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**REPORT
OF THE
ASIAN NUCLEAR SAFETY NETWORK
INFORMATION TECHNOLOGY
SUPPORT GROUP MEETING**

**Jakarta, Indonesia
7-10 June 2004**

**EXTRABUDGETARY PROGRAMME ON THE
SAFETY OF NUCLEAR INSTALLATIONS IN THE SOUTH EAST ASIA,
PACIFIC AND FAR EAST COUNTRIES**

International Atomic Energy Agency

ANSN Information Technology Support Group Meeting

Meeting Minutes

Jakarta, Indonesia, June 7-10, 2004

Welcome Address

In his opening remarks, Prof. Djaloeis, Chairman of BAPETEN, explained the framework under which the ANSN will contribute towards the efforts being undertaken in Indonesia with regards to establishing the first nuclear power plant in 2015. To achieve such an aggressive development plan, the nuclear regulatory infrastructure needs to be in place by 2008 to allow for 2 years of legal and contractual preparations, and 5 years for subsequent construction. Therefore, any support of developing the regulatory infrastructure within the next few years is of high importance to the country. Indonesia will need assistance in order to prepare for the task. The activities also cover the regulatory oversight over three research reactors, fuel cycle and experimental facilities, post-irradiation examination facilities, and activities in radioactive waste treatment. He stressed that the ANSN is an important tool to support the regulatory activities in Indonesia. The ANSN will also support the creation of Education and Training materials specific to the needs in the country. These efforts will help to establish a level of safety culture that may contribute to the successful operation of a nuclear power reactor in the future.

Introduction

The meeting has been requested by the ANSN Steering Committee to address the remaining technical issues of the ANSN pilot project and to increasingly involve the National Centers in the development effort. This will, as a first step, help identifying the specific needs of the National Centers and will facilitate the development effort for future improvements of the ANSN network.

Presentations were given by the National Centers and each Hub to provide overview over the previous experiences and the lessons learned, the problems and bottlenecks that were identified, and the solutions recommended and implemented to address these problems. The presentations were intended to prepare the National Centers for planning, implementation and operation of their sites.

Presentation of Vietnam

The location of the ANSN site is not decided upon at this time. The ANSN may be established at the head office of VAEC or alternatively at INST. While both locations are basically suitable for this purpose, both lack permanent Internet connections at this time and provide insufficient office space. The current Internet connection is provided through an ADSL connection without a fixed IP address, which will make the operation of a web server difficult. The establishment of a permanent connection with fixed IP address is a preferred solution, but costly. Different configuration options, such as Linux and

Microsoft Windows platforms are under consideration. Further discussions and experiences gained from communication within the ANSN IT group will hopefully lead to reaching appropriate plans for final implementation.

Presentation of Philippines

A web site is currently operating at <http://www.pnri.dost.gov.ph/>. The site operates on a Linux server and an Apache web server and is accessible through a permanent dialup connection only. A database system is currently not operating. Due to insufficient funds, there are no immediate plans to establish a national center site. Moreover, a lack of manpower and expertise prevents the Philippines currently to fully engage in the development of the ANSN network. The country hopes to learn from the experiences at the Hubs and other National Centers, specifically from Indonesia, including hardware, software, and staffing requirements.

Presentation from Malaysia

After participating in the knowledge management workshop held in October 2003 in Korea, Malaysia is preparing their activities to participate in the ANSN and establish a National Center. A committee (MNSN) has been established (May 2004) to coordinate the needs of the different organizations such as AELB, MINT, and may include the universities in the future. The goal is to address issues such as selection and quality assurance of documents and to coordinate the activities across the different organizations. Closer collaboration with Korea is sought to benefit from the similar hardware and software environment already available to the ANSN. Malaysia has a leased line broadband connection, is planning for outside consultancy, and is ready for some in-house development of software as needed for the project. A preliminary web site is already operating at <http://www.ansn.aelb.gov.my>.

Presentation of Thailand

A test system is already configured and operating, while a final web server has been acquired and will be available soon. The system is based on Linux and is available at <http://ansn.oaep.go.th>. A 256 kbps leased line is available for Internet access. Assistance is needed to benefit from previous software developments for other ANSN nodes, and assistance is sought from similarly configured ANSN Hubs such as China, Japan, or the US. The institute has a long experience with Linux systems, from which the ANSN project will benefit greatly.

Presentation of Indonesia

The ANSN site in Indonesia will benefit from access to a government-owned high speed network (GSI) that will be available at no cost to the National Center. The current web site is operating on a Mandrake Linux system and using a 256kbps leased line. The web site can be accessed at <http://ansn.bapeten.go.id/>. The web site is quite advanced at this time, and effort has been made already in translating materials for posting on the site.

However, at this stage only limited content is available to allow for conceptualization and testing.

Presentations of Hub Countries (China, Japan, Korea, IAEA, and US)

Each of the Hubs gave a detailed assessment of their experiences, problems, and chosen solutions to reach the current implementation stage. In order to prepare the National Centers in their development effort, a separate document will be developed that lists requirements for hardware, software, effort, issues that can be anticipated, problem areas, best practices, budget planning, and evaluation of alternatives.

The day concluded with a visit of the Indonesian IT department which will soon move into a new building.

Information Technology Development Status of the Hubs

Status in Japan

Japan has largely completed the XML data transfer interface. The data exchange has been successfully tested with the master index operated at the IAEA. The testing revealed a few remaining compatibility issues with regards to the data content, such as incomplete metadata.

Due to a lack of resources, Japan has not recently been engaged in additional software development activities. Japan hopes to add additional resources to the project in 2005 and specifically intends to add at least two training courses to their content.

Japan is strongly committed to the speedy implementation of a single sign-on solution and the finalization of the XML data exchange software. Completion of these activities for the Japanese Hub is expected for the end of 2004.

In addition to the above mentioned activities, Japan will lead the support effort to establish the topical group for education and training in close coordination with Korea and China.

Status in China

China has established a prototype for the XML data exchange interface as well, but testing across the Internet with the IAEA master index server could not be performed yet due to the fact that the Chinese server is not continuously operating. However, testing of the data transfer interface will be started shortly after the meeting, and continuous operation of the server is planned for the end of 2004.

Due to limited resources, no software development was performed since the ANSN Steering Committee meeting in March 2004. However, it is envisioned to make

additional resources and funds available to continue this work. Similar to Japan, China will be leading the topical group for operational safety and related activities.

China plans to add several courses to their ANSN content, including workshop materials produced by EDF, and to increasingly collaborate with the nuclear power plants in China to identify and evaluate additional materials for the ANSN.

Status in Korea

The XML data exchange interface has been largely completed. Initial testing with the IAEA master index server has been initiated but has not yet been completed. Additional database content will become available within 2004, including materials that are currently in translation (KEDO).

Korea has spent also considerable time on evaluating and conceptualizing a number of methodologies related to the single sign-on requirement. This includes ways to encrypt authentication data when referring users from Hub to Hub, and the option of providing an encryption server for the ANSN.

Korea will lead the development of tools used for topical group support and activities related to their implementation.

Status in the US

Similar to the ANSN Hubs, work in the US has been slowed by limited funding. Activities which have been prioritized in coordination with the IAEA have been focusing on implementation of compatible single sign-on methodologies as well as their testing and documentation.

In addition, alternative database engines have been evaluated for possible use in the future. For example, a version of the ANSN database tables has been created for PostgreSQL and will be made available for further evaluation to the other Hubs.

No content has been added during the past 6 months. Related training activities outside the scope of the ANSN project might result in suitable materials for subsequent addition to the ANSN content.

Status at the IAEA

The previous developer from China stopped development activities in December 2003 in order to document his efforts before returning to Beijing. In March 2004, a new developer from China joined the IAEA and is now fully dedicated to the development work. Several activities included testing of the XML data transfer software with the US, Japan, and Korea, have been carried out. Work related to the database integration and single sign-on has also been undertaken.

The IAEA is planning to add new content in the near future. In addition, the IAEA is now providing access to a powerful collaboration tool, Livelink, that can be made available for use in the ANSN project, and which has been already been used in preparation for the IT group meeting. A detailed demonstration of the features of Livelink was given.

Technical Briefing for National Centers

To prepare experts from the National Centers for their development work, the ANSN concept, as implemented in the past, has been thoroughly explained and discussed.

Discussions on Single Sign-On

As initially conceptualized before and during the ANSN Steering Committee meeting in Beijing, a prototype implementation of the single sign-on solution has been fully implemented by the US and the IAEA, and was demonstrated as well as explained in detail to the meeting participants. The complexity of the technical challenges led to long discussions and eventual deep understanding of the proposed solution. As part of this solution, Japan requested adding increased security by providing an encryption component to the transmission of user credentials.

Additional important concepts were introduced by Korea, specifically addressing the needs for access to materials and tools that are specific to the topical groups. The discussions concluded with an agreement on a methodology that meets the requirements of all Hubs. This can be achieved by combining the different key concepts into an integrated technical solution. This work will be documented in a separate document and is expected to be fully implemented before the end of 2004.

Meeting of Korea, China, and Japan on Support for Topical Groups

The three Hubs, China, Japan and Korea, held a meeting on 8 June 2004 during ANSN ITSG Meeting in Jakarta. The objectives of the meeting were 1) to discuss the technical issues related to the upcoming TG Activities (TG Activity Support) and 2) to share experience and identify technical challenges involving user issues (User Issues).

The three Hubs reached agreement on the following:

1. TG Activity Support

- BBS (bulletin board system) developed by Korea will be used for all the TG forums.
- China and Japan request Korea to provide the ASP programs of its BBS
- Japan will develop PHP programs on the basis of ASP programs elaborated by Korea and provide them to China
- Korea and Japan will further investigate the feasibility of the Korean proposal of SSO scheme for TG forums.

2. User Issues

- Learning from the Korean experience, the Hubs in China and Japan will explore possibility and timing to hold off-line meetings of local users.
- Recognizing the need for more intensive discussions on the user issues, the three Hubs will seek to multiply communication channels.

National Center's to Needs for Technical Assistance

Side meetings were held individually with each National Center to assess the needs and plan for technical assistance.

Thailand

Thailand plans to establish an ANSN test system during the autumn of 2004. This system will be migrated to new server hardware early in 2005 (February). Thailand will request to receive the ANSN database and web software (Linux/Apache) from the Hubs later in 2004 and will do the initial ANSN installation and installation themselves.

Following the migration to the new server, Thailand will request to receive technical assistance in installation, configuration and programming. In addition, specialist advice on operation and content management might be needed.

Malaysia

Malaysia already has a server established and has registered an Internet domain for ANSN. Malaysia will request to receive the ANSN software package (Microsoft based) from the IAEA and Korea in July or August 2004 and will do the initial installation by themselves.

During 4th quarter of 2004, Malaysia would like to request technical assistance on the finalization of installation, configuration and programming. Like Thailand, specialist advice on operation and content management might be needed.

Philippines

Philippines expects to establish an ANSN test environment towards the end of 2004. Philippines will then require to receive the necessary software (Linux/Apache for web, database and data entry) to launch an ANSN test site.

Philippines will need technical assistance in web server and database installation and configuration plus advice and guidance on operation.

Vietnam

As the first step, Vietnam plans to establish project groups for IT and ANSN content.

Vietnam currently has no server hardware for ANSN but expects to be able to purchase this later in 2004. Vietnam will then request to receive the required ANSN software (Linux/Apache) and will perform the initial installation and configuration with the remote assistance from the Hubs.

Vietnam might request assistance from IAEA in several expert visits: one preparatory and planning mission by the end of 2004 and one expert mission targeting installation, configuration and operation during the first or second quarter of 2005.

Country	Type of assistance required	3 rd Quarter 2004	4 th Quarter 2004	1st Quarter 2005	2 nd Quarter 2005
Thailand	Linux installation, configuration and operation.				
Malaysia	Microsoft installation, configuration and operation. Content and operational management.				
Philippines	Linux installation, configuration and operation				
Vietnam	Assistance in preparation and planning				
	Linux installation, configuration and operation				

Meeting on Quality Control Issues

The automatic mechanism to share data between the ANSN sites requires a number of sanity checks on the data and the data structure to allow for successful transmission to the master index server. Identical checks need to be applied at the origin and destination of the transmission, with quality requirements mostly based on the needs of the receiving application.

Some of these sanity checks have been only identified after initial testing of the data exchange mechanism, such as the requirement that each document entry must have a minimum of one link to each taxonomy table. This particular requirement is based on a technical necessity at the master index server. Other checks are implemented based on the agreed upon database design document and the drafts of the quality control documents.

An example is the agreed upon requirement that at least one keyword is entered for each document entry.

The meeting participants revisited the data entry document (ANSN07) and made changes that everybody is able to implement in their respective applications. The specific decisions that have been made are:

- Keywords are now clearly a mandatory field
- All document and group entries must be linked to at least one entry in each of the three taxonomy tables
- Documents do not necessarily belong to a group
- Items cannot exist without being linked to a document
- Each document entry must have at least one item linked to it
- The limitation of 4000 characters for some of the text fields is not mandatory any longer but remains as a recommendation
- Fields that may contain multiple entries such as keywords, organizations, and authors must separate the individual entries by a semi-colon
- The file size field in the LevelItem table uses the unit bytes and may be set to 0 to indicate an unspecified size.

In addition, additional node identifiers and language identifiers have been decided upon as specified in the following table:

Country / Site	NodeID	LanguageID
Indonesia	9	10 Indonesian
Malaysia	11	11 Malay
Thailand	12	12 Thai
Philippines	14	14 Pilipino
Vietnam	15	15 Vietnamese

The documents affected by these refinements will be updated accordingly and made available to the developer community.

It was also agreed upon that quality control will extend beyond algorithmic checking. The quality of materials in the entire ANSN network will be affected significantly by missing quality assurance procedures at any participating site. Quality assurance will be based on the document “Procedures for Assuring Quality of Information Input to Asian Nuclear Safety Network (ANSN)” adopted by the ANSN Steering Committee in Beijing, March 2004.

Communication and Information Sharing

It was decided to strengthen communication between all participants. This can be done using more frequent E-mail contact, shortening response times, and using tools such as Internet chatting. Use of the MSN forum will be discontinued. Sharing of documents and Internet-based collaboration will from now on continue using the Livelihood environment

provided by the IAEA. Additional accounts can be created as needed by contacting Lars Ulfkjaer at the IAEA.

Work Plan for Hubs

It was agreed upon that the software development activities related to XML and Single Sign-On will be completed within 2004 following the methodology agreed upon earlier in this meeting.