

NCOALink™

IMPROVING DELIVERABILITY THROUGH SECURE TECHNOLOGY

NCOALink

**USER TECHNICAL REFERENCE
United States Postal Service
National Customer Support Center
August 23, 2004
Version 1**

USPS NCOA^{Link}

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Introduction

In the event of a conflict between this document and the standard NCOA^{Link} License Agreement, the terms of the NCOA^{Link} License Agreement prevail.

The information contained in this document has been extracted from other documents such as the NCOA^{Link} Software Developer Guide. This information can be disclosed to the public.

NCOA^{Link}™ is a data only product that introduces secure technology into the world of Change-of-Address (COA) processing. The secure technology of this DATA ONLY PRODUCT eliminates the clear text representation of the change-of-address data and the complexity of address matching routines. Once the software used to access this data is completed and a successful inquiry is achieved, the new address and/or return flags can be derived from the results.

This product and technology is patented and licensed by the United States Postal Service® (USPS®). By virtue of reading this documentation, the company and or business entity, which includes employees, entered into a Non-Disclosure Agreement.

This product is similar to the existing National Change of Address (NCOA) and *FASTforward* Mailing List Correction (MLC) processing except this is a DATA ONLY PRODUCT. The utilization of this product eliminates the majority of complex name and address matching routines because the majority of the name and address matching technology is built into this secure data technology.

Administration

The USPS provides support for this system through the National Customer Support Center (NCSC) in Memphis TN. For all administration and technical information regarding this product please contact the Move Update Support Department at 800-589-5766 or email at ncoalink@usps.gov.

Disclaimer

The USPS makes no warranty or representation either expressed or implied, with respect to the NCOA^{Link} technology and/or the computer system in which it is contained, including its correctness, quality, performance, merchantability, or fitness for any particular purpose.

The USPS will not be liable for direct, indirect, special, incidental, consequential, or other similar damages arising out of use of, or inability to use, the NCOA^{Link} technology and/or computer system, even if advised of the possibility of such damages.

Developer Specification and Requirements

For the purpose of clarity, developer is synonymous with vendor, or any other term that implies a creator of a software system developed for the purpose of communicating and interfacing with the USPS NCOA^{Link} system. The term licensee is defined as one who has been certified and licensed by the USPS to perform NCOA^{Link} processing.

The sole intent of the NCOA^{Link} system is to provide data back to the customer for the purpose of updating an address list that will be used for mailing purposes. A one hundred unique record file minimum is required. Development of an interface system must incorporate USPS guidelines and specifications contained in the Software Developer Guide as well as any requirements contained in the USPS NCOA^{Link} License Agreement and Licensee Performance Requirements.

Any advertising or marketing promotions that mention and/or imply a relationship with the USPS NCOA^{Link} technology must be approved in writing, prior to its use, by the USPS NCSC. The approval of this material is a requirement and is inclusive to all developers, vendors, licensees, sub-contractors and users that directly or indirectly utilize the USPS NCOA^{Link} system.

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Due to the sensitive nature of USPS provided COA data, the system employs a secure technology approach, designed and created by the USPS. The sensitivity of the COA data and customer data requires a high level of security and accuracy with respect to the use of the data in any electronic process. Any interface system that provides for, or allows data transfer between the interface and any other location or device, must enable the user/licensee to ensure that no COA information obtained from the NCOA^{Link} system is intercepted, copied, rerouted, stored, retained, archived, or used for any purpose other than explicitly authorized in the license agreement.

All addresses prior to submission to the NCOA^{Link} interface system must be processed by the users/licensee's CASS Certified™ (Coding Accuracy Support System) software. **The ZIP + 4® and City State databases utilized by the CASS Certified software must be updated monthly.**

It is **required and necessary** to incorporate the reading of the **NCOA^{Link} License Agreement** to obtain the requirements of a potential licensee and to ensure that the developed interface and/or licensee can meet these requirements. The completed NCOA^{Link} system will require specific specifications with regard to processing in addition to statistical and other reporting requirements that will be contained in the above document.

Computer Hardware Specifications

The NCOA^{Link} data product will be fulfilled by two Digital Video Disc's (DVD). It is suggested that the minimum system requirements required for this system is 2GB RAM and 60GB of disk space.

Getting Started

1. Read this document thoroughly.
2. Obtain the appropriate NCOA^{Link} License Agreement for this development. This will contain the necessary additional requirements that will be required for an interface to be certified.
3. Please note that there is a 100 unique record minimum requirement for processing files.
4. For name matching, standard matching logic requires inquiries in the following order:
 Business: Match on business name.
 Individual: Match on first name, middle name, surname and title required. Gender is checked and nickname possibilities are considered.
 Family: Match on surname only.
5. Within the interface, the system is designed to have the following options:

Name	Description	Code
Business only	Interface system will provide only new address information for Business moves.	B
Individual only	Interface system will provide only new address information for Individual moves	I
Individual with Business	Interface system will provide only new address information for Individual and Business moves.	C
Standard	Interface system will not restrict any matches or prohibit the return of information based on move types (Family, Individual or Business).	S

6. Pure Family only matching is prohibited. The interface system will utilize only the above options. The interface cannot remove, ignore or drop any other name information except as prescribed in this document and the associated License Performance requirements.
7. The interface system will provide a return code only option.
8. User may select time frame shorter than the NCOA^{Link} Product but no less than six months. (Time period covered and total matches rejected are reported in the Customer Service Log.)
9. Middle name matching will be performed by the interface software. The NCOA^{Link} system will return only two characters of the middle name.
10. The interface system will utilize all NCOA^{Link} data files as received with regard to content. Additions or subtractions from data files/tables with regards to data content are prohibited unless otherwise stated.
11. While the NCOA^{Link} system requires the utilization of a CASS certified ZIP+4 system it is not mandated that the ZIP+4 system be imbedded or inline within the NCOA^{Link} system.
12. While the NCOA^{Link} system may require the utilization of a certified DPV system it is not mandated that the DPV system be imbedded or inline within the NCOA^{Link} system.
13. Mailing lists may contain multiple named individuals, especially in the financial and insurance environment, and may be printed on the actual mailpiece. The multiple named individuals within a base record may or may not contain the same last name. Regardless, it is the responsibility of the mail list owner to identify the primary target name for submission to the NCOA^{Link} process or develop processes to handle these records. Any pre or post proprietary process will come under USPS scrutiny when used in this manner and any information used to enhance matching must be explained to the client. The specific name used in the query to obtain the match must be returned to the client. All NCOA^{Link} tests must be taken in the FULL PRODUCTION environment and any and all pre- and/or post-processing MUST be included.

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14. Determine the impact, if any, this system may have with existing COA processes such as direct customer contact, Address Change Service and mailpiece endorsements.
15. It is suggested and recommended that the interface process utilize an additional flag. In keeping with the philosophy as stated in 14 above, a file submitted for NCOA^{Link} processing may contain a flag that indicates that the customer may not want this address automatically updated. The intent of this flag is just to be passed back to the customer. This field/flag could be a date or some other character or string. At this time it will not override the NCOA^{Link} process and the normal interface processing will occur and the field will be passed back to the customer.
16. The data fulfillment will consist of two DVD's. All files will be located on the DVD without any directories/sub-directories. Each DVD will contain a header file and will contain a data date, all file names contained on the DVD and their associated SHA value including the compressed and uncompressed files. While we anticipate that specific files may be allocated to a specific DVD the software should not rely on this and should utilize the header file to determine contents of the DVD. The SHA value should be used to confirm that the files have been copied and uncompressed to the necessary media correctly. The record that contains the release date also contains a SHA value of the release date which can be utilized to prevent tampering with the release date. If the SHA value of the release date is not correct compared to the computed SHA from the software then the software could decide not to load the release and/or not allow the software to operate if the date stored on the system has been tampered with. PLEASE NOTE: UNDER NO CIRCUMSTANCES MAY A FILE BE SWAPPED OR REPLACED FROM ANOTHER RELEASE. DOING SO WILL CAUSE UNKNOWN RESULTS AND CAN CORRUPT ADDRESS LISTS.
17. In processing any COA data, regardless of origin, it is a good idea that the base file contain flags/fields that provide the necessary information on origin of the COA and when the record was updated. In conjunction with other COA processes circumstances may occur in which automated updating of certain base records may need to be prohibited and/or diverted to a different process. The utilization of these flags/fields or other fields will facilitate in the systemic decision making.
18. Understand all of the components of the COA data, including the different styles of addresses to insure the base file is being updated properly. The publications below are recommended for reference material:

“Postal Addressing Standards” (Publication 28)
“Address Information System Products Technical Guide”

Publication 28 may be located at <http://www.usps.com/publications/pubs/publicationspdf.htm>. The AIS Products Technical Guide may be located at <http://www.usps.com/ncsc/addressmgmtpubs/addressmgmtpubsmenu.htm>.
19. Process specialized USPS certification, audit or test files.
20. The move type must be returned when a match is made. This is determined by the interface based on the specific name inquiry utilized to obtain the match.
21. For Full Service licensees, the software will populate the field RESULT ZIP+4 RETURN CODE with a value of 'AA' or 'A1' (ZIP+4 matched, ZIP+4 not matched, respectively). The Result DPV Return Code field will only be populated with one DPV return code when appropriate. If the DPV processes results in multiple return codes, excluding AA and A1, for the purpose of NCOA^{Link} testing, only one return code will be returned in the test file. In production processing, all applicable codes will be returned to the mail list owner per the license agreement.
22. For Limited Service Provider or End-User licensees (which are not required to perform DPV processing) the field RESULT ZIP+4 RETURN CODE must be populated with a value of 'AA' or 'A1' and the Result DPV Return Code field will be space filled. If one of these licensees exercises a DPV option then the Result DPV Return Code field will be populated in the same manner as the Full Service Provider.

Appropriate use of the Drop Flag

Drop Flag – This logic is only applicable when there is a street level ZIP+4 Match and an individual name match. If this flag is set to 'Y' then this means the USPS dropped the Secondary Number to create this record (on the NCOA^{Link} database) and if the interface processing has dropped the Secondary Number (from the input address), a match cannot be made. If one of these Secondary Number Drop Flags is 'Y' and the other is 'N' or both are 'N', a match can be made. This covers the rule allowing that the Secondary Number may be missing from either the input or the COA but not both; provided that an individual name match is obtained, an NCOA^{Link} match can be made.

Drop-N Flag – This logic is only applicable when there is a complete Middle Name and individual name match. If this flag is set to 'Y' this means the USPS created a record with the first initial and middle name and if the interface processing has also truncated the first name from the input, a match cannot be made. This covers the rule requiring that the first name may be shortened to one letter on either the input or the COA but not both.

Incorporate the Daily Delete file

The production versions of this file (dailydel.dat or dailydel.ebc) will be available via download from <http://ribbs.usps.gov/files/ncoalink>.

The Daily Delete file contains information on moves that will be removed from NCOA^{Link}. All Service Provider licensees, both Full and Limited, must incorporate Daily Delete file processing into their NCOA^{Link} process. End User licensees may choose to or not to incorporate this process. However, these licensees need to be aware that there is risk of obtaining incorrect information for a customer that has contacted USPS for removal of that information.

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NCOA^{Link} Return Code Description

Code = Return Code

Address = "Y" = New Address provided

= "N" = New Address not provided

Description = Explanation of Return code

How = "D" = Derived by data – returned in lieu of 11 digit

"S" = Derived by software

Code	Description	Address	How
A	COA Match - The input record matched to a business, individual or family type master file record. A new address could be furnished. Please Note: If this return code is achieved then <u>no other matching attempts</u> are permitted regardless of the PROCESSING mode.	Y	D
00	NO Match - The input record COULD NOT BE matched to a master file record. A new address could not be furnished. This return code may be returned regardless of the processing mode, matching logic, or COA type. Please Note: When processing in any mode and this return code is received it is required to attempt the match again using the next level of matching logic allowed by the processing mode.	N	D
01	Found COA: Foreign Move – The input record matched to a business, individual or family type master file record but the new address was outside the USPS delivery area. This return code may be returned regardless of the processing mode, matching logic, or COA type. Please Note: If this return code is achieved then <u>no other matching attempts</u> are permitted regardless of the PROCESSING mode.	N	D
02	Found COA: Moved Left No Address(MLNA) - The input record matched to a business, individual or family type master file record and the new address was not provided to USPS. This return code may be returned regardless of the processing mode, matching logic, or COA type. Please Note: If this return code is achieved then <u>no other matching attempts</u> are permitted regardless of the PROCESSING mode.	N	D
03	Found COA: Box Closed No Order(BCNO) – The Input record matched to a business, individual or family type master file record which contains an old address of PO BOX that has been closed without a forwarding address provided. This return code may be returned regardless of the processing mode, matching logic, or COA type. Please Note: If this return code is achieved then <u>no other matching attempts</u> are permitted regardless of the PROCESSING mode.	N	D
04	Cannot match COA: Street Address with Secondary – In the STANDARD mode utilizing Family matching logic the input record matched to a family record type on the master file with an old address that contained secondary information which obtained a ZIP+4 street level match. The input record does not contain secondary information. This address match situation requires individual name matching logic to obtain a match and individual names do not match. Please Note: This return code is only obtained when processing in the STANDARD mode using Family matching logic.	N	D
05	Found COA: New 11-digit DPBC is Ambiguous – The input record matched to a business, individual or family type master file record. The new address on the master file record could not be converted to a deliverable address because the DPBC represents more than one delivery point. This return code may be returned regardless of the processing mode, matching logic, or COA type. Please Note: If this return code is achieved then <u>no other matching attempts</u> are permitted regardless of the PROCESSING mode.	N	D

NCOA^{Link} Return Code Description – continued

Code	Description	Address	How
06	Cannot Match COA: Conflicting Directions: Middle Name Related –There is more than one COA (individual or family type) record for the match algorithm and the middle names or initials on the COAs are different. Therefore, a single match result could not be determined. This return code is only obtained when using individual matching logic. Please Note: If this return code is achieved then <u>no other matching attempts</u> are permitted regardless of the PROCESSING mode.	N	D
07	Cannot Match COA: Conflicting Directions: Gender Related –There is more than one COA (individual or family type) record for the match algorithm and the genders of the names on the COAs are different. Therefore, a single match result could not be determined. This return code is only obtained when using individual matching logic. Please Note: If this return code is achieved then no other matching attempts are permitted regardless of the PROCESSING mode.	N	D
08	Cannot Match COA: Other Conflicting Instructions – The input record matched to two master file (business, individual or family type) records. The two records in the master file were compared and due to differences in the new addresses, a match could not be made. This return code may be returned regardless of the processing mode, matching logic, or COA type. Please Note: If this return code is achieved then <u>no other matching attempts</u> are permitted regardless of the PROCESSING mode.	N	D
09	Cannot Match COA: High-rise Default – The input record matched to a family record on the master file from a High-rise address ZIP+4 coded to the building default. This address match situation requires individual name matching logic to obtain a match and individual names do not match. Please Note: This return code is only obtained when processing in the STANDARD mode using Family matching logic.	N	D
10	Cannot Match COA: Rural Default - The input record matched to a family record on the master file from a Rural Route or Highway Contract Route address ZIP+4 coded to the route default. This address situation requires individual name matching logic to obtain a match and individual names do not match. Please Note: This return code is only obtained when processing in the STANDARD mode using Family matching logic.	N	D
11	Cannot Match COA: Individual Match: Insufficient COA Name for Match – There is a master file (individual or family type) record with the same surname and address but there is insufficient name information on the master file record to produce a match using individual matching logic. This return code is only obtained when using individual matching logic. Please Note: When processing in the STANDARD mode and this return code is received utilizing Individual Logic do not continue the Individual logic sequence and go straight to the FAMILY matching logic.	N	D
12	Cannot Match COA: Middle Name Test Failed - The input record matched to an individual or family record on the master file with the same address and surname. However, a match cannot be made because the input name contains a conflict with the middle name or initials on the master file record. This return code is only obtained when using individual matching logic. Please Note: If this return code is achieved then <u>no other matching attempts</u> are permitted regardless of the PROCESSING mode.	N	S
13	Cannot Match COA: Gender Test Failed – The input record matched to a master file (individual or family type) record. A match cannot be made because the gender of the name on the input record conflicts with the gender of the name on the master file record. This return code is only obtained when using individual matching logic. Please Note: When processing in the STANDARD mode and this return code is received utilizing Individual Logic do not continue the Individual logic sequence and go straight to the FAMILY matching logic.	N	S

NCOA^{Link} Return Code Description – continued

Code	Description	Address	How
14	Found COA: New Address Would Not Convert at Run Time - The input record matched to a master file (business, individual or family type) record. The new address could not be converted to a deliverable address. This return code may be returned regardless of the processing mode, matching logic, or COA type. Please Note: If this return code is achieved then <u>no other matching attempts</u> are permitted regardless of the PROCESSING mode.	N	S
15	Cannot Match COA: Individual Name Insufficient – There is a master file record with the same address and surname. A match cannot be made because the input record does not contain a first name or contains initials only. This return code is only obtained when using individual matching logic. Please Note: When processing in the STANDARD mode and this return code is received utilizing Individual Logic do not continue the Individual logic sequence and go straight to the FAMILY matching logic.	N	S
16	Cannot Match COA: Secondary Number Discrepancy – The input record matched to a street level individual or family type record. However, a match is prohibited based on 1 of the following reasons: 1) There is conflicting secondary information on the input and master file record; 2) the input record contained secondary information and matched to a family record that does not contain secondary information. In item 2, this address match situation requires individual name matching logic to obtain a COA match and individual names do not match. Please Note: If this return code is achieved then <u>no other matching attempts</u> are permitted regardless of the PROCESSING mode.	N	S
17	Cannot Match COA: Other Insufficient Name – The input record matched to an individual or family master file record. The input name is different or not sufficient enough to produce a match. This return code is only obtained when using individual matching logic. Please Note: When processing in the STANDARD mode and this return code is received utilizing Individual Logic do not continue the Individual logic sequence and go straight to the FAMILY matching logic.	N	S
18	Cannot Match COA: General Delivery – The input record matched to a family record on the master file from a General Delivery address. This address situation requires individual name matching logic to obtain a match and individual names do not match. Please Note: This return code is only obtained when processing in the STANDARD mode using Family matching logic.	N	D
19	Found COA: New Address not ZIP+4 coded – There is a change of address on file but the new address cannot be ZIP+4 coded and therefore there is no 11-digit DPBC to store or return. This return code may be returned regardless of the processing mode, matching logic, or COA type. Please Note: If this return code is achieved then <u>no other matching attempts</u> are permitted regardless of the PROCESSING mode.	N	D
20	Cannot Match COA: Conflicting Directions after re-chaining – Multiple master file records were potential matches for the input record. The master file records contained different new addresses and a single match result could not be determined. This return code may be returned regardless of the processing mode, matching logic, or COA type. Please Note: If this return code is achieved then <u>no other matching attempts</u> are permitted regardless of the PROCESSING mode.	N	D
66	Daily Delete – The input record matched to a business, individual or family type master file record with an old address that is present in the daily delete file. The presence of an address in the daily delete file means that a COA with this address is pending deletion from the master file and that no mail may be forwarded from this address. This return code may be returned regardless of the processing mode, matching logic or COA type. Please Note: If this return code is achieved then no other matching attempts are permitted regardless of the PROCESSING mode.	N	S

NCOA^{Link} Return Code Description – continued

Code	Description	Address	How
91	COA Match: Secondary Number dropped from COA – The input record matched to a master file record. The master file record had a secondary number and the input address did not. Please Note: This return code is derived from Individual matching logic only. If this return code is achieved then no other matching attempts are permitted regardless of the PROCESSING mode.	Y	S
92	COA Match: Secondary Number Dropped from input address – The input record matched to a master file record, but the input address had a secondary number and the master file record did not. The record is a ZIP+4 street level match. Please Note: This return code is derived from individual matching logic only. If this return code is achieved then <u>no other matching attempts</u> are permitted regardless of the PROCESSING mode.	Y	S

Please Note: When processing in STANDARD mode and return codes 00, 11, 13, 15 and 17 are received utilizing Individual Logic it is required to attempt the match again using FAMILY matching logic.

NCOA^{Link} Return Code Matrix

Code	Received during Business matching logic	Received during Individual matching logic	Received during Family matching Logic	Retry matching attempts
A	YES	YES	YES	NO
00	YES	YES	YES	attempt the match again using the next level of matching logic allowed by the processing mode
01	YES	YES	YES	NO
02	YES	YES	YES	NO
03	YES	YES	YES	NO
04	NO	NO	YES	NO
05	YES	YES	YES	NO
06	NO	YES	NO	NO
07	NO	YES	NO	NO
08	YES	YES	YES	NO
09	NO	NO	YES	NO
10	NO	NO	YES	NO
11	NO	YES	NO	When processing in the STANDARD mode and this return code is received utilizing Individual Logic it is required to attempt the match again using FAMILY matching logic.
12	NO	YES	NO	NO
13	NO	YES	NO	When processing in the STANDARD mode and this return code is received utilizing Individual Logic it is required to attempt the match again using FAMILY matching logic.
14	YES	YES	YES	NO
15	NO	YES	NO	When processing in the STANDARD mode and this return code is received utilizing Individual Logic it is required to attempt the match again using FAMILY matching logic.
16	NO	YES	YES	NO
17	NO	YES	NO	When processing in the STANDARD mode and this return code is received utilizing Individual Logic it is required to attempt the match again using FAMILY matching logic.

NCOA^{Link} Return Code Matrix - continued

Code	Received during Business matching logic	Received during Individual matching logic	Received during Family matching logic	Retry matching attempts
18	NO	NO	YES	NO
19	YES	YES	YES	NO
20	YES	YES	YES	NO
66	YES	YES	YES	NO
91	NO	YES	NO	NO
92	NO	YES	NO	NO

New address information is returned only on the following return codes: A, 91, 92

Return Codes that indicate a COA was found but was unable to provide a new address: 01, 02, 03, 05, 14, 19

Return Codes that return a move effective date: A, 91, 92, 01, 02, 03, 05, 14, 19

Return Codes that should not return a move effective date: 04, 06, 07, 08, 09, 10, 11, 18, 20

Return Codes in which the move effective date must be discarded: 12, 13, 15, 16, 17

Return Codes that indicate potential matches but could not make the match due to rules: 04, 06, 07, 08, 09, 10, 11, 12, 13, 15, 16, 17, 18, 20

Return Codes returned during Individual logic only: 06, 07, 11, 12, 13, 15, 17, 91, 92

Return Codes returned during Family logic only: 04, 09, 10, 18

Return Codes that require discontinuing the Individual logic sequence and go straight to the FAMILY matching logic. 11, 13, 15, 17

Return Codes that do not allow retry of matching logic: A, 01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 12, 14, 16, 18, 19, 20, 91, 92

Other Return Code Descriptions

Code	Description	Process
AA	Input Address ZIP+4 match	ZIP+4
A1	Input Address ZIP+4 not matched	ZIP+4
M1	Input Address Primary Number Missing	DPV
M3	Input Address Primary Number Invalid	DPV
P1	Input Address Missing PO, RR, or HC Box number	DPV
P3	Input Address PO, RR, or HC Box number invalid	DPV
BB	Input Address DPV matched (all components)	DPV
RR	Input Address DPV matched to CMRA	DPV
CC	Input Address DPV Primary Number match, Secondary Number not Matched (secondary number present but is not DPV confirmed)	DPV
N1	Input Address DPV Primary Number match, High-rise Address Missing Secondary Number	DPV
R1	Input Address DPV matched to CMRA but PMB Number not Present	DPV

NCOA^{Link} Return Code Examples

RC = Return Code

How – Derived from D (data) or S (software)

Address – Y (new address provided) or N (new address not provided)

RC	How	Description	Input Record	COA Record		Address
				old side ↓	new side	
A	D	COA Match	Mary Jackson 123 Main ST	Mary Jackson 123 Main ST		Y
66	S	Daily Delete	Mary Jones 123 Main ST	Mary Jones 123 Main ST (in daily delete file)		N
00	D	NO Match	Mary Smith 123 Main ST	No COA on file		N
01	D	Found COA: Foreign Move	John Baker 123 Main ST	John M. Baker 123 Main ST	Foreign	N
02	D	Found COA: Moved Left No Address (MLNA)	Mary Baker 456 Elm ST	Mary Baker 456 Elm ST	MLNA	N
03	D	Found COA: Box Closed No Order (BCNO)	Moore Printing PO BOX 123	Moore Printing BCNO PO BOX 123		N
04	D	Cannot Match COA: Street Address with Secondary	Smith 789 Oak ST	Pam Smith (family) 789 Oak ST APT 3 (S)		N
05	D	Found COA: New 11-digit DPBC is Ambiguous	Mary Smith 1 1 st ST STE 211	Mary Smith 1 1 st ST STE 211	new 11-digit ambiguous	N
06	D	Cannot Match COA: Conflicting Directions: Middle Name Related	Ann (or) Ann S (or) Ann M Adams 123 Main ST	Ann M Adams 123 Main ST Ann S Adams 123 Main ST	456 Elm ST 789 Oak ST	N
07	D	Cannot Match COA: Conflicting Directions: Gender Related	Patrick (or) Patricia Adams 123 Main ST	Patrick Adams 123 Main ST Patricia Adams 123 Main ST	456 Main ST 789 Oak ST	N
08	D	Cannot Match COA: Other Conflicting Directions	Cindy Williams 123 Main ST	Cindy Williams 123 Main ST	456 Elm ST med: 200110 (2 COAs on file with different new) 789 Oak ST med: 200110	N
09	D	Cannot Match COA: High-rise Default	Smith 50 First ST	John Smith (family) 50 First ST (L)		N
10	D	Cannot Match COA: Rural Default	Smith RR 1	Martha Smith (family) RR 1 (D)		N
11	D	Cannot Match COA: Individual Match: Insufficient COA Name for Match	M Smith 123 Main ST	M Smith 123 Main ST {COA w/first initial only}		N
12	S	Cannot Match COA: Middle Name Test Failed	Mary P Jones 456 Elm ST	Mary R Jones 456 Elm ST		N
13	S	Cannot Match COA: Gender Test Failed	Rhonda Jones 789 Oak ST	Randy Jones 789 Oak ST		N
14	S	Found COA: New Address Would Not Convert at Run Time	Paul Walters 1 Second ST	Paul Walters 1 Second ST	new 11-digit ambiguous	N

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NCOA^{Link} Return Code Examples - continued

RC = Return Code

How – Derived from D (data) or S (software)

Address – Y (new address provided) or N (new address not provided)

RC	How	Description	Input Record	COA Record		Address
				old side ↓	new side	
15	S	Cannot Match COA: Individual Name Insufficient	J Michael Smith (or) J M Smith (or) J Smith 1 Main ST	J Mark Smith 1 Main ST {COA w/first initial and complete middle}		N
16	S	Cannot Match COA: Secondary Number Discrepancy	1) Mary Jackson 21 Front ST APT 7 2) Jackson 21 Front ST (dropped sec#) 3) Mary Jackson 21 Front ST (dropped sec#)	1) Mary Jackson 21 Front ST APT 2 2) Mary Jackson (family) 21 Front ST 3) Mary Jackson 21 Front ST (S) (w/drop flag)		N
17	S	Cannot Match COA: Other Insufficient Name	M Kathleen Johnson (or) M C Johnson (or) M A Johnson (or) M Johnson 456 Elm ST	Mary Cindy Johnson (I) 456 Elm ST {COA w/complete first and middle}		N
18	D	Cannot Match COA: General Delivery	Smith General Delivery	Mary Smith (family) General Delivery		N
19	D	Found COA: New Address not ZIP+4 Coded	John Smith 99 First ST	John Smith 123 Main ST → 99 First ST Anytown, ST 11111-0000		N
20	D	Cannot Match COA: Conflicting Directions after re-chaining	Cindy Smith-Jones	Cindy Smith-Jones 123 Main ST 789 Oak ST Cindy Smith med: 200210 789 Oak ST PO BOX 100 Cindy Jones med: 200210 789 Oak ST 1011 Fig DR		N
91	S	COA Match: Secondary Number dropped from COA	Richard Smith 123 Main ST	Richard Smith 123 Main ST (S) (w/drop flag)		Y
92	S	COA Match: Secondary Number dropped from Input	Gary Jones 123 Main ST (dropped sec#)	Gary Jones 123 Main ST (S)		Y

NCOA Footnotes vs NCOA^{Link} Return Codes

NCOA Code Definition		NCOA ^{Link} Code Definition	
A	NCOA MATCH The input record matched to a NCOA master file record using the current NCOA rules. DELIVERABILITY CODE =M = Forwardable move A new address could be furnished	A	COA Match - The input record matched to a business, individual or family type master file record. A new address could be furnished. Please Note: If this return code is achieved then <u>no other matching attempts</u> are permitted regardless of the PROCESSING mode.
A A1 A2 A3 A4	NCOA MATCH The input record matched to a NCOA master file record using the current NCOA rules. FOREIGN FLAG = F foreign move – NO NEW ADDRESS PROVIDED	01	Found COA: Foreign Move – The input record matched to a business, individual or family type master file record but the new address was outside the USPS delivery area. This return code may be returned regardless of the processing mode, matching logic, or COA type. Please Note: If this return code is achieved then <u>no other matching attempts</u> are permitted regardless of the PROCESSING mode.
A A1 A2 A3 A4	NCOA MATCH The input record matched to a NCOA master file record using the current NCOA rules. DELIVERABILITY CODE = K = Moved, left no address- NO NEW ADDRESS PROVIDED	02	Found COA: Moved Left No Address(MLNA) - The input record matched to a business, individual or family type master file record and the new address was not provided to USPS. This return code may be returned regardless of the processing mode, matching logic, or COA type. Please Note: If this return code is achieved then <u>no other matching attempts</u> are permitted regardless of the PROCESSING mode.
A A1 A2 A3 A4	NCOA MATCH The input record matched to a NCOA master file record using the current NCOA rules. DELIVERABILITY CODE =G = PO Box Closed – NO NEW ADDRESS PROVIDED	03	Found COA: Box Closed No Order(BCNO) – The Input record matched to a business, individual or family type master file record which contains an old address of PO BOX that has been closed without a forwarding address provided. This return code may be returned regardless of the processing mode, matching logic, or COA type. Please Note: If this return code is achieved then <u>no other matching attempts</u> are permitted regardless of the PROCESSING mode.
A A1 A2 A3 A4	NCOA MATCH The input record matched to a NCOA master file record using the current NCOA rules. DELIVERABILITY CODE =P = Primary address not on delivery point file – NO NEW ADDRESS PROVIDED	19	Found COA: New Address not ZIP+4 coded – There is a change of address on file but the new address cannot be ZIP+4 coded and therefore there is no 11-digit DPBC to store or return. This return code may be returned regardless of the processing mode, matching logic, or COA type. Please Note: If this return code is achieved then <u>no other matching attempts</u> are permitted regardless of the PROCESSING mode.
A1	NCOA MATCH - MIDDLE NAME/INITIAL NOT PRESENT An NCOA match was made using the current NCOA rules; however, one of the records contains a complete middle name or middle name initial and the other record does not contain a middle name or middle name initial.		

NCOA Footnotes vs NCOA^{Link} Return Codes - continued

NCOA		NCOA^{Link}	
Code	Definition	Code	Definition
A2	NCOA MATCH - MATCHED FULL MIDDLE NAME TO INITIAL An NCOA match was made using current NCOA rules; however, one record contains a complete first name and a complete middle name and the other record contains a complete first name and only a middle name initial.		
A3	NCOA MATCH - MATCHED FULL FIRST NAME TO INITIAL An NCOA match was made using current NCOA rules; however, one record contains a complete first name and a complete middle name and the other record contains a first name initial only with a complete middle name.		
A4	NCOA MATCH - FAMILY MOVE, FIRST/MIDDLE DIFFERENT An NCOA match was made using current NCOA rules for standard matching; both records contain the same last name; however, the first names or initials and the middle names or initials on the NCOA file and the customer record do not match.		
B	POSSIBLE NIXIE MATCH The input record was similar to an NCOA master file record; however, an NCOA match could not be made because of one or more NCOA rules. Additional footnotes are given to indicate reason(s) an NCOA match could not be made		Return Codes that indicate potential matches but could not make the match due to rules: 04, 06, 07, 08, 09, 10, 11, 12, 13, 15, 16, 17, 18, 20

NCOA Footnotes vs NCOA^{Link} Return Codes - continued

NCOA Code	Definition	NCOA ^{Link} Code	Definition
C	<p>NO MATCH AVAILABLE The input record was not similar to an NCOA master file record.</p>	00	<p>NO Match - The input record COULD NOT BE matched to a master file record. A new address could not be furnished. This return code may be returned regardless of the processing mode, matching logic, or COA type. Please Note: When processing in any mode and this return code is received it is required to attempt the match again using the next level of matching logic allowed by the processing mode.</p>
D	<p>HOUSE NUMBER MISSING The input record is a street record which is missing the house number. NCOA rules require the input house number to be exactly the same as master file record for an NCOA match to occur.</p>	00	<p>NO Match - The input record COULD NOT BE matched to a master file record. A new address could not be furnished. This return code may be returned regardless of the processing mode, matching logic, or COA type. Please Note: When processing in any mode and this return code is received it is required to attempt the match again using the next level of matching logic allowed by the processing mode</p>
F	<p>SURNAMES DO NOT MATCH The input surname is phonetically similar to the NCOA master file record. However, the degree of similarity is less than NCOA rules require to identify a match.</p>	00	<p>NO Match - The input record COULD NOT BE matched to a master file record. A new address could not be furnished. This return code may be returned regardless of the processing mode, matching logic, or COA type. Please Note: When processing in any mode and this return code is received it is required to attempt the match again using the next level of matching logic allowed by the processing mode</p>

NCOA Footnotes vs NCOA^{Link} Return Codes - continued

NCOA Code	Definition	NCOA ^{Link} Code	Definition
G	<p>INDIVIDUAL MOVE, FIRST NAMES DO NOT MATCH There is an individual move record with the same address and surname on the master file. However, an NCOA match cannot be made because first names do not match.</p>	17	<p>Cannot Match COA: Other Insufficient Name – The input record matched to an individual or family master file record. The input name is different or not sufficient enough to produce a match. This return code is only obtained when using individual matching logic. Please Note: When processing in the STANDARD mode and this return code is received utilizing Individual Logic do not continue the Individual logic sequence and go straight to the FAMILY matching logic.</p>
H	<p>TITLES DO NOT MATCH An NCOA match was not made for one of the following reasons: 1) Both the input record and the master file record contain a title such as Jr., Sr., I, II, or III and the title is not the same on both files; or 2) a title such as Jr., Sr., I, II, III, etc., appeared on the input record but no title appeared on the master file record; or 3) no title appeared on the input record but a title such as Jr., Sr., I, II, III, etc., appeared on the master file record.</p>	00	<p>NO Match - The input record COULD NOT BE matched to a master file record. A new address could not be furnished. This return code may be returned regardless of the processing mode, matching logic, or COA type. Please Note: When processing in any mode and this return code is received it is required to attempt the match again using the next level of matching logic allowed by the processing mode.</p> <p>Individual and/or Business Matching only – If it goes to family level a match is allowed</p>
I	<p>FIRM NAMES DO NOT MATCH The input record was compared to a firm record but a match could not be made.</p>	00	<p>NO Match - The input record COULD NOT BE matched to a master file record. A new address could not be furnished. This return code may be returned regardless of the processing mode, matching logic, or COA type. Please Note: When processing in any mode and this return code is received it is required to attempt the match again using the next level of matching logic allowed by the processing mode.</p>
J	<p>INPUT FILE MISSING FIRST NAME There is an individual move record with the same or similar address and surname on the master file. However, an NCOA match cannot be made because the input file does not contain a first name or initials</p>	15	<p>Cannot Match COA: Individual Name Insufficient – There is a master file record with the same address and surname. A match cannot be made because the input record does not contain the appropriate first and middle name information. This return code is only obtained when using individual matching logic. Please Note: When processing in the STANDARD mode and this return code is received utilizing Individual Logic do not continue the Individual logic sequence and go straight to the FAMILY matching logic.</p>

NCOA Footnotes vs NCOA^{Link} Return Codes - continued

NCOA		NCOA ^{Link}	
Code	Definition	Code	Definition
K	<p>SECONDARY NAME OR INITIAL DOES NOT MATCH The NCOA master file record is for an individual move and the middle name or initial is not the same on both files.</p>	06	<p>Cannot Match COA: Conflicting Directions: Middle Name Related –There is more than one COA (individual or family type) record for the match algorithm and the middle names or initials on the COAs are different. Therefore, a single match result could not be determined. This return code is only obtained when using individual matching logic. Please Note: If this return code is achieved then <u>no other matching attempts</u> are permitted regardless of the PROCESSING mode.</p>
		12	<p>Cannot Match COA: Middle Name Test Failed - The input record matched to an individual or family record on the master file with the same address and surname. However, a match cannot be made because the input name contains a conflict with the middle name or initials on the master file record. This return code is only obtained when using individual matching logic. Please Note: If this return code is achieved then <u>no other matching attempts</u> are permitted regardless of the PROCESSING mode.</p>
L	<p>DIFFERENT GENDER The NCOA master file record is for an individual move. An NCOA match was not made because the two files do not indicate the same gender.</p>	07	<p>Cannot Match COA: Conflicting Directions: Gender Related –There is more than one COA (individual or family type) record for the match algorithm and the genders of the names on the COAs are different. Therefore, a single match result could not be determined. This return code is only obtained when using individual matching logic. Please Note: If this return code is achieved then no other matching attempts are permitted regardless of the PROCESSING mode.</p>
		13	<p>Cannot Match COA: Gender Test Failed – The input record matched to a master file (individual or family type) record. A match cannot be made because the gender of the name on the input record conflicts with the gender of the name on the master file record. This return code is only obtained when using individual matching logic. Please Note: When processing in the STANDARD mode and this return code is received utilizing Individual Logic do not continue the Individual logic sequence and go straight to the FAMILY matching logic.</p>

NCOA^{Link} USER TECHNICAL REFERENCE

NCOA Footnotes vs NCOA^{Link} Return Codes - continued

NCOA		NCOA ^{Link}	
Code	Definition	Code	Definition
M	<p>INPUT ADDRESS MISSING BOX NUMBER An NCOA match was not made because the input address is a Rural Route or Highway Contract Route and does not have a box number while the NCOA candidate record does contain a box number, or</p> <p>The input address is a Rural Route or Highway Contract Route and does have a box number while the NCOA candidate record does not contain a box number, or</p> <p>The input address is a Rural Route or Highway Contract Route and does not have a box number and the NCOA candidate record does not contain a box number and individual match not made.</p>	10	<p>Cannot Match COA: Rural Default - The input record matched to a family record on the master file from a Rural Route or Highway Contract Route address ZIP+4 coded to the route default. This address situation requires individual name matching logic to obtain a match and individual names do not match. Please Note: This return code is only obtained when processing in the STANDARD mode using Family matching logic.</p>
N	<p>ADDRESS NOT MATCHED The input address and the NCOA master file address were compared and because of a difference in pre-directional, or post-directional or suffix, an NCOA match could not be made.</p>	00	<p>NO Match - The input record COULD NOT BE matched to a master file record. A new address could not be furnished. This return code may be returned regardless of the processing mode, matching logic, or COA type. Please Note: When processing in any mode and this return code is received it is required to attempt the match again using the next level of matching logic allowed by the processing mode.</p>
O	<p>STREET NAMES NOT MATCHED The input address and the NCOA master file address were compared and the street name was not similar enough to make an NCOA match.</p>	00	<p>NO Match - The input record COULD NOT BE matched to a master file record. A new address could not be furnished. This return code may be returned regardless of the processing mode, matching logic, or COA type. Please Note: When processing in any mode and this return code is received it is required to attempt the match again using the next level of matching logic allowed by the processing mode.</p>

NCOA Footnotes vs NCOA^{Link} Return Codes - continued

NCOA		NCOA ^{Link}	
Code	Definition	Code	Definition
P	<p>MULTIPLE RESPONSE, NO MATCH The NCOA master file contained more than one possible match for the input record; therefore, an NCOA match cannot be made.</p>	06	<p>Cannot Match COA: Conflicting Directions: Middle Name Related –There is more than one COA (individual or family type) record for the match algorithm and the middle names or initials on the COAs are different. Therefore, a single match result could not be determined. This return code is only obtained when using individual matching logic. Please Note: If this return code is achieved then <u>no other matching attempts</u> are permitted regardless of the PROCESSING mode.</p>
		07	<p>Cannot Match COA: Conflicting Directions: Gender Related –There is more than one COA (individual or family type) record for the match algorithm and the genders of the names on the COAs are different. Therefore, a single match result could not be determined. This return code is only obtained when using individual matching logic. Please Note: If this return code is achieved then no other matching attempts are permitted regardless of the PROCESSING mode.</p>
		08	<p>Cannot Match COA: Other Conflicting Instructions – The input record matched to two master file (business, individual or family type) records. The two records in the master file were compared and due to differences in the new addresses, a match could not be made. This return code may be returned regardless of the processing mode, matching logic, or COA type. Please Note: If this return code is achieved then <u>no other matching attempts</u> are permitted regardless of the PROCESSING mode.</p>
		20	<p>Cannot Match COA: Conflicting Directions after re-chaining – Multiple master file records were potential matches for the input record. The master file records contained different new addresses and a single match result could not be determined. This return code may be returned regardless of the processing mode, matching logic, or COA type. Please Note: If this return code is achieved then <u>no other matching attempts</u> are permitted regardless of the PROCESSING mode.</p>

NCOA^{Link} USER TECHNICAL REFERENCE

NCOA Footnotes vs NCOA^{Link} Return Codes - continued

NCOA		NCOA ^{Link}	
Code	Definition	Code	Definition
Q	UNIT DESIGNATOR VALUES NOT EQUAL Unit designator value on the input record does not match the unit designator value on the master file record.	16	Cannot Match COA: Secondary Number Discrepancy – The input record matched to a street level individual or family type record. However, a match is prohibited based on 1 of the following reasons: 1) There is conflicting secondary information on the input and master file record; 2) the input record contained secondary information and matched to a family record that does not contain secondary information. In item 2, this address match situation requires individual name matching logic to obtain a COA match and individual names do not match. Please Note: If this return code is achieved then <u>no other matching attempts</u> are permitted regardless of the PROCESSING mode.
R	<u>INDIVIDUAL MOVE</u>		Level of match is always returned with the appropriate return code other than 00
S	<u>FIRM MOVE</u>		Level of match is always returned with the appropriate return code other than 00
T	<u>FAMILY MOVE</u>		Level of match is always returned with the appropriate return code other than 00

NCOA Footnotes vs NCOA^{Link} Return Codes - continued

NCOA	Code Definition	NCOA ^{Link}	Code Definition
U	<p>APARTMENT NUMBER/SECONDARY INFORMATION MISSING</p> <p>NCOA rules require the input record when compared to the master file record contain the same apartment number if present in either or contain the same secondary information if present in either. An NCOA match was not made for one of the following reasons:</p> <p>The master file record contains an apartment number and the input record does not, or</p> <p>The master file record does not contain an apartment number and the input record does, or</p> <p>The master file record and the input record are missing secondary information and, the address is a highrise and, an individual match cannot be made.</p>	<p>91</p> <p>92</p> <p>09</p>	<p>COA Match: Secondary Number Dropped from input address – The input record matched to a master file record, but the input address had a secondary number and the master file record did not. The record is a ZIP+4 street level match. Please Note: This return code is derived from individual matching logic only. If this return code is achieved then <u>no other matching attempts</u> are permitted regardless of the PROCESSING mode.</p> <p>COA Match: Secondary Number Dropped from input address – The input record matched to a master file record, but the input address had a secondary number and the master file record did not. The record is a ZIP+4 street level match. Please Note: This return code is derived from individual matching logic only. If this return code is achieved then <u>no other matching attempts</u> are permitted regardless of the PROCESSING mode.</p> <p>Cannot Match COA: High-rise Default – The input record matched to a family record on the master file from a High-rise address ZIP+4 coded to the building default. This address match situation requires individual name matching logic to obtain a match and individual names do not match. Please Note: This return code is only obtained when processing in the STANDARD mode using Family matching logic.</p>
V	<p><u>FIRST NAME MATCHES FIRST INITIAL, INDIVIDUAL MOVE</u></p> <p>An NCOA match could not be made because of name matching rules for an individual move. However, one file contains an initial which matches to the first name on the other file.</p>	<p>11</p>	<p>Cannot Match COA: Individual Match: Insufficient COA Name for Match – There is a master file (individual or family type) record with the same surname and address but there is insufficient name information on the master file record to produce a match using individual matching logic. This return code is only obtained when using individual matching logic. Please Note: When processing in the STANDARD mode and this return code is received utilizing Individual Logic do not continue the Individual logic sequence and go straight to the FAMILY matching logic.</p>

NCOA Footnotes vs NCOA^{Link} Return Codes - continued

NCOA		NCOA ^{Link}	
Code	Definition	Code	Definition
W	<p>TRANSPPOSITION OF SECONDARY NUMBER</p> <p>The last two digits in a "string" are transposed. As such, an NCOA match could not be made. For purposes of Nixie matching, this transportation is considered to be equal.</p> <p>Example: 12456 = 12465</p>	00	<p>NO Match - The input record COULD NOT BE matched to a master file record. A new address could not be furnished. This return code may be returned regardless of the processing mode, matching logic, or COA type. Please Note: When processing in any mode and this return code is received it is required to attempt the match again using the next level of matching logic allowed by the processing mode.</p>
X	<p>EXCEPTIONAL UNIT DESIGNATORS WITHOUT UNIT DESIGNATOR VALUE</p> <p>An NCOA match could not be made because exceptional unit designators without designator values must be equal.</p>	16	<p>Cannot Match COA: Secondary Number Discrepancy – The input record matched to a street level individual or family type record. However, a match is prohibited based on 1 of the following reasons: 1) There is conflicting secondary information on the input and master file record; 2) the input record contained secondary information and matched to a family record that does not contain secondary information. In item 2, this address match situation requires individual name matching logic to obtain a COA match and individual names do not match. Please Note: If this return code is achieved then <u>no other matching attempts</u> are permitted regardless of the PROCESSING mode.</p>
Y	<p>INDIVIDUAL MATCH LOGIC REQUESTED</p> <p>Individual Match logic was chosen for NCOA processing. A potential match was made to a family move; however, the first/middle names on the input and master file records do not match. The match cannot be accepted.</p>	17	<p>Cannot Match COA: Other Insufficient Name – The input record matched to an individual or family master file record. The input name is different or not sufficient enough to produce a match. This return code is only obtained when using individual matching logic. Please Note: When processing in the STANDARD mode and this return code is received utilizing Individual Logic do not continue the Individual logic sequence and go straight to the FAMILY matching logic.</p>
Z	<p>FAMILY MATCH TO A GENERAL DELIVERY</p> <p>Moves from General Delivery addresses require the use of Individual Match logic. A potential match was made to a family move from a general delivery address; however, the first/middle names on the input and master file records do not match. The NCOA match cannot be accepted.</p>	18	<p>Cannot Match COA: General Delivery – The input record matched to a family record on the master file from a General Delivery address. This address situation requires individual name matching logic to obtain a match and individual names do not match. Please Note: This return code is only obtained when processing in the STANDARD mode using Family matching logic.</p>

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NCOA Footnotes vs NCOA^{Link} Return Codes - continued

The following NCOA^{Link} return codes are specific to NCOA^{Link} technology:

Code	Description
05	Found COA: New 11-digit DPBC is Ambiguous – The input record matched to a business, individual or family type master file record. The new address on the master file record could not be converted to a deliverable address because the DPBC represents more than one delivery point. This return code may be returned regardless of the processing mode, matching logic, or COA type. Please Note: If this return code is achieved then <u>no other matching attempts</u> are permitted regardless of the PROCESSING mode.
14	Found COA: New Address Would Not Convert at Run Time - The input record matched to a master file (business, individual or family type) record. The new address could not be converted to a deliverable address. This return code may be returned regardless of the processing mode, matching logic, or COA type. Please Note: If this return code is achieved then <u>no other matching attempts</u> are permitted regardless of the PROCESSING mode.

The following NCOA Footnotes/Nixes did not have a corresponding NCOA^{Link} Return Code:
A1, A2, A3, A4,

The following NCOA Footnotes/Nixes equate to **only** a NCOA^{Link} Return Code of 00:
D, F, H, I, N, O, W

The following NCOA Footnotes/Nixes were expanded and have more specific NCOA^{Link} Return Codes:

NCOA	NCOA ^{Link}	# expanded	NCOA ^{Link} Return Codes
C	2		04, 66
K	2		06, 12
L	2		07, 13
P	4		06, 07, 08, 20
U	3		91, 92, 09

NCOA^{Link} Return Code Processing

When processing in STANDARD mode and return codes 00, 11, 13, 15 and 17 are received utilizing Individual Logic it is required to continue the Individual Logic sequence. If the no other result is found after all Individual Logic attempts have been exhausted, it is required to attempt the match again using FAMILY matching logic. In the event that subsequent Family matching logic does not produce a match when Return codes 11, 13, 15, 17 are initially received, then provide the last return code (11, 13, 15, 17) received from the individual matching logic. No other matching attempts are permitted.

When processing yields multiple return codes with values other than "00", the software must return the final return code, query name and query address as part of the required return data in the certification/audit process as well as in the return to the customer.

Developer's software may optionally provide 4 additional fields to store return codes derived from "intermediate" processes/lookups as long as it is made clear that the values do not represent the final result of the exact input or query name on the return record. Duplicated return codes as well as return code '00' should not be included in the optional fields.

The eleven digit DPBC should only be provided to the customer as part of the new address when return code A, 91 or 92 is the result.

When the input address on a record is unable to be ZIP+4 coded, that record does not have to go through the normal matching routine process. This record can simply bypass the subsequent matching routines as long as it is recorded in the statistical records.

For each address submitted to NCOA^{Link}, the software must return the following output:

- a. Each original unaltered input address as it was presented.
- b. The standardized input address appended with the correct ZIP+4/DPC, other postal values and any other intelligence flags or return codes that result from the CASS processing segment.
- c. For each mailing address for which there is a match (return codes A, 91, 92) to the NCOA^{Link} hash table(s) as defined in this document, the 11-digit DPBC and a conversion to a standardized address, and standard return codes. Software shall assign all applicable standard return codes.
- d. When a match is made (return codes A, 91, 92, 01, 02, 03, 05, 14, 19) the following elements must be returned: the move effective date (CCYYMM), specific name and address utilized in the query that obtained the match, and the move type. The move type is determined by the software based on the specific name inquiry utilized to obtain the match.
- e. For each mailing address for which there is not a match to the NCOA^{Link} hash table(s), the software must return all elements as appropriate as well as any standard return codes that may be appropriate.
- f. The urbanization name information, when applicable.
- g. The carrier route information for new (updated) addresses.
- h. Delivery Point Validation results, if returned.

NCOA^{Link} Name Sequence Presentation

The following is an order of precedence for presenting names to NCOA^{Link}. The middle names or initials are presented in this presentation for clarity and it is understood that middle names or initials are not presented for matching, but are used for comparison and validation of the information returned from NCOA^{Link}.

1. First Name, Middle Name, and Last Name as presented (individual logic).

Name as presented: KIMBERLY ANN SMITH		
Attempted input name :		
First	Middle	Last
KIMBERLY	ANN	SMITH

Optional: If the last name ends with an 'S', you may drop the 'S' and try this match again.

2. If there is not a match utilizing Example 1, then if the first name as presented appears as a misspelling on normalf.lst, substitute the correctly spelled (normalized) version of the first name (individual logic).

Name as presented: KIMERLY ANN SMITH		
Attempted input name :		
First	Middle	Last
KIMERLY	ANN	SMITH
Normalf.lst indicates that KIMERLY is a misspelling of KIMBERLY. Normalize KIMERLY to KIMBERLY.		
NOTE: Once you have normalized a first name, use the nickname(s) of the normalized first name.		

Optional: If the last name ends with an 'S', you may drop the 'S' and try this match again.

3. If there is not a match utilizing Example 2, then check the nicknames on nick.list utilizing the original input or normalized version of the first name, as the case may be (individual logic). If a nickname is present, substitute the nickname for the first name for all nickname occurrences.

Name as presented: KIMBERLY ANN SMITH		
Attempted input name :		
First	Middle	Last
KIM	ANN	SMITH
Do not attempt misspellings/normalization of nick names.		
<i>Optional: If the last name ends with an 'S', you may drop the 'S' and try this match again.</i>		

4. If there is not a match utilizing Example 3, then if the last name as presented appears as a misspelling on Normall.lst, substitute the correctly spelled (normalized) version from Normall.lst for the last name (individual logic).

Name as presented: KIMBERLY ANN ZMITH		
Attempted input name :		
First	Middle	Last
KIMBERLY	ANN	SMITH
Normall.lst indicates that ZMITH is a misspelling of SMITH. Normalize ZMITH to SMITH		
Attempting variations of the first name and last name simultaneously is prohibited.		
If the name as presented is KIMERLY ANN ZMITH, you may try KIMERLY ANN SMITH, but not KIMBERLY ANN SMITH or KIM ANN SMITH.		

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5. If there is not a match utilizing Example 4 and if there is a Middle Name (more than 1 character), you may attempt a lookup on only the first initial, full middle name, and last name (individual logic).

Name as presented: KIMBERLY ANN SMITH		
Attempted input name :		
First	Middle	Last
K	ANN	SMITH
<p>Note: If the first name is truncated to the first initial only, the software should set the INPUT DROP NAME FLAG (or any other variable name utilized by the software to track if the input truncated to the first initial) must be set to positive. If the returned NCOA^{Link} DROP N FLAG is positive and the INPUT DROP NAME FLAG is positive then this lookup should be treated as a no match (Return Code: 00). Continue with the lookup process. Please refer to section labeled Appropriate use of the Drop Flag.</p>		
<p><i>Optional: If the last name ends with an 'S', you may drop the 'S' and try this match again.</i></p>		

6. If there is not a match utilizing Example 5, you may reverse the order of the first name and full middle name, providing, of course, that the middle name is more than 1 character (individual logic).

Name as presented: KIMBERLY ANN SMITH		
Attempted input name :		
First	Middle	Last
ANN	KIMBERLY	SMITH
Do not attempt name variations when using this option. (normalized or nicknames) Use the name as presented		
Name as presented: KIMERLY ANN SMITH		
Attempted input name :		
First	Middle	Last
ANN	KIMERLY	SMITH
<p><i>Optional: If the last name ends with an 'S', you may drop the 'S' and try this match again.</i></p>		

7. If there is not a match utilizing Example 6, then you may attempt the Last Name (family logic).

Name as presented: KIMBERLY ANN SMITH		
Attempted input name :		
First	Middle	Last
		SMITH
<p>If you got to this step by return code 11,13,15, and 17 then this would be your last lookup.</p>		
<p><i>Optional: If the last name ends with an 'S', you may drop the 'S' and try this match again.</i></p>		

NCOA^{Link} USER TECHNICAL REFERENCE

8. If there is not a match utilizing Example 7, then you may attempt the normalized Last Name (family logic).

Name as presented: KIMBERLY ANN ZMITH		
Attempted input name :		
First	Middle	Last
		SMITH
<i>Optional: If the last name ends with an 'S', you may drop the 'S' and try this match again.</i>		

9. If there is not a match utilizing Example 7, then you may attempt the First Name, and Hyphenated Middle Name / Last Name combination (individual logic).

Name as presented: KIMBERLY ANN SMITH		
Attempted input name :		
First	Middle	Last
KIMBERLY		ANN-SMITH
Do not attempt name variations when using this option. (normalized or nicknames)		
Name as presented: KIMERLY ANN SMITH		
Attempted input name :		
First	Middle	Last
KIMERLY		ANN-SMITH
<i>Optional: If the last name ends with an 'S', you may drop the 'S' and try this match again.</i>		

10. If there is not a match utilizing Example 8 then you may attempt the Hyphenated Middle Name / Last Name combination (family logic).

Name as presented: KIMBERLY ANN SMITH		
Attempted input name :		
First	Middle	Last
		ANN-SMITH
<i>Optional: If the last name ends with an 'S', you may drop the 'S' and try this match again.</i>		

NOTE:

- **Do not** attempt variations of the first name and last name simultaneously (except when using the option to drop the 'S' in the last name).
- **Do not** truncate first names while testing normalized spellings of last names.
- **Do not** drop the 'S' in the last name and test normalized spellings of the last name simultaneously
- **Do not** attempt misspellings of nicknames.

- **Using individual match logic, if the address match is made to a street level record, and there is secondary address information in the input address, if no match is made a second attempt may be made dropping the secondary information from the input address.**

- It is understood that middle names or initials are not presented for matching, but are used for comparison and validation of the information returned from NCOA^{Link}.

Cindy-Mary Table

	Cindy Mary	Cindy M	Cindy	C Mary	C M	C	Mary	Mary C
Cindy Mary	Match	Match	Match	Match	No match	No match	Match	Match
Cindy M	Match	Match	Match	No match	No match	No match	No match	No match
Cindy	Match	Match	Match	No match	No match	No match	No match	No match
C Mary	Match	No match	No match	Match	No match	No match	Match	Match
C M	No match	No match	No match	No match	Match	No match	No match	No match
C	No match	No match	No match	No match	No match	No match	No match	No match
Mary	Match	No match	No match	Match	No match	No match	Match	Match
Mary C	Match	No match	No match	Match	No match	No match	Match	Match

NCOA^{Link} USER TECHNICAL REFERENCE

NCOA^{Link} Build Records - continued

COA Type and Name as provided by customer:		Record(s) Created during NCOALink Build:	Input Name:	Sequence Input Name producing specified return code (other than 00):	Return Code:
I	Mary C Jones	Mary <u>C</u> Jones (I)	Mary Jones Cathy Jones C Mary Jones Mary C Jones B Mary Jones Mary B Jones C Jones M Jones C M Jones M C Jones Mary Cathleen Jones Cathleen Mary Jones Jones [family logic]	Mary C Jones Mary B Jones Mary Cathleen Jones	A 00 A A 12 12 00 00 00 00 00 A A 00
F	Mary C Jones	Mary <u>C</u> Jones (I) Jones (F)	Same as above except input of last name 'Jones' [family logic] would receive return code A.		
I	Mary Smith-Jones	Mary Smith (I) Mary Jones (I) Mary Smith-Jones(I) Mary Jones-Smith(I)	Mary Smith Mary Jones Mary (Smith-Jones) Mary (Jones-Smith) Mary Cathy Smith Mary Cathy Jones Cathy Mary Smith Cathy Mary Jones M S Jones S M Jones M Smith Jones Smith M Jones Mary Cathy (Smith-Jones) Mary Cathy (Jones-Smith) Cathy Mary (Smith-Jones) Cathy Mary (Jones-Smith) M S (Jones-Smith) S M (Jones-Smith) M Smith (Jones-Smith) Smith M (Jones-Smith) (Jones-Smith) [family logic] (Smith-Jones) [family logic]	Mary Cathy Smith Mary Cathy Jones	A A A A A A A A A 00 00 00 00 A A A A 00 00 00 00 00 00
F	Mary Smith-Jones	Mary Smith (I) Mary Jones (I) Mary Smith-Jones (I) Mary Jones-Smith (I) Smith-Jones (F) Jones-Smith (F)	Same as above except input of last name 'Smith-Jones' [family logic] or 'Jones-Smith' [family logic] would receive return code A.		

NCOA^{Link} USER TECHNICAL REFERENCE

NCOA^{Link} Build Records - continued

COA Type and Name as provided by customer:		Record(s) Created during NCOALink Build:	Input Name:	Sequence Input Name producing specified return code (other than 00):	Return Code:
I	John Mary Smith	John Smith Mary Smith	John Smith Mary Smith Mary A Smith John A Smith A John Smith A Mary Smith J Mary Smith Mary J Smith John Mary Smith Mary John Smith Smith [family logic]	John A Smith Mary A Smith Mary J Smith	A A A A A A A A A A A 00
F	John Mary Smith	John Smith Mary Smith Smith (F)	Same as above except input of last name 'Smith' [family logic] would receive return code A.		

Note: If the COA is a ZIP+4 street level record with secondary information, a drop-flag record is created in addition to the above specified record in the table. For example: If the COA is for 'M Cindy Jones' moving from 123 Main ST APT 2, street level record, the following records would be created:

M Cindy Jones, 123 Main ST APT 2

M Cindy Jones, 123 Main ST (w/drop flag)

Certification and Audit

The following is a description of the file layouts used in the Audit and certification process. The following layouts describe how the Certification/Audit file, which is also called the Stage 2 file, will be constructed:

TEST CLIENT INPUT FILE HEADER RECORD
 TEST CLIENT INPUT FILE DETAIL RECORD

The Certification/Audit file or better known by Stage 2 will only contain the questions.

The following is a description of the file layouts used in the developer process or by any Licensee to test the system. The following layouts describe how the test file, which is also called the Stage 1 file, will be constructed:

TEST CLIENT OUTPUT FILE HEADER RECORD
 TEST CLIENT OUTPUT FILE DETAIL RECORD

The test file or better known by Stage 1 will contain the questions and the answers. Developers and Licensees can utilize this file to analyze if the system is functioning properly. This format will be utilized to provide back the answers to a Certification/Audit file (Stage 2).

All Alpha fields, defined as (pic x(#)) in the output file, will be left justified and space filled. When an Alpha field is empty it must contain all spaces. All Numeric fields, defined as (pic 9(#)) in the output file, will be right justified zero filled. When a Numeric field is empty it must contain all zeros. All records will be fixed length and contain a carriage-return line-feed (CRLF) at the end of each record.

TEST CLIENT INPUT FILE HEADER RECORD				
RECORD FROM	POSITION TO	FIELD NAME	LENGTH	COBOL
1	8	NCSC AUDIT FILE CREATED DATE(YYYYMMDD)	8	9(08)
9	14	NCSC AUDIT FILE CREATED TIME(HHMMSS)	6	9(06)
15	18	NCSC AUDIT FILE NUMBER	4	9(04)
19	26	NCSC NCOA ^{Link} RELEASE DATE	8	9(08)
27	34	NCSC ZIP+4 RELEASE DATE	8	9(08)
35	42	NCSC DPV RELEASE DATE	8	9(08)
43	43	NCSC TYPE (Audit, Certification, Stage)	1	X(01)
44	297	FILLER	254	X(254)
298	298	RECORD TYPE (Header/Detail) (H,D)	1	X(01)
299	300	CARRIAGE RETURN LINE FEED	2	X(02)

NCOA^{Link} USER TECHNICAL REFERENCE

TEST CLIENT INPUT FILE DETAIL RECORD				
RECORD FROM	POSITION TO	FIELD NAME	LENGTH	COBOL
1	28	INPUT CUSTOMER KEY	28	X(28)
29	29	INPUT NAME PARSED (Y,N)	1	X(01)
30	95	INPUT CUSTOMER NAME	66	X(66)
	NOTE:	The information found in the INPUT CUSTOMER NAME will be fixed length. The data contained within the field may be presented as a single field or it may be parsed. If the name is a business, then the name will start in the first position.		
30	35	INPUT PREFIX TITLES	6	X(06)
36	50	INPUT CUSTOMER FIRST NAME	15	X(15)
51	65	INPUT CUSTOMER MIDDLE NAME	15	X(15)
66	85	INPUT CUSTOMER LAST NAME	20	X(20)
86	91	INPUT SUFFIX TITLES	6	X(06)
92	95	FILLER	4	X(04)
96	96	INPUT ADDRESS PARSED (Y,N)	1	X(01)
97	124	INPUT CUSTOMER URBANIZATION NAME	28	X(28)
125	191	INPUT CUSTOMER ADDRESS	67	X(67)
	NOTE:	The information found in the INPUT CUSTOMER ADDRESS will be fixed length. The data contained within the field may be presented as a single field or it may be parsed.		
125	134	INPUT PARSED PRIMARY NUMBER	10	X(10)
135	136	INPUT PARSED PRE-DIRECTIONAL	2	X(02)
137	164	INPUT PARSED PRIMARY NAME	28	X(28)
165	168	INPUT PARSED SUFFIX	4	X(04)
169	170	INPUT PARSED POST-DIRECTIONAL	2	X(02)
171	174	INPUT PARSED UNIT DESIGNATOR	4	X(04)
175	182	INPUT PARSED SECONDARY NUMBER	8	X(08)
183	191	FILLER	9	X(09)
192	192	INPUT LAST LINE PARSED (Y,N)	1	X(01)
193	234	CUSTOMER LAST LINE	42	X(42)
	NOTE:	The information found in the INPUT CUSTOMER LAST LINE will be fixed length. The data contained within the field may be presented as a single field or it may be parsed.		
193	220	INPUT CITY NAME	28	X(28)
221	222	INPUT STATE	2	X(02)
223	227	INPUT FIVE DIGIT ZIP	5	X(05)
228	231	INPUT ZIP+4 ADDON	4	X(04)
232	234	FILLER	3	X(03)
235	297	FILLER	63	X(63)
298	298	RECORD TYPE (Header/Detail) (H,D)	1	X(01)
299	300	CARRIAGE RETURN LINE FEED	2	X(02)

NCOA^{Link} USER TECHNICAL REFERENCE

TEST CLIENT OUTPUT FILE HEADER RECORD				
RECORD FROM	POSITION TO	FIELD NAME	LENGTH	COBOL
1	8	NCSC AUDIT FILE CREATED DATE(YYYYMMDD)	8	9(08)
9	14	NCSC AUDIT FILE CREATED TIME(HHMMSS)	6	9(06)
15	18	NCSC AUDIT FILE NUMBER	4	9(04)
19	26	NCSC NCOA ^{Link} RELEASE DATE	8	9(08)
27	34	NCSC ZIP+4 RELEASE DATE	8	9(08)
35	42	NCSC DPV RELEASE DATE	8	9(08)
43	43	NCSC TYPE (Audit, Certification, Stage)	1	X(01)
44	298	FILLER	255	X(255)
299	306	OUTPUT AUDIT FILE CREATED DATE(YYYYMMDD)	8	9(08)
307	312	OUTPUT AUDIT FILE CREATED TIME(HHMMSS)	6	9(06)
313	320	PROCESSED AGAINST NCOA ^{Link} RELEASE DATE	8	9(08)
321	328	PROCESSED AGAINST ZIP+4 RELEASE DATE	8	9(08)
329	336	PROCESSED AGAINST DPV RELEASE DATE	8	9(08)
337	340	PROCESSED ON PLATFORM ID	4	X(04)
341	997	FILLER	657	X(657)
998	998	RECORD TYPE (Header/Detail) (H,D)	1	X(01)
999	1000	CARRIAGE RETURN LINE FEED	2	X(02)

NCOA^{Link} USER TECHNICAL REFERENCE

TEST CLIENT OUTPUT FILE				
Page 1 of 2				
RECORD FROM	POSITION TO	FIELD NAME	LENGTH	COBOL
1	28	INPUT CUSTOMER KEY	28	X(28)
29	29	INPUT NAME PARSED (Y,N)	1	X(01)
30	95	INPUT CUSTOMER NAME	66	X(66)
	NOTE:	The information found in the INPUT CUSTOMER NAME will be fixed length. The data contained within the field may be presented as a single field or it may be parsed. If the name is a business, then the name will start in the first position.		
30	35	INPUT PREFIX TITLES	6	X(06)
36	50	INPUT CUSTOMER FIRST NAME	15	X(15)
51	65	INPUT CUSTOMER MIDDLE NAME	15	X(15)
66	85	INPUT CUSTOMER LAST NAME	20	X(20)
86	91	INPUT SUFFIX TITLES	6	X(06)
92	95	FILLER	4	X(04)
96	96	INPUT ADDRESS PARSED (Y,N)	1	X(01)
97	124	INPUT CUSTOMER URBANIZATION NAME	28	X(28)
125	191	INPUT CUSTOMER ADDRESS	67	X(67)
	NOTE:	The information found in the INPUT CUSTOMER ADDRESS will be fixed length. The data contained within the field may be presented as a single field or it may be parsed.		
125	134	INPUT PARSED PRIMARY NUMBER	10	X(10)
135	136	INPUT PARSED PRE-DIRECTIONAL	2	X(02)
137	164	INPUT PARSED PRIMARY NAME	28	X(28)
165	168	INPUT PARSED SUFFIX	4	X(04)
169	170	INPUT PARSED POST-DIRECTIONAL	2	X(02)
171	174	INPUT PARSED UNIT DESIGNATOR	4	X(04)
175	182	INPUT PARSED SECONDARY NUMBER	8	X(08)
183	191	FILLER	9	X(09)
192	192	INPUT LAST LINE PARSED (Y,N)	1	X(01)
193	234	CUSTOMER LAST LINE	42	X(42)
	NOTE:	The information found in the INPUT CUSTOMER LAST LINE will be fixed length. The data contained within the field may be presented as a single field or it may be parsed.		
193	220	INPUT CITY NAME	28	X(28)
221	222	INPUT STATE	2	X(02)
223	227	INPUT FIVE DIGIT ZIP	5	X(05)
228	231	INPUT ZIP+4 ADDON	4	X(04)
232	234	FILLER	3	X(03)
235	298	FILLER	64	X(64)
	NOTE:	The following fields reflect the results of input name after the utilization of a name parser. This is the final parsed name information utilized in the process which was responsible for the final result. If the name is a business, then the name will start in the first position. If no match (return code 00) or daily delete (return code 66) then this field will be blank.		
299	304	QUERY PREFIX TITLE	6	X(06)
305	319	QUERY CUSTOMER FIRST NAME	15	X(15)
320	334	QUERY CUSTOMER MIDDLE NAME	15	X(15)
335	354	QUERY CUSTOMER LAST NAME	20	X(20)
355	360	QUERY SUFFIX TITLE	6	X(06)

NCOA^{Link} USER TECHNICAL REFERENCE

TEST CLIENT OUTPUT FILE				
Page 2 of 2				
RECORD FROM	POSITION TO	FIELD NAME	LENGTH	COBOL
	NOTE:	The following fields reflect the results of the input address after the utilization of a certified CASS ZIP+4 system. This is the final address information that was utilized in the process which was responsible for the final result. If no match (return code 00) or daily delete (return code 66) then this field will be blank.		
361	388	QUERY PARSED URBANIZATION NAME	28	X(28)
389	398	QUERY PARSED PRIMARY NUMBER	10	X(10)
399	400	QUERY PARSED PRE-DIRECTIONAL	2	X(02)
401	428	QUERY PARSED PRIMARY NAME	28	X(28)
429	432	QUERY PARSED SUFFIX	4	X(04)
433	434	QUERY PARSED POST-DIRECTIONAL	2	X(02)
435	438	QUERY PARSED UNIT DESIGNATOR	4	X(04)
439	446	QUERY PARSED SECONDARY NUMBER	08	X(08)
447	474	QUERY PARSED CITY NAME	28	X(28)
475	476	QUERY PARSED STATE	2	X(02)
477	481	QUERY FIVE DIGIT ZIP	5	X(05)
482	485	QUERY ZIP+4 ADDON	4	X(04)
486	513	RESULT PARSED URBANIZATION NAME	28	X(28)
514	523	RESULT PARSED PRIMARY NUMBER	10	X(10)
524	525	RESULT PARSED PRE-DIRECTIONAL	2	X(02)
526	553	RESULT PARSED PRIMARY NAME	28	X(28)
554	557	RESULT PARSED SUFFIX	4	X(04)
558	559	RESULT PARSED POST-DIRECTIONAL	2	X(02)
560	563	RESULT PARSED UNIT DESIGNATOR	4	X(04)
564	571	RESULT PARSED SECONDARY NUMBER	08	X(08)
572	599	RESULT PARSED CITY NAME	28	X(28)
600	601	RESULT PARSED STATE	2	X(02)
602	606	RESULT FIVE DIGIT ZIP	5	X(05)
607	610	RESULT ZIP+4 ADDON	4	X(04)
611	613	RESULT DBPC (including check digit)	3	X(03)
614	617	RESULT CARRIER RTE	4	X(04)
618	618	*RESULT DROP FLAG	1	X(01)
619	619	*RESULT DROP N FLAG	1	X(01)
620	625	RESULT MOVE EFFECTIVE DATE	6	X(06)
626	627	*RESULT MIDDLE NAME/Initials(returned from NCOA/Link)	2	X(02)
628	628	*RESULT GENDER (returned from NCOA/Link)	1	X(01)
629	636	*RESULT HINT BYTE (after expansion)	8	X(08)
637	638	RESULT NCOA LINK RETURN CODE	2	X(02)
639	640	RESULT ZIP+4 RETURN CODE	2	X(02)
641	642	RESULT DPV RETURN CODE	2	X(02)
643	658	HEX VALUE OF THE EMDP (from input address)	16	X(16)
659	698	HEX VALUE OF THE SHA OF EMPD (from input address)	40	X(40)
699	714	HEX VALUE OF THE FIRST 8 CHARACTERS OF 48 BYTE OBJECT	16	X(16)
715	729	FIRST NAME OF THE 48 BYTE OBJECT	15	X(15)
730	749	LAST NAME OF THE 48 BYTE OBJECT	20	X(20)
750	754	SUFFIX NAME OF THE 48 BYTE OBJECT	5	X(05)
755	794	HEX VALUE OF THE SHA OF 48 BYTE OBJECT	40	X(40)
795	810	HEX VALUE OF THE DATA RETRIEVED (before reorder)	16	X(16)
811	827	DECIMAL VALUE OF THE 17 DIGIT RESULT VALUE	17	X(17)
828	828	RESULT MOVE TYPE (Family, Individual, Business)(F,I,B)	1	X(01)
839	836	OPTIONAL – INTERMEDIATE RETURN CODES	8	X(08)
837	997	FILLER	161	X(161)
998	998	RECORD TYPE (Header/Detail) (H,D)	1	X(01)
999	1000	CARRIAGE RETURN LINE FEED	2	X(02)

***The following fields of returned data used for analysis must not be returned to the customer: result drop flag, result drop n flag, result middle name, result gender and result hint byte.**

Report/File calculation

The NCOA^{Link} system requires report and file generation of statistical data. The following is provided as a reference only to the Customer Service Log (CSL) as an example of data collected. For a full list of the most current requirements please consult the appropriate NCOA^{Link} Licensee Performance requirements.

Note: All field positions indicate the field start.

1. All information on the Processing Summary Report is from the CSL & PAF reports
2. Total of detail records for all Count fields should equal the Sum placed in the header record
3. Position 115 'Total Number of Records ZIP+4 Coded' should equal the total of the following fields:

Start	FIELD NAME
287	Total Matched To PO Box Record
298	Total Matched To Highway Contract Record With Box Number
309	Total Matched To Rural Route Default
320	Total Matched To Firm Record
331	Total Matched To General Delivery
342	Total Matched To Building/Highrise Default
353	Total Matched To Military ZIP
364	Total Matched To Non-Deliverable
375	Total Matched To Rural Route With Box Number
386	Total Matched To Street Record
397	Total Matched To Highway Contract Default
408	Total Matched To Building/Highrise With Secondary
419	Total Matched To Other

4. The following ZIP + 4 Coded fields should equal the corresponding CASS Fields.

NCOA ^{Link} Field Name	CASS Field
Total Matched To PO Box Record	PO Box
Total Matched To Highway Contract Record With Box Number	HCR Exact
Total Matched To Rural Route Default	RR Default
Total Matched To Firm Record	Firm
Total Matched To General Delivery	General Del
Total Matched To Building/Highrise Default	Highrise Default
Total Matched To Military ZIP	Military
Total Matched To Non-Deliverable	Non-Deliverable
Total Matched To Rural Route With Box Number	RR Exact
Total Matched To Street Record	Street
Total Matched To Highway Contract Default	HCR Default
Total Matched To Building/Highrise With Secondary	Highrise Exact
Total Matched To Other	Other
Total Matched To Records With Positive LACS Flag	Pos LACS
Ews – No Match Count	EWS

Report/File calculation – continued

5. The following ZIP + 4 Counts should equal the corresponding 3553 Boxes

NCOA ^{Link} Field Name	3553 Field
Total Matched To Rural Route Default	Sum of RR Default and HCR Default
Total Matched To Rural Route With Box Number	Sum of RR Exact and HCR Exact
Total Matched To Building/Highrise Default	High Rise Default
Total Matched To Building/Highrise With Secondary	High Rise Exact
Total Matched To Records With Positive LACS Flag	LACS
EWS – No Match Count	EWS
Total Number Of Records DPV Confirmed	DPV

6. The sum of the following fields should equal Position 93 “Total Number of Records Matched”

Start	FIELD NAME
452	A – Match
463	91 – Match With Secondary Number Dropped On COA (Old Side)
474	92 – Match With Secondary Number Dropped On Input
485	01 – Match – Foreign Move
496	02 – Match – Moved Left No Address
507	03 – Match – Po Box Closed
529	05 – Match – New 11 Digit DPBC Is Ambiguous
617	19 – Match – New Address Not ZIP+4 Codeable
661	14 – Match – New Address Would Not Convert

Report/File calculation – continued

7. The sum of the following fields should equal Position 93 “Total Number of Records Matched

Start	FIELD NAME
837	Addresses Matched Month 0
848	Addresses Matched Month 1
859	Addresses Matched Month 2
870	Addresses Matched Month 3
881	Addresses Matched Month 4
892	Addresses Matched Month 5
903	Addresses Matched Month 6
914	Addresses Matched Month 7
925	Addresses Matched Month 8
936	Addresses Matched Month 9
947	Addresses Matched Month 10
958	Addresses Matched Month 11
969	Addresses Matched Month 12
980	Addresses Matched Month 13
991	Addresses Matched Month 14
1002	Addresses Matched Month 15
1013	Addresses Matched Month 16

Start	FIELD NAME
1024	Addresses Matched Month 17
1035	Addresses Matched Month 18
1046	Addresses Matched Month 19
1057	Addresses Matched Month 20
1068	Addresses Matched Month 21
1079	Addresses Matched Month 22
1090	Addresses Matched Month 22
1101	Addresses Matched Month 24
1112	Addresses Matched Month 25
1123	Addresses Matched Month 26
1134	Addresses Matched Month 27
1145	Addresses Matched Month 28
1156	Addresses Matched Month 29
1167	Addresses Matched Month 30
1178	Addresses Matched Month 31
1189	Addresses Matched Month 32

Start	FIELD NAME
1200	Addresses Matched Month 33
1211	Addresses Matched Month 34
1222	Addresses Matched Month 35
1233	Addresses Matched Month 36
1244	Addresses Matched Month 37
1255	Addresses Matched Month 38
1266	Addresses Matched Month 39
1277	Addresses Matched Month 40
1288	Addresses Matched Month 41
1299	Addresses Matched Month 42
1310	Addresses Matched Month 43
1321	Addresses Matched Month 44
1332	Addresses Matched Month 45
1343	Addresses Matched Month 46
1354	Addresses Matched Month 47
1365	Addresses Matched Month 48

Report/File calculation – continued

The sum of the following fields should equal Position 126 “Total Number of Records DPV Confirmed” .

Start	FIELD NAME
1453	Street (S) Records Validated
1486	High Rise (H) Records Validated
1519	Po Box (P) Records Validated
1530	Rr/Hc (R) Records Validated
1563	Firm (F) Records Validated
1596	General Delivery (G) Records Validated

8. The sum of the following fields should equal Position 1607 “Total Primary Number Error” .

Start	FIELD NAME
1618	Street (S) Records With Primary Number Error
1629	High Rise (H) Records With Primary Number Error
1640	PO Box (P) Records With Primary Number Error
1651	RR/HC (R) Records With Primary Number Error
1662	Firm (F) Records With Primary Number Error

9. The sum of the following fields should equal Position 1673 “Total Secondary Number Error”

Start	FIELD NAME
1684	Street (S) Records With Secondary Number Error
1695	High Rise (H) Records With Secondary Number Error
1706	Firm (F) Records With Secondary Number Error

NCOA^{Link} USER TECHNICAL REFERENCE

Customer Service Log File Layout reference

Start	FIELD NAME and DESCRIPTION	Comment
1	Processing Acknowledgemetrn Form (Paf) ID	First 4 bytes should be the same as the header record for the CSL
19	Processing Category	
29	Additional Notes	
30	Pre-Processes Performed	
31	Concurrent Processes Performed	
32	Post-Processes Performed	
33	Standard Output Returned	
34	Matching Logic Applied	
35	Data Returned	
36	Number Of Months Requested	
38	Class Of Mail	
39	Date List Received From Customer	
47	DATE Ncoa ^{Link} PROCESSING BEGAN	
55	DATE Ncoa ^{Link} PROCESSING COMPLETED	
63	Date List Returned To Customer	
71	Total Number Of Records Processed	
82	Total Number Of Ncoa ^{Link} QUERIES Performed	
93	Total Number Of Records Matched	
104	Total Number Of Matches Rejected	
115	Total Number Of Records Zip+4 Coded	
126	Total Number Of Records Dpv Confirmed	
137	Zip+4 Software Name	
167	Zip+4 Software Version	
179	Zip+4 Directory (Data) Release Date	
187	Ncoa ^{Link} Software Name	
217	Ncoa ^{Link} Software Version	
229	Ncoa ^{Link} Data Release Date	
237	Dpv Software Name	
267	Dpv Software Version	
279	Dpv Data Release Date	
287	Total Matched To PO Box Record	
298	Total Matched To Highway Contract Record With Box Number	
309	Total Matched To Rural Route Default	
320	Total Matched To Firm Record	
331	Total Matched To General Delivery	
342	Total Matched To Building/Highrise Default	
353	Total Matched To Military ZIP	
364	Total Matched To Non-Deliverable	
375	Total Matched To Rural Route With Box Number	
386	Total Matched To Street Record	
397	Total Matched To Highway Contract Default	
408	Total Matched To Building/Highrise With Secondary	
419	Total Matched To Other	
430	Total Matched To Records With Positive LACS Flag	

NCOA^{Link} USER TECHNICAL REFERENCE

Customer Service Log File Layout reference -continued

441	Ews – No Match Count	
452	A – Match	
463	91 – Match With Secondary Number Dropped On COA (Old Side)	
474	92 – Match With Secondary Number Dropped On Input	
485	01 – Match – Foreign Move	
496	02 – Match – Moved Left No Address	
507	03 – Match – Po Box Closed	
518	04 – No Match – Family Move From Street Address W/Secondary	
529	05 – Match – New 11 Digit DPBC Is Ambiguous	
540	06 – No Match – Middle Name Related	
551	07 – No Match – Gender Related	
562	08 – No Match – Conflicting Instructions	
573	09 – No Match – Family Move From Highrise Default	
584	10 – No Match – Family Move From Rural/HC Route Default	
595	11 – No Match – Individual Move – Insufficient Name Data	
606	18 – No Match – Family Move From General Delivery	
617	19 – Match – New Address Not ZIP+4 Codeable	
628	20 – No Match – Multiple Response – Conflicting Directions	
639	12 – No Match – Middle Name Test Failed	
650	13 – No Match – Gender Test Failed	
661	14 – Match – New Address Would Not Convert	
672	15 – No Match – Individual Name Insufficient On Input To Match	
683	16 – No Match – Secondary Number Discrepancy	
694	17 – No Match – Different First Name	
	From “Daily Delete” Process	
705	66 – No Match – Input Address Appears In “Daily Delete” Suppression File	
	From DPV Processing Of Input Addresses	
716	Aa – Zip+4 Match	
727	A1 – Zip+4 No Match	
738	M1 – Primary Number Missing	
749	M3 – Primary Number Invalid	
760	P1 – Missing PO, RR Or HC Box Number	
771	P3 – Invalid PO, RR Or HC Box Number	
782	BB – DPV Matched (All Components)	
793	RR – DPV Matched To CMRA	
804	CC – Primary Number Match – Secondary Present But Invalid	
815	N1 – Primary Number Match – Secondary Missing	
826	R1 – DPV Matched To CMRA – PMB Number Not Present	
837	Addresses Matched Month 0	
848	Addresses Matched Month 1	

NCOA^{Link} USER TECHNICAL REFERENCE

Customer Service Log File Layout reference -continued

859	Addresses Matched Month 2	
870	Addresses Matched Month 3	
881	Addresses Matched Month 4	
892	Addresses Matched Month 5	
903	Addresses Matched Month 6	
914	Addresses Matched Month 7	
925	Addresses Matched Month 8	
936	Addresses Matched Month 9	
947	Addresses Matched Month 10	
958	Addresses Matched Month 11	
969	Addresses Matched Month 12	
980	Addresses Matched Month 13	
991	Addresses Matched Month 14	
1002	Addresses Matched Month 15	
1013	Addresses Matched Month 16	
1024	Addresses Matched Month 17	
1035	Addresses Matched Month 18	
1046	Addresses Matched Month 19	
1057	Addresses Matched Month 20	
1068	Addresses Matched Month 21	
1079	Addresses Matched Month 22	
1090	Addresses Matched Month 22	
1101	Addresses Matched Month 24	
1112	Addresses Matched Month 25	
1123	Addresses Matched Month 26	
1134	Addresses Matched Month 27	
1145	Addresses Matched Month 28	
1156	Addresses Matched Month 29	
1167	Addresses Matched Month 30	
1178	Addresses Matched Month 31	
1189	Addresses Matched Month 32	
1200	Addresses Matched Month 33	
1211	Addresses Matched Month 34	
1222	Addresses Matched Month 35	
1233	Addresses Matched Month 36	
1244	Addresses Matched Month 37	
1255	Addresses Matched Month 38	
1266	Addresses Matched Month 39	
1277	Addresses Matched Month 40	
1288	Addresses Matched Month 41	
1299	Addresses Matched Month 42	
1310	Addresses Matched Month 43	
1321	Addresses Matched Month 44	
1332	Addresses Matched Month 45	
1343	Addresses Matched Month 46	
1354	Addresses Matched Month 47	
1365	Addresses Matched Month 48	
1376	Operator Id	
1388	Buyer Company Name	
1418	Mailing Zip Code	
1423	Filler	

Customer Service Log File Layout reference -continued

1453	Street (S) Records Validated	
1464	Cmra Presented	
1475	Cmra Validated	
1486	High Rise (H) Records Validated	
1497	Cmra Presented	
1508	Cmra Validated	
1519	Po Box (P) Records Validated	
1530	Rr/Hc (R) Records Validated	
1541	Cmra Presented	
1552	Cmra Validated	
1563	Firm (F) Records Validated	
1574	Cmra Presented	
1585	Cmra Validated	
1596	General Delivery (G) Records Validated	
1607	Total Primary Number Error	
1618	Street (S) Records With Primary Number Error	
1629	High Rise (H) Records With Primary Number Error	
1640	PO Box (P) Records With Primary Number Error	
1651	RR/HC (R) Records With Primary Number Error	
1662	Firm (F) Records With Primary Number Error	
1673	Total Secondary Number Error	
1684	Street (S) Records With Secondary Number Error	
1695	High Rise (H) Records With Secondary Number Error	
1706	Firm (F) Records With Secondary Number Error	
1717	Filler	
1800	Record Type	