EUROPEAN ALARA NETWORK

PODIUM Personal Online DosImetry Using computational Methods

EUROPEAN JOINT PROGRAMME FOR THE INTEGRATION OF RADIATION PROTECTION RESEARCH CONCERT

EEAE ΕΛΛΗΝΙΚΗ ΕΠΙΤΡΟΠΗ ΑΤΟΜΙΚΗΣ ΕΝΕΡΓΕΙΑΣ GREEK ATOMIC ENERGY COMMISSION

Personal Online DosImetry Using computational Methods (PODIUM) dissemination workshop

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19th European ALARA Network Workshop on Innovative ALARA Tools

26 -28
November 2019
Athens, Greece

https://eeae.gr/alara-2019

PODIUM is part of the CONCERT project. This project has received funding from the Euratom research and training programme 2014-2018 under grant agreement No 662287.

Objectives of the workshops

PODIUM Workshop

The main aim of the **PODIUM** project is the development of an online dosimetry application based on computer simulations without the use of physical dosemeters.

Real movements of exposed workers captured by tracking tools have been used together with Monte Carlo simulations for the development of the application. The methodology has been applied in two crucial workplaces where improvements in dosimetry are urgently needed: neutron and interventional radiology workplaces. The availability of advanced online dosimetry applications such as these in the radiation protection field will increase awareness among workers and should improve the implementation of the ALARA principle.

The objectives of the **European ALARA Network** workshop are:

- to present and review recent and emerging "innovative ALARA Tools" used in the different steps of the ALARA process: radiological characterization and evaluation of the exposure, planning and decision phases and follow-up and feedback.
- to investigate the benefits of the tools and identify potential limits in their application;
- to disseminate the knowledge on innovative ALARA Tools in support of the ALARA process;
- to investigate how innovative ALARA Tools and innovation may (re)shape the ALARA process for the next years: evolution or revolution?

A significant part of the EAN Workshop program is devoted to discussions within Working Groups (each participant can participate in one Working Group). The provisional topics for discussion are:

- Are there specific challenges in the ALARA process that may be solved by innovative ALARA Tools (under development or to be developed)?
- Are there specific issues which may limit the development and/or the use of innovative ALARA Tools (technical, legislative, ethical etc.)? How to deal with these issues?
- What is the role of the radiation protection professionals (RPEs/MPEs/ RPOs,...) with respect to these tools?
- There is currently a lot of focus on research and innovation in areas beyond that of traditional RP research, notably artificial intelligence (IA). Does IA have the potential to shape the ALARA process in the next year?

The workshop conclusions and recommendations will summarize the main points of the presentations and the discussions held during the Working Groups.

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Programme Committee

Sylvain Andresz, *Nuclear Protection Evaluation Centre, CEPN, France*
Anja Almen, *Lund University, Sweden*
Eleftheria Carinou, *Greek Atomic Energy Commission, EEAE, Greece*
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Una O'Connor, *St. James's Hospital, Ireland*
Filip Vanhavere, *SCK•CEN, Belgium*
Fernand Vermeersch, *SCK•CEN, Belgium*

Local Organising Committee (EEAE)

Eleftheria Carinou
Sotirios Economides
Vasiliki Tafili
Zoi Thrapsanioti

Registration is now open at: https://eeae.gr/alara-2019

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Programme (provisional)

PODIUM Workshop

8:30-9:00	*Meeting point(s) in Athens, shuttle bus and transportation*
9:00-9:30	Registration
9:30-10:00	General framework of the Podium Project
10:00-10:30	Use of indoor positioning systems in Podium
10:30-11:00	Individualized Phantoms
11:00-11:30	**Coffee break**
11:30-12:00	MC-GPU Monte Carlo code
12:00-12:30	Use of “Look up approach”
12:30-13:30	**Lunch**
13:30-14:00	Development of the online dosimetry application
14:00-14:30	Application in neutron fields
14:30-15:00	Application in IR/IC fields
15:00-15:30	**Coffee break**
15:30-16:00	Personal Monitoring: The Tech Trap and Social Expectation? *(St. James's Hospital / Trinity College Dublin)*
16:00-17:00	Round table discussion: Advisory group
17:00-17:30	Conclusion and future work
17:30	*Shuttle bus and transportation, back to meeting point(s) in Athens*

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European ALARA Network workshop

8:30-9:00	*Meeting point(s) in Athens, shuttle bus and transportation*
9:00-9:30	Registration
SESSION 1. INNOVATIVE ALARA TOOLS IN THE RADIOLOGICAL CHARACTERISATION AND THE FIRST EVALUATION OF THE EXPOSURE	
9:30-10:00	Welcome by EEAE-Introduction and setting the scene *(PODIUM and ALARA)*
10:00-10:20	Remote detection technique, imaging and the use of virtual reality *(CEA)*
10:20-10:40	Use of drones in the assessment of uncommon exposure situations *(SCK•CEN)*
10:40-11:00	Personal dose computation using monitoring systems and 3D cameras *(PODIUM)*
11:00-11:30	**Coffee break**
11:30-11:50	Radiological characterisation using computing code Actiwiz *(CERN)*
11:50-12:10	In-vivo incorporation of radionuclides of workers: measurements vs. evaluation with GEANT4 *(IRA)*
12:10-12:30	The Way of CEN - Dose Assessment for Construction Products *(BfS)*
12:30-13:30	**Lunch**
SESSION 2. INNOVATIVE ALARA TOOLS IN THE PLANNING AND DECISION PHASES	
13:30-13:50	The VISIPLAN software: to perform dose assessment under different scenarios *(SCK•CEN)*
13:50-14:10	Presentation by French utility EDF – to be confirmed
14:10-14:30	ALARA, the ICRP System, Ethics and Innovation: Are they aligned? (*Trinity College Dublin)*
14:30-14:40	**Introduction to working group** *EAN Representatives*
14:40-17:00	Working group session (1/2)
17:00	*Shuttle bus and transportation, back to meeting point(s) in Athens*

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European ALARA Network workshop (cont.)

8:30-9:00	*Meeting point(s) in Athens, shuttle bus and transportation*
SESSION 2. INNOVATIVE ALARA TOOLS IN THE PLANNING AND DECISION PHASES (CONT.)	
9:00-9:20	Decision aiding tools considering multiple criteria *(EPA)*
9:20-9:40	ALARA Tools – Legacy Retrieval at Sellafield
9:40-10:00	Manuela: an advanced 3D characterization material in NPP *(Orano)*
10:00-10:20	A 3D Monte Carlo software, has helped a French hospital for their ALARA optimisation process *(RayXpert)*
10:20-10:50	**Coffee break**
SESSION 3. INNOVATIVE ALARA TOOLS FOR THE FOLLOW-UP AND FEEDBACK	
10:50-11:10	SHAMISEN-SINGS WP2: Critical review of existing plug-in's and apps to turn smart devices in radiation detectors *(ISS)*
10:20-10:40	The D-Schuttle for the collection, capitalization and broadcasting of radiological data after radiological events *(CEPN, AIST)*
10:40-11:00	Recorded conference from *invited speaker (New York University)*
11:00-11:20	Impact of the Euratom Directive on the need of follow up and feedback from activities *(EEAE)*
11:20-11:40	EUTERP Contribution to be confirmed
11:40-12:00	Presentation on a feedback tool (to be confirmed)
12:00-13:00	**Lunch**
13:00-15:00	Working group session (2/2)
15:00-16:00	Working group reports Synthesis and concluding remarks
16:00	*Shuttle bus and transportation*

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