Steps towards a broader participation of the New Members States in the Euratom research

Main findings

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Content

- Project objectives & approach
- Activities
- Main Achievements
- Conclusions

Why low involvement?

Assumptions:

- ***a lack of good links between the specialists of NMS (New Member States) and OMS (Old Member States)***
- ***fragmentation of national research, not always very well interconnected and competing at national level for very small research funds***
- ***different reactor fleet (CANDU, VVER, RBMK) that focused national research on specific aspects not largely reflected in the Euratom research topics;***
- ***delay in NMS in the use of advanced techniques and information in nuclear research; the accession process reduced these differences but some gaps still persist***

NEWLANCER objectives

to ***identify and implement effective and efficient solutions*** leading to enlarged NMS involvement in future Euratom FPs by:

strengthening and catalyzing national R&D potential in NMS

increasing cohesion between NMS institutions

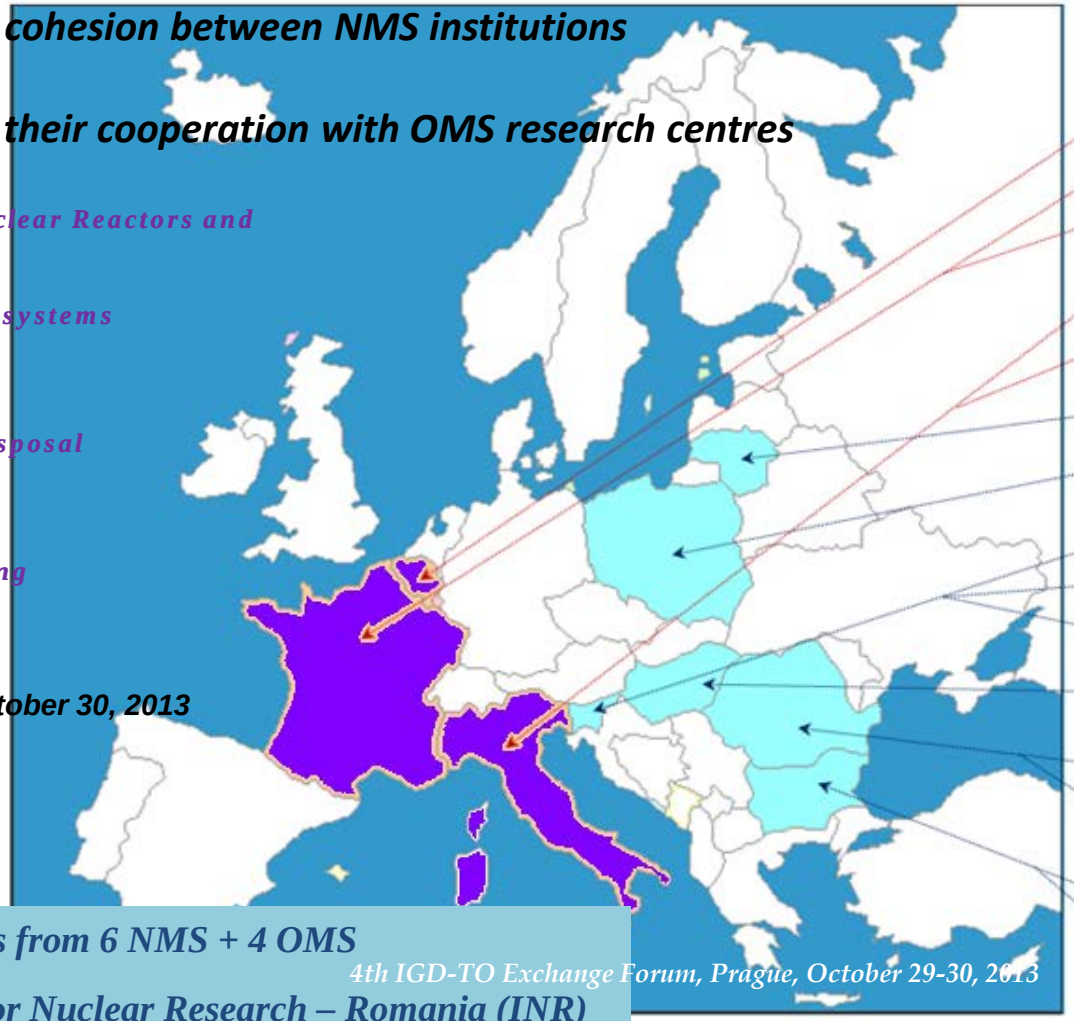
improving their cooperation with OMS research centres

Scope

- *Materials for Fast Nuclear Reactors and ADS*
- *Generation III and IV systems*
- *Nuclear Safety*
- *Radioactive Waste Disposal*
- *Radioprotection*
- *Education and Training*

Coordinated Actions

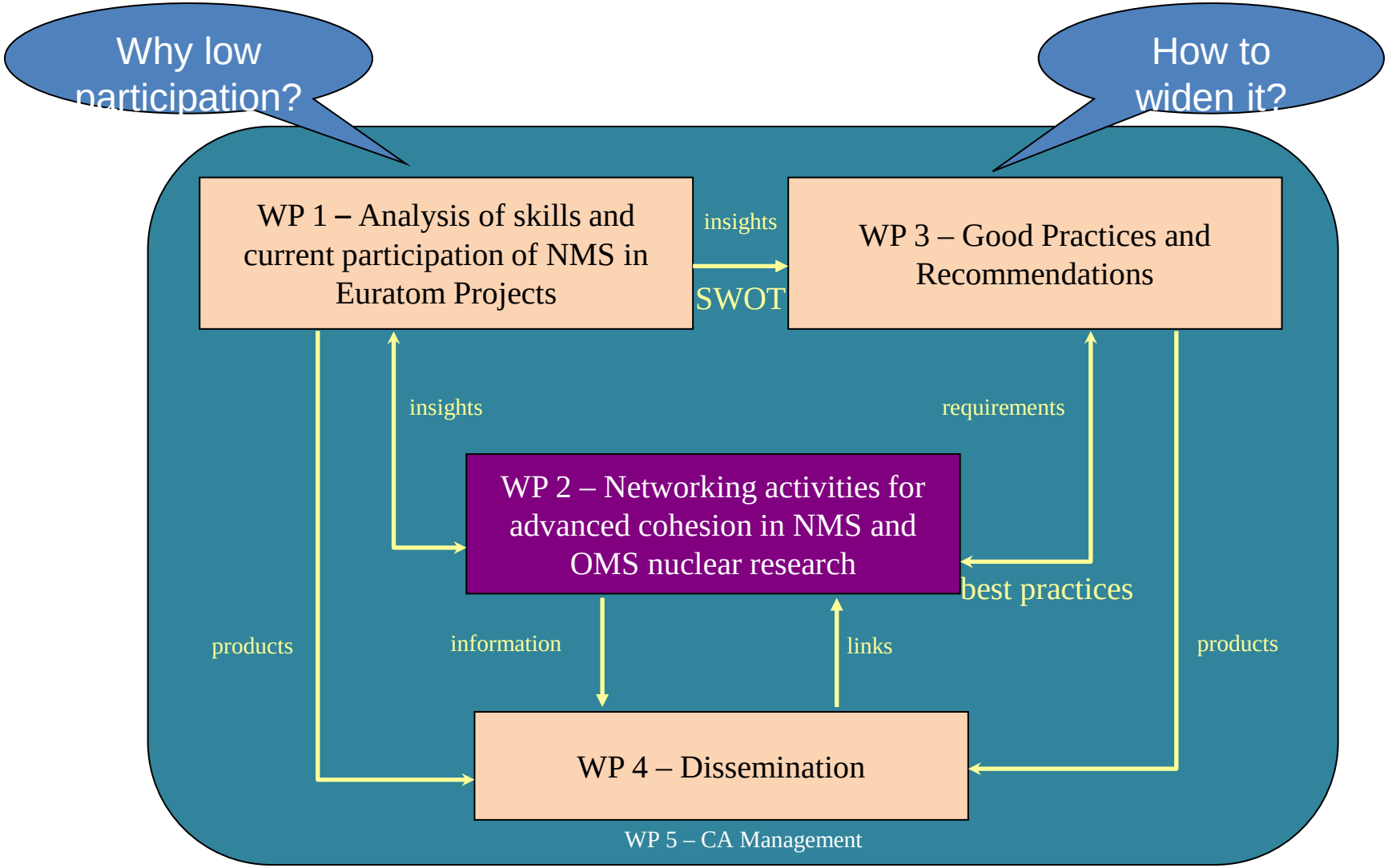
November 1, 2011 – October 30, 2013



Consortium: 17 partners from 6 NMS + 4 OMS

Coordinator: Institute for Nuclear Research – Romania (INR)

Project Approach



Networking Activities

Create connections, built links in order to:

Consolidate national cohesion among institutions

Enhance regional and European collaboration

Improve communication with European structures

19 National Expert Groups (160)

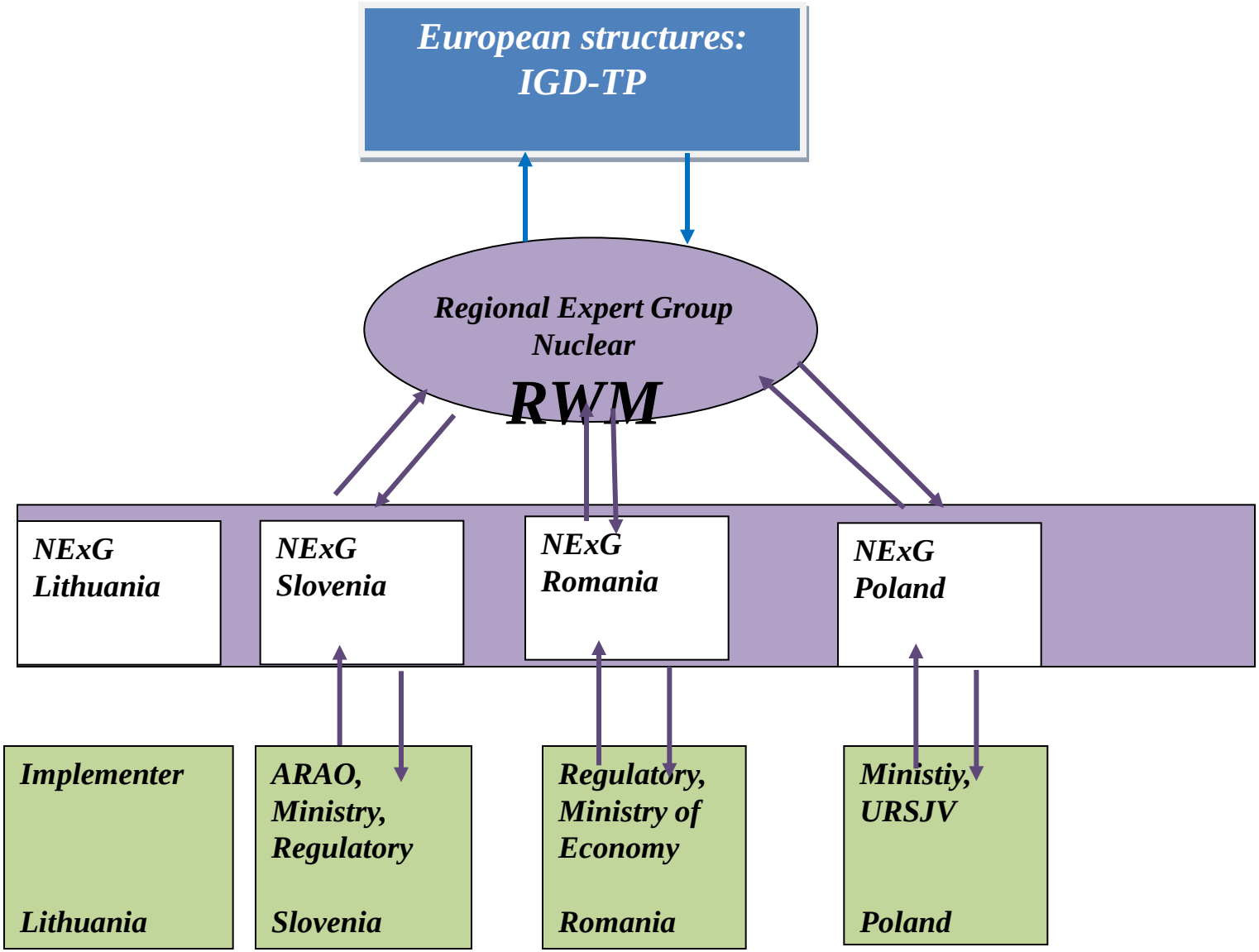
5 Regional Expert Groups
4 Regional Seminars& Technical Visits

Collaboration with TPs Working groups

Scope

- ***Materials for Fast Nuclear Reactors and ADS***
- ***Generation III and IV systems***
- ***Nuclear Safety***
- ***Radioactive Waste Disposal***
- ***Education and Training***
- ***Radioprotection***

NEWLANCER network in Radioprotection



Understanding current participation

Quantitative & Qualitative analysis ***– Input data on Euratom FP6 and 7 from EC***

New and Old MS insights

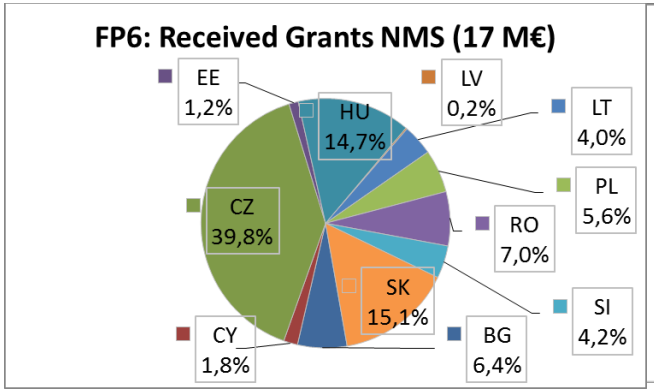
Why low participation?

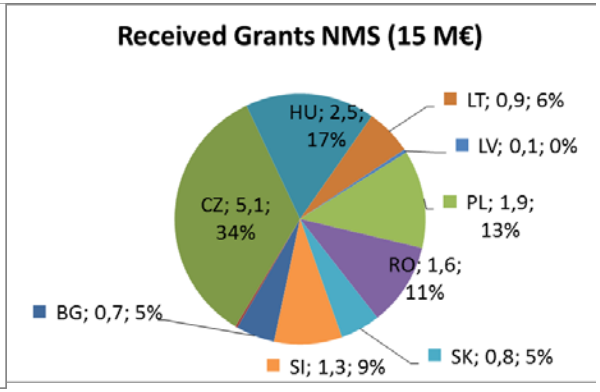
- ***driving forces***
- ***main barriers; where are they: inside or outside organization?***
- ***Existence of interest, support, competence, strategies?***
- ***It participation promoted and supported?***
- ***Is the entire potential used?***
- ***What the margins are?***

– ***Organisation level***

– ***Review of National Nuclear Programmes and National R&D Strategies***

Numerical Correlations



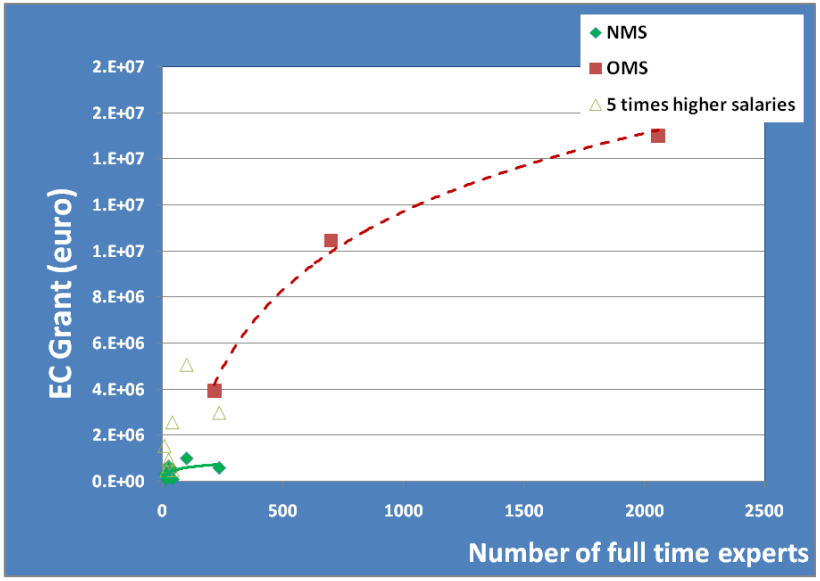


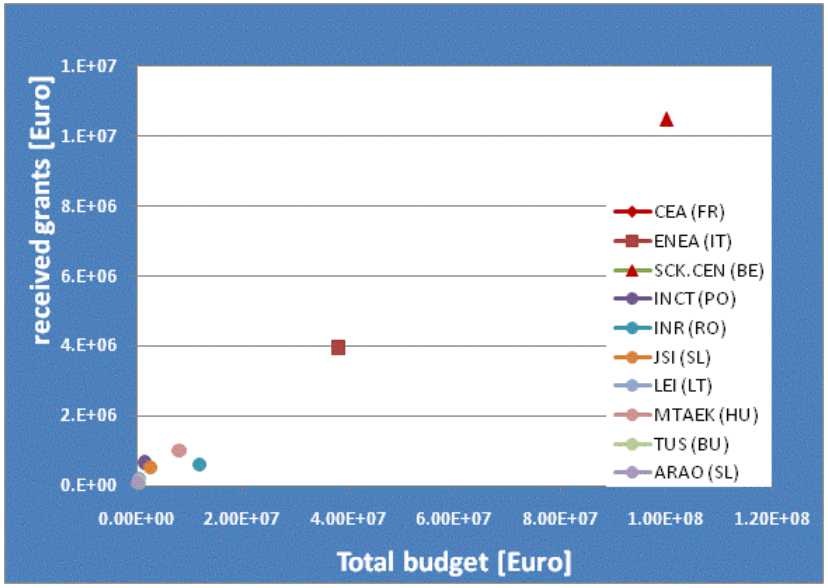
FP6, FP7

NMS received 5%EC grant

Increase trend: Hu, Pl, Ro, Si, Lt

Received EC grant is proportional with:
- number of full experts
- organisation budget





Driving forces

OMS

- *High involvement in European networks and TP platforms*
- *High national coordination of participants in Euratom programs*
- ***Bilateral partnerships established with some key European research organizations***
- ***Nuclear programs strongly supported by national authorities***

NMS

- ***Organisation strategy***
- *Scientific excellence*
- *Personal contacts*
- *Individual determination and persistence*
- ***Visibility***

Main obstacles limiting participation

O&NMS – common reasons

- limited resources
- national strategies
- large efforts needed to prepare a proposal and finding the right set of partners.

NMS - Specific reasons

- ***specific national priorities/competences not connected to the OMS interests***
- ***low coherence in the national strategic progrmmes in R&D and nuclear energy***
- ***small size of research groups***
- ***weak networking -***
  - ***insufficient incentives for domestic and European networking,***

Major concern:

lack of resources may be much more detrimental for the future of the research in the NMS.

Critical success factors: SWOT analysis

1. Improving institutional and national policy making, strategic planning and setting the nuclear research and education among priorities (implementing priorities with resources for training, modernized infrastructure, support…)

2. Improving cooperation between all activity holders in nuclear research and development, including cooperation with universities and postgraduate students

3. Including information on Euratom projects and policy in nuclear study programs

4. Ensuring visibility and presence on the European scene, including academic dissemination, researcher networking, scientific lobbying

Increasing regional collaboration

-regional seminars (Budapest, Sofia, Ljubljana)

- *discuss the regional capabilities vs. opportunities of the research market;*
- *expert group presentations on the state-of-the-art, research works and programmes, directions, needs in each thematic fields*
- *produce working plans for long-term cooperation*

-thematic visits

- *explore NMS current capabilities, both as research infrastructure and as human resources;*
- *Result: INR participation in MACSIMA project*

Targets:

- *identify common aspects and/or complementarities,*
- *establish links with the EU structures and be aware on their visions*
- *discuss how to better exploit existing potential in future common projects*
- *establish ways for a durable cooperation*

Regional collaboration on RWM

Common priority: to solve LIL-SL waste disposal (Ro, Lt, Si, Po)

- monitoring (planning the program), source term modeling (cement behaviour - radionuclide long-term Kd variation)

Complementarities:

- Lt – competences in numerical modeling
- Ro – experiments on radionuclide migration
- Po – conditioning matrices
- Si – public approach

Common concern: ***elaboration of the strategy for SF/HLW and its associated program (Ro, Lt, Bg, Po)***

Common problems:

- ***RAW inventory (Ro, Lt,)***
- ***advanced solutions for treatment and conditioning (Ro, Po, Lt)***
- ***i-graphite (Lt, Ro, Si)***

Common wish: ***regional geological repository***

Strengthening communication at EU level

– *Introducing NEWLANCER in SNETP General Assembly, 2011*

– *NEWLANCER representatives in 3 NUGENIA Working Groups*

- *Participation of Nagy Zoltan in 1st RM, April, 2012, Budapest importance to be part of the IGDTP*
- *Participation of Jacques Delay in the Regional Meeting on RWM, Ljubljana, April 15-17, 2013*
- *Participation of NEWLANCER in IGDTP Working Group on less advanced programs ; input only the needs*

Participation of Dr. A. Dietrich in 1st RM, April, 2012 Budapest

- *information on Radioprotection program, MELODI and DoReMi*
- *Joint workshop with OPPERA - list of contacts from NMS institutes and Universities for dissemination of future calls - NExG members*

Dialogue with TPs revealed:

- low level of knowledge of TPs visions, structure, activities

- low level of participation ***(membership, contribution to documents elaboration, and in decision process)***

delay in the waste disposal programme, ***research objectives shifted to other objectives than geological disposal***

Small communication with NMS specialists and organisations – ***NEWLANCER a future interface for dissemination***

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NMS main priorities

- *Monitoring programs for near surface and geological repositories*
- *Waste behavior in repository conditions (both for surface and geological repositories)*
- *Guidelines for developing a geological disposal program*
- *Methods for site characterization: surface and deep investigating techniques*
- *i-graphite (thermal columns of RRs): inventory, treatment and disposal solutions (critical for IFIN-HH Bucharest)*
- *Gen IV waste*

Success Stories analysis on some 30 EURATOM projects

involving 5 NMS and 3 OMS

Critical success factors

- Stable and favorable context (economic and social context)
- Strong national frameworks for Research
- Excellent science
- Sufficient trained human resources
- Organisational & Infrastructure facilities
- Management skills
- Strong reputation & visibility
- Opportunities and Support
- International openness and collaboration ;◊ Networking
- Together with other human qualities and skills
  (commitment, enthusiasm, willingness…)