

Slide 1

**Plans for further development of  
European decision support systems  
(the EURANOS project)**

W. Raskob

EVATECH seminar  
Brussels, Belgium, 20 April 2005

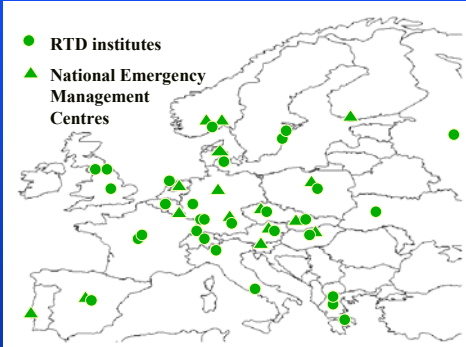
Forschungszentrum Karlsruhe **EURANOS**

Slide 2

**Integrated Project EURANOS**

„European approach to nuclear and radiological  
emergency management and rehabilitation strategies“

● RTD institutes  
▲ National Emergency  
Management  
Centres



**partners:** 33 RTD institutes and 17 national emergency management centres from 23 European countries

**budget:**  
total costs: 14 Mio €  
EC funding: 7 Mio €

**duration:** 5 years

**co-ordination:** FZK

Forschungszentrum Karlsruhe **EURANOS**

\* 1  
26 Jan 2004

Slide 3

**Overall objectives**

**Improvement of the coherence and effectiveness of  
nuclear and radiological emergency management  
including the rehabilitation of contaminated areas**

**through:**

establishment of an effective working platform of emergency management organisations, RTD institutes, end-users and other stakeholders

**for:**

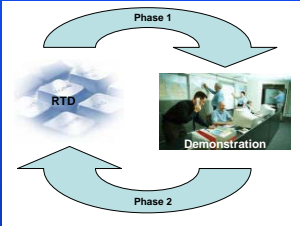
initiating application oriented improvements of methods, procedures, guidelines, and IT tools (e.g. RODOS)

Forschungszentrum Karlsruhe **EURANOS**

Slide 4

**Instruments applied:**

- RTD work programme (15 individual activities)
- Demonstration projects
- Training courses (8 topics)
- Management activities



Forschungszentrum Karlsruhe **EURANOS** 


Slide 5

**Categories of RTD work**

**CAT1:**  
Strategies and guidance on emergency actions and countermeasures

**CAT2:**  
Enhancement of decision support systems for operational application

**CAT3:**  
Strategies and guidance for the sustainable rehabilitation and development of long term contaminated areas

Forschungszentrum Karlsruhe **EURANOS** 

Slide 6

**Main topics CAT1**

- To expand existing information on countermeasures
- To produce handbooks for managing contaminated inhabited areas and food production systems
- To produce a handbook for managing and optimising radiation measurements in an emergency

Forschungszentrum Karlsruhe **EURANOS** 

Slide 7

### Main topics of CAT3

- To **develop a framework**, including guidance on its application, that can inform or assist national authorities in establishing arrangements for the long term management and rehabilitation of extensive areas that may be contaminated as a result of an accident or malevolent act involving radioactive material.
- To **demonstrate** that the proposed arrangements are capable of finding broad acceptance in Europe.
- To **disseminate** the framework widely within the Union and **promote** its use by those who would be responsible for the long term management and rehabilitation of potentially contaminated areas.

Forschungszentrum Karlsruhe **EURANOS**

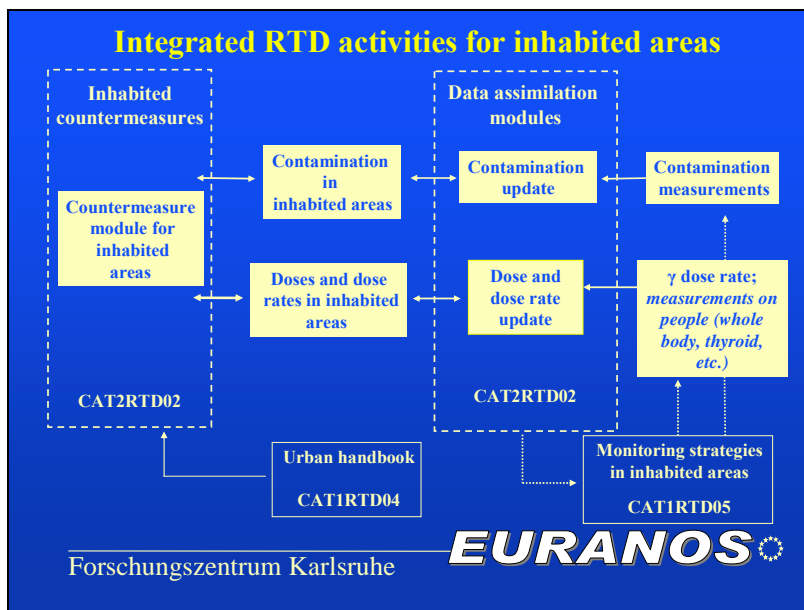
Slide 8

### Main topics of CAT2

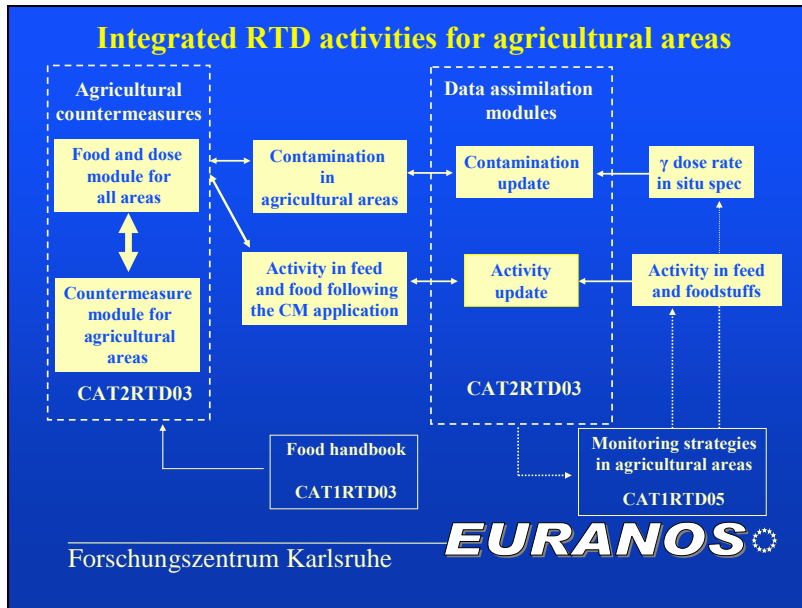
- Estimation of management of the radiological situation and countermeasures in inhabited areas
- Estimation of management of the radiological situation and countermeasures in agricultural areas
- Enhancement of decision support systems, in particular the RODOS system

Forschungszentrum Karlsruhe **EURANOS**

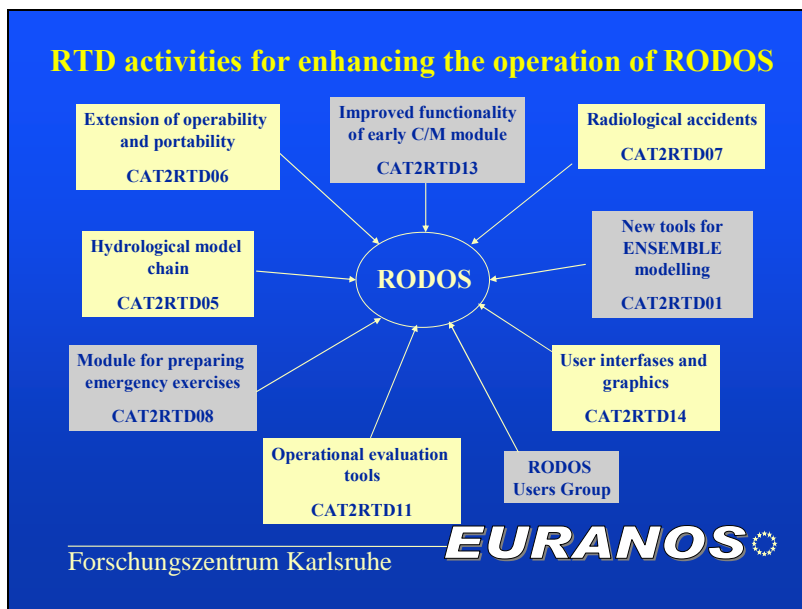
Slide 9



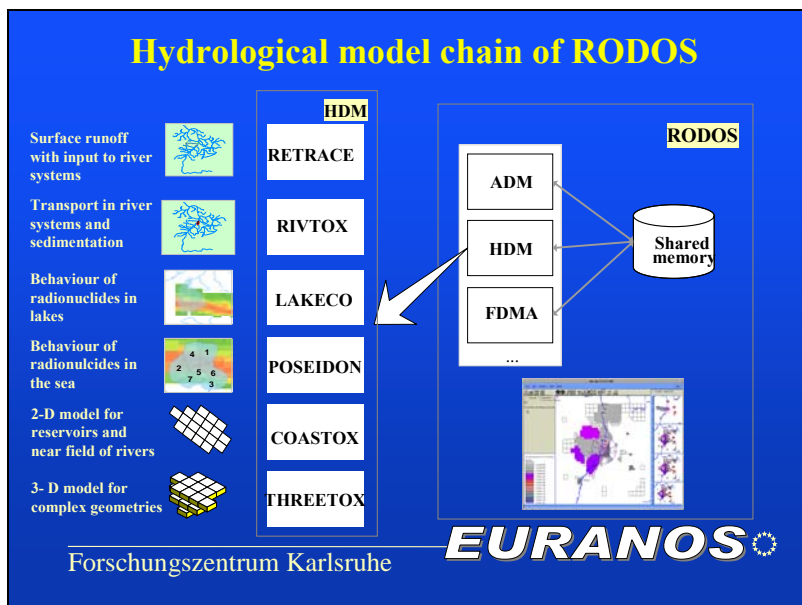
Slide 10



Slide 11



Slide 12



Slide 13

### Completion of the hydrological model chain incl. Interfaces to national hydrological institutes

- **Work in Phase 1**
  - Development of a new version of the coastal model POSEIDON-R which includes a dynamic foodchain model
  - Interfacing with national hydrological models (design)
  - Improvement of the operability of the hydrological model chain of RODOS (numeric scheme, customisation tools, interfaces)
- **Work in Phase 2**
  - Interfacing with national hydrological models (realisation)
  - Improvement of the operability of the hydrological model chain of RODOS (numeric scheme, customisation tools, interfaces)

Forschungszentrum Karlsruhe

**EURANOS** 

Slide 14

### Extension of the portability and operability of the RODOS system

- **Migration of RODOS from UNIX to Linux operating system**
  - Wider applicability
  - Reduced hardware costs
- **Improve the stability of the system in the Automatic mode operation and with incomplete data**
- **Improvement of the long range dispersion model MATCH**
  - Coupling to the source term data base
  - Effective use of all available information in the weather forecast data

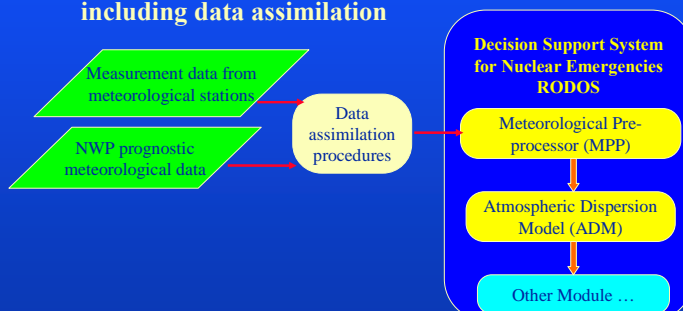
Forschungszentrum Karlsruhe

**EURANOS** 

Slide 15

### Extension of the portability and operability of the RODOS system (2)

- **Improvement of the wind field modelling in RODOS including data assimilation**



Forschungszentrum Karlsruhe

**EURANOS** 

Slide 16

### Enhancement of RODOS for radiological emergencies

- Emergencies considered: terrorist attacks, dirty bombs, transport accidents, satellite crashes
  - Not considered are waste problems
- Identification of relevant nuclides (will be added to the RODOS data base)
- Further work
  - Improve ADM by a model describing the initial blast
  - Extend source term functionalities
- No decisive evidence, that a special ADM for inhabited areas is necessary

Forschungszentrum Karlsruhe **EURANOS**

Slide 17

### Further enhancement of evaluation tools in decision support systems for operational applicability

- Implementation of a generic explanation module into Web-Hipre including background information
- Defining a limited decision tree
- Development of a concept for:
  - Uncertainties
  - Sequential decision making
- In Phase 2, the selected concept will be realised

Forschungszentrum Karlsruhe **EURANOS**


Slide 18

Forschungszentrum Karlsruhe **EURANOS**

Slide 19

**User driven development of the RODOS user interface and graphics system**

- Development of a new graphical user interface (more user friendly)
- Development of a new graphical presentation software

Forschungszentrum Karlsruhe **EURANOS** 

Slide 20

**Demonstration activities**

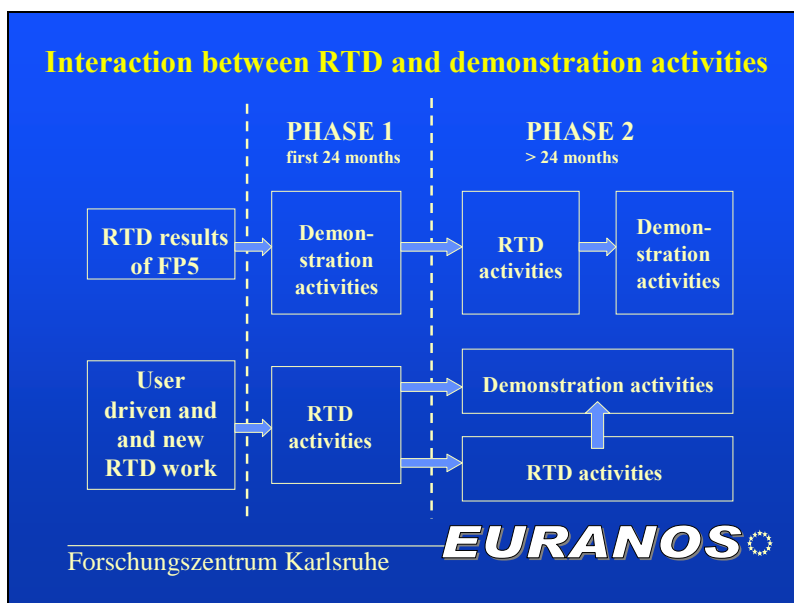
**Overall objective:**  
 Demonstrate the functionality and/or practicability of specific tools or methods, if possible in the actual operational environment

**that means:**

- Integration of DSS and other methodological and technical developments in national emergency management arrangements
- Their operational use in test, education, training and exercises
- Evaluation and documentation of the experience gained and communication of results to the RTD community
- Promotion of tools proven to be of benefit for emergency management

Forschungszentrum Karlsruhe **EURANOS** 

Slide 21



Slide 22

**EURANOS Web Site**  
<http://www.euranos.fzk.de>

**Public Section with News:**

EURANOS project

- Objectives
- Consortium
- RTD activities
- Demonstration activities
- Training activities
- Management
- Publications
- Products

Contact

Links

---

Forschungszentrum Karlsruhe **EURANOS** 