

Joint priority setting for the first CONCERT call

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Towards joint programming in RP in H2020

A European Strategy for Radiation Protection Research

CONCERT EJP

Umbrella structure for radiation protection research in Europe

- · Co-funding action
- · Joint programming
- · Open research calls
- Integrative activities

MELODI

ALLIANCE

NERIS

EURADOS

Medicine

http://www.concert-h2020.eu/en



Call Procedure and Project Evaluation

Integration, Joint Programming, Call Preparation

Management and Decision-Making

ESAB External Scientific Advisory Board WP 2
Integration and SRA Development in Radiation Protection
Research

WP3

Priority research and joint programming needs in the perspective of European integration

WP 4
Management of the open RTD calls

WP 5

Stakeholder Involvement and Communication of scientific evidence base and Radiation Protection research WP 6
Access to
Infrastructure

WP 7 Education and Training ExB Executive Board

MB Management Board

WP 1
Management and
Administration

Annual Meetings of CONCERT Participants and Grantees



WP2: Integration and SRA development of radiation protection research

- **Task 2.1** Development of Strategic Research Agenda, roadmap and priorities for research on low dose risk (MELODI)
- Task 2.2 Development of Strategic Research Agenda, roadmap and priorities for research on radioecology (ALLIANCE)
- Task 2.3 Development of Strategic Research Agenda, roadmap and priorities for research on emergency preparedness and response (NERIS)
- Task 2.4 Development of Strategic Research Agenda, roadmap and priorities for research on dosimetry (EURADOS)
- Task 2.5 Development of Strategic Research Agenda, roadmap and priorities for research with the medical scientific community
- Task 2.6 Creating Strategic Research Agenda on social sciences and safety culture in radiation protection
- Task 2.7 Research and innovation supporting the implementation of the revised European Basic Safety Standards



CONCERT 1st call preparation

Input from:

SRA Priorities from RP associations

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Selection by WP2-WP3 WG

Condensed list + call conditions

Medical SRA

Integrative activities for calls (infrastructure, E&T)

National input (POMs)

Stakeholders input

BSS working group
Social sci & humanities



Open <u>consultation</u> on MELODI workshop 11/11/2015,



Approval by MB



Submission to call administrator (WP4)



MELODI SRA Statement priorities

- M1: To explore the shape of the dose-response relationship for radiation induced health effects at low doses/dose-rates based on key informative epidemiological studies (including where appropriate, molecular or other biomarkers) for internal and/or external emitters, incorporating detailed dosimetric assessment.
- **M2:** To explore and define the role of epigenetic modifications in radiation-induced health effects following exposure to low doses/low dose rates.
- M3: To identify, develop and validate biomarkers for exposure, early and late effects for cancer or/and non-cancer diseases in relation to low doses/low-dose rates and to integrate them in molecular epidemiological studies.
- M4: To explore the roles of specific target cells for low dose/dose-rate radiation-induced late developing health effects such as cancers, circulatory diseases and cataract.
- **M5:** To understand the potential impact of individual susceptibility on radiation risk using cohorts and/or systems models with variations in sensitivity to low doses of radiation, so that differences in the response pathways can be detected and biomarkers validated.



ALLIANCE SRA Statement priorities

- A1: Environmental availability and impact of radionuclides in terrestrial and freshwater ecosystems (including human food chain) and their interactions with atmosphere, incorporating physical, chemical and/or biological processes. Validated process-based model parameterisation, characterisation of variability and uncertainty, and guidance for fit-forpurpose models (ranked as priority 1)
- A2: Biomarkers of exposure and effects to living organisms as operational outcomes of a mechanistic understanding of intra- and inter-species variation of radiosensitivity to chronic low dose exposure situations (ranked as priority 2)
- A3: Development of models/tools, and datasets for their calibration and validation and guidance to select and evaluate the effectiveness of different remediation strategies in long-lasting exposure situations (e.g. nuclear accidents and/or NORM/TeNORM) (ranked as priority 3)
- A4: Multiple stressors and modulation of radiation effects in living organisms (ranked as priority 4).



NERIS SRA Statement Priorities

- **N1:** Assessment of and communication of uncertainties. Investigation of data uncertainties (model or monitoring results) and how they can be communicated, e.g. in model results and in Decision Support Systems (DSS) to help decision-makers to understand the radiological situation. This includes also work on model sensitivity, validity of model results and inter-comparisons of models and measurements.
- N2: Robust decision-making. Structuring the decision processes and the protective strategies at national, regional and local levels with the help of formal decision aid tools, such as multi---criteria analysis and on the basis of feedback from stakeholder processes. Development of guidance on the use of DSS in the various phases of an event based on feedback from stakeholder processes and from Fukushima experience in emergency response and recovery.
- N3: Countermeasure strategy preparedness. Development of sustainable preparedness strategy at Local, National and European level, based on the analysis of countermeasures for relevant accident scenarios. Ensuring that parameters governing the radiological consequences can be identified in time to enable optimized remediation and contribute to the elaboration of robust recovery strategies.
- **N4:** Atmospheric dispersion modelling. To make more reliable forecasts of atmospheric dispersion, including data assimilation and improved inverse modelling (to determine source term and/or source location) in different environments (e.g. urban areas) and/or at different spatial scales (near range to global scale).
- N5: Local radio-ecological models. Development and integration in general DSS of local radio-ecological
 models interlinked with monitoring information and the more global and food chain dose models.
 Investigate the capability of such models to be operated by local stakeholders as farmers or local
 communities. Link with ALLIANCE.
- N6: Monitoring strategies. Optimised use of monitoring resources, including mobile units and trans-border issues. Integration of new monitoring technologies (e.g.; drones). Development of processes and tools for integrating the monitoring results from experts and lay people into a common operational picture (monitoring crowdsourcing). Information fusion (radiological and non-radiological). Link with EURADOS but focus on strategy and integration, less on the improvement or development of new measurement methods/techniques.



EURADOS SRA Statement priorities

- E1: To quantify correlations between track structure and radiation damage
- E2: To improve neutron dosimetry techniques
- E3: To quantify doses after accidental internal contamination
- **E4:** To develop accurate and on-line personal dosimetry for workers
- E5: To improve the measurement and combination of out-of-field radiotherapy and imaging doses in photon and particle radiotherapy, for input to epidemiological studies
- **E6:** To improve dosimetry in modern external beam radiotherapy



Medical SRA priorities

- MD1: Personalised dosimetry
- MD2: Biomarkers

















Input from national Programme Owners / Managers (POMs)

- POMs have been invited to formulate research priorities
- This resulted in
 - 38 topics from 9 POMs
 - 15 Comments from 6 POMs
- POMs are CONCERT MB members having final word on priorities



POM's priorities assessment by the RP platforms

Matrix with indication of interest

POM priority title	Al(-	NERI: -	EU -	MEL -	med -	budge -	durati -	NERIS comments -	MELODI Comments -	Soc Ss H -	EUR/ -	MED comments	Alliance Comments
				M1									
To explore immune- and inflammation-related mechanisms in the				M2									
development of radiation induced late side effects such as various				М3					Link with M1, M2, M3,M4,M5				
cancers and different degenerative disorders of the cardiovascular,				M4					(keyword immune- and				
central nervous and hematopoietic system		-		M5	MD2	3-4	4		inflammation-related mechanism)				
•									Link with M1, because good				
To explore the role of spatial inhomogeneity of radiation burden in									dosimetry for internal exposure is				Limited interest - re
cellular, tissue and health effects in case of internal exposure		-		M1		1-2			a prerequisite				also improve wildli
•									Link with M1, because good				Some interest - Ar
									dosimetry for internal exposure is a				of RNs in organism
Biokinetic models for incorporated radionuclides		-	E3	M1	MD1	4-6 par	3-4		prerequisite				and improve dosim
				M1					•				•
			E5	M2						implicit			
Secondary Neutrons Issues in Modern Radiotherapy			E2	M3					Small link with M1, M2,M3, M4 in	link to			
Applications		-	E6	M4		4 partn	3-5		case of Medical epi/biology study	SSH			
Source term estimation with external and in-plant data		N4				4-6 par	tners						
Radioprotection and nanotechnology: a case for a converging													
technology approach towards innovation.		-	E1		MD3	2	3-5					quite special	
				M1									
Medical Radiation Protection: Integrating Radiobiology,				M5	MD1								
Dosimetry, Epidemiology and Modelling		-	E5	M3	MD2	6-8	3-5		Strong link with M1,M5, M3				
Nano and microdosimetry research for radiological applications		-	E1		MD1	1	3-4		_				
Environmental availability of radionuclides in the biosfere and their													
impact on wildlife and human food chain. Process-based model									Indirect link to M1 with respect to	implicit			
parameterization, characterization of variability, uncertainty	A1	N5							good dosimetry in environmental	link to			
assessment and communication	Α3	N1		M1		2-4	3-5		epi studies	SSH			Strong link with Al
Development of tools, datasets and quidance to select and													



Match between platforms' and POMs' priorities

- Platforms investigated the POM's priorities and comments, and identified the relationship/similarity to their own priorities
- 34/38 priorities were identified to be at least partially covered by the priorities in the statements of the associations
- Many of them were even recognised by several associations
- 1 about E&T



CONCERT MB decisions Sept 2015

- Platforms invested a lot of time for the process of defining priorities
- In the final call text the priorities should show up
- The number of call topics could be 2-4
- Avoid overlap with other calls (Euratom, EURAMET)
- Consider number of proposals expected per topic; 4-8 fold oversubmission is optimal, just one not good.
- ✓ A structured approach needed to define the priorities for the 1st CONCERT call
- ✓ Setup of a WP2-WP3 working group representing platforms and task leaders of WP2 and WP3

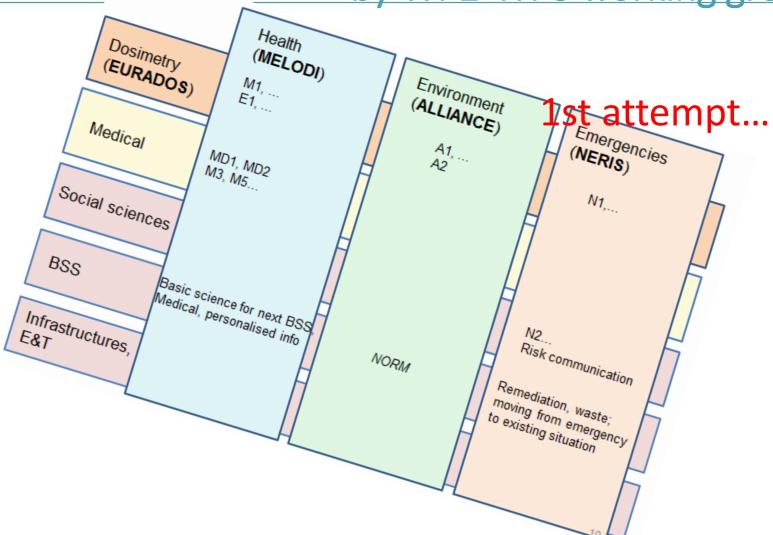


CONCERT WP2-WP3 working group

WP3 leader, chair of the WP2-WP3 working group	Nathalie Impens	SCK•CEN
WP2 leader, secretary	Sisko Salomaa	STUK
WP2, secretary	Liisa Sirkka	STUK
MELODI chair	Jacques Repussard	IRSN
MELODI SRA WG	Michaela Kreuzer	BfS
ALLIANCE chair	Hildegarde Vandenhove	SCK•CEN
ALLIANCE SRA WG	Jacqueline Garnier-Laplace	IRSN
ALLIANCE secretary	Almudena Real	CIEMAT
NERIS chair	Thierry Schneider	CEPN
NERIS SRA WG	Johan Camps	SCK•CEN
NERIS + Task 3.1.3	Wolfgang Raskob	KIT
EURADOS chair	Werner Rühm	HMGU
EURADOS vice chair	Filip Vanhavere	SCK•CEN
Task 2.5.1 Medical	Christoph Hoeschen	HMGU
Task 2.5.2 Medical + WP7 E&T	Vere Smyth	UNIPV
Task 2.5.2 Medical + WP7 E&T	Andrea Ottolenghi	UNIPV
Task 2.6 Social sciences	Tanja Perko	SCK•CEN
Task 2.6 Social sciences	Catrinel Turcanu	SCK•CEN
Task 2.7 BSS	Katalin Lumniczky	OSSKI
Task 3.1.2	Imre Balashazy	MTA-EK
OPERRA Coordinator	Jean-René Jourdain	IRSN

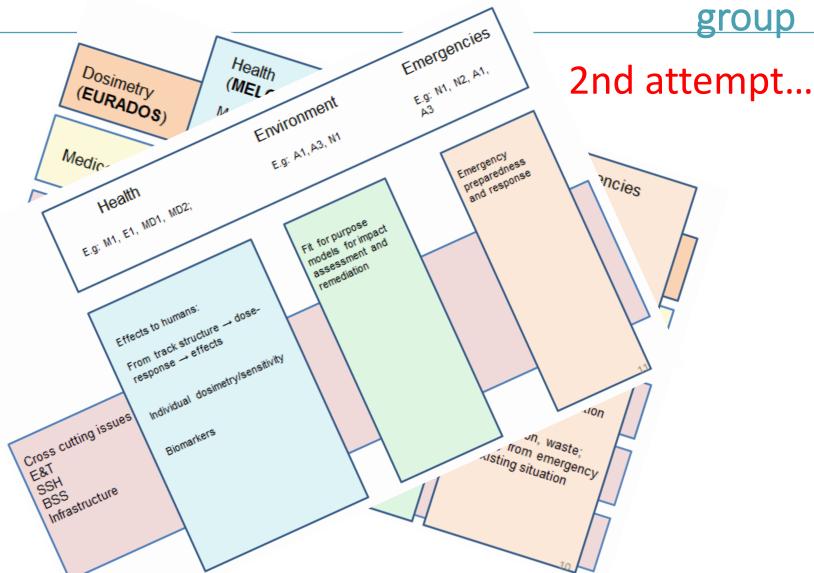


Brainstorming on joint priority definition by WP2-WP3 working group





Brainstorming by WP2-WP3 working





Proposal to MB on 16/10/15

Scientific priorities responding to society's concerns

Impact on human health of exposure to ionizing radiation at low doses/ low dose rates

Environment, emergencies and long lasting exposure situations to radioactive substances

Cross cutting issues:

Social Science and Humanities (SSH)

Basic safety standards (BSS)

Infrastructure

Education & Training (E&T)

Improving knowledge on the shape of the dose-response-relationship for radiation-induced health effects at low doses/ dose rates to strengthen the scientific base for radiation protection including all relevant dose components and dose uncertainties, and fundamental considerations of radiation tracks at molecular and cellular levels.

Reducing uncertainties in human and ecosystem radiological risk assessment including appropriate exposure quantification for improved decision making, remediation and risk communication in nuclear emergencies and/or existing exposure situations including NORM



Adapted proposal after MB consultation by e-mail

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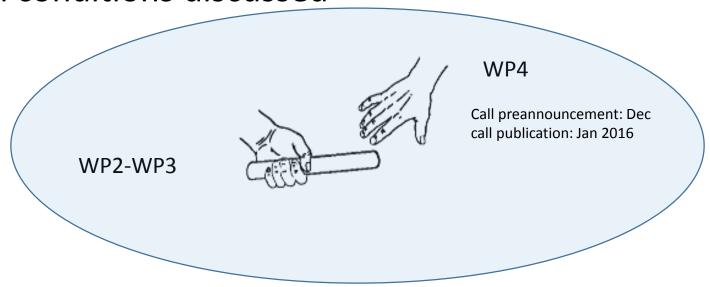
Improving knowledge on the shape of the dose-response-relationship for radiation-induced health effects at low doses/ dose rates, including all relevant dose components and dose uncertainties and fundamental considerations of radiation tracks at molecular and cellular levels, as well as the use of bioindicators, to strengthen the scientific base for radiation protection

Improving the consideration of uncertainties in human and ecosystem radiological risk assessment including appropriate exposure quantification, and in risk management of nuclear emergencies and existing exposure situations including NORM, for enhanced decision making



MB decisions 12/11/2016

- Detailed priority texts were provided to the MB 2 weeks before the MB meeting.
- Approved by the MB
- Call conditions discussed





CONCERT call information

http://www.concert-h2020.eu



CONCERT Calls Partners RP Stakeholders FaQ Jobs Associations

Concert

The 'CONCERT-European Joint Programme for the Integration of Radiation Protection Research' under Horizon 2020 is operating as an umbrella structure for the research initiatives jointly launched by the radiation protection research platforms MELODI, ALLIANCE, NERIS and EURADOS. Based on the platform SRAs and joint programming, CONCERT will develop research priorities, align them with priorities from participating Member States and will seek further input from society and stakeholders. It will reach out to engage the wider scientific community in its projects, aiming to answer the needs in radiation protection for the public, occupationally exposed people, patients in medicine, and the environment. To reach its goals, CONCERT will have seven Work Packages each of which will focus on each of the key directions.

Within CONCERT two major open RTD calls will be launched; the first one in spring 2016 and the other one in spring 2017. Universities and research institutes from all over Europe have the opportunity to join in research consortia and submit proposals.

News

Transnational Call 2016

The EJP CONCERT expects to launch the first Transnational Call for Proposals (2016)

EAN-NORM workshop in Stockholm

Dec. 5th - 7th, 2016 - Call for papers

E&T launches its first annual call

Invitation to organise Education & Training courses. Proposals can be submitted until 10 December 2015

More news

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