NEA IDKM/EGSSC Workshop on Digital Safety Case Methods and Development

Tuesday 25th October – Wednesday 26th October 2022

Venue: NH Hotel Berlin Mitte am Checkpoint Charlie, Leipziger Str. 106-111, 10117 Berlin, Germany

Optional Site Visit (Monday 24th October)
Site Visit to Morsleben repository Transportation and refreshments will be provided. Departure time and place: 6 am from Berlin (meeting point at the entrance of the NH Hotel Berlin Mitte am Checkpoint Charlie - Leipziger Str. 106-111, 10117). Estimated arrival time to Berlin: 5.30 pm.

DAY 1 (Tuesday 25th October)	
08:45	*REGISTRATION*
Opening of the Workshop Chair: Jonathan KINDLEIN, *Head of Post Closure Safety Analyses Group, BGE, Germany*	
09:15	Stefan STUDT, *Chairman of the Management Board, BGE, Germany* Luca PICIACCIA, *Senior Adviser, DSA, Norway / EGSSC Chair;* Ulrich NOSECK, *Head of Safety Case Site Selection Department, GRS, Germany/ IGSC Co-chair*
Session 1 – Digitisation and Digitalisation experiences Chair: Alexander CARTER, *Senior Environmental Safety Case Manager, NWS, United Kingdom*	
09:30	**Linked Data** Khalil AHMED, *Senior Solutions Architect, Epimorphics, United Kingdom*
10:00	**Knowledge Graphs** Sebastian HELLMANN, *Executive Director of DBpedia Association, Institute of Applied Informatics (InfAI), Germany*
10:30	**Virtual and Augmented Reality – Applications in Production Engineering** Philipp KLIMANT, *Chief Executive Engineer and Head of Business Unit, Chemnitz University of Technology and Fraunhofer Institute IWU*
11:00	*BREAK*
11:30	**Unlocking knowledge from Textual Data using Natural Language Processing** Riza BATISTA-NAVARRO, *Senior Lecturer, University of Manchester, United Kingdom*
12:00	*LUNCH*

DAY 1 (Tuesday 25th October)	
Session 2 – Stakeholder perspectives and national use cases Chair: Shogo NISHIKAWA, *Knowledge Management Expert, NUMO, Japan*	
13:00	**Main takeaways from the Digital Safety Case Questionnaire** Olivier DE CLERCQ, *Inspector – Expert in Waste Management and Disposal, FANC, Belgium*
13:05	**Input from outside the Safety Case community: Improving Safety Case content and communication using electronic tools** Klaus-Jürgen RÖHLIG, *Executive Director - Professor of Repository Systems, Technical University of Clausthal, Germany*
13:35	**VISI Safety Case Management System** Alexander CARTER, *Senior Environmental Safety Case Manager, NWS, United Kingdom*
14:05	**Use of databases for FEP, activities and input data in SKB's post-closure safety assessments** Niko MARSIC, *Expert Radionuclide Transport, SKB, Sweden*
14:35	**Regulatory perspectives on the use of Digital Safety Cases – requirements, expectations and independent Safety Case review** Olivier DE CLERCQ, *Inspector – Expert in Waste Management and Disposal, FANC, Belgium*
15:05	*BREAK*
15:30	**Panel Discussion on Session 1 and 2** Moderator: Jesus S. MARTINEZ, *Nuclear Energy Agency - Secretariat* Key questions: • **Q1**: How can digital technologies and systems benefit knowledge and information management and help demonstrate a 'Golden Thread' between safety claims and evidence? • **Q2**: How can digital workflows increase auditability and efficiency in the safety case production process? • **Q3**: How can digital technologies and systems help to improve understanding, presentation and communication of the safety case with both technical and non-technical interested parties?
16:45	*BREAK*
17:00	**Summary of Panel Discussion** Oliver HALL, *Post-closure Safety Specialist, NWS, United Kingdom*
17:15	*END OF DAY ONE*

DAY 1 – Workshop dinner
Workshop dinner offered by BGE Buffet dinner at 6:30 – 9:30 pm. Restaurant: Erdinger am Gendarmenmarkt Berlin, Jägerstraße 56, 10117 Berlin

DAY 2 (Wednesday 26th October)

Session 3 – Digitalisation of the Safety Case

Chair: Ann-Kathrin LEUZ, *Head of Disposal and Safety Analyses Section, ENSI, Switzerland*

Participants split into three breakout groups according to a predefined list produced by NEA. Each group has a mix of skills, experience and interests. Each breakout group will work with a facilitator and rapporteur to collect ideas and thoughts on 3 key questions relating to the digitalization of a radioactive waste safety case. After the allotted time, the group will change breakout room to consider the next question, with the next facilitator and rapporteur.

Session 3a – Opportunities and Challenges

- **Q1**: How can digital technologies and systems benefit knowledge and information management and help demonstrate a 'Golden Thread' between safety claims and evidence?
  Possible discussion topics:
  - Linked data and semantic authoring
  - Use of methodologies like 'argumentation' / 'Claims, Argument, Evidence' to structure safety case information
  - Use of metadata
- **Q2**: How can digital workflows increase auditability and efficiency in the safety case production process?
  Possible discussion topics:
  - Process modelling
  - Change and configuration control
  - Electronic signing
  - Workflow engines and status tracking
  - Accession to archives
- **Q3**: How can digital technologies and systems help to improve understanding, presentation and communication of the safety case with both technical and non-technical interested parties?
  Possible discussion topics:
  - Interactive graphics and media
  - Use of virtual or augmented reality
  - Review and addressing of comments, within an RWMO and with Regulators

9:00	**Welcome and Opening Remarks**		
9:05	Breakout session 3a.1		
	Group 1: Q1	Group 2: Q2	Group 3: Q3
10:00	Breakout session 3a.2		
	Group 1: Q2	Group 2: Q3	Group 3: Q1
11:00	*BREAK*		
11:15	Breakout session 3a.3		
	Group 1: Q3	Group 2: Q1	Group 3: Q2
12:15	*LUNCH*		

<table>
<tr><th colspan="4">DAY 2 (Wednesday 26th October)</th></tr>
<tr><td>13:15 – 14:00</td><td colspan="3">Summary of Session 3a and Discussion
Summary by Q1 rapporteur
Summary by Q2 rapporteur
Summary by Q3 rapporteur
Discussion</td></tr>
<tr><td colspan="4">Session 3b – Implementation of Digitization</td></tr>
<tr><td colspan="4">Q1: How can a Business Case support digitisation of the safety case and what are the arguments and components of such a case?
Possible discussion topics:
Strategic case
Economic case (e.g. cost-benefit analysis and success factors)
Financial case (e.g. estimating costs)
Commercial approaches (e.g. in-house development versus customising commercial software, role of supply chain, delivery partners)
Q2: How do organisations migrate to a digital safety case?
Possible discussion topics:
Roadmaps for delivery and prioritisation of activities (e.g. staged role out, staff training on approaches and systems, development of management system procedures)
New skills and education needed
Managing digital information over the very long time periods associated with a disposal facility (system lifetime and data migration)
Dealing with legacy information (e.g. determining priority of what to digitize and the value of image scanning versus production of full machine-readable formats)
Q3: What does a vision for an ‘ideal’ digital safety case look like and what future work would be needed to achieve this?
Possible discussion topics:
Role of NEA in developing a shared vision
International vs. national guidance
Future work needed in EGSSC roadmap</td></tr>
<tr><td>14.00</td><td colspan="3">Breakout session 3b.1
Group 1: Q1 Group 2: Q2 Group 3: Q3</td></tr>
<tr><td>14:30</td><td colspan="3">Breakout session 3b.2
Group 1: Q2 Group 2: Q3 Group 3: Q1</td></tr>
<tr><td>15:00</td><td colspan="3">Breakout session 3b.3
Group 1: Q3 Group 2: Q1 Group 3: Q2</td></tr>
<tr><td>15.30</td><td colspan="3">Summary of Session 3b and Discussion
Summary by Q1 rapporteur
Summary by Q2 rapporteur
Summary by Q3 rapporteur
Discussion</td></tr>
<tr><td>16:15</td><td colspan="3">BREAK</td></tr>
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Session 4 – Conclusions and Next Steps Chair: Jonathan KINDLEIN, *Head of Post Closure Safety Analyses Group, BGE, Germany*	
16:30	**Summary of Workshop, takeaways and potential next steps** Oliver HALL, *Post-closure Safety Specialist, NWS, United Kingdom*
16:45	**Closing remarks** Jonathan KINDLEIN, *Head of Post Closure Safety Analyses Group, BGE, Germany*
17:00	*END OF THE WORKSHOP*