

## **Nuclear Safety Education and Training Network**

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### **Background**

In March 2001, the Secretariat convened an Advisory Group on Education and Training in nuclear safety (E&T). The Advisory Group considered structure, scope and means related to the implementation of an IAEA Programme on E&T.

A strategic plan was agreed and the following outputs were envisaged:

1. A Training Support Programme in nuclear safety, including a standardized and harmonized approach for training developed by the IAEA and in use by Member States.
2. National and regional training centres, established to support sustainable national nuclear safety infrastructures.
3. Training material for use by lecturers and students developed by the IAEA in English and translated to other languages.

The implementation of the plan was initiated in 2002 emphasizing the preparation of training materials. In 2003 a pilot project for a network on E&T in Asia was initiated.

### **Preparation of Training Materials**

A standard training package consists of a set of documents that helps training centres organize a course on a specific topic and helps the lecturers to prepare their presentations. The package contains a manual on organizing courses, viewgraphs with associated text and reference material. In the first 2 years of the strategic plan implementation, standard training packages were prepared on topics where the Agency had organized training activities recurrently. These include safety assessment of NPPs, management of operational safety, ageing of research reactors, emergency preparedness and response for research reactors and probabilistic safety assessment.

With the increased availability of personal computers, many workers have access to a computer in the workplace and this has stimulated the development of computer based training tools. At present training tools were created as hypertext modules and as multi-media material with video and PowerPoint presentations synchronized. A special series of multi-media presentations covering the most recent issued nuclear safety standards was initiated in 2003.

Textbooks were prepared for the Basic Professional Training Course and for the course on Regulatory Control of Nuclear Power Plants. The first one is a 6 weeks course oriented to young professionals and is designed to provide a basic understanding of the broad range of topics that make up the body of fundamental background knowledge in nuclear safety. The second one is a 2 weeks course oriented to new staff of regulatory

bodies. Both courses present the general practices recommended by the IAEA in its safety guidance as well as country specific examples.

The standard training course packages, computer based training tools and textbooks are being distributed to Member States upon request. About 4000 CD's were distributed in 2003. Support on the use of the materials, as well as information on training methods, are being provided through training courses oriented to the trainers - so called 'train-the-trainers'.

### **Networking**

A network of training centres to share experiences and training materials is an essential element of the E&T strategy in nuclear safety. For the Asian region this goal is to be achieved through the establishment of the Asian Nuclear Safety Network (ANSN).

The ANSN major functions goes beyond E&T covering as well aspects related to information assessment from knowledge management and communication with the public. This paper focuses only on the use of ANSN as tool that facilitates the communication among training experts and shares training related documents.

One of the main elements of the ANSN is an electronic database developed with modern IT technology. The concept is to have de-centralized storage of documents and materials relevant to ANSN and a centralized search and retrieval mechanism, Figure 1.

ANSN consist of a number of web servers located in various countries in South East Asia, Europe and USA. Each server holds nuclear training material produced by the country. Each of these servers is referred to as a hub, while the central IAEA server is referred to as the Master Index. As a minimum, each hub has a web server that provides access to the content, however the hub might also have a web site and this web site might also have a search mechanism giving access to the content on this particular web server.

The content on the hubs is organized in a structure that has 3 levels: *Group*, *Document* and *Item*. For example: A *Group* could be a training course; a *Document* could be a lecture in the training course while an *Item* could be an element used in the lecture, like a Power Point presentation or a pdf file. All 3 levels of the content are described by metadata. The contents under *Group* and *Document* are technically classified using a standard Taxonomy. The Taxonomy is grouped into 3 areas: Technical Area (e.g. Facility Operation & Maintenance), Facility Type (e.g. Research Reactors) and Activity Area (e.g. Emergency Preparedness). The metadata are stored in a database. The metadata for an *Item* will include a full URL pointing to the location on the web server (hub) where it is stored. By selecting the URL, the related document can be either downloaded or displayed on the screen.

The IAEA hub, unlike most other hubs, is holding the metadata for materials stored on all hubs in the ANSN network. This enables users to use only one search engine to search for content located on all hubs. When downloading content from a specific ANSN hub, the user is automatically authenticated on that hub. However, true single sign-on has yet to be implemented.

Quality assurance procedures were developed for the data input in an effort to establish common quality measures and to assure minimum standards on the choice and content of materials distributed through the ANSN.

The ultimate goal of the ANSN is to facilitate the establishment of a network of experts. This is to be achieved through electronic means (ANSN database) as well as through regular meetings of training experts. In this regard the first workshop of representatives of training centres will be organized in July this year in Japan. The purposes of the workshop are to discuss Member States needs, to assess national training programmes and to launch the topical group (TG) on E&T.

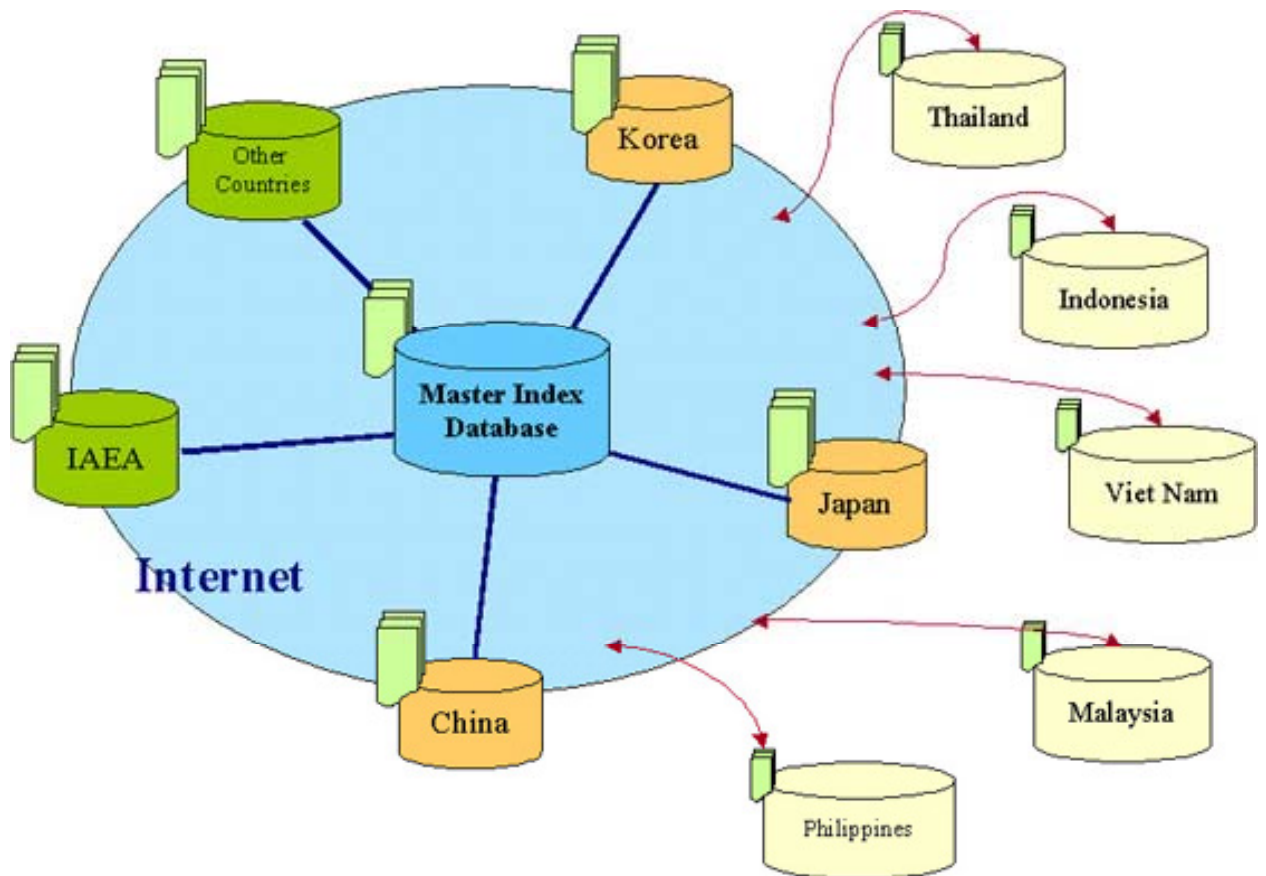


Figure 1: ANSN Schematic representation

The TG on E&T will be constituted of training experts. A moderator from one of the hubs will be designated to coordinate the activities of the group. The mission of the TG is to provide technical support to ANSN activities, serve as forum for information exchange among experts, prepare technical documentation to capture the results, ensure the quality of the material, classify the material and populate the database, consider and respond to feed-back from users and maintain sustainability.