

**Structure of Transmission dictionary**  
(N. Otsuka, 2023-12-23, Memo CP-D/1092(Rev.))

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 (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, disregarding pointers in col.11		3000000100003
	N2=number of records in the BIB section		3000000100004
...	N3=may contain a library name.		3000000100005
ENDDICTION	44	0	3000000199999
DICTION	2	202306 Information identifiers	3000000200001
ADD-RES	(Additional results) 360 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	90001001	20230629 System identifiers	9000100100001
BIB	First record of each BIB section.		9000100100002
	N1=number of keywords in the BIB section, disregarding pointers in col.11		9000100100003
	N2=number of records in the BIB section		9000100100004
...	N3=may contain a library name.		9000100100005
ENDSUBDICT	44	0	9000100199999
SUBDICT	90001002	20230629 Information identifiers	9000100200001
ADD-RES	(Additional results) 360 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

## 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  $\geq 9$  in column 67 and 9's in columns 68-79.

2. 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".

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

**SUBDICT** 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** and **ENDSUBDICT** records.

N2 - Presently unused (may be blank or zero)

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

4. 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.

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SUBDICT      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, Matematiche
            e Naturali
AAST        (Atti Acad. Sci. Torino, Cl. Sci. Fis. Mat. Nat.) 2ITY
            Atti della Academia della Scienze di Torino,
            Classe de Scienze Fisiche, Matematiche 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
.....
ENDSUBDICT
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