



# Third NERIS Workshop

*“State of the art and Needs for further research for emergency and recovery preparedness and response”*

**17-19 May 2017, Lisbon, Portugal**

**Draft Programme**

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Hosted by Instituto Superior Técnico



## Day 1 - Wednesday 17 May 2017

13.30 – 16.30

### NERIS GENERAL ASSEMBLY

NERIS Workshop Registration

## Day 2 - Thursday 18 May 2017

8.30 – 9.00

NERIS Workshop Registration

9.00 – 9.30

### NERIS Workshop Opening Ceremony

**Chair: João Oliveira Martins, Pedro Vaz and Thierry Schneider**

#### Welcome and Introduction

*J. O. Martins<sup>1</sup> and Pedro Vaz<sup>2</sup>*

*<sup>1</sup>APA, Agência Portuguesa do Ambiente (Portugal) – Local Organizer*

*<sup>2</sup>IST, Instituto Superior Técnico (Portugal) – Local Organizer*

#### The main challenges of the NERIS Platform

*Thierry Schneider – CEPN (France) – President of NERIS*

#### The NERIS Strategic Research Agenda: Status and Perspectives

*J. Camps<sup>1</sup>, T. Schneider<sup>2</sup>, W. Raskob<sup>3</sup> and the NERIS R&D Committee*

*<sup>1</sup>SCK-CEN, Belgian Nuclear Research Centre (Belgium)*

*<sup>2</sup>CEPN (France)*

*<sup>3</sup>KIT, Karlsruhe Institute of Technology (Germany)*

9.30 - 10.30

**Session 1: Challenges in countermeasures and countermeasure strategies in emergency & recovery, decision support & disaster informatics.**

**Chair: Kasper Andersson & Milagros Montero**

#### Crisis Management Yesterday and Now – Societal Changes in Challenges related to Decision-Making and Protective Measures

*Ø. G. Selnaes, I. M. Eikermann, A. Liland – NRPA, Norwegian Radiation Protection Authority (Norway)*

#### An investigation of the effectiveness of sheltering versus evacuation

*J. Sherwood<sup>1</sup>, K. Mortimer<sup>1</sup>, T. Charnock<sup>1</sup>, S. Haywood<sup>1</sup>, T. Hamburger<sup>2</sup>, F. Gering<sup>2</sup>*

*<sup>1</sup>PHE, Public Health England (United Kingdom)*

*<sup>2</sup>BfS, Federal Office for Radiation Protection (Germany)*

#### A Case Study of the Use of ERMIN in Portugal After a Radiological Emergency Scenario

*P. Marques Nunes, L. Portugal, F. Cardoso, M. Farto, J. O. Martins – APA, Agência Portuguesa do Ambiente (Portugal)*

#### Short presentation of topics covered at the latest ARGOS User Group Meetings in Tallinn and Copenhagen

*J. Pehrsson – PDC-ARGOS (Denmark)*

10.30 - 11.00

**Coffee Break**

## Day 2 - Thursday 18 May 2017

**11.00 – 11.45** **Session 1 (con't): Challenges in countermeasures and countermeasure strategies in emergency & recovery, decision support & disaster informatics.**

**Chair: Kasper Andersson & Milagros Montero**

**On the needs for revision of European countermeasure information for management of contaminated areas**

*K.G. Andersson & Y. Hinrichsen – DTU, Technical University of Denmark (Denmark)*

**Countermeasures on agricultural areas after the Chernobyl and Fukushima accident**

*V. Durand and G. Mathieu – IRSN, French Institute for Radiological Protection and Nuclear Safety (France)*

**Countermeasures in agriculture in emergency and long-term phases of the accident at the Chernobyl nuclear power plant. Experience of Belarus**

*V. Averin – Gomel State University (Belarus)*

**11.45 – 12.15** **Discussion: Session 1**

**12.15 – 12.45** **Session 2: Challenges in radiological impact assessments during all phases of nuclear/radiological events**

**Chair: Antony Bexon & Florian Gering**

**Radiological impact assessment as basis for a review of protection strategies in Germany**

*F. Gering, T. Hamburger, G. Heinrich, S. Schantz, H. Walter, M. Werner, Y. Yevdin, N. Zander – BfS, Federal Office for Radiation Protection (Germany)*

**Rapid prediction of haematological acute radiation syndrome in radiation injury patients using peripheral blood cell counts**

*M. Port<sup>1</sup>, B. Pieper<sup>1</sup>, T. Knie<sup>1</sup>, H. Dörr<sup>1</sup>, A. Ganzer<sup>2</sup>, D. Graessle<sup>1,3</sup>, V. Meineke<sup>1</sup> and M. Abend<sup>1</sup>*

<sup>1</sup>*Bundeswehr Institute of Radiobiology (Germany)*

<sup>2</sup>*Hannover Medical School (Germany)*

<sup>3</sup>*Radiation Medicine Research Group of the Faculty of Medicine, Ulm University and WHO Liaison Institute for Radiation Emergency Preparedness (Germany)*

**12.45 – 13.00** **Presentation of Posters related to Session 2**

**Chair: Eduardo Gallego**

**13.00 – 14.00** **Lunch**

14.00 – 15.00

**Session 2 (con't): Challenges in radiological impact assessments during all phases of nuclear/radiological events**

**Chair: Antony Bexon & Florian Gering**

**Region-specific parametrisation of Spanish Mediterranean areas to reduce the uncertainties in the management of the long-term rehabilitation**

*C. Trueba, M. Montero – CIEMAT (Spain)*

**EMERGENCIAS, a forward-looking very high-resolution modelling and decision support to handle a contingent hazardous material release**

*P. Armand and C. Duchenne – CEA, France Atomic and alternative Energies Commission (France)*

**Towards Inverse Source Term Estimation using Big Data Technologies**

*S. Andronopoulos, I.A. Klampanos, A. Davvetas, C. Pappas, A. Ikonopoulos and V. Karkaletsis – National Centre for Scientific Research 'Demokritos' (Greece)*

**European nuclear Risk Mapping by Kernel Density Estimation applied to air mass trajectories**

*M. A. Hernández Ceballos, L. De Felice, M. De Cort – Joint Research Centre, Nuclear Safety and Security directorate, Radioactivity Environmental Monitoring Group (European Commission)*

15.00 – 15.30

**Discussion on Session 2**

15.30 – 16.00

**Coffee & Posters of Session 2**

16.00 – 17.30

**Session 3: Uncertainty handling issues for emergency and recovery**

**Chair: Spyros Andronopoulos & Wolfgang Raskob**

**Coping with uncertainties: The new research project CONFIDENCE**

*W. Raskob<sup>1</sup>, O. Isnard<sup>2</sup>, C. Woda<sup>3</sup>, N. A. Beresford<sup>4</sup>, M. Montero<sup>5</sup>, C. Turcanu<sup>6</sup>, T. Müller<sup>1</sup>, T. Duranova<sup>7</sup>*

<sup>1</sup>KIT, Karlsruhe Institute of Technology (Germany)

<sup>2</sup>IRSN, French Institute for Radiological Protection and Nuclear Safety (France)

<sup>3</sup>HMGU, Helmholtz Zentrum München – German Research Center for Environmental Health (Germany)

<sup>4</sup>NERC, Centre for Ecology & Hydrology (United-Kingdom)

<sup>5</sup>CIEMAT, Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas (Spain)

<sup>6</sup>SCK-CEN, Belgian Nuclear Research Centre (Belgium)

<sup>7</sup>VUJE (Slovak Republic)

**The new European Research Project TERRITORIES**

*M. Simon-Cornu – IRSN, French Institute for Radiological Protection and Nuclear Safety (France)*

**Handling Uncertainty in the Threat and Early Phases**

*S. Haywood, N. Argyris, S. French, M. Hort, J.Q. Smith – PHE, Public Health England (United Kingdom)*

16.00 – 17.30  
(...)

**Building a dataset for near-range validation of dose rate estimations from atmospheric dispersion calculations**

*J. Camps<sup>1</sup>, C. Gueibe<sup>1</sup>, G. Olyslaegers<sup>1</sup>, F. Menneson<sup>2</sup> and M. Sonck<sup>2</sup>*

<sup>1</sup>*SCK•CEN, Belgian Nuclear Research Centre (Belgium)*

<sup>2</sup>*FANC-AFCN, Federal Agency for Nuclear Control*

**Nordic research on uncertainty of atmospheric dispersion prediction for nuclear emergency preparedness**

*Jens Havskov Sørensen et al. – DMI, Danish Meteorological Institute (Denmark)*

**Uncertainty quantification of atmospheric transport modelling of radionuclides**

*P. De Meutter, J. Camps, A. Delcloo, P. Termonia*

<sup>1</sup>*SCK•CEN, Belgian Nuclear Research Centre (Belgium)*

<sup>2</sup>*Royal Meteorological Institute of Belgium (Belgium)*

<sup>3</sup>*Department of Physics and Astronomy (Belgium)*

17.30 – 18.00

**Discussion: Session 3**

20.00 – 23.00

**Workshop Dinner**

9.00 – 10.30

**Session 4: Challenges in setting-up a holistic framework for preparedness for emergency response & recovery**

**Chair: Pascal Croüail & Joao Oliveira Martins**

**Facing a challenging path toward a holistic framework for EPR&R**

*M. C. Cantone, I. Veronese – University of Milan (Italy)*

**A framework for training of first responders and intervention teams**

*L. Portugal<sup>1</sup>, Nuno Mondril<sup>2</sup>, Paulo Marques Nunes<sup>1</sup>, Francisco Cardoso<sup>1</sup>, Márcia Farto<sup>1</sup>, João Oliveira Martins<sup>1</sup>, Patrícia Pires<sup>2</sup>, Isabel Santana<sup>2</sup>*

<sup>1</sup>APA, Agência Portuguesa do Ambiente

<sup>2</sup>Autoridade Nacional de Proteção Civil

**Ethical considerations on the empowerment of people living in contaminated areas after a nuclear accident**

*F. Rollinger et al. – IRSN, French Institute for Radiological Protection and Nuclear Safety (France)*

**Investigating social, ethical and communicational aspects of uncertainty management in emergency and post-accident situations- a multi-disciplinary approach in the CONFIDENCE project**

*C. Turcanu et al. – SCK•CEN, Belgian Nuclear Research Centre (Belgium)*

**Enhancing CBRN first response in the framework of the CBRN Centres of Excellence initiative: the case of South-East and Eastern Europe region**

*K. van der Meer et al. – SCK•CEN, Belgian Nuclear Research Centre (Belgium)*

**Considerations about the protection of emergency and recovery responders in affected areas**

*J-F. Lecomte et al. – IRSN, French Institute for Radiological Protection and Nuclear Safety (France)*

10.30 – 10.45

**Presentation of Posters related to Session 4 & 5**

**Chair: Catrinel Turcanu**

10.45 – 11.15

**Coffee & Posters of Sessions 4 & 5**

11.15 – 12.15

**Session 5: Stakeholder involvement and engagement in emergency and recovery**

**Chair: Deborah Oughton and Tatiana Duranova**

**Citizen's measurements: their role in radiation protection and emergency preparedness and response - the pros and the cons**

*J. Hulka, I. Cespirova, P. Kuca – SURO, National Radiation Protection Institute (Czech Republic)*

**Ideology and radiation risk: what Japan's anti-nuclear movement can teach us about stakeholder engagement**

*M. Takahashi – University of Cambridge (United Kingdom)*

## Day 3 - Friday 19 May 2017

11.15 – 12.15  
(...)

**Lessons learned from Living Conditions and Health Status of Populations living in affected territories after the Chernobyl and Fukushima accidents – European Research Project SHAMISEN.**

*M. Maître et al. – CEPN (France)*

**Recommendations for preparedness and health surveillance of populations affected by a radiation accident - Conclusions from the SHAMISEN Project**

*D. Oughton et al. – NMBU (Norway)*

12.15 – 12.45

**Discussion: Session 5**

12.45 – 13.30

**General Discussion**

**Chair: *Thierry Schneider & Johan Camps***

**Presentation and discussion of the group findings on NERIS SRA update – Round Table and NERIS Roadmap**

**Workshop Close**

13.30 – 14.30

**Lunch**

14.30 – 17.30

*(can close earlier if appropriate)*

**NERIS & CONFIDENCE Working group meetings**

## List of Posters (1/2)

### EURATOM Programme, NUCL-EU 2020

*S. Guedes Vaz – Horizon 2020 National Contact Point (NCP) – EURATOM*

### Session 2: Challenges in radiological impact assessments during all phases of nuclear/radiological events

#### **ENEA fast internal contamination methodology for nuclear emergency**

*I. Vilardi, G. Antonacci, P. Battisti, C.-M. Castellani, I. Giardina, G. Iurlaro, L. Sperandio – ENEA, Radiation Protection Institute, Italian National Agency for New Technologies, Energy and Sustainable Economic Development (Italy)*

#### **Monitoring strategies to assist dose modelling in the first year after a nuclear accident**

*Ch. Gueibe, T. Al Mahaini, F. F. Perez, L. Sweeck and J. Camps – SCK-CEN, Belgian Nuclear Research Centre (Belgium)*

#### **On Air-Borne Monitoring**

*J. Paridaens, G. Olyslaegers and J. Camps – SCK-CEN, Belgian Nuclear Research Centre (Belgium)*

#### **A Big Data Architecture for Learning-Based Source Term Estimation**

*Iraklis A. Klampanos, A. Davvetas, C. Pappas, S. Andronopoulos, A. Ikonopoulou and V. Karkaletsis – National Centre for Scientific Research 'Demokritos' (Greece)*

#### **Establishing gene expression for early and high-throughput prediction of the hematological acute radiation syndrome**

*M. Majewski<sup>1</sup>, F. Herodin<sup>2</sup>, M. Valente<sup>2</sup>, M. Drouet<sup>2</sup>, A. Lamkowski<sup>1</sup>, M. Port<sup>1</sup> and M. Abend<sup>1</sup>*

*<sup>1</sup>Bundeswehr Institute of Radiobiology (Germany)*

*<sup>2</sup>Institut de Recherche Biomédicale des Armées (France)*

#### **Radioactivity Environmental Monitoring Measurements Evaluation and Dose Assessment for Radiation protection purpose in routine and emergency situations**

*G. Iurlaro<sup>1</sup>, M. De Cort<sup>2</sup>, E. Fantuzzi<sup>1</sup>, M. Marin Ferrer<sup>3</sup>*

*<sup>1</sup>ENEA, Radiation Protection Institute*

*<sup>2</sup>EC-JRC Nuclear Safety & Security, Knowledge for Nuclear Safety, Security & Safeguards*

*<sup>3</sup>EC-JRC Space, Security & Migration, Disaster Risk Management*

### Session 4: Challenges in setting-up a holistic framework for preparedness for emergency response & recovery

#### **Mobile based Application for Radiological Emergency Trainings**

*A. Nagy, M. Mulders, J. Camps – SCK-CEN, Belgian Nuclear Research Centre (Belgium)*

#### **A semantic information service to support resilience after a nuclear accident**

*Antonin Segault, F. Tajariol and Ioan Roxin – University of Franche-Comté (France)*



## List of Posters (2/2)

### Session 5: Stakeholder involvement and engagement in emergency and recovery

#### **Four years of dialogue for the rehabilitation of living conditions in the area contaminated by the Fukushima accident**

*F. Rollinger<sup>1</sup>, V. Marchal<sup>1</sup>, J. Lochard<sup>2</sup> and R. Ando<sup>3</sup>*

*<sup>1</sup>IRSN, French Institute for Radiological Protection and Nuclear Safety (France)*

*<sup>2</sup>Nagasaki University (Japan)*

*<sup>3</sup>Ethos in Fukushima (Japan)*