

# Technical Meeting on Implementation of the Fast Reactor Retrieval and Knowledge Preservation Initiative

28 November - 1 December 2006  
Vienna, Austria

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## Background

In response to the needs expressed by Member States and within a broader Agency wide effort in nuclear knowledge preservation and transfer to the younger generation, the IAEA is implementing a concrete initiative on fast reactor data retrieval and knowledge preservation (FRKP). The IAEA's FRKP initiative provides an overall framework for the various programs being implemented in the Member States. The main goals of this initiative are to halt the ongoing loss of information, to assist with data retrieval, data assessment to determine which data and information should be retained, to consider how information from different programs could be linked, and what standards should be developed and employed in software and hardware to allow knowledge preservation over the next 30 to 40 years.

In the framework of the FRKP initiative the IAEA intends to create a comprehensive international inventory of fast reactor data and knowledge combining information from different Member States through a Web-Portal established and maintained by the Agency. This meeting follows within series of meetings convened by the Agency to implement the FRKP initiative, i.e. the Technical Meeting to Preserve Fast Reactor Physics Knowledge, held on 12 – 16 May 2003, the Consultancy on the IAEA Initiative to Establish a Fast Reactor Knowledge Base, held on 8 – 10 December 2004, and the back-to-back Technical Meetings of the Coordinated Research Project (CRP) on Analyses of and Lessons Learned from the Operational Experience with Fast Reactor Equipment and Systems, and on Coordinating the Agency's Fast Reactor Knowledge Preservation International Project in Russia, held on 24 – 28 January 2005.

## Technical Meeting

To facilitate the development of the Web-Portal described above, an IAEA Technical Meeting was held from 28 November to 1 December 2006 at the Agency's Headquarters in Vienna, Austria within the framework of the projects C.3.03 on *Maintenance and Preservation of Knowledge in Specific Areas of Nuclear Science and Technology* and A.4.02 *Technology Advances in Fast Reactors and Accelerator Driven Systems*, as a collaborative effort involving the Nuclear Power Technology Development Section and the INIS and Nuclear Knowledge Management Section. During the meeting, 4 experts from 4 Member States and IAEA staff reviewed the current status of the FRKP Initiative, the generic requirements for the FRKP Portal, and the work plan for its implementation.

## Objectives

- Review national activities in the area of fast reactor data and knowledge preservation; and
- Develop the requirements and specifications for the Fast Reactor Knowledge Portal to be implemented and maintained by the Agency

## Outcomes

The Technical Meeting has produced the following items:

- Recommendation of continuing support in knowledge preservation within the framework of the FRKP Initiative
- An outline of the structure of the FRKP Portal
- A set of specific requirements for the implementation of the FRKP Portal
- A list of the types of resources which should be collected and made available through the FRKP Portal

## Work Done

The participants provided presentations on the ways in which FR-related content is available in their countries and the form in which this FR content should be made available to and through the FRKP Portal.

Based on these descriptions, the participants outlined **the structure of the FRKP Portal: content, interface and taxonomy** leaving the technical specifications to be expressed in the final version of the FRKP System Technical Requirements and Project Proposal document.

The meeting formulated also the following functional **requirements** for the FRKP Portal:

- The FRKP Portal will have **its own storage space for the FR-related Knowledge Base** and will provide an interface for managing and searching it.  
The FR-related content will be assembled from references to the relevant resources currently available in INIS, resources acquired by now by NPTDS and resources which will be provided in the future by MS directly or through NPTDS, or through INIS.  
All available FR content should be referenced or stored in the FR Knowledge Base.  
The types of resources, apart those from INIS, include the following: electronic resources in MS and other International Organizations, codes and data collections, references to hard-copy collections, etc. MS and/or NPTDS may provide the input on various media.
- **To enable a comprehensive search** throughout the FRKP content, the resources made available through the FRKP Portal have to be marked according to the **FRKP taxonomy**. MS may propose modifications to the taxonomy which will be settled in the FR Working Group.
  - Because INIS does not currently use the FRKP taxonomy, a knowledge map between the FRKP taxonomy and the INIS thesaurus/descriptors should be developed; alternatively, INIS can mark its FR-related resources according to the FRKP taxonomy.
  - The non-INIS resources which are added to the FRKP Portal should have attached a minimal set of metadata which should allow the FRKP Portal to mark correctly the resource according to its own taxonomy. This set is specified in Annex 1.
- **The FRKP Portal Interface** should:
  - Allow easy retrieval of the FR content from all distributed information resources, e.g. INIS Database, non-INIS resources stored separately, which should be organized in a consistent, harmonized and user-friendly way, and primarily available through the Portal;
  - Allow a simplified way of managing and searching the FR-content available through it;

- Provide the capability to manage the INIS descriptors assigned to the FRKP taxonomy and the taxonomy itself;
- Be able to manage its specific set of users.

## Specific Recommendations

- **The NKM unit should build a test system (pilot Portal) using the FR related subset of resources from INIS or NPTDS.**
- **NPTDS should continue to work on FRKP with MS within the framework of TWGFR:**
  - MS will be asked to identify the types and size of non-INIS, FR-related, information resources.
  - MS will be asked to check the level of coverage of FR-related content provided by INIS
- **MS, INIS, NKM and NPTDS** should comment on the FRKP TM draft by the end of Jan 2007
- **NKM** should issue a final version of this document

## Actions

NKM should initiate internal meetings with all the parties concerned by the implementation of the FRKP Portal, to settle the following issues:

- **Finalize** the Fast Reactor Knowledge Preservation System Technical Requirements and Project Proposal according to the outcome of the previous two meetings. This document will establish a timeline and formulate technical specifications for the implementation of the FRKP Portal (NKM and NPTDS).
- **Implement** a prototype of the FRKP Portal (NKM) NKM creates the FRKP Portal as a component of the “Nuclear Energy Knowledge Portal”. As the owner of the FRKP Portal, NKM should take the full responsibility for the implementation of the search interface, maintenance of the Portal and provide MTIT’s NUCLEUS with a link to the Portal.

## General Recommendations

- **The** meeting participants recommend that the Agency continue this Fast Reactors Knowledge Preservation Portal implementation project.
- **Member** States within Technical Working Group on Fast Reactors should continue supporting IAEA’s Fast Reactors Knowledge Preservation Initiative.
- **To continue** in parallel two activities:
  - motivating/supporting Member States to preserve knowledge in the subject area, and make it available in the framework of the Fast Reactors Knowledge Preservation initiative;
  - developing/implementing the Fast Reactors Knowledge Preservation Portal.
- **For** INIS: to continue the comprehensive coverage of content related to Fast Reactors

## **Annex 1 Minimal metadata required for the FRKP Portal**

- Author
- Title
- Date
- Content Location or Contact Information of the Content Provider
- Language of the document
- FRKP taxonomy Reference or Keywords, in English.