

M04252018

Minutes

NINTH GENERAL ASSEMBLY OF THE NERIS PLATFORM

Location: Dublin, Ireland

Date: Wednesday, 25th April 2018

Participants: See list attached

1. OPENING OF THE NINTH GENERAL ASSEMBLY

The Ninth NERIS General Assembly was held at the occasion of the fourth NERIS Workshop in Dublin, Ireland, on April 25 2018.

Thierry Schneider welcomed and opened the General Assembly at 1:30 pm, as President of the NERIS Platform. The list of participants is provided in Annex 1 and Annex 2.

The proposed agenda, Annex 3, was adopted by the General Assembly.

2. ANNUAL REPORT

Thierry Schneider presented the main activities of the NERIS Platform for the year 2017. The annual report presenting in details the NERIS activities for 2017 can be downloaded on the NERIS website.

► New membership

In 2017, 1 new organisation joined the NERIS Platform as member (BIR - Bundeswehr Institute of Radiobiology- Germany). At the end of 2017, 60 organisations were members of NERIS with 26 supporting organisations and 34 only members of the NERIS Platform. For further details, see the list in Annex 4.

► For the year 2017, the president noted the following points (meetings list in Annex 5):

- The publications of the updated NERIS Strategic Research Agenda in October 2017 and the first version of the NERIS Roadmap in December 2017 were made possible thanks to 6 meetings of the Management Board, as well as 3 R&D Committee meetings during the year 2017, with support of the CONCERT project. In addition, a dedicated consultation meeting on September 22 to discuss the draft roadmap with the NERIS community.
- At the occasion of INEX Symposium organized by NEA in November 2017 and ERWP17 in October 2017, the NERIS Roadmap was presented. Concerning ERPW17, Thierry Schneider underlined the organization of special sessions dedicated to Ethics and Evacuation.
- It is interesting to note the participation of the NERIS organisation in projects of interest for the Platform such as OPERRA's final meeting held in Budapest in May 2017, and the CONCERT funded projects CONFIDENCE, TERRITORIES, ENGAGE and SHAMISEN SINGS. Thierry Schneider emphasized on the importance of sharing and disseminating the results and state of these projects.
- The cooperation with the other European platforms was largely focused in 2017 on the contribution to the first Joint Roadmap on Radiation Protection Research (MELODI, ALLIANCE, EURADOS & EURAMED).
- The European platforms signed, with NUGENIA, an agreement to provide a framework of cooperation for the promotion of radiation protection research in Europe, with ALLIANCE, EURADOS and MELODI in October 2017. Thierry Schneider proposed to reflect on how to push further the cooperation with NUGENIA, by identifying common topics.

More recently, an Information Day on joint gap analysis with the other platforms was held in February 2018, further details can be found on NERIS website.

Thierry Schneider also presented the main challenges for the NERIS Platform in the coming years. The following points were highlighted.

► NERIS Working groups

- The work carried out should be promoted outside of the working groups by presenting, publishing the results and reinforcing the links with current research projects (notably ENGAGE, CONFIDENCE, TERRITORIES & SHAMISEN-SINGS).

► NERIS R&D

- The new SRA should be promoted and published, while following and integrating the results of the on-going projects. On top of that, the needs for new research developments should be discussed.

▶ **NERIS MB**

- The NERIS Roadmap needs not only to be disseminated but also developments should be discussed on specific topics. Thierry Schneider emphasized on the importance of the Roadmap for the future of the Platform's research activities.
- Cooperation with the other European Research Platforms should be reinforced and the interaction with international organisations strengthened, notably by formalizing feedback from the International Forum.
- Thierry Schneider welcomed members to become Supporting Organisations (SO). Also, the president asked current SO to propose candidates for the new Management Board mandate mid 2019- mid 2021 as soon as possible to prepare for elections for the next General Assembly in 2019.

▶ **Visibility of NERIS activities**

- There is a need to make the NERIS Website more attractive and updated (chronology, publications etc.). The president also invited participants to download the last newsletter (13th and 14th issues) and make suggestions, in order to improve next issues.
- It is also crucial to enhance the Platform visibility outside the community by publishing papers, organising workshops and topical sessions. To do so, Thierry Schneider underlined the need to favour cooperation within and outside the platform.

▶ **Transversal challenges**

- In the following months a call for proposals will be opened by the EC. It is important for NERIS and some organisations to contribute to the evaluation of the FP6 & FP7 research programmes.
- Making proposals in the development of new researches to respond to the gap analysis for next calls.
- The NERIS community could use the results from the various projects to engage a reflection on the promotion of harmonization and development of national framework for managing accidental and post-accidental situations.
- The feedback analysis of Chernobyl and Fukushima post-accidental management has to continue to draw the lessons for improving the assessment and management of emergency and recovery.
- Finally, it is crucial to favour the development of Education and Training programmes in emergency and recovery issues. Thierry Schneider emphasized notably the importance of continuing International Training Courses within the CONCERT project.

The annual report of the NERIS Platform for 2017 was adopted by the General Assembly.

3. FINANCIAL ISSUES

Wolfgang Raskob, Treasurer of the NERIS Platform, presented the main figures of the financial results for 2017 (workload days, costs and resources). The details of NERIS operating costs, resources and the result for 2017 are available in Annex 5.1 ; the proposed budget for 2018 is available in Annex 5.2.

3.1. Results of 2017

Wolfgang Raskob presented, for 2017, the expenses, and the resources provided by the fees of the supporting organisations. The total of the expenses is 55,8 k€ and the total of the resources is 59,8 k€. This leads to a positive result for 2017 of 3981 €.

The participants validated the financial results for 2017.

The General Assembly agreed to add the positive financial results (3981 €) to the NERIS financial reserves.

3.2. Proposed budget for 2018

For 2018, Wolfgang Raskob proposed the same distribution of workload, costs and resources. The 4th Workshop should raise a lower income than the 3rd Workshop held in Lisbon, but equilibrium is expected for 2018.

For 2019, the same fees for the supporting organisations were proposed.

Eduardo Gallego asked the total amount of financial reserves. Thierry Schneider mentioned that the details are presented in the balance sheet in Annex 5 and proposed to the Management Board to think about the way to use the reserve for following years.

The participants of the NERIS General Assembly validated the proposed budget for 2018 as well as the conservation of the fees amount for 2019.

4. REVIEW OF THE PLATFORM ACTIVITIES

4.1. Activities of the NERIS Working Groups

▶ Working Group on ICRP recommendations

Wolfgang Raskob reminded that the updated versions of ICRP Publication 109 and 111 on emergency and recovery are currently under revision and the public consultation is scheduled by the end of 2018. For 2018, Wolfgang Raskob explained that a dedicated consultation meeting to review the updated ICRP Publications 109 and 111 will be co-organised with OECD-NEA to give feedbacks from the NERIS Community.

▶ Working Group on Contaminated Goods

Sylvie Charron presented the activities related to the Working Group on Contaminated Goods (ConGoo). She reminded that in September 2016, during the ERPW16 in Oxford, The WG ConGoo as such has been reactivated as all partners agreed to continue the reflection involving stakeholders on the management of contaminated goods.

Sylvie Charron explained that in 2017 a WG ConGoo meeting was in May 2017 in Lisbon at the occasion of the 3rd NERIS Workshop. She underlined the need to continue practical feedbacks from Japan, for instance management of fisheries and drinking water, follow-up of farming activities in areas where evacuation orders have been recently lifted, etc.

For 2018, Sylvie Charron reminded that a WG ConGoo meeting was held just before the General Assembly. The discussion was focused on the way the work conducted within TERRITORIES and CONFIDENCE projects can be related to the WG ConGoo. A WG ConGoo skype meeting will be organised before summer 2018 to share practical feedbacks from Japan.

▶ Working Group on Information, Participation and Communication

Eduardo Gallego presented the 2017 activities of the Working Group dedicated to 'Information, Participation and Communication'. He reminded that this WG was created in January 2016 in Bratislava with the idea to continue the work implemented in the framework of PREPARE WP6 on information and participation. The objectives of this WG are to:

- Elaborate on the conclusions and recommendations of PREPARE WP6 & WP3, with regard to information to the public, communication among experts and stakeholders, and the participation of the relevant stakeholder in the EPR processes.
- Create a group of users of the "Analytical Platform" developed in PREPARE.
- Have a forum of exchange of ideas and experiences within NERIS and with international organizations or groups interested in the WG topics.

In 2017, a first meeting was organised at the occasion of the 3rd NERIS Workshop. For 2018, he announced that a meeting will be organised just after the General Assembly in order to redesign the NERIS WG-IPC objectives and activities, by taking into account:

- Activities of current projects TERRITORIES and CONFIDENCE on participation of stakeholders and communication of uncertainties
- Ongoing work conducted within ENGAGE Project
- Former NERIS knowledge base on stakeholder engagement

4.2. Activities of the RODOS Users Group

Florian Gering presented the activities of the RODOS Users Group. He explained that in 2017, the meeting of the RODOS Users Groups was held in Karlsruhe (Germany) on 4-5 April 2017. About 45 participants from 18 countries were present.

It consisted in:

- Informing all users of the RODOS decision support system about the recent developments of the system,
- Reporting and discussing about the use of RODOS in the RUG member countries,
- Discussing about the need for further development of the system.

For 2018, Florian Gering announced that the next meeting of the RODOS Users Group is scheduled on 14-15 May 2018 in Munich, and it will include a short training course for RODOS (15 May afternoon).

4.3. Activities of the ARGOS Users Group

Jan Pehrsson presented the activities of the ARGOS Users Group (AUG). He explained that at the occasion of the 4th NERIS Workshop, a meeting was held on 23-24 April in Dublin. It consisted in establishing terms of reference for a new AUG, discussions on the use of the ARGOS system and on developments. He thanked users coming from further: Brazil and Australia.

Presentations and documents from the ARGOS User Group will be made available on the NERIS website. Thierry Schneider reflected on this to encourage the RUG and AUG to share information and think about an article to communicate through the newsletter.

4.4. NERIS R&D Committee: Updated Strategic Research Agenda (SRA)

Johan Camps, Chair of the NERIS R&D Committee, presented the main activities of the committee during 2017, which were dedicated to the finalization and publication of NERIS SRA as well as the publication of the first version of the NERIS Roadmap. He reminded that both are available on the NERIS website to be downloaded.

An extensive review was conducted on the structure of the SRA since new research topics were added such as:

- Challenges in radiological impact assessment during all phases of nuclear/radiological events,
- Countermeasure strategies in emergency and recovery,
- Setting up a transdisciplinary framework for emergency response and recovery,
- The use and treatment of big data,
- Uncertainties.

Johan Camps also announced the endorsement of new members of the NERIS R&D Committee:

- Damien DIDIER - IRSN, France
- Marie-Claire CANTONE – UMIL, Italy
- Catrinel TURCANU - SCK•CEN, Belgium
- Veronica SMITH – EPA, Ireland

For 2018, Johan Camps proposed to promote the new SRA by publishing a dedicated article, investigate needs for new research developments on specific topics and keep working on the NERIS Roadmap.

5. INFORMATION ON THE CONCERT PROJECT

5.1. General information on the CONCERT Project

Thierry Schneider informed on the latest information about the CONCERT Project. He reminded that 2 projects of interest for NERIS have been selected under the 2nd Call of CONCERT for the period 2017-2019:

- ENGAGE, on “Enhancing stakeholder participation in the governance of radiological risk”, coordinated by Catrinel Turcanu (SCK•CEN),

- SHAMISEN-SINGS, in continuation of SHAMISEN with the topic “Stakeholder involvement in generating science after nuclear emergencies” coordinated by Elisabeth Cardis (ISGlobal).

The president encouraged participants to contact the respective coordinators to get further information on evolution of the projects.

5.2. CONCERT WPs

Thierry Schneider emphasized the following points concerning the different CONCERT work packages.

- ▶ **WP3:** The first CONCERT joint roadmap has been finalized, published and is available on both NERIS and CONCERT websites.
- ▶ **WP6:** Members should receive a regular newsletter, AIR². If not, missing members should contact the Secretariat to be added to the mailing list..
- ▶ **WP7:** There are regular open calls for Courses and Travel Grants, the community is welcomed to apply.

5.3. CONCERT WP5 – Contribution to the CONCERT Stakeholder Group

Concerning WP5, Thierry Schneider explained that the Stakeholder Group (subtask 5.2) had its first meeting on 27-28 September 2017 in Paris. Currently it consists in 15 European stakeholders from 8 different countries.

The president announced that the next step is to keep the Stakeholder Group informed regularly, to have another meeting and exchange at the occasion of ERPW18 on October 2018. The idea would be to present, discuss and share comments about the CONCERT joint Roadmap and the CONCERT funded projects.

6. NERIS PARTICIPATION TO ERPW 2018 IN ROVINJ

Thierry Schneider announced that a NERIS session dedicated to Environment and Health Monitoring is proposed for ERPW18 held in Rovinj (Croatia) on 1-5 October 2018. In addition, a transversal session of interest for NERIS will be focused on risk assessment, uncertainties and communication. Call for presentations (oral or poster) will be opened soon, so interested attendants are welcomed to send abstracts. The deadline to send abstracts is June 29th 2018, reviews will be completed by August 15th 2018 and authors will be notified on 31st August at earliest. For further information: <https://erpw2018.com>.

Participants wishing to organise satellite meetings are also invited to contact Thierry Schneider in order to book dedicated meeting rooms, since there is an opening on 2nd or 3rd of October mornings.

Thierry Schneider also announced the next ERPW in 2019 to be held Stockholm on 14-18 October.

7. OTHER ISSUES

Thierry Schneider announced that the next NERIS Workshop will be held in Roskilde (Denmark) on April or May 2019, hosted by DTU Nutech (Risø Campus – Center of Nuclear Technologies – Technical University of Denmark). At this occasion, it was decided to organise the tenth General Assembly. In addition, satellite meetings could take place during this week.

Kasper Andersson (DTU) welcomed the NERIS community and presented the Risø Campus.

The president also invited organizations wishing to organize a workshop to already propose a place for 2020.

8. INFORMATION ON DETECTION OF RUTHENIUM 106 IN THE EAST AND SOUTH-EAST PARTS OF EUROPE

Florian Gering (BfS) and Olivier Isnard (IRSN) presented the conclusions from the 1st meeting of the International Scientific Commission for Investigation of Ru-106 Case, held on 31 January 2018.

In the first part, Olivier Isnard summarized the current knowledge on this issue.

He explained that significant releases (100 - 300 TBq) of Ruthenium-106 were detected during the last week of September 2017. This event was detected at the continental scale while neither health or environmental impact in Europe were observed. He stated that after compiling data by correlating positive measurement and modelling, the most plausible zone of release would lie in the Urals.

Olivier Isnard also pointed out that such a release would have required the implementation of protective measures close to the release location, thus a Russian/European scientific commission was mobilized, with IRSN and BfS participating. He stressed out that an important issue is reaching the limits of the simulations based on the available atmospheric monitoring results, making local ground deposition monitoring results essential for a more accurate assessment.

Florian Gering summarized the conclusion of the 1st meeting of the Commission.

He stated that based on the measurements in different European countries and Russia, the entire activity of Ru-106 found in the air between the end of September to the beginning of October, 2017, is estimated as ~ 100 TBq. Also, modeling calculations performed in different countries were consistent with each other, though too many uncertainties remain to make conclusions about the location of the Ru source at the moment. Florian Gering also informed that in some countries, measurements of Ru-103 were made and the ratio of Ru-106/Ru-103 was corresponding to fresh spent fuel.

Florian Gering also explained that the Commission needs to:

- Collect and verify all available data, in order to form a unified Database and assess the quality of the data. It would be worthwhile to make this Database available for other people for further research and analysis.
- Request Roshydromet on the local weather conditions data and additional data on precipitation measurements,
- Add measurements upward the wind direction from localities where Ru-106 was found in the Chelyabinsk Region. On this, the Commission considers helpful to get measurements from Romania on deposition of Ru-106 since they detected the highest values of Ru-106.
- Present results in scientific magazines

The Commission noted that the Rostekhnadzor inspections conducted at the PO “Mayak” and NIIAR (Dimitrovgrad) facilities during the period August – November 2017 showed **no deviations from normal technological processes**. Thus, the Commission acknowledges useful information and clarification provided for 2nd Meeting by experts from PA “Mayak” and IBRAE RAN. Members will analyze the presented data and make decisions on necessity of the future work and meetings.

The full presentation is provided on Annex 7.

At the end of this presentation, members of the NERIS General Assembly discussed the possibility for the NERIS platform to provide information and/or a statement in case of radiological events. T. Schneider noticed the interest of the NERIS Management Board for the Ru106 case. It was decided to publish a short news on NERIS website with links towards more detailed information provided by NERIS organisations such as BfS, IRSN, SCK CEN...

Thierry Schneider proposed that the NERIS MB further investigates the possibilities for diffusion of information, preparation of statements or even performance of calculations in case of future event. Before going further, it is essential to identify the possible process, the rules and to have an agreement from NERIS supporting organisations.

9. NERIS INTERNATIONAL FORUM

9.1. Introduction on the NERIS Roadmap

For introducing the forum, Thierry Schneider presented the first version of the NERIS Roadmap to the General Assembly, the full presentation on Annex 8.1. He developed the topics of each area:

- Challenges in radiological impact assessment during all phases of nuclear and radiological event
- Challenges in countermeasures and countermeasure strategies in emergency & recovery, decision support and disaster informatics

- Challenges in setting-up a trans-disciplinary and inclusive framework for preparedness for emergency response and recovery

Thierry Schneider asked each representative of the international organisations to present relevant activities within their organisation with regard to NERIS roadmap.

9.2. Highlights from international cooperation of interest for NERIS

▶ WHO-REMPAN

Zhanat Carr (WHO) could not attend the Workshop but sent her contribution, thus Thierry Schneider presented the main links between NERIS and WHO. Zhanat Carr identified the following links between NERIS Roadmap key areas and WHO's areas of work:

- On improved monitoring (key topic 2), WHO has set up a WG on internal contamination monitoring. A report on lessons learnt from individual monitoring experience after major nuclear emergencies is under preparation. In addition, WHO plans to develop guidelines on internal contamination monitoring and management.
- A tool for public communication in relation to contaminated food after a nuclear emergency is being developed by WHO, and the organisation would be interested to cooperate with NERIS on pushing this document forward and finalizing it.
- WHO would be interested to develop guidelines for better health surveillance approaches.

The detailed presentation is available on Annex 8.2.

▶ ICRP

Jean-François Lecomte (IRSN and secretary of ICRP Committee 4) presented the main current ICRP activities related to NERIS. He explained that work is continued on the update for Publications 109 and 111 and will be shared with Liaison Organizations for comments. ICRP Committee 4 is considering several additional items that are related to the NERIS program of work, such as:

- Responding to the needs of business interests following an emergency,
- Consideration of guidance on livestock and pets,
- Revision of Publication 96 to cover possible emergencies that are not at a large facility.

Jean-François Lecomte stated that ICRP would welcome suggestions and support for activities related to the additional areas. Also, he reminded that work is ongoing for Task Groups looking at the DDREF issue, the calculation of Detriment, and a report on Effective Dose. The latter should be available for consultation in the near future.

Please find the detailed presentation on Annex 8.3.

▶ IAEA

Kilian Smith presented the main activities of the Incident and Emergency Centre of IAEA. He did an update on recent and planned activities on:

- Development of Safety Standards and Technical Guidance
- Capacity Building Activities (Training, Webinars, EPRIMS, EPREV)
- Notification and official information exchange (USIE, EPR IECComm)
- Assessment of potential emergency consequences and prognosis of possible emergency progression

Killian Smith also announced for 2018: A Competent Authorities Meeting (CAM) under the Early Notification and Assistance Conventions on 18-22 June and The International Symposium on Communicating Nuclear and Radiological Emergencies to the Public on 1-5 October.

The detailed presentation is available on Annex 8.4.

▶ NEA-OECD

Olvido Guzmán (NEA) explained NEA activities in Emergency Preparedness, Response and Recovery Management (EPR) and presented the links with the NERIS platform. She presented the outcomes,

method of work and participants of each item of the NEA Programme of Work 2018-2020 interfacing with the NERIS Roadmap:

- Real-time communication,
- Non-radiological public health aspects of radiation including psycho-social and other societal impacts of evacuation, sheltering and relocation. These activities should be given high-priority,
- Recommendations for building nationally adapted frameworks for recovery in NEA countries,
- Benchmarking on dose projection code outputs based on same (or very similar) inputs,
- Update Protective Measures Handbooks. NERIS could be involved notably through CONFIDENCE project,
- Involvement of decision-makers in the planning and implementation of protective action strategy.

Olvido Guzman also announced that on 2019, NEA envisages to organise a joint workshop (OECD/ENV, OECD/GOV, NEA, JRC, others) on EPR in the nuclear and non-nuclear fields. On top of that NEA (EGIR) would be part of the consultation on revision of ICRP Publications 109, 111 and NERIS could be associated with this action.

The detailed presentation is available in Annex 8.5.

► **HERCA**

Florian Gering (BfS) presented HERCA and the potential links between the NERIS Roadmap and the Working Group on Emergencies. He explained that key topics 1 to 5 are linked with HERCA WGE activities, respectively on: improved modelling, improved monitoring, data assimilation, countermeasures & countermeasure strategies and formal decision support.

Florian Gering also explained how key topic 7 on “Emergency response and recovery framework, including reference levels” is linked with HERCA WGE Action Plan 2018-2022.

Full details on Florian Gering’s presentation are available in Annex 8.6.

► **EC-JRC**

Ivana Oceano presented EC-JRC and its support in EP&R and links with NERIS. She explained that JRC perspectives in NEP&R Disaster Risk Management are focused on: developing a strong common understanding of the approaches in nuclear/radiological crises and compiling knowledge in crises management broader than the specificity of nuclear activities. Then, Ivana Oceano presented the implementations and actions of the Disaster Risk Management Knowledge Centre (DRMKC) which is in development.

She proposed to organise a JRC-NERIS meeting to present JRC activities in nuclear and non-nuclear EP&R and assess topics of collaboration.

The detailed presentation of Ivana Oceano is available in Annex 8.7.

► **Conclusion of the forum**

Thierry Schneider thanked all organisations for their fruitful presentations. He proposed to discuss with the different organizations to see how to go further and identify the feasible cooperation. The aim will be for the Management Board to establish a Programme of Work with all the organizations on short term and long term. He invited participants to formalize comments and results of discussions and share it with the Management Board in the following weeks.

10. COMING EVENTS

Thierry Schneider provided information on 2 events of interest for NERIS:

- The 5th European IRPA congress, held 4-8 June 2018 at The Hague (The Netherlands)
- RICOMET 2018, held 13-15 June 2018 in Antwerp (Belgium).

11. CLOSING OF THE NINTH GENERAL ASSEMBLY

Thierry Schneider thanked all the participants and closed the General Assembly at 5:00 pm.

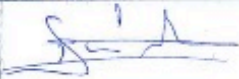
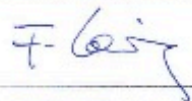


LIST OF ANNEXES

- **Annex 1: List of Participants: NERIS Bureau**
- **Annex 2: List of Participants: Supporting Organisations**
- **Annex 3: Agenda of the Ninth NERIS General Assembly**
- **Annex 4: Membership of the NERIS platform**
- **Annex 5: NERIS Financial issues**
 - Annex 5.1: Operating costs, resources and result for 2017
 - Annex 5.2: Expectations for 2018
- **Annex 6: List of the meetings and activities of the NERIS Platform in 2017**
- **Annex 7: Information on detection of Ruthenium 106 in the East and South-East parts of Europe, Florian Gering (BfS) and Olivier Isnard (IRSN)**
- **Annex 8: Presentations from the International Forum**
 - Annex 8.1: Presentation of the NERIS Roadmap, Thierry Schneider (CEPN)
 - Annex 8.2: Identified links between NERIS Roadmap key areas and WHO's area of work
 - Annex 8.3: Presentation of ICRP-NERIS relationship
 - Annex 8.4: Update on IAEA EPR activities
 - Annex 8.5: NEA activities in Emergency Preparedness, Response and Recovery Management ; Links with NERIS activities, Olvido Guzman (NEA)
 - Annex 8.6: Potential links between HERCA (Working Group on Emergencies) and NERIS activities, Florian Gering (BfS)
 - Annex 8.7: The EC-JRC support in EP&R and link with NERIS, Ivana Oceano



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NINTH GENERAL ASSEMBLY OF THE NERIS PLATFORM**Wednesday April 25, 2018***Dublin Castle - Dame Street - Dublin 2, Ireland*Members of the Bureau of the NERIS Platform

Thierry SCHNEIDER, CEPN	Chair	
Florian GERING, BFS	Vice-Chair	
Deborah OUGHTON, NMBU	Secretary	
Wolfgang RASKOB, KIT	Treasurer	

Annex 2. List of Participants: Supporting Organisations



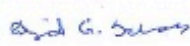






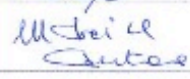
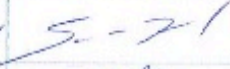



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NINTH GENERAL ASSEMBLY OF THE NERIS PLATFORM
Wednesday April 25, 2018
Dublin Castle - Dame Street - Dublin 2, Ireland
Supporting organisations of the NERIS Platform

ORGANISATIONS	REPRESENTATIVES	SIGNATURE
APA - Agencia Portuguesa do Ambiente	proxy to Paulo Nunes	Paulo Nunes
BfS - Federal Office for Radiation Protection	Florian Gering	F. Gering
CEPN - Nuclear Evaluation Protection Centre	Thierry Schneider	Thierry Schneider
CIEMAT	MILAGROS MONTERO	Milagros Montero
DTU NUTECH - Technical University of Denmark	Kasper Sørensen	Kasper Sørensen
EPA - Environmental Protection Agency	VERONICA SMITH	Veronica Smith
FOPH - Federal Office Public Health	proxy to Thierry Schneider	Thierry Schneider
GAEK - Greek Atomic Energy Commission	proxy to Spyros Andronopoulos	Spyros Andronopoulos
IRSN - French Institute for Radiological Protection and Nuclear Safety	CHARROU Sylvie	Charrou Sylvie
IST - Instituto Superior Técnico (the Lisbon School of Engineering, Science and Technology)	MARIO REIS	Mario Reis
KIT - Karlsruhe Institute of Technology	W. Raschke	W. Raschke
MUTADIS	Fr. Héctor-Johani	Fr. Héctor-Johani

List of Participants: Supporting Organisations (continued)

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ORGANISATIONS	REPRESENTATIVES	SIGNATURE
NCBI - National Centre for Nuclear Research		
NCSR - National Centre for Scientific Research "Demokritos"	S. Andronopoulos	
NMBU - Norwegian University of Life Sciences	DEBORAH OUGHTON	
NRPA - Norwegian Radiation Protection Authority	EDVARD GJØRHE SELNES	
PDC-Angos - Prolog development Center	JAN PETTERSEN	
PHE - Public Health England	proxy to Thierry Schneider	
SCK-CEN - Belgian Nuclear Research Centre	Ighen Gamps	
STUK - Finnish Radiation and Nuclear Safety Authority	Taavi Kähkönen	
SURO - National Radiation Protection Institute	BOLE KUČA	
Tecnatom	proxy to Eduardo Gallego	
UNIMI - University of Milan	MARIE CLAIRE CANTONE	
University of Warwick	S. MONT FRENCH	
UPM - Universidad Politécnica de Madrid	Eduardo GALLEGO	
VUJE - Nuclear Power Plants Research Institute	Tatjana Đurmanović	

NINTH GENERAL ASSEMBLY OF THE NERIS PLATFORM**Wednesday April 25, 2018****13.30 – 17:00***Dublin Castle - Dame Street - Dublin 2, Ireland***AGENDA****13:30 – 15:00 REVIEW OF THE NERIS PLATFORM ACTIVITIES****Opening of the General Assembly and adoption of the agenda***(President – Thierry Schneider - CEPN)***Annual report** *(President – Thierry Schneider - CEPN)*

- ▶ Activities and evolution of the memberships
 - Adoption of the report by the GA

Financial issues *(Report of the treasurer: Wolfgang Raskob – KIT)*

- ▶ Results of 2017
 - Adoption of the results of 2017
- ▶ Proposal for 2018
- ▶ Adoption of the fees for 2019

Review of the Platform activities

- ▶ Activities of the NERIS Working groups:
 - WG on ICRP recommendations *(Wolfgang Raskob - KIT)*
 - WG on Contaminated Goods *(Sylvie Charron - IRSN)*
 - WG on Information, Participation and Communication *(Eduardo Gallego - UPM)*
- ▶ Activities of the RODOS Users Group *(Florian Gering – BfS)*
- ▶ Activities of the ARGOS User Group *(Jan Pehrsson – PDC ARGOS)*
- ▶ Activities of the NERIS R&D Committee *(Johan Camps – SCK CEN)*

Information on the CONCERT project

- ▶ General Information on the CONCERT Project

NERIS participation to the ERPW18 in October 2018 in Rovinj *(Tatiana Duranova & Mélanie Maître)*

Agenda of the Ninth NERIS General Assembly (continued)

Other issues

- ▶ NERIS Workshop 2019
- ▶ Date and venue of the next General Assembly

Information on detection of Ruthenium 106 in the East and South-East parts of Europe (*Florian Gering – BfS- and Olivier Isnard - IRSN*)

15:00 – 15:30 Coffee Break

15:30 – 17:00 NERIS INTERNATIONAL FORUM

Introduction on the NERIS Roadmap (*President- Thierry Schneider – CEPN*)



Highlights from international cooperation of interest for NERIS

- ▶ WHO – REMPAN (*Zhanat Carr*)
- ▶ ICRP (*Jean-François Lecomte*)
- ▶ IAEA (*Kilian Smith*)
- ▶ NEA/OECD (*Olvido Guzman/Ted Lazo*)
- ▶ HERCA (*Florian Gering*)
- ▶ EC-ISPRA (*Ivana Oceano*)

General discussion on possible link with NERIS activities

Closing Remarks of the Ninth General Assembly (*President -Thierry Schneider – CEPN*)

Annex 4. Membership of the NERIS platform

Supporting organisations:

1. [APA](#) - Agencia Portuguesa do Ambiente (Portugal)
2. [BfS](#) - Federal Office for Radiation Protection (Germany)
3. [CEPN](#) - Nuclear Evaluation Protection Centre (France)
4. [CIEMAT](#) - Research Centre for Energy, Environment and Technology (Spain)
5. [DTU](#) - Technical University of Denmark (Denmark)
6. [EPA](#) - Environmental Protection Agency (Ireland)
7. [FOPH](#) - Federal Office of Public Health, Radiological Protection (Switzerland)
8. [GAEC](#) - Greek Atomic Energy Commission (Greece)
9. [IRSN](#) - French Institute for Radiological Protection and Nuclear Safety (France)
10. [IST](#) - Instituto Superior Técnico, the Lisbon School of Engineering, Science and Technology (Portugal)
11. [KIT](#) - Karlsruhe Institute of Technology (Germany)
12. [MUTADIS](#) (France)
13. [NCSR](#) - National Centre for Scientific Research "Demokritos" (Greece)
14. [NCBJ](#) - National Centre for Nuclear Research (Poland)
15. [NMBU](#) - Norwegian University of Life Sciences (Norway)
16. [NRPA](#) - Norwegian Radiation Protection Authority (Norway)
17. [PHE](#) - Public Health England (United Kingdom)
18. [PDC](#) - Prolog Development Center (Denmark)
19. [SCK.CEN](#) - Belgian Nuclear Research Centre (Belgium)
20. [STUK](#) - Finnish Radiation and Nuclear Safety Authority (Finland)
21. [SURO](#) - National Radiation Protection Institute (Czech Republic)
22. [Tecnatom](#) (Spain)
23. [UNIMI](#) - University of Milan (Italy)
24. [University of Warwick](#) (United Kingdom)
25. [UPM](#) - Universidad Politécnica de Madrid (Spain)
26. [VUJE](#) - Nuclear Power Plants Research Institute (Slovakia)

Members:

27. [AgroParisTech](#) - Paris Institute of Technology for Life, Food and Environmental Sciences (France)
28. [AIT](#) - Austrian Institute of Technology (Austria)
29. [ANCCLI](#) - National Association of Liaison Committee (France)
30. [ASN](#) - French Safety Authority (France)
31. [BfR](#) - Bundeswehr Institute of Radiobiology (Germany)
32. [DEMA](#) - Danish Emergency Management Agency (Denmark)
33. [DZZZ](#) - Office for Radiological and Nuclear Safety (Croatia)
34. [ENEA](#) - Italian National Agency for New Technologies, Energy and Sustainable Economic Development (Italy)
35. [EVIRA](#) - Finnish Food Safety Authority (Finland)
36. [GRS](#) - Gesellschaft für Anlagen und Reaktorsicherheit (Germany)
37. [Hungarian Academy of Sciences Centre for Energy Research](#) (Hungary)
38. [IFIN HH](#) - National Institute of Physics and Nuclear Engineering (Romania)
39. [IKE](#) - Institute of Nuclear Technology and Energy Systems (Germany)
40. [ISP NPP](#) - Institute for Safety Problems of Nuclear Power Plants (Ukraine)
41. [ISS](#) - Istituto Superiore di Sanità (Italy)
42. [KWR](#) - Watercycle Research Institute (Netherlands)
43. [MBS](#) - University of Manchester (United Kingdom)
44. [NAEA](#) - National Atomic Energy Agency (Poland)
45. [NPP-OSI](#) - NPP Operation Support Institute (Ukraine)
46. [NRG](#) - Nuclear Research and Consultancy Group (Netherlands)
47. [PMA](#) - Pays de Montbéliard Agglomération (France)
48. [Regional Environmental Center](#) (Slovenia)
49. [RIKILT](#) - Institute of Food Safety (Netherlands)
50. [RIR](#) - Research Institute of Radiology (Belarus)
51. [RIVM](#) - National Institute for Public Health and the Environment (Netherlands)
52. [SCN](#) - Institute for Nuclear Research (Romania)
53. [SNSA](#) - Slovenian Nuclear Safety Administration (Slovenia)
54. [SSTC NRS](#) - State Scientific and Technical Center for Nuclear and Radiation Safety (Ukraine)
55. [TRPA](#) - Taiwan Radiation Protection Association (Taiwan)
56. [UBB](#) - University Babeş-Bolyai (Romania)
57. [UCEWP](#) - Ukrainian Center of Environmental and Water Projects (Ukraine)
58. [UOI](#) - University of Ioannina (Greece)
59. [UV](#) - University of Valencia (Spain)
60. [UVM.BWL](#) - Ministerium für Umwelt, Naturschutz und Verkehr Baden-Württemberg (Germany)

Annex 5. NERIS Financial issues
Annex 5.1 Operating costs, resources and result for 2017

NERIS 2017 OPERATING COSTS									
NERIS COSTS	Items	Workload days	Workload days paid	Daily cost VAT excluded €	Total cost VAT excuded €	Total cost VAT included 20% €	T&S and others €	Subtotal F €	Total €
NETWORK SECRETARIAT (CEPN)									
NERIS Steering Group & Management	General management (manager)	2,5	2	1400,00	2800,00	3360,00		3360,00	
	Assistance (junior researcher)	15,8	10	600,00	6000,00	7200,00	280,50	7480,50	
NERIS Workshops (NERIS 2017+ERPW)	Workshops organisation (manager)	2	1	1400,00	1400,00	1680,00		1680,00	
	Workshops organisation (junior researcher)	7	6	600,00	3600,00	4320,00	321,32	4641,32	
WG & sub-network management	Management (manager)	1	1	1400,00	1400,00	1680,00		1680,00	
	Assistance (junior researcher)	3	2	600,00	1200,00	1440,00		1440,00	
NERIS Newsletters	Editorial board (manager)	1	0	1400,00	0,00	0,00		0,00	
	Realisation (junior researcher)	5	4	600,00	2400,00	2880,00		2880,00	
NERIS website	Maintenance, upgrading (senior researcher)	4,5	1	980,00	980,00	1176,00		1176,00	
	Maintenance, upgrading (junior researcher)	3	0	600,00	0,00	0,00		0,00	24337,82
Contacts with intl. Organisations	Management (manager)	6	5	1400,00	7000,00	8400,00		8400,00	8400,00
European projects	CONCERT Projects (manager)	6	0	1400,00	0,00	0,00		0,00	
	Travel meeting costs						4802,83	4802,83	
	SHAMISEN project	0	0	1400,00	0,00	0,00		0,00	
	Stakeholder invitations						5269,15	5269,15	10071,98
Reception	Lunches, dinner (AB, SG)						0,00	0,00	
Workshop	Workshop organisation - Neris 2017						9377,59	9377,59	
Others	Auditor certification						500,00	500,00	
	Web domain (neris.eu), stamp, banking...						128,34	128,34	10005,93
NERIS COST for coordination		56,8	32		26780,00	32136,00	20679,73		52815,73
Contributions	ALLIANCE/ICRER						1000,00		1000,00
	RPW 2017						2000,00		2000,00
NERIS COST for support							3000,00		3000,00
TOTAL NERIS COSTS		56,8	32,0			32136,00	23679,73		55815,73

NERIS 2017 RESOURCES		
Fees	members of NERIS - supporting organisations	38000,00
European financial support	CONCERT project	3162,20
	OPERRA SHAMISEN project	4134,77
Workshop	Registrations - Lisbon	14500,00
TOTAL NERIS RESOURCES		59796,97

RESULT	3981,24
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FEES 2017				
NERIS RESOURCES	Members of NERIS - supporting organisations			Fees €
	1 Belgium	SCK-CEN	Belgian Nuclear Research Center	1000,00
	2 Czech Rep.	SURO	National Radiation Protection Institute	1000,00
	3 Denmark	DTU	Technical University of Denmark	1000,00
	4 Denmark	PDC	Prolog Development Center	1000,00
	5 Finland	STUK	Radiation and Nuclear Safety Authority	2000,00
	6 France	MUTADIS	Mutadis	1000,00
	7 France	CEPN	Nuclear Evaluation Protection Center	1000,00
	8 France	IRSN	Institute for Radiological Protection and Nuclear Safety	2000,00
	9 Germany	BFS	Federal Office for Radiation Protection	2000,00
	10 Germany	KIT	Karlsruhe Institute of Technology	1000,00
	11 Germany	IKE	University of Stuttgart	0,00
	12 Greece	GAEC	Greek Atomic Energy Commission	2000,00
	13 Greece	DEMOKRITOS	National Center for Scientific Research DEMOKRITOS	1000,00
	14 Ireland	EPA	Environmental Protection Agency	2000,00
	15 Italy	UNIMI	University of Milan	1000,00
	16 Netherlands	KWR	Watercycle Research Institute	0,00
	17 Norway	NRPA	Norwegian Radiation Protection Authority	2000,00
	18 Norway	NMBU	Norwegian University of Life Science	1000,00
	19 Poland	NCNR	National Centre for Nuclear Research	1000,00
	20 Portugal	IST	Technical Institute of Lisbon	1000,00
	21 Portugal	APA	Agencia Portuguesa do Ambiente	2000,00
	22 Spain	UPM	Technical University of Madrid	1000,00
	23 Spain	CIEMAT	Ciemat	2000,00
	24 Spain	TECNATOM	Tecnatom	2000,00
	25 Slovakia	VUJE	Nuclear Power Plants Research Institute	2000,00
	26 Switzerland	OFSP	Swiss Federal Office of Public Health	2000,00
	27 United Kingdom	PHE	Public Health England	2000,00
	28 United Kingdom	RISCU	University of Warwick	1000,00
TOTAL FEES				38000,00

Annex 5.2 Expectations for 2018

NERIS 2018 OPERATING COSTS									
NERIS COSTS	Items	Workload days	Workload days paid	Daily cost VAT excluded €	Total cost VAT excluded €	Total cost VAT included 20% €	T&S and others €	Subtotal F €	Total €
NETWORK SECRETARIAT (CEPN)									
NERIS Steering Group & Management	General management (manager)	3	2	1400,00	2800,00	3360,00		3360,00	
	Assistance (junior researcher)	15	10	600,00	6000,00	7200,00	300,00	7500,00	
NERIS Workshops (NERIS 2017+ERPW)	Workshops organisation (manager)	2	1	1400,00	1400,00	1680,00		1680,00	
	Workshops organisation (junior researcher)	7	5	600,00	3000,00	3600,00	600,00	4200,00	
WG & sub-network management	Management (manager)	2	1	1400,00	1400,00	1680,00		1680,00	
	Assistance (junior researcher)	3	2	600,00	1200,00	1440,00		1440,00	
NERIS Newsletters	Editorial board (manager)	1	0	1400,00	0,00	0,00		0,00	
	Realisation (junior researcher)	5	4	600,00	2400,00	2880,00		2880,00	
NERIS website	Maintenance, upgrading (senior researcher)	4	2	980,00	1960,00	2352,00		2352,00	
	Maintenance, upgrading (junior researcher)	3	0	600,00	0,00	0,00		0,00	25092,00
Contacts with intl. Organisations	Management (manager)	6	5	1400,00	7000,00	8400,00		8400,00	8400,00
European projects	CONCERT Projects (manager)	5	0	1400,00	0,00	0,00		0,00	
	Consultation meetings						10000,00	10000,00	10000,00
Reception	Lunches, dinner (AB, SG)						200,00	200,00	
Workshop	Workshop organisation - Neris 2018						9500,00	9500,00	
Others	Auditor certification						500,00	500,00	
	Web domain (neris.eu), stamp, banking...						160,00	160,00	10360,00
NERIS COST for coordination		56	32		27160,00	32592,00	21260,00		53852,00
Contributions	RPW						2000,00		2000,00
NERIS COST for support							2000,00		2000,00
TOTAL NERIS COSTS		56,0	32,0			32592,00	23260,00		55852,00

NERIS 2018 RESOURCES		
Fees	members of NERIS - supporting organisations	38000,00
European financial support	CONCERT project	0,00
	CONCERT consultation meeting support	7000,00
Workshop	Registrations - Dublin	13500,00
TOTAL NERIS RESOURCES		58500,00


RESULT	2648,00
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FEES 2018				
NERIS RESOURCES	Members of NERIS - supporting organisations			Fees €
	1 Belgium	SCK-CEN	Belgian Nuclear Research Center	1000,00
	2 Czech Rep.	SURO	National Radiation Protection Institute	1000,00
	3 Denmark	DTU	Technical University of Denmark	1000,00
	4 Denmark	PDC	Prolog Development Center	1000,00
	5 Finland	STUK	Radiation and Nuclear Safety Authority	2000,00
	6 France	MUTADIS	Mutadis	1000,00
	7 France	CEPN	Nuclear Evaluation Protection Center	1000,00
	8 France	IRSN	Institute for Radiological Protection and Nuclear Safety	2000,00
	9 Germany	BFS	Federal Office for Radiation Protection	2000,00
	10 Germany	KIT	Karlsruhe Institute of Technology	1000,00
	11 Germany	IKE	University of Stuttgart	0,00
	12 Greece	GAEC	Greek Atomic Energy Commission	2000,00
	13 Greece	DEMOKRITOS	National Center for Scientific Research DEMOKRITOS	1000,00
	14 Ireland	EPA	Environmental Protection Agency	2000,00
	15 Italy	UNIMI	University of Milan	1000,00
	16 Netherland	KWR	Watercycle Research Institute	0,00
	17 Norway	NRPA	Norwegian Radiation Protection Authority	2000,00
	18 Norway	NMBU	Norwegian University of Life Science	1000,00
	19 Poland	NCNR	National Centre for Nuclear Research	1000,00
	20 Portugal	IST	Technical Institute of Lisbon	1000,00
	21 Portugal	APA	Agencia Portuguesa do Ambiente	2000,00
	22 Spain	UPM	Technical University of Madrid	1000,00
	23 Spain	CIEMAT	Ciemat	2000,00
	24 Spain	TECNATOM	Tecnatom	2000,00
	25 Slovakia	VUJE	Nuclear Power Plants Research Institute	2000,00
	26 Switzerland	OFSP	Swiss Federal Office of Public Health	2000,00
	27 United Kingdom	PHE	Public Health England	2000,00
	28 United Kingdom	RISCU	University of Warwick	1000,00
TOTAL FEES				38000,00

Annex 6. List of the meetings and activities of the NERIS Platform in 2017

Event	Date	Venue
NERIS Management Board Meetings		
23 rd NERIS Management Board	3 March 2017	Skype meeting
24 th NERIS Management Board	4 May 2017	Skype meeting
25 th NERIS Management Board	12 June 2017	Skype meeting
26 th NERIS Management Board	13 July 2017	Skype meeting
27 th NERIS Management Board	6 September 2017	Skype meeting
28 th NERIS Management Board	11 October 2017	Marne-la-Vallée
R&D Committee meetings		
NERIS R&D Committee – Preparation of the 3 rd NERIS Workshop	30 January 2017	Brussels (Belgium)
NERIS R&D Committee – Update of the NERIS SRA	31 January 2017	Brussels (Belgium)
Consultation meeting on the NERIS Roadmap	22 September 2017	Brussels (Belgium)
NERIS R&D Committee – Finalisation of the NERIS Roadmap and SRA	11 October 2017	Marne-la-Vallée
General Assembly		
8 th NERIS General Assembly	17 May 2017	Lisbon (Portugal)
Training Courses		
International Training Course on “Assessment of long-term radiological risks from environmental releases: modelling and measurements”	6-17 March 2017	Roskilde (Denmark)
International Training Course on “Preparedness and response for nuclear and radiological emergencies”	20-24 Mars 2017	Mol (Belgium)
International Training Course on “Late Phase Nuclear Accident Preparedness and Management”	19-23 June 2017	Gomel (Belarus)
RODOS User Group		
RUG meeting	03-05 April 2017	Karlsruhe (Germany)
Workshops		
3 rd NERIS Workshop	18-19 May 2017	Lisbon (Portugal)
Cooperation with European Platforms		
EAN-NERIS Workshop	15-17 May 2017	Lisbon (Portugal)
European Radiation Protection Week	10-12 October 2017	Marne-la-Vallée (France)
MELODI, EURADOS, NERIS, ALLIANCE, EURAMED meeting	12 October 2017	Marne-la-Vallée (France)
OPERRA Project		
3 rd periodic meeting	23-25 May 2017	Budapest (Hungary)
CONCERT Project		
Executive and Management Board	16 February 2017	Munich (Germany)
Management Board	22 July 2017	Munich (Germany)
Executive and Management Board	09 October 2017	Marne-la-Vallée (France)
CONCERT WP5 Stakeholder Group	27-28 September 2017	Paris (France)
CONCERT WP2-WP3 and NERIS R&D Committee		
CONCERT SRA & Joint Roadmap	22 May 2017	Budapest (Hungary)
CONCERT SRA & Joint Roadmap	11 October 2017	Marne-la-Vallée (France)
CONCERT Joint Roadmap	27 October 2017	Conference Call
CONCERT Joint Roadmap	14 November 2017	Conference Call
Participation to other Workshops		
SHAMISEN Final Workshop	23-24 March 2017	Paris (France)
RICOMET 2017	27-29 June 2017	Vienna (Austria)
ICRP Symposium	10-12 October 2017	Marne-la-Vallée (France)
Other cooperation		
COMET Final Event	25-27 April 2017	Bruges (Belgium)
REMPAN meeting	3 July 2017	Geneva (Switzerland)
WPNEM - INEX 5 meeting	25 October 2017	Paris (France)
RTD Information Day	09 November 2017	Brussels (Belgium)
ICRP SLO meeting	17 November 2017	Geneva (Switzerland)

Annex 7. Information on detection of Ruthenium 106 in the East and South-East parts of Europe, Florian Gering (BfS) and Olivier Isnard (IRSN)



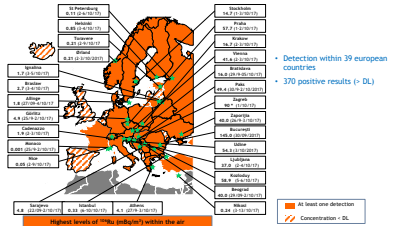
Detection of Ruthenium-106 in Europe

First detections and reactions in Europe

First detections in Italy and Czech Republic at 2nd of October : few mBq/m³ measured during the last week of September.

- Separately, IRSN and BfS activated dedicated teams to :
 - Strengthen the atmospheric survey in their country (shortening of the samplings)
 - Collect data at the European scale to follow and understand the situation
 - Assess the possible health and environmental effects
 - Inform the authorities and the population [as soon as of 3rd of October]
 - Based on the data collected and the meteorological data, try to localize the origin of the releases and to evaluate the source-term

Detections at the continental scale end of September - beginning of October

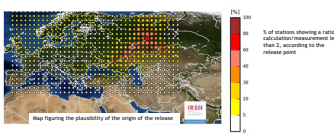


Detection within 39 European countries
• 370 positive results (+ DL)

Legend:
 No direct one detection
 Concentration > DL

Potential release zone and quantity released

For each of more than 700 mesh points equally spaced within a meshing, IRSN simulated a release of Ruthenium-106 and quantified the consistency between the simulation results and the 370 positive measurements (use of real meteorological data).

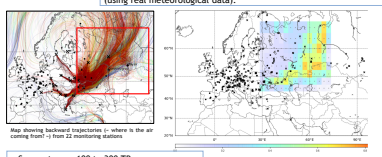


Map figuring the plausibility of the origin of the release

- Source term : 100 to 300 TBq
- Release during the last week of September

Potential release zone and quantity released

For each of 120 mesh points equally spaced within a grid, BfS simulated a release of Ruthenium-106 and quantified the correlation between the simulation results and the 370 positive measurements (using real meteorological data).



Map showing backward trajectories (→ where is the air coming from) → then 22 monitoring stations

Map showing the correlation between dispersion modelling and measurements, which is an indicator for the probability of the origin of the release

- Source term : 100 to 300 TBq
- Release during the last week of September

Comparison of simulations

- Different organisations have been contacted for comparing the methodology and results
 - IRSN (France)
 - BfS (Germany)
 - NET-Office (United Kingdom)
 - FOI (Sweden)
 - Environnement Canada (Canada)
 - Institute of Environmental Science and Research limited (New Zealand)
 - Norwegian Institute for Air Research (Norway)
 - The Institute of Mathematical Machines and System problems (Ukraine)
 - CEMRA - Ecole des Ponts - ParisTech (France)
 - SECNRS (Russia)
- These organizations show agreement regarding methodology and results.

Conclusions regarding the origin of the release

- Nuclear Power Plant or Research Reactor : not plausible due to the measurement of Ru-106 alone (with some Ru-103)
- Re-entry into the atmosphere of a satellite powered by a Ru-106 generator : highly unlikely
 - No such satellite re-entry has been identified (according to IAEA and special bodies) ;
- Fuel cycle facilities : Ru releases have been experienced in the past following incidents in this type of facilities
- Radioactive sources production facilities : can not be excluded

To summarize....

- Significant releases (100 - 300 TBq) of Ruthenium-106 during the last week of September
- Event detected at the continental scale. No health or environmental impact in Europe.
- Most plausible zone of release lying in the Urals.
- Such a release would have required the implementation of protective measures close to the release location.
- Russian/European scientific commission to come : IRSN and BfS invited

An important issue : reaching the limits of the simulations based on the available atmospheric monitoring results, now getting local ground deposition monitoring results is essential for a more accurate assessment.

Information on detection of Ruthenium 106 in the East and South-East parts of Europe (continued)

International Scientific Commission for Investigation of Ru-106 Case - Conclusions of the 1. meeting at 31 January 2018

- Based on the measurements in different European countries and Russia, the entire activity of Ru-106 found in the air in between the end of September to the beginning of October, 2017, is estimated as ~ 100 TBq.
- Based upon the available data, no health effects are expected for the population.
- Modeling calculations performed in different countries are consistent with each other, though there are too many uncertainties to make conclusions about the location of the Ru source at the moment.
- In some countries, measurements of Ru-103 were made. The ratio of Ru-106/Ru-103 was the same and corresponds to a fresh spent fuel.
- The Commission needs to collect and verify all available data, to form a unified Database and assess the quality of the data. There is a need to request Roshydromet on the local weather conditions data and additional data on precipitation measurements.

IRSN

International Scientific Commission for Investigation of Ru-106 Case

International Scientific Commission for Investigation of Ru-106 Case - Conclusions of the 1. meeting at 31 January 2018 (continued)

- There is a need in additional measurements upward the wind direction from localities where Ru-106 was found in the Chelyabinsk Region. The Commission considers helpful to get measurements from Romania on deposition of Ru-106 due to the highest values of Ru-106 activity detected.
- The hypothesis on the "medical" origin of Ru-106 (as a source for medical therapy) can be excluded.
- According to Roshydromet data, a specific atmospheric phenomenon of descending air flow circulation was observed in the Chelyabinsk Region around the end of September. These data shall be taken into account for further consideration.
- The Commission noted that the Rostekhnadzor inspections were conducted at the PO "Mayak" and NIAR (Dimitrograd) facilities covering the operations during the period August - November 2017, and no deviations from normal technological processes were found.

IRSN

International Scientific Commission for Investigation of Ru-106 Case

International Scientific Commission for Investigation of Ru-106 Case - Conclusions of the 2. meeting at 11 April 2018





- With the available data, the Commission could not point out on any verified hypothesis of Ru-106 origin within the nuclear activities that have been investigated.
- A large Database of measurement results and calculations was created. The Commission is analyzing all data provided to it.
- It would be worthwhile to make this Database available for other people for further research and analysis.
- The data and measurement results newly available for the Commission confirm that no health effects are expected in all areas where the radiation monitoring revealed Ru-106 in September-October 2017.
- Presenting results of the Commission work in scientific magazines is desirable.
- The Commission acknowledges useful information and clarification provided for 2nd Meeting by experts from PA "Mayak" and IBRAE RAN. The Commission members will analyze the presented data and make decisions on necessity of the future work and meetings of the Commission.

IRSN





International Scientific Commission for Investigation of Ru-106 Case

Annex 8. Presentations from the International Forum

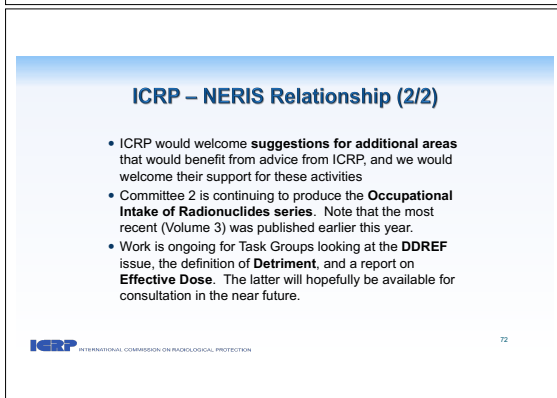
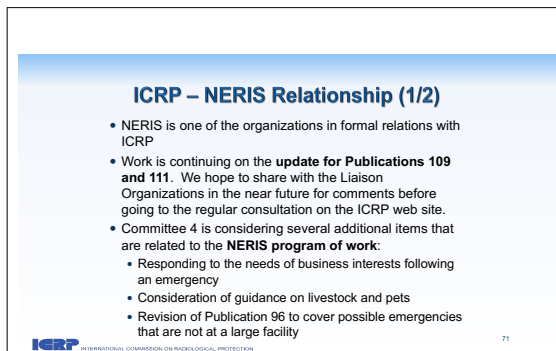
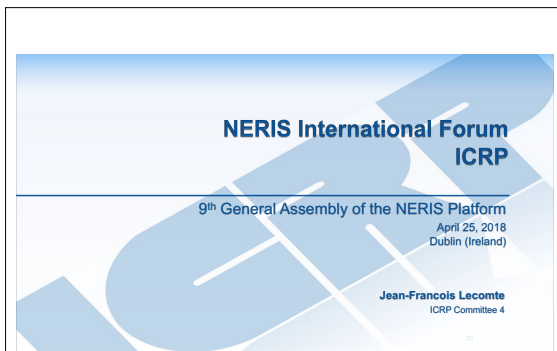
Annex 8.1 Presentation of the NERIS Roadmap, Thierry Schneider (CEPN)

<p> NERIS NERIS Roadmap (1)</p> <hr/> <ul style="list-style-type: none"> ► Challenges in radiological impact assessment during all phases of nuclear and radiological events <ul style="list-style-type: none"> ○ Improvement of modelling <ul style="list-style-type: none"> • Applicable in all environments (urban, agricultural, forests, etc.) world-wide, including uncertainties • Improved foodchain models • Models for assessing the exposure of the public, of emergency workers and helpers ○ Improvement of monitoring <ul style="list-style-type: none"> • New devices, techniques and guidelines for monitoring in Europe being harmonised • Optimise all potential emergency scenarios ○ Development of data assimilation <ul style="list-style-type: none"> • Improved capabilities to estimate source locations and source terms • Improved capabilities to assess the radiological situation • Combined tools for improved decision making using Big Data capabilities within Decision Support Systems <p style="text-align: right;">60</p>	<p> NERIS NERIS Roadmap (2)</p> <hr/> <ul style="list-style-type: none"> ► Challenges in countermeasures and countermeasure strategies in emergency & recovery, decision support and disaster informatics <ul style="list-style-type: none"> ○ Better knowledge on countermeasures and countermeasures strategies <ul style="list-style-type: none"> • Further analysis of the efficiency of available countermeasures and countermeasures strategies for the different phases of an accident • Development of methodological framework for the implementation and lifting of countermeasures ○ Improvement of formal decision support <ul style="list-style-type: none"> • Integration of the new methodological development on decision making process into decision support tools • Further development on the management of uncertainties in decision making ○ New development in disaster informatics <ul style="list-style-type: none"> • Further development of analytical platform • Development of knowledge databases • New generation of DSS and integration of virtual and augmented reality <p style="text-align: right;">61</p>
<p> NERIS NERIS Roadmap (3)</p> <hr/> <ul style="list-style-type: none"> ► Challenges in setting-up a trans-disciplinary and inclusive framework for preparedness for emergency response and recovery <ul style="list-style-type: none"> ○ Further development of emergency and recovery framework <ul style="list-style-type: none"> • Integration of reference levels and operational levels • Better addressing transition and long-term phases into the framework, • Further development on the management of contaminated goods (food and non-food) ○ Elaboration of strategies for stakeholder engagement, involvement and public participation <ul style="list-style-type: none"> • Analysis and guideline for stakeholder and public engagement processes • Guideline for integrating citizen science in radiological risk governance • Better addressing communication issues including social media <p style="text-align: right;">62</p>	<p> NERIS NERIS Roadmap (4)</p> <hr/> <ul style="list-style-type: none"> ► Challenges in setting-up a trans-disciplinary and inclusive framework for preparedness for emergency response and recovery (cont.) <ul style="list-style-type: none"> ○ Development of an integrated emergency management including non-radiological aspects <ul style="list-style-type: none"> • Improving health surveillance programme • Better addressing socio-economic and ethical aspects in decision making processes • Guideline for the development of radiological protection culture ○ Better addressing uncertainties and managing incomplete information <ul style="list-style-type: none"> • Guidance framework and advanced tools to better identify, address and communicate uncertainties • Guidance on the role of social media • Development of education and training <p style="text-align: right;">63</p>

Annex 8.2 Identified links between NERIS Roadmap key areas and WHO's area of work

<p> NERIS</p> <hr/> <p style="text-align: center;">WHO - REMPAN</p> <p style="text-align: center;"><i>Zhanat Carr</i></p> <p>25 April 2018 9th NERIS General Assembly</p> <p style="text-align: right;">65</p>	<p> NERIS</p> <hr/> <p>Some linkages identified between NERIS Roadmap key areas and WHO's area of work:</p> <ul style="list-style-type: none"> ► Key topic 2 - Improved Monitoring <ul style="list-style-type: none"> • Monitoring techniques and strategies (<i>individual monitoring of affected people</i>) <ul style="list-style-type: none"> → WHO has set up a WG on internal contamination monitoring. Preparation of a report on lessons learnt from individual monitoring experience after major nuclear emergencies. → Plan to develop WHO guidelines on internal contamination monitoring and management/treatment <p>25 April 2018 9th NERIS General Assembly</p> <p style="text-align: right;">66</p>
<p> NERIS</p> <hr/> <ul style="list-style-type: none"> ► Key topic 7. Emergency response and recovery framework, including reference levels <ul style="list-style-type: none"> • Implementation of BSS including reference levels and relation with operational levels • Longer term management • Contaminated goods → These challenges are in link with WHO's work ► Key topic 8. Stakeholder engagement, involvement of the public & communication <ul style="list-style-type: none"> • Stakeholder engagement processes including the public • Communication → a tool for public communication in relation to contaminated food after a nuclear emergency is being developed by WHO (currently on hold). Interest in cooperate with NERIS on pushing this document forward and finalizing it within a year. <p>25 April 2018 9th NERIS General Assembly</p> <p style="text-align: right;">67</p>	<p> NERIS</p> <hr/> <ul style="list-style-type: none"> ► Key topic 9. Integrated emergency management – non-radiological aspects (health surveillance, ethical aspects, economic issues...) <ul style="list-style-type: none"> • Health surveillance • Ethical aspects • Socio-economic aspects • Integrated surveillance and monitoring • Radiological protection culture → WHO would be interested to develop guidelines for better health surveillance approaches <p>25 April 2018 9th NERIS General Assembly</p> <p style="text-align: right;">68</p>

Annex 8.3 Presentation of ICRP-NERIS relationship, Jean François Lecomte (IRSN)



Annex 8.4 Update on IAEA EPR activities, Kilian Smith



Update on IAEA EPR activities

Ninth General Assembly of the NERIS Platform
25 April, Dublin, Ireland

Kilian Smith
RANET Officer
Incident and Emergency Centre
Department of Nuclear Safety and Security
International Atomic Energy Agency

Update on Recent and Planned Activities

1. Preparedness:
 - Development of Safety Standards and Technical Guidance
 - Capacity Building Activities (Training, EPRIMS, EPREV)
2. Response:
 - Notification and official information exchange (USIE, EPR IECComm)
 - Assessment of potential emergency consequences and prognosis of possible emergency progression

Development of Safety Standards

- **IAEA Safety Standards Series No. GSG-11**
Arrangements for the Termination of a Nuclear or Radiological Emergency
 - Published March of 2018
- **DS475 (Safety Guide on Public Communication):**
 - To be published beginning of 2019
- **DS469 (Safety Guide on EPR in Transport, revision of TS-G-1.2):**
 - Expected completion: 2019/2020
- **DS504 (Safety Guide on EPR, revision of GS-G-2.1):**
 - Expected completion: 2021/2022
- **DS505 (Safety Guide on Source, environmental and individual monitoring, revision of RS-G-1.8):**
 - Expected completion: 2021/2022



Development of Technical Guidance (1)

- **EPR Protection Strategy:**
 - Advanced stage of development addressing feedback from CS held in November 2017
 - Expected completion: **end of 2018**
 - **Pilot training** to be provided in November 2018
- **EPR- On-site plan for facilities in EPC I and II:**
 - Final stage of internal review
 - Expected completion: **end of 2018**
- **Revision of INES User's Manual:**
 - **Technical Meeting:** 23-27 April 2018, Vienna
 - Expected completion: **end of 2018**

Notification and information exchange: USIE

- **USIE 7.0 made available in March 2018**
 - Highlights of some of the new features:
 - Possibility for short messages
 - Adding information to already published EMERCON forms
 - Encryption possibility – within the forms
 - Other improvements: display of various forms, form suggestion wizard etc.
- **5 Webinars on USIE 7.0 held February – March 2018 with more to come in 2Q-3Q 2018**

Assessment and prognosis: Operations Manual



- **EPR – A&P manual to be published soon**
 - Elaborates the IAEA and Accident State assessment and prognosis process - Step by step
 - Provides objectives, expected timing, information sharing processes and review process with the AS
- To be complemented with a **supporting guide** that provides technical basis for process
 - To be available online on assessment tool website

Assessment and prognosis: EPRIMS RTI Database

- DEEPER dataset has been fully integrated into EPRIMS Reactor Technical Information database (RTI)
- Waiting for final comments from DEEPER project counterparts to confirm project success
 - Announcement to be made once these have been received
- Sharing between countries, offline reports and other features that were previously requested have already been implemented

Mark the calendar - 2018

- **CAM under the Early Notification and Assistance Conventions**
 - **18-22 June 2018**
- **International Symposium on Communicating Nuclear and Radiological Emergencies to the Public**
 - **1-5 October 2018**

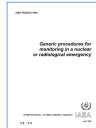


Update on IAEA EPR activities (continued)

Development of Technical Guidance (2)

- On-going projects (for completion in 2018):

- EPR Combined Emergencies**
- EPR RAD OILs**
- Revision of:
 - TECDOC 955**
 - TECDOC 1092**
 - EPR Medical 2005**



Capacity Building: Training and Workshops (1)

School of Radiation Emergency Management:

- 3 week training course, to provide a comprehensive training to MS officials involved at mid managerial level in EPR
- 5 Schools** held in 2017
 - 146 experts from 68 MSs trained
- 3 Schools** planned for **3Q-4Q 2018**:
 - Morocco (for MSs in the **Africa** Region)
 - Austria (for MSs in the **Europe** Region)
 - TBD (for MSs in the **Caribbean**)



Capacity Building: Training and Workshops (2)

- National and Regional GSR Part 7 WSs to support implementation
- Joint WS with EC: WS on EPR aspects of BSS Directive and GSR Part 7
 - Tentatively: **September 2018**
- First Regional Workshop on self-assessment against GSR Part 7 (EPRIMS) for Europe
 - 14-18 May 2018, Slovenia**
- Many training courses and workshops on other EPR topics (<https://www.iaea.org/events>)

Capacity Building: Webinars

- Topical web-based seminars aimed to:
 - Raise awareness on different GSR Part 7 requirements
 - Discuss requirements and their impact on existing arrangements
- Whenever possible to be jointly organized by international organizations, co-sponsors of GSR Part 7 and other interested organizations
 - Opened for respective counterparts in MSs of the organizing international organizations as well as to relevant international organizations
- Next: Food Safety in a Nuclear or Radiological Emergency, Dates to be confirmed, (IEC/FAO)

Follow IEC-related news



On the website:
iec.iaea.org

On Twitter:
[@iaeaiec](https://twitter.com/iaeaiec)



EPR-RAD-OILs publication

Scope:

- EPR-NPP-OILs 2017 → Reactor and spent fuel emergencies
- EPR-RAD-OILs Draft → Radiological emergencies

Significant differences in the:

- Protection strategy
- Monitoring strategy
- Radiation and radionuclide mixes
- Public behaviour
- Behaviour of the radionuclides
- Exposure scenarios
- Instrument response
- Other operational considerations

The EPR-RAD-OILs will include OILs for the "new" generic criteria of GSR Part 7:

- Vehicles, equipment and other items
- Food and other commodities traded internationally
- Enabling a transition to an existing exposure situation

Annex 8.5 NEA activities in Emergency Preparedness, Response and Recovery Management ; Links with NERIS activities, Olvido Guzman (NEA)

OECD Nuclear Energy Agency NEA

NEA activities in Emergency Preparedness, Response and Recovery Management

Links with NERIS activities

Olvido Guzmán
NEA RP-HANS

NERIS General Assembly, International Forum
25 April 2018

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OECD Nuclear Energy Agency NEA

NEA Programme of Work 2018-2020: Interfaces with NERIS Roadmap

NERIS Roadmap	Final PoW Item
Key topic 6	Real-time communication
Key topic 5	Benchmarking on dose projection code outputs based on same (or very similar) inputs
Key topic 4	Update WPNEP member country Protective Measures Handbooks
Key topic 9	Non-radiological Public Health Aspects of Radiation
Key topic 9	Involvement of decision-makers in the planning and implementation of protective action strategy
Key topic 7	Recommendations for building nationally adapted frameworks for recovery in NEA countries
Key topic 9	Joint workshop nuclear and non-nuclear NEA(EGIR) ICRP 109, 111
Key topic 8	Risk understanding and communication

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A) Real-time communication

- Outcome:** WPNEP Report: Review of existing real-time platforms in NEA member countries to facilitate cross-border and regional information exchange and coordination of countermeasures.
 - What exists (state of the art)?
 - Identification of good practices and case studies of use for cross-border coordination
 - What information should be available? To whom? At what level?
 - WPNEP investigate and assess how the Member States interact with formal information exchange systems (i.e. USIE/ECURIE). What opportunities exist (if any) for additional (less formal) information to be shared via these systems? Identify any barriers to the use of existing tools as far as is practicable within the context of national and international EPR strategies
- Participants:** France, United Kingdom, Slovenia, Germany, Slovak Republic (TBC). IAEA and EC as observers.

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OECD Nuclear Energy Agency NEA

B) Non-radiological Public Health Aspects of Radiation EPR

B) Non-radiological Public Health Aspects of Radiation Emergency Planning and Response including psycho-social and other societal impacts of Evacuation, Sheltering and Relocation

Outcome: WPNEP Report: Review with a view to developing practical solutions for mitigation of these aspects through:

- developing a policy framework that adopts existing WHO guidance on mental health in emergencies to nuclear and radiological emergencies (WHO product);
- Proposing practical solutions/tools for support of the decision making process while planning for and responding to nuclear and radiological emergencies. (WPNEP product).

Participants: Germany, USA, Japan, Slovak Republic, Norway, Russian Federation.

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B) Non-radiological Public Health Aspects of Radiation EPR (Cont.)

B) Non-radiological Public Health Aspects of Radiation EPR (Cont.)

Method of work:

- Review WHO guidelines on psycho-social effects in emergencies, adopt those for nuclear emergency scenarios (led by WHO, with WPNEP Working Group input);
- Derive from above, practical tools for decision makers (led by WPNEP Working Group with WHO input);
- Organisation of a Joint Workshop to discuss key issues to be considered.

Other interactions: CRPPH review of the psycho-social aspects of emergencies and protective action strategies. WPNEP may be able to add further to this review with regard to the potential effects of urgent protective actions, evacuation, sheltering and ITB.

The WPNEP expressed that these activities should be given high-priority

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OECD Nuclear Energy Agency NEA

C) Recommendations for building nationally adapted frameworks for recovery in NEA countries

Outcome: WPNEP Report describing best practices in developing a recovery framework along international guidelines (GRS-7, GSG-474) adapted to national conditions.

- Post-accident recovery actions should be planned in advance. A large range of countermeasures exist, but not all would be applicable in every country owing to national variations.
- In addition, emergency measures may have downstream implications for later recovery actions.
- Development of a recovery framework would also need a process of relevant stakeholder involvement with collaborative deliberation on the issues at stake.

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OECD Nuclear Energy Agency NEA

C) Recommendations for building nationally adapted frameworks for recovery in NEA countries

Method of Work:

- Expert Group to highlight the best practice regarding development of a recovery framework, based on existing tools and experience in the process of building the framework.
- WPNEP collaborate with other experts and groups regarding recovery issues.
- Can divide the work in e.g. food management, drinking water management, urban and environmental decontamination, and waste management.

Participants: Japan, Norway, USA, France, UK, Ireland, Slovak Republic, Austria, Germany, Canada.

Interactions: WHO volunteer to participate to provide inputs on WHO standards in drinking water and food management.

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D) Benchmarking on dose projection code outputs based on same (or very similar) inputs

Outcome: WPNEP benchmark report on dose projection code outputs

Method of Work: Develop and hold an exercise where member countries share dose projection code outputs based on same (or very similar accident) inputs – understanding of why the results are or may be different. – Defining what is considered to be good general agreement amongst the codes.

Participants: France, Ireland, Spain, Russian Federation, Canada, US, Germany, Slovak Republic, The Netherlands, Portugal.



Interactions: IAEA, WMO (World Meteorological Organisation)

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NEA activities in Emergency Preparedness, Response and Recovery Management; Links with NERIS activities (continued)

<p>E) Update WPNEM member country Protective Measures Handbooks</p> <ul style="list-style-type: none"> Outcome: WPNEM Report update of the WPNEM member country Protective Measures Handbooks Method of Work: Collate and update changes to WPNEM member country Protective Measures Handbook considering implementation of GSR Part 7 and other post-Fukushima considerations. <ul style="list-style-type: none"> Proposal is for a deeper examination of the rationale for actions. For instance, some countries may choose only to shelter as a protective measure in certain areas due to population density and in other parts of the country the decision may be to evacuate the entire population. Iodine distribution methods and target populations (supplement or stand-alone) and why? Carry out a survey, analysis of the survey results and discussion during WPNEM meeting. Participants: Slovenia, USA, Spain, Slovak Republic Interactions: NERIS through CONFIDENCE project 	<p>F) Involvement of decision-makers in the planning and implementation of protective action strategy</p> <p>Following up on suggestion #6 from the INEX-5 workshop, the WPNEM mandated the WPNEM Secretariat to establish contacts with the Public Governance Directorate with a view to include decision-makers in the planning and implementation of protective action strategy.</p> <p>Following the approval of the joint workshop with OECD/ENV, OECD/GOV and JRC, one further step could be including the experience gained by the High Level Risk Forum in this endeavour in the programme of the 2019 joint Workshop (cf. item G of this PoW).</p>
<p>Proposals E) & G)</p> <ul style="list-style-type: none"> Additionally: <ul style="list-style-type: none"> G) Organisation of a joint workshop (OECD/ENV, OECD/GOV, NEA, JRC, others) on EPR in the nuclear and non-nuclear fields. Timeframe: from 2019; H) NEA (EGIR) consultation on revision of ICRP 109, 111 with the aim of having the WGNEM-Members included. 	<p>Risk communication</p> <ul style="list-style-type: none"> The CRPPH has agreed that there is a need to address the issue of communicating on radiation hazards further and that the CRPPH should include this in its future direction for its PoW. Addressing radiation risk communication within the CRPPH cannot be done in a single step and in the short term it should distinguish actions between experts and actions with the public. Planning or advisory group to be established which will consider all the different views during the topical session held in April 2018, to define what an step-wise strategy should be for the future work. Possible link to 2nd Stakeholder Involvement workshop

Annex 8.6 Potential links between HERCA (Working Group on Emergencies) and NERIS activities, Florian Gering (BfS)

<p>Potential links between HERCA (Working Group on Emergencies) and NERIS activities</p> <p>Florian Gering, Germany</p>	<p>HERCA</p>  <ul style="list-style-type: none"> Heads & Senior Officials/Experts of Radiation Protection Authorities (RPAs) 32 countries (the 28 EU MS + IS, NO, CH, RS) 56 organizations (RPA + TSO) 310 nominations Observers: EC, IAEA, WHO, FDA
<p>HERCA Working Group on Emergencies (WGE)</p> <ul style="list-style-type: none"> Mandate of HERCA WGE: To promote consistent and compatible emergency preparedness and response arrangements in HERCA countries for nuclear and radiological emergencies, irrespective of their location or cause, taking into account EU directives, EU Council Conclusions and international requirements. Vision: Achieve consistent protective actions through effective cross border coordination between countries affected by a nuclear or radiological emergency. Objective: Practical and operational response in case of accident including cross-border releases 	<p>HERCA Working Group on Emergencies (WGE)</p> <p>Recent WGE publications:</p> <ul style="list-style-type: none"> Practical proposal for further harmonisation of the reactions in European countries to any distant nuclear or radiological emergency (2013) HERCA-WENRA Approach (HWA) to better cross-border coordination of protective actions during early phase of a nuclear accident (2014) Guidance for Bilateral Arrangements (2015) 


Potential links between HERCA (Working Group on Emergencies) and NERIS activities (continued)

 HERCA Working Group on Emergencies (WGE)


Future WGE work:

- Action Plan for 2018 - 2022


Wolfen Butte - CNRA/CNN/CRPH Forum on Decision Making Associated with Severe Accidents - 2017-05-31

 Potential links of NERIS Roadmap with HERCA WGE


Challenges and achievement in	Potential link with HERCA WGE
Radiological impact assessment during all phases of nuclear and radiological events	
Key topic 1: Improved Modelling	
Atmospheric transport and dispersion modelling (ATM/ADM)	• ATM/ADM modelling is one essential prerequisite for assessing the radiological situation in case of an emergency
	• Improvements in modelling may improve e.g. the accuracy and rapid availability of the situation report
	• Trans-border harmonization of response could be improved if effects of modelling differences are well understood
Hydrological modelling	• Inverse modelling becomes more and more important for operational EPR (see ATM)
Dose models	• Develop practical guidance to populations who wish to make their own measurements (see ATM)
Environmental models	(see ATM)

 Potential links of NERIS Roadmap with HERCA WGE


Challenges and achievement in	Potential link with HERCA WGE
Radiological impact assessment during all phases of nuclear and radiological events	
Key topic 2: Improved Monitoring	
Monitoring techniques and strategies	New devices, techniques and guidelines for monitoring in Europe being harmonised for cross-border application and monitoring information supplied by professionals, NGOs and lay people;
	Harmonised monitoring strategies for Europe for all phases and for all types of radiological and nuclear events;
	... develop European wide guidelines for monitoring ...
Data collection & sharing	• HERCA WGE Action Plan 2018 - 2022: "Develop and publish a pragmatic approach to the monitoring of people and commodities"
Optimisation	• Currently no HERCA activities in this area

 Potential links of NERIS Roadmap with HERCA WGE


Challenges and achievement in	Potential link with HERCA WGE
Radiological impact assessment during all phases of nuclear and radiological events	
Key topic 3: Data assimilation	
Improved source term estimation	Improved capabilities to estimate source locations and source terms with ATM/ADM as defined in Key Topic 1 and advanced data assimilation
Improved impact assessment	Improved capabilities to assess the radiological situation in all phases of an accident or incident (e.g. medical follow-up or other long-term actions)
Big Data, Data Fusion	• Added value for operational EPR needs to be demonstrated

 Potential links of NERIS Roadmap with HERCA WGE


Challenges and achievement in	Potential link with HERCA WGE
Challenges in countermeasures and countermeasure strategies in emergency and recovery, decision support and disaster informatics	
Key topic 4: Countermeasures & countermeasure strategies	
Countermeasures/management options	• How can e.g. new guidance documents and new handbooks improve operational EPR?
	• HERCA WGE Action Plan 2018 - 2022: "Additional Urgent Protective Actions with Cross Border Relevance", concerning food chain and challenges in logistics
	• Preparedness for lifting of countermeasures often missing in operational EPR
Implementation of countermeasures, lifting of countermeasures, transition from emergency to existing exposure situation	• Preparedness for transition to existing exposure situation often missing in operational EPR
	• HERCA WGE Action Plan 2018 - 2022: "Examine factors affecting the implementation of protective actions, especially in the intermediate phase"

 Potential links of NERIS Roadmap with HERCA WGE

Challenges and achievement in	Potential link with HERCA WGE
Challenges in countermeasures and countermeasure strategies in emergency and recovery, decision support and disaster informatics	
Key topic 5: Formal decision support	
Decision making methods and tools	• Currently no HERCA activities in this area
Decisions under high uncertainty	Formalised methods that support robust decision making under high uncertainties -> HERCA-WENRA approach Part II is also addressing this issue, but with a simple and pragmatic approach




 Potential links of NERIS Roadmap with HERCA WGE

Challenges and achievement in	Potential link with HERCA WGE
Challenges in countermeasures and countermeasure strategies in emergency and recovery, decision support and disaster informatics	
Key topic 6: Disaster Informatics	
Analytical platform	• Currently no HERCA activities in this area
Knowledge databases	• Currently no HERCA activities in this area
New generation Decision Support Systems (DSS)	• Currently no HERCA activities in this area
Virtual and augmented reality	• Currently no HERCA activities in this area

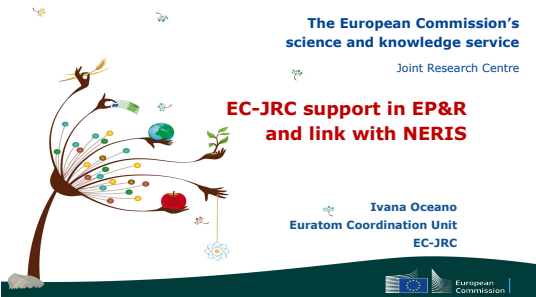
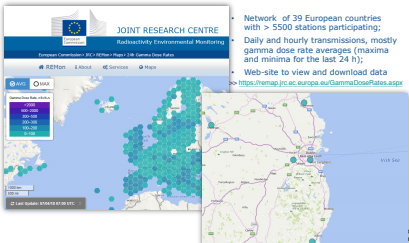
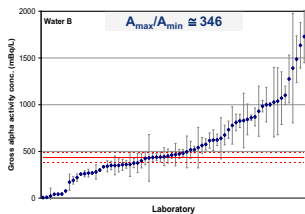
 Potential links of NERIS Roadmap with HERCA WGE

Challenges and achievement in	Vision
Setting up a trans-disciplinary and inclusive framework for preparedness for emergency response and recovery	
Key topic 7: Emergency response and recovery framework, including reference levels	
Implementation and development of BSS including reference levels and relation with operational levels	• HERCA WGE Action Plan 2018 - 2022: "Information exchange on the practical implementation of EU BSS (e.g. chosen reference levels and mechanisms for changing them during emergencies)"
Longer term management	• Currently no HERCA activities in this area
Contaminated goods	• HERCA WGE Action Plan 2018 - 2022: "Develop and publish a pragmatic approach to the monitoring of people and commodities"

Potential links between HERCA (Working Group on Emergencies) and NERIS activities (continued)

 <p>Potential links of NERIS Roadmap with HERCA WGE</p> <table border="1"> <thead> <tr> <th>Challenges and achievement in</th> <th>Vision</th> </tr> </thead> <tbody> <tr> <td>Setting up a trans-disciplinary and inclusive framework for preparedness for emergency response and recovery</td> <td></td> </tr> <tr> <td>Key topic 8: Stakeholder engagement, involvement of the public & communication (presentation of and addressing uncertainties)</td> <td></td> </tr> <tr> <td>Stakeholder engagement processes including the public</td> <td>• Currently no HERCA activities in this area</td> </tr> <tr> <td>Citizen Science</td> <td>• Currently no HERCA activities in this area</td> </tr> <tr> <td>Communication</td> <td>• Currently no HERCA activities in this area</td> </tr> </tbody> </table>	Challenges and achievement in	Vision	Setting up a trans-disciplinary and inclusive framework for preparedness for emergency response and recovery		Key topic 8: Stakeholder engagement, involvement of the public & communication (presentation of and addressing uncertainties)		Stakeholder engagement processes including the public	• Currently no HERCA activities in this area	Citizen Science	• Currently no HERCA activities in this area	Communication	• Currently no HERCA activities in this area	 <p>Potential links of NERIS Roadmap with HERCA WGE</p> <table border="1"> <thead> <tr> <th>Challenges and achievement in</th> <th>Vision</th> </tr> </thead> <tbody> <tr> <td>Setting up a trans-disciplinary and inclusive framework for preparedness for emergency response and recovery</td> <td></td> </tr> <tr> <td>Key topic 9: Integrated emergency management – non-radiological aspects (health surveillance, ethical aspects, economic issues...)</td> <td></td> </tr> <tr> <td>Health surveillance</td> <td>• Currently no HERCA activities in this area</td> </tr> <tr> <td>Ethical aspects</td> <td>• Currently no HERCA activities in this area</td> </tr> <tr> <td>Socio-economic aspects</td> <td>• Currently no HERCA activities in this area</td> </tr> <tr> <td>Integrated monitoring and surveillance</td> <td>• Currently no HERCA activities in this area</td> </tr> <tr> <td>Radiological protection culture</td> <td>• Currently no HERCA activities in this area</td> </tr> </tbody> </table>	Challenges and achievement in	Vision	Setting up a trans-disciplinary and inclusive framework for preparedness for emergency response and recovery		Key topic 9: Integrated emergency management – non-radiological aspects (health surveillance, ethical aspects, economic issues...)		Health surveillance	• Currently no HERCA activities in this area	Ethical aspects	• Currently no HERCA activities in this area	Socio-economic aspects	• Currently no HERCA activities in this area	Integrated monitoring and surveillance	• Currently no HERCA activities in this area	Radiological protection culture	• Currently no HERCA activities in this area
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 <p>Potential links of NERIS Roadmap with HERCA WGE</p> <table border="1"> <thead> <tr> <th>Challenges and achievement in</th> <th>Vision</th> </tr> </thead> <tbody> <tr> <td>Setting up a trans-disciplinary and inclusive framework for preparedness for emergency response and recovery</td> <td></td> </tr> <tr> <td>Key topic 10: Uncertainty and incomplete information handling (presentation of uncertainties)</td> <td></td> </tr> <tr> <td>Dealing with uncertainties</td> <td>• Currently no HERCA activities in this area</td> </tr> </tbody> </table>	Challenges and achievement in	Vision	Setting up a trans-disciplinary and inclusive framework for preparedness for emergency response and recovery		Key topic 10: Uncertainty and incomplete information handling (presentation of uncertainties)		Dealing with uncertainties	• Currently no HERCA activities in this area																					
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Annex 8.7 The EC-JRC support in EP&R and link with NERIS, Ivana Oceano


 <p>The European Commission's science and knowledge service Joint Research Centre</p> <p>EC-JRC support in EP&R and link with NERIS</p> <p>Ivana Oceano Euratom Coordination Unit EC-JRC</p>	<p>EURATOM Treaty</p> <ul style="list-style-type: none"> articles 35-36 set requirements for environmental monitoring and communication of data to the Commission goal is to constantly monitor and assess the level of exposure of EU citizens paves the way for enhanced preparedness and response to potential nuclear or radiological accidents article 39 gives to the "health and safety documentation and study section" of the "Joint Nuclear Research Centre" (today JRC) the task of collecting documentation and information in support to the Commission
<p>Example 1 - European Radiological Data Exchange Platform (EURDEP)</p>  <p>JOINT RESEARCH CENTRE European Commission 2017 Edition 128 Countries Data</p> <p>Network of 39 European countries with > 5500 stations participating; Daily and hourly transmissions, mostly gamma dose rate averages (maxima and minima for the last 24 h); Web-site to view and download data https://emap.jrc.ec.europa.eu/GammaDoseRates.aspx</p>	<p>Example 2 – Proficiency tests - Radioactivity in drinking water</p>  <p>Water B $A_{max}/A_{min} \approx 346$</p> <p>Gross alpha activity (Bq/L)</p> <p>Laboratory</p>

The EC-JRC support in EP&R and link with NERIS (continued)

Perspectives in NEP&R

- Experience with accidents and incidents shows that a **strong common understanding** of the approaches in nuclear and radiological crises is more crucial **in the EU** than elsewhere:
 - significant density of neighbouring nuclear/non-nuclear installations
 - single market ensuring free movement of goods
 - growing need to communicate with one voice at EU level
- Emergency management is **not** an area that is **specific only to the nuclear field** and is more than ever seen as part of a broader framework



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Disaster Risk Management Knowledge Centre (DRMKC)

Policy context:

Sendai Framework for Disaster Risk Reduction
2015-2030
Call for **stronger role of science** and **building risk knowledge**
Main conclusion → a lot is already known in various areas but the knowledge is too fragmented



New Union Civil Protection Mechanism
Nov. 2017
"Strengthening the effectiveness of **prevention action** as part of the DRM cycle, as well as **reinforcing links with other key EU policies** acting in the field of disaster prevention and disaster response"

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Disaster Risk Management Knowledge Centre (DRMKC)

Implementation:

coordinated by JRC-Ispra <http://drmkc.jrc.ec.europa.eu/>

- scientific partnerships, networking
- pooling research results
- identification research needs
- facilitate use of existing expertise
- "crisis management lab" (Ispra)



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Disaster Risk Management Knowledge Centre (DRMKC)

In practice:


- DRMKC publications (all-hazards)
- organisation seminars
- participation in training
- scientific support in some areas
- website compiling all information linked to disaster risks
- newsletter



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Collaboration between EC-JRC and NERIS

- **Collaborative Research Arrangement** signed between JRC and NERIS; covers scientific data exchange, coordination, co-operation in NEP&R
- Concrete possibilities to **collaborate**:
 - 1) In specific scientific areas
 - 2) By making the link with the DRMKC which is in development (sharing of experiences in publications, participation to conferences, ...)
- Proposal to organise a **JRC-NERIS meeting** (in Ispra?) to present JRC activities in nuclear and non-nuclear EP&R and assess topics of collaboration

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The European Commission's science and knowledge service
Joint Research Centre

Thank you for your attention!
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