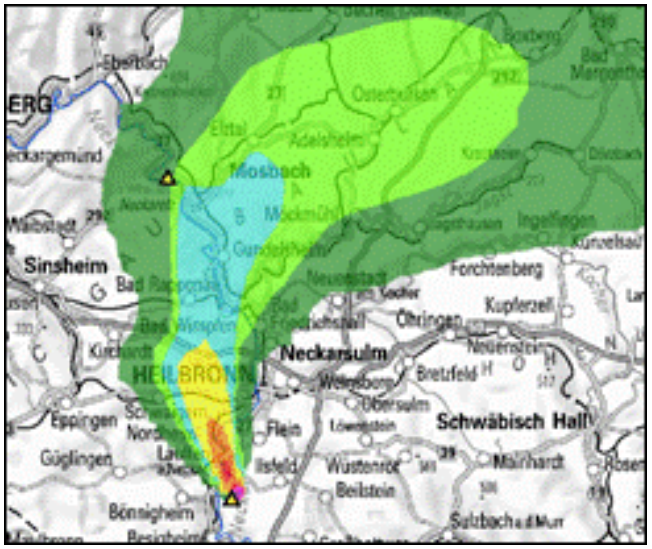
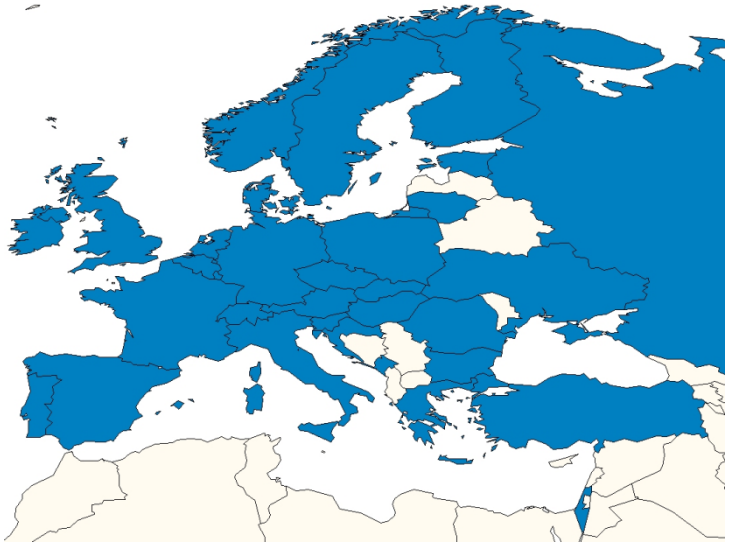
Overview about NERIS-TP and PREPARE





Introduction

- **NERIS-TP**: Towards a self sustaining European Technology Platform (NERIS-TP) on Preparedness for Nuclear and Radiological Emergency Response and RecoveryManagement of the project
  - Running from February 2011 – February 2014 (final workshop in Oslo, January 22 – 24. 2014)
  - 19 organisations
- **PREPARE**: Innovative integrated tools and platforms for radiological emergency preparedness and post-accident response in Europe
  - Running from February 2013 – February 2016
  - 45 organisations

History

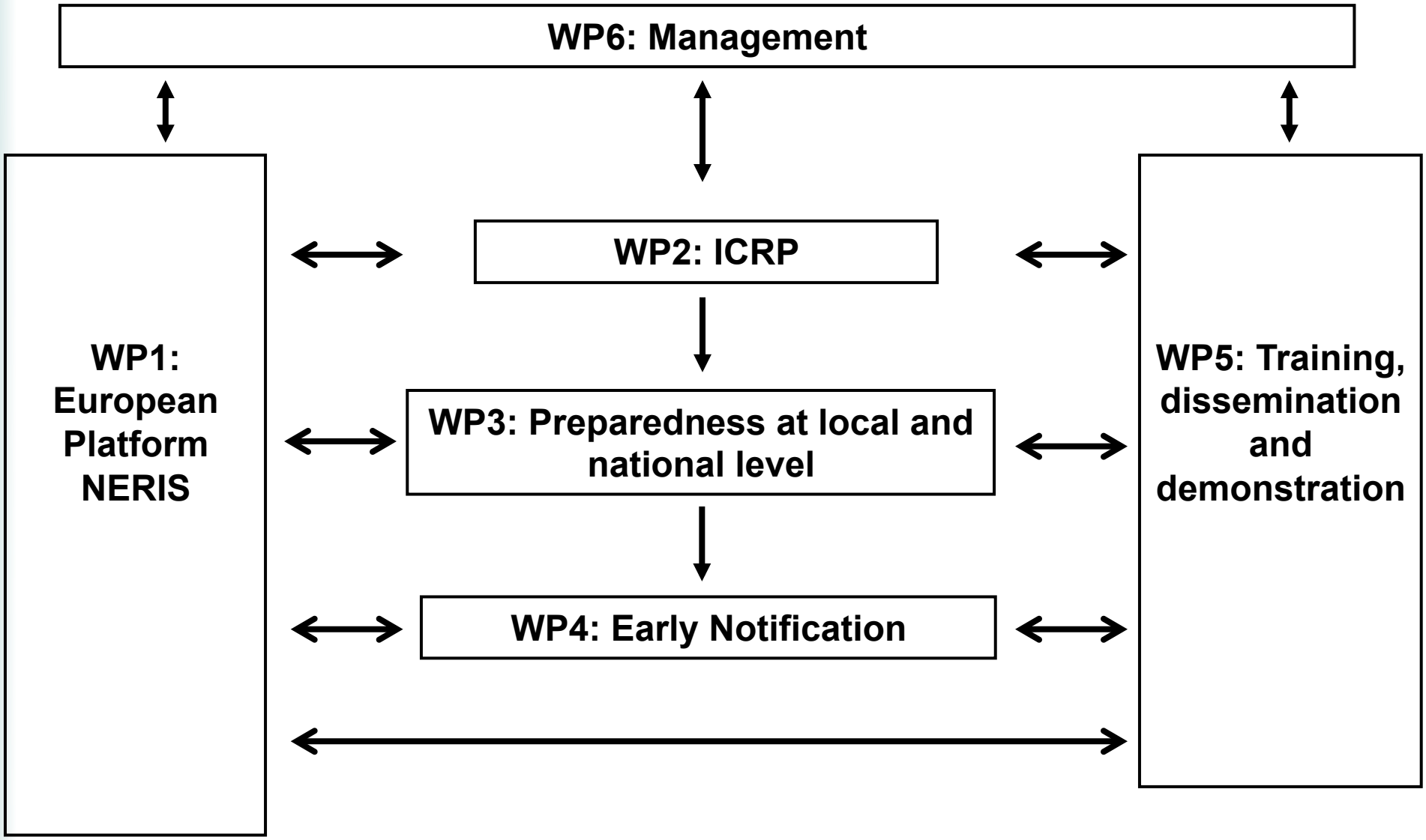
EC Project EURANOS (2004 – 2009)
Improvement of the coherence and effectiveness of nuclear and radiological emergency management including the rehabilitation of contaminated areas

NERIS-Platform
- Keep the momentum from EURANOS
- Improve the effectiveness of current European, national and local approaches
- Promoting more coherent approaches through the establishment of networking activities
- Maintaining and improving know-how and technical expertise among all interested stakeholders
- Identifying needs for further developments and addressing new and emerging challenges

EC Project NERIS-TP (2011-2014)
- Close gaps from EURANOS
- Promote the NERIS Platform

EC Project PREPARE (2013-2016)
- Close gaps based on Fukushima experience

Work package dependencies

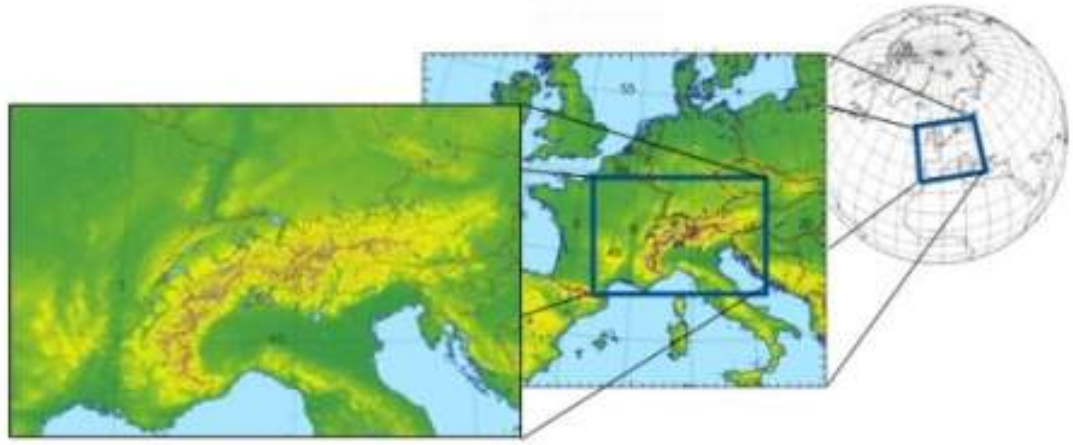


Results (ICRP)

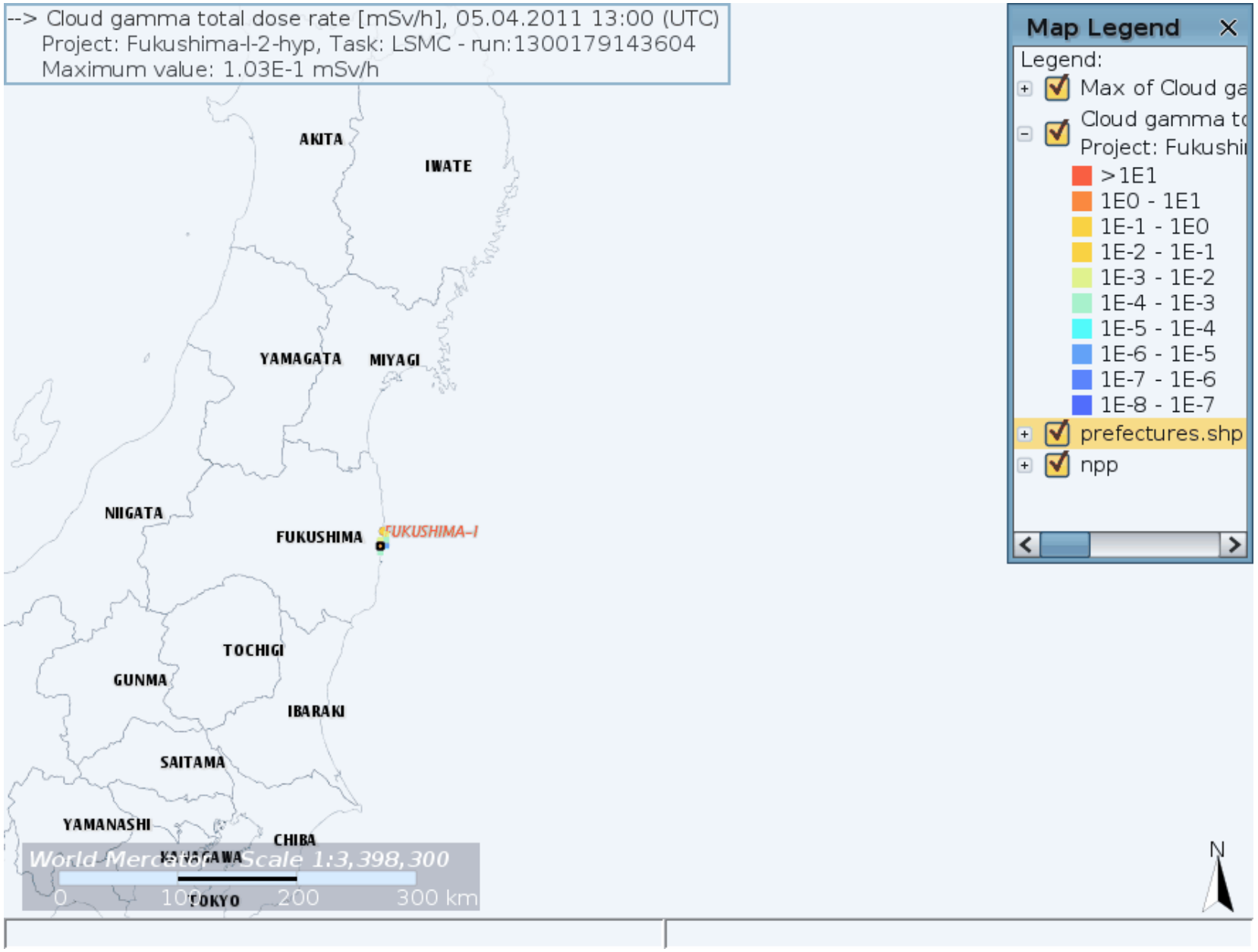
- So far all recommendations on countermeasures are based on a limited set of exposure pathways and comprise single measures such as sheltering, evacuation and intake of iodine tablets
- ICRP 103 proposes to use all exposure pathways and define combined countermeasure strategies – a priori, based on a reference level valid for one year
- This recommendations will become European law
- Within NERIS-TP we have developed a screening model allowing to define countermeasure strategies by considering all exposure pathways in one simulation step

Results (early notification systems)

- European (ECURIE) and International (USIE of IAEA) early notification systems provide information about nuclear incidents
  - Reporting of timing and source term
  - Consequences missing
- Coupling the information automatically to a DSS, consequences can be estimated (USIE was used)
- To this purpose we had to develop a system that allows the preparation of meteorological input at any location world wide based on freely available meteorological data



Calculations for Fukushima



PREPARE General

PREPARE: Innovative integrated tools and platforms for radiological emergency preparedness and post-accident response in Europe

Research project under the European Commission's 7th Framework Programme, EURATOM for Nuclear Research and Training Activities (work programme 2012), Fission-2012-3.3.1, Grand Agreement Number 323287

Started February 1., 2013 and will last 3 years

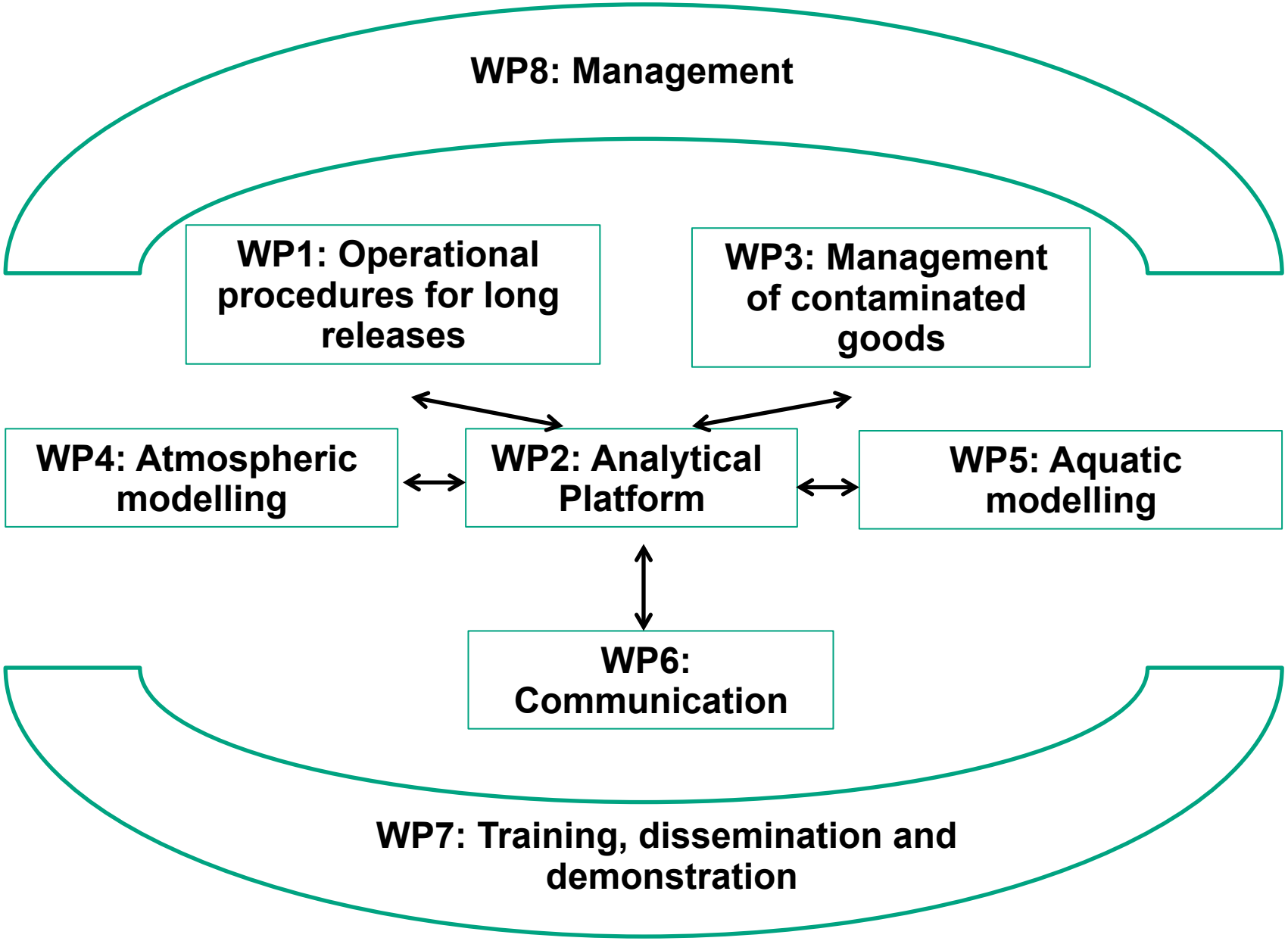
45 partners

6 research work packages

1 work package on training and dissemination

1 work package on management

PREPARE work packages



Objectives

- This project aims to close gaps that have been identified in nuclear and radiological preparedness following the first evaluation of the Fukushima disaster. Among others, the project will address the review of existing operational procedures for dealing with long lasting releases, cross border problems in monitoring and food safety and further develop missing functionalities in decision support systems ranging from improved source term estimation and dispersion modelling to the inclusion of hydrological pathways for European water bodies. In addition, as the management of the Fukushima event in Europe was far from optimal, a so called Analytical Platform will be developed exploring the scientific and operational means to improve information collection, information exchange and the evaluation of such types of disasters.

Work packages

- **Operational procedures for long lasting releases**: Following the Fukushima Daiichi accident a review of existing procedures for long lasting releases and identification of possible needs for improvements by performing scenario calculations will be performed on a European level. (**WP1**)
- **Platform for information collection and exchange**: The objective of this activity is to develop scientific methods and tools that could be used by a European Platform (i.e. focal point) for the collection of and analysis of information from any nuclear or radiological event, particularly regarding the consequences and any further developments. The intention is to set up such a Platform on a scientific level and discuss within the three years of the project whether such a platform should be formalised either as part of the NERIS Platform or as a tool of the European Commission. (**WP2**)

Work packages

- Following the Fukushima accident it became obvious, that the recommendations or requirements already existing worldwide on **contaminated goods** (IAEA, Codex Alimentarius) and in Europe (Euratom regulations) were apparently too simple (based only on criteria in activity concentration) and not so easy to implement. Improvements should be proposed at least on a European level (**WP3**)
- **Improvement to terrestrial aspects of decision support systems**: Fukushima clearly demonstrated the importance of a source term estimation that is not only based on information from the plant operators. Lessons from Chernobyl showed deficits in the representation of the physico-chemical properties of radionuclides emitted in the atmospheric dispersion models of ARGOS and RODOS (**WP4)**

Work packages

- **Improvement to aquatic aspects of decision support systems**: The aquatic models in decision support systems are far less developed than those for terrestrial ecosystems. This was apparent for the Fukushima accident (ocean). In this respect we intend to integrate state of the art aquatic models into the RODOS DSS and couple them with countermeasure simulation models. (**WP5**)
- **Communication with the public**: The overall objective of the work package is to investigate the conditions and means for relevant, reliable and trustworthy information to be made available to the public at the appropriate time and according to its needs, both during the nuclear emergency as well as in the post-emergency phases. Information needs in this context refer to the understanding (by the members of the public) of the evolution of the accident, its management (and the related potential risks) and the capacity of the population and communities to prevent or mitigate individually and collectively harm arising from the threat. (**WP6**)

Training and exercises

- Basic training of key players in the field of nuclear and radiological emergency and post-accident management by the organization of two basic courses:
  - Training Course on Preparedness and Response for Nuclear and Radiological Emergencies;
  - Training Course on Late Phase Nuclear Accident Preparedness and Management.
- Training related to the use of specific tools developed or updated in this project.

Exercises

- Emergency exercise to evaluate the response during an accident involving an international transport of radioactive material;
- Table-top exercise to evaluate the preparedness for monitoring the extent of a large scale cross-border radioactive contamination in the aftermath of a nuclear accident.

Thank you very much for your attention

Questions?