INDC(IAE)*020G
INDSWG - 84

STATUS OF COMPILATION ACTIVITIES IN THE IAEA NUCLEAR DATA GROUP

4 August 1965

1. INTRODUCTION - GENERAL

The staff available to the Nuclear Data Unit is listed at the foot of this report and all members contribute a greater or less fraction of their time to the compilation work, including the CINDA bibliographic system. Indeed, if the preparation of the facilities list is included, one member works on these projects full time and total effort available is approximately equal to four professional staff. Within the next few months the secretarial support available is expected to increase.

The IBM 7040 computer in the Vienna Technische Hochschule, which is available for this work, has just had the full 32768-word memory installed. The IBM 1401 computer will be installed in the Agency in October 1965 and will provide supporting facilities, including graphical plotting.

The replies so far received to the Director General's request (dated December 1964) for arrangements of cooperation with the three other data centers (in the United States, the USSR, and the ENEA Center in Saclay, France) are at this time only partial, although some informal exchanges have already taken place. It is hoped that further information will be available at the Tokyo meeting, but in the meantime it has appeared that the situation is not yet sufficiently definite for specific terms of reference for the operation of the Agency's Nuclear Data Unit to be drawn up.

In the following sections the status of the work is described in more detail for the CINDA work and the exchange of numerical data, respectively.

2. CINDA

(a) Staff familiar with CINDA

Three physicists in the Nuclear Data Unit are now familiar with CINDA and can act as readers and check entries mailed to IAEA from readers outside the Agency, and secretarial assistance for CINDA (bookkeeping, mailing, punching, updating, etc.) is shortly to be expanded. We are thus equipped and prepared for an increasing amount

of work in the CINDA field.

(b) Readers cooperating from outside

Negotiations for the cooperation of CINDA readers contributing from their home countries are proceeding; getting such readers is considered most important and depends largely on the cooperation of INDSWG participants.

This work is most advanced at present with the Soviet Union, thanks to Dr. Abramov's efforts. Although the coverage of Soviet literature is not yet complete, we believe that arrangements should now progress rapidly.

A Polish scientist has been nominated for CINDA work to cover the Polish literature, and details of this cooperation are now being worked out.

(c) Present IAEA contributions to CINDA

Coverage of current issues is now occurring or will be arranged in the very near future for ATOMNAJA ENERGIJA and JADERNAJA FIZIKA, NUKLEONIKA and BULL. ACAD. POLON. SCI., SER. PHYS. It is also expected that the coverage of Russian literature will soon be extended considerably.

The gap between the issues being covered as current literature and the last issues found to be covered in CINDA is being filled up by the IAEA staff, who have also covered the conference proceedings JINR-1845 (Proceedings of the Meeting on Interactions of Neutrons with Nuclei, Dubna, July 1964), as well as INDSWG documents and other IAEA publications starting from INDSWG-61.

Some work has also been done on the CZECHOSLOVAKIAN JOURNAL OF PHYSICS.

Starting from June 1965, IAEA has contributed 18 CINDA entry forms with about 300 entries up to the date of this report.

(d) Technical and Administrative Work

The guidance of readers is considered most important. The entries collected from the readers are checked carefully, especially in the case of new readers, and, where necessary, the original literature is consulted; in some cases detailed advice or a corrected version of the entries has been found to be necessary. Readers are also currently supplied with information about all changes in the system or in dictionaries.

The entries are punched on cards, the cards are checked carefully, and then mailed to Dr. Goldstein (Columbia). A copy of the entry form is also mailed to Dr. Colvin (Saclay).

(e) Communication with CINDA Centers

A copy of all instructions and letters to our readers is also sent to Dr. Goldstein (Columbia), Dr. Colvin (Saclay), Dr. Whitehead (Oak Ridge), and, if concerned, to Mrs. May (Sigma Center) for information and comments.

Some questions arose during the updating of the dictionaries of abbreviations. It is hoped to clear these up by close contact with the CINDA-centers.

When we have to invent new abbreviations, we communicate them immediately to the CINDA centers and our CINDA readers, and the CINDA centers are asked to let us know if there is any objection to our new abbreviations. Up to now no objections have been received. The dictionaries are kept on punched cards, so that updated versions can easily be produced and distributed, in order to keep the CINDA manuals and our readers up-to-date.

(f) Literature to be covered by IAEA

We expect to be able to cover all literature arising in countries outside USA, Canada and ENEA (OECD), starting by reading literature in Vienna, but this activity is to be transferred to outside readers as soon as possible.

(g) Transliteration

When CINDA entries from Russian literature are made, the problem of transliteration of Russian names arises. A preliminary suggestion of a transliteration system was distributed to CINDA centers and IAEA CINDA readers; however, the final decision was left to the Tokyo INDSWG meeting. For details of our proposal and some alternatives, see Appendix.

(h) Status of CINDA Programs

We have on hand the following CINDA programs:

CINDA3 Main Program
PRINT2
DELETE2
DELETE3
MERGE2
BIB II
CODEM

All these have been (or will shortly have been) changed to fit into the 7040 configuration and the FORTRAN IV version currently available for this machine. Flow charts have been drawn and all tables and dictionaries checked. We have on hand approximately 400 CINDA data cards for testing purposes.

A plan has been drawn up for testing all these programs and general CINDA procedure. It is expected to start this testing as soon as the extra memory is installed (i.e., about 5 August). It was decided not to make the changes in CINDA which would enable it to be run on a 16K machine in view of the short waiting period.

3. NUMERICAL DATA

(a) Some samples of experimental results have already been received through informal channels. These will be used for orientational studies.

(b) Dr. Lemmel's visit to the Brookhaven National Laboratories Sigma Center was very useful in acquainting us with methods of operation and, together with Mrs. Attree's visit to North America, yielded us information concerning computer programmes. However, the present SCISRS programmes, being written in 7090 machine language, would be excessively time consuming to convert for use with the Vienna 7040. We are therefore attempting to obtain a programme from Dr. M. Drake for the reading of SCISRS tapes by a 7040 computer for interim operations.

We were in touch with Dr. Howerton (Livermore) concerning the programmes used in that laboratory, but it appears that the revised programmes for numerical data compilation will be available very shortly and therefore the present programmes have not been provided and it is understood that revised programmes will be made available to us at an early date.

(c) At the specialist meeting on compilation (March 29-31, 1965) it was recommended that the US provide to the Nuclear Data Unit information on the revisions proposed and the underlying philosophy. It is not known whether a document of this nature will be available at the Tokyo meeting, but Dr. Westcott has arranged to visit Dr. Howerton en route from Vienna to Tokyo for discussions of the present position.

(d) If it is found necessary, an appendix may be added to this report at the last moment to include information gained, or comments on the

situation revealed, by the visit to the United States.

4. CALL FOR COOPERATION

Where such arrangements do not yet exist INDSWG participants are asked for cooperation by nominating scientists as readers to cover the literature of their countries.

The reader will receive full information on the CINDA system as well as any advice or guidance he needs. We will also supply the latest edition of the CINDA book as soon as it is available. He should be able to read the literature of his area immediately it is issued and mail the entries to IAEA without delay.

Cooperation is also desirable in increasing the amount of numerical data available to the IAEA Nuclear Data Unit.

5. STAFF OF NUCLEAR DATA UNIT

Physicists:

Dr. C.H. Westcott
Mr. K. Ekberg
Dr. H. Lemmel
Dr. P. Obstavnov
Miss U. Schulze

Programmer:

Mrs. P. Attree

Assistants:

Miss E. Kiovsky
Mrs. F. Hirschbichler

TABLE 1

I. Characters without problems:

А Б В Г Д Е З И К Л М Н О П Р С Т У Ф

A B V G D E Z I K L M N O P R S T U F

II. Characters with different transliterations:

Cyrillic	Ё	Ж	Й	Х	Ц	Ч	Ш	Щ	Ъ	Ы	Ь	Э	Ю	Я
CERN Library	E	ZH	J	KH	TS	CH	SH	SHCH	"	Y	'	E	YU	YA
Mathemat. Rev.	Ë	Ž	Ĭ	H	C	Č	Š	Šč	"	Y	'	Ê	YU	YA
Zentralbl.f.Math.	E	Ž	J	CH	C	Č	Š	Šč	no	Y	'	Ê	JU	JA
Bulletin Analytique	Ë	ZH	J	KH	C	CH	SH	SHCH	no	Y	'	E	JU	JA
Appl. Mech. Rev.	Ë	ZH	Ĭ	KH	TS	CH	SH	SHCH	"	Í	'	É	YU	YA
Science Abstracts	E	ZH	Ĭ	KH	TS	CH	SH	SHCH	'	Ȳ	'	E	YU	YA
NSA	E	ZH	I	KH	TS	CH	SH	SHCH	'	Y	'	E	YU	YA
US Library of Congress	Ë	ZH	Ĭ	KH	TS	CH	SH	SHCH	"	Y	'	É	IU	IA
Amer. Slavic Review	Ë	Ž	J	KH	C	Č	Š	Šč	'	Y	'	Ê	JU	JA
ISO	Ë	Ž	J	H	C	Č	Š	Šč	"	Y	'	E	JU	JA
Recommended by IAEA Nuclear Data Group	E	ZH	J	KH	C	CH	SH	SHCH	no	Y	no	E	JU	JA

APPENDIX

Transliteration of Cyrillic letters

(a) In coding CINDA entries from Russian literature, the problem of transliteration of names arises. Various different transliteration systems are in use, but almost none of them can be used by computers without changes because of accents and special signs.

(b) In table 1 will be found a compilation of various systems as a basis for discussion, and the description of a system that is tentatively recommended by the IAEA Nuclear Data Unit.

(c) Comments: The IAEA ruling is to use the ISO system, which is used by all international organizations and which agrees to some extent with other Slavic languages written in Latin letters. Thus, we recommend a modified ISO system for use in CINDA and other computerized work, where an accent would be replaced by an H. This modified ISO-system is not too different from the Nuclear Science Abstracts (NSA) system. The differences are:

1. Й J in ISO
   I in NSA, which appears also as transliteration of the vowel "И". To avoid double use of a character and since Y is already used for "Ы", we recommend J, as used in Latin-Slavic languages.

2. Х H in ISO (Hrushchev)
   KH in NSA (Khrushchev)
   For obvious reasons we would recommend (as an exception) KH rather than H.

3. Ц C in ISO (Centralnyj)
   TS in NSA (Tsentralnyj)
   TS is already used as transliteration of the similar sounding "ТС": "ОТСТАВНОЙ" = OTSTAVNOV. In systems, where "Ц" is transliterated as TS, "TC" then is transliterated by means of a hyphen: OT-STAVNOV. This can be avoided by using the otherwise unused Latin C. We would recommend C rather than TS.

4. Ю, Я JU and JA in ISO (Atomnaja Energija, Jadernaja Fizika, Jugoslavija)
   YU and YA in NSA (Atomnaya Energiya, Yadernaya Fizika, Yugoslaviya).
   NSA agrees with English pronunciation, however, this system is illogical, as Y is used for the hard vowel "Ы" and JU and JA should be used if J is used for the soft sound "Й". We recommend JU and JA, corresponding to 1. above.

IAEA contribution to CINDA on 1 September 1965.

This supersedes item 2(c) of INDSWG-84 p.2.

The following East European and IAEA publications are now currently read for CINDA by IAEA readers, who contributed about 450 entries up to the date of this report.

This list does not yet include USSR publications, which will be covered by USSR readers who contributed already entries on ATOMNAJA ENERGIJA and JADERNAJA FIZIKA.

The coverage of literature by IAEA readers will soon be extended to other areas.

INPUT	SCISRS OUTPUT	COUNTRY	JOURNAL
		BUL	COMPTES RENDUS DE LACADEMIE BULGARE D.SCIENCES
CZJ	CZECH.J.PHYS	CSR	CZECHOSLOVAKIAN JOURNAL OF PHYSICS
JE	JADERNA EN.	CSR	JADERNA ENERGIE
AHP	A.PHYS.HUNG.	HUN	ACTA PHYS.ACAD.SCI.HUNG.
AK		HUN	ATOMKI KOZLEMENYEK
AKS		HUN	ATOMKI KOZLEMENYEK, SUPPLEMENTS
MFF		HUN	MAGYAR FIZIKAI FOLYOIRAT
		HUN	ENERGIA ES ATOMTECHNIKA
APP	A.PHYS.POL.	POL	ACTA PHYS. POLON.
BPP	B.POL.PHYS.	POL	BULL.ACAD.POLON.SCI.SER.PHYS.
NKA	NUKLEONIKA	POL	NUKLEONIKA
PF		POL	POSTEPY FIZYKI
RRP	REV.PHYS.RUM	RUM	REVUE DE PHYSIQUE, ACAD.DE LA REP.POP.ROUMAINE
SCF	ST.CERC.FIZ.	RUM	STUDII SI CERC.DE FIZ.,AC.R.P.ROM.,INST.FIZ.AT.
IBK	I.B.KIDRICH	YUG	BULL.OF THE BORIS KIDRICH INST.OF NUCL.SCIENCES
NF	NUCL.FUSION	IAE	NUCLEAR FUSION
REA		IAE	ATOMIC ENERGY REVIEW, REVUE DENERGIE ATOMIQUE
INDSWG		IAE	INTERNATNL.NUCL.DATA SCIENT.WORKING GROUP, IAEA
		IAE	INTERNATIONAL ATOMIC ENERGY AGENCY BULLETIN