

# NoE ACTINET

A view from a European research project

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# Content

- Some general remarks
- FP6 (soon the past)
- FP7 (the future)
- Key conclusions



# General

From the viewpoint of operating EC (and other) projects:

The potential benefits from a Network are

- A. The **awareness** of, and
- B. **Access** to
  - **Infrastructure**,
  - Advanced **analytical approaches** and **instrumentation**, and
  - **Expertise**,

within a **defined administrative scheme**.

Setting up a new project, there are parts of the activities implemented, either

- With,  
or
- Without,  
an external structure/network offering these possibilities.

An existing Network can mean less effort for achieving a specific outcome and thus can be highly desired

**One key point is the predictability,  
i.e. that we know in time that we can rely on such a structure**



Predictability -> Clarity

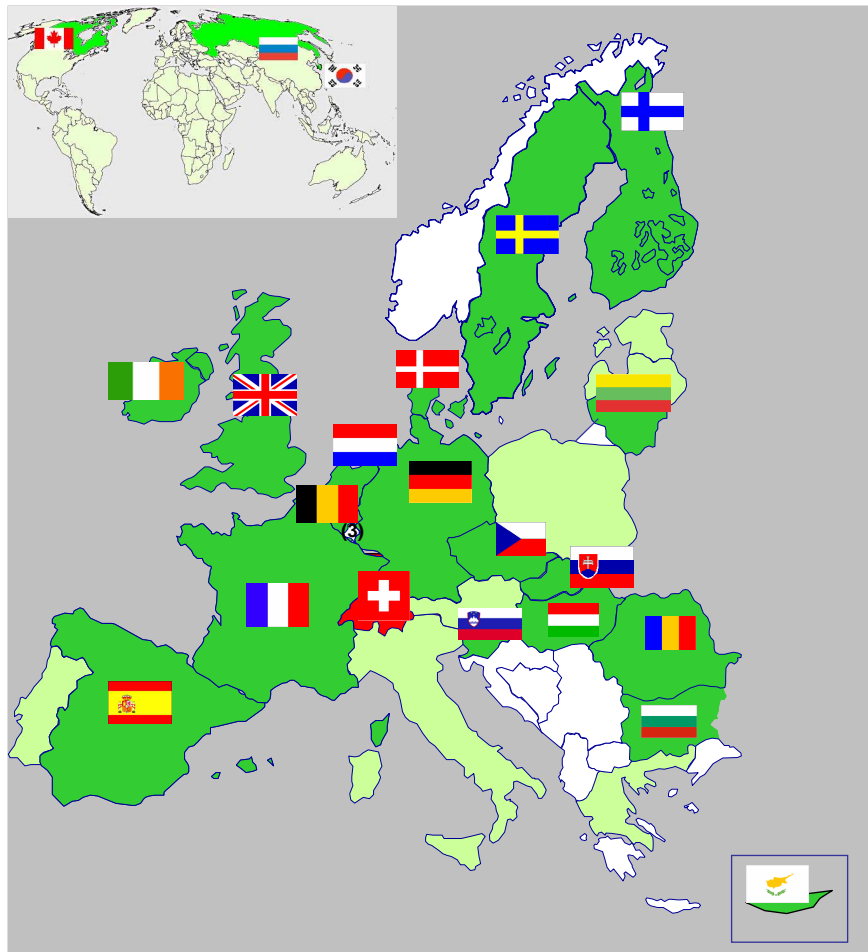
**Be sure that the objectives are clear and clearly communicated**



# IP FUNMIG

INTEGRATED Project: Fundamental Processes of Radionuclide Migration

51 Contractors  
28 Associated Groups  
1.2005 -12.2008



Dissemination of  
Knowledge

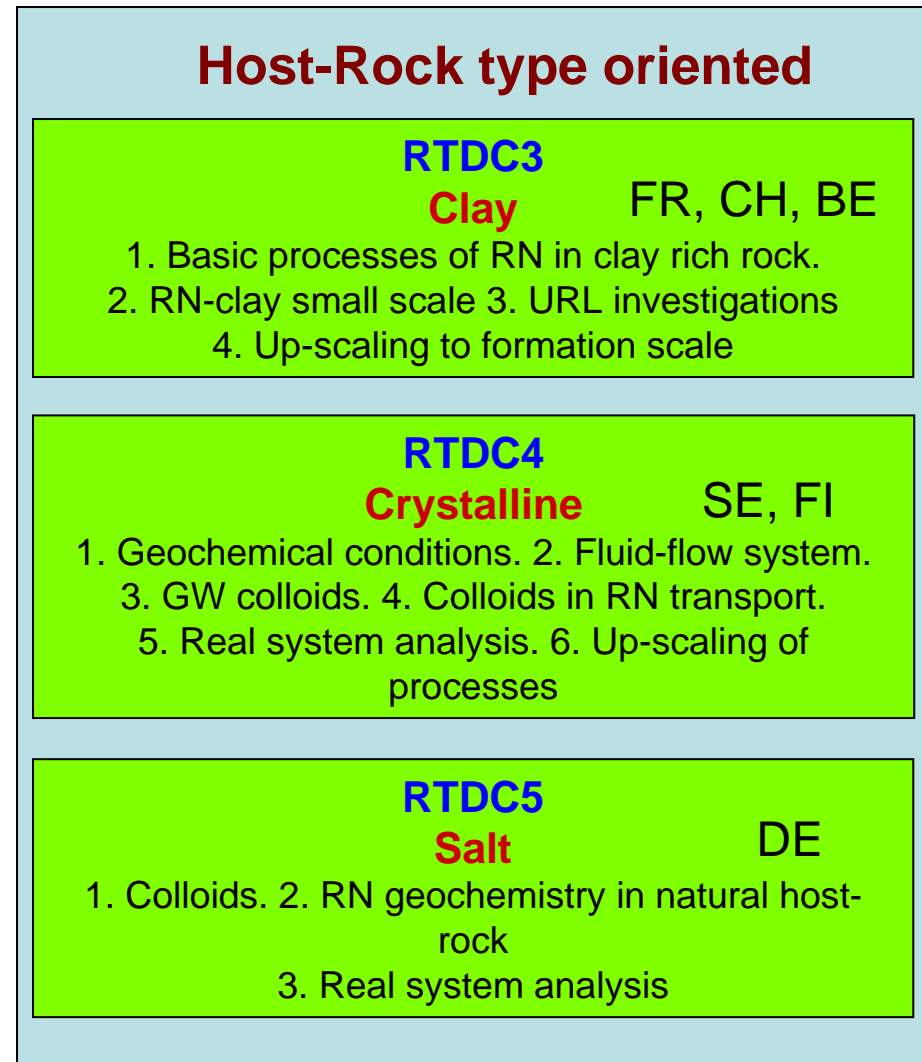
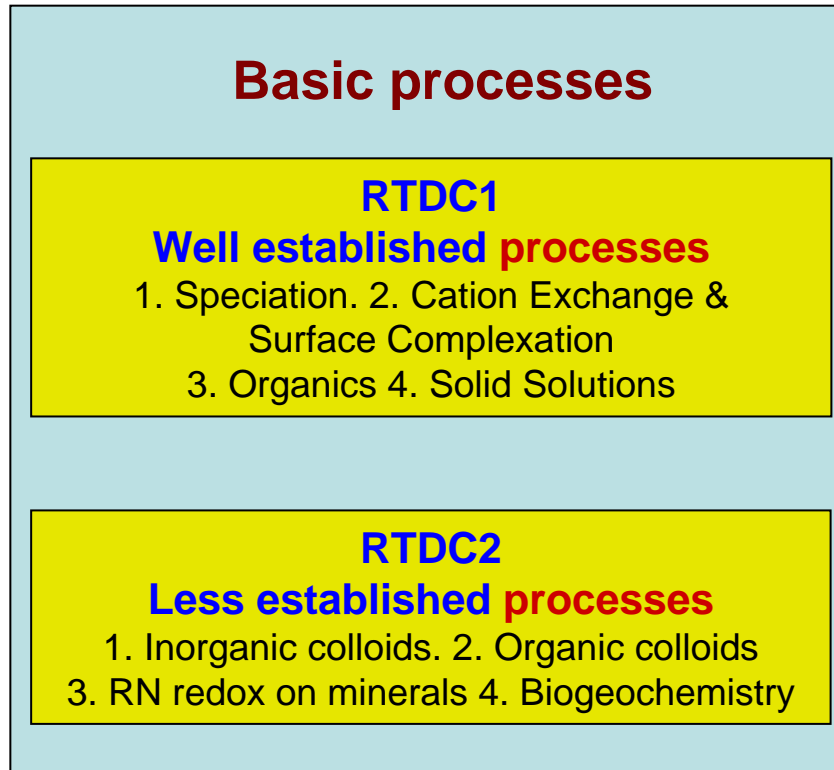


Research and  
Technology  
Development

Training



# Structure of IP FUNMIG



# Structure of IP FUNMIG

## Basic processes

RTDC1

Established processes

Specialized Carbon Exchange & Sulfur Cycle  
3. Organic Solid Solutions

RTDC2

Less established processes

1. Inorganic colloids
2. Organic colloids
3. RN redox on minerals
4. Biogeochemistry

## Host-Rock type oriented

RTDC3

Clay

FR, CH, BE

1. Basic processes of RN in clay rich rock.
2. RN-clay small scale
3. URL investigations
4. Up-scaling to formation scale

RTDC4

1. Chemical conditions. Fluid flow systems
2. Colloids. Colloid RN transport
3. Real system analysis. Up-scaling of processes

RTDC5

Salt

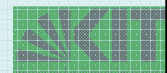
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1. Colloids
2. RN geochemistry in natural host-rock
3. Real system analysis

RTDC6

Integration and abstraction to PA

1. Current treatment of processes in PA
2. Integration of results into PA



**2005**  
(Integration Report)

Training:

- Annual Workshops
- Training courses
- Mobility measures
- .....

<b>Training course organized by the Project</b>
<i>The Fundamentals of Radionuclide Migration, Barcelona, 7 to 10 November 2005</i>

<b>Training course within ACTINET</b>
Training researchers on the “Short Course with Tutorial on Aqueous - Solid Solution Systems Involving Actinides (Thermodynamic and Experimental Aspects)”.

<b>NoE ACTINET mobility measures</b>		
No.	Project number	IP FUNMIG partners participating
1	01-01	CIEMAT, ENVIROS, UPC, FZK-INE, CSIC
2	01-03	UNIMANCH
3	02-03	UNICYPRUS, UPPC, FZK-INE, CEA
4	02-08	NRI-REZ, ITU
5	02-15	Armines, CEA, FZK-INE, UNICYPRUS
6	02-21	UNIMANCH, FZK-INE
7	Proposal	NRI-REZ, FZR
8	ANS-14 (proposal ID ANKA)	KTH, FZK-INE, UNICYPRUS



ACTINET Mobility Activities: Reported Project Year 2006	
No.	ACTINET JOINT PROJECTS
01-01	Actinide interaction with colloids.
01-02	Development of components for spatially resolved speciation studies at the INE-Beamline
01-22	Development of chemical, electrochemical, spectroscopic and mass spectrometric methods for speciation of plutonium ions.
02-08	Synthesis of actinide end-member solids and solid solutions of relevance for geologic storage
02-15	Interaction of Eu(III)/(Cm(III)) with polyacrylic acid: Investigation of properties and comparison with actinide humic substances interaction.
02-24	“ACTINET Sorption Board - Managing Experiments, Models and Data”
02-26	Spectroscopy and Quantum Chemistry applied to Surface Reactions of Actinides on Aluminum Oxy-Hydroxides
04-09	Micro-focusing capability at the INE-Beamline”
05-13	Reduction of actinides by inorganic and organic bound Fe(II).
05-21	Study of the interaction of Cm(III) and Eu(III) on a synthetic montmorillonite, effect of compaction.
Proposal	Use of INE-Beamline at the synchrotron radiation source ANKA to compare results from chemical extraction of reference and natural samples with different U(IV)/U(VI) ratios to those obtained from X-ray based methods of oxidation state determination, XANES and EXAFS (Validation of chemical extraction for separation of U(IV) and U(VI) from solid samples).

No.	ACTINET TRAINING WORKSHOP
02-23	ACTINET Sorption Board



# Role of NoE ACTINET in IP FUNMIG

## Key contributions to:

### Training

- Next generation
- Expertise

### Access to infrastructure

- Controlled areas/Actinides
- Spectroscopy
- Synchrotron radiation facilities
- Other high-end/frontier analytical approaches

### Excellence

- Bringing experts together
- Direct contact to expertise
- Experience a different environment

**A set of training and excellence objectives were achieved that would have been more difficult and resource intense without NoE ACTINET**

**Additional activities through awareness**

**Activities focus on fundamental/basic processes**



## Role of NoE ACTINET in IP FUNMIG

**There are also training objectives beyond the scope of individual external structures/networks,**

**and**

**Key training topics cannot rely on acceptance of external review board.**

**“Internal” and “external” training:**

**Complementary roles**



**FP7?**



# Training in Euratom FP7

Separate training and mobility activities in the form of individual grants are not foreseen:

Training and mobility integral part of CP's



# FP7 CP ReCosy: Collaborative Project: Redox Phenomena Controlling Systems

30 Contractors

Open to Associated Groups

1.2008 -12.2011 (four years)

Training is integral part and requirement

## Training:

- Annual Workshops
- Inter-laboratory comparison exercise
- Targeted training workshops (pending)
- **Training mobility measures**

Implementation? →



# ReCosy

Present project planning does not assume the existence of an adequate Network for structured access to infrastructure and training

Emergence of such a Network is highly desirable

Information on scope, objectives, function, .... as soon as possible

Inform and encourage the project partners as soon as possible



## Scope, objectives and function

How is it related to TP's?

Harmonization of competence level within EU27?

Disposal safety: Restricted to geochemistry of Actinides?

...

**Determines implementation**



# Summary

NoE ACTINET a success for other FP6 Project(s)

Very resource-efficient contribution to a series of objectives

Follow-up structure highly desirable

Clarify and communicate the role, scope, objectives and function as soon as possible

