

Project 1.4.2.01 - Enhancement of RR utilization and applications

Responsible Officers: Danas Ridikas/NAPC & Ira Goldman/NEFW

Outcome:

RR Networks for enhanced, efficient & sustainable utilization

Performance indicators:

- Number of RR forming networks/coalitions
- Number of RR users forming networks (without RR)
- Number of RR with new/updated strategic plans

Project 1.4.2.01 - Enhancement of RR utilization and applications

	2010	2011
<u>Activity 1:</u> RR coalitions & centres of excellence (2008-2012)	CS – RR networks & coalitions	CS – RR networks & coalitions
<u>Activity 2:</u> RR User's Networks - RRUN (2008-2012)	CS – RR Users' networks	TM – Use of RR by non-host Member States

- RR coalitions:

- Eastern European RR Initiative (EERRI)
- Eurasian RR Coalition (EARRC)
- Caribbean RR Coalition (CRRC)

North-South America RR Coalition (NSARRC)

- RR Users' Networks:

- Mediterranean RR Users' Network (M-RRUN)
- Network on Residual Stress & Texture Analysis (STRAINET)
- Baltic RR User's Network (B-RRUN)*
- Pacific RR User's Network (P-RRUN)*

Mediterranean RR Users' Network (M-RRUN)

RRs in the region

- Algeria (2)
- Bulgaria (1)
- Egypt (2)
- Greece (1)
- Israel (1)
- Libya (1)
- Morocco (1)
- Serbia (1)
- Slovenia (1)
- Syria (1)
- Turkey (1)



- Feb. 2008: TM on strategic planning for sustainability of RRs: Mediterranean Region
 - Azerbaijan, Egypt, Greece, Montenegro, Syria, Tunisia
 - Actions plan 2008-2010
 - * Creation of M-RRUN
 - * A web site development
 - * Organization of workshops
 - * Common activities on neutronic calculations, NAA, neutron beams, etc.

Mediterranean RR Users' Network (M-RRUN)

Status as of today

- Egypt (2)
- Greece (1)
- Syria (1)
- Tunisia
- Montenegro
- Azerbaijan



Activities

- * A web site development (OK)
- * NAA analysis of marine sediments (in progress; samples prepared)
- * Organization of workshops (in progress; budget request)
- * Participation in other projects with concerted actions (2 CRPs)

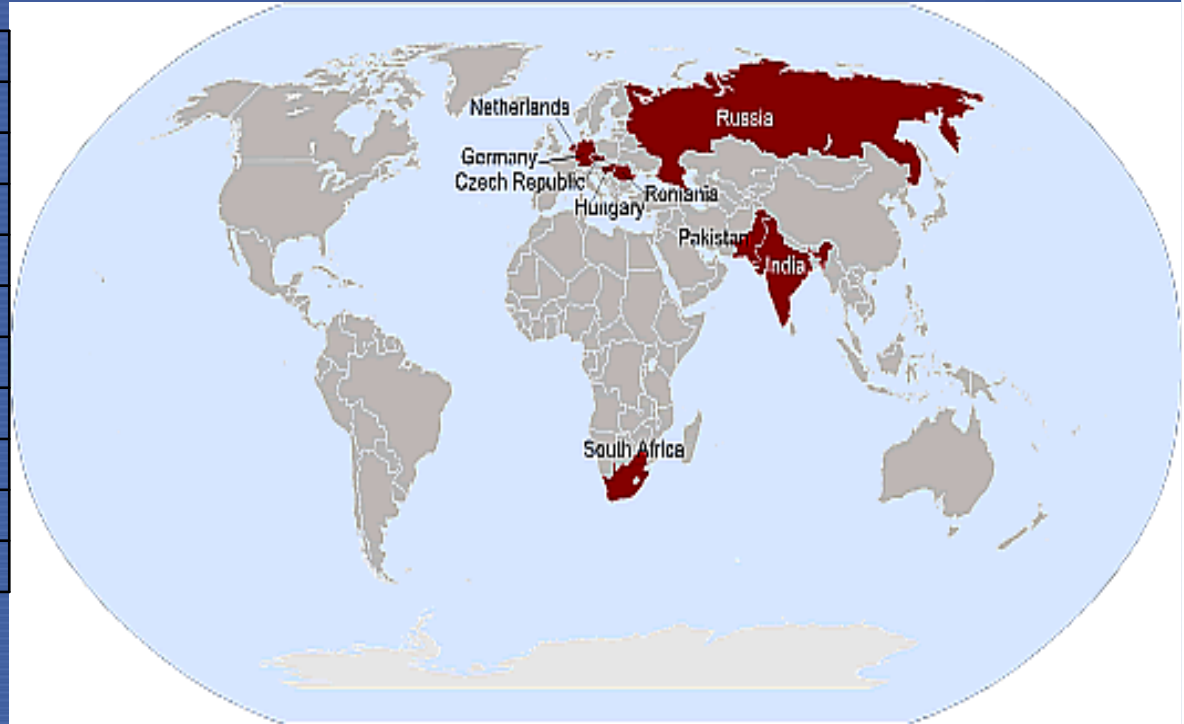
Future actions:

- * Finalise on-going activities
- * Involve other countries (Algeria, Morocco, Portugal, Bulgaria, Turkey)
- * Prepare strategic plans: individual → network
- * Look for funding through European-Mediterranean initiative
- * Coherence with AFRA activities

Network on Residual Stress & Texture Analysis (STRAINET)

- Ongoing CRP (2006-2009) on “Development and Application of the Techniques on Residual Stress Measurements in Materials”

COUNTRY	RR NAME	POWER, MW
Czech Republic	<u>LVR-15 REZ</u>	10.0
Germany	<u>BER-II</u>	10.0
Germany	<u>FRM II</u>	20.0
Hungary	<u>BUDAPEST RES</u>	10.0
India	<u>DHRUVA</u>	100.0
Netherlands	<u>HFR</u>	45.0
Pakistan	<u>PARR-1</u>	10.0
Romania	<u>TRIGA II PITESTI</u>	14.0
Russia	<u>IBR-2</u>	1.5
South Africa	<u>SAFARI-1</u>	20.0



Background for the network:

- Requests from industry on dedicated residual stress & texture measurements
- Need of standardization & flexible response to requirements of industry
- Need of organized share of expertise at international level

Network on Residual Stress & Texture Analysis (STRAINET)

Core Institutes	Partners
HCB (former HMI)	
FRM II	
PSI	
TEXMAT	
	ANSTO
	ILL Grenoble
	JRC Petten
	LLB CEA Saclay
	NRI Rez
	ORNL
	A number of industries

Meetings held:

- 1st meeting held in Oct. 2007 in Berlin
- 2nd meeting planned in 2009 at ANSTO or JRC Petten

Future actions:

- Creation of dedicated web page
- Involvement of developing countries (after CRP)
- Round Robin tests for standardisation purposes
- Coordination taken over by JRC Petten (?)



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RESIDUAL STRESS AND TEXTURE ANALYSIS FOR INDUSTRIAL PARTNERS

Non-destructive / Spatially-resolved / Phase-1

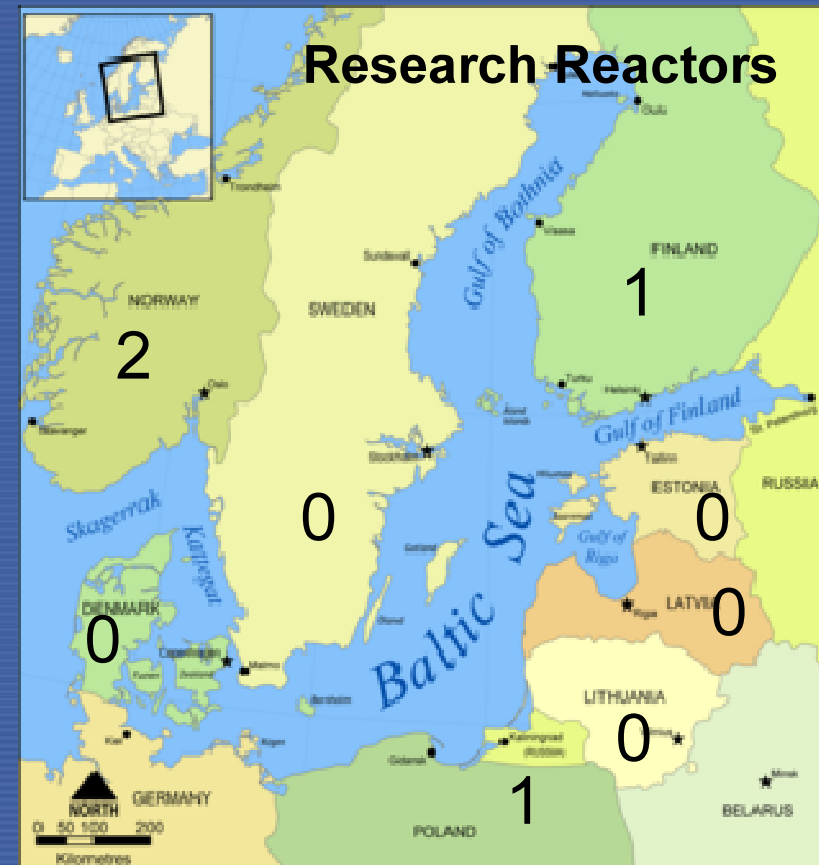
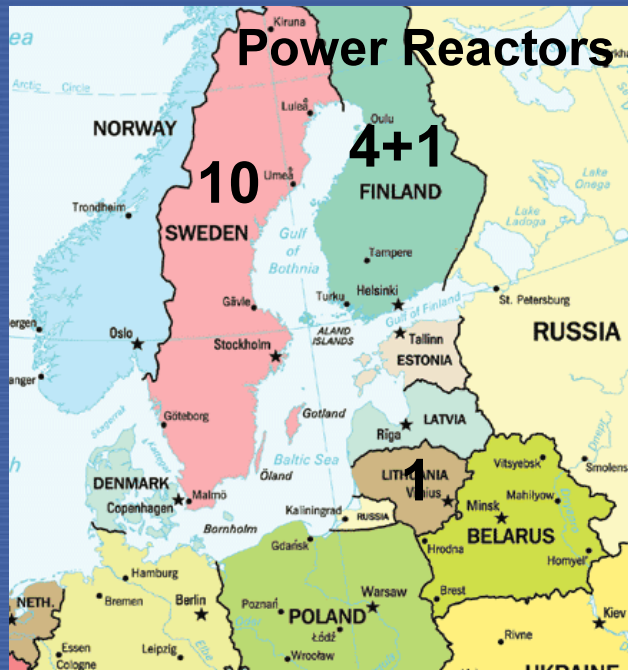
STRAINET

TUM
Technische Universität München

New Initiative: Baltic RR Users' Network (B-RRUN)

Background:

- Nordic/Baltic region remains nuclear (Finland, Sweden, Baltic States + Poland)
- RRs shutdown in Latvia, Denmark, and Sweden
- Clear needs for personnel training & education, R&D



New Initiative: Baltic RR Users' Network (B-RRUN)

Present situation and future actions:

- 8 of 10 Member States expressed very positive interest
- Including BER-II (Germany) and PIK (Russia)
- Replies pending from Latvia and Finland
- 1st exploratory meeting is planned in Swierk, Poland in June 2009 under RER 4032

Objectives:

- Identify and characterize the needs to access the RRs from the Member States without their own RRs
- Evaluate availability of the RRs in the region to provide services for neighbouring countries
- Discuss potential applications of RRs, where common efforts might lead to regional coalition/network
- Create a network of users for RRs in the Baltic Region (e.g. **training & education, R&D, etc.**)

New Initiative: Pacific RR Users' Network (P-RRUN)

ASIA AND THE PACIFIC	Operational RRs
Australia	1
Bangladesh	1
India	5
Indonesia	3
Korea	2
Malaysia	1
Philippines	0
Thailand	1
Vietnam	1



Background:

- Good experience from the past: RCA and series of TC projects under RAS
- In 2007 ANSTO becomes the IAEA Collaborative Centre for Neutron Scattering Applications
- Potential access to the OPAL beam lines for developing Member States from the region
- Framework for support from the Agency



New Initiative: Pacific RR Users' Network (P-RRUN)

Present situation and future actions:

- ANSTO is positive to the initiative
- Potential Member States from the region to be contacted
(Bangladesh, Indonesia, Malaysia, Philippines, Thailand, Vietnam)
- 1st exploratory meeting is planned at ANSTO in Q4 2009

Objectives:

- Identify and characterize the needs to access neutron beams provided by ANSTO
- Evaluate availability of OPAL beams to provide priority access for neighbouring countries
- Discuss potential applications of RRs, where common efforts would lead to the regional network
- Create a network of users for RRs in the Pacific Region with ANSTO being the IAEA CC

Other potential RR Users' Networks

Network on Neutron Radiography/Tomography:

- Recommendation of the CS meeting held in Nov. 2008
- Urgent need of standardization in relation to industries (e.g. auto, aviation, energy cells,...)
- International efforts including developing countries

Network on Data Acquisition and Analysis with Neutron Beams:

- Recommendation of the CS meeting held in Dec. 2008
- Need of standardization of data formats (e.g. use of NEXUS)
- International efforts including developing countries

African RR Users' Network:

- one of the objectives of the new regional TC project RAF4022 (AFRA)
- potentially constant need to access RRs by Member States without RRs
- concerted/organized actions might be very helpful (e.g. request/supply forum-data base)