

At the Trieste science park



Elettra Sincrotrone Trieste

a synchrotron radiation source



a free electron laser source



a nanoscience nanotech facility

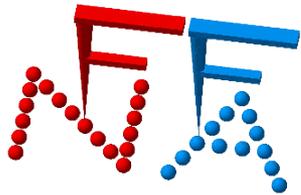
operate in close synergy.



Central European
Research Infrastructure
Consortium



is a **distributed infrastructure** set up by a group of proposing countries (*Austria, Croatia, Czech Republic, Hungary, Italy, Poland, Romania, Serbia, Slovenia*) and open to other interested countries.



Nanoscience Foundries and Fine Analysis

is a plan for a **distributed infrastructure** designed in FP7 (*Austria, England, Italy, Spain, Switzerland*) and will run in H2020 in the Integrating Actions (I3).

**Roberto Gotter (IOM-CNR and Innovation Working Group of ESFRI):
distributed research infrastructures as an opportunity for the WBR**



Towards 2020:

New Horizons for RTD and Innovation in the Western Balkan Region

WBC-INCO.NET Final Conference & Brokerage Event

Tech Gate Vienna / Donau-City-Straße 1 / 1220 Vienna / Austria

2nd Panel

Framework Conditions for Research and Innovation Cooperation

Parallel Session 5: RTDI Infrastructures

Distributed Research Infrastructures

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Benefits of Research Infrastructures (RI)

- ▶ Open access: a high flux of “peer reviewed” top science from around the world
 - ▶ Keeps science at international level
 - ▶ Keeps state of the art KET support
 - ▶ Creates collaborations and high IF publications
- ▶ Direct involvement of industry in construction and upgrade (very effective Tech Transfer)
- ▶ Incubators, start up, high tech entrepreneurship all around in a “business to walking distance” style
- ▶ Awareness on local citizen: education, internationalization



**A unique ecosystem for
innovation**

Typical construction and running costs

- ▶ LSFs (Large Scale Facilities) ~ 2 billions € (a huge cost even if positively impact on GNP)
- ▶ Facility Laboratories (nanotech, biotech) ~ 100 millions € to join KET and analytical capabilities of LSFs
- ▶ Running costs between 10 and 50 millions €
- ▶ Integrating Actions ~ 10 millions € (FP7, H2020) to support (high level) users communities



Any other opportunity ?

Distributed RIs

- ▶ Joining together relevant expertises already established in different countries (in kind participation to the consortium)
- ▶ In a single open access management (cost effective top science flux)
- ▶ A “gate” to LSFs “ecosystems” around EU



**Just the need to upgrade instrumentation
and create open access/user support
room**

~ few millions €



Example 1:



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- ▶ Light Scattering laboratory and SAXS facility @ Graz:
- ▶ HRTEM and ESR/EPR @ Bucharest
- ▶ Nuclear Magnetic Resonance centre (David 800 MHz, Magic and Lara 600MHz, Odie and Ajax 300MHz) @ Ljubliana
- ▶ Synchrotron radiation beamlines (ESCA Microscopy, IUVS, MCX, Materials Science, Nanospectroscopy, SAXS, XRD1, Spectromicroscopy, TwinMic, XAFS) @ Trieste
- ▶ XPD facility @ Prague
- ▶ other integrated services and national point @ Croatia, Poland and Serbia

Are integrated together in an ERIC



(European Research Infrastructure Consortium)

the EU legal framework



Example 1:



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- ▶ As agreed by the founding governmental Parties, CERIC has two main goals:
 1. to *provide research in materials and life sciences* with a unique Research Infrastructure of Pan-EU and international relevance, operating in the context of the European Research Area.
 2. to **help the catch-up process by the newer Member States**, being involved in the setting-up and the operation of a Pan-EU Research Infrastructure able to compete at international level.

- ▶ This ***distributed Research Infrastructure*** have:
 - a *common access point* describing and offering the available services;
 - a *common entry point* for users proposals and a *common evaluation system* to select them and allocate access time to the integrated services;
 - *free and open access* based on quality selection only;
 - *support and logistic services* as required;
 - a *common legal form*, allowing a single and effective governance;
 - a *single management board* in charge of its integrated operation

From the MoU in 2011 to the present Zero Call



for access to integrated multidisciplinary facilities for
Materials and Biomaterials

Deadline for proposals : April 15th, 2014



Example 2: Nanoscience Foundries & Fine Analysis

- ▶ a user-oriented **distributed infrastructure** for nanoscience
- ▶ offering open access to **nano-foundry** facilities that are **co-located with ALSFs** for fine analysis
- ▶ integrating nano-foundries, that are engaged in developing and adopting a **common metrology** and a **common data management**



Will activate a new user community by joining nanoscience community and analytical community to fully exploit ALSFs

(like EMBL for biology and synchrotron communities)

Example 2: Nanoscience Foundries & Fine Analysis

- ▶ starting with Integrating Actions in H2020 by in kind participations to demonstrate validity of the strategy and interest of new users
- ▶ the **long term** goal of NFFA is to reinforce the ERA in the broad and strategic field of nanoscience and nanotech by constructing a European Distributed Research Infrastructure of **full size nanofoundries** co-located with fine analysis facilities, similar to those realized by the DOE in the USA.



**With the ambition to create also the first
Nanoscience Data Repository
to be connected with e-infrastructures**

Conclusions

- ▶ RIs and LSFs create unique ecosystems with benefits for innovation, but they cost a lot
- ▶ creating/participating to **distributed infrastructures**, starting with in kind participations in integrating actions to create the user community and to aware partner's governments
- ▶ and then aiming for full-size distributed facilities

 **as a more sustainable and reliable path for Western Balkan Countries to set up pan-European Research Infrastructures and make newer Member States to catch up on global RTDI competition**

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Thank You For Your Attention!

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