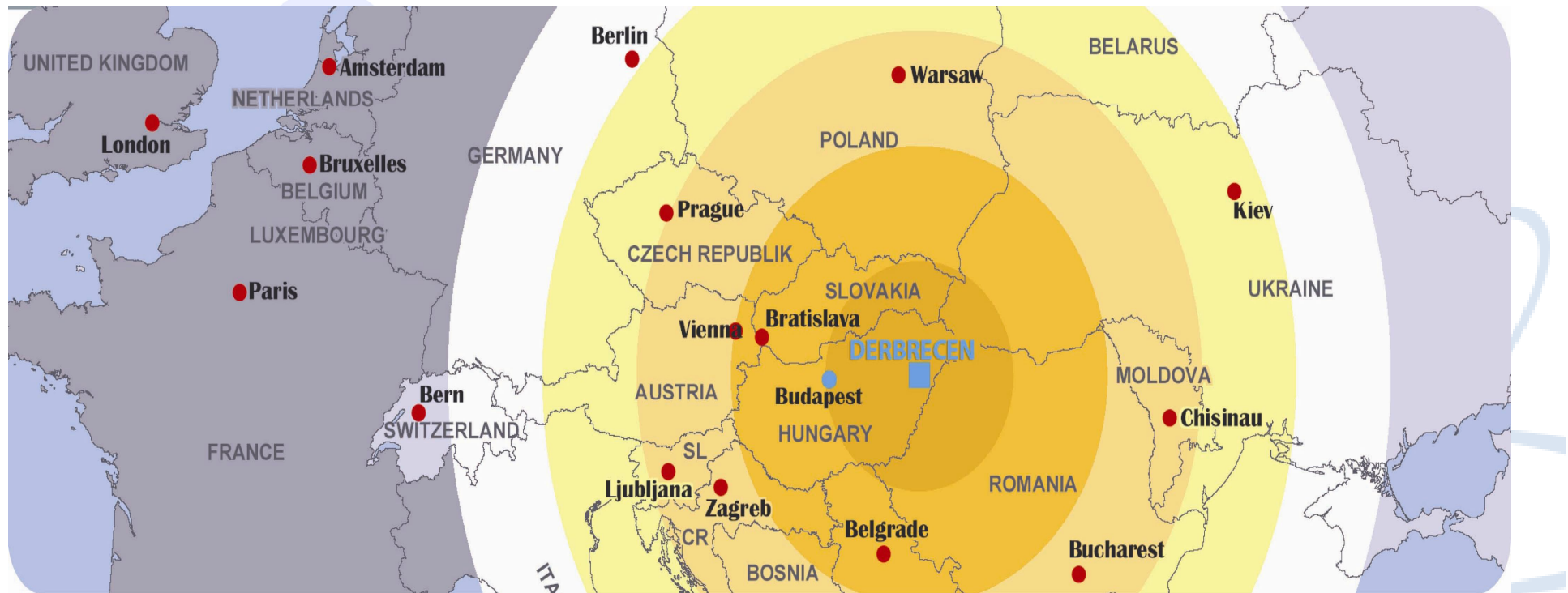


For a balanced science in Europe



Géza Egyed, Government Commissioner
Bucharest, March 3, 2009

European Competitiveness - the vision of ERA

- **Lisbon Strategy** was launched in March 2000 with the aim of making the European Union the most competitive knowledge-based economy in the world
- **Vision of the European Research Area based on six dimensions:**
 - **realizing a single labor market for researchers;**
 - **developing world-class research infrastructures;**
 - **optimizing research programs and priorities;**
 - **opening to the world through international cooperation in S&T.**
 - **strengthening research institutions; sharing knowledge;**
- **The competitiveness of Europe depends on the sufficient number of skilled educated researchers in all parts of Europe, and therefore it depends also on the development of all parts of Europe in the terms of excellent research infrastructures**



...Mind the gap!

We need brain circulation vs. brain drain

- **Risk of brain drain**
 - Current geographical distribution of world class research infrastructure is a clear risk for brain drain within Europe
- **Cohesion is strength**
 - Strengthening the innovative capacities of the „peripheries” is also fundamental long term interest of the centers.
- **This is a region with excellent capabilities**
 - In the region of central Europe, there is a long tradition in the fields of many sciences; material, particle physics, bio- medicine, energy, etc.
- **Regional cooperation is essential**
 - To be successful we need a concerted regional concept, based on national strengths and mutually supportive fashion



Large scientific infrastructure – a powerful catalisator....

- **Research Infrastructures act as a real “knowledge triangle” between Research, Education and Innovation**
- **The occurrence of quality research infrastructures in a region will have a positive effect on the development of human resources and on the stabilization of the researchers´ workforce in this region.**
- **Research Infrastructure in a Region has also a direct local return, both during its construction and its operation**
- **The larger “technological footprint” of the infrastructure, whether it is based on the intensive use of new and advancing technologies has the more potential to induce the attraction of high-tech industries**



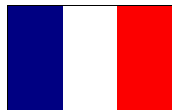
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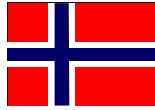
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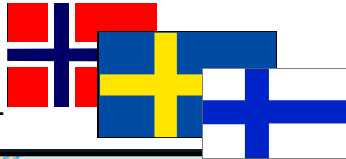
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MAX IV.



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FAIR
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BBMRI



Supercomputer

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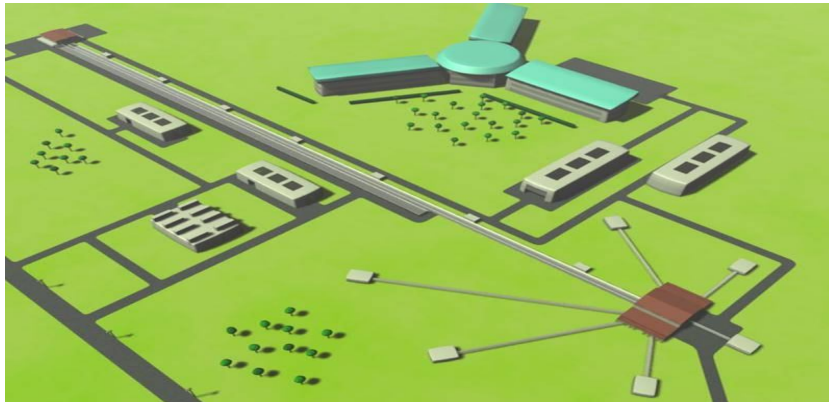
KM3Net

European Spallation Source – a brief history

- Neutron spectroscopy since 1950's based on research reactors
- Fast growing demand from the industry since 1980's
- Existing European facilities have limited capabilities
- OECD-recommendation in 1999
- Most matured scientific project recommended by the EU commission

Two facilities already exist:

- ➔ United States
- ➔ Japan



Three applicants for hosting:

- ➔ Spain – **Bilbao**
- ➔ Sweden – **Lund**
- ➔ Hungary - **Debrecen**



A 21st century, world class project

ESS will be one of the largest scientific investments in Europe. For decades, it would provide unrivalled material research possibilities, based on Pan-European cooperation.

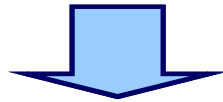
- The investment period will take app.. 8 years;
- Estimated operation period is 40 years;
- 5000 European researchers and experts;
- 600 permanent staff, scientists;
- Further 1500 vacancies;
- Estimated total cost approaches 1,1 billion Euro.



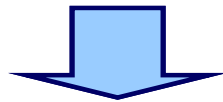
A revolution in material science

Neutron spectroscopy can be used for research in many fields, from the basic nature of materials to healthcare:

- new materials (architecture, electronics, biotech, etc.)
- new technologies
- new medicines, new methods for curing and healing



Revolution in Physics



Better world and everyday life



ESS – an world class knowledge center in the region

Regional and economic development:

- Demand for conventional engineering and high-tech suppliers during investment cycle
- Provides research opportunities to more than 600 employees. It generates further 1500 workplaces in the region
- Attracts the settling of research and development activities, and industries using the results

Science and education:

- Puts Central-Europe on the Map of world class research infrastructures
- Opens the way for the region's Universities to become top European institution
- Yearly 3000-4000 guest scientists from around the world will use it



Why Debrecen vs. Lund and Bilbao?

EU political:

- Large facilities are all concentrated in Old Europe. Geographical balance of European research infrastructures is a must for the „5th freedom”, further inner cohesion of EU
- A Central-European hosting of ESS is a „trigger” to facilitate an integrated large infrastructure policy in the region

Scientific:

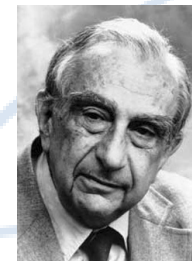
- Hungary has a long tradition in nuclear/neutron research. Neutron center in Csillebérc and Atomki in Debrecen are excellent scientific platforms
- The „father” of the long pulse neutron source is Prof. Ferenc Mezei. The know-how of ESS is Hungarian dominated

Economical, financial:

- Investment expenditure and operational costs are the lowest
- Hungary offers comprehensive financial package including the usage of structural fund

Debrecen:

- ATOMKI (Institute of Nuclear Research of the Hungarian Academy of Sciences)
- Debrecen University with 30 thousand of students, researchers and teachers
- Excellent infrastructure and living conditions
- Medium size city without the constraints of a crowded metropolis or of a medieval city



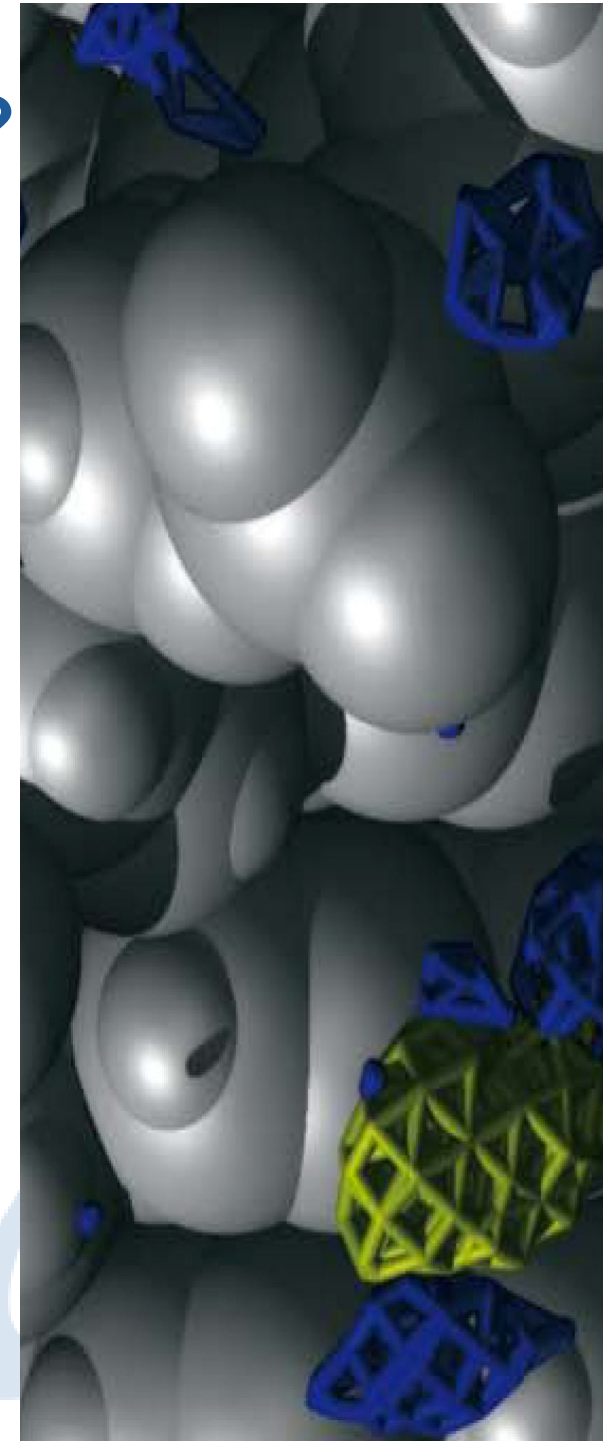
When and how is decision made?

When?

- 2009 is a realistic date

The milestones:

- Put on EU (ESFRI) official roadmap in 2006
- Proposals presented by candidates in S1 2008
- Independent site audit in October 2008. All three sites are appropriate
- ESS, large infrastructure discussed in the EU Competitiveness Council in December 2008
- ESFRI asks Czech presidency, German and French government to take lead in the political decision process. March 6??
- Decision making: by a core country group

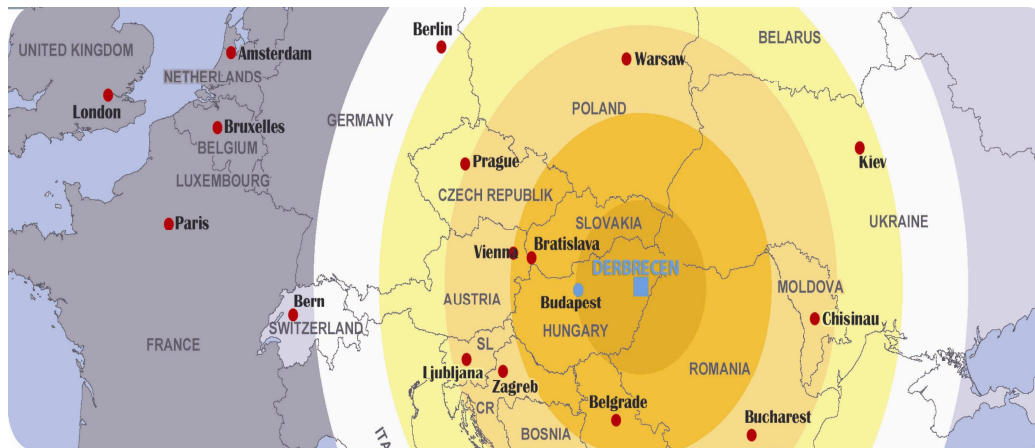


ESS; a unique opportunity for cooperation between Romania and Hungary

- ESS is a rare political and scientific window of opportunity
- The geographical closeness opens the way for close cross-border cooperation



- In construction
- Operating
- Building regional knowledge clusters
- Attracting high-tech industries
- Combining with prevailing Romanian research facilities
- Including Romanian universities
- For mutual support of large scientific infrastructure plans



Thank you for your kind attention!

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www.esshungary.eu

