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# **Knowledge Management Portal - Fukushima Observations and Lessons**

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## Outline

- 1) Background**
- 2) Objectives**
- 3) Scope and Workplan**
- 4) Current Status**
- 5) Next Steps**



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# The Fukushima Daiichi Accident Lessons Learned Knowledge Portal

## Background

# Background



## The IAEA Director General's Report on the Fukushima Daiichi Accident and Five Technical Volumes

- The report provides a comprehensive understanding of what happened during the accident and why.
- The main observations and lessons are highlighted so that they can be acted upon by governments, regulators and nuclear power plant operators throughout the world.



## Observations and Lessons

- **104** in the Technical Volumes;
- **45** key observations and lessons in the Report by the Director General.

# Background



## The Nuclear Safety Action Plan

- Focused on sharing the lessons learned from the accident, identifying relevant best practices and ensuring that both are widely disseminated
- Focused on the need to incorporate them into the Member States capacity building programmes for both the embarking countries as well as for countries with nuclear power programmes
- Over 1300 activities covering 12 key areas of nuclear safety
- 9 International Experts Meetings and related reports capturing lessons learned
- 15 international experts missions to Japan



## Observations and Lessons

- ~ **400** observations and recommendations (at present);
- ~ **50** source documents (at present).

# Summary of activities and lessons per action



# Background

## NSOC Observations and Lessons Learned Database

- **IAEA Fukushima Report**
- **IAEA Nuclear Safety Action Plan Series**
  - IEMs 1 -9
  - IAEA Report on Capacity Building;
  - IAEA Report on Strengthening Nuclear Regular Effectiveness;
  - IAEA Report on Preparedness and Response for a nuclear or radiological emergency in the light of the accident at the Fukushima Daiichi NPP.
- **IAEA International Expert Missions Reports**
- **IAEA Conferences**
- **Other possible source documents**
  - New outcome documents of completed Action Plan projects;
  - Peer reviews, technical meetings, IAEA workshops, TECDOCs, radiological monitoring, BOG reports, presentations, etc.



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# **The Fukushima Daiichi Accident Lessons Learned Knowledge Portal**

## **Objectives and Rationale**





## Fukushima Observations and Lessons Knowledge Management Portal

The objective is to turn this database into a user-friendly web-based knowledge portal that will be accessible to all Member States and hosted within the GNSSN



# Project Objectives

The implementation of the IAEA Action Plan and the publication of the IAEA Fukushima Report highlighted many observations and lessons that **require further deliberation**. In order to build on these observations and lessons:

→ a **strong knowledge base** needs to be created, as well as a **tracking system** that will allow following-up on the progress.



# Project Objectives

- To **share observations and lessons learned** from the Fukushima Daiichi Accident **and exchange practices** among all participating MS and international organizations;
- To ensure that observations and lessons are **captured, retained and disseminated** in a **structured and consistent manner**;
- To facilitate access to knowledge that will provide a **framework** for MS to ensure the effectiveness of activities undertaken so far and that recommendations are fully carried out.



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# The Fukushima Daiichi Accident Lessons Learned Knowledge Portal

## Scope and Workplan



# Scope of the Portal

- Embedded within **GNSSN (Sharepoint 2013)**
- **Search interface** via different users views:
  - a) Key word search;
  - b) Thematic area;
  - c) Target audience;
  - d) Safety standards;
  - e) Lifetime operation.
- **Software platform:** including a search engine that retrieves information based on the chosen classification system (**Nuclear Accident Taxonomy** and different user views)
- The user will find the observation or lesson sorted by relevance as well as a link to the original source document



Fukushima Report

IEMs

Mission Reports



**DATABASE of Observations and Lessons**

Conference Reports

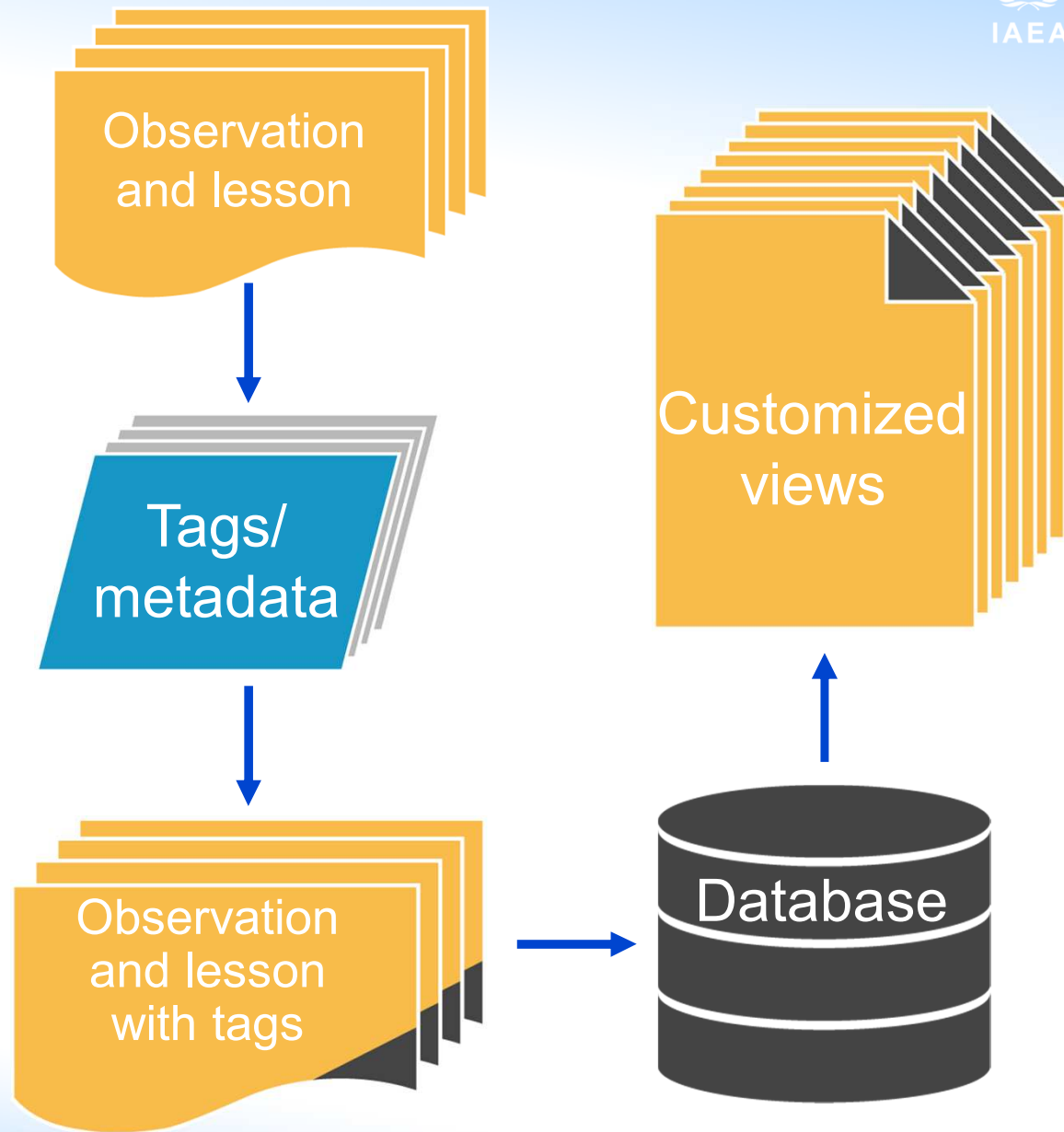


TMI and Chernobyl Reports



Other sources







## Phase 1: Pilot Portal

- Make the observations and lessons from the Fukushima Report:
  - **available** under GNSSN;
  - **accessible in several views** (thematic, audience related etc.);
  - **referenceable** in order for the MS to facilitate linking the observations and lessons to national initiatives and reporting.





## Phase 2: full implementation

- Add other IAEA documents (IAEA Nuclear Safety Action Plan Series, Fact-finding Mission reports, Conference reports, etc.)
- Link to other sources and create annotations
- Standardize and publish taxonomy (views/language)
- Potential expansion of the database to include TMI and Chernobyl observations and lessons
- Review full portal
  - Adjustments and maintenance



# Support by GNSSN

- **Reviewing**

- Providing advice based on existing GNSSN knowledge networks and portals
- Feedback on content, categorization, search functions, sustainability etc.

- **Testing**

- feedback on the conceptual structure and sustainability of the main features during pilot phase and the migration of all lessons and observations

- **Promotion**

- Support in promoting this new feature of the GNSSN



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# The Fukushima Daiichi Accident Lessons Learned Knowledge Portal

## Current Status



## Current Status

- As part of the analysis stage of the project the Secretariat has finalized:
  - compilation of observations and lessons from the implementation of the Fukushima Report and key IAEA Action Plan outcome documents;
  - identification of the knowledge domains;
  - categorization of the observations and lessons under the relevant knowledge domains;
  - 1st Consultancy Meeting was held in December 2016



# Achievements of the 1<sup>st</sup> CS

- Definition of the **basic needs** (content, MS interest)
- Development of **conceptual structure** and the framework of the dynamic web-based portal
- Development of a **taxonomy** for categorizations of observations and lessons
- Identification of **semantic search software** to ensure user-friendly search functions (Pool Party)
- Development of detailed **work plan** for Phase 1 (maintenance, managing access, promotion etc.)
- Identification of **means of implementation**
- Development of the excel file and discussion of the metadata (framework, design, etc.)
- Development of **governance** (sustainability, GNSSN support)



# Conceptual Structure

- **Thematic Areas** (general thematic areas e.g. “safety assessment” , “radiological consequences”)
- **IAEA Safety Standards**
- **Target audience** (e.g. government, operators, technical and scientific organizations)
- **Lifetime operation** (e.g. design, construction, decommissioning)



# Standardized Taxonomy

- **Nuclear Accident Knowledge Taxonomy (IAEA Nuclear Energy Series No. NG-T-6.8)**
  - Was developed by NE to create a specialized taxonomy on nuclear accidents
  - For a variety of users: Governments, Regulatory bodies, Emergency response organisations, Designers, Operators, Technical support organisations.
- Source documents will be **tagged automatically** using the standardized taxonomy (in addition to tags based on thematic areas, relevant safety standards, target audience etc.)
- This allows **efficient text searches** and the presentation of results according to relevance.



# Standardized Taxonomy

- Nuclear Accident Knowledge Taxonomy (NG-T-6.8)
  - Legal and governmental framework
  - Nuclear installation status
  - Accident management
  - Emergency preparedness and response
  - Scientific and technical support
  - Accident consequences





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# The Fukushima Daiichi Accident Lessons Learned Knowledge Portal

## Next steps



## Next Steps

- Knowledge Management Portal Development within GNSSN Framework (SharePoint 2013/Pool Party)  
Prototyping of portal layout
  - Pilot portal: use the Fukushima observations and lessons during the test phase
  - Migration of observations and lesson to GNSSN
  - Defining search criteria based on taxonomy
  - Defining user interface based on taxonomy
  - Defining views for search results
  - Designing the necessary metadata and document libraries
- Sharing of knowledge portal with MS (beta version)
  - Promotion
  - Population (e.g. managing access requests)
  - Maintenance (e.g. regular updates).



## Next Steps

- **Quality Assurance**
  - Publishing the portal to selected key stakeholders for feedback
  - Incorporating feedback
- **Outreach**
  - Training material (video, handouts etc.)
  - IAEA Website (icon, banner)
  - GNSSN highlights
  - Search optimization for portal (Google)
  - 61st IAEA GC (e.g. info booklet, information advert at GNSSN plenary, exhibit)



## NSOC Contact Points

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*Thank you!*