

To: Distribution

1985-09-11

From: M.M.Seits  
M.Lammer

*M.M. Seits*  
*M. Lammer*

Subject: 1. CINDA Exchange System  
2. Deadline for CINDA-85 Supplement

1. CINDA Exchange System

I hope that the attached "CINDA Exchange System Specifications" meet the approval of all centers.

We plan to implement the NDS CINDA system as of November 1985. We request NEA-DB to send a "Lab Sort" tape representing the complete, up-to-date CINDA file mid November 1985, about the same time as the "Book Tape". We will then use this "Lab Sort" file to load our production data base.

At this time, the full trilateral CINDA exchange, as defined in the attached "CINDA Exchange System, System Specifications" can commence. NNDC and NEA-DB will send NDS area 1 and 2 CINDA records in "Exchange Format" for updating our master file and area 3 and 4 CINDA records in "Reader Format" for loading into our data base.

NDS will continue to send NNDC and NEA-DB the files of area 1 and 2 entries in "Reader Format" input data (as we have been doing). In addition we will include as a further file on the same tape, area 3 and 4 update data in the "Exchange Format". Sheets that describe the contents of the tapes in detail will be attached to each tape. If there is any objection to this procedure, please let us know. We will discontinue sending area 3 and 4 "Reader Format" entries after a certain trial period.

Clearance: *Lemmel*  
for J.J. Schmidt

Distribution:

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1. S.Pearlstein, NNDC
  2. N.Tubbs, NEA/DB
  4. V.N.Manokhin, CJD

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file copies

The creation of the "Book Tape" at NDS will run in parallel with the creation at NEA-DB. The tape produced at NDS will be a final test run. We will then no longer require "Book Tapes" from NEA-DB as the book production as of 1986 will be wholly the responsibility of NDS.

However, we request a final transmission of the "Lab Sort" tape in March 1986. This tape should also be a complete, up-to-date version of the CINDA Master file. We will use it to make a final comparison of that file with the one we will produce from our own updated CINDA data base.

## 2. Deadline for CINDA-85 Supplement

Since Monica Seits will be on leave from the last week of September until almost the end of October 1985, we want to perform a thorough checking of the CINDA programs during the time left. As a consequence, the coding of CINDA entries at NDS has to have lower priority for a while. I therefore request that the deadline for submitting CINDA entries to Saclay for inclusion in the Supplement be delayed until, say, mid of October (a delay of 2 weeks from the schedule as specified in Memo 4C-3/277). The exact date will be communicated later. I hope that this meets the centres' agreement.

CINDA Exchange System

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System Specifications

This document describes the exchange system of CINDA data between the 4 Centers: NDS, NNDC, NEA/DB and CJD. Included are the responsibilities of each center and detailed descriptions of the relevant CINDA formats.

(It is understood that these CINDA Exchange System Specifications must be updated when CJD is to be integrated as a full member of the System.)

M.M.Seits  
IAEA, Nuclear Data Section  
85-09-03

CINDA EXCHANGE System

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General

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Each of the 4 centers is responsible for an "Area". NNDC is responsible for area 1, NEA/DB is responsible for area 2, and NDS is responsible for area 3 and also for area 4 until CJD assumes full responsibility for area 4.

NOTE that CINDA "Readers" scan literature that is PUBLISHED in a given area. This may contain work originating from LABs in another area, and the resulting CINDA entries are transmitted in "Reader Format" to that center which is responsible for the area of the respective LAB. Throughout this document, "Area" pertains to the area of the LAB.

Each center (except CJD) maintains its own master file which consists of all CINDA lines from all areas. The format of this master file as well as its storage and update method can vary from center to center according to local computing facilities. (CJD periodically receives a copy of the master file from NDS).

Each center is responsible for processing input (additions, deletions, modifications) to the CINDA System for their area (NDS also processes input for area 4). This input is always in the "Reader Format". Generally the "Reader Format" input is received from the readers of the respective area. If one center has input for an area other than its own, it sends this input in the "Reader Format" to the proper center for processing.

From the processed input records, the center creates update records in the "Exchange Format". These records are sent to all other centers who use them to update their copy of the CINDA Master File. Details are given under "Responsibilities of Centers" on Page 2.

All CINDA records (regardless of format) are transmitted as tape files. Generally the tape specifications for these transmissions are: 9 track tape, EBCDIC code, No Labels, 1600 bpi, blocking factor of 20. However, other tape specifications can be arranged between any two centers as desired. One or more files can be present on any tape.

Both "Reader Format" and "Exchange Format" transmissions should take place at least 4 times per year. Each center determines its own schedule for sending input (i.e. "Reader Format") and update (i.e. "Exchange Format") files to the other centers. It is advisable, however, to note the schedule for the Book Production and to attempt to submit as many entries as possible by the "Last date for Submission to NDS" to be included in the book.

For the time being, NDS will send a copy of its Master File to CJD 4 times per year (in "Transmission Format").

Responsibilities of Centers:  
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Area 1, NNDC

- maintaining area 1 entries
- receiving:
  - . area 1 entries from NEA/DB & NDS in "Reader Format"
  - . area 2 entries from NEA/DB in "Exchange Format"
  - . area 3 & 4 entries from NDS in "Exchange Format"
- sending:
  - . area 1 entries to NEA/DB & NDS in "Exchange Format"
  - . area 2 entries to NEA/DB in "Reader Format"
  - . area 3 & 4 entries to NDS in "Reader Format"
- maintaining an up to date copy of the CINDA Master

Area 2, NEA/DB

- maintaining area 2 entries
- receiving:
  - . area 1 entries from NNDC in "Exchange Format"
  - . area 2 entries from NNDC & NDS in "Reader Format"
  - . area 3 & 4 entries from NDS in "Exchange Format"
- sending:
  - . area 1 entries to NNDC in "Reader Format"
  - . area 2 entries to NNDC & NDS in "Exchange Format"
  - . area 3 & 4 entries to NDS in "Reader Format"
- maintaining an up to date copy of the CINDA Master
- maintaining the "CINDA Coding Manual"

Area 3, NDS

- maintaining area 3 and temporarily, area 4 entries
- receiving:
  - . area 1 entries from NNDC in "Exchange Format"
  - . area 2 entries from NEA/DB in "Exchange Format"
  - . area 3 & 4 entries from NNDC & NEA/DB in "Reader Format"
- sending:
  - . area 1 entries to NNDC in "Reader Format"
  - . area 2 entries to NEA/DB in "Reader Format"
  - . area 3 & 4 entries to NNDC & NEA/DB in "Exchange Format"
  - . complete file to CJD in "Transmission Format"
- maintaining an up to date copy of the CINDA Master

Area 4, CJD

- receiving:
  - . complete file from NDS in "Transmission Format"
- sending:
  - . area 4 entries to NDS in "Reader Format"
- preparing for maintaining area 4 entries
- preparing for maintaining own copy of the CINDA Master

CINDA Exchange System - "Exchange Format"

Record Format:

Location	Contents	Length	Notes
1	Operation	CHAR (01)	1)
2- 7	Serial Number	PIC '999999'	2)
8- 9	S = Element Symbol	CHAR (02)	3)
10- 12	A = Atomic Weight	CHAR (03)	3)
13- 15	Q = Mnemonic Quantity	CHAR (03)	
16- 18	Lab	CHAR (03)	
19- 21	Block Number	PIC '999'	
22	Work Type	CHAR (01)	
23- 27	En-Min	CHAR (05)	4)
28- 32	En-Max	CHAR (05)	4)
33	Hierarchy	CHAR (01)	5)
34	Reference Type	CHAR (01)	
35- 48	Reference	CHAR (14)	
49- 52	Reference Date (YMMM)	PIC '9999'	
53	Author Flag	CHAR (01)	6)
54- 89	Comments	CHAR (36)	
90	Reader	CHAR (01)	
91	Area	CHAR (01)	
92- 94	Country	CHAR (03)	
95-100	Date of last update (YYMMDD)	PIC '999999'	

Notes:

For Add or Mod operations, NO fields may be blank except possibly Energy field(s) in special cases, or Author Flag if no Author present. For Del operations, the first 6 fields MAY NOT be blank.

Either leading blanks or leading zeroes are acceptable for any numeric field (PIC fields).

- 1) Operation:           A   Add new record  
                          D   Delete existing record  
                          M   Modify existing record (replace whole record)
  
- 2) SERIAL Number       range is:  900,000-999,999 for area 3  
  400,000-499,999 for area 4
  
- 3) Target:             MANY or FPROD  
                          or (S-A):  
                              S   . Element Symbol  
                                      (D and T not allowed)  
                              A   . blank           = Natural Isotope  
                                      . 1 - 399       = Isotope (leading blank or 0)  
                                      . alphabetic   = Alphabetic Compound Code
  
- 4) Energy fields  
    Numeric:       m.msn   for positive energy range limits  
                      -.msn   for negative resonance energies  
                      (   m: mantissa  
                              n: exponent  
                              s: exponent sign )  
    Alphabetic:  4 character upper case alphabetic energy code

- 5) Hierarchy: numeric Hierarchy code
- 6) Author Flag: blank - no author present in Comments field  
'X' - author(s) given in Comments field

Sort Order:

The CINDA Exchange file is not sorted in any particular order. However, if two lines with the same serial number appear, they must appear in the order the operations were originally performed.

CINDA Exchange System - "Reader Format"

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Record Format:

Location	Contents	Length	Notes
1- 2	S = Element Symbol	CHAR (02)	1)
3- 5	A = Atomic Weight	CHAR (03)	1)
6- 8	Q = Mnemonic Quantity	CHAR (03)	
9- 11	Lab	CHAR (03)	
12- 14	Block Number	PIC '999'	2)
15	Reader	CHAR (01)	
16	Operation	CHAR (01)	3)
17	Hierarchy	CHAR (01)	4)
18	Work Type	CHAR (01)	
19- 22	En-Min	CHAR (04)	5)
23- 26	En-Max	CHAR (04)	5)
27	Reference Type	CHAR (01)	
28- 41	Reference	CHAR (14)	
42- 44	Reference Date (MY)	CHAR (03)	
45- 80	Comments	CHAR (36)	

Notes:

The "Reader Format" records MUST conform to the rules as specified in the "CINDA Coding Manual".

- 1) Target: MANY or FPROD  
or (S-A):
  - S . Element Symbol  
(D and T are accepted)
  - A . blank = Natural Isotope
  - . 001 - 399 = Isotope (leading zeros)
  - . alphabetic = Alphabetic Compound Code
- 2) Block Number: may be blank, to be filled in at relevant center
- 3) Operation:
  - A Add new record
  - B Block record to existing block
  - D Delete existing record
  - K Kill - delete whole block
  - L Link - combine two blocks
  - M Modify existing record
- 4) Hierarchy: mnemonic or numeric Hierarchy code
- 5) Energy fields
  - Numeric: mmsn for positive energy range limits
  - msn for negative resonance energies
  - ( m: mantissa
  - n: exponent
  - s: exponent sign )
  - ==a decimal point is assumed after the first digit
  - Alphabetic: 4 character upper case alphabetic energy code

Sort Order:

The CINDA Reader file is NOT sorted.



CINDA Exchange System - "Transmission Format"

Record Format:

Location	Contents	Length	Notes
1	Exchange Flag	CHAR (01)	1)
2- 4	Lab	CHAR (03)	
5- 7	Z = Atomic Number	CHAR (03)	2)
8- 10	A = Atomic Weight	CHAR (03)	3)
11- 12	Q = Numeric Quantity	PIC '99'	
13- 15	Block Number	PIC '999'	
16- 21	Serial Number	PIC '999999'	
22- 25	En-Min	CHAR (04)	4)
26- 29	En-Max	CHAR (04)	4)
30- 31	Energy Flag	CHAR (02)	5)
32- 37	Date of last update (YYMMDD)	PIC '999999'	
38- 39	S = Element Symbol	CHAR (02)	6)
40- 42	Q = Mnemonic Quantity	CHAR (03)	
43	Reader	CHAR (01)	
44	Hierarchy	CHAR (01)	7)
45	Work Type	CHAR (01)	
46	Area	CHAR (01)	
47	Data Flag	CHAR (01)	8)
48	Reference Type	CHAR (01)	
49- 62	Reference	CHAR (14)	
63- 66	Reference Date (YYMM)	PIC '9999'	
67	Author Flag	CHAR (01)	9)
68-103	Comments	CHAR (36)	
104	Filler	CHAR (01)	10)

Notes:

- 1) Exchange Flag: can be ignored
- 2) Atomic Number: 000-125 - atomic number  
126 - MANY  
127 - FPROD  
128-999 - 128 + atomic number (denotes compound)
- 3) Atomic Weight: 000 - natural isotope  
blank - MANY, FPROD  
001-399 - atomic weight  
400-999 - numeric compound code
- 4) Energy  
Numeric: mmsn for positive energy range limits  
-msn for negative resonance energies  
( m: mantissa  
n: exponent  
s: exponent sign )  
==a decimal point is assumed after the first digit  
Alphabetic: 4 character upper case alphabetic energy code

5) Energy Flag:

1st char	blank		
2nd char	0	= E-Min numeric,	E-Max numeric
	1	= E-Min alpha,	E-Max numeric
	2	= E-Min alpha,	E-Max alpha
	3	= E-Min alpha,	E-Max alpha concatenated
	4	= E-Min numeric,	E-Max alpha
	5	= E-Min blank,	E-Max blank
	6	= E-Min alpha,	E-Max blank
	7	= E-Min numeric,	E-Max blank
	8	= E-Min blank,	E-Max numeric
	9	= E-Min blank,	E-Max alpha

6) Element Symbol: blank if Atomic Number = 126 or 127 (MANY, FPROD)

7) Hierarchy: numeric Hierarchy code

8) Data Flag: blank - Reference is NOT a reference to data  
'X' - Reference is a reference to data

9) Author Flag: blank - no author present in Comments field  
'X' - author(s) given in Comments field

10) Filler: can be ignored

Sort Order:

The CINDA Transmission file is sorted by ascending LAB, Z, A, Q-Numeric, Block Number, Hierarchy; and decending Reference Date.