date": {
      "type": "string",
      "pattern": "[0-9]{4}-[0-9]{2}-[0-9]{2}"
    }
  }
}

```


Appendix B – Co-ordination of Benefits (COB) Messages in N-CPL

The goal of including the coordination of benefits information in the N-CPL is twofold:

1. Enable PMS vendors to automate secondary claims processing as much as possible; and
2. For the system user, answer the question, “Can I send the secondary claim electronically?”

In CDAnet, claims processors have a few options on how to process claims when they are the secondary claims processor. CDA has gathered for each claims processor whether they use CDAnet for secondary claims, and if they do, how. This information has been coded and included in the N-CPL. Fully integrated, the PMS vendor will be able to automate the submitting of secondary claims where possible, and communicating to the user when it is not possible.

COB Background

Coordination of benefits is the process used by claims processors to decide which plan pays first when a person is covered by more than one benefit plan. For more information on this, see the following from the Canadian Life and Health Insurance Association (CLHIA):

<http://clhia.uberflip.com/i/405145-a-guide-to-the-coordination-of-benefits/0?>

The benefit plan that pays first is called the “primary” plan. The plan that pays second is the “secondary” plan. When one claims processor has both the primary and secondary plans, for example when two parents have the same employer and therefore benefits provider, the secondary claim is called a “blue-on-blue” claim (nothing to do with Blue Cross).

CDAnet Possibilities for COB

Version 2 of CDAnet does not have any capability for coordination of benefits. However it should be noted that one version 2 claims processor will do the following; if the primary claim lists them as the secondary claims processor, they will:

- Process the primary claims and return a CDAnet explanation of benefits or acknowledgement as usual, and
- Process the secondary claim and send the explanation of benefits to the plan member outside of CDAnet, either by mail or posted to a portal.

The COB possibilities in version 4 of CDAnet are as follows:

- The embedded EOB functionality of the 21 EOB message is used for blue-on-blue claims.
- The 07 COB message is used to receive secondary claims. The variations on this are:
 - The 07 can only include version 4 EOBs from primary claims processors (meaning the primary claims processor must be CDAnet v4)
 - The 07 can include either a v2 or a v4 EOB from the primary claims processor
 - The 07 only accepts claims where the claims processor is also the primary claims processor

Based on these possibilities, the N-CPL captures the capabilities for each claim processor. The table below shows the possible values in the N-CPL for the three fields that include these possibilities.

Table 1: N-CPL encoding for messages related to secondary claims

CDAnet Message	Possible N-CPL Values
21 Claim Explanation of Benefits	N = Not supported Y = Supported but not the embedded EOB for secondary claims X = Supported with the embedded EOB for secondary claims
23 Predetermination Explanation of Benefits	N = Not supported Y = Supported buy not the embedded EOB for secondary claims X = Supported with the embedded EOB for secondary claims
07 Coordination of Benefits Claim	N = Not supported Y = Supported, either v2 or v4 EOBs accepted X = Supported, only v4 EOBs accepted Z = Supported, only for blue-on-blue claims

In addition to the encoding above, the N-CPL also includes text descriptions of the COB capability for the claims processor. These are listed under the element carriers.cob_instructions, and include the descriptions in English and French. Following is how this looks in the N-CPL.json from a sample claims processor:

```
"cob_instructions": {
  "en": "Different primary: If the primary benefits are a CDAnet version 4 carrier, send the secondary benefit claim using COB Transaction 07. RBC Insurance will adjudicate secondary claim benefits based returned primary claim EOB. When the primary benefits carrier is a CDAnet version 2, submit the secondary benefit claim with the Standard Dental Claim Form.\n\nBlue-on-blue: Send the secondary benefit claim using COB Transaction 07.",
  "fr": "Régime primaire différent : Si l'assureur primaire utilise la version 4 de CDAnet, soumettre la demande de prestations secondaire au moyen de la transaction 07 relative à la coordination des prestations. RBC évaluera la demande de prestations secondaire en fonction des détails des prestations transmis en réponse à la demande primaire. Si l'assureur primaire utilise la version 2 de CDAnet, soumettre la demande de prestations secondaire au moyen de la demande d'indemnisation des soins dentaires.\n\nBleu contre bleu : Soumettre la demande de prestations secondaire au moyen de la transaction 07 relative à la coordination des prestations."
},
```

This information is available to the PMS vendor to display on screen. PMS vendors may also choose to display specific information based on the exact situation. For example, if the primary claim resulted in a v2 EOB, and the secondary carrier only accepts the 07 COB message with a v4 EOB, a the PMS vendor could display a context-specific message along the lines of:

The secondary claim cannot be sent electronically as [secondary carrier] only accepts the electronic Coordination of Benefits claim when the primary carrier uses CDAnet version 4. Please send a paper claim for the secondary claim.

Appendix C – Error Codes

Error Codes for all of CDAnet, ICD, ICA and CCDWS

A compiled list of all error codes for the various software in CDAnet is available at:

www.cda-adc.ca/get. Here is the link to the file:

<http://www.cda-adc.ca/get/ErrorCodes-ICD-ICA-CCDWS-CDAnet.pdf>

ICD Error Codes (ITRANS 2.0)

Code	Message	Description
0	Success	The request was sent to the network and the response was successfully received.
1026	No answer	The ICD could not connect to the network (HTTP 503 error).
1034	Request invalid	The network reported a bad request (HTTP 400 error)
1042	Network timeout	A timeout occurred either sending the message to the network or receiving a response from the network.
1043	Network endpoint not found	The network endpoint could not be found (HTTP 404 error). This can happen if the endpoint is misconfigured in the ICD.ini file
1045	Network disconnect	The network disconnected unexpectedly. See the logs for more information
3000	Cannot access ICD CDAnet payload folder Object reference not set to an instance of an object	The configuration for the ICD refers to a payload folder that either does not exist, or the ICD user does not have rights to access. The transaction was not properly formatted as per the CDAnet standard. This can be determined by looking at data positions in the input file. Most fields would be out of position.
3001	Cannot access <communication agent> CDAnet payload folder.	The configuration for the ICD refers to one or more payload folders for the identified communication agent that either does not exist, or the ICD user does not have rights to access.
3002	Invalid transaction type	The ICD was unable to successfully parse or extract a valid transaction type code A04 from the payload. IF CLAIM BAD, NOT ROUTED TO NETWORK (VENDOR), BUT COULD BE THE RESPONSE AS CARRIER)
3003	Unknown carrier ID	The ICD was unable to successfully parse or extract a carrier identification number A05 that matches a value the N-CPL.
3004		Not used

Code	Message	Description
0	Success	The request was sent to the network and the response was successfully received.
1026	No answer	The ICD could not connect to the network (HTTP 503 error).
1034	Request invalid	The network reported a bad request (HTTP 400 error)
1042	Network timeout	A timeout occurred either sending the message to the network or receiving a response from the network.
1043	Network endpoint not found	The network endpoint could not be found (HTTP 404 error). This can happen if the endpoint is misconfigured in the ICD.ini file
1045	Network disconnect	The network disconnected unexpectedly. See the logs for more information
3005		Not used
3006*		The ICD was unable to find a valid client certificate when sending to the ITS.
3007*		Error occurred during de-identification.
3008*		Unable to connect to ITS.
3009*		ITS rejected client certificate.
3010	No CDA Digital IDs found	On startup, the ICD service scans the windows certificate store for valid certificates on the computer and generate the error if it doesn't find any under the user the service is logged on.
3011	CCDWS not reachable	When attempting to send to the CCDWS API, no response was returned.

* Input message is still sent to the network. Error relates to ICD processing for sending de-identified transaction to CDA.

ICA Error Codes (ITRANS 1.0)

Detailed explanations of the ICA status and error codes are located at:

<https://www.goitrans.com/itrans-support-error-codes/>

CCDWS Error Codes

Code	Message	Description
0	Success	The request was sent to the remote server and the response was successfully received and stored in the output file.
1001	General error	A general error occurred. Check the log file for details, including internal error
1026	No answer	Communication agent could not connect to the remote server.
1033	Error reading input	The input file could not be read.
1034	Request invalid	The input request does not conform to CDAnet v2, v3, or v4 message standards. See the log file for details.
1042	Server timeout	A timeout occurred either sending the message to the server (write timeout) or receiving a response from the server (read timeout).
1043	Invalid characters	The server responded with unexpected data. This may happen in the server address is incorrect or the server is not correctly configured.
1045	Server disconnect	The server disconnected unexpectedly. This will most frequently occur if a connection was made, but an SSL/TLS error was detected.

CDAnet Error Codes

Code	Message
1	Missing/Invalid Transaction Prefix
2	Missing/Invalid Dental Claim # or Office Sequence #
3	Missing/Invalid Version Number
4	Missing/Invalid Transaction Code
5	Missing/Invalid Carrier Identification Number
6	Missing/Invalid Software System ID
7	Missing/Invalid Dentist Unique ID (Provider Number)
8	Missing/Invalid Dental Office Number
9	Missing/Invalid Primary Policy/Plan Number
10	Missing/Invalid Division/Section Number
11	Missing/Invalid Subscriber Identification Number
12	Missing/Invalid Relationship Code
13	Missing/Invalid Patient's Sex
14	Missing/Invalid Patient's Birthday
15	Missing Patient's Last Name
16	Missing Patient's First Name
17	Missing/Invalid Eligibility Exception Code
18	Missing Name of School
19	Missing Subscriber's Last Name or Name did not match to the one on file
20	Missing Subscriber's First Name or Name did not match to the one on file
21	Missing Subscriber's Address
22	Missing Subscriber's City
23	Missing/Invalid Subscriber's Postal Code
24	Invalid Language of Insured
25	Missing/Invalid Subscriber's Birthday
26	Invalid Secondary Carrier ID Number
27	Missing/Invalid Secondary Policy/Plan Number
28	Missing/Invalid Secondary Division/Section Number
29	Missing/Invalid Secondary Plan Subscriber Number
30	Missing/Invalid Secondary Subscriber's Birthday
31	Claim should be submitted to the Secondary Carrier first. (The secondary is the primary carrier)
32	Missing/Invalid Payee
33	Invalid Accident Date
34	Missing/Invalid Number of Procedures Performed
35	Missing/Invalid Procedure Code
36	Missing/Invalid Date of Service
37	Missing/Invalid International Tooth, Sextant, Quadrant or Arch Designation
38	Missing/Invalid Tooth Surface
39	Invalid Date of Initial Placement (Upper)
40	Missing/Invalid Response re: Treatment Required for Orthodontic Purposes

Code	Message
41	Missing/Invalid Dentist's Fee Claimed
42	Missing/Invalid Lab Fee
43	Missing/Invalid Units of Time
44	Message Length Field did not match length of message received
45	Missing/Invalid E-Mail / Materials Forwarded Flag
46	Missing/Invalid Claim Reference Number
47	Provider is not Authorized to access CDAnet
48	Please Submit Claim Manually
49	No outstanding responses from the network requested
50	Missing/Invalid Procedure Line Number
51	Predetermination number not found
52	At least one service must be entered for a claim/predetermination
53	Missing/Invalid Subscriber's province
54	Subscriber ID on reversal did not match that on the original claim
55	Reversal not for today's transaction
56	Provider's specialty code does not match that on file
57	Missing/Invalid response to Question re: Is this an initial placement (Upper)
58	Number of procedures found did not match with number indicated
59	Dental Office Software is not certified to submit transactions to CDAnet
60	Claim Reversal Transaction cannot be accepted now, please try again later today
61	Network error, please re-submit transaction
62	Missing/Invalid Payee CDA Provider Number
63	Missing/Invalid Payee Provider Office Number
64	Missing/Invalid Referring Provider
65	Missing/Invalid Referral Reason Code
66	Missing/Invalid Plan Flag
67	Missing NIHB Plan fields
68	Missing/Invalid Band Number
69	Missing/Invalid Family Number
70	Missing/Invalid Missing Teeth Map
71	Missing/Invalid Secondary Relationship Code
72	Missing/Invalid Procedure Type Codes
73	Missing/Invalid Remarks Code
74	Date of Service is a future date
75	Date of Service is more than one week old
76	Group not acceptable through EDI
77	Procedure Type not supported by carrier
78	Please submit pre-authorization manually
79	Duplicate Claim
80	Missing/Invalid Carrier Transaction Counter
81	Invalid Eligibility Date
82	Invalid Card Sequence/Version Number
83	Missing/Invalid Secondary Subscriber's Last Name

Code	Message
84	Missing/Invalid Secondary Subscriber's First Name
85	Invalid Secondary Subscriber's Middle Initial
86	Missing Secondary Subscriber's Address Line 1
87	Missing Secondary Subscriber's City
88	Missing Secondary Subscriber's Province/State Code
89	Invalid Secondary Subscriber's Postal/Zip Code
90	Missing/Invalid response to Question: Is this an Initial Placement Lower
91	Missing/Invalid Date of Initial Placement Lower
92	Missing/Invalid Maxillary Prosthesis Material
93	Missing/Invalid Mandibular Prosthesis Material
94	Missing/Invalid Extracted Teeth Count
95	Missing/Invalid Extracted Tooth Number
96	Missing/Invalid Extraction Date
97	Invalid Reconciliation Date
98	Missing/Invalid Lab Procedure Code
99	Invalid Encryption Code
100	Invalid Encryption
101	Invalid Subscriber's Middle Initial
102	Invalid Patient's Middle Initial
103	Missing/Invalid Primary Dependant Code
104	Missing/Invalid Secondary Dependant Code
105	Missing/Invalid Secondary Card Sequence/Version Number
106	Missing/Invalid Secondary Language
107	Missing/Invalid Secondary Coverage Flag
108	Secondary Coverage Fields Missing
109	Missing/Invalid Secondary Sequence Number
110	Missing/Invalid Orthodontic Record Flag
111	Missing/Invalid First Examination Fee
112	Missing/Invalid Diagnostic Phase Fee
113	Missing/Invalid Initial Payment
114	Missing/Invalid Payment Mode
115	Missing/Invalid Treatment Duration
116	Missing/Invalid Number of Anticipated Payments
117	Missing/Invalid Anticipated Payment Amount
118	Missing/Invalid Lab Procedure Code # 2
119	Missing/Invalid Lab Procedure Fee # 2
120	Missing/Invalid Estimated Treatment Starting Date
121	Primary EOB Altered from the Original
122	Data no longer available
123	Missing/Invalid Reconciliation Page Number
124	Transaction Type not supported by the carrier
125	Transaction Version not supported
126	Missing/Invalid Diagnostic Code

Code	Message
127	Missing/Invalid Institution Code
128	Missing/Invalid Current Predetermination Page Number
129	Missing/Invalid Last Predetermination Page Number
130	Missing/Invalid Plan Record Count
131	Missing/Invalid Plan Record
132	Missing/Invalid Secondary Record Count
133	Missing/Invalid Embedded Transaction Length
134	Invalid Secondary Address Line # 2
135	Missing / Invalid Receiving Provider Number
136	Missing / Invalid Receiving Office Number
137	Missing / Invalid Original Office Sequence Number
138	Missing / Invalid Original Transaction Reference Number
139	Missing / Invalid Attachment Source
140	Missing / Invalid Attachment Count
141	Missing / Invalid Attachment Type
142	Missing / Invalid Attachment Length
143	Missing / Invalid Attachment
144	Missing / Invalid Attachment File Date
145	Submitted Claim's Predetermination number indicates claim must be made manually
146	Submitted Claim's Predetermination number has expired
147	Overage dependant is not a student or disabled
148	Subscriber does not have dental coverage
149	Patient is not eligible
150	Lab bill is not allowed
151	Patient's name / birth year does not match our files
152	Lab bill must be submitted on the same line as the associated professional fee
153	Our records indicate another payor should be primary
997	Last Transaction Unreadable
998	Reserved by CDAnet for future use
999	Host Processing Error - Resubmit Claim Manually

6 Appendix D – ICD Local Web API Specification 1.0

6.1 Methods

6.1.1 SendPayload

Sends the payload to the ICD.

6.1.2 Request

Method	URL
POST	/ICD/SendPayload/

Type	Params	Values
POST	Payload	string

Payload

The CDAnet formatted payload. This is the same value that would be saved to an input file.

6.1.3 Response

Status	Response
200	Payload successfully processed by CCDWS <pre>{ "response": "HD*...", "statusCode": 0 }</pre>
202	Payload successfully processed by CCDWS, but was unable to send claim to the ITS. See status code for more detail <pre>{ "response": "HD*...", "statusCode": 3006 }</pre>
400	Invalid transaction type. <pre>{ "statusCode": 3002 }</pre>

403	<p>Cannot access communication agent CDAnet payload folder.</p> <pre>{ "statusCode": 3001 }</pre>
404	<p>Unknown carrier ID.</p> <pre>{ "statusCode": 3003 }</pre>
408	<p>Request timeout. Communication agent did not respond in time.</p> <pre>{ "statusCode": 3010 }</pre>
500	<p>Communication agent error. See status code for more information</p> <pre>{ "statusCode": 1001 }</pre>

6.1.4 Example

Request:

```
{
  "Payload": "HD*          0000010401666666VR1..."
}
```

Response:

```
{
  "response": "HD*          0000010421666666VR1...",
  "statusCode": 0
}
```

6.2 GetNCPL

Downloads and returns the latest version of the N-CPL.

6.2.1 Request

Method	URL
GET	/ICD/GetNCPL/

6.2.2 Response

Status	Response
200	Downloads and returns the contents of the latest N-CPL <pre>{ "carriers": [...], "rot_bins": [...], "change_log": [...] }</pre>
404	Not Found
408	Request Timeout
500	Internal Server Error

6.2.3 Example

Response:

```
{
  "carriers": [
    {
      "name": {
        "en": "Carrier English Name",
        "fr": "Nom Français du Transporteur"
      },
      "change_date": "2016-10-10",
      "telephone": [
        {
          "name": {
            "en": "Main",
            "fr": "Principale"
          },
          "change_date": "2016-10-10",
          "value": "1-800-661-7871"
        },
        {
          "name": {
            "en": "Alternative Number",
            "fr": "Numéro alternatif"
          },
          "change_date": "2016-12-05",
          "value": "1-800-567-8104"
        }
      ],
      "bin": "000090",
      "versions": [ "2", "4" ],
      "batch": "N",
      "age_days": 7,
      "policy_number": {
```

```

    "en": "1-5 digits, alphanum",
    "fr": "1-5 digits, alphanum"
  },
  "division_number": {
    "en": "1-3 digits, alphanum",
    "fr": "1-3 digits, alphanum"
  },
  "certificate_number": {
    "en": "1-10 digits, alphanum",
    "fr": "1-10 digits, alphanum"
  },
  "claim_01": "Y",
  "claim_11": "Y",
  "claim_21": "X",
  "reversal_02": "Y",
  "reversal_12": "Y",
  "predetermination_03": "Y",
  "predetermination_13": "Y",
  "predetermination_23": "X",
  "predetermination_multi": "Y",
  "outstanding_04": "Y",
  "outstanding_14": "Y",
  "summary_reconciliation_04": "N",
  "summary_reconciliation_15": "N",
  "summary_reconciliation_06": "N",
  "summary_reconciliation_16": "N",
  "cob_07": "X",
  "eligibility_08": "N",
  "eligibility_18": "N",
  "attachment_09": "Y",
  "attachment_19": "Y",
  "cob_instructions": {
    "en": "Use message 07 for all COB claims",
    "fr": " Utiliser le message 07 pour toutes les demandes de COB"
  },
  "notes": {
    "en": "Misc notes",
    "fr": "Notes diverses"
  },
  "claims_processor": {
    "change_date": "2016-12-20",
    "name": {
      "en": "Express Scripts",
      "fr": "Express Scripts"
    },
    "short_name": {
      "en": "ESC",
      "fr": "ESC"
    }
  },
  "address": [
    {
      "street1": "Blue Cross Place",
      "street2": "10009 108 Street NW",
      "city": "Edmonton",
      "province": "AB",

```

```

        "postal_code": "T5J 3C5",
        "attention": "Claims Processing",
        "notes": {
            "en": "Office hours Mon-Fri 8:30am - 5:00pm Mountain Time",
            "fr": "Heures Lun-Ven de 8h30 à 17h00 Heure de montagne"
        }
    },
    "network": [
        {
            "network_folder": "ABC",
            "name": {
                "en": "Alberta Blue Cross",
                "fr": "Croix Bleue Alberta"
            },
            "change_date": "2016-10-10",
            "telephone": [
                {
                    "name": {
                        "en": "Main",
                        "fr": "Principale"
                    },
                    "change_date": "2016-12-05",
                    "phone": "123-456-7890"
                }
            ],
            "load": {
                "change_date": "2016-12-20",
                "percent": 100
            }
        }
    ]
},
"rot_bins": [
    "000016",
    "000103",
    "000090"
],
"change_log": [
    {
        "change_date": "2016-12-05",
        "description": {
            "en": "Change description",
            "fr": "Changer la description"
        }
    }
]
}

```