

INDC International Nuclear Data Committee

Summary Report of the Technical Meeting on
International Network of Nuclear Reaction Data Centres

OECD Nuclear Energy Agency, Issy-les-Moulineux, France

16 – 19 April 2012

Prepared by

Naohiko Otsuka
IAEA Nuclear Data Section, Vienna, Austria

June 2012

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Abstract

This report summarizes the IAEA Technical Meeting on the International Network of Nuclear Reaction Data Centres, held at the OECD Nuclear Energy Agency (NEA) in Issy-les-Moulineaux, France from 16 to 19 April 2012. The meeting was attended by twenty-three participants representing thirteen cooperative centres from eight Member States and two International Organisations. A summary of the meeting is given in this report along with the conclusions and actions.

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THE INTERNATIONAL NETWORK OF NUCLEAR REACTION DATA CENTRES

National, regional and specialized nuclear reaction data centres, coordinated by the International Atomic Energy Agency, cooperate in the compilation, exchange and dissemination of nuclear reaction data in order to meet the requirements of nuclear data users in all countries. At present, the following data centres participate in the network:

NNDC	US National Nuclear Data Center, Brookhaven, USA
NEA-DB	OECD/NEA Data Bank, Issy-les-Moulineaux, France
NDS	IAEA Nuclear Data Section, Vienna, Austria
CJD	Centr Jadernykh Dannykh (= Nuclear Data Centre), Obninsk, Russia
CNDC	China Nuclear Data Centre, Beijing, China
ATOMKI	ATOMKI Charged-Particle Nuclear Reaction Data Group, Debrecen, Hungary
NDPCI	Nuclear Data Physics Centre of India, Bhabha Atomic Research Centre, Trombay, Mumbai, India
JAEA/NDC	Nuclear Data Center, Japan Atomic Energy Agency (formerly Japan Atomic Energy Research Institute, JAERI), Tokai-mura, Japan
JCPRG	Nuclear Reaction Data Centre, Hokkaido University, Sapporo, Japan
KAERI/NDC	Nuclear Data Center, Korea Atomic Energy Research Institute, Yuseong, Daejeon, Republic of Korea
CAJAD	Russian Nuclear Structure and Reaction Data Centre, Moscow, Russia
CDFE	Centr Dannykh Fotojadernykh Eksperimentov (= Centre for Photonuclear Experiments Data), Moscow, Russia
CNPD	Center of Nuclear Physics Data, Russian Federal Nuclear Center - VNIIEF, Sarov, Russia
UkrNDC	Ukrainian Nuclear Data Centre, Institute for Nuclear Research, Kyiv, Ukraine

A detailed description of the objectives of the network and the contributions of each Centre to these activities are given in INDC(NDS)-401 (Rev.5), "International Network of Nuclear Reaction Data Centres".

PREVIOUS NRDC MEETINGS

Paris, 16-19 April 2012	Centre Heads + Tech.	INDC(NDS)-0618
Vienna, 23-24 May 2011	Technical	INDC(NDS)-0593
Sapporo, 20-23 April 2010	Centre Heads + Tech.	INDC(NDS)-0573
Vienna, 25-26 May 2009	Technical	INDC(NDS)-0558
Obninsk+Moscow 22-25 Sept. 2008	Centre Heads + Tech.	INDC(NDS)-0536
Vienna, 8-10 October 2007	Technical	INDC(NDS)-0519
Vienna, 25-28 September 2006	Centre Heads + Tech.	INDC(NDS)-0503
Vienna, 12-14 October 2005	Technical	INDC(NDS)-0480
Brookhaven, 4-7 October 2004	Centre Heads + Tech.	INDC(NDS)-464
Vienna, 17-19 June 2003	Technical	INDC(NDS)-446
Paris, 27-30 May 2002	Centre Heads + Tech.	INDC(NDS)-434
Vienna, 28-30 May 2001	Technical	INDC(NDS)-427
Obninsk, 15-19 May 2000	Centre Heads + Tech.	INDC(NDS)-418
Vienna, 18-20 May 1999	Technical	INDC(NDS)-407
Vienna, 11-15 May 1998	Centre Heads + Tech.	INDC(NDS)-383
Vienna, 26-28 May 1997	Technical	INDC(NDS)-374
Brookhaven, 3-7 June 1996	Center Heads + Tech.	INDC(NDS)-360
Vienna, 2-4 May 1995	Technical	INDC(NDS)-343
Paris, 25-27 April 1994	Center Heads + Tech.	INDC(NDS)-308
Vienna, 1-3 Sept 1992	Technical	INDC(NDS)-279
Obninsk, 7-11 Oct 1991	Center Heads + Tech.	INDC(NDS)-0262
Vienna, 13-15 Nov 1990	Technical	Memo CP-D/210
Vienna, 2-4 Oct 1989	Centre Heads + Tech.	Memo CP-D/200
Vienna, 4-6 Oct 1988	Technical	Memo CP-D/190
Brookhaven, 27-29 Oct 1987	Center Heads + Tech.	INDC(NDS)-204
Vienna, 7-9 Oct 1986	Technical	Memo CP-D/159
Saclay, 9-11 Oct 1985	Center Heads + Tech. = 8 th NRDC Meeting	INDC(NDS)-178
Vienna, 19-21 Sept 1984	Technical	Memo CP-D/131
Obninsk+Moscow, 17-21 Oct 1983	7 th NRDC Meeting	INDC(NDS)-154
Vienna, 3-7 May 1982	6 th NRDC Meeting	INDC(NDS)-141
Brookhaven, 29.9 - 2.10.1980	5 th NRDC Meeting	INDC(NDS)-125
Karlsruhe, 8-13 Oct 1979	4 th NRDC Meeting	INDC(NDS)-110
Paris, 19-23 June 1978	3 rd NRDC Meeting	INDC(NDS)-99
Kiev, 11-16 April 1977	2 nd NRDC Meeting = 3 rd CPND + 13th 4-C	INDC(NDS)-90
Vienna, 28-30 April 1976	2 nd CPND Meeting	INDC(NDS)-77
Vienna, 26-27 April 1976	12 th 4C-Meeting	INDC(NDS)-78
Vienna, 8-12 Sept 1975	CPND Meeting	INDC(NDS)-69+71
Brookhaven, 10-14 March 1975	11 th 4C-Meeting	INDC(NDS)-68
Paris, 6-10 May 1974	10 th 4C Meeting	INDC(NDS)-58
Vienna, 24-26 April 1974	CPND + PhotoND	INDC(NDS)-59+61
Moscow/Obninsk, 4-8 June 1973	9 th 4C Meeting	INDC(NDS)-54
Vienna, 16-20 Oct 1972	8 th 4C Meeting	INDC(NDS)-51
Brookhaven, 25-29 Oct 1971	7 th 4C Meeting	INDC(NDS)-41
Paris, 5-9 Oct 1970	6 th 4C Meeting	INDC(NDS)-28
Moscow, 17-21 Nov 1969	5 th 4C Meeting	INDC(NDS)-16

LIST OF ACRONYMS

ATOMKI	Nuclear Research Institute, Debrecen, Hungary
BARC	Bhabha Atomic Research Centre, Trombay, Mumbai, India
BibTeX	Program for formatting reference lists for LaTeX
BNL	Brookhaven National Laboratory, Upton, New York, USA
BROND	Russian Evaluated Neutron Reaction Data Library
C4	Computational format for EXFOR data
CAJAD	Centre for Nuclear Structure and Reaction Data, Kurchatov Institute, Moscow, Russia
CDFE	Centr Dannykh Fotojad. Eksp., Moscow State University, Russia
CENDL	Chinese Evaluated Neutron reaction Data Library
CHEX	EXFOR check program (originating from NNDC)
CIAE	Chinese Institute of Atomic Energy, Beijing, China
CINDA	A specialized bibliography and data index on nuclear reaction data operated by NRDC
CJD	Russian Nuclear Data Centre, IPPE, Obninsk, Russia
CNDC	China Nuclear Data Centre, CIAE, Beijing, China
CNPD	Centre of Nuclear Physics Data at RFNC-VNIIEF, Sarov, Russia
CP...	Numbering code for memos exchanged within the NRDC
CPND	Charged-particle nuclear reaction data
CRP	Coordinated Research Project (of the IAEA Nuclear Data Section)
CSEWG	US Cross Section Evaluation Working Group
DOI	Digital Object Identifier, e.g. for bibliographic references
EFF	European Fusion File, coordinated by NEA-DB
EMPIRE	A code system for nuclear reaction model calculations
ENDF-6	International format for evaluated data exchange, version 6
ENDF/B	US Evaluated Nuclear Data File/B
ENDVER	ENDF File Verification support package
ENSDF	Evaluated Nuclear Structure Data File
EVA	Retrieval interface for evaluated data used at NEA-DB
EXFOR	Format for the international exchange of nuclear reaction data
FENDL	Fusion Evaluated Nuclear Data Library, maintained at IAEA-NDS
GSYS	Data digitizing system by JCPRG
IAEA	International Atomic Energy Agency, Vienna, Austria

IBANDL	Ion Beam Analysis Nuclear Data Library, maintained at IAEA
INDC	International Nuclear Data Committee
IPPE	Institute of Physics and Power Engineering, Obninsk, Russia
IRDF	International Reactor Dosimetry File, maintained by the IAEA-NDS
JAEA	Japan Atomic Energy Agency (from 1 October 2005)
JAERI	Japan Atomic Energy Research Institute (until 30 September 2005)
JANIS	Java Nuclear Information System of NEA-DB
JCPRG	Japan Nuclear Reaction Data Centre (formerly Japan Charged-Particle Nuclear Reaction Data Group), Sapporo, Japan
JEF	Joint Evaluated File, coordinated by NEA-DB
JEFF	Joint Evaluated Fission and Fusion File, coordinated by NEA-DB
JENDL	Japanese Evaluated Nuclear Data Library
KAERI	Korea Atomic Energy Research Institute, Daejeon, Korea
KAERI/NDC	Nuclear Data Center, KAERI, Daejeon, Korea
KINR	Kyiv Institute of Nuclear Research
LEXFOR	Part of the EXFOR manual containing physics information for compilers
MIRD	Medical Internal Radiation Dose, a database derived from ENSDF
NDS	IAEA Nuclear Data Section, Vienna, Austria
NDS	Nuclear Data Sheets
NEA	OECD Nuclear Energy Agency, Issy-les-Moulineaux, France
NEA-DB	OECD/NEA Data Bank, Issy-les-Moulineaux, France
NEANDC	OECD/NEA Nuclear Data Committee
NNDC	National Nuclear Data Center, Brookhaven National Laboratory, USA
NRDC	International Network of Nuclear Reaction Data Centres
NRDF	Japanese Nuclear Reaction Data File
NSDD	International Network of Nuclear Structure and Decay Data Evaluators
NSC	OECD/NEA Nuclear Science Committee
NSR	Nuclear Science References, a bibliographic system
OECD	Organization for Economic Cooperation and Development, Paris, France
ORDER	EXFOR program for addition of record identification and bookkeeping information
PGAA	Prompt Gamma Activation Analysis, maintained at IAEA
PhND	Photonuclear data
RIKEN	Institute of Physics and Chemistry Research, Wako-Shi, Saitama, Japan
RIPL	Reference Input Parameter Library for reaction calculations, maintained at IAEA
RNAL	Reference Neutron Activation Library, maintained at IAEA

R33	Format used by ion beam analysis community for storing experimental cross-sections
TRANS	Name of transmission tapes for data exchange in the EXFOR system
UKRNDC	Ukraine Nuclear Data Centre at KINR, Kyiv, Ukraine
VNIIEF	Russian Federal Nuclear Centre, Sarov, Russia
WPEC	Working Party on International Nuclear Data Evaluation Co-operation
WPEC-SG30	WPEC Subgroup 30 on “Quality Improvement of the EXFOR Database”
XTRACT	EXFOR indexing program
X4TOC4	Conversion program from EXFOR to computational format “C4”
ZCHEX	Current version of CHEX, updated and maintained by NDS
4C...	Numbering code of memos exchanged among the four Neutron Data Centres

MEETING SUMMARY

1. INTRODUCTION

The IAEA Technical Meeting on the International Network of Nuclear Reaction Data Centres was held at the OECD Nuclear Energy Agency (NEA) in Issy-les-Moulineaux, France from 16 to 19 April 2012. The meeting was attended by twenty-three participants (Appendix A) representing thirteen cooperative centres from eight Member States (China, Hungary, India, Japan, Korea, Russia, Ukraine, USA) and two International Organisations (NEA, IAEA). Meetings of this network are held annually, with full meetings, involving Centre heads and technical staff, every two years.

Main topics of the present meeting were EXFOR transmission statistics, EXFOR coverage and quality control, needs of EXFOR users, update of manuals, NRDC Network Document and Protocol, EXFOR/CINDA dictionaries, EXFOR exchange and output formats as well as improved web tools and software (see Appendix B).

Totally forty-one working papers were presented at the meeting. The results of the discussions were summarized in twenty Conclusions and seventy-four Actions (see Appendix C).

2. Brief Summary

2.1 Opening

T. Dujardin, Deputy Director General of the OECD Nuclear Energy Agency, welcomed the participants of the meeting on behalf of the NEA. The objectives of the meeting were outlined by R. Forrest, Head of the IAEA Nuclear Data Section.

E. Dupont was elected as the chairman, and the agenda was adopted without change. Progress reports from all thirteen attending centres were presented, highlighting the overall as well as the staffing situation of the centres, their compilation activities, data services, other nuclear data activities of interest to the network, and relevant publications (see Appendix D). Apology for absence was received from A. Blokhin and M. Mikhaylyukova (CJD, Obninsk, Russia).

2.2 EXFOR (General)

On behalf of V. Semkova, N. Otsuka reviewed the status of transmissions since the last meeting, currently scanned journals, compilation of articles published in the ND2010 Conference Proceedings, and preliminary tape checking performed by centres. He also reported his analysis on delay in compilation (= time of transmission – time of publication) for eight selected journals published in 2011. The delay is 5.7 months in average, which has been slightly reduced since the previous year. Finally he reported the current status of coding mistakes registered to the EXFOR Feedback List.

V. Zerkov presented updates of the EXFOR Compilation Control System. The first author of each article can be registered to the system, and compilers can search articles having the same author in the EXFOR database. This may help compilers to avoid creation of a new entry for which the same experimental work has been already compiled in another entry.

N. Otsuka introduced a new scanning responsibility proposed by CJD and NNDC. CJD proposed scanning of six Russian journals, and NNDC also proposed scanning of Astrophysical Journal and

its Letters. These proposals were welcomed by participants.

R. Forrest reported two IAEA meetings – the Technical Meeting (TM) on Long-term Needs for Nuclear Data Development, 2-4 November 2011, Vienna, and the Consultant Meeting (CM) on Further Development of EXFOR, 6–9 March 2012, Vienna. Both meetings treated subjects strongly related to EXFOR compilation activity. The latter meeting discussed a possible new exchange format (e.g., XML), variety of output formats, web tools for visualisation, and editors which may isolate compilers from the exchange format, and he briefly summarized the conclusions and recommendations from the meeting. The meeting participants of the CM concluded that there is no crucial issue forcing a major change of the exchange format. Nevertheless the participants of the present meeting agreed to form a working group to discuss an opportunity to use XML as the new exchange format.

2.3 Manuals and Dictionaries

S. Hlavač proposed revision of the dictionary 25 (Units) to improve consistency in prefixes within the dictionary as well as consistency with the International Systems of Units (SI). He proposed modification of $-SQ$ (squared) to 2, and also MICRO- (micro) to MU- in the unit codes. He also proposed to change FERMI to FM and MILLI-MU to NM.

N. Otsuka proposed extension of the maximum character length of particle codes (Dictionary 33) from three to five for short nuclide codes. R. Forrest proposed to change it to six to allow an isomeric state flag (e.g., AM242M). N. Otsuka also introduced a new related reference type code o (e.g., o, D4232001, F.Ditroi+, J, NIM/B, 268, 2571, 2010) to indicate articles which show experimental data sets relevant to the entry but that are not compiled in the same entry.

N. Soppera reviewed problems and possible improvements of the EXFOR/CINDA dictionary. He explained that there are various formats in distributed dictionaries (archive, backup, trans) and also dictionaries not currently used. He also mentioned that more up-to-date dictionaries are necessary to reduce unnecessary error messages from checking codes and display software. He proposed assessment of current usages of the dictionaries (formats, contents) and dissemination of “preliminary up-to-date dictionaries”.

2.4 CINDA

V. Zerkin reported that update of the CINDA database maintained by NDS is currently done using the following three steps – (1) inclusion of lines from the manual CINDA compilation, (2) inclusion of lines from the EXFOR database, (3) inclusion of lines from the NSR database, and he also explained that only the lines from the first and second step are included into the CINDA Master File. NEA DB and JCPRG are maintaining their own CINDA databases, and they were asked to inform V. Zerkin whether they wish to receive the CINDA Master File including the CINDA lines from the third step. V. Zerkin also proposed not to use reader files for future CINDA transmission.

2.5 EXFOR Compilation

O. Gritzay proposed coding rules for compilation of neutron source spectra which are necessary to utilize spectrum averaged cross sections compiled in the EXFOR library.

N. Otsuka reviewed progress in compilation of neutron source spectra, nuclear resonance fluorescence data and proton-induced reaction cross sections. He also reported proton-induced isotope production cross section articles tabulated in Landolt - Börnstein compilation but missing in the EXFOR library, and asked centres to compile these articles. Finally he reviewed progress in corrections of two digit year and upper case entries, angular distribution without level energy,

prompt fission neutron spectra, super heavy elements symbols and English translation of Atomnaya Energiya (AE) missing in the EXFOR library.

S. Babykina reported EXFOR entries where the English translation of Yadernaya Fizika (YF) is missing, and asked centres to add translation information to the EXFOR entries.

N. Otsuka introduced the JANIS Import Log created from every EXFOR Master File. He introduced various “error” and “warning” types listed by the JANIS Import Log, and explained that the number of errors has been decreased since the last NRDC meeting for all types. He proposed corrections of 11 subentries which are reported as an “error” (which does not allow further checking by JANIS).

M. Bossant explained erroneous citations found in coded information under the keywords TITLE, AUTHOR, REFERENCE, REL-REF and MONIT-REF. He recommended (unless absolutely necessary) not coding the issue number, month and day of publication in order to avoid mistakes.

In order to preserve various covariance information under the keyword COVARIANCE, V. Zerkin proposed to code some data in “free text format”.

N. Otsuka proposed a change in the usage of the fourth field of the keyword ERR-ANALYS from correlation coefficients to correlation properties by introducing several flags (e.g., F for fully correlated, U for uncorrelated), and it was approved. He also proposed to replace “systematic” by “partial” in the expansions of the data headings ERR-1, ERR-2 etc. because these headings have been applied to both correlated and uncorrelated uncertainties. V. Zerkin proposed to postpone this change because these uncertainties are treated as being fully correlated in his program to produce data in the C5 format.

N. Otsuka reviewed gamma spectra compiled in the EXFOR library. There are two groups of parameter codes, namely (1) SPC and (2) PY and MLT to define gamma yields coded with gamma energy (or the range), and he proposed to use (1) SPC for discrete gamma lines and (2) PY and MLT for continuous gamma spectra.

N. Otsuka reported the recent comparison of $kT = 30$ keV Maxwellian averaged cross section (MACS) accessible from the EXFOR database and Karlsruhe Astrophysical Database of Nuclear synthesis in Stars (KADoNiS) performed by V. Semkova, B. Pritychenko and him. He reported that some articles in KADoNiS are missing from the EXFOR library, but sometimes data in such articles are compiled in EXFOR entries for other articles. He proposed the addition of such missing articles to the EXFOR entries. M. Herman stressed that the MACS experimental data should be compiled even if they were complemented by other experimental and/or theoretical results. He also proposed compilation of MACS recommended by the Karlsruhe group. R. Forrest commented that the neutron spectrum must be well specified when the experimentally determined MACS are compiled in an EXFOR entry.

N. Otsuka introduced possible delayed neutron data compilation in the EXFOR library recently assessed by V. Semkova. The priority of compilation has been rather low for these data in the past, it could be due to the fact that they are on the boundary between reaction data and decay data. M. Herman mentioned these quantities are rather close to the scope of data in ENDF libraries from the view of their application, and supported the idea to compile them in the EXFOR library.

N. Otsuka introduced four working papers prepared by M. Mikhaylyukova. He informed that the “Short Guide for EXFOR Compilers” was revised by CJD following actions of the NRDC 2011 Meeting. Then he introduced Mikhaylyukova’s comments and proposals on information given under the keyword SAMPLE and INC-SOURCE. The participants recognized some entries shown in her

working papers are obviously against the current coding rule, and should be corrected. It was also confirmed that the keyword `INC-SOURCE` will not be used for spontaneous fission data. Finally N. Otsuka introduced Mikhaylyukova's proposal on automatic conversion of the journal code `ND/B` to `NDS` for articles published in Nuclear Data Sheets. The meeting participants agreed inclusion of the special transmission tape (`PRELIM.Y008`) to the EXFOR library for corrected entries which were agreed with the originating centres.

2.6 Evaluated Data Libraries

N. Otsuka explained his recent experience on comparison of the $^{27}\text{Al}(n,\alpha)^{24}\text{Na}$ standard cross section evaluated and compiled in the ENDF/B-V and ENDF/B-VI libraries. Search and plotting of the ENDF/B-V library is not available in the web tools provided by centres, and he had to manipulate cross sections in the ENDF-5 format by himself. He also introduced comments from D.L. Smith (ANL), and proposed collection and exchange of old evaluated data libraries and inclusion of them to the database maintained by centres, especially for renormalization of old EXFOR data sets.

2.7 Software and Dissemination

R. Forrest explained that NDS collects the electronic articles as PDFs for references to data compiled in the EXFOR library. The PDFs are exclusively available for IAEA NDS staff and people working under contracts (such as CRPs and consultancies) with the IAEA, and are not generally available because of copyright limitations.

S. Taova introduced a proposed revision of the NRDC Protocol Chapter "EXFOR processing and retrieval codes". She explained the advantages of executable module exchange. The participants agreed to encourage free exchange of software and co-operation in software development between centres, and to describe it as a preamble of the NRDC Protocol Chapter without a detailed revision to the Protocol.

G. Pikulina explained recent development of the Russian editor (EXFOR-Editor) developed at CNPD. She reported on EXFOR-Editor Ver. 1.11.1 which was released in December 2011, and mentioned that there will be no substantial upgrade of this version but they will maintain it by taking account of feedbacks from users. She also introduced possible simplification of compilation by extending the concepts of EXFOR-Wizard, a trial version of which is available on the NRDC Software webpage as "EXFOR-Editor Ver. 2.0".

M. Aikawa introduced the systems maintained by JCPRG for compilers and users. He explained that JCPRG maintains their EXFOR database by inclusion of finalized transmission tapes from the NDS open area one by one, while updating their CINDA database based on the CINDA Master File distributed by NDS. He also introduced an e-mail archiving system "Stock" which automatically collects e-mails between compilers, authors and data centres. He also introduced GSYS 2.4.2, the latest version of the digitizer released in November 2011 with an updated English manual. He noted that R. Suzuki (Hokkaido Univ. Hospital) plans refactoring of the digitizer program to implement "undo" and "redo" functions.

V. Zerkin introduced his recent developments of a web tool for covariance matrix construction from EXFOR uncertainties. He explained that users can (1) confirm and change uncertainties coded in an EXFOR entry, and also can introduce new uncertainties; (2) introduce a correlation type for each partial uncertainty; (3) obtain constructed covariance data (in the ENDF-6 and EXFOR formats), and plot with Fortran codes to read covariance data generated from the tool. V. Zerkin also reported progress in development of the EXFOR Data Correction System in 2011-2012. He introduced the syntax, variables, constants and operations defined by the system with several examples of

corrections performed on the system. He reported that a coding error under the keyword `MONIT-REF` (e.g., `IAEA-1211` or `IAEA-NDS-1211` instead of `IAEA-TECDOC-1211`) may disturb his system. Finally V. Zerkina presented his recent development of various EXFOR output formats (X4+, XML and HTML). After brief introduction of X4+, he introduced a revised X4+ as well as X4+ created by a standalone program. He explained the X4+ output is suitable for author proof correction, and asked participants to send comments to him how to best utilize the output for this purpose. He also introduced EXFOR-XML output with some examples and solutions, and also presented its XSL translation to HTML + Javascript interactive pages. He explained that the EXFOR-XML output format still requires users to have various knowledge of EXFOR (data file structure, dictionaries etc.) and proposed the EXFOR “Standard Output” which is equivalent to the EXFOR exchange format but much easier to read and to interpret information in the EXFOR library.

N. Soppera presented software to facilitate visualisation and manipulation of nuclear data, JANIS (Java-based Nuclear Information Software). He introduced various windows (browser window, renderer window), search tools and computation functions. He also explained some tools derived from JANIS (TRANS Checker, JANIS Books, automatic comparison tools EXFOR with EXFOR, EXFOR with ENDF). This presentation was followed by a demonstration by E. Dupont.

Guochang Chen requested to include EXFOR/MySQL database (part of EndVer/GUI CDROM) to be regularly distributed to the NRDC. V. Zerkina answered that it is a service provided by NDS and one should request NDS directly.

2.7 Closing

M. Herman introduced the ND2013 Conference (New York, USA, March 4-8, 2013) and invited NRDC members to participate.

A. Makinaga introduced the Asian collaboration in nuclear data research.

N. Otsuka proposed the plans for the next full NRDC meeting (Smolenice, Slovakia, the 2nd quarter of 2014), technical NRDC meeting (Vienna, Austria, the week of 22-26 April, 2013) as well as EXFOR compilation workshop (Vienna, Austria, the 3rd quarter of 2013).

R. Forrest thanked NEA for hosting and congratulated participants on a very successful meeting. He then called an adjournment of the meeting.

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AGENDA

Monday, 16 April 2012

Plenary: 9:30 – 13:00

1. Opening Items

1.1	Welcome address	10 min		T. Dujardin
1.2	Introduction	10 min		R. Forrest
1.3	Election of chairperson, adoption of the agenda, announcements	5 min		N. Otsuka

2. Progress Reports

2.1	NDPCI (Mumbai, India)	10 min	P2012-01	A. Saxena
2.2	CDFE (Moscow, Russia)	10 min	P2012-02	V. Varlamov
2.3	CNPD (Sarov, Russia)	10 min	P2012-03	S. Taova
2.4	CAJaD (Moscow, Russia)	10 min	P2012-04	S. Babykina
2.5	JCPRG (Sapporo, Japan)	10 min	P2012-05	M. Aikawa
2.6	NDS (Vienna, Austria)	10 min	P2012-06	R. Forrest
2.7	CJD (Obninsk, Russia)	10 min	P2012-07	A. Blokhin
2.8	ATOMKI (Debrecen, Hungary)	10 min	P2012-08	F. Tárkányi
2.9	NEA DB (Paris, France)	10 min	P2012-09	K. Matsumoto
2.10	JAEA (Tokai, Japan)	10 min	P2012-10	T. Fukahori
2.11	UkrNDC (Kyiv, Ukraine)	10 min	P2012-11	O. Gritzay
2.12	KAERI (Daejeon, Korea)	10 min	P2012-12	Y.O. Lee
2.13	CNDC (Beijing, China)	10 min		Ge Zhigang
2.14	NNDC (Upton, USA)	10 min		M. Herman

165 min

Plenary: 14:00 – 18:00

3. EXFOR General

3.1	New and revised entries / subentries since the 2012 NRDC meeting	10 min	WP2012-02	V. Semkova
3.2	Status of scanned journals	10 min	WP2012-03	V. Semkova
3.3	Status of new articles for EXFOR compilation (A7)	20 min	WP2012-04	N. Otsuka
3.4	Compilation status of the articles from ND2010 (A6)	10 min	WP2012-05	V. Semkova
3.5	Statistics of checking the preliminary files	10 min	WP2012-06	V. Semkova
3.6	Corrections of erroneous entries (A1)	10 min	WP2012-07	N. Otsuka
3.7	EXFOR Compilation Control System (A2,A5)	10 min		V. Semkova, V. Zerkin
3.8	CJD scanning responsibility	10 min	WP2012-08	M. Mikhaylyukova
3.9	IAEA TM on “Long-term Needs for Nuclear Data Development”, IAEA CM on “Further Development of EXFOR” (A3)	30 min		R. Forrest
3.10	Status of the Network Document -	10 min		R. Forrest

	INDC(NDS)-0401 (Rev.5)			
3.11	Other actions (A4,A8)	10 min	WP2012-01	
4	Manuals and Dictionary			
4.1	Unification of prefixes in unit codes (A9)	10 min	WP2012-09	S. Hlavač
4.2	Short nuclide codes in SF7 (A11)	10 min	WP2012-10	N. Otsuka
4.3	LEXFOR entry “Nuclear resonance fluorescence”	10 min	WP2012-11	N. Otsuka
4.4	New related reference code “o”	10 min	WP2012-12	N. Otsuka
4.5	EXFOR/CINDA dictionaries used by JANIS software	20 min	WP2012-13	N. Soppera
4.6	Other actions (A10, A12, A39,A46)	10 min <i>210 min</i>	WP2012-01	Chairperson

Tuesday, 17 April 2012

Plenary: 9:00 – 13:00

5	CINDA			
5.1	Status of CINDA database in the IAEA-NDS (A16,A17,A18)	10 min	WP2012-14	V. Zerkin
5.2	Other actions (A13-A15)	10 min	WP2012-01	Chairperson
6	EXFOR Compilation			
6.1	Neutron source spectra format (A29)	20 min	WP2012-15	O. Gritzay
6.2	Compilation of neutron source spectra (A23)	10 min	WP2012-16	N. Otsuka
6.3	Compilation of nuclear resonance fluorescence data (A24)	10 min	WP2012-17	N. Otsuka
6.4	Compilation of proton-induced reaction cross section	10 min	WP2012-18	N. Otsuka
6.5	Comparison between Landolt-Börnstein and EXFOR (proton-induced reaction cross section)	10 min	WP2012-19	N. Otsuka
6.6	Status of two digits year and upper case entries (A19)	10 min	WP2012-20	N. Otsuka
6.7	Status of WPEC SG30 list (A26)	10 min	WP2012-21	N. Otsuka
6.8	Angular distribution without level specification	10 min	WP2012-22	N. Otsuka
6.9	Duplication in area 1, C and L (A20)	5 min	WP2012-23	N. Otsuka
6.10	Prompt fission neutron spectra (A21)	5 min	WP2012-23	N. Otsuka
6.11	Super heavy element symbols (A22)	5 min	WP2012-23	N. Otsuka
6.12	English translation of Atomnaya Energiya (A32)	5 min	WP2012-23	N. Otsuka
6.13	English translation of Yadernaya Fizika (A33)	10 min	WP2012-24	S. Babykina

6.14	Analysis of JANIS Import Log (A28)	10 min	WP2012-25	N. Otsuka
6.15	Incorrect author name (A31)	10 min	WP2012-26	M. Bossant
		<i>160 min</i>		

Plenary: 14:00 – 18:00

6 EXFOR Compilation (cont'd)

6.16	Proposal for coding of covariance data in EXFOR files (A34)	20 min	WP2012-27	V. Zerkin
6.17	ERR-ANALYS: Correlation coefficient field	10 min	WP2012-28	N. Otsuka
6.18	Review of gamma spectra compiled in EXFOR (A38)	10 min	WP2012-29	N. Otsuka
6.19	Quantities of fission neutron emitted from a specific fragment	10 min	WP2012-30	N. Otsuka
6.20	Comparison between EXFOR and Karlsruhe MACS compilation	10 min	WP2012-31	N. Otsuka
6.21	Compilation of delayed neutron data	10 min	WP2012-32	V. Semkova
6.22	Revised Guide for EXFOR Compilers (A35)	10 min	WP2012-33	M. Mikhaylyukova
6.23	Coding of SAMPLE	10 min	WP2012-34	M. Mikhaylyukova
6.24	INC-SOURCE in spontaneous fission entries	10 min	WP2012-35	M. Mikhaylyukova
6.25	Automatic conversion of ND/B to NDS	10 min	WP2012-36	M. Mikhaylyukova
6.26	Other actions (A25,A27,A30,A36, A37)	10 min	WP2012-01	Chairperson

7 Evaluated Data Libraries

7.1	Archiving of old evaluated data libraries	10 min	WP2012-37	N. Otsuka
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130 min

Social Event: 19:00 –

“Chez Clément” (98 Avenue Edouard Vaillant, Boulogne, near M9 Marcel Sembat)

Wednesday, 18 April 2012

Plenary: 9:00 – 13:00

8 Software and Dissemination

- | | | | | |
|-----|--|--------|-----------|-------------|
| 8.1 | Copyright issue on electronic article distribution (A47) | 10 min | | R. Forrest |
| 8.2 | Revision of Protocol “EXFOR processing and retrieval codes” (A50) | 30 min | WP2012-38 | S. Taova |
| 8.3 | Development of Software for Input and Editing of Experimental data in EXFOR format (A56) | 20 min | WP2012-39 | G. Pikulina |
| 8.4 | System for compilation and user services in JCPRG | 10 min | WP2012-40 | M. Aikawa |
| 8.5 | Development of digitizing software GSYS (A48) | 10 min | WP2012-41 | R. Suzuki |
| 8.6 | Development of Web Tool for construction covariance matrix from EXFOR uncertainties | 30 min | WP2012-42 | V. Zerkin |
| 8.7 | Recent development of the EXFOR output formats: XML, HTML, X4+ (A40, A51, A52) | 30 min | | V. Zerkin |
| 8.8 | EXFOR data correction system: Progress in 2011-2012 (A44) | 30 min | | V. Zerkin |

170 min

Plenary: 14:00 – 18:00

8 Software & Dissemination (cont'd)

- | | | | | |
|------|--|--------|-----------|-------------------------|
| 8.9 | Presentation of the JANIS software | 1 hour | | N. Soppera
E. Dupont |
| 8.10 | Other actions (A40-A43, A45, A49, A53 - A55) | 10 min | WP2012-01 | Chairperson |

70 min

Thursday, 19 April 2012

Plenary: 9:00 – 18:00

9 Other business

10. Closing

10.1	ND2013 Conference (New York, USA, March 4-8, 2013)	15 min		M. Herman
10.2	Developments of academic bases of nuclear data research in Asia	10 min	WP2012-43	A. Makinaga
10.3	Dates and places of next meetings	10 min		N. Otsuka
10.4	Review of actions and conclusions	1 hour		Chairperson
10.5	Adjournment	5 min		R. Forrest
		<i>100 min</i>		

CONCLUSIONS AND ACTIONS

Conclusions

General

- C1 The next full NRDC meeting will be held in Smolenice, Slovakia in the 2nd quarter of 2014.
- C2 The next technical NRDC meeting will be held in Vienna, Austria in the week of 22 - 26 April 2013.
- C3 The next EXFOR Compilation Workshop will be held in Vienna, Austria in the 3rd quarter of 2013.

EXFOR, General

- C4 CJD will scan AE, ZET, ZEP, PTE, FCY and FCY/L, and report the result to Semkova for every issue on a regular basis.
- C5 NNDC will scan AJ and AJ/L, and report the result to Semkova for every issue on a regular basis.

Manuals and Dictionaries

- C6 Unification of prefixes in unit codes proposed in WP2012-09 and change of prefixes MICRO- to MU- in dictionary 25 were approved.
- C7 The code length of particle codes (Dictionary 33) will be 6 or less for short nuclide codes (e.g., AM242M).
- C8 LEXFOR entry “Nuclear resonance fluorescence” proposed in WP2012-11 was approved.
- C9 A new related reference code \circ and its usage proposed in WP2012-12 was approved. The status code COREL will not be used for the purpose.

CINDA

- C10 Only Exchange files will be used in future CINDA transmissions (i.e., Reader files will be no longer used).

EXFOR Compilation

- C11 All centres are recommended to collect and archive entry by entry all communications between compilers, authors and centres as ASCII files (e-mails) or PDF files (documentation).
- C12 The neutron source spectra format proposed in WP2012-15 was approved with correction of, DE to , PY/DE.
- C13 Compilers are not recommended to put the issue, day and month under the keyword REFERENCE, MONIT-REF and REL-REF unless they are essential to identify the article.
- C14 The covariance data format proposed in WP2012-27 was approved. Compilers and programmers are encouraged to use the new format.
- C15 The ERR-ANALYS format and the usage of headings ERR-1, ERR-2 etc. proposed in WP2012-28 were approved .The 4th field of ERR-ANALYS will be used to indicate correlation property of the source of uncertainties in future transmissions.
- C16 The parameter code SPC will be used for yield of discrete gamma line(s) while PAR,MLT and PAR, PY will be used for yield of continuous gamma (WP2012-29).
- C17 The following coding rule about the keyword SAMPLE were approved: (a) only abundances normalized to 1 (within uncertainties) will be coded in the isotopic abundance field; (b) no blanks permitted for isotopic abundance value; (c) only fixed (not ranges) abundances given by the authors are allowed as coded information (number) in the isotopic abundance field. Abundance ranges may be given in free text.
- C18 The keyword INC-SOURCE will not be permitted when the data set is for spontaneous fission.

Evaluated Data Libraries

- C19 Centres are recommended to collect and make available through their nuclear data services old evaluated libraries, especially standard data used to derive experimental data compiled in EXFOR (WP2012-37).

Software and Dissemination

- C20 NRDC encourages free exchange of software and co-operation in software development between Centres.

Actions

EXFOR General

- | | | |
|----|--|--|
| A1 | All | (Standing Action) Give highest priority to compiling new publications. |
| A2 | Aikawa
Dupont
Hlavač
Pritychenko
Semkova
Yang | (Continuing action) Give high priority to compilation of articles published in the ND2010 conference (Jeju, Korea) and listed in WP2012-05. |
| A3 | All | (Continuing action) Correct erroneous entries listed on the EXFOR Feedback List on the NRDC web page according to the indicated priorities. All urgent corrections must be done by the next meeting. |
| A4 | Semkova | (Continuing Action) (1) Remove transmission number from the compiler name field of the EXFOR Compilation Control System; (2) Add the first author name to the EXFOR Compilation Control System, as time/resources permit. |
| A5 | Centre Heads | Nominate participants from the centre to the EXFOR working group coordinated by Zerkin, which will discuss the opportunity to use XML as a new EXchange FORmat and could participate in the related proposed WPEC subgroup on the evaluated Generalized Nuclear Data (GND) format. |
| A6 | NDS | Prepare a list of questions to ask centres about the usages of compilation tools, output formats etc., and send it to centres. |
| A7 | All | Respond to the questions mentioned above. |
| A8 | Otsuka | Coordinate submission of an abstract to the ND2013 conference. |

Manuals and Dictionaries

- | | | |
|-----|--------------|--|
| A9 | Centre Heads | Send comments on the Network document to Otsuka to prepare the next update to be reviewed and signed at the next Centre Heads meeting in 2014. |
| A10 | Otsuka | Update the Network document following the comments by Centre Heads. |

- A11 Otsuka Update the NRDC Protocol Appendix B following the new scanning responsibilities of NNDC and CJD. (Conclusion 4 and 5).
- A12 Otsuka Revise LEXFOR for (a) TOF covariance (WP2011-27); (b) new branch code ISP (WP2011-29); (c) specific temperatures for prompt fission neutron spectrum averaged quantities (WP2011-30); (d) compilation of prompt fission neutron quantities (WP2011-31); (e) nuclear resonance fluorescence (WP2012-11); (f) additional reference compiled in another entry (WP2012-12).
- A13 Otsuka Revise the EXFOR Formats Manual for (a) short nuclide codes in REACTION SF7 (WP2011-28); (b) the keyword ERR-ANALYS (Conclusion 15); (c) the keyword SAMPLE (Conclusion 17).
- A14 Zerkin Submit an update of the EXFOR Formats Manual (Appendix B) for the new covariance format (WP2012-27).
- A15 Otsuka Revise NRDC Protocol according to the Conclusion 20.
- A16 Otsuka Consider revision of the NRDC Protocol for submission of transmission tapes specialized for corrections.
- A17 Otsuka Update dictionary 25 (Unit codes) for agreed change (Conclusion 6).
- A18 Otsuka Assess the current use of various dictionaries and their types (archive, backup, trans) by compilers and computer programs maintained by data centres for possible simplification (WP2012-13).
- A19 Otsuka (Continuing Action) Consider to make available preliminary up-to-date dictionaries to suppress unnecessary error messages from checking programs (WP2012-13).
- A20 Otsuka (Continuing Action) Update Dictionaries every four months.
- CINDA**
- A21 Dupont (Continuing Action) Correct errors detected during CINDA loading procedure, as described in WP2008-36.
- A22 Dupont (Continuing Action) Correct all CINDA lines, as described in WP2009-30.
- A23 Zerkin (Continuing Action) Periodically export EXFOR and NSR to CINDA.

- A24 Zerkin (Continuing Action) Periodically update the CINDA Master File and distribute it to other Centres.
- A25 Aikawa Inform Zerkin whether the Centres want to receive the NSR
Dupont exportation part in the CINDA Master File.

EXFOR Compilation

- A26 Aikawa (Continuing Action) Compile neutron source spectra listed in
Dupont WP2012-16.
Hlavač
Pritychenko
Semkova
Taova
- A27 Otsuka Compile Mannhart's ^{252}Cf standard neutron spectrum.
- A28 Hlavač Compile proton-induced reaction cross section (R.D. Albert et al.)
in WP2012-18.
- A29 Babykina Compile proton-induced isotope production cross sections listed
Dupont in the 1st table of WP2012-19. Also consider to compile cross
Otsuka sections listed in the 2nd table of WP2012-19 if possible.
Takács
- A30 Otsuka Continue comparison between Landolt-Börnstein compilation and
Babykina EXFOR for light charged-particle induced isotope production
cross sections.
- A31 All (Continuing Action) According to the list of Entries with `NODATA`
one of the following corrections has to be made (see "Guide for
EXFOR Compilers"): (a) restore numerical data from old EXFOR
backup in retransmission if data were not superseded before in this
Entry; (b) delete Subentry, or the whole Entry, if it is real
duplication in reference and data, as well as adding a comment in
`HISTORY`; (c) Add `SPSDD` under `STATUS` when it is applicable; (d)
Digitize numerical data if the quality of the figures is enough for
digitization, if `SPSDD` not applicable, and if the article was
published before 2000; (e) add `UNOBT` and comment if it is
impossible to digitize the data and the article was published before
2000; (f) try to find numerical data if the article was published
later than 2000.
- A32 All (Continuing Action) Revise remaining upper case entries and
other necessary corrections as time permits. (WP2012-20)
- A33 Dupont Revise entries listed in the WPEC SG30 list (WP2012-21, also
Pritychenko registered to the EXFOR Feedback List).

- A34 Otsuka Merge WPEC SG30 list to the EXFOR Feedback List.
- A35 Aikawa Correct entries for data sets which are partial for secondary
Babykina energies listed in WP2012-22 (also registered to the EXFOR
Dupont Feedback System).
Mikhaylyukova
Otsuka
Pritychenko
Taova
Varlamov
- A36 Aikawa (Continuing Action) Replace element symbols of asterisk in
REACTION SF4 in Entry E2054 (WP2012-23).
- A37 Dupont (Continuing Action) Add English translation information of
Mikhaylyukova Atomnaya Energiya under the keyword REFERENCE as listed in
Varlamov WP2011-26 (also registered to the EXFOR Feedback List).
- A38 Babykina Add English translation information of Yadernaya Fizika under
Dupont the keyword REFERENCE as listed in WP2012-24 (also registered
Mikhaylyukova to the EXFOR Feedback System).
Otsuka
Taova
Varlamov
- A39 Babykina (Continuing Action) Provide a list of English translation
information of Russian journals, e.g., IZV.
- A40 Otsuka Update the feedback list with information from WP2012-24 and
WP2012-35.
- A41 Soppera Provide JANIS Import Log created from the EXFOR Master File
to Otsuka on a regular basis.
- A42 Otsuka Assess the JANIS Import Log provided by Soppera as above, and
register important errors to the EXFOR Feedback System.
- A43 Dupont Correct errors listed in WP2012-25.
Mikhaylyukva
Pritychenko
- A44 Dupont (Continuing Action) Assess neutron cross section data useful for
Hlavač standard evaluation listed in WP2011-15 and compile them when
Pritychenko appropriate.
Semkova
- A45 Dupont (Continuing Action) Provide NDS a list of erroneous and
suspicious outliers by using the new statistical approach being
developed when available (WP2011-17).

- A46 Dupont (Continuing Action) Provide JANIS–TRANS Checker Log list on every preliminary TRANS-file.
- A47 Dupont Assess the articles reporting keV neutron capture cross section entries listed in WP2012-31, and made necessary corrections and additions.
Hlavač
Mikhaylyukova
Otsuka
Pritychenko
- A48 Otsuka Consider compilation of $kT = 30$ keV Maxwellian Averaged Cross Section compiled in KADoNiS as an EXFOR entry.
- A49 Otsuka Extract serious errors (e.g., opening parenthesis in column 12, `ENR=0.`) from WP2012-34, and distribute a list to centres as a memo for corrections with addition of the entries to the EXFOR Feedback List.
- A50 Dupont Correct entries using the keyword `INC-SOURCE` for spontaneous fission as listed in WP2012-35, and move information to another keyword or subentry when necessary.
Hlavač
Mikhaylyukova
Pritychenko
Semkova
- A51 Otsuka Check if each centre agrees with entries included in `PRELIM.Y008`.
- A52 Semkova Check and finalize `PRELIM.Y008` (after trivial corrections if necessary).
Otsuka
- A53 Zerkin Assess the technical feasibility to automatically update the entries affected by the change of prefixes in the unit code (Conclusion 6), and prepare a draft of a preliminary area Y transmission tape.
- A54 Semkova Submit the preliminary tape mentioned above to the NDS open area (after trivial corrections if necessary).
- A55 Otsuka Check if each centre agrees with the entries included in the area Y preliminary tape mentioned above.
- A56 Otsuka Assess the correlation properties of uncertainties given under the heading `ERR-1`, `ERR-2` etc. in the existing entries.

Software and Dissemination

- A57 NEA DB (Continuing Action) Continue development and testing of the JANIS –TRANS Checker in cooperation with NDS and the other centres.
- A58 Otsuka (Continuing Action) Provide EXFOR News for every EXFOR Master File.

- A59 Zerkin (Continuing Action) Continue development of EXFOR+ (interpreted / extended EXFOR format).
- A60 All Consider to use the EXFOR+ format for author approval, and also send feedback to Zerkin.
- A61 Zerkin (Continuing Action) Every four months produce an EXFOR distribution with (a) full Dictionary distribution; (b) EXFOR in C4 and XC4 format; (c) Dictionaries in MS Access; (d) X4Map and X4Archive.
- A62 Zerkin (Continuing Action) Generate and distribute list of errors to NRDC after every new EXFOR Master File creation.
- A63 Zerkin (Continuing Action) Development of a new database encompassing correction factors and relevant comments for suspect/erroneous data (X4-evaluated) presented in WP2010-19; keep NRDC informed about conclusions of discussions on new database.
- A64 Zerkin (Continuing Action) Develop the program to generate EXFOR+ from a standalone EXFOR entry.
- A65 Pikulina, Zerkin Implement the X4+ converter code into the EXFOR-Editor in a form of independent executable module.
- A66 NDS Assess the current status of NDS EXFOR checking codes (ZCHEX, Zerkin's upload system) and to prepare a consolidated proposal on which checking code should be maintained / developed as the NRDC checking code that must be used by compilers.
- A67 Zerkin (Continuing Action) Update ZCHEX based on comments from compilers (e.g., WP2011-36) as time permits.
- A68 All (Continuing Action) Provide feedback to NDS on the existing ZCHEX version (on bugs as well as desired additions.).
- A69 Zerkin (Continuing Action) Continue development of the EXFOR upload web tool.
- A70 Zerkin Prepare coding of covariance data for all EXFOR Entries having authors' covariances, and offer them to compilers according to Areas for finalizing and submitting to the database.
- A71 JCPRG (Continuing Action) Continue development and testing of the digitizing software GSYS in cooperation with NDS and other centres.
- A72 CNPD Provide more detailed information on future development of the EXFOR-Editor.

- A73 All Provide feedback on the current version of the EXFOR-Editor and requests for the development of the next version.
- A74 CNPD (Continuing Action) Continue development and testing of the EXFOR-Editor and digitizer in cooperation with NDS and other data Centres, taking into account compilers' remarks.

LIST OF PROGRESS REPORTS

Number	Title	Presented by
P2012-01	A brief status report on the activities of Nuclear Data Physics Centre of India (NDPCI)	A. Saxena
P2012-02	Summary of the CDFE nuclear data activity for 2011 - 2012	V.V. Varlamov
P2012-03	Center of Nuclear Physics Data (CNPD), RFNC-VNIIEF - Technical paper for the NRDC Meeting, Paris, April 16-19, 2012	S. Taova
P2012-04	Activity of CAJAD for the IAEA Meeting, France , Issy-les-Moulineux, 16-19 April 2012	S. Babykina
P2012-05	Japan Nuclear Reaction Data Centre (JCPRG), Progress Report	M. Aikawa
P2012-06	IAEA Nuclear Data Section: Progress Report, 2011/12 Summary of nuclear data activity by staff of the IAEA Nuclear Data Section, May 2011 - April 2012	R. Forrest
P2012-07	CJD, Progress Report, 2010/2011, Summary of nuclear data activity by staff of the IPPE CJD	
P2012-08	Progress Report, Nuclear Reaction Data Group at ATOMKI (NRDC Meeting, 16-19 April 2012)	F. Tárkányi,
P2012-09	NEA Data Bank Progress Report 2011-2012	K. Matsumoto E. Dupont
P2012-10	Status Report of JAEA Nuclear Data Center	T. Fukahori
P2012-11	Ukrainian Nuclear Data Centre Progress Report, 2011/12, Summary of nuclear data studies by staff of the Ukrainian Nuclear Data Centre	O. Gritzay
P2012-12	Nuclear Data Center (NDC) of Korea Atomic Energy Research Institute (KAERI), Progress Report to the IAEA Technical Meeting of Nuclear Reaction Data Centers (NRDC)	Y.O. Lee

Note: These progress reports are available online: http://www-nds.iaea.org/nrdc/nrdc_2012/.

LIST OF WORKING PAPERS

Number	Title	From
WP2012-01	Conclusions and action of the 2011 NRDC Meeting	
WP2012-02	New and revised entries/subentries since the 2011 NRDC Meeting	V. Semkova
WP2012-03	Status of scanned journals, (Action A11)	V. Semkova
WP2012-04	Status of new articles for EXFOR compilation (A7)	N. Otsuka
WP2012-05	Compilation status of the articles from ND2010 (A6)	V. Semkova
WP2012-06	Statistics of checking the preliminary files	V. Semkova
WP2012-07	Corrections of erroneous entries (A1)	N. Otsuka
WP2012-08	Scanning responsibility of journals by CJD	M. Mikhaylyukova
WP2012-09	Unification of prefixes in unit codes (A9)	N. Otsuka S. Hlavač
WP2012-10	Short nuclide code in SF7 (A11)	N. Otsuka
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Developments of academic bases of nuclear data research in Asia	A. Makinaga

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