



Natural Resources
Canada
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National topographic data base

Metadata Format - **NTDB Edition 3**

Centre for Topographic Information
Customer Support Group
2144 King St. West, Suite 010
Sherbrooke (Quebec) J1J 2E8
1-800-661-2638 (Canada and USA)

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Canada

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1-OBJECTIVE

The present document describes the transfer format of the data set metadata of the National Topographic Data Base (NTDB) edition 3. The information on an NTDB data set is transferred in two separate files : one describing the geometry and the other describing the metadata.

This format meets two needs : transfer the metadata to our clients and load the metadata into the NTDB information management internal system (SIB). The information contained in the metadata file differs slightly between both needs.

The metadata file supplied with the geometry will contain all of the territory's metadata, even if the

3.2- Line Structure

Data are expressed in lines and conform to the following format :

- comment column 1
- key word columns 2 to 15
- separator column 16
- value columns 17 to 80 inclusively

Information is supplied in lines by combining the key word, separator and value. Lines have a maximum length of 80 characters. The «Value» field is ended with a carriage return to position 81 or before «Blank» k characters inserted left of the «Value» are not interpreted. However, the first «Non-blank» character met indicates the beginning of the value. The next characters have to conform to the format determined for this particular value. A chain of characters of 0 in length (carriage return to position 17) or a chain of «Blank» characters is considered empty. Information requiring more than one line shall conform to the same format

```
! Second polygon  
BEGIN          POLYGON  
...  
END  
! End of the polygon section  
END            POLYGON_SECTION  
END            FILE
```

3.3- Separator - column 16

Column 16 is used as separator between key words and values. The blank character is used as separator.

3.4- Values - columns 17 to 80 inclusively

The «Value» field contains the information to be transmitted. This field must conform to the format designated by each key word. Field lengths must be adhered to. The carriage return will be used to indicate the end of the chain of characters.

4- FORMAT DETAILED DESCRIPTION

The detailed description specifies the values and the format to be used for transferring metadata. The metadata file format is subjected to the following rules :

- **Scope**

4.1- TERRITORY Section

The TERRITORY Section initiates the metadata file. It contains the metadata linked to the territory represented. The data must comply with the following format and order :

BEGIN	A(30)	A(0)	1L
-------	-------	------	----

The key word BEGIN is associated with the FILE value to indicate the file's beginning.

BEGIN	A(30)	A(0)	1L
-------	-------	------	----

The BEGIN key word is associated with the TERRITORY_SECTION value to indicate the beginning of the section.

NTS	A(4) OR A(6)	A(0)	1L
-----	--------------	------	----

PCT_OF_LAND	*N(3)	A(0)	1L
-------------	-------	------	----

UNIT_CONTOURS	A(1)	*A(7)	1L
---------------	------	-------	----

This data indicates the measuring unit used to express contour and elevation point elevations (example : M (meter)).

CONTOUR_INTERV	A(3)	A(0)	1L
----------------	------	------	----

Contour intervals correspond to the elevation difference between two consecutive contours. It is expressed in integer (e.g. 10).

CONT_AUXILAIRY	A(3)	A(0)	1L
----------------	------	------	----

Auxiliary contour intervals correspond to the elevation difference between a contour and an auxiliary contour, or between two consecutive auxiliary contours. It is expressed in integer (example : 10).

DIMENSION	A(2)	A(0)	1L
-----------	------	------	----

Data indicating if the data set is in two dimensions (X,Y) or in three dimensions (X,Y,h) (example : 2D).

SOUTH_EDGE	A(1)	*A(13)	1L
------------	------	--------	----

Data indicating the horizontal integration status for the data set's SOUTH boundary.

EAST_EDGE	A(1)	*A(13)	1L
-----------	------	--------	----

COORDINATES	A(60)	A(0)	998L
-------------	-------	------	------

Coordinates are expressed in integer and localise metadata polygon. The polygon may represents a complex area. The first and the last coordinate of the each line must be equal. Every delimiter line must be separated by two (2) number sign character (« # »). A maximum of four pairs of coordinates or special characters are placed per line. The X and Y values, the number sign character, as well as the pairs of coordinates, are separated by blanks.

ENTITIES	A(60)	A(0)	32L
----------	-------	------	-----

List of NTDB codes (as found in the NTDB) according to geometric representation (point, line and area).

SOURCE_TYPE	A(12)	*A(52)	1L
-------------	-------	--------	----

Type of source used. When more than one source is used, the types of source are be listed and separated by a plus (+).

SOURCE_NAME	A(64)	A(0)	1L
-------------	-------	------	----

Name and/or number that accurately identifies the source material used. The entry may have two distinct parts separated by a point.
The first part describes the unique identifier of the source. The second (optional) describes the origin of the source. When the source has more than one origin, the different origins are listed and separated by a plus « + ».

VALID_DATE	A(7)	A(0)	1L
------------	------	------	----

Date qualifying the time-dependent validity of the entity occurrences. It corresponds to the date of the source used in identifying the data; for instance the date of field completion, the date of image taking from the earth's surface (aerial photos, satellite images or others serving to identify the data), etc. The date is expressed in the following manner : YYYY/MM. When the month is unknown, the value is (-1).

PLAN_ACCY_QUAL	A(1)	*A(10)	1L
----------------	------	--------	----

The planimetric-precision qualifier gives information on the method used for determining the accuracy of the data source.

PLAN_ACCURACY	A(1)	A(0)	1L
---------------	------	------	----

Provides the planimetric precision of the source of data framed by the polygon. The precision is the degree of correspondence of the geometric data versus geodetic foundation (horizontal reference system). This value is measured in meters. Please note that the value is not very significant for the contours.

ALTI_ACCU_QUAL	A(1)	*A(10)	1L
----------------	------	--------	----

The altimetric-precision qualifier gives information on the method used for determining the accuracy of the data source.

ALTI_ACCURACY	N(3)	A(0)	1L
---------------	------	------	----

4.5- THEME Section

The metadata associated to themes aims at providing a synthetic view of the data making up the theme. The number of themes is given by the key word NB_THEMES. These data are :

BEGIN	A(30)	A(0)	1L
-------	-------	------	----

The key word BEGIN is associated to the THEMES_SECTION value to indicate the beginning of the section.

NB_THEMES	N(2)	A(0)	1L
-----------	------	------	----

This field provides the number of themes included in this section.

BEGIN	A(30)	A(0)	1L
-------	-------	------	----

The key word BEGIN is associated to the THEME value to indicate the beginning of the information group.

NAME	A(2)	*A(27)	1L
------	------	--------	----

This field indicates the theme's name.

AVAIL_THEME	A(1)	*A(5)	1L
-------------	------	-------	----

Indicates if the theme is available. The « Y » character indicates that the theme is available while the « N » character indicates that the theme is not available.

RESOLUTION	A(6)	A(0)	1L
------------	------	------	----

This field indicates the scale of the theme's data for the data set. The resolution may vary from one theme to the other within a data set.

NB_KM	N(6)	A(0)	1L
-------	------	------	----

END	A(30)	A(0)	1L
-----	-------	------	----

The key word END is associated to the THEMES_SECTION value to indicate the end of the section. This line is present after the last information group has been written.

END	A(30)	A(0)	1L
-----	-------	------	----

The key word END is associated to the FILE value to indicate the end of the file. This is the file's last line.

5- EXAMPLE

This is an example of a metadata file

```
!  
BEGIN          FILE  
!  
BEGIN          TERRITORY_SECTION  
NTS           031D01  
DATA_SET_NAME RICE LAKE  
PROVINCE      ON (Ontario)  
ZONE_NUMBER_1 17  
ZONE_NUMBER_2 -1  
PCT_OF_LAND 100  
SPECIAL_LIMITS N(Normal)  
END           TERRITORY_SECTION  
!  
BEGIN          DATA_SET_SECTION  
EDITION_VERSIO 2.02  
NTDB_SPEC      3.1  
DATE_AVAILABLE 1994/10/06  
FORMAT         CCOGIF-P3.0  
FORMAT         IFF-BNDT-3.0  
UNITE_CONTOURS M(Mètre)  
CONTOUR_INTERV 10  
CONT_AUXILIARY -1  
DIMENSION      3D  
MAP_EDITION    -1  
COMMENT  
END           DATA_SET_SECTION  
!  
BEGIN          INTEGRATION_SECTION  
NORHT_EDGE     N (No)  
SOUTH_EDGE     N (No)  
EAST_EDGE      O (Yes)  
WEST_EDGE      O (Yes)  
END           INTEGRATION_SECTION  
!  
BEGIN          POLYGON_SECTION  
NB_POLYGONS    2  
BEGIN          POLYGON  
ID_POLYGON     0001
```

COORDINATES 699593 4902679 719553 4903318 739513 4904017 740526 4876249
COORDINATES 720481 4875549 700437 4874911 699593 4902679
ENTITIES P 1-1576,1589-2047
ENTITIES L 359,370-373,383,394,405,416,429,440,451,462-469,510-710,745,815
ENTITIES 910-1213,1300-1799
ENTITIES S 1-2047
SOURCE_TYPE REPRO (Reprographic material)
NAME_SOURCE 031D01-ED6
VALID_DATE 1984/-1
PLAN_ACCU_QUAL E (Estimated)
PLAN_ACCURACY 15
ALTI_ACCU_QUAL I (Unknown)
ALTI_ACCURACY -1
ACTION ACQ.COMP.SCAN (Complete acquisition of entities by scanning)
IMPACT_ACT_C S (Systematic)
IMPACT_ACT_P N (No)
POL_ED_VER 2.00
COMMENT
END POLYGON
!
BEGIN POLYGON
ID_POLYGON 0002
COORDINATES 699593 4902679 719553 4903318 739513 4904017 740526 4876249
COORDINATES 720481 4875549 700437 4874911 699593 4902679
ENTITIES P 1-1576,1589-2047
ENTITIES L 359,370-373,383,394,405,416,429,440,451,462-469,510-710,745,815
ENTITIES 910-1213,1300-1799
ENTITIES S 1-2047
SOURCE_TYPE SAT
SOURCE_NAME LANDSAT-TM-MSS-XX-XX
VALID_DATE 1990/-1
PLAN_ACCU_QUAL E (Estimated)
PLAN_ACCURACY 15
ALTI_ACCU_QUAL I (Unknown)
ALTI_ACCURACY -1
ACTION CONF.(Confirmation)
IMPACT_ACT_C S (Systematic)
IMPACT_ACT_P N (No)
POL_ED_VER 2.00
COMMENT
END POLYGON

```
END                POLYGON_SECTION
!
BEGIN              THEMES_SECTION
NB_THEMES          14
!
! This group will be repeat 14 times
!

BEGIN              THEME
NAME               VE (VEGETATION)
AVAIL_THEME        O(Yes)
RESOLUTION         5000
NB_KM              123456
NB_POINTS          0
```


APPENDIX A - Domain values and authorized combinations

Some field must respect predefined domain values. When an entry contains more than one distinct part, the domain of each part is listed along with its authorized combinations for the entry. The domain values will evolve to better respond to the change of the production environment and then describe the phenomena we want to keep and classify.

TERRITORY Section

NTS

Any valid NTS number for Canadian territory.

PROVINCE

- AB Alberta
- BC British Columbia
- FR France
- GL Greenland
- MB Manitoba
- NB New Brunswick
- NF Newfoundland
- NS Nova Scotia
- NT Northwest Territories
- NU Nunavut
-

DATA SET Section

NTDB_SPEC

- 3.0A
- 3.0B
- 3.0C
- 3.1

FORMAT

- CCOGIF-P3.0 CCOGIF format, NTDB v3.* data profile
- IFF-BNDT-3.0 IFF format, NTDB V3.* data

UNIT_CONTOURS

- M Meters
- P Foot
- X Non applicable

CONTOUR_INTERV

The values are expressed in integer.

Value	Unit
-1	X
5	Meters
10	Meters
20	Foot/Meters
25	Foot
40	Foot/Meters
50	Foot/Meters
60	Meters
100	Foot/Meters
200	Foot/Meters
500	Foot

CONT_AUXILIARY

See CONTOUR_INTERV

DIMENSION

- 2D
- 3D

INTEGRATION Section

NORHT_EDGE, SOUTH_EDGE, EAST_EDGE and WEST_EDGE

- O Yes
- N No
- I Imperfect
- X Not required

POLYGON Section

ENTITIES

Codes are listed separately or by range. Each code is separated by a comma. A range of codes is represented by giving the smallest and the largest code, separated by a hyphen (e.g., 1-10 means all the codes between 1 and 10, inclusive). When a range is used, one or more codes not in the NTDB can be included (e.g., 1-2047 means all possible NTDB codes, even if some of them do not exist). Codes are grouped according to geometry, with each group labeled with a letter (P,L or S), followed by a blank space. The letter must always be positioned at the beginning of the entry. Codes are listed in ascending order. All codes between 1 and 2047 must be included. When the list of codes exceeds a single line, the next line must begin without repeating the letter (P,L or S).

SOURCE_TYPE

BDN	Digital data base
BNDT	National topographic data base
CARTE	Paper map
CT	Field completion
MNE	Digital Elevation model
DNEC	Canadian digital elevation data
GPS	Global positioning system
REPRO	Reprographic material
ORTIM	Ortho-image
ORTPH	Ortho-photo
PHA	Aerial photography
SAT	Satellite image

The entry source type is composed of one part, but more than one value can be repeated and separated by a plus « + ».

Authorized combinaisons

BDN	Digital data base
BDN+CARTE	Digital data base and paper map
BDN+CT+GPS	Digital data base with GPS and field completion
BNDT	National topographic data base
CARTE	Paper map
CT	Field completion
CT+GPS	Field completion with GPS
CT+GPS+ORTIM	Ortho-image with GPS and field completion
CT+GPS+ORTPH	Ortho-photo with GPS and field completion
CT+ORTIM	Ortho-image with field completion
CT+ORTPH	Ortho-photo with field completion
CT+PHA	Aerial photography with field completion
DNEC	Canadian digital elevation data
GPS	Global positioning system

MNE	Digital Elevation Model
REPRO	Reprographic material
ORTIM	Ortho-image
ORTPH	Ortho-photo
PHA	Aerial photography
SAT	Satellite image

SOURCE_NAME

First part : source type

BDTC-pp-aaaa	Canadian Geographic Names Data Base where (pp) stands for province and (aaaa) stand for the year in which the data were validated. The field may be repeated up to 4 times if several provinces are included in the data set (CGNDB).
BNDT-nts	National topographic data base where (nts) is the data set name used.
BNDT-nts-eevv	National topographic data base where (nts) is the data set used :and (eevv) stands for the edition and version of the data set.
CARTE	Represents any map other than NTS maps.
DNEC-nts-eevv	Canadian Digital Elevation Data where (nts) stands for the name of the data set used and (eevv) stands for the edition and version of the data set.
GPS	Global positioning system data.
LANDSANT-TM-MSS-nn-nn	Image from the Landsat satellite where (nn-nn) stands for the image number in the Landsat classification system.
NUM	Tile name and/or tile number of the data source.
PHOTOS	Aerial photography.
SPOT	Image from the Spot satellite.
nts-Edn	Where (nts) stands for the NTS number of the paper map used and (n) stands for the map's edition number. When the paper map represents more than one NTS division, the NTS numbers are listed.

Second part : Source provenance (this optional part is only use with the values CARTE, NUM and PHOTOS). This second part can be repeated when the source has more than one origin, the different origins are then listed and separated by a plus « + ».

AB	Alberta
BC	British Columbia
MB	Manitoba
NB	New Brunswick
NF	Newfoundland
NS	Nova Scotia
NT	North West Territories
NU	Nunavut
ON	Ontario
PE	Prince Edward Island
PQ	Quebec
RNCAN	Natural Ressources Canada
SK	Saskatchewan
YT	Yukon Territory

Authorized combinations

nts-EDn¹

BDTC-pp-aaaa²

BDNT-nts

CARTE.prov³

GPS

LANDSAT-TM-MSS-nn-nn

LANDSAT-TM-MSS-XX-XX

NUM.prov³

PHOTOS.prov³

SPOT

PLAN_ACCURACY and ALTI_ACCURACY

An integer value, which is contained in the domain : -1(1,999).

PLANI_ACCU_QUAL and ALTI_ACCU_QUAL

- C Calculated
- E Estimated
- I Unknown

Note : When the accuracy qualifier is I(unknown), the corresponding ACCURACY value is always -1.

ACTION

Part one : Type of Action carried out

- | | |
|------|-------------------------------------|
| ACQ | Acquisition of entities |
| CONF | Confirmation of contents |
| GEN | Generalization of entities |
| REH | Planimetric enhancement of entities |
| REV | Updating of entities |

Part two : Theme affected by the Action

- | | |
|------|------------------------------|
| COMP | All polygon entities |
| PART | Part of the polygon entities |

Note : All THEME section values are also possible.

¹ If the paper map contains more than one data set (map extrusion); we must enumerate each paper map and separate them with a plus « + » (ex. : 021E05-ED4+021E06-ED4).

² If more than one province is present in the polygon, we repeat the field (pp-aaa) for each province (maximum 4

Part three : Additional information on the action and/or on the content (this part is optional)

ANA Analog

MAN Manual dign

THEME Section

NAME

- AD Designated Area
- CH Roads
-