NCOA RECOGNITION HANDBOOK

Version: No. 2

May 2007

PART 1: INTRODUCTION

1.1 OVERVIEW OF THE NATIONAL CHANGE OF ADDRESS DATA

While reading this handbook, the following points should be kept in mind about the National Change of Address (NCOA) Data from CANADA POST:

- NCOA Data is a source of information about individuals, families and businesses that have moved from one address to another
- The NCOA Data is obtained from the Change of Address Notifications (COAN's) filed with CANADA POST. It may also contain CANADA POST initiated changes, e.g., address changes that result from the urbanization of some areas, street changes resulting from municipal amalgamations, etc.
- The NCOA Data provides a three-year history of moves and licensees must only maintain a 3-year record of the NCOA Data.
- NCOA Data can be used for mailing purposes only
- NCOA Data can only be used by organizations directly under license with CANADA POST or with licensed Mail Service Providers (MSPs)
- NCOA Data can only be processed by matching software that is recognized by CANADA POST
- NCOA Data only provides information for those COANs where customer consent has been received (see section on Nixi records)

1.2 PURPOSE OF THIS HANDBOOK

This handbook provides organizations wanting to develop their own NCOA matching software and have it recognized by CANADA POST with a complete description of the software recognition process, of the name and address matching requirements and of the content and layout of the NCOA files and database. This handbook also serves as a useful tool for all licensees as it outlines the reporting requirements and processes that all licensees must follow.

1.3 AUDIENCE

This document is intended to be used by the managers, owners, process analysts, matching methodologists, and software designers and developers involved in decision making or software development with regards to using the NCOA Data.

1.4 STRUCTURE OF THIS HANDBOOK

This Introduction is followed by the:

- PART 2: THE NCOA RECOGNITION PROCESS
- PART 3: TECHNICAL SPECIFICATIONS
- PART 4: DATA SPECIFICATIONS

PART 2 provides a complete description of the NCOA Recognition Process from initial contact to ongoing maintenance and auditing.

PART 3 provides a complete description of the matching requirements for using NCOA Data. Mandatory requirements, recommended processing and suggested guidelines are provided for the matching of individual, family and business names and for addresses. Also included are the requirements for doing the initial database load and the monthly updates.

PART 4 provides a complete description of the content and layout of the NCOA files and database.

Additional information is included in the following appendices:

- APPENDIX A: GLOSSARY OF TERMS AND ACRONYMS
- APPENDIX B: NCOA PROCESS CHECKLIST

CANADA POST staff tasked with maintaining this document will find useful information in APPENDIX C: NCOA HANDBOOK: DOCUMENT MAINTENANCE.

1.5 BACKGROUND

Each year, approximately 1.7 million individuals and families move in Canada and 1.2 million of those movers file a Change of Address Notification (COAN) form with Canada Post when they move. This information is captured electronically and made available, for those customers who have provided their consent, to licensees of Canada Post's National Change of Address Data. The NCOA Database also contains information about Businesses that have moved and submitted a change of address request with Canada Post.

The NCOA Data is licensed to organizations that want to update their internal mailing lists (or house list) or that offer mailing list updating services by electronically comparing the mailing lists of clients of the Licensee against the NCOA data file; (Mail Service Providers).

Organizations wishing to become an NCOA Licensee are required to either develop their own matching software or purchase matching software recognized by CANADA POST. Matching software is used to compare the mailer's list with the NCOA records, specifically the addressee name and address fields, in order to determine which addresses should be updated.

Before a licensee becomes operational, the licensee's matching software must be audited by CANADA POST for accuracy and reliability. As such, a number of steps must be completed by the organization wishing to become a licensee before CANADA POST can audit their software. These steps are detailed in PART 3: The NCOA Recognition Process.

In PART 4: Technical Specifications, mandatory and recommended requirements for the matching of addressee names and addresses are provided to assist licensees in the development of matching software.

It should be noted that CANADA POST reserves the right to audit licensee's matching software on an ad hoc basis. These audits re-confirm the accuracy and reliability of the matching software.

1.6 NCOA KEY CONTACT

Organizations interested in becoming an NCOA Licensee may direct their inquiries to their CANADA POST Account Representative or to the NCOA Key Contact listed below.

NCOA ADMINISTRATOR
CANADA POST CORPORATION
B216-2701 RIVERSIDE DRIVE
OTTAWA ON K1A 0B1

Phone: 1-800-363-3459

Fax: (613) 734-6208

E-mail: data.product@canadapost.ca

The NCOA Key Contact can also be contacted for information about:

- operational and technical support
- NCOA services
- the licensing agreement
- how to obtain the NCOA data
- how to request an audit

You may also find information on the Internet at:
http://www.canadapost.ca/business/offerings/address_management/can/ncoa-e.asp

1.7 SUPPLEMENTAL DOCUMENTATION

It is recommended that software designers and developers use the ***Canadian Addressing Guide*** to find information on proper address formatting and a listing of the Street Types, Street Directions and Province Codes that are recognized and used by CANADA POST. The best address matching rates are obtained when the mailing list addresses follow the standards in that document.

The ***Canadian Addressing Guidelines*** can be obtained by visiting the following URL:

http://www.canadapost.ca/personal/tools/pg/manual/PGaddress-e.asp

PART 2: THE NCOA RECOGNITION PROCESS

2.1 INTRODUCTION TO THE PROCESS

2.1.1 Structure and Content

This section provides a complete description of the NCOA matching software recognition processes.

Three levels of process breakdown are presented:

- Activities
- Processes
- Major Processes

Activities are individual steps that need to be performed.

Processes are logical groupings of activities.

Major Processes group processes into the four important functions that make up the NCOA Recognition Process. The Major Processes are:

- Setup
- Initial Audit
- Monthly Updates
- Regular and Ad Hoc Audits

Each of those Major Processes is defined in a section below.

Each Major Process section contains narrative that defines the Major Process in terms of its component processes and activities. The activities are numbered in a single sequence that spans all of the Major Processes. The process narrative in each section is followed by a diagram that depicts the component processes and the associated flows of information. Those diagrams assume the most complex case: that the NCOA Licensee is developing their own NCOA matching software. Note that the narrative and diagrams are intended to be read in conjunction with each other.

As an aid to obtaining a quick understanding of the NCOA Recognition Process, the critical statements and phrases in the sections below are highlighted.

To assist in managing the NCOA Recognition Process for your organization, Appendix B contains a checklist of the NCOA processes. That checklist may be all that is required for a manager to obtain a high-level understanding of the NCOA Recognition Process.

2.1.2 NCOA Licensee Options

The details of the NCOA Recognition Process can be significantly impacted by the options selected by the NCOA Licensee. The available options are described below.

NCOA Data Format

While the NCOA Database itself has been implemented on a relational database platform, ***both a relational and a flat-file version of the database are available to licensees***. The actual data content for the two versions is identical; the only differences concern the file formats and database structures. ***The option selected applies both to the initial database and to the monthly updates***.

The technical platform on which CANADA POST's NCOA Database is housed is based on Windows NT Server and the Microsoft SQL (Sequential Query Language) Server Relational Database Management System (RDBMS) platform. ***Every effort has been made to eliminate platform-specific requirements*** in order to ensure the trouble-free implementation of the NCOA Database in as many different customer environments as possible.

NCOA Media

The NCOA Licensee has a choice of receiving the ***NCOA initial database and monthly updates on:***

- ***CD ROM (compressed)***
- ***FTP download from the Canada Post (website) FTP server***

Develop, Purchase or Use Recognized NCOA Matching Software

The Licensee can choose to either:

- ***develop software that will pass the NCOA Audits*** by performing the processes defined in this section and by meeting the requirements defined in PART 3: Technical Specifications or
- ***purchase NCOA matching software*** that is already recognized by CANADA POST

For the above two options, the NCOA License Agreement must be signed with CANADA POST.

A third option is available: namely, ***to contract with a Mail Service Provider*** (MSP) with recognized NCOA matching software ***to do the matching of the Licensee's mailing list(s) against the NCOA Database***. In this case, ***the organization*** with the mailing list to be matched ***must sign a Schedule A Acknowledgement form that is part of the MSP's NCOA License Agreement***.

2.1.3 Development and Implementation Overview

If the Licensee elects to develop NCOA matching software***, the following software components must be implemented:***

- ***Initial NCOA Database Install***
- ***NCOA Matching***
- ***Monthly NCOA Update***
- ***Monthly Load Reports (4)***

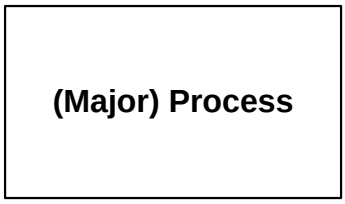
All of the above software components include Audit Reports that CANADA POST reviews and, if there are any concerns, requests that the NCOA Licensee either explain or correct the report or the process on which it reports. Details of these reports are included in Section 3.8 below. Note that the various counts required on the Initial Database Load and Monthly Update reports must exactly match the values predetermined by CANADA POST.

A high-level functional design for each of those components is included in the remainder of this section. By far the largest component is the NCOA Matching Component that must meet the requirements defined in PART 3: Technical Specifications of this handbook.

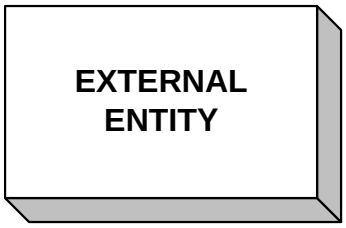
The ***details of the NCOA files and database tables*** required for implementing the above software components ***are provided in PART 4: Data Specifications*** of this handbook.

2.1.4 Process Diagram Icons

The following icons are used on the Data Flow Diagrams (DFDs) that provide a visual overview of each for the following sections:



- a group of processes or activities



- an organization or group that interacts with the processes

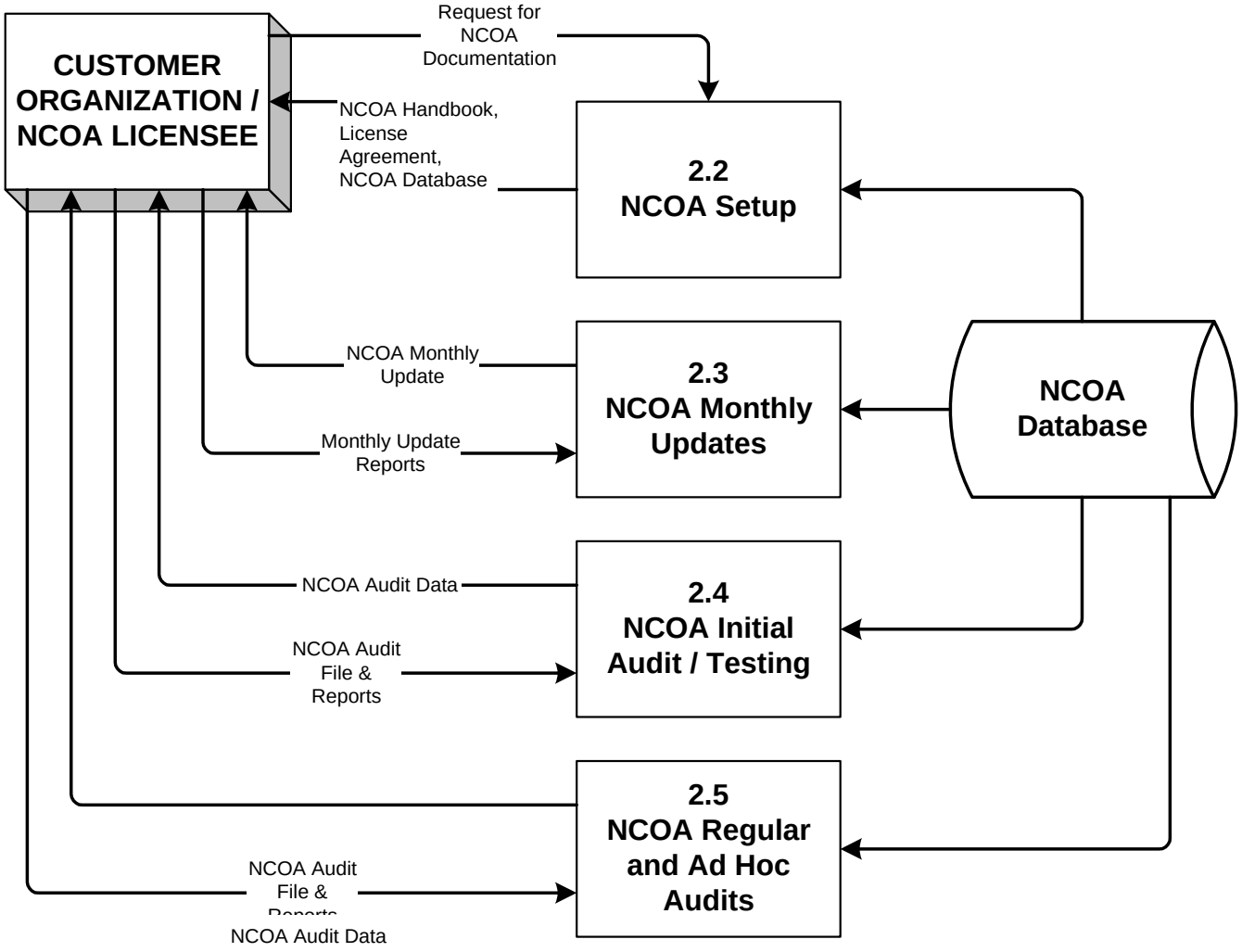
- a complete set of NCOA information (may be in relational table or flat-file format)

- a subset of NCOA information created for an NCOA Licensee (may be in relational table or flat-file format)

- information (data) being communicated between two of the above icons.

2.1.5 NCOA Recognition Process Overview

The diagram that follows provides a quick, visual overview of the NCOA Recognition Process.



2.2 NCOA SETUP

2.2.1 NCOA Setup Description

Before an NCOA License becomes operational, the licensee's NCOA Database Setup, NCOA Matching and Monthly Update software components must be audited (Initial Audit) by CANADA POST for accuracy and reliability.

SET UP NCOA LICENSE AGREEMENT:

1) ***A customer organization contacts the CANADA POST - NCOA Key Contact*** (details can be found in PART 1: Introduction of this handbook) ***and requests the NCOA documentation***.

2) ***CANADA POST forwards the NCOA Recognition Handbook and the NCOA License Agreement to the customer organization***.

3) ***The customer organization returns the completed and signed NCOA License Agreement (in duplicate) and the Licensing Fee to the NCOA Key Contact***.

4) The CANADA POST NCOA Key Contact obtains an authorized CANADA POST signature for the NCOA License Agreement.

5) The Canada Post NCOA Key Contact obtains credit authorization and customer number, for billing purposes, according to current Canada Post procedures.

6) ***The NCOA Key Contact forwards the signed NCOA License Agreement and the current NCOA Database*** (on the media selected and in the format requested) ***to the NCOA Licensee***.

CREATE NCOA DATABASE:

7) ***The NCOA Licensee develops and tests the Initial Database Load Component***.

8) ***The NCOA Licensee loads the NCOA Data into their database and produces the Move Date Summary Report, the Move Type Summary Report and the Address Type Summary Report*** (see report details in Section 3.8 below) ***and forwards those reports to CANADA POST.***

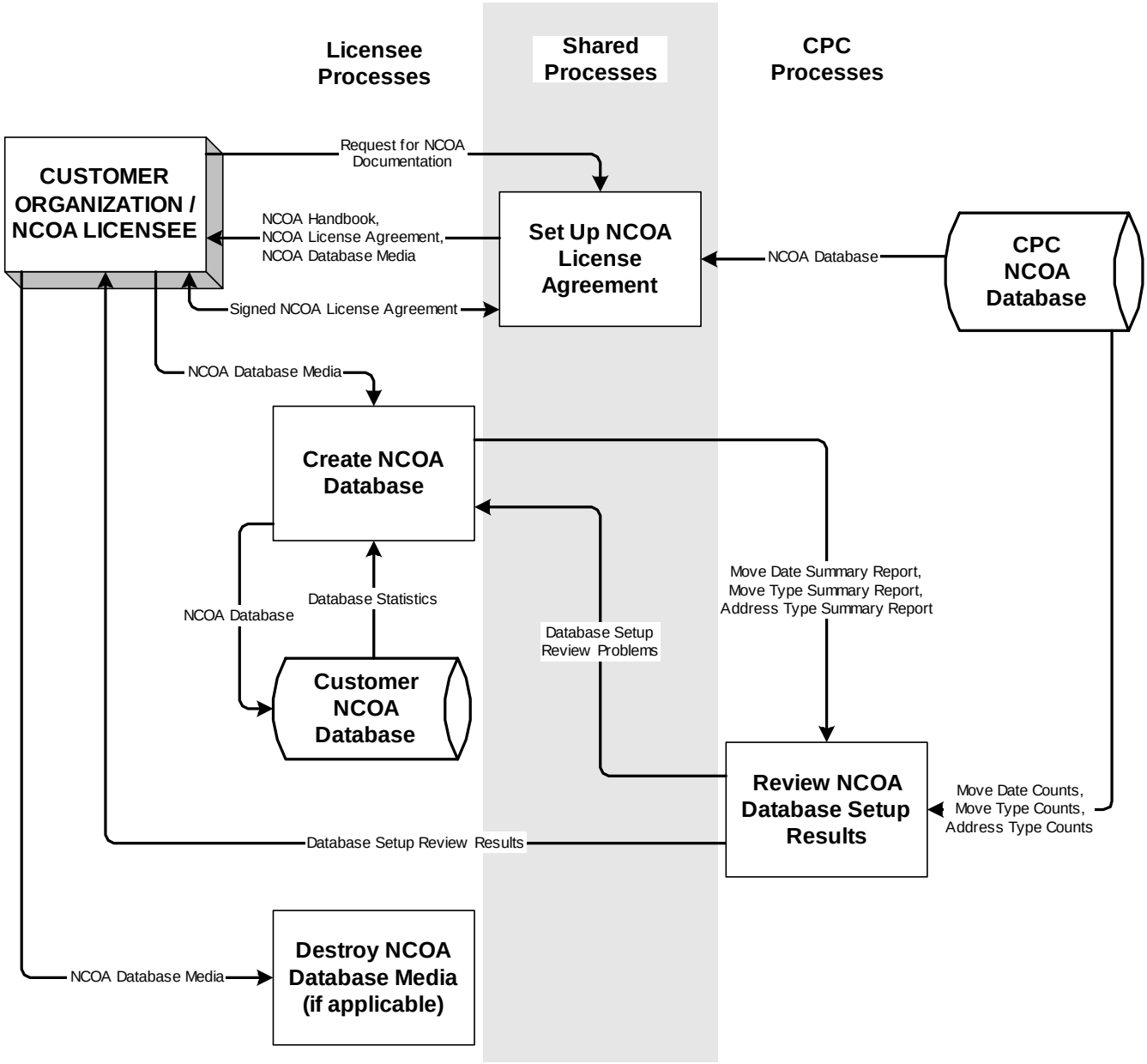
REVIEW NCOA DATABASE SETUP RESULTS:

9) CANADA POST reviews the reports, compares them to the Move Date, Move Type and Address Type Counts from the CANADA POST NCOA Database and informs the NCOA Licensee as to whether the format and content of the reports is acceptable.

DESTRUCTION OF NCOA DATABASE MEDIA:

10) Once the NCOA Data has been successfully loaded, the NCOA Licensee must ensure that he has made one back up for security purposes and ensure the destruction of the CD or file.

2.2.2 NCOA Setup Diagram



2.3 NCOA MONTHLY UPDATES

2.3.1 NCOA Monthly Updates Description

PREPARE FOR MONTHLY UPDATE:

10) Having passed the initial audit of their matching software, ***the NCOA Licensee must develop and test software that accurately updates their NCOA Database with the Monthly Update File*** sent to them by CANADA POST. This software may have to be updated based on the results of the Monthly Update Review.

11) In the middle of each month (or upon passing the Initial Audit of the NCOA Licensee's matching software), CANADA POST sends each NCOA Licensee the NCOA Monthly Update data on the media of their choice and in the file format of choice.

PERFORM MONTHLY UPDATE:

12) ***The NCOA Licensee applies the updates to their NCOA Database*** (see details in Section 3.7 below).

13) ***Once update processing is complete, the Move Date Summary Report, the Update Statistics Report, the NCOA Client List Monthly Report and the NCOA In-House Monthly Report*** (see details in Section 3.8 below) ***must be produced and forwarded to CANADA POST within five business days of receiving the NCOA Update Data (for new NCOA Licensees, these reports must be returned when the Monthly Update process development and first update have been completed).***

REVIEW MONTHLY UPDATE RESULTS:

14) CANADA POST reviews the Move Date Summary Report and the Update Statistics Report and, within 10 business days, either informs the NCOA Licensee that their Monthly Update was correct or returns those reports to the NCOA Licensee with appropriate comments. The licensee must then correct their software and re-run the NCOA Monthly Update.

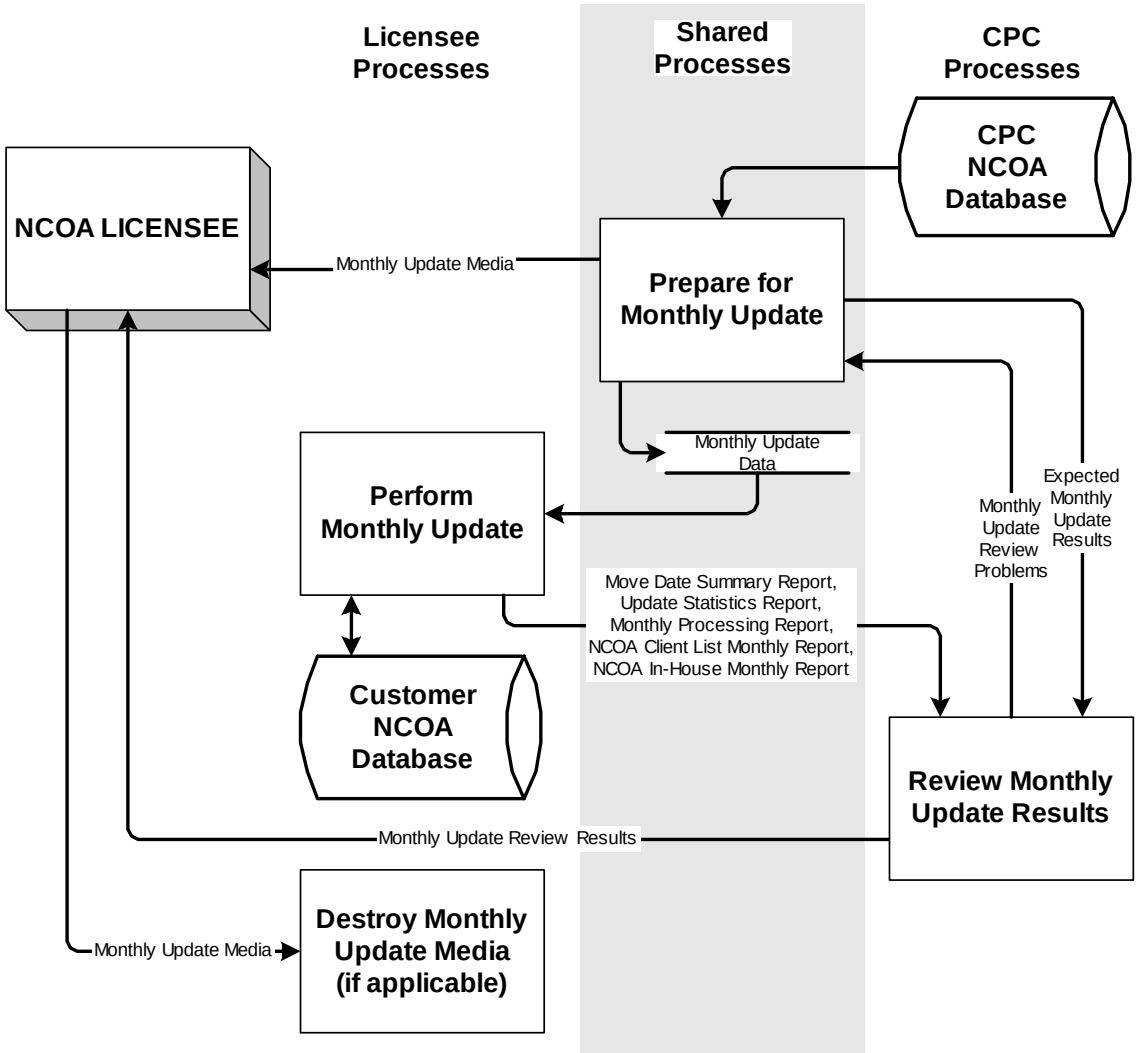
DATA DISPOSAL:

15) Once the NCOA Data has been successfully loaded and the update reports accepted by CANADA POST, ***the NCOA Licensee must ensure that they make one back up of the***

update for security reasons and destroy the CD or delete the file update that they have received.

When an NCOA Licensee performs their first monthly update and CANADA POST accepts their first Monthly Update Reports, their NCOA License becomes operational and they start receiving regular Monthly Updates.

2.3.2 NCOA Monthly Updates Diagram



2.4 NCOA INITIAL AUDIT

2.4.1 NCOA Initial Audit / Testing Description

PREPARE FOR INITIAL AUDIT:

16) ***The NCOA Licensee develops and tests the NCOA Matching Component***. This component ***must meet the requirements defined in PART 3: Technical Specifications*** of this handbook. Those requirements are at a functional level (i.e. ***they define what must be accomplished but not how the component has to implement those requirements***). This software may have to be updated based on the results of an audit (initial, regular or ad hoc).

It is up to the NCOA Licensee to determine operational requirements such as user interface and throughput.

17) ***Software must also be developed to produce an Audit Report*** and an ***Audit Report File*** (see Section 4.3 below for details). This software may have to be updated based on the results of an audit.

18) ***The NCOA Licensee requests CANADA POST to perform the NCOA Initial Audit***.

19) CANADA POST provides the NCOA Licensee with an Audit Data File and records the Expected Matching Results for use in the Review Audit Results process.

PERFORM INITIAL AUDIT / TESTING:

20) ***The NCOA Licensee matches the names and addresses in the Audit Data File against their NCOA Database.***

21) ***The NCOA Licensee produces the Audit Report File*** (see details in Section 4.3 below) ***and the Audit Report*** (see details in Section 3.8 below) ***and forwards them to CANADA POST within five business days of receiving the Audit Data File.***

REVIEW INITIAL AUDIT RESULTS:

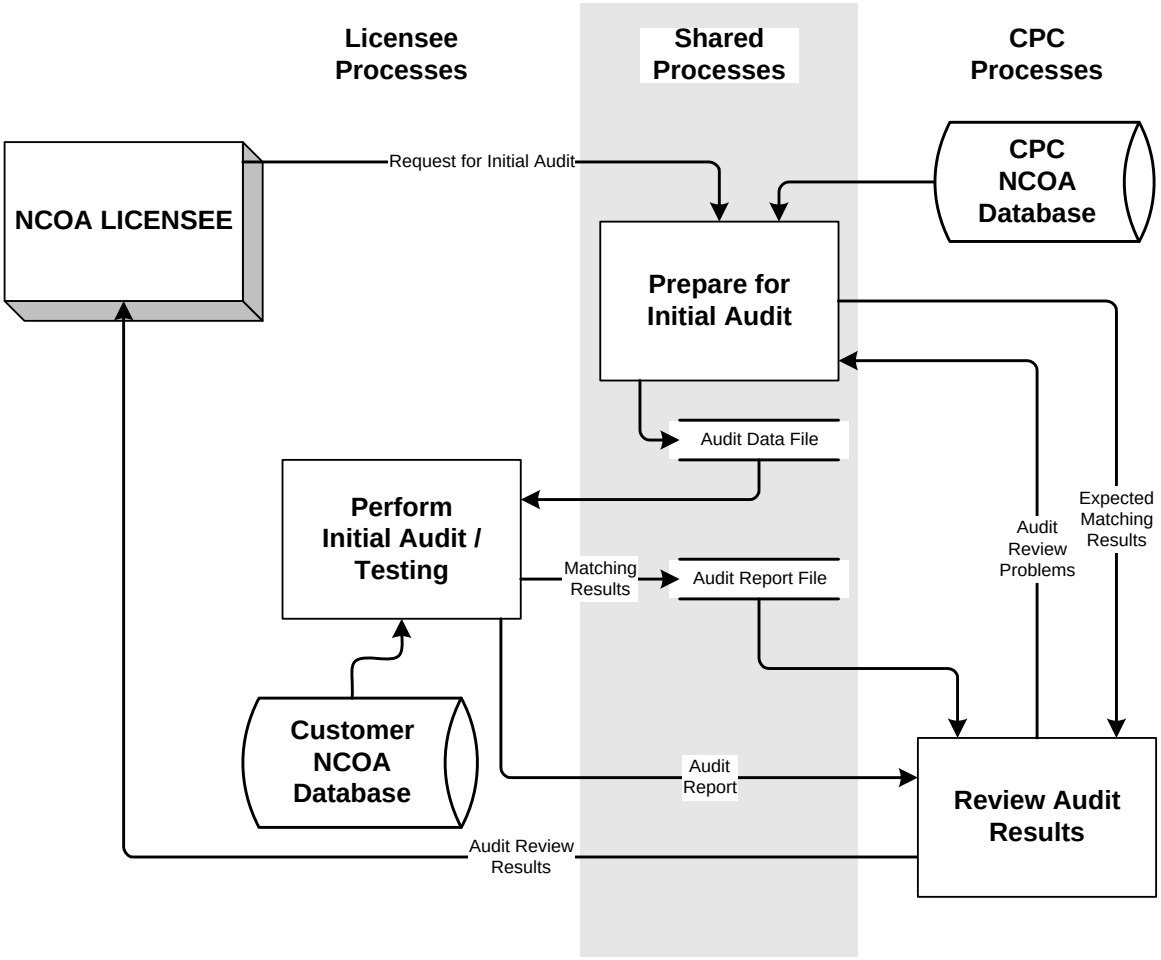
22) CANADA POST reviews the Audit Report File and the Audit Report and, within ten business days, informs the NCOA Licensee as to which one of the following situations exists:

- The NCOA Licensee has passed the Initial Audit of their matching software and may now proceed with the audit of their monthly update process.

- The NCOA Licensee needs to return to the Prepare for Initial Audit process to fix or repair their software (based on specific comments and suggestions for corrections and improvements) then to repeat the Perform Initial Audit / Testing process to rerun their Audit Data File and resubmit the Audit Report File and the Audit Report.
- The NCOA Licensee needs to be re-audited (i.e., all of the NCOA Initial Audit processes need to be repeated). A second audit file will be forwarded to the NCOA Licensee upon request but third and subsequent audit files will only be forwarded upon receipt of an Audit Fee.

NOTE: The NCOA Licensee will not be forwarded the Monthly Updates until their matching software has passed the audit.

2.4.2 NCOA Initial Audit / Testing Diagram



2.5 NCOA AD HOC AUDITS

2.5.1 NCOA Ad Hoc Audits Description

On an as required basis, an NCOA Audit will be performed with reasonable notice given to the NCOA Licensee. It will test the licensee's matching software and processes in a similar manner to that for the Initial Audit.

The Adhoc Audit will also review the NCOA Licensee's processes and procedures to ensure that the NCOA data is being kept and used as per the Privacy obligations of the NCOA License Agreement. The Adhoc Audit may be done at the NCOA Licensee's request (e.g., when they

produce a new version of their NCOA Matching Software that they want to be recognized by CANADA POST) or at CANADA POST's request (e.g., when information concerning alleged misuses of the NCOA data or of unreported changes to the licensee's matching software is received by CANADA POST).

The process for Adhoc Audits is identical and is very similar to that of the Initial Audit.

PREPARE FOR AUDIT:

23) ***CANADA POST schedules the audit with the NCOA Licensee***.

24) CANADA POST provides the NCOA Licensee with an Audit Data File.

PERFORM AUDIT:

25) ***The NCOA Licensee matches the names and addresses in the Audit Data File against their NCOA Database.***

26) The NCOA Licensee produces the Audit Report File (see details in Section 4.3 below) and the Audit Report (see details in Section 3.8 below) and forwards them to CANADA POST within five business days of receiving the Audit Data File.

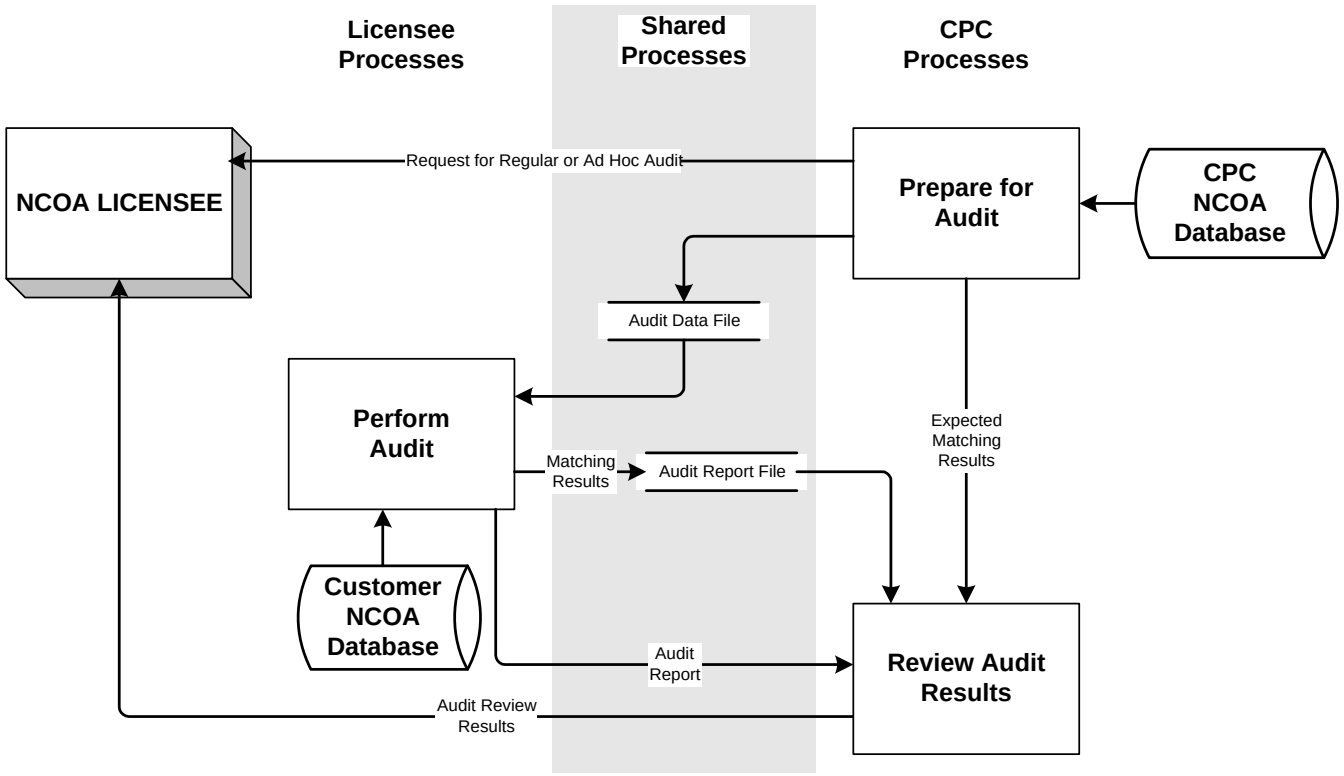
REVIEW AUDIT RESULTS:

27) CANADA POST reviews the Audit Report File and the Audit Report and, within ten business days, informs the NCOA Licensee as to which one of the following situations exists:

- The NCOA Licensee has passed the Audit of their matching software and may continue their NCOA operations as before
- The NCOA Licensee needs to update their software (based on specific comments and suggestions for corrections and improvements), rerun their Audit Data File and resubmit the Audit Report File and the Audit Report
- The NCOA Licensee needs to be re-audited (a second Audit File will be forwarded to the NCOA Licensee upon request but third and subsequent audit files will only be forwarded upon receipt of an Audit Fee).

NOTE: The NCOA Licensee will not be forwarded any further Monthly Updates until their software has passed the adhoc audit.

2.5.2 NCOA Adhoc Audits Diagram



2.5.3 NCOA On-Site Customer Assessments

As part of the NCOA processes, Canada Post reserves the right to visit licensees on site to conduct customer assessments to ensure that the NCOA data is being used according to the rules and processes laid out in the NCOA Handbook and the NCOA License Agreement. Reasonable notice will be provided and mutual agreed time and date will be arranged prior to the visit.

PART 3: TECHNICAL SPECIFICATIONS

3.1 INTRODUCTION

This section provides the designers and developers of NCOA Matching Software with a complete list of mandatory requirements that **must** be met (such mandatory requirement statements have the word **must** in bold). A number of recommended – but not mandatory – requirements are also provided (such requirement statements have the word **should** in bold). The content and layout of the NCOA Database and files that are referenced in this section are detailed in PART 4: Data Specifications of this handbook.

3.2 ASSUMPTIONS AND RECOMMENDATIONS ON DATA TO BE MATCHED

The following assumptions have been made with regards to the preparation of name and address data before NCOA Matching begins:

- The NCOA Licensee name data has been converted to all capital letters with accents removed. Licensee supplied names should be parsed into First Name, Middle Name (Initial) and Last Name fields.
- Prefix Titles and Suffix Titles should be parsed into separate fields. It is recommended that special punctuation characters and blanks be removed prior to matching.
- It is assumed that the addresses to be matched against the NCOA Database have previously been passed through a recognized address accuracy software package.
- The NCOA Data has been corrected and validated according to the following:
    - All address elements are stored in upper case letters with all accents removed
    - Standard symbols are used for the street type, the street direction, the delivery mode type, the delivery installation type and the province.
    - All punctuation has been removed between elements (Note, however, that punctuation which is part of an official name - as in ST. JOHN'S, for example - has not been removed)
    - The acceptable alternate street name or acceptable alternate municipality name were retained as entered and not changed to the official name
    - Since the NCOA Database maintains the Street Address Number Suffix as a 3-digit field so that fractions can be represented as 1/4, 1/2 or 3/4, mailing list address suffixes may have to be maintained in a compatible manner

3.3 GENERAL ASSUMPTIONS ON MATCHING SOFTWARE

The following general assumptions have been made with regards to the NCOA Licensee's NCOA Matching Software:

- There are no match criteria for the unit designator word such as apartment, suite, office, etc. as it is not maintained on the NCOA Database.
- When a mailing list record matches the NCOA name and address for more than one mover (i.e., different fmly_id), the match **must** be made to the NCOA record with the most recent move date. For example: if the NCOA Database has two move records showing an individual, family or business moving from address A to address B and also from address A to address C, then the A to C move must be considered the valid match provided that the move date is more recent. If the move dates are the same, then the match where the value of the Family Id is largest (i.e., the NCOA record created last) **should** be used.
- The NCOA Database contains linkages between change of address records for individuals or families that have moved more than once in the time frame covered by the database (as in the case of moving from address 'A' to address 'B' to address 'C'). These links are maintained in the chain_id field. Regardless of whether the current address on the mailing list is address 'A' or is address 'B'. The matching software **must** link to the mover to address 'C' in order to obtain the mover's most recent address.
- The NCOA Database contains a number of records with unparsed addresses. They are unparsed because they have been flagged as invalid by recognized Address Accuracy software. These invalid addresses are included because they are, in spite of being invalid, the best address information available for the mover. The NCOA Matching Software need not do matching against those addresses.

3.3.1 Nixi Records

Nixi records are those records in the NCOA database where only the name and old address are listed. These records will have a nixi_indvalue of "Y" when customers have opted not to have their new address information in the NCOA database. These nixi records will appear in the database at the expiry of the Change of Address service. These records will be flagged by a "Y" and there will be no new address information provided. The intention of having these records included in the NCOA database is that it still provides valuable information for the mailer. Mailers and mail service providers that are processing NCOA should remove these records from their databases, if they receive matches on the old address. By doing so, mailing costs can be saved for the mailer, as mail pieces that are intended for the customer where no new address is provided, will not be returned to sender.

3.3.2 Deceased Records

Deceased records are flagged in the NCOA Database with a "D" in the coan_typ field, indicating an estate move. It is Canada Post's recommendation that you remove these individuals from your database, unless your mailing is of importance to the executor of the deceased individual's estate, in which case the mail piece should be forwarded.

3.4 NAME MATCHING

Although exact matching of fields provides the highest level of comfort, it can also provide the lowest match rate. Given the significant occurrence of input errors, particularly in the spelling of names, adopting a weighted approach to matching names can provide a higher match rate and at the same time provide a high level of comfort (an example of a useful weighting algorithm is presented in Section 4.4 below. Other weighted matching algorithms can be found on the Internet).

Family moves and individual moves are differentiated in the NCOA Database. If the customer-input record matches an NCOA record flagged as an individual move, first name matching **must** be performed. Attention **must** also be given to name suffixes.

Since many NCOA move records contain more than one surname and many first names (see "NCOA Move Records" in Section 4.7.1), matching software **must** be able to compare the names on the mailing list record to the numerous names associated with an NCOA move record.

The use of hyphenated names is becoming more popular. Often, only one of the hyphenated names appears in a move record. Therefore, the matching software **should** be written to take into account that both parts of a hyphenated name may not be present in either the mailing list or the NCOA Database.

Names with embedded blanks (Van Damme, Van Der Wey, and Mary Lou) cause matching problems since sometimes the blanks are missing and sometimes the blanks are inserted incorrectly. The matching software **should** be able to identify matches whether or not the embedded blanks are present in either the mailing list or the NCOA Database.

Names with a period or an apostrophe (O'Conner, O'Reily, and D'Arcy) can cause matching problems since sometimes the period or apostrophe is left out. The matching software **should** be able to identify matches whether or not the apostrophes or blanks are left out of either the mailing list or the NCOA Database.

3.4.1 Individual Matching - Recommended

It is highly recommended that licensees use individual matching rules (both the first and last name must match.) if a potential NCOA match record is a family move but has a populated first

name. This is advisable, especially if the database will be used for sensitive mailings. Only if the record contains a blank first name, should family matching principles be used. By adopting this principle to the matching software's functionality, the risk of mismatched mail items will be reduced. The reason for this recommendation is that there are many customers that select a Family move when only one member or part of the household is moving.

3.4.2 First Name Matching

In the case of Family Moves, where the move record has a populated first name, it is highly recommended that the matching be done on both the first and last names. See the optional use of the First Name field for Business Moves in the Business Name Matching section below.

First name matching **must** be done for Individual Moves.

Matching on only initials (when dealing with an Individual Move) can lead to the incorrect re-direction of mail, if more than one member in the family has the same first name initial. If however, the first and middle name initials are the same, it can be considered a match.

A nickname table **should** be used to increase the number of matches (e.g.: William = Bill, Elizabeth = Liz, Lizzy, Beth, Bets and Betty).

A "weighted matching" routine **should** be used on the first name to yield the best results (see references in Name Matching above and an example weighting algorithm in Weighted Name Matching below).

Weighted matching may not prove to be practical in some development applications. In such cases, if the shorter name string is contained in the longer string (e.g. Nan = Nancy, Carol = Carolyn), a match may be considered to exist.

The attached table illustrates both unacceptable and acceptable matches for first name matches.

Customer List			NCOA			Match Result
First Name	Middle Name	Last Name	First Name	Middle Name	Last Name	
J		SMITH	J		SMITH	Not OK
JOHN		SMITH	J		SMITH	Not OK
JOHN		SMITH	J	A	SMITH	Not OK
JOHN	A	SMITH	J	A	SMITH	OK
J		SMITH	J	A	SMITH	Not OK
JOHN	ALAN	SMITH	J	A	SMITH	OK
JOHN		SMITH	JOHN	ALAN	SMITH	OK
J	ALAN	SMITH	JOHN	A	SMITH	OK
J	A	SMITH	J	A	SMITH	OK

3.4.3 Last Name Matching

For Individual and Business Moves, the last names **must** either be an exact match or pass a weighted match threshold (see Section 3.4.4 below).

An exception to this rule exists for hyphenated names. If one file contains a hyphenated name and the other contains only one of the last names, as long as the last name matches one of the hyphenated parts, it **must** be considered a match.

Last names with embedded blanks, periods or apostrophes **must** be compared after these characters are removed, in order to take into account the fact that one of the files may have left out the character or may have added one in error.

Weighted matching may not prove to be practical in some development applications. In such cases, if the first several characters match, it **must** be considered a match. Usually this means that a match exists if all of the characters in the shorter name exactly match the first characters in the longer name.

3.4.4 Prefix and Suffix Title Matching

Title matching only applies to Individual Moves. Given that less than 0.1% of Individual Moves in the NCOA Database contain titles, title matching is normally not done. **If it is done**, consider the following:

- If a Suffix Title (e.g. Sr., Jr., etc.) is present on the Mailing List, there **should** be a match on the Suffix Title.
- If a Suffix Title is present in the NCOA Record, there **must** be a match on the Suffix Title.
- Prefix Titles **should** be ignored.

3.4.5 Weighted Name Matching

There are a number of potentially effective weighted-matching schemes in existence. CANADA POST is not recommending any particular approach or score thresholds, but a weighted approach to matching names **should** be used to improve the match rate and match accuracy of their software.

If an NCOA Licensee elects to use a weighted-matching approach, it is recommended that the algorithm that is selected be applied to a number of real-world sample names to determine what threshold value(s) would be appropriate.

The United States Postal Service NCOA Service uses the Weighted-Match Formulae below. They provide a Weight Score and a Penalty Score that may or may not be combined into a single match-no-match threshold.

To clarify the calculations and procedures below, the following example names are used:

Name 1 = ABCDEFGH

Name 2 = DBCEFFHAG

The factors used in the calculation of the weight and the penalties are determined as follows:

L1 = length of Name1 (= 8 for the example)

L2 = length of Name 2(= 9 for the example)

ML = the length of the longer string (= 9 for the example)

N is calculated by dividing ML by 2, truncating that to a whole number and subtracting 1 (= 3 for the example, i.e., 9 / 2 = 4.5, truncate to 4 and subtract 1)

SR = Search range which is the current letter's position plus or minus N characters

C = number of matched letters in one name. It is found by comparing each letter in one string to each letter within the search range of the other string (= 7 in the example: the A in Name 1 would not be considered a match because there isn't an A within 3 characters of its position in Name 2 but all of the other letters do have a match within the search range)

TR = number of transpositions. It is calculated by comparing Name-1 and Name-2 character by character, counting the number of differences and dividing by 2 (=2.5 in the example: the A, D, E, G and H in Name1 are different from the letter in the same position in Name 2, i.e., 5 letters different divided by 2 = 2.5).

The Weight and Penalty values are calculated as follows:

Weight = 500*[(**C**/**L1**) + (**C**/**L2**) + ((**C**-**TR**)/**C**)]

Penalty = 20*[((**L1**-**C**)/**L1**) + ((**L2**-**C**)/**L2**)+(**TR**/**C**)]

In the example:

L1 = 8, **L2** = 9, **N** = 3, **C** = 7, **TR** = 2.5.

Therefore:

Weight = 500*[(7/8) + (7/9) + ((7-2.5)/7)] = 1148

Penalty = 20*[((8-7)/8) + ((9-7)/9) + (2.5/7)] = 14

Note that, if this weighted matching algorithm is used, it **must not** be used for names that are less than four characters long.

3.4.6 Business Name Matching

For those NCOA Licensees who wish to do matching for Business Moves (i.e., REC_TYP = B), the following points should be kept in mind:

- The address matching process **must** be identical to that used for Individual and Family Moves
- For some Business Move Records, personal names are also included. In these cases, the field REC_TYP code is 'B', but the field FRST_NME and LST_NME fields are populated. A common example would be a move involving a home-based business—the person is obligated to fill out a business COAN, but they may wish to include their personal name in addition to the business name. In these situations, licensees should use the Individual name matching rules on the personal name data.
- When a personal name is included in a Business Move the same matching algorithm **must** be used as is used for Individual Names
- Business Moves are NOT chained (i.e., chain_id will always equal zero)
- Business Name matching must provide a high degree of confidence that the business that is actually moving is the one that is identified by the matching process (this is simplified by matching on the Old Address before any attempt is made to match on the Business Name)
- The following table provides a few real-world examples of correctly matched Business Names (in all cases an Address Match was found first):

Mailing List Business Name	NCOA Business Name
PPM 2000 INC	PPM 2000 INC/O'SULLIVAN
BUFFALO PARCEL COURIER SVC LTD	BUFFALO PARCEL COURIER
TEXTILE & GEN DISTRIBUTORS LTD	T&G TEXTILE & GENERAL DIST
IMAGE COMMERCIAL UNIFORMS CO	COMMERCIAL UNIFORMS CO LTD
NATIONAL OILWELL SUPPLY	AKA NATIONAL OILWELL-DRECO
RL BREWS LTD	R L BREWS & SON LTD
LONDON LIFE INSURANCE CO	LONDON LIFE
ST MICHAE'S HEALTH CENTRE	ST.MICHAE'S HEALTH CARE
KIDNEY FOUNDATION OF CANADA	THE KIDNEY FOUNDATION CA

3.4.7 Move backs and Recursive Matching

Move back records:

A move back record is a move record in the NCOA database where the old and new addresses have been reversed. The reason for this reversal is to restore the original address for moves (COANS) that have been cancelled. This allows an NCOA licensee to correct the updated address in a customer's database to reflect the original address. Move backs are really intended to assist licensees that run the same file on a periodic basis (monthly, quarterly etc).

Recursive Chaining:

Chain IDS that are included in the NCOA database are by definition limited. In particular, it's not possible to chain a family move to an individual move. For example, if you had the Smith family moving from address A to address B, and then Bob Smith fills out an individual COAN for a move from address B to address C, these moves clearly cannot be linked in the NCOA database as Bob is the only person that moved. However, if a licensee has Bob Smith at address A on their file, clearly it should be updated to address C. The only way to do this is to perform a recursive chain. Licensees need to ensure that they exclude move back records from the recursive chaining process. Recursive chaining can be complicated and should be considered an optional process.

- First, match Bob Smith at address A to NCOA. This should return the family move that has the Smith's moving to address B.
- Next, match Bob Smith at address B to NCOA. This should return the individual move that has Bob Smith moving to address C.
- Finally, match Bob Smith at address C to NCOA. This shouldn't return anything, so at that point the recursive chaining process stops and the last address, C, is used.

Licensees **must** make sure that they exclude move back records from the recursive chaining process. As a result, steps #2 and #3 should read:

- Next, match Bob Smith at address B to NCOA records **that are not movebacks.** This should return the individual move that has Bob Smith moving to address C.
- Finally, match Bob Smith at address C to NCOA records that are not movebacks. This should not return anything, so at that point the recursive chaining stops and the last address, C, is used.

Recursive chaining should be considered an optional process because of its complexities.

The example below illustrates a case where recursive chaining should not be used as it results in misdirected mail.

Example:

If John Smith originally purchases a family Change of Address, moving from:

4 ACORN PL
GUELPH ON N1E 6L6

To:

3 BATER AVE
TORONTO ON M4K 2C1

This is a temporary move, as John moves in with his father, Dave Smith. Then, if John Smith cancels his Change of Address service, it would become a Moveback record and would then look like the following:

Old Address:

3 BATER AVE
TORONTO ON M4K 2C1

New Address:

4 ACORN PL
GUELPH ON N1E 6L6

John now purchases another family Change of Address:

Old Address:

4 ACORN PL
GUELPH ON N1E 6L6

New Address:

2 HEATHERGLEN COVE
WINNIPEG MB R2E 0B8

In this case, if Recursive Chaining were to use the Moveback record in NCOA processing, mail intended for Dave Smith at 3 BATER AVE would be redirected in error to 2 HEATHERGLEN COVE, assuming there was a match on the same family name.

3.5 ADDRESS MATCHING

NOTE: An NCOA Licensee can greatly improve the overall matching rate for addresses by running their mailing list(s) through a CANADA POST recognized Address Accuracy Software Package before attempting any NCOA Matching.

As well as insuring that the addresses on the mailing list are valid, some Address Accuracy software packages also determine the type of address being validated. Having the Address Type already determined facilitates the matching processes defined below. If the Address Type has not been predetermined, the address matching software must determine it.

The address types covered below are:

- Civic Addresses
- Streets Served by Route Addresses
- Postal Box Addresses
- Route Service Addresses
- General Delivery Addresses

For each of those types of addresses the following information is presented:

- A properly formatted fictitious address example (more details on the formatting of each address type can be found in CANADA POST's "Canadian Addressing Guide")
- A table containing:
  - its address components
  - the associated NCOA Data-Field Name (were applicable)
  - a fictitious example of that type of address split (parsed) into its address components
- a list of address components that need to match in order for the Mailing List address to be considered a match with the NCOA address (If the addresses in the Mailing List have been validated, only the indicated subset of the address components needs to be matched. Otherwise, all address components need to match.)
- a note on alternate name considerations

3.5.1 Type-1 Address – Civic Address

Fictitious address example:

10A MAIN ST W SUITE 1023
OTTAWA ON K1A 3J4

Address Component	NCOA Data Field-Name	Example
Street Address Number	Old(new)_st_adr_nbr	10
Street Address Number Suffix	Old(new)_st_adr_nbr_sfx_cde	A

Address Component	NCOA Data Field-Name	Example
Street Name	Old(new)_st_nme	MAIN
Street Type	Old(new)_st_typ_cde	ST
Street Direction	Old(new)_st_drctn_cde	W
Unit Designator	n / a	SUITE
Suite Number	Old(new)_ste_nbr	1023
Municipality	Old(new)_mncplt_nme	OTTAWA
Province	Old(new)_prov_cde	ON
Postal Code	Old(new)_pstl_cde	K1A 3J4

To uniquely identify a validated Type-1 Address, the following address components **must** be matched:

- Address Type
- Postal Code
- Street Address Number
- Street Address Number Suffix (if it exists)
- Suite Number (if it exists)

Note: The street name, street type, street direction or municipality name may be stored with an alternate name on either the NCOA Database or the NCOA Licensee's mailing list(s). The matching software **must** handle such conditions.

3.5.2 Type-2 Address – Street Served by Route Address

Fictitious address example:

10A MAIN ST W SUITE 1023
RR 3
OTTAWA ON K1A 3J4

Address Component	NCOA Data Field-Name	Example
Street Address Number	Old(new)_st_adr_nbr	10
Street Address Number Suffix	Old(new)_st_adr_nbr_sfx_cde	A
Street Name	Old(new)_st_nme	MAIN
Street Type	Old(new)_st_typ_cde	ST
Street Direction	Old(new)_st_drctn_cde	W
Unit Designator	n / a	SUITE
Suite Number	Old(new)_ste_nbr	1023
Route Service Type	Old(new)_route_serv_typ_dsc	RR

Address Component	NCOA Data Field-Name	Example
Route Service Number	Old(new)_ route_serv_nbr	3
Municipality	Old(new)_mncplt_nme	OTTAWA
Province	Old(new)_prov_cde	ON
Postal Code	Old(new)_pstl_cde	K1A 3J4

To uniquely identify a validated Type-2 Address, the following address components **must** be matched:

- Address Type
- Postal Code
- Street Address Number
- Street Name
- Street Address Number Suffix (if it exists)
- Suite Number (if it exists)

Note: The street name, street type, street direction or municipality name may be stored with an alternate name on either the NCOA Database or the NCOA Licensee's mailing list(s). The matching software **must** handle such conditions.

3.5.3 Type-3 Address – Postal Box Address

Fictitious address example:

PO BOX 4000 NEPEAN STN A
OTTAWA ON K1A 2J4

Address Component	NCOA Data Field-Name	Example
Lock Box Description	Old(new)_lock_box_dsc	PO BOX
Lock Box Number	Old(new)_lock_box_nbr	4000
Delivery Installation Area Name	Old(new)_area_nme	NEPEAN
Delivery Installation Type	Old(new)_instl_typ	STN
Delivery Installation Qualifier	Old(new)_instl_dsc	A
Municipality	Old(new)_mncplt_nme	OTTAWA
Province	Old(new)_prov_cde	ON
Postal Code	Old(new)_pstl_cde	K1A 2J4

To uniquely identify a validated Type-3 Address, the following address components **must** be matched:

- Address Type
- Postal Code

- Lock Box Number.

3.5.4 Type-4 Address – Route Service Address

Fictitious address example:

CONC 4 LOT 3
RR 2 NEPEAN STN A
OTTAWA ON K1A 1J5

Address Component	NCOA Data Field-Name	Example
Route Service Type	Old(new)_route_serv_typ_dsc	RR
Route Service Number	Old(new)_ route_serv_nbr	2
Delivery Installation Area Name	Old(new)_area_nme	NEPEAN
Delivery Installation Type	Old(new)_instl_typ	STN
Delivery Installation Qualifier	Old(new)_instl_dsc	A
Municipality	Old(new)_mncplt_nme	OTTAWA
Province	Old(new)_prov_cde	ON
Postal Code	Old(new)_pstl_cde	K1A 1J5
Extra Information	Old(new)_adr_1	CONC 4 LOT 3

To uniquely identify a validated Type-4 Address, the following address components **must** be matched:

- Address Type
- Postal Code
- Route Service Number
- Extra Information

The Type-4 Address includes many points of call (distinct addresses). In order to ensure uniqueness, the addressee name is not sufficient. The extra information **must** be used. The extra information can be either Civic Address Information or Other Information.

Civic Address Information

Whenever a Type-4 Address is identified, if civic information was indicated on the COAN form, it is retained as extra information and not validated. This information will not be parsed and will be stored as a single line of information on the extra information field.

Other Information

When information such as compartment, site, box, lot and concession is indicated on the COAN form, it is retained on the NCOA Database and stored on the Address Line 2 field. This information is not parsed.

The following table contains a list of commonly used designators and abbreviations. Each licensee **should** add to this list as they identify occurrences of such values in their address information.

Designator	Abbreviations
BOÎTE	BOÎTE, B, B-
BOX	BX, B, B-
COMPARTIMENT	COMP, C, C-
COMPARTMENT	COMP, C, C-
CONCESSION	CON, CONC
EMPLACEMENT	EMPL
GROUP	GRP, G, G-
LOT	L, L-
TOWNSHIP	TWSHP, TWS
MERIDIAN	M, M-
SECTION	S, S-
RANGE	R, R-
RANG	R, R-
SITE	S, S-

Each of the above designators is usually followed by a number and can appear in any order on the extra information line. The information can appear with a hyphen, a space or no space between the abbreviation and the number.

Examples: SITE 3 BX 9
C-33 S-1
BOX 21 S1

3.5.5 Type-5 Address – General Delivery Address

Fictitious address example:

GD NEPEAN STN A
OTTAWA ON K1A 1J5

Address Component	NCOA Data Field-Name	Example
General Delivery Description	Old(new)_gnrl_dlvry_dsc	GD
Delivery Installation Area Name	Old(new)_area_nme	NEPEAN
Delivery Installation Type	Old(new)_instl_typ	STN
Delivery Installation Qualifier	Old(new)_instl_dsc	A
Municipality	Old(new)_mncplt_nme	OTTAWA
Province	Old(new)_prov_cde	ON
Postal Code	Old(new)_pstl_cde	K1A 1J5

NOTE: Type-5 Addresses cannot be uniquely identified. An attempt **must not** be made to match this type of address.

3.6 OTHER MATCHING CONSIDERATIONS

3.6.1 Matching Criteria Not Included

In this section, some additional considerations are discussed that cover the exceptions for address matching and explanations as to why they were not included in the matching guidelines.

Note that the portions of the two example addresses presented that are different for each exception are bolded.

For type-1 addresses, there are occurrences of addresses for which the same postal code points to more than one address with the same street address number.

E.g.: 99 SUMMER**FIELD** RD
AIRDRIE AB T4B 1X3

99 SUMMER**WOOD** RD
AIRDRIE AB T4B 1X3

It has been determined that these instances represent less than 0.8% of the total number of type-1 address. CANADA POST will not be auditing for the street name, the street type and the street direction for type-1 addresses.

For type-2 addresses, there are occurrences of addresses for which the postal code points to more than one address with the same street address number and street name:

E.g.: 702 BANKVIEW **CLOSE**
SS 6
DRUMHELLER AB T0J 0Y6

702 BANKVIEW **DR**
SS 6
DRUMHELLER AB T0J 0Y6

There are very few instances of the street type or street direction being required to uniquely identify the address. Therefore, CANADA POST will not be auditing for the street type and the street direction for type-2 addresses.

For type-4 address, there are occurrences of addresses for which the same postal code points to more than one address with the same route service number:

E.g.: **RR 1**
CHASE BC V0E 1M0

RR 2
CHASE BC V0E 1M0

Since, matching type-4 addresses, require matching on the extra information as well as the route service number, there is no need to include the route service type as a match criteria for type-4 addresses.

3.6.2 Use of Additional Address Components for Matching

The municipality and province fields are not considered as matching criteria for any of the address types. These address components are not needed to uniquely identify an address. It is possible however, that some organization may use those fields for matching purposes. In such cases, it is important to note that:

- the municipality name maintained on either the NCOA Database or the mailing list(s) might be a valid alternate name. The address matching software should be able to resolve the use of an alternate municipality name.

For Type-2 Addresses, the Route Service Type and Route Service Number has not been retained as match criteria in the matching guidelines. These address components are not needed to uniquely identify a Type-2 Address. It is possible however, that some organizations may use those fields for matching purposes. In such case, it is important to note that there is a distinction between an Urban Type-2 Address and a Rural Type-2 Address. The distinction between the two is, for rural addresses; there is a zero in the second position of the Postal Code. For Urban Type-2 Addresses, the route service information is not mandatory and it is possible that this information was not entered for certain addresses on either the NCOA Database or the licensee's mailing list(s). If the route service information is used for address matching, then the matching software has to take into account this distinction. For Rural Type-2 Address, the route service information is always mandatory.

The Street Type, the Street Direction, the Delivery Mode and the Delivery Installation Type fields were not considered as matching criteria for any of the address types. These address components are not needed to uniquely identify an address. It is possible however, that some organization may use these fields for matching purposes. In such cases, it is important to note that these fields are considered translatable and the matching software will have to support the translations. Also, the Symbol and the Long Form must both be considered valid and equivalent.

The English and French Symbols and Long Names for each of those address components are provided in the tables that follow.

Street Type			
English		French	
Symbol	**Long Form**	**Symbol**	**Long Form**
ST	STREET	RUE	RUE
BLVD	BOULEVARD	BOUL	BOULEVARD
AVE	AVENUE	AV	AVENUE

Street Direction			
English		French	
Symbol	**Long Form**	**Symbol**	**Long Form**
E	EAST	E	EST
N	NORTH	N	NORD
NE	NORTH EAST	NE	NORD-EST
NW	NORTH WEST	NO	NORD-OUEST
S	SOUTH	S	SOUTH
SE	SOUTH EAST	SE	SUD-EST
SW	SOUTH WEST	SO	SUD-OUEST
W	WEST	O	OUEST

Delivery Mode Type			
English		French	
Symbol	**Long Form**	**Symbol**	**Long Form**
GD	GENERAL DELIVERY	PR	POSTE RESTANTE
MR	MOBILE ROUTE	IM	ITINERAIRE MOTORISE
PO BOX	POST OFFICE BOX	CP	CASE POSTALE

Delivery Mode Type			
English		French	
Symbol	**Long Form**	**Symbol**	**Long Form**
RR	RURAL ROUTE	RR	ROUTE RURALE
SS	SUBURBAN SERVICE	SS	SERVICE SUBURBAIN

Delivery Installation Type			
English		French	
Symbol	**Long Form**	**Symbol**	**Long Form**
RPO	POSTAL OUTLET	CSP	COMPTOIR POSTAL
STN	STATION	SUCC	SUCCURSALE
LCD	LETTER CARRIER DEPOT	PDF	POSTE DE FACTEURS
CMC	COMMUNITY MAIL CENTRE	CPC	CENTRE POSTAL COMMUNAUTAIRE
CDO	COMMERCIAL DEALERSHIP OUTLET	CC	CONCESSION COMMERCIALE

3.7 NCOA MONTHLY UPDATES

3.7.1 Overview

This section describes the Monthly Update process and provides an overview of the composition of the monthly Update file(s).

Section 4.4 below provides details of the content and layout of the Monthly Update file(s).

The Monthly Update has one file for the flat-file version of the NCOA Database and a file for each of the four relational tables for the relational version of the NCOA Database. Each file contains one header record and a variable number of add, modify and delete transaction records.

3.7.2 Processing Header Records

The ***Header Record*** provides the Release Date, Release Number, File-Type Indicator, a Purge Date and Total Transaction Counts for each Transaction Type.

The ***Release Date and Release Number*** are included in each of the Monthly Update Reports (see details of those reports in Section 3.8 below).

The ***File-Type Indicator*** is used to confirm that the correct file is being used for each update process.

Because the NCOA Database maintains a maximum of three years of historical data, the ***Purge Date*** must be used to determine which records should be purged from the database each month. Those records that have a Mail-Forwarding Start-Date (the strt_dte field) older than the specified Purge Date must be deleted from the NCOA Database during the monthly update process. For relational version subscribers, purge records must be removed from all four tables to avoid orphan records.

The ***Transaction Count*** values are used as a check mechanism to ensure that the expected number of transactions is processed for each Monthly Update File.

3.7.3 Processing Transaction Records

Add Transactions

The existence of an Add Transaction in a Monthly Update File indicates that an individual, family or business has supplied CANADA POST with a COAN and requires that a move-record be inserted into the appropriate table (or into the Master File).

The field layout for Add Transactions is identical to the NCOA Flat-File Structure, except for the addition of a Transaction Type field.

Modify Transactions

Modify Transactions occur when an individual, family, business or CANADA POST (e.g., when an invalid new address was captured from a COAN) indicates that the name, old address or new address on the COAN needs to be changed. Consequently, Modify Transactions change an existing record in the NCOA Database.

Using the fmly_id or the combination of fmly_id and prsn_id to identify the record to be updated (for the flat-file version) or as a unique key (for the relational version), the Modify Transaction can be processed as an update-in-place transaction or by the combination of a delete transaction and an insert transaction.

Delete Transactions

Delete Transactions occur when an individual, family or business cancels a COAN (i.e. they didn’t actually move).

For Delete Transactions only the fmly_id or fmly_id and prsn_id values are populated on the transaction records (all remaining fields are blank-filled). This data provides a unique key with which to identify and delete the appropriate move record.

Moveback Processing

Moveback records are used to address situations where customers submit Valid Change of Address Notifications (COANs) and subsequently cancel their mail forwarding before the six-month mail redirection period ends.

When a cancellation of this type occurs, the original move (from address 'A' to address 'B') is removed from the NCOA Database and a Moveback record (from address 'B' to address 'A') is inserted. A Moveback Record is identified by setting the COAN_TYP to "M"

If the COAN is cancelled within the same month that it was submitted, the move is not reflected in the NCOA Database.

If the COAN is cancelled in the second, third or fourth month after the COAN was submitted, a Moveback record is created so that the NCOA Licensee can determine how best to process the move information. For example, if this is the first time that the NCOA Licensee has done a monthly update or if the NCOA Licensee has not updated any mailing lists during the period since the original COAN was submitted, the original COAN can just be deleted from the NCOA Database and the Moveback added. If one or more Mailing Lists have been updated with the original COAN information, the Moveback may have to be processed as a Change Transaction.

Rural to Urban Address Conversion Processing

When the COAN Type of a transaction is Rural to Urban Address Conversion (COAN_TYP = U), the individual, family or business has not changed physical locations. Rather, the old address in the transaction is the former (no longer correct) rural address and the new address is the new urban address that must be used for addressing mail pieces as of the associated Start Date.

This COAN Type was initially introduced to handle the province-wide 911 Emergency Service Program in New Brunswick. For that program, only individual and business move transactions were used.

A Rural to Urban Address Conversion transaction is processed the same as any other move transaction.

3.8 NCOA REPORTING

The following reports need to be developed and produced as per PART 2: The NCOA Recognition Process of this handbook.

Move Date Summary Report

The Move Date Summary Report provides a count of mail forwarding start dates, by year and month, for the entire NCOA Database. Subscribers to the relational version of the NCOA Database should perform the counts using the strt_dte field in the NCOA_INFO table. Flat-file subscribers should use the strt_dte field in the NCOA_FLAT table.

A **sample** of the **Move Date Summary Report** follows:

```
CUSTOMER NAME:            ABC DATA PROCESSING
NCOA DATABASE TYPE:       RELATIONAL
NCOA UPDATE RUN DATE:     2000/10/17

NCOA SOFTWARE SUPPLIER:   ABC DATA PROCESSING
NCOA SOFTWARE VERSION:    1.0

NCOA RELEASE NUMBER:      043
NCOA RELEASE DATE:        2000/10/15
FILE NAME:                NCOA_INFO *
```

STRT_DTE	COUNT
1997/10	82,477
1997/11	42,454
1997/12	63,225
1998/01	47,763
1998/02	78,780
1998/03	56,536
1998/04	72,465
1998/05	73,435
1998/06	121,854
1998/07	112,693
1998/08	87,447
1998/09	133,812
1998/10	68,541
1998/11	63,186
1998/12	50,485
1999/01	43,200
1999/02	44,027

1999/03	147,817
1999/04	60,900
1999/05	77,780
1999/06	110,478
1999/07	110,815
1999/08	88,693
1999/09	148,001
1999/10	68,478
1999/11	68,363
1999/12	54,274
2000/01	47,289
2000/02	49,134
2000/03	152,249
2000/04	64,018
2000/05	81,579
2000/06	107,241
2000/07	95,202
2000/08	63,110
2000/09	47,356
	==========
	2,885,157

***** The "FILE NAME" field should contain either NCOA_INFO for subscribers to the relational version, or NCOA_FLAT for subscribers to the flat-file version.

Move Type Summary Report

The Move Type Summary Report provides a count of change of address move types (Family, Individual and Business) for the entire NCOA Database. Subscribers to the relational version of the NCOA Database should perform the counts using the rec_type field in the NCOA_INFO table. Flat-file subscribers should use the rec_type field in the NCOA_FLAT table.

A **sample** of the **Move Type Summary Report** is as follows:

```
CUSTOMER NAME:           ABC DATA PROCESSING

NCOA DATABASE TYPE:      RELATIONAL
NCOA UPDATE RUN DATE:    2000/10/17

NCOA SOFTWARE SUPPLIER: ABC DATA PROCESSING
NCOA SOFTWARE VERSION:  1.0
NCOA RELEASE NUMBER:    043

NCOA RELEASE DATE:       2000/10/15
```

```
FILE NAME:              NCOA_INFO
REC_TYP          COUNT
--------- -----------
B              153,076
F            1,231,185
I            1,500,896
           ===========
             2,885,157
```

Address Type Summary Report

The Address Type Summary Report provides a count of change of address types for old and new addresses, for the entire NCOA Database. Subscribers to the relational version of the NCOA Database should perform the counts using the old_adr_typ_cde field in the NCOA_ OLD_ADDR table and the new_adr_typ_cde in the NCOA_NEW_ ADDR table. Flat-file subscribers should use the old_adr_typ_cde and new_adr_typ_cde fields in the NCOA_FLAT table.

A **sample** of the **Address Type Summary Report** is as follows:

```
CUSTOMER NAME:          ABC DATA PROCESSING
NCOA DATABASE TYPE:     FLAT-FILE
NCOA UPDATE RUN DATE:   2000/10/17

NCOA SOFTWARE SUPPLIER: ABC DATA PROCESSING
NCOA SOFTWARE VERSION:  1.0

NCOA RELEASE NUMBER:    043
NCOA RELEASE DATE:      2000/10/15
FILE NAME:              NCOA_FLAT *
ADR_TYP_CDE  OLD_ADDR      NEW COUNT
------------ ----------- -----------
(BLANK)                0       1,613
0                735,238     413,741
1              3,481,655   3,712,473
2                111,256     129,017
3                255,921     271,708
4                152,847     179,153
5                 25,000      54,212
             =========== ===========
               4,761,917   4,761,917
```

Update Statistics Report

The Update Statistics Report provides a summary of the results of the NCOA update process. For subscribers to the relational version of the NCOA Database, four different copies of this report must be produced, one each for the NCOA_INFO, NCOA_NAMES, NCOA_OLD_ADDR, and NCOA_NEW_ADDR tables. Flat-file version subscribers need only produce one Update Statistics Report for the NCOA_FLAT table.

A **sample** of the **Update Statistics Report** follows:

```
CUSTOMER NAME:                      ABC DATA PROCESSING
NCOA DATABASE TYPE:                 FLAT-FILE
NCOA UPDATE RUN DATE:               1997/01/20

NCOA SOFTWARE SUPPLIER:             ABC DATA PROCESSING
NCOA SOFTWARE VERSION:              1.0

NCOA RELEASE NUMBER:                001
NCOA RELEASE DATE:                  1997/01/17
NCOA PURGE DATE:                    1994/01/17

FILE NAME:                          NCOA_FLAT*
FILE NUMBER:                        05

TOTAL RECORDS BEFORE PROCESSING:    5,000,000

UPDATES APPLIED:
     ADDS                           123,456
     MODIFIES                       54,321
     DELETES                        12,345
PURGED RECORDS:                     54,321

TOTAL RECORDS AFTER PROCESSING:     5,056,790
```

- The “FILE NAME” field should contain one of NCOA_INFO, NCOA_NAMES, NCOA_OLD_ADDR, or NCOA_NEW_ADDR for subscribers to the relational version, or NCOA_FLAT for subscribers to the flat-file version.

NCOA Client List Monthly Report

The NCOA Client List Monthly Report provides a summary of the Mailing List processing done for clients of the Licensee.

A **sample** of the **NCOA Client List Monthly Report** follows:

Date	Customer Name	Records Processed	NCOA Matches Number	NCOA Matches Percent	Nixies Number	Nixies Percent
1/12/1996	ABC Corp	100,000	6,000	6%	2,000	2%
1/12/1996	XYZ Ltd	200,000	10,000	5%	**	
2/12/1996	DEF Ltd.	50,000	4,000	8%	1,000	2%

****** Client did not request/require nixie service

	Count	Percent
Total Addresses Processed this Month	3,000,000	
Total Address Matches this month	180,000	6%
Total Nixies	60,000	2%
Number of client lists processed this Month	15	
Total Addresses Processed year to date	9,600,000	
Total Address Matches Year To Date	528,000	5.5%
Total Nixies	144,000	1.5%
Number of client lists processed this Year		50

NCOA In-House Monthly Report

The NCOA In-House Monthly Report provides a summary of the Mailing List processing done by the Licensee for their respective Mailing Lists.

A **sample** of the **NCOA In-House Monthly Report** follows:

Date	Records Processed	NCOA Matches Number	NCOA Matches Percent	Nixies Number	Nixies Percent
1/12/1996	100,000	6,000	6%	2,000	2%
1/12/1996	200,000	10,000	5%	0	0%
2/12/1996	50,000	4,000	8%	1,000	2%

Total Addresses Processed this Month	3,000,000	
Total Address Matches this month	180,000	6%
Total Nixies	60,000	2%
Total Addresses Processed year to date	9,600,000	
Total Address Matches year to date	528,000	5.5%
Total Nixies	144,000	1.5%

Audit Report

This report provides CANADA POST with a summary of the results of the processing of an Audit Data File. Its format is not fixed but it must show:

- the date the test was conducted
- the number of records processed
- number of matches found
- matches found as a percentage of total records run
- if calculated, the number of nixies (i.e., the number of names eliminated because a new address is not included in the NCOA Database)

PART 4: DATA SPECIFICATIONS

4.1 INTRODUCTION

Section 4.2 following provides a complete description of the NCOA Database content and layout as it exists in both relational table and fat-file format.

Section 4.3 provides a complete description of the NCOA Audit Data File and the NCOA Audit Report File content and layout.

Section 4.4 provides a complete description of the NCOA Monthly Update content and layout as it exists in both relational table and fat-file format.

4.2 NCOA DATABASE STRUCTURE AND LAYOUT

4.2.1 Introduction

NCOA Database Content

All NCOA data originates from the CANADA POST System for Decentralized Redirection System (DRS), where information from the Change of Address Notifications (COANs) is entered. In addition to supporting mail-forwarding programs, this data is subsequently collected, reformatted, processed through an address accuracy program and parsed to produce the NCOA Database.

NCOA Platform

While the NCOA Database itself has been implemented on a relational database platform, both a relational-table and a flat-file version of the database are available to NCOA Licensees. The actual data content between the two versions is identical: the only differences concern the file formats and database structures.

The technical platform on which CANADA POST's NCOA Database is housed, is based on Windows NT Server and the Microsoft SQL Server RDBMS platform. Every effort has been taken to eliminate technology-platform-specific requirements in order to ensure the successful implementation of the NCOA Database in as many different licensee environments as possible.

NCOA Move Records

Each move record in the NCOA Database is identified by a unique value of the Family Identifier (fmly_id field).

The NCOA Database contains three types of move records. They are identified by the following values in the rec_typ field:

I = Individual Move

F = Family Move

B = Business Move

A **Family Move** consists of one or more names that represent all of the people associated with a household. Each name entry for a family move will consist of a Last Name (i.e., the family's surname) and optionally a First Name and a Middle Initial. Only one Old Address and, optionally, one New Address are associated with a Family Move. In the flat-file version, the address(es) will be repeated on the subsequent records within that move.

An **Individual Move** consists of one or more names (each with a Last Name, A First Name and, optionally, a Middle Initial), one Old Address and, optionally (i.e., if nixie_ind = N), one New Address. Unlike Family Moves, Individual Moves represent moves for subsets of the full household living at the old address. Only one Old Address and, optionally, one New Address are associated with an Individual Move. In the flat-file version, the address(es) will be repeated on the subsequent records within that move.

A **Business Move** consists of one or more names. Name entries can consist of either a Business Name (in the Last Name field) or as a Personal Name. For Personal Names the First Name field, the Last Name field, and, optionally, the Middle Initial field will be populated. Only one Old Address and, optionally, one New Address are associated with a Business Move. In the flat-file version, the address(es) will be repeated on the subsequent records within that move.

4.2.2 NCOA Relational Database

Database Structure

An essential design goal for the relational version of the NCOA Database has been simplicity: in order to ensure straightforward implementation on a variety of database platforms.

The database consists of four tables: NCOA_INFO, NCOA_NAMES, NCOA_OLD_ADDR, and NCOA_NEW_ADDR.

NCOA_INFO

This table includes all basic tracking and date information for each COAN Record. It is the base table from which all the database's relationships emanate. In NCOA_INFO, fmly_id provides an identification number for each record and is unique within the table.

Key status indicators in this table include the Record Type (denoting an individual, family, or business move), Language Code, and the Nixie Indicator. Nixie records refer to COANs that contain old address information only. Currently, nixie records only occur when new address information is not provided for privacy reasons.

The strt_dte field refers to the actual date when mail forwarding starts and provides the best indication as to the age of each COAN in the database.

NCOA_NAMES

The NCOA_NAMES table contains fully parsed versions of the name information entered on the original COAN. Wherever possible, last name, first name, and other name components have been parsed. This table has a many-to-one join with the NCOA_INFO table, as each COAN record may contain multiple names. The prsn_id field identifies unique individuals within each COAN (i.e., a unique fmly_id). Consequently, the unique key for this table is fmly_id plus prsn_id. Note that second and subsequent records for Family and Business Moves are optional.

Business names are stored in the lst_nme field. Note, however, that business moves often have a personal name as well as a business name associated with the move record (for example, "JOHN SMITH" and "JOHN SMITH & ASSOCIATES" may both be listed names on a specific Business Move COAN). Personal names on Business Move Records appear on separate name records with the same fmly_id as the business name and with unique prsn_id's. The personal names are parsed into the frst_nme and lst_nme fields (and other name component fields) the same as they are for Individual Moves and Family Moves.

The chain_id field provides a linkage to the most current address of a particular individual or family in the NCOA Database. When the chain_id is populated, it will point to a fmly_id value of the individual's or family's last move. In cases where an individual has moved more than once (as in the case of moving from address 'A' to address 'B' to address 'C'), chaining information will link a particular record to the most recent move information, by chaining address 'A' to address 'C' and address 'B' to address 'C'. Therefore, when the chain_id field is populated, it is only necessary to perform one additional query to obtain the most recent address for an individual or for a family.

Business Moves are not chained and therefore the chain_id field for them will always be set to zero.

NCOA_OLD_ADDR

This table, in a one-to-one relational join with the NCOA_INFO table, provides old address information for each NCOA record. All address data in this table has been processed through an address accuracy program and corrected using CANADA POST-approved address correction software. Additionally, parsed fields of key address component information have been included.

All old address information is for domestic addresses only. Consequently, no old_cntry field is required or supplied.

The old_adr_1, old_adr_2, old_mncplt_nme, old_pstl_cde, and old_prov_cde fields contain the complete versions of the old address information. The old_crctn_typ_cde field provides an indicator to denote whether or not the old address has been rejected, validated or repaired by an address accuracy program. Please note that old addresses that could not be validated or repaired are still included in the NCOA Database, but the address is not parsed.

The old_adr_typ_cde field indicates the CANADA POST Record Type for each validated or repaired address. This field should be used to determine which parsed address components are available for each COAN record (see details for each Address Type in Section 4.4 below).

NCOA_NEW_ADDR

The NCOA_NEW_ADDR table provides new address information for each COAN record.

Because some records are identified as nixies (i.e., new address information not provided), the relational link from NCOA_NEW_ADDR to NCOA_INFO is either one-to-one or zero-to-one. This means that although there is always an NCOA_INFO record for every NCOA_NEW_ADDR record (a one-to-one relationship), there is not necessarily an NCOA_NEW_ADDR record for every NCOA_INFO record (a zero-to-one relationship).

The data in NCOA_NEW_ADDR is very similar to that in NCOA_OLD_ADDR. Exceptions include:

- the addition of the new_cntry field, which is required because moves can be international
- The new_mve_typ_cde field indicates whether a move has been to a domestic or foreign destination
- the new_pstl_cde and new_prov_cde fields are widened in this table to accommodate the requirements of international addresses

Database Layout

NCOA_INFO				
FIELD NAME	**START**	**LENGTH**	**TYPE**	**DESCRIPTION**
fmly_id	1	10	Numeric	Family ID number
coan_typ	11	1	Char	COAN type (blank = regular, C = CANADA POST initiated, D = Estate, M = NCOA Moveback, U = rural to urban address conversion, X = privacy / nixie)
rec_typ	12	1	Char	Record type (F = family move, I = individual move, B = business move)
Lang	13	1	Char	Language (blank = unknown, E = English, F = French)
nixie_ind	14	1	Char	Nixie indicator (Y = nixie record, N = normal record). Nixie records contain an old address only; all new address fields are blank
strt_dte	15	8	Char	The date the change of address takes effect and mail forwarding begins (YYYYMMDD)
adr_rnwl_cnt	23	3	Numeric	Indicates the number of times the address change has been renewed

NCOA_NAMES				
FIELD NAME	**START**	**LENGTH**	**TYPE**	**DESCRIPTION**
fmly_id	1	10	Numeric	Family ID number
prsn_id	11	3	Numeric	Individual person ID within fmly_id
titl	14	6	Char	Title (MR, MRS, etc)
frst_nme	20	26	Char	Parsed first name
initl	46	4	Char	Parsed initials
lst_nme	50	26	Char	Parsed last name
nme_sfx	76	3	Char	Parsed name suffix (JR, SR, etc)
chain_id	79	10	Numeric	Chain identifier

NCOA_OLD_ADDR				
FIELD NAME	**START**	**LENGTH**	**TYPE**	**DESCRIPTION**
fmly_id	1	10	Numeric	Family ID
old_adr_1	11	40	Char	Old address line 1

NCOA_OLD_ADDR				
FIELD NAME	**START**	**LENGTH**	**TYPE**	**DESCRIPTION**
old_adr_2	51	40	Char	Old address line 2
old_mncplt_nme	91	30	Char	Old municipality name
old_pstl_cde	121	6	Char	Old postal code
old_prov_cde	127	2	Char	Old province code
old_crctn_typ_cde	129	1	Char	Old address correction type code (V = validated, N = Address Accuracy invalid)
old_adr_typ_cde	130	1	Char	Old address type code (0 = Address Accuracy-invalid record, 1 = street address, 2 = street address with route service, 3 = PO box, 4 = rural route, 5 = general delivery)
old_ste_nbr	131	6	Char	Old suite number (old_adr_typ_cde 1 or 2 only)
old_st_adr_nbr	137	6	Char	Old street address number (old_adr_typ_cde 1 or 2 only)
old_st_adr_nbr_sfx_cde	143	3	Char	Old street address number suffix code (old_adr_typ_cde 1 or 2 only)
old_st_nme	146	30	Char	Old street name (old_adr_typ_cde 1 or 2 only)
old_st_typ_cde	176	6	Char	Old street type code (old_adr_typ_cde 1 or 2 only)
old_st_drctn_cde	182	2	Char	Old street direction code (old_adr_typ_cde 1 or 2 only)
old_lock_box_dsc	184	7	Char	Old lock box description (PO BOX or CP; old_adr_typ_cde 3 only)
old_lock_box_nbr	191	6	Char	Old lock box number (old_adr_typ_cde 3 only)
old_route_serv_typ_dsc	197	7	Char	Old route service type description (RR, SS, or MR; old_adr_typ_cde 2 or 4 only)
old_route_serv_nbr	204	6	Char	Old route service number (old_adr_typ_cde 2 or 4 only)
old_gnrl_dlvry_dsc	210	2	Char	Old general delivery description (GD, old_adr_typ_cde 5 only)
old_area_nme	212	30	Char	Old delivery installation area name (old_adr_typ_cde 3, 4 or 5 only)
old_instl_typ	242	5	Char	Old delivery installation type description (old_adr_typ_cde 3, 4 or 5 only)
old_instl_dsc	247	15	Char	Old delivery installation qualifier name (old_adr_typ_cde 3,4 or 5 only)

NCOA_NEW_ADDR				
FIELD NAME	**START**	**LENGTH**	**TYPE**	**DESCRIPTION**
fmly_id	1	10	Numeric	Family ID
new_adr_1	11	40	Char	New address line 1

NCOA_NEW_ADDR				
FIELD NAME	**START**	**LENGTH**	**TYPE**	**DESCRIPTION**
new_adr_2	51	40	Char	New address line 2
new_mncplt_nme	91	30	Char	New municipality name
new_pstl_cde	121	9	Char	New postal/ZIP code
new_prov_cde	130	15	Char	New province/state code
new_cntry	145	15	Char	New country name
new_mve_typ_cde	160	1	Char	New move type code (D = domestic, F = foreign)
new_crctn_typ_cde	161	1	Char	New address correction type code (V = validated, N = Address Accuracy invalid)
new_adr_typ_cde	162	1	Char	New address type code (0 = Address Accuracy-invalid record, 1 = street address, 2 = street address with route service, 3 = PO box, 4 = rural route, 5 = general delivery)
new_ste_nbr	163	6	Char	New suite number (new_addr_typ_cde 1 or 2 only)
new_st_adr_nbr	169	6	Char	New street address number (new_addr_typ_cde 1 or 2 only)
new_st_adr_nbr_sfx_cde	175	3	Char	New street address number suffix code (new_addr_typ_cde 1 or 2 only)
new_st_nme	178	30	Char	New street name (new_addr_typ_cde 1 or 2 only)
new_st_typ_cde	208	6	Char	New street type code (new_addr_typ_cde 1 or 2 only)
new_st_drctn_cde	214	2	Char	New street direction code (new_addr_typ_cde 1 or 2 only)
new_lock_box_dsc	216	7	Char	New lock box description (PO BOX or CP; new_addr_typ_cde 3 only)
new_lock_box_nbr	223	6	Char	New lock box number (new_addr_typ_cde 3 only)
new_route_serv_typ_dsc	229	7	Char	New route service type description (RR, SS, or MR; new_addr_typ_cde 2 or 4 only)
new_route_serv_nbr	236	6	Char	New route service number (new_addr_typ_cde 2 or 4 only)
new_gnrl_dlvry_dsc	242	2	Char	New general delivery description (GD; new_adr_typ_cde 5 only)
new_area_nme	244	30	Char	New delivery installation area name (new_adr_typ_cde 3,4 or 5 only)
new_instl_typ	274	5	Char	New delivery installation type description (new_adr_typ_cde 3,4 or 5 only)
new_instal_dsc	279	15	Char	New delivery installation qualifier name (new_adr_typ_cde 3,4 or 5 only)

4.2.3 NCOA Flat-File Database

Database Structure

The flat-file version of the NCOA Database contains the same data elements as the relational version. However, the relational data representation has been denormalized into a single data-file.

The flat-file version is structured such that the combination of fmly_id and prsn_id provide a unique key for each record (the prsn_id is zero for Individual Moves and for the first record of a Family Move or a Business Move). Otherwise, the field and data descriptions outlined in the section "Relational Version Table Structure" are identical to that of the flat-file version.

Database Layout

NCOA FLAT-FILE DATABASE				
FIELD NAME	**START**	**LENGTH**	**TYPE**	**DESCRIPTION**
fmly_id	1	10	Numeric	Family ID number
prsn_id	11	3	Numeric	Individual person ID within fmly_id
coan_typ	14	1	Char	COAN type (blank = regular, C = CANADA POST initiated, D = Estate, M = NCOA Moveback, U = rural to urban address conversion, X = privacy / nixie)
rec_typ	15	1	Char	Record type (F = family move, I = individual move, B = business)
lang	16	1	Char	Language (blank = unknown, E = English, F = French)
nixie_ind	17	1	Char	Nixie indicator (Y = nixie record, N = normal record). Nixie records contain an old address only; all new address fields are blank
strt_dte	18	8	Char	The date the change of address takes effect and mail forwarding begins (YYYYMMDD)
adr_rnwl_cnt	26	3	Numeric	Indicates the number of times the address change has been renewed
titl	29	6	Char	Title (MR, MRS, etc)
frst_nme	35	26	Char	Parsed first name
initl	61	4	Char	Parsed initials
lst_nme	65	26	Char	Parsed last name
nme_sfx	91	3	Char	Parsed name suffix (JR, SR, etc)
old_adr_1	94	40	Char	Old address line 1

NCOA FLAT-FILE DATABASE				
FIELD NAME	**START**	**LENGTH**	**TYPE**	**DESCRIPTION**
old_adr_2	134	40	Char	Old address line 2
old_mncplt_nme	174	30	Char	Old municipality name
old_pstl_cde	204	6	Char	Old postal code
old_prov_cde	210	2	Char	Old province code
old_crctn_typ_cde	212	1	Char	Old address correction type code (V = validated, N = Address Accuracy invalid)
old_adr_typ_cde	213	1	Char	Old address type code (0 = Address Accuracy-invalid record, 1 = street address, 2 = street address with route service, 3 = PO box, 4 = rural route, 5 = general delivery)
old_ste_nbr	214	6	Char	Old suite numbers (old_adr_typ_cde 1 or 2 only)
old_st_adr_nbr	220	6	Char	Old street address number (old_adr_typ_cde 1 or 2 only)
old_st_adr_nbr_sfx_cde	226	3	Char	Old street address number suffix code (old_adr_typ_cde 1 or 2 only)
old_st_nme	229	30	Char	Old street name (old_adr_typ_cde 1 or 2 only)
old_st_typ_cde	259	6	Char	Old street type code (old_adr_typ_cde 1 or 2 only)
old_st_drctn_cde	265	2	Char	Old street direction code (old_adr_typ_cde 1 or 2 only)
old_lock_box_dsc	267	7	Char	Old lock box description (PO BOX or CP; old_adr_typ_cde 3 only)
old_lock_box_nbr	274	6	Char	Old lock box number (old_adr_typ_cde 3 only)
old_route_serv_typ_dsc	280	7	Char	Old route service type description (RR, SS, or MR; old_adr_typ_cde 2 or 4 only)
old_route_serv_nbr	287	6	Char	Old route service number (old_adr_typ_cde 2 or 4 only)
old_gnrl_dlvry_dsc	293	2	Char	Old general delivery description (GD; old_adr_typ_cde 5 only)
old_area_nme	295	30	Char	Old delivery installation area name (old_adr_typ_cdr 3,4, or 5 only)
old_instl_typ	325	5	Char	Old delivery installation type description (old_adr_typ_cdr 3,4, or 5 only)
old_instl_dsc	330	15	Char	Old delivery installation qualifier name (old_adr_typ_cdr 3,4, or 5 only)
new_adr_1	345	40	Char	New address line 1
new_adr_2	385	40	Char	New address line 2

NCOA FLAT-FILE DATABASE				
FIELD NAME	**START**	**LENGTH**	**TYPE**	**DESCRIPTION**
new_mncplt_nme	425	30	Char	New municipality name
new_pstl_cde	455	9	Char	New postal/ZIP code
new_prov_cde	464	15	Char	New province/state code
new_cntry	479	15	Char	New country name
new_mve_typ_cde	494	1	Char	New move type code (D = domestic, F = foreign)
new_crctn_typ_cde	495	1	Char	New address correction type code (V = validated, N = Address Accuracy invalid)
new_adr_typ_cde	496	1	Char	New address type code (0 = Address Accuracy-invalid record, 1 = street address, 2 = street address with route service, 3 = PO box, 4 = rural route, 5 = general delivery)
new_ste_nbr	497	6	Char	New suite number (new_adr_typ_cde 1 or 2 only)
new_st_adr_nbr	503	6	Char	New street address number (new_adr_typ_cde 1 or 2 only)
new_st_adr_nbr_sfx_cde	509	3	Char	New street number address suffix code (new_adr_typ_cde 1 or 2 only)
new_st_nme	512	30	Char	New street name (new_adr_typ_cde 1 or 2 only)
new_st_typ_cde	542	6	Char	New street type code (new_adr_typ_cde 1 or 2 only)
new_st_drctn_cde	548	2	Char	New street direction code (new_adr_typ_cde 1 or 2 only)
new_lock_box_dsc	550	7	Char	New lock box description (PO BOX or CP; new_adr_typ_cde 3 only)
new_lock_box_nbr	557	6	Char	New lock box number (new_adr_typ_cde 3 only)
new_route_serv_typ_dsc	563	7	Char	New route service type description (RR, SS, or MR; new_adr_typ_cde 2 or 4 only)
new_route_serv_nbr	570	6	Char	New route service number (new_adr_typ_cde 2 or 4 only)
new_gnrl_dlvry_dsc	576	2	Char	New general delivery description (GD; new_adr_typ_cde 5 only)
new_area_nme	578	30	Char	New delivery installation area name (new_adr_typ_cde 3,4, or 5 only)
new_instl_typ	608	5	Char	New delivery installation type description (new_adr_typ_cde 3,4, or 5 only)
new_instl_dsc	613	15	Char	New delivery installation qualifier name (new_adr_typ_cde 3,4, or 5 only)
chain_id	628	10	Numeric	Chain identifier

4.3 NCOA AUDIT FILES

4.3.1 Introduction

When CANADA POST audits the NCOA matching software for a NCOA Licensee or an existing NCOA Licensee, a data file of names and addresses to be matched against the current version of the NCOA Database is forwarded to the licensee with the content and layout described below.

When the licensee has completed the NCOA Matching Process for the audit, a single, fixed-width column text-file must be returned to CANADA POST with the content and layout described below.

4.3.2 Audit Data File

Audit Data File Structure

The NCOA Audit Data File is a single flat-file in a fixed-width column layout that is defined below.

The file will typically contain about 15,000 records, which translates to about 3.3 megabytes of data.

Audit Data File Layout

NCOA AUDIT DATA FILE				
FIELD NAME	**START**	**LENGTH**	**TYPE**	**DESCRIPTION**
record_key	1	10	numeric	Unique record identifier
title	11	6	char	Title (MR, MRS, etc)
first_name	17	30	char	
initial	47	1	char	
last_name	48	30	char	
name_suffix	78	3	char	Name suffix (JR, SR, etc)
addr_1	81	40	char	Address line 1
addr_2	121	40	char	Address line 2
city	161	30	char	City name
prov	191	2	char	Province code

NCOA AUDIT DATA FILE				
FIELD NAME	**START**	**LENGTH**	**TYPE**	**DESCRIPTION**
postal_code	193	6	char	Postal code

4.3.3 Audit Report File

Audit Report File Content

The NCOA Audit Report File contains, for each record on the NCOA Audit Data File sent to the licensee, the audit information sent to the licensee and, if a match was found in the NCOA Database, the name, old address and new address found.

Audit Report File Layout

When the licensee has completed the NCOA Matching Process for the audit, a single, fixed-width column text-file must be returned to CANADA POST laid-out as follows:

NCOA AUDIT REPORT FILE				
FIELD NAME	**START**	**LENGTH**	**TYPE**	**DESCRIPTION**
record_key	1	10	numeric	Unique record identifier
title	11	6	char	Title (MR, MRS, etc)
first_name	17	30	char	
initial	47	1	char	
last_name	48	30	char	
name_suffix	78	3	char	Name suffix (JR, SR, etc)
addr_1	81	40	char	Address line 1
addr_2	121	40	char	Address line 2
city	161	30	char	City name
prov	191	2	char	Province code
postal_code	193	6	char	Postal code
fmly_id	199	10	numeric	The fmly_id of the NCOA record that generated a match, if any
prsn_id	209	3	numeric	The prsn_id of the NCOA record that generated a match, if any
chain_id	212	10	numeric	The value from the chain_id field on the NCOA record that generated a match, if non-zero

NCOA AUDIT REPORT FILE				
FIELD NAME	**START**	**LENGTH**	**TYPE**	**DESCRIPTION**
titl	222	6	char	Name information should be provided from the NCOA record that generated a match, if any
frst_nme	228	26	char	
initl	254	4	char	
lst_nme	258	26	char	
nme_sfx	284	3	char	
old_adr_1	287	40	char	Old address information should be provided from the NCOA record that generated a match, if any
old_adr_2	327	40	char	
old_mncplt_nme	367	30	char	
old_prov_cde	397	2	char	
old_pstl_cde	399	6	char	
new_adr_1	405	40	char	New address information should be provided from the NCOA record that generated a match (if the chain_id was zero), or from the final address (based on the chain_id value when non-zero)
new_adr_2	445	40	char	
new_mncplt_nme	485	30	char	
new_prov_cde	515	15	char	
new_pstl_cde	530	9	char	
new_cntry	539	15	char	

4.4 MONTHLY UPDATE STRUCTURE AND LAYOUT

4.4.1 Introduction

On the fifteenth of each month (or the last working day before the fifteenth) CANADA POST distributes the NCOA Monthly Update to each NCOA Licensee on the media requested and in the format (relational-table or flat-file) requested.

This monthly update consists of add, modify and delete transactions that reflect the changes to the NCOA Database during the preceding month.

The structure and layout of the monthly update is described below for the relational-table format then for the flat-file format.

4.4.2 NCOA Relational Monthly Update

Monthly Update Structure

Each update file contains one header record and a variable number of add, modify and delete transactions.

The header record provides information regarding the release date, release number, file type indicator, a purge date and total number of each transaction type.

The field layout for the transactions is identical to the NCOA relational-table database structure except that a Transaction Type field has been added.

The relational version of the NCOA Database consists of four tables: NCOA_INFO, NCOA_NAMES, NCOA_OLD_ADDR, and NCOA_NEW_ADDR. Accordingly, updates consist of add, modify, and delete transactions for each of these tables.

The naming standard for the update files consists of the shortened table name (INFO, NAMES, NEWADDR or OLDADDR) plus the NCOA Update Release Number. Shortened table names are used to allow for compatibility with a wide range of computing platforms. The Release Number is a three-byte sequential numeric value that can also be found in the Transaction File Header Record. Thus, the file name for the first update transaction file for the NCOA_INFO table would be INFO.001.

Monthly Update Layout

NCOA_INFO: Monthly-Update Header-Record				
FIELD NAME	**START**	**LENGTH**	**TYPE**	**DESCRIPTION**
trnstn_typ	1	2	numeric	Transaction type (00 = header record, 20 = add, 25 = delete, 30 = modify)
fle_typ	3	2	numeric	File type (01 = ncoa_flat, 05 = ncoa_info, 06 = ncoa_names, 07 = ncoa_old_addr, 08 = ncoa_new_addr)
rlse_dte	5	8	numeric	Release date (YYYYMMDD)
rlse_nbr	13	3	numeric	Release number
ttl_insrt_cnt	16	8	numeric	Count of total add transactions
ttl_dlt_cnt	24	8	numeric	Count of total delete transactions
ttl_up_cnt	32	8	numeric	Count of total modify transactions
prg_dte	40	8	numeric	Purge date (YYYYMMDD)

NCOA_INFO: Monthly-Update Transaction-Record				
FIELD NAME	**START**	**LENGTH**	**TYPE**	**DESCRIPTION**
trnstn_typ	1	2	numeric	Transaction Type (00 = header record, 20 = add, 25 = delete, 30 = modify)
fmly_id	3	10	numeric	Family ID number
coan_typ	13	1	char	COAN type (blank = regular, C = CPC initiated, D = Estate, M = NCOA Moveback, U = rural to urban address conversion, X = privacy)
rec_typ	14	1	char	Record type (F = family move, I = individual move, B = business)
lang	15	1	char	Language (blank = unknown, E = English, F = French)
nixi_ind	16	1	char	Nixie indicator (Y = nixie record, N = normal record). Nixie records contain an old address only; all new address fields are blank
strt_dte	17	8	char	The date the change of address takes effect and mail forwarding begins (YYYYMMDD)
adr_rnwl_cnt	25	3	numeric	Indicates the number of times the address change has been renewed
filler	28	20	char	

NCOA_NAMES: Monthly-Update Header-Record				
FIELD NAME	**START**	**LENGTH**	**TYPE**	**DESCRIPTION**
trnstn_typ	1	2	numeric	Transaction type (00 = header record, 20 = add, 25 = delete, 30 = modify)
fle_typ	3	2	numeric	File type (01 = ncoa_flat, 05 = ncoa_info, 06 = ncoa_names, 07 = ncoa_old_addr, 08 = ncoa_new_addr)
rlse_dte	5	8	numeric	Release date (YYYYMMDD)
rlse_nbr	13	3	numeric	Release number
ttl_insrt_cnt	16	8	numeric	Count of total add transactions
ttl_dlt_cnt	24	8	numeric	Count of total delete transactions
ttl_up_cnt	32	8	numeric	Count of total modify transactions
prg_dte	40	8	numeric	Purge date (YYYYMMDD)
filler	48	43	char	

NCOA_NAMES: Monthly-Update Transaction-Record				
FIELD NAME	**START**	**LENGTH**	**TYPE**	**DESCRIPTION**
trnstn_typ	1	2	numeric	Transaction type (00 = header record, 20 = add, 25 = delete, 30 = modify)
fmly_id	3	10	numeric	Family ID number
prsn_id	13	3	numeric	Individual person ID within fmly_id
titl	16	6	char	Title (MR, MRS, etc)
frst_nme	22	26	char	Parsed first name
initl	48	4	char	Parsed initials
lst_nme	52	26	char	Parsed last name
nme_sfx	78	3	char	Parsed name suffix (JR, SR, etc)
chain_id	81	10	numeric	Chain identifier

NCOA_OLD_ADDR: Monthly-Update Header-Record				
FIELD NAME	**START**	**LENGTH**	**TYPE**	**DESCRIPTION**
trnstn_typ	1	2	numeric	Transaction type (00 = header record, 20 = add, 25 = delete, 30 = modify)
fle_typ	3	2	numeric	File type (01 = ncoa_flat, 05 = ncoa_info, 06 = ncoa_names, 07 = ncoa_old_addr, 08 = ncoa_new_addr)
rlse_dte	5	8	numeric	Release date (YYYYMMDD)
rlse_nbr	13	3	numeric	Release number
ttl_insrt_cnt	16	8	numeric	Count of total add transactions
ttl_dlt_cnt	24	8	numeric	Count of total delete transactions
ttl_up_cnt	32	8	numeric	Count of total modify transactions
prg_dte	40	8	numeric	Purge date (YYYYMMDD)
filler	48	216	char	

NCOA_OLD_ADDR: Monthly-Update Transaction-Record				
FIELD NAME	**START**	**LENGTH**	**TYPE**	**DESCRIPTION**
trnstn_typ	1	2	numeric	Transaction type (00 = header record, 20 = add, 25 = delete, 30 = modify)
fmly_id	3	10	numeric	Family ID
old_adr_1	13	40	char	Old address line 1
old_adr_2	53	40	char	Old address line 2

NCOA_OLD_ADDR: Monthly-Update Transaction-Record				
FIELD NAME	**START**	**LENGTH**	**TYPE**	**DESCRIPTION**
old_mncplt_nme	93	30	char	Old municipality name
old_pstl_cde	123	6	char	Old postal code
old_prov_cde	129	2	char	Old province code
old_crctn_typ_cde	131	1	char	Old address correction type code (V = validated, N = Address Accuracy invalid)
old_adr_typ_cde	132	1	char	Old address type code (0 = Address Accuracy-invalid record, 1 = street address, 2 = street address with route service, 3 = PO box, 4 = rural route, 5 = general delivery)
old_ste_nbr	133	6	char	Old suite number (old_adr_typ_cde 1 or 2 only)
old_st_adr_nbr	139	6	char	Old street address number (old_adr_typ_cde 1 or 2 only)
old_st_adr_nbr_sfx_cde	145	3	char	Old street address number suffix code (old_adr_typ_cde 1 or 2 only)
old_st_nme	148	30	char	Old street name (old_adr_typ_cde 1 or 2 only)
old_st_typ_cde	178	6	char	Old street type code (old_adr_typ_cde 1 or 2 only)
old_st_drctn_cde	184	2	char	Old street direction code (old_adr_typ_cde 1 or 2 only)
old_lock_box_dsc	186	7	char	Old lock box description (PO BOX or CP; old_adr_typ_cde 3 only)
old_lock_box_nbr	193	6	char	Old lock box number (old_adr_typ_cde 3 only)
old_route_serv_typ_dsc	199	7	char	Old route service type description (RR, SS, or MR; old_adr_typ_cde 2 or 4 only)
old_route_serv_nbr	206	6	char	Old route service number (old_adr_typ_cde 2 or 4 only)
old_gnrl_dlvry_dsc	212	2	char	Old general delivery description (GD, old_adr_typ_cde 5 only)
old_area_nme	214	30	char	Old delivery installation area name (old_adr_typ_cde 3,4 or 5 only)
old_instl_typ	244	5	char	Old delivery installation type description (old_adr_typ_cde 3,4 or 5 only)
old_instl_dsc	249	15	char	Old delivery installation qualifier name (old_adr_typ_cde 3,4 or 5 only)

NCOA_NEW_ADDR: Monthly-Update Header-Record				
FIELD NAME	**START**	**LENGTH**	**TYPE**	**DESCRIPTION**
trnstn_typ	1	2	numeric	Transaction type (00 = header record, 20 = add, 25 = delete, 30 = modify)
fle_typ	3	2	numeric	File type (01 = ncoa_flat, 05 = ncoa_info, 06 = ncoa_names, 07 = ncoa_old_addr, 08 = ncoa_new_addr)
rlse_dte	5	8	numeric	Release date (YYYYMMDD)
rlse_nbr	13	3	numeric	Release number
ttl_insrt_cnt	16	8	numeric	Count of total add transactions
ttl_dlt_cnt	24	8	numeric	Count of total delete transactions
ttl_up_cnt	32	8	numeric	Count of total modify transactions
prg_dte	40	8	numeric	Purge date (YYYYMMDD)
filler	48	248	char	

NCOA_NEW_ADDR: Monthly-Update Transaction-Record				
FIELD NAME	**START**	**LENGTH**	**TYPE**	**DESCRIPTION**
trnstn_typ	1	2	numeric	Transaction type (00 = header record, 20 = add, 25 = delete, 30 = modify)
fmly_id	3	10	numeric	Family ID
new_adr_1	13	40	char	New address line 1
new_adr_2	53	40	char	New address line 2
new_mncplt_nme	93	30	char	New municipality name
new_pstl_cde	123	9	char	New postal/ZIP code
new_prov_cde	132	15	char	New province/state code
new_cntry	147	15	char	New country name
new_mve_typ_cde	162	1	char	New move type code (D = domestic, F = foreign)
new_crctn_typ_cde	163	1	char	New address correction type code (V = validated, N = Address Accuracy invalid)
new_adr_typ_cde	164	1	char	New address type code (0 = Address Accuracy-invalid record, 1 = street address, 2 = street address with route service, 3 = PO box, 4 = rural route, 5 = general delivery)

NCOA_NEW_ADDR: Monthly-Update Transaction-Record				
FIELD NAME	**START**	**LENGTH**	**TYPE**	**DESCRIPTION**
new_ste_nbr	165	6	char	New suite number (new_addr_typ_cde 1 or 2 only)
new_st_adr_nbr	171	6	char	New street address number (new_addr_typ_cde 1 or 2 only)
new_st_adr_nbr_sfx_cde	177	3	char	New street address number suffix code (new_addr_typ_cde 1 or 2 only)
new_st_nme	180	30	char	New street name (new_addr_typ_cde 1 or 2 only)
new_st_typ_cde	210	6	char	New street type code (new_addr_typ_cde 1 or 2 only)
new_st_drctn_cde	216	2	char	New street direction code (new_addr_typ_cde 1 or 2 only)
new_lock_box_dsc	218	7	char	New lock box description (PO BOX or CP; new_addr_typ_cde 3 only)
new_lock_box_nbr	225	6	char	New lock box number (new_addr_typ_cde 3 only)
new_route_serv_typ_dsc	231	7	char	New route service type description (RR, SS, or MR; new_addr_typ_cde 2 or 4 only)
new_route_serv_nbr	238	6	char	New route service number (new_addr_typ_cde 2 or 4 only)
new_gnrl_dlvry_dsc	244	2	char	New general delivery description (GD; new_adr_typ_cde 5 only)
new_area_nme	246	30	char	New delivery installation area name (new_adr_typ_cde 3,4 or 5 only)
new_instl_typ	276	5	char	New delivery installation type description (new_adr_typ_cde 3,4 or 5 only)
new_instal_dsc	281	15	char	New delivery installation qualifier name (new_adr_typ_cde 3,4 or 5 only)

4.4.3 NCOA Flat-File Monthly Update

Monthly Update Structure

Because the flat-file version of the NCOA Database only consists of one table, NCOA_FLAT, NCOA updates will include one file only that contains a header record followed by add, modify, and delete transactions. Naming standards for updates will consist of the shortened table name (NCOAFLAT) in conjunction with the NCOA update release number, a three byte sequential

numeric value that also exists in the transaction file header record. Accordingly, the first update transaction file for flat-file customers would be NCOAFLAT.001.

Monthly Update Layout

Monthly Update Flat-File Header Record				
FIELD NAME	**START**	**LENGTH**	**TYPE**	**DESCRIPTION**
trnstn_typ	1	2	numeric	Transaction type (00 = header record, 20 = add, 25 = delete, 30 = modify)
fle_typ	3	2	numeric	File type (01 = ncoa_flat, 05 = ncoa_info, 06 = ncoa_names, 07 = ncoa_old_addr, 08 = ncoa_new_addr)
rlse_dte	5	8	numeric	Release date (YYYYMMDD)
rlse_nbr	13	3	numeric	Release number
ttl_insrt_cnt	16	8	numeric	Count of total add transactions
ttl_dlt_cnt	24	8	numeric	Count of total delete transactions
ttl_up_cnt	32	8	numeric	Count of total modify transactions
prg_dte	40	8	numeric	Purge date (YYYYMMDD)
Filler	48	592	char	Filler

Monthly Update Flat-File Transaction Record				
FIELD NAME	**START**	**LENGTH**	**TYPE**	**DESCRIPTION**
trnstn_typ	1	2	numeric	Transaction type (00 = header record, 20 = add, 25 = delete, 30 = modify)
fmly_id	3	10	numeric	Family ID number
prsn_id	13	3	numeric	Individual person ID within fmly_id
coan_typ	16	1	char	COAN type (blank = regular, C = CPC initiated, D = Estate, M = NCOA Moveback, U = rural to urban address conversion, X = privacy)
rec_typ	17	1	char	Record type (F = family move, I = individual move, B = business)
Lang	18	1	char	Language (blank = unknown, E = English, F = French)
nixi_ind	19	1	char	Nixie indicator (Y = nixie record, N = normal record). Nixie records contain an old address only; all new address fields are blank
strt_dte	20	8	numeric	The date the change of address takes effect and mail forwarding begins (YYYYMMDD)
adr_rnwl_cnt	28	3	numeric	Indicates the number of times the address

Monthly Update Flat-File Transaction Record				
FIELD NAME	**START**	**LENGTH**	**TYPE**	**DESCRIPTION**
				change has been renewed
titl	31	6	char	Title (MR, MRS, etc)
frst_nme	37	26	char	Parsed first name
initl	63	4	char	Parsed initials
lst_nme	67	26	char	Parsed last name
nme_sfx	93	3	char	Parsed name suffix (JR, SR, etc)
old_adr_1	96	40	char	Old address line 1
old_adr_2	136	40	char	Old address line 2
old_mncplt_nme	176	30	char	Old municipality name
old_pstl_cde	206	6	char	Old postal code
old_prov_cde	212	2	char	Old province code
old_crctn_typ_cde	214	1	char	Old address correction type code (V = validated, N = Address Accuracy invalid)
old_adr_typ_cde	215	1	char	Old address type code (0 = Address Accuracy-invalid record, 1 = street address, 2 = street address with route service, 3 = PO box, 4 = rural route, 5 = general delivery)
old_ste_nbr	216	6	char	Old suite numbers (old_adr_typ_cde 1 or 2 only)
old_st_adr_nbr	222	6	char	Old street address number (old_adr_typ_cde 1 or 2 only)
old_st_adr_nbr_sfx_cde	228	3	char	Old street address number suffix code (old_adr_typ_cde 1 or 2 only)
old_st_nme	231	30	char	Old street name (old_adr_typ_cde 1 or 2 only)
old_st_typ_cde	261	6	char	Old street type code (old_adr_typ_cde 1 or 2 only)
old_st_drctn_cde	267	2	char	Old street direction code (old_adr_typ_cde 1 or 2 only)
old_lock_box_dsc	269	7	char	Old lock box description (PO BOX or CP; old_adr_typ_cde 3 only)
old_lock_box_nbr	276	6	char	Old lock box number (old_adr_typ_cde 3 only)
old_route_serv_typ_dsc	282	7	char	Old route service type description (RR, SS, or MR; old_adr_typ_cde 2 or 4 only)
old_route_serv_nbr	289	6	char	Old route service number (old_adr_typ_cde 2 or 4 only)
old_gnrl_dlvry_dsc	295	2	char	Old general delivery description (GD; old_adr_typ_cde 5 only)

Monthly Update Flat-File Transaction Record				
FIELD NAME	**START**	**LENGTH**	**TYPE**	**DESCRIPTION**
old_area_nme	297	30	char	Old delivery installation area name (old_adr_typ_cdr 3,4, or 5 only)
old_instl_typ	327	5	char	Old delivery installation type description (old_adr_typ_cdr 3,4, or 5 only)
old_instl_dsc	332	15	char	Old delivery installation qualifier name (old_adr_typ_cdr 3,4, or 5 only)
new_adr_1	347	40	char	New address line 1
new_adr_2	387	40	char	New address line 2
new_mncplt_nme	427	30	char	New municipality name
new_pstl_cde	457	9	char	New postal/ZIP code
new_prov_cde	466	15	char	New province/state code
new_cntry	481	15	char	New country name
new_mve_typ_cde	496	1	char	New move type code (D = domestic, F = foreign)
new_crctn_typ_cde	497	1	char	New address correction type code (V = validated, N = Address Accuracy invalid)
new_adr_typ_cde	498	1	char	New address type code (0 = Address Accuracy-invalid record, 1 = street address, 2 = street address with route service, 3 = PO box, 4 = rural route, 5 = general delivery)
new_ste_nbr	499	6	char	New suite number (new_adr_typ_cde 1 or 2 only)
new_st_adr_nbr	505	6	char	New street address number (new_adr_typ_cde 1 or 2 only)
new_st_adr_nbr_sfx_cde	511	3	char	New street number address suffix code (new_adr_typ_cde 1 or 2 only)
new_st_nme	514	30	char	New street name (new_adr_typ_cde 1 or 2 only)
new_st_typ_cde	544	6	char	New street type code (new_adr_typ_cde 1 or 2 only)
new_st_drctn_cde	550	2	char	New street direction code (new_adr_typ_cde 1 or 2 only)
new_lock_box_dsc	552	7	char	New lock box description (PO BOX or CP; new_adr_typ_cde 3 only)
new_lock_box_nbr	559	6	char	New lock box number (new_adr_typ_cde 3 only)
new_route_serv_typ_dsc	565	7	char	New route service type description (RR, SS, or MR; new_adr_typ_cde 2 or 4 only)
new_route_serv_nbr	572	6	char	New route service number (new_adr_typ_cde 2 or 4 only)

Monthly Update Flat-File Transaction Record				
FIELD NAME	**START**	**LENGTH**	**TYPE**	**DESCRIPTION**
new_gnrl_dlvry_dsc	578	2	char	New general delivery description (GD; new_adr_typ_cde 5 only)
new_area_nme	580	30	char	New delivery installation area name (new_adr_typ_cde 3,4, or 5 only)
new_instl_typ	610	5	char	New delivery installation type description (new_adr_typ_cde 3,4, or 5 only)
new_instl_dsc	615	15	char	New delivery installation qualifier name (new_adr_typ_cde 3,4, or 5 only)
chain_id	630	10	numeric	Chain identifier

APPENDIX A: GLOSSARY OF TERMS AND ACRONYMS

Term / Acronym	Meaning
COAN	Change of Address Notice: the form filled out by individuals, families and businesses that want CANADA POST to forward their mail to their new address.
CPC	Canada Post Corporation
MSP	Mail Service Provider
NCOA	National Change of Address
NCOA Licensee	An organization that has signed the National Change of Address License Agreement with CANADA POST.
Nixies	Moves where new address information is not provided
RDBMS	Relational Database Management System
SQL	Sequential Query Language
USPS	United States Postal Service

APPENDIX B: NCOA PROCESS CHECKLIST

Step #	Step Description	Responsibility		Completed
		Licensee	CANADA POST	
NCOA SETUP				
Set Up NCOA License Agreement:				
1	NCOA Licensee requests the NCOA documentation.	✓		
2	CANADA POST forwards the NCOA Recognition Handbook and the NCOA License Agreement.		✓	
3	NCOA Licensee returns the completed and signed NCOA License Agreement and the Licensing Fee.	✓		
4	CANADA POST completes credit check and obtains customer number for billing purposes, as per current procedures.		✓	
5	The NCOA License Agreement is signed by CANADA POST.		✓	
6	CANADA POST forwards the signed NCOA License Agreement and the current NCOA Database to NCOA Licensee.		✓	
Create NCOA Database:				
6	The NCOA Licensee develops and tests the Initial Database Load Component.	✓		
7	NCOA Licensee loads the NCOA data into their database and produces the Initial Load Reports.	✓		
Review NCOA Database Setup:				
8	CANADA POST reviews the Initial Load Reports.		✓	
Return NCOA Database Media:				
9	The NCOA Licensee returns the media to CANADA POST.	✓		
NCOA MONTHLY UPDATES				
Prepare for Monthly Update:				
10	NCOA Licensee develops and tests the NCOA Monthly Update Component.	✓		
11	CANADA POST sends each NCOA Licensee the NCOA Monthly Update data.		✓	
Perform Monthly Update:				

Step #	Step Description	Responsibility		Completed
		Licensee	CANADA POST	
12	The NCOA Licensee applies the updates to their NCOA Database.	✓		
13	The Move Date Summary Report, the Update Statistics Report, NCOA Client List Monthly Report and the NCOA In-House Monthly Report are produced and forwarded to CANADA POST.	✓		
Review Monthly Update Results:				
14	CANADA POST reviews the Monthly Update Reports.	✓		
Return Monthly Update Media:				
15	The NCOA Licensee returns the update media to CANADA POST.	✓		
NCOA INITIAL AUDIT				
Prepare for Initial Audit:				
16	NCOA Licensee develops and tests the NCOA Matching Component.	✓		
17	Software is developed to produce an Audit Report and an Audit Report File.	✓		
18	NCOA Licensee requests CANADA POST to perform the NCOA Initial Audit.	✓		
19	CANADA POST provides NCOA Licensee with an Audit Data File.		✓	
Perform Initial Audit:				
20	The NCOA Licensee matches the names and addresses in the Audit Data File against their NCOA Database.	✓		
21	NCOA Licensee produces the Audit Report File and the Audit Report.	✓		
Review Initial Audit Results:				
22	CANADA POST reviews the Audit Report File and Audit Report.		✓	
NCOA REGULAR AND AD HOC AUDITS				
Prepare for Audit:				
23	CANADA POST schedules the audit.		✓	
24	CANADA POST provides the NCOA Licensee with an Audit Data File.		✓	

Step #	Step Description	Responsibility		Completed
		Licensee	CANADA POST	
Perform Audit:				
25	The NCOA Licensee matches the names and addresses in the Audit Data File against their NCOA Database.	✓		
26	NCOA Licensee produces the Audit Report File and the Audit Report.	✓		
Review Audit Results:				
27	CANADA POST reviews the Audit Report File and the Audit Report.		✓	