**Nuclear Data Section**

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**Memo CP-D/1081**

**Date:** 2023-04-25

**To:** Distribution

**From:** N. Otsuka

**Subject: Revision of EXFOR/CINDA Dictionary Manual and format change**

**Reference:** CP-D/1067

I prepared a draft of the revised EXFOR/CINDA Dictionary Manual. During the revision, I got two proposals of the revision in the dictionary files.

**Proposal 1. Introduction of the long expansion field in Dictionary 5 (Journals)**

I also would like to introduce change in the comment record format of Dictionary 5 Journal. There has been an option to provide a full journal title in comment records with the comment flag \* (asterisk) at column 44. I propose (1) parenthesizing rather than flagging, and (2) renaming the field from “full title” to “long expansion” as it has been done for Dictionary 7 (Conferences) and 207 (Books), and parenthesize it. **This does not introduce any change in the DANIEL Backup dictionary.**

**Manual description (current)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Line** | **Contents** | **Format** | **Archive** | **Trans** | **CHEX** |
| 1 | Code | A6 | 13-18 | 1-6 | x |
| … | … | … | … | ... |
| Expansion | A48 | 76-123 | (12-61) |  |
| 2+ | Comment flag+ addition to title\* full title. translation of title= CINDA comment | A1 | 44 | N/A |  |

**Manual description (proposed)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Line** | **Contents** | **Format** | **Archive** | **Trans** | **CHEX** |
| 1 | Code | A6 | 13-18 | 1-6 | x |
| … | … | … | … | ... |
| Expansion | A48 | 76-123 | (12-61) |  |
| 2+ | Long expansion | A55 | (44-98) | (12-66) |  |
| 3+ | Comment flag+ addition to title~~\* full title~~. translation of title= CINDA comment | A1 | 44 | N/A |  |

***Example:***

**Current**

1----+----2..4----+----5----+----6----+----7----+----8----+----9----+----0----+----1----+----2

 NIM/A NIMA2NED Nucl.Instr.Meth.A Nucl. Instrum. Methods in Physics Res., Sect.A

 \*Nuclear Instruments and Methods in Physics Research,

 \* section A - accelerators, spectrometers, detectors

 \* and associated equipment

**Proposed**

1----+----2..4----+----5----+----6----+----7----+----8----+----9----+----0----+----1----+----2

 NIM/A NIMA2NED Nucl.Instr.Meth.A Nucl. Instrum. Methods in Physics Res., Sect.A

 **(**Nuclear Instruments and Methods in Physics Research,

 section A - accelerators, spectrometers, detectors

 and associated equipment**)**

**Proposal 2. Renaming of Dictionaries 45 (New CINDA quantities) and 47 (Old/New CINDA quantities)**

I believe now “CINDA” means the CINDA in the new format (New CINDA). Also “New” is often omitted in the current manual. I propose to rename Dictionary 45 to “**CINDA quantities**” and Dictionary 47 to “**Old CINDA quantities**” and do the same replacement in the manual text thoroughly.

**Summary of manual revisions**

Below I summarize major and selected minor revisions. Note that **the proposed manual do not assume any change in the dictionaries files themselves** (except for renaming of the renaming of CINDA related Dictionaries 45 and 47). The proposed manual revisions are rather to adjust the format description to the actual dictionary files. Namely this draft must be further updated for the (1) change proposed above and (2) change in the description on Dictionary 227 if they are approved.

**Major revisions:**

1. Chapter 2.1 (Archive Dictionaries): Revision of the column structure for COMMENT records of the archive dictionary. (The current manual mentions the column 1­43 is blank. We always see a status code in column 2¬4 in COMMENT records. I also know presence of an alteration flag at Column 1 is essential for production of Backup and TRANS dictionaries though these alteration flags disappear when dictionary update completes.
2. Chapter 3. Description of the parenthesized field was improved:
3. Chapter 3 Dictionary 5 (Journals): Correction of the column position of the organization code (52­54 must be 53­55) and column position of ZZZ (53­55 must be 49­51).
4. Chapter 3 Dictionary 24 (Data headings):
* Separation of “Data type flag” (2I1) to “Data type flag 1” (I1) and “Data type flag 2” (I1).
* Separation of “Plotting flag” (I7) to “Plotting flag 1” (I1) to “Plotting flag 7” (I1).
* Addition of the data type flag for the normalization pointer in the list of “Data Type Flags”.
* Addition of the flag for the secondary effective mass (S) and dependent variables (\*) in the table of “Family Flags”.
1. Chapter 3 Dictionary 38 (Supplemental information): New dictionary.
2. Chapter 3 Dictionary 144 (Data libraries for new CINDA):
* Correction of the column position of ZZZ (52­54 must be 45­47).
* Addition of 4C (Four Centres) as character set may be combined with the country code ZZZ for dictionary 144 (Data libraries for new CINDA).
1. Chapter 3 Dictionary 209 (Compounds): Col.44-45 of the COMMENT record has been reserved for “Output dictionary number for DANIEL”. This was used when the compound codes were defined in Dictionary 9 in the Trans dictionary. But now the compound codes are defined in Dictionary 209 in the Trans dictionary, too, and not used anymore. Hence, this field is presently not used and I believe “ 9” seen in the current Dictionary 209 must be deleted. (Please let me know if you need it.)
2. Chapter 3 Dictionary 213 (Reaction types): Separation of “Independent variable family flag” (I10) to “Independent variable type 1” (I1) and “Independent variable type 10” (I1).
3. Chapter 3 Dictionary 227 (Nuclides): Correction of the format and column position of the isotopic abundance and atomic weight. (Their formats have been E11 and E12 in the manual, but their actual formats are E10 and E13).
4. Chapter 3 Dictionary 236 (Quantities):

Separation of the descriptions on the long expansion and comment in the table.

1. Chapter 3 Dictionary 950 (List of dictionaries): New section.

**Minor revisions:**

Minor changes (simplification, unification) of the content names, for example,

* “long expansion” → “expansion” where appropriate,
* “3-character CINDA code” → “CINDA code”
* ”Book expansion” → “short expansion”

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