**Nuclear Data Section**

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**Memo CP-D/1092 (Rev.)**

**Date:** 2023-12-23

**To:** Distribution

**From:** N. Otsuka

**Subject: Structure of Transmission dictionary**

I am planning to include the EXFOR/CINDA dictionary in the EXFOR master under as a single “entry” (90001) with dictionaries as “subentries” (e.g., 90001.236 for the quantity dictionary). For this purpose, I would like to propose change in the Transmission dictionary format as appended to this memo. The major changes are

1. replacement of the DICTION (ENDDICTION) record with the SUBDICT~~ION~~ (ENDSUBDICT) record
2. addition of DICTION (ENDDICTION) just below (above) the TRANS (ENDTRANS) record.

The top and bottom of the Transmission dictionary before and after the changes look like:

**Current**

TRANS 9128 202306 3000000000000

DICTION 1 202306 System identifiers 3000000100001

BIB First record of each BIB section. 3000000100002

N1=number of keywords in the BIB section, disregarding3000000100003

pointers in col.11 3000000100004

N2=number of records in the BIB section 3000000100005

…

N3=may contain a library name. 3000000100045

ENDDICTION 44 0 3000000199999

DICTION 2 202306 Information identifiers 3000000200001

ADD-RES (Additional results) 36O 20 3000000200002

…

227 Nuclides and nat.isot.mixtures 3000095000039

235 Work types 3000095000040

236 Quantities (REACTION SF 5-8) 3000095000041

ENDDICTION 40 0 3000095099999

ENDTRANS 41 0 9999999999999

**Revised**

TRANS 9128 20230629 9000000000000

DICTION 90001 20230629 9000100000000

SUBDICT~~ION~~ 90001001 20230629 System identifiers 9000100100001

BIB First record of each BIB section. 9000100100002

N1=number of keywords in the BIB section, disregarding9000100100003

pointers in col.11 9000100100004

N2=number of records in the BIB section 9000100100005

…

N3=may contain a library name. 9000100100045

ENDSUBDICT 44 0 9000100199999

SUBDICT~~ION~~ 90001002 20230629 Information identifiers 9000100200001

ADD-RES (Additional results) 36O 20 9000100200002

…

227 Nuclides and nat.isot.mixtures 9000195000039

235 Work types 9000195000040

236 Quantities (REACTION SF 5-8) 9000195000041

ENDSUBDICT 40 0 9000195099999

ENDDICTION 41 0 9000199999999

ENDTRANS 1 0 9999999999999

**Proposed revision of the EXFOR/CINDA Dictionary Manual Sect.2.3**

**2.3 EXFOR Transmission Dictionaries**

The EXFOR Transmission dictionary files (File name:TRANS.9nnn) have much the same format as an EXFOR exchange file. Both the structure of the dictionary transmission files and the format of the individual dictionaries are described in this chapter. More detailed information for specific dictionaries see Chapter 3.

**General Format**

1. An EXFOR Transmission dictionary file is one logical file (compare *EXFOR Formats Manual,* Chapter 2 on System Identifiers).

**trans** is the **first record** of the dictionary transmission.

N1 - Dictionary transmission number. "9" is used as the centre identification character~~, although in column 67 the centre identification "3" is used (as throughout the file)~~.

N2 - Date of last update (year, month, and day) on which the dictionary was deposited to the NDS open area – (yyyymmdd).

The record identification contains the centre identification character 9 in column 67 and zeros in columns 68-79.

**endtrans** is the **last record** of the dictionary transmission.

N1 - Number of dictionaries transmitted.

N2 - Presently unused (may be blank or zero)

The record identification contains a character, whose value is 9 in column 67 and 9’s in columns 68-79.

1. An EXFOR Transmission dictionary file is made up of one EXFOR Transmission dictionary.

**diction** is the first record of the Transmission dictionary.

N1 - Always “90001”.

N2 - Same as the N2 of TRANS record.

The record identification (columns 67-79) contains "90001" in columns 67-71, and zeros in columns 72-79.

**enddiction** is the last record of the Transmission dictionary.

N1 – Always “1”.

N2 - Presently unused (may be blank or zero)

The record identification is the same as in the diction record, except that the record sequence number is "99999".

1. An EXFOR Transmission dictionary file is made up of dictionaries (compare *EXFOR Formats Manual,* Chapter 2 on System Identifiers).

**subdict~~ion~~** is the first record of each dictionary.

N1 - Dictionary identification number.

N2 - Same as the N2 of TRANS record.

Columns 34-66 describe the contents of the dictionary in free text.

The record identification (columns 67-79) contains "90001" in columns 67-71, the dictionary identification number in columns 72-74, and the record sequence number "00001" in columns 75-79.

**endsubdict** is the last record of each dictionary.

N1 - Number of records in the dictionary, excluding the subdict~~ion~~ and endsubdict records.

N2 - Presently unused (may be blank or zero)

The record identification is the same as in the subdict~~ion~~ record, except that the record sequence number is "99999".

1. The format of the transmitted dictionaries is generally similar to that of the BIB section in EXFOR entries. A dictionary record consists of three parts:

columns 1-11: key field,

columns 12-66: explanation field,

columns 67-79: record identification field

column 80: flag field

Key field: the key (i.e., keyword or code) to be defined is given, left adjusted, in the first field, starting in column 1. The field is usually contained in columns 1-11, but may be longer for some dictionaries (see Chapter 1, Table of Dictionaries).

Explanation field: The explanation field usually starts in column 12 (in column 23, in the case of quantity codes) and usually (but with some exceptions) ends in column 66 of the first record.

Expansions are enclosed in parentheses for certain dictionaries; the opening parenthesis is given in the first column of the explanation field. The expansion is normally restricted to the length of the explanation field of one record, but, for certain dictionaries the expansion may continue within the explanation field onto following records.

Free text may immediately follow the closing parenthesis of the expansion or, if no parenthesized expansion is given, begin in the first column of the explanation field. It may continue within the explanation field, onto any number of records. The free text may include parentheses, but a left parenthesis that is part of the free text must not be entered in the first column of the explanation field (signalling the presence of an expansion).

Record identification field: The record identification (columns 67-79) of a dictionary record contains "90001" in columns 67-71, the dictionary identification number in columns 72-74 with leading zero(s), and the record sequence number with leading zeros in columns 75-79.

Flag field: Column 80 is used

1. to flag certain validity conditions for the code given on the same record. These flags remain permanently attached to the respective codes or keywords. For an explanation of the **Obsolete flag** (O) and the **Extinct flag** (X) see Chapter 1.
2. as an indication that the record was altered since the last dictionary transmission, *e.g*, added (I), corrected (C). See *EXFOR Exchange Formats Manual,* Chapter 8, for use of alteration flags.

The order of entries in each dictionary has been chosen for ease of use by compilers. It is the prerogative of each centre to rearrange the dictionary for their own purposes if they wish, *e.g.*, for optimum computer use.

An example of a dictionary is shown below; columns 67-80 are omitted.

SUBDICT~~ION~~ 90001005 20070604 Journal Codes

AAA (Astronomy and Astrophysics) 2GER

AAB (Anais da Academia Brasileira de Ciencias) 3BZL

AAF (Annales Acad. Sci. Fennicae, Series A6: Physica) 2SF

AANL (Atti Acad. Naz. Lincei,Rend.,Sci.Fis.,Mat.Nat.) 2ITY

Atti della Academia Nazionale dei Lincei (Roma),

Rendiconti, Classe di Scienze Fisiche, Mathematiche

e Naturali

AAST (Atti Acad. Sci. Torino, Cl.Sci.Fis.Mat.Nat.) 2ITY

Atti della Academia della Scienze di Torino,

Classe de Scienze Fisiche, Mathematiche e Naturali

ABS (Memoires de l'Acad. Roy.Belg.,Cl.Sci.) 2BLG

AC (Analytical Chemistry) 1USA

ACA (Analitica Chimica Acta) 2NED

ACH (Angewandte Chemie) 2GER

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ENDSUBDICT

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