The European Radioecology Alliance

Hildegarde Vandenhove
On behalf of Frank Hardeman, Chair of the ALLIANCE

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www.er-alliance.org

IUR International Workshop: Worldwide harmonization of radioecology networks
La Baume, Aix-en-Provence, France, 19 – 20 June 2014

EUROPEAN RADIOECOLOGY ALLIANCE

SCK•CEN
STUDIECENTRUM VOOR KERNENERGIE
CENTRE D'ETUDE DE L'ENERGIE NUCLEAIRE

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Overview

- The European Radioecology Alliance Association – the "ALLIANCE". Founded in 2009
  - Why an ALLIANCE?
  - Objectives
  - Membership
- Strategic Research Agenda
- Interaction with other associations
- Initiatives
- Conclusions

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RÉPUBLIQUE FRANÇAISE

PREFET DES HAUTS DE SEINE

SOUS PREFECTURE D'ANTONY
Bureau du Cabinet et Police administrative
Associations
99, avenue du Général De Gaulle
92160 ANTONY
Tel: 01 56 45 38 11

Le numéro W921002908
est à rappeler dans toute
correspondance

Récépissé de Déclaration de CREATION

de l'association n° W921002908

Vu la loi du 1er Juillet 1901 relative au contrat d' association ;
Vu le décret du 16 Août 1901 portant règlement d'administration publique pour l'exécution de la loi précitée ;

LE SOUS-PRÉFET D'ANTONY

donne récépissé à **Monsieur le Trésorier**
d'une déclaration en date du : **20 septembre 2012**
faisant connaître la constitution d'une association ayant pour titre :

ASSOCIATION ALLIANCE EUROPEENNE EN RADIOECOLOGIE

dont le siège social est situé : 31 avenue de La Division Leclerc
BP 17
92262 Fontenay-aux-Roses

Décision prise le : **06 juillet 2012**

Pièces fournies : Statuts
Procès-verbal
liste des dirigeants

Antony, le 21 septembre 2012

Le Sous-Préfet d'Antony
Pour le Sous-Préfet et par délégation,
Le Chef de Bureau,

Anne-Marie CAMUS

Loi du 1 juillet 1901, article 5 - al 5,6 et 7 - Décret du 16 août 1901, article 3 :
Les associations sont tenues de faire connaître, dans les trois mois, tous les changements survenus dans leur administration ou leur direction, ainsi que toutes les modifications apportées à leurs statuts.
Ces modifications et changements ne sont opposables aux tiers qu'à partir du jour où ils auront été déclarés.
Les modifications et changements seront, en outre, consignés sur un registre spécial qui devra être présenté aux autorités administratives ou judiciaires chaque fois qu'elles en feront la demande.
Loi du 1 juillet 1901, article 8 - al 1 :
Seront punis d'une amende de 1500 € en première infraction, et, en cas de récidive, ceux qui auront contrevenu aux dispositions de l'article 5.
NOTA :
L'insertion au Journal Officiel des modifications portant sur le titre, l'objet, le siège social d'une association est facultative. Elle ne peut être exigée des tiers car le récépissé délivré par les services préfectoraux fait foi dans tous les cas.

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Objectives of the Alliance

- Coordinate and promote research in Radioecology
- Act as a Research Platform:
  - Definition of Priorities
  - Definition of Research Programmes and Resources
  - Assessment of the results obtained
  - Promotion and Communication
- Make its information public
- Act as partner in future EU funding mechanisms: Horizon 2020

European Commission

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How is the ALLIANCE organised?

- **Board of Directors**

  Consists of a minimum of eight members appointed by the General Assembly, including at least fifty percent of members drawn from the Founding Members

- **Bureau** (Chosen by the Board of directors; elected for 3 years)
  - a president;
  - a vice president;
  - a secretary
  - a treasurer

- **General Assemblies** (on an annual basis)

  One representative of each legal entity Member (one vote)

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The Alliance Bureau

Frank Hardeman
President
SCK·CEN (Belgium)

Per Strand
Vice-President
NRPA (Norway)

Almudena Real
Secretary
CIEMAT (Spain)

Jean-Christophe Gariel
Treasurer
IRSN (France)

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Eight Founding Members of the Alliance

- Bundesamt für Strahlenschutz (**BfS**), GERMANY – Martin Steiner
- Centro de Investigaciones Energéticas Medioambientales y Tecnológicas (**CIEMAT**), SPAIN – Almudena Real, Jose Gutierrez
- Institut De Radioprotection Et De Surete Nucleaire (**IRSN**), FRANCE – Jean-Christophe Gariel, Jacqueline Garnier-Laplace
- Natural Environment Research Council (**NERC**), UNITED KINGDOM – Brenda Howard, Nick Beresford
- Säteilyturvakeskus (**STUK**), FINLAND – Sisko Salomaa, Tarja Ikaheimonen
- Statens strålevern (**NRPA**), NORWAY – Per Strand, Ingar Amundsen
- Stralsakerhetsmyndigheten (**SSM**), SWEDEN – Eva Simic, Lars Gedda
- Studiecentrum voor Kernenergie; Centre d'Étude de l'énergie Nucléaire (**SCK·CEN**), BELGIUM – Frank Hardeman, Hildegarde Vandenhove

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Ten Subscribing Members of the Alliance (1/2)

- Commissariat à l'Energie Nucléaire et aux énergies alternatives (**CEA**), FRANCE – Laure Sabatier, Catherine Berthomieu
- Helmholtz-Zentrum München (**HMGU**), GERMANY – Jochen Tschiersch, Jan Christian Kaiser
- Helmholtz-Zentrum Dresden-Rossendorf (**HZDR**), GERMANY – Susanne Sachs, Vinzenz Brendler, Gerhard Geipel
- National Nuclear Centre of the Republic of Kazakhstan (**NNCRK**), KAZAKHSTAN – Sergey Lukashenko, Zhanat Baigazinov
- Radiological Protection Institute of Ireland (**RPII**), IRELAND– Lorraine Currivan, Kevin Kelleher
- University of Portsmouth (**UoP**), UNITED KINGDOM – James Smith

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Subscribing Members of the Alliance (2/2)

- Główny Instytut Górnictwa (**GIG**), POLAND – Bugoslaw Michalik
- Instituto Superior Técnico (**IST**), PORTUGAL – Maria José Madruga, Pedro Vaz
- Centre for Environmental Radioactivity (**CERAD**), Norwegian University of Life Sciences (NMBU), NORWAY – Brit Salbu, Deborah Oughton
- Institute for Medical Research and Occupational Health (**IMROH**), CROATIA, Ivica Prlić

- Application received, decision to be made by Board: National Centre for Scientific Research Demokritos (**NCSRD**), GREECE, Heleni Florou

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Our Members

Bundesamt für Strahlenschutz

DE LA RECHERCHE À L'INDUSTRIE
cea

Ciemat
Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas

HelmholtzZentrum münchen
Deutsches Forschungszentrum für Gesundheit und Umwelt

GIG

IRSN

HZDR
HELMHOLTZ ZENTRUM DRESDEN ROSSENDORF

NATURAL ENVIRONMENT RESEARCH COUNCIL

Radiological Protection Institute of Ireland
An Institiúid Éireannach um Chosaint Raideolaíoch

NTI
BUILDING A SAFER WORLD

SCK·CEN
STUDIECENTRUM VOOR KERNENERGIE
CENTRE D'ETUDE DE L'ENERGIE NUCLEAIRE

Strål säkerhets myndigheten
Swedish Radiation Safety Authority

Statens strålevern
Norwegian Radiation Protection Authority

STUK

University of Portsmouth

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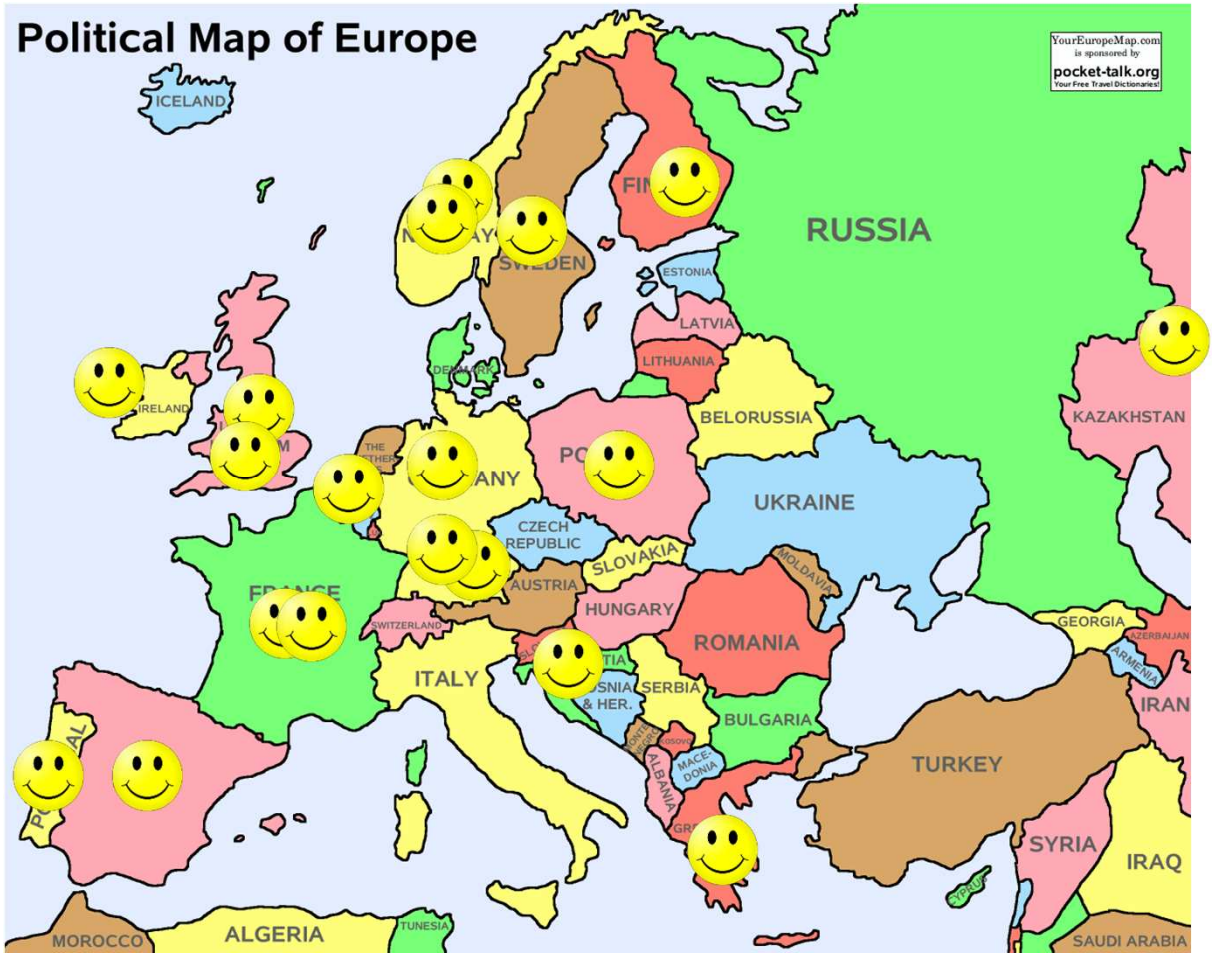
On the Map



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How to Join the Alliance?

- The Alliance warmly welcomes new members
  - Priority for European organisations active in domain of radioecology
  - But open to interested parties from other countries
- More information (statutes, application letter, latest news):
  - www.er-alliance.org
  - Application to: application@er-alliance.org
- Decision: via General Assembly of the Alliance
- Modest Membership fee: 1.000 €/annum (2014)

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A Major Tool: the Strategic Research Agenda (SRA)

- Within the objectives of the Alliance:
  - Develop a long term vision on the needs and implementation of Radioecology (decades)
  - Sustainable after FP7 projects
- Adequate processes for defining long term needs and short term priorities are vital
- An adequate **SRA is an important tool**
  - Not: as extensive as possible
  - Better: as relevant as possible
    - Usefulness for science and society
    - Shared by stakeholders and researchers
    - Realistic from an operational and scientific point of view

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The Strategic Research Agenda: a Joint Effort with Radioecology European Projects

- STAR: STrategy for Allied Radioecology
  - www.star-radioecology.org
  - Network of Excellence
  - 2011 – 2015
  - Coordinator: IRSN (Tom Hinton)

- COMET: COordination and iMplementation of a pan European instrumenT for Radioecology
  - www.comet-radioecology.org
  - 2013 – 2017
  - Coordinator: SCK•CEN (Hildegarde Vandenhove)

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3 Challenges for Radioecology

1. Predict human and wildlife exposure in a robust way by quantifying key processes that influence radionuclide transfers and exposure
2. Determine ecological consequences under realistic exposure conditions
3. Improve human and environmental protection by integrating radioecology

→ For more details on SRA → see Tom Hinton

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ALLIANCE workshop

- Presentation of members' activities
- Definition of common research interests linked with SRA
  - Marine modelling
  - Forest modelling
  - Human food chain modelling
  - NORM modelling
  - Particle behaviour
  - ICRP reference sites
  - Contribution of epigenome to transgenerational effects
  - Biomarkers of exposure and effects
  - Watershed modelling
  - Mechanistic studies of RN transfer

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Strategic Vision for Challenge 1

Predict human and wildlife exposure in a robust way by quantifying key processes that influence radionuclide transfers and exposure

Our strategic vision is that over the next 20 years radioecology will have achieved a thorough mechanistic conceptualisation of radionuclide transfer processes within major ecosystems (terrestrial, aquatic, urban), and be able to accurately predict exposure to humans and wildlife by incorporating a more profound understanding of environmental processes.

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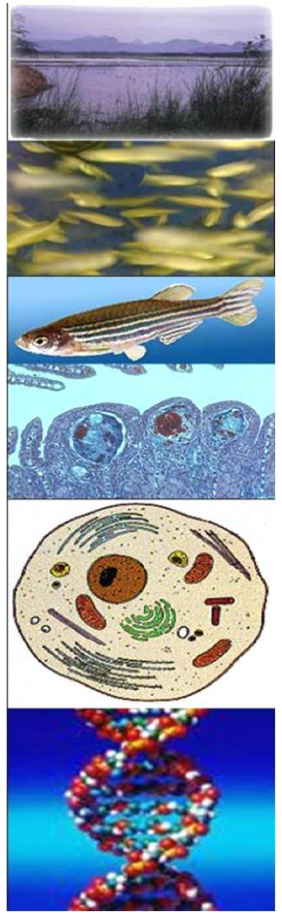
Strategic Vision for Challenge 2

Determine ecological consequences under realistic exposure conditions

Our strategic vision is that over the next 20 years radioecology will have gained a thorough mechanistic understanding of the processes inducing radiation effects at different levels of biological organisation, including the consequences on ecosystem integrity, and be able to accurately predict effects under realistic conditions.



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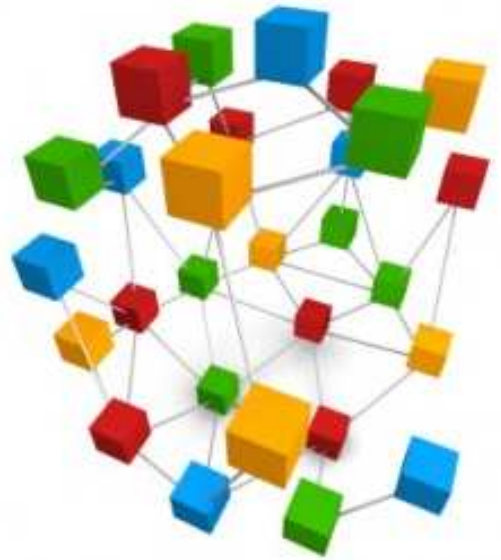
Strategic Vision for Challenge 3

Improve human and environmental protection by integrating radioecology

Our strategic vision is that over the next 20 years radioecology will develop the scientific foundation for the holistic integration of human and environmental protection, as well as their associated management systems.



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Research Lines for Challenge 1

Predict human and wildlife exposure in a robust way by quantifying key processes that influence radionuclide transfers and exposure

1. Identify and mathematically represent key processes that make significant contributions to the environmental transfers of radionuclides and resultant exposures of humans and wildlife.

2. Acquire the data necessary for parameterisation of the key processes controlling the transfer of radionuclides.

3. Develop transfer and exposure models that incorporate physical, chemical and biological interactions, and enable predictions to be made spatially and temporally.

4. Represent radionuclide transfer and exposure at a landscape or global environmental level with an indication of the associated uncertainty.

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Research Lines for Challenge 2

Determine ecological consequences under realistic exposure conditions

1. Establish processes link radiation induced effects in wildlife from molecular to individual levels of biological complexity.
2. Determine what causes intraspecies and interspecies differences in radiosensitivity (*i.e.* among cell types, tissues, life stages, among contrasted life histories, influence of ecological characteristics including habitats, behaviour, feeding regime…).
3. Understand the interactions between ionising radiation effects and other co-stressors.
4. Identify the mechanisms underlying multigenerational responses to long-term ecologically relevant exposures: maternal effects, hereditary effects, adaptive responses, genomic instability, and epigenetic changes/transformations/processes.
5. Understand how radiation effects combine in a broader ecological context at higher levels of biological organisation (population dynamics, trophic interactions, indirect effects at the community level, and consequences for ecosystem functioning).

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Research Lines for Challenge 3

Improve human and environmental protection by integrating radioecology

1. Integrate uncertainty and variability from transfer modelling, exposure assessment, and effects characterisation into risk characterisation.
2. Integrate human and environmental protection frameworks.
3. Integrate the risk assessment frameworks for ionising radiation and chemicals.
4. Provide a multi-criteria perspective in support of optimised decision making.
5. Integrate ecosystem approaches, such as ecosystem services and ecological economics, within radioecology.
6. Integrate decision support systems.

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Interaction with Others?

- The Radioecology Alliance is only one of the European platforms in the domain of radiation protection
- Active cooperation with:
  - NERIS (Emergency preparedness and recovery) www.eu-neris.net
  - MELODI (Low dose research) www.melodi-online.eu
  - EURADOS (Person's dosimetry) www.eurados.org
  - EUTERP (Education and training in Radiation Protection) www.euterp.eu

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Memorandum of Understanding with MELODI, NERIS and EURADOS

Signature of the MoU between the ALLIANCE, MELODI, NERIS and EURADOS in presence of the European Commission
Brussels, 5 December 2013

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Memorandum of Understanding with MELODI, NERIS and EURADOS

Signature of the MoU between ALLIANCE, MELODI, NERIS and EURADOS (Brussels, 5 December 2013)

From left to right: Frank Hardeman (ALLIANCE); Thierry Schneider (NERIS), Jacques Repussard (MELODI), Filip Vanhavere (EURADOS)

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MoU with 4 Pillar Associations in Radiation Protection Research

- …. Decide to cooperate … in order to promote the integration and efficiency of European research and scientific education and training in the field of radiation protection.
- Elaboration of a joint radiation protection research roadmap committee and various joint working groups.
- Responsibility for administration of open calls within FP7.
- Mutual observers during General Assembly meetings of the four associations.
- Openness to other associations with similar interests.

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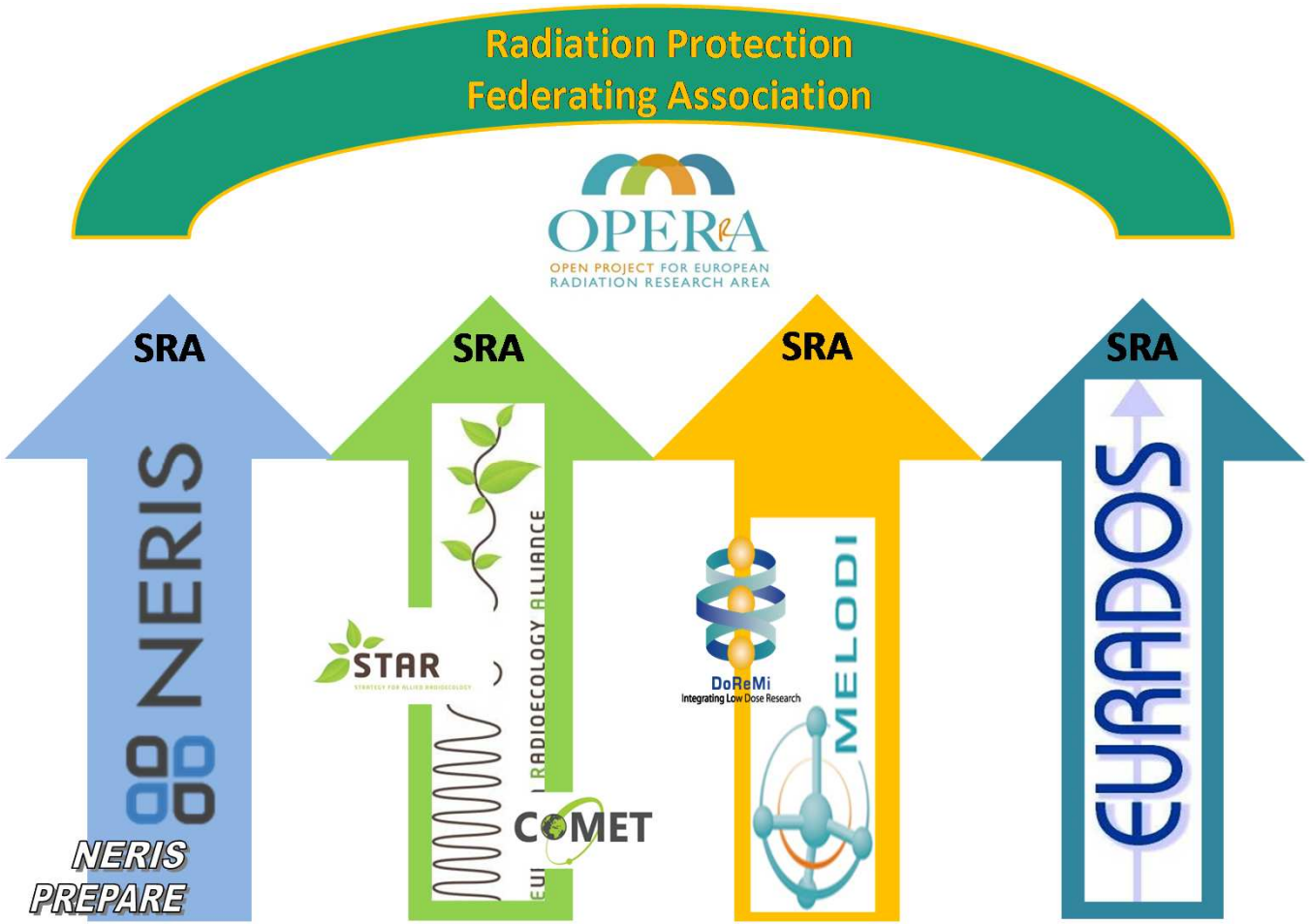
An Overall Picture for Preparing the Future



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Memorandum of Understanding with IUR

- The IUR and the Alliance have agreed to cooperate
  - to promote a common strategy and the implementation plans for research,
  - to conduct joint activities,
  - to promote and conduct sound research in all aspects of environmental radioactivity and radioecology,
  - to promote exchange of information,
  - to author joint publications and presentations in the domains of activity they share.
- The cooperation as such includes radiation ecology and biology, environmental monitoring, radioecological aspects of (post-) emergency preparedness, ecological risk assessment, ecotoxicology, environmental health physics, tracer studies and microbiology and biotechnology.
- http://www.iur-uir.org/en/

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Conclusions

- The **European Radioecology Alliance** has been created to develop a vision on research needs for a longer term in radioecology and to foster cooperation.
- The Alliance is open to new members.
- An SRA and associated processes for updating are vital to maintain visibility of radioecology and to get sufficient priority in scientific programming.

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