### Coming events

13-15 June 2018

RICOMET 2018, Antwerp, Belgium

1-5 October 2018

ERPW 2018, Rovinj, Croatia

3-5 April 2019

5<sup>th</sup> NERIS Workshop, Roskilde, The Netherlands



EUROPEAN PLATFORM
ON PREPAREDNESS
FOR NUCLEAR AND RADIOLOGICAL
EMERGENCY RESPONSE AND RECOVERY

### **■ EDITORIAL**

**Issue 15 –** June 2018

This newsletter clearly emphasizes the on-going research related to emergency and recovery issues within the CONCERT project. Part of them are focussed on further investigation of uncertainty assessment and management, covering the different facets from health impact, environmental issues, decision making processes and social and ethical considerations. More recently, research projects dedicated to the analysis of stakeholder engagement processes and development of new applications to interact with the public have been selected for funding with the CONCERT project. It is worth to notice that all these projects are largely relying on the development of multi-disciplinary approaches and contribute to reinforce the cooperation of the NERIS community with the other European research platforms.

In this context, the organisation of the 4<sup>th</sup> NERIS Workshop hosted by the Irish Environmental Protection Agency on 25-27 April 2018 in Dublin, allowed to have fruitful inputs from on-going research and challenging debates on the way forward, having in mind the NERIS Strategic Research Agenda and NERIS First Research Roadmap, adopted at the end of 2017. Feedback experience from Fukushima accident, new technological and scientific developments are still providing new challenges in the perspective of developing efficient tools, models, and a framework for preparedness in Europe and worldwide to improve the assessment and management of emergency and recovery in case of an accident. The discussions during the NERIS workshop and the interaction with international organisations pointed out the needs for going a step further for harmonizing national approaches or at least promoting common understanding and approaches. The international forum organized during the NERIS general assembly identified possible common work in this perspective.

For the first time, NERIS promoted the participation of young scientists and I have to acknowledge that their participation was very valuable and provided new perspectives for research in our community. I would like to congratulate all the young scientists who participated to the 4<sup>th</sup> NERIS Workshop and more particularly the awarded young scientists.

Finally, several events are advertised in this issue of the Newsletter: some of them will take place in the following days, while others will be held next year! These events are crucial for our NERIS community to exchange on the research and practice in emergency and recovery management as well as to foster the cooperation with the other European research platforms.

Thierry Schneider – CEPN – President of the NERIS Platform



Issue 15

## FEEDBACK FROM RECENT EVENTS...



### The 9<sup>th</sup> NERIS General Assembly

30 participants from 12 countries attended the Ninth NERIS General Assembly, which was held on April 25, 2018 at the occasion of the  $4^{th}$  NERIS Workshop in Dublin.

The General Assembly allowed sharing and discussing the annual report, the financial situation, and the review of the on-going activities of the NERIS Platform. The first Roadmap was presented and at the occasion of an international forum, HERCA, IAEA, ICRP, NEA-OECD, WHO and EC-JRC ISPRA presented research topics related to NERIS activities to discuss on future cooperation. Information on the OPERRA and CONCERT Project were given and the future challenges of the Platform were also discussed.



### The 4<sup>th</sup> NERIS Workshop – Dublin, April 25-27 2018

On 25-27 April 2018 in Dublin, the NERIS Platform organised its 4th Workshop in cooperation with the Irish Environmental Protection Agency. The Workshop gathered 130 participants and 40 papers dedicated to the issue of "Adapting nuclear and radiological emergency preparedness, response and recovery to a changing world":

- Citizen science and monitoring by the public;
- Coping with uncertainty in impact assessment & decision making;
- Calibration of new monitoring options (mobile monitoring);
- Inverse modelling & data assimilation;
- Data reproductibility and model validation;
- Novel approaches to communication & stakeholder engagement;
- Operational challenges for emergency response and recovery.

In addition, a Round Table on the CONCERT Joint Roadmap and the links with the NERIS research activities was organized at the end of the workshop.

The final programme of the Workshop and the powerpoint presentations made during the workshop are available on the NERIS website.



### Young scientist award

For the first time, the NERIS Platform set up the 'NERIS Young Scientist Award' to promote young people whose professional or scientific works have been noted for their quality and originality. Three award winners were selected according to criteria established by the Programme Committee. The award was announced and presented at the end of the 4th NERIS Workshop, and consisted of a diploma for all and a free registration for the next NERIS Workshop for the 1st prize.



1st award

Pieter de Meutter - SCK •CEN — Belgium
« Source localisation of the Ru-106
detected in autumn 2017 »



2nd award
Mélanie Maître - CEPN – France
« Organisation of the Environmental
monitoring: lessons learnt from
Fukushima»



3rd award

Joke Kenens- University of Leuven– Belgium
« Science for citizens or by citizens?

Exploring grassroots radiation monitoring
after Fukushima»

### FEEDBACK FROM RECENT EVENTS...





### Round table on the CONCERT Joint Roadmap and the links with the NERIS research activities

As part of the NERIS Workshop in Dublin a round table discussion on the CONCERT joint roadmap and the links with the NERIS research activities was organised. As a starting point for the discussion, Nathalie Impens, representing CONCERT, gave a presentation on the joint and individual roadmaps and highlighted the challenges and vision within the different roadmaps that might have a link with NERIS. She pointed also to the need for further harmonization of the different individual roadmaps and alignment with the joint roadmap to converge towards a coherent set of documents in the next months.

After the joint roadmap presentation, representatives from ALLIANCE, MELODI and EURADOS gave potential links between their roadmap and the NERIS activities. ALLIANCE pointed mainly towards the further development of models for the aquatic environment, including the transfer of radionuclides deposited after a nuclear accident from the terrestrial towards the aquatic environment and mentioned also to explore more combined stressors (radioactive + chemical). In relation with the aquatic environment, it was mentioned that the marine and coastal environments, including estuaries require more attention.

MELODI pointed towards the fact that data collected in emergencies should allow for effect studies afterwards. It is however not very clear which biomarkers can be used having an exclusivity to low doses of ionising radiation. In this respect MELODI is interested to interact with NERIS in testing and validating biodosimetry methods and identifying exposed groups in emergencies for epidemiological follow-up.

EURADOS made a link between their working groups to NERIS activities. For the environmental working group monitoring with spectroscopy systems, crowded networks (citizen measurements or citizens science) and the use of radiation cameras were mentioned. For the dosimetry working group combining general and individual monitoring was mentioned, as well as biological dosimetry. Also a link was made to retrospective dosimetry, especially in the case of the malevolent use of ionising radiation. More general, they pointed to the NERIS topic on monitoring strategies.

From the transversal community of Social Sciences and Humanities (SSH) the traditional very good collaboration between NERIS and SSH was mentioned and especially attention was asked for two SSH topics which could be further addressed: dialog with the society and integrating SSH in responsible research and innovation.

In the context of the further roadmap development following suggestions were made: 1) to include at the end of every session at the Radiation Protection Week 2018 in Croatia a discussion on which challenges should be integrated in the individual roadmaps, 2) links between the different platforms should be further explored with experts in specific topics and 3) to harmonize further the roadmaps to realize a more coherent structure in the different roadmaps in which the individual roadmaps support the joint roadmap.

Johan Camps - SCK • CEN

### Round table on the CONCERT Joint Roadmap





## FEEDBACK FROM RECENT EVENTS...





### ALLIANCE-NERIS Workshop – Munich, March 28-29 2018

More than 30 scientists participated in the joint ALLIANCE-NERIS workshop to discuss two common gaps namely issues in aquatic modeling and use of big data in emergency management. The workshop was organised by BfS and held in Munich on March 28 and 29, 2018. The objective was to review the development stage of the issues mentioned above and to establish a consensus on possible future research priorities.

To start this workshop, a presentation was dedicated to the importance of developing a holistic approach in the management of radioactive pollutions, notably by presenting the various aspects (societal, ethical, environmental, etc.) at stake in the implementation of countermeasure and remediation strategies. The issue of environmental surveillance, which involves various actors (experts, public, farmers, authorities) and emphasizes the importance of participatory processes was also emphasised.

Then, following two introductory sessions with individual presentations presenting state of the art research of organisations active in the two platforms, two working groups for each of the above-mentioned topics were established to discuss the presentations and explore common future work.

The first working group for topic 1 discussed the "Spatial redistribution of radionuclides on water- and solid- mediated fluxes of radionuclides from the source to the ocean". Here technical approaches and mathematical models were discussed. The second working group on How to develop a holistic understanding of key processes to improve radiological impact assessment and management? reviewed briefly the current approaches and concentrated on the needs for a holistic approach dealing with countermeasures strategies in that area.



Participants of the workshop

The first working group on the big data topic discussed "<u>Issues around using large volumes of possible heterogeneous data and combining model predictions with monitoring results in an optimized way"</u>. Origin of big data sources were addressed and in to which extend information from modeling and monitoring can be better combined. The second working group here discussed "<u>Heterogeneous data"</u> and to which extend they can be stored in one database. Also use of such data in simulation models was discussed.

Note that recommendations will be published on the ALLIANCE and NERIS webpages as soon as they are finally discussed and reviewed.

Mélanie Maître – CEPN, Spyros Andronopoulos – NCSR Demokritos, Wolfgang Raskob – KIT

TERRITORIES team and TSC familiarize themselves with Hofbräuhaus in Munich, Germany on 7 February 2018.





### TERRITORIES annual meeting

The TERRITORIES\* research project, part of the H2020 grant agreement 662287 - CONCERT\*\*, is aimed at putting together an integrated and graded management of contaminated territories characterized by long-lasting environmental radioactivity, with emphasis on two types of existing exposure situations: post-accident and NORM. Its Annual Meeting was hosted by BfS in February 2018, close to Munich, Germany, on Wednesday 7 February 2018 afternoon and Thursday 8 February 2018. About 30 scientists from the 11 partners\*\*\* were actively involved in the discussions, as well as 5 out of 6 experts of the advisory board of TERRITORIES.

First-year advances and prospects for the last two years were discussed for each of the work packages: WP1 (Quantifying variability and reducing uncertainties when characterizing radiological exposure of humans and wildlife by making the best use of data from monitoring and of existing models), WP 2 (Reducing uncertainties when characterizing exposure scenarios, accounting for human and wildlife behaviours, and integrating social and ethical considerations in the management of uncertainties), WP3 (Stakeholder engagement for a better management of uncertainty in risk assessment and decision-making processes including remediation strategies), WP4 (Strategic and integrated communication, education and training). Some of the main outcomes to date include: (i) the first version of the TERRITORIES Library Database, in which partners enter data (collected or obtained from other databases) characterizing territories of interest; (ii) a common Socio-Technical Integration Research (STIR) protocol shared by different social sciences teams to study social and ethical aspects linked to uncertainty in radiological assessments, (iii) the deliverable D9.65, addressing the decision making process in the management of existing situations (report available on-line: https://territories.eu/assets/files/publications), and (iv) the organization of 2 workshops in Oslo in 2017 (conclusions available on-line: https://territories.eu/workshops).

The advisory board of TERRITORIES concluded that work packages will produce relevant scientific and technical information that will represent valuable contribution not only to the technical and scientific communities in Europe but worldwide, and provided recommendations about the management of the project (e.g. to enhance intensive interaction between work packages), and about the deliverables (e.g. to adapt the content to the targeted audience, possibly in a modular way if several targets are identified). They concluded that "this is a very interesting and exciting project that raises high expectations on its result. It has clear intentions, but it mixes elements of research objectives with purposes of contributing to address specific practical needs of the international community. It will be really a challenge to project participants to combine both objectives." This challenge is tackled by the Management Board who met immediately after the conclusions, and will meet again on 12 June in Madrid.

For more information about TERRITORIES, please check the website: https://territories.eu/ (which contains, among other useful resources, all deliverables), "follow" the blog: https://territoriesweb.wordpress.com/, and "save the date" for the future events open to non partners:

- A workshop entitled Multidisciplinary forum to discuss the scientific basis for reducing uncertainties and improving risk assessment, hosted by CIEMAT in Madrid on 13-14 June 2018
- The last workshop, to be hosted by PHE the week starting 18th of March 2019, in Oxford (UK)
- The Final Event, to be hosted by IRSN end of October 2019, in Aix en Provence (France)

Marie Simon-Cornu - IRSN



<sup>\*</sup>To Enhance unceRtainties Reduction and stakeholders Involvement TOwards integrated and graded Risk management of humans and wildlife In long-lasting radiological Exposure

<sup>\*\*</sup>CONCERT-European Joint Programme for the Integration of Radiation Protection Research

<sup>\*\*\*</sup> IRSN, lead (France), BfS (Germany), CEPN (France), CIEMAT (Spain), NMBU (Norway), NRPA (Norway), Public Health England (United Kingdom), Belgium Nuclear Research Center (Belgium), STUK (Finland), University of Tartu (Estonia), Mutadis (France)





### **CONFIDENCE** Workshop

The H2020 CONFIDENCE project aims to close existing gaps in several areas of emergency management and long-term rehabilitation by trying to understand, reduce and cope with the uncertainty in the decision making process. It concentrates on the early and transition phases of an emergency, but considers also longer-term decisions made during these phases.

More than 80 participants attended the CONFIDENCE workshop in Dublin. The local host, EPA Ireland, organised the workshop in Dublin Castle. The main objective was to review the progress achieved so far and discuss the way forward for the next 20 months. To facilitate this, the first day of the workshop was devoted to a general review of all work packages including presentations on scientific highlights achieved for each work package. The day ended with a panel discussion on WP interactions uncertainties addressed in each work package and work package interaction. The second day started with individual work package meetings. Findings of these individual sessions were reported and discussed in a plenary session. Finally, the scientific advisory board of CONFIDENCE provided their observations and commented on the work reported. The third day discussed possible interactions of TERRITORIES work package 3 with CONFIDENCE work packages 4, 5 and 6.



**CONFIDENCE Workshop in Dublin Castle** 

Following the workshop one can conclude that the CONFIDENCE project is progressing as foreseen and that the interaction of the various work packages is well established. Key activities such as meteorological ensemble modelling, monitoring strategies, dosimetric assessment, health risk modelling, improved radioecological modelling, development of sensible management strategies for the transition phase, stakeholder panels in nine countries, the review of response in past accident situations, reviews of the behaviour of the potentially affected population, robust decision making, use of multi criteria tools supporting formal decision making under high uncertainties and finally training and exercises have shown their first results and will do so in 2018 and 2019. First open training courses and exercise events are planned for May 2019.

\*Coping with uncertainty for improved modeling and decision making in nuclear emergencies

Wolfgang Raskob – KIT







### **SHAMISEN-SINGS**

<u>SHAMISEN-SINGS</u>, project selected for funding in the second open call from CONCERT, building on the <u>recommendations</u> of the EC-OPERRA funded <u>SHAMISEN project</u>, aims to enhance Citizen Participation in preparedness for and recovery from a possible radiation accident through the evaluation and development of novel tools and APPs to support data collection on radiation measurements, health and well-being indicators.

The project's goal will be achieved through the following actions:

- Interaction with stakeholders to assess their needs and interest in contributing to dose and health assessment through the use of new technologies, for example, mobile applications (APPs);
- Review of existing APPs for citizen-based dose measurements and for health monitoring, establishing minimum standards of quality. Develop a core protocol for a possible citizen-based study on health, social, and psychological consequences in the case of a radiation accident;
- Develop the concept/guidelines for one or more APPs that could be used to monitor one's radiation dose (possibly contributing to radiation exposure assessment after an accident including visualisation of real-time radiation conditions), and log behavioural and health information. In addition to contributing to citizen science studies, these Apps would be designed to provide a channel for practical information, professional support and dialogue, as needed by stakeholders.
- Address ethical issues related to the use of these Apps through a consensus workshop.

### Progress to date:

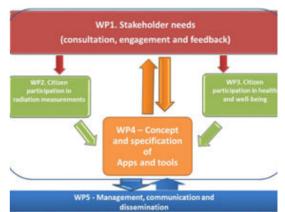
The kick-off meeting was held on October 11<sup>th</sup>, 2017 in France and the SHAMISEN-SINGS web page has been created.

Work in WP2 and WP3 is underway, gathering and reviewing information and existing APPs and devices that could be useful in the context of radiation exposure and/or nuclear accident for dose measurements (WP2) and for monitoring health and well-being indicators (WP3). In parallel, and with the support of WPs 2 and 3, a protocol and an anonymous web questionnaire were developed in WP1 for a survey to Explore Stakeholders (in particular the general population) needs and requirements for Apps or devices for dose measurements, information & health/well-being monitoring in the case of a nuclear accident. The questionnaire is being translated into French, Italian, Spanish, Ukrainian and Russian for implementation on the SHAMISEN-SINGS web.

You are warmly invited to participate in this public Survey (available on the SHAMISEN-Sings website) – and to disseminate information about it to interested stakeholders. This will help us reach as many stakeholders as possible (including: authorities, medical workers and the general public) and better identify interest and needs for such APPs

**Coordinator:** Elisabeth Cardis (ISGlobal): Partners: UAB (Spain), ISS (Italy), FMU (Japan), CEPN (France), IRSN (France), NMBU (Norway) and experts from France, Ukraine, Belarus and Luxemburg.

Lidumila Liutsko – ISGlobal









### Information about ENGAGE

Stakeholder engagement and informed decision-making are central to effective governance of radiological risks in emergency and post-accident situations. However, the practical implementation of stakeholder engagement is confronted with multiple challenges and a continuously evolving landscape of actors producing radiation protection knowledge. The CONCERT project ENGAGE (December 2017-November 2019) aims at developing theory, practice and guidelines for stakeholder engagement in radiation protection in relation to medical exposures to ionising radiation, post-accident exposures, and exposures to indoor radon.



Workpackages of the project

### Its main objectives are to:

- a) Answer the questions why, when and how are stakeholders engaged in radiation protection issues;
- b) Develop novel approaches to analysing stakeholder interaction and engagement and, provide guidance for meeting challenges and opportunities identified in response to (a);
- c) Investigate the processes for enhancing radiation protection culture and their role in facilitating stakeholder engagement, and develop guidelines for building radiation protection culture;
- d) Provide recommendations and build a joint knowledge base for stakeholder engagement in radiation protection.

In a first phase, ENGAGE research concentrates on macro-level discourses that justify and/or prescribe stakeholder participation in radiation protection, through regulations and guidelines at international and national level (see research methodology). Among others, it analyses motivations for participation, levels of participation and frames used to define / recommend engagement. For example, preliminary results show that different conceptualizations and models are used for stakeholder engagement by the radiation protection community. For this reason, input from social sciences is needed to clarify these differences and their potential impact on the practice of stakeholder engagement. An analysis grid for case studies of radiation protection culture has also been elaborated (see analysis grid), including elements such as the evaluation and the role of radiation protection culture.

To engage with nuclear emergency management stakeholders, ENGAGE project members organized in partnership with the NERIS Working Group on Information, Participation and Communication a joint workshop on 25<sup>th</sup> of April 2018 in Dublin, at the 4<sup>th</sup> NERIS workshop. A summary of discussions will be available shortly. Among others, this interaction aimed at gathering ideas and suggestions for extending and further developing the knowledge base on participatory activities of the NERIS Platform.

Would you like to read more information about ENGAGE or join our stakeholder group? Meet us on our project webpage: <a href="www.engage-concert.eu">www.engage-concert.eu</a> or at the ENGAGE events.

Catrinel Turcanu – SCK•CEN

### ANNOUNCEMENTS

RICOMET 2018, 13-15 June 2018, Antwerp, Belgium

### RICOMET 2018

Social Sciences and Humanities in Ionising Radiation Research

The fourth RICOMET conference on Social Sciences and Humanities in Ionising Radiation Research takes place in Antwerp, Belgium 13th to 15th of June 2018.

This edition is scientifically orientated towards supporting SSH researchers to identify good research practices, address challenges in multidisciplinary research, review and suggest methods and build towards a common understanding of SSH research related to ionizing radiation. The conference will use discussion approach and encourage participants for a multidisciplinary dialogue.

A pre-conference workshop on Public Information & Transparency in case of a radiological emergency according to the new Basic Safety Standards and Nuclear safety Directive is organised from 11th to 12th of June.

3rd European Radiological Protection Week, 1-5 October 2018, Rovinj, Croatia



The Croatian Institute for Medical Research and Occupational Health (IMI) will host the 3rd European Radiological Protection Research Week in Rovinj from 1 to 5 October 2018. NERIS, as the other European Platforms (ALLIANCE, EURADOS, EURAMED and MELODI), will be associated with this event and will propose sessions dedicated on emergency and recovery preparedness and response topics.

- Online registration opened on February 5<sup>th</sup>
- Abstract submission opened on April 23<sup>rd</sup> and will last until June 29<sup>th</sup>
- Review of abstract will be completed by August 15<sup>th</sup> and authors notified on August 31st

further information, For please the ERPW<sub>3</sub> website: visit http://www.erpw2018.com.

Hosted and organized by:



















### Save the Date!

5<sup>th</sup> NERIS Workshop & 10<sup>th</sup> General Assembly – 3-5 April 2019 Roskilde, Denmark

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### DTU Nutech

Center for Nuclear Technologies



The  $5^{th}$  NERIS Workshop will be hosted by DTU – Nutech, Center for Nuclear Technologies, in Roskilde (Denmark) from  $3^{rd}$  to  $5^{th}$  April 2019. It will be the opportunity to discuss and exchange between NERIS members, international organisations and European Research communities on research developments and priorities for the European NERIS Platform.

The topic of the workshop will be communicated in the coming months. For further information, please visit the NERIS Website or contact the secretariat at sec@eu-neris.net.



Decomissioned DR2 research reactor on Riso campus

DTU Nutech is located on DTU Risø Campus and has inherited the mission as Denmark's national competence center for nuclear technologies from the former Risoe National Laboratory. The aim of the center is to develop and utilize knowledge concerning radioactivity and ionizing radiation for the benefit of society. DTU Nutech has a strong tradition of transferring research results into numerous products and services used by industry, hospitals, public authorities, other research institutions and media. Research in nuclear/radiological emergency preparedness and radioecology remains an important task of the center.

### Save the Date!



Use of uncertain information by decision makers at the various levels within the decision making process and its communication. Training course - First announcement

13-16 May 2019 VUJE, Okruzna 5, Trnava, Slovak Republic

We are pleased to announce that the first announcement of the training course is available on the NERIS website. You will find important information such as:

- Detail of the course contents,
- Dates and venue,
- Accommodation,
- Working language,
- Registration and fee.

### **Objectives:**

Guidance and recommendations for decision making in the post release and transition phase taking into account uncertain information will be presented and tested. Attendees will debate how to interpret, use and communicate uncertainties within the decision making process. The course will also consider the: establishment and optimisation of remediation strategies; benefits of stakeholder involvement; inclusion of human behaviour, cultural differences and stakeholder preferences as a part of the tools to aid decision making. Training the trainers and facilitators of national, regional and local workshops based on learning from doing and own engagement and experience during the training course is one of the goals of the training.

### Organized by:





















### Addressed to:

Decision makers, advisors and other stakeholders at the various levels (national, regional, local) who may be involved in the decision making process during the post release and transition phases of a nuclear/radiological accident. Participants will actively participate in the practical sessions in the form of short topical workshops based on exercise scenarios and round table discussions.

Please note that the training course is limited to 24 participants and pre-registration is required.

### **Important dates**

Pre-registration deadline:
 Second announcement/Programme:
 Registration:
 Training course:
 September 30, 2018
 October 31, 2018
 January 31, 2019
 May 13-16, 2019

For further information please contact the Coordinator (Tatiana Duranova <u>tatiana.duranova@vuje.sk</u>) or the NERIS Secretariat (<u>sec@eu-neris.net</u>).

### Save the Date!



### CONFIDENCE Dissemination workshop, 2-5 December 2019, Bratislava, Slovak Republic

The CONFIDENCE Project, funded under the H2020 CONCERT project, is performing research focused on uncertainties in the area of emergency management and long-term rehabilitation. It concentrates on the early and transition phases of an emergency, but considers also longer-term decisions made during these phases. The project brings together expertise from four European Radiation Protection Research Platforms (NERIS, MELODI, ALLIANCE and EURADOS) and also from Social Sciences and Humanities.

Actors in emergency and recovery preparedness and management from all levels and sectors are encouraged to participate in this the CONFIDENCE Dissemination to be held in Bratislava from 2 to 5 December 2019.

The main objectives will be:

- To disseminate the knowledge acquired and to demonstrate the capability of the developed models, methods, approaches, guides, recommendations and tools.
- To collect feedback from end users on our outputs and remaining research requirements or improvements in models/guides etc. as a feedback to the Platforms to further develop their Strategic Research Agendas.

Please consult the NERIS web page for agenda, registration and accommodation: www.eu-neris.net

The workshop participation is free of charge.

The workshop language will be English.

