European Exascale Software Initiative

SC'09 - IESP BoF

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EDF

LEADING THE ENERGY CHANGE

European Exascale Software Initiative (EESI)

Context

Past and actual initiatives that evaluate the potential benefit of Peta/ Exaflopic computing:

- HPC Eur - European High Performance Computing Initiative, "The Scientific Case for a European Super Computing Infrastructure", Petascale Computing in Europe - input for the
- ESFRI Roadmap process, spring 2006
- PRACE, Partnership for Advanced Computing in Europe (PRACE)
- DOE Workshop series, http://www.exascale.org/mediawiki/images/a/a7/Messina-doeexa.pdf, extremecomputing.labworks.org/
- *IESP identified US contribution:* www.exascale.org/iesp/IESP:Documents#Relevant_background_material

"*The guiding purpose of the IESP is to empower ultrahigh resolution and data intensive science and engineering research through the year 2020 by developing a plan for 1) a common, high quality computational environment for peta/exascale systems and for 2) catalyzing, coordinating, and sustaining the effort of the international open source software community to create that environment as quickly as possible.*"

European Exascale Software Initiative (EESI)

Main goals

Build a European vision and roadmap to address the challenge of Peta and Exascaling computation and simulation

- Investigate how Europe is located, its strengths and weaknesses, in the overall international HPC landscape and competition
- Identify priority actions
- Identify the sources of competitiveness for Europe induced by the development of Peta/Exascale solutions and usages
- Identify and stimulate opportunities of worldwide **collaborations**

European Exascale Software Initiative (EESI)

Main tasks

Coordination of the European participation in IESP

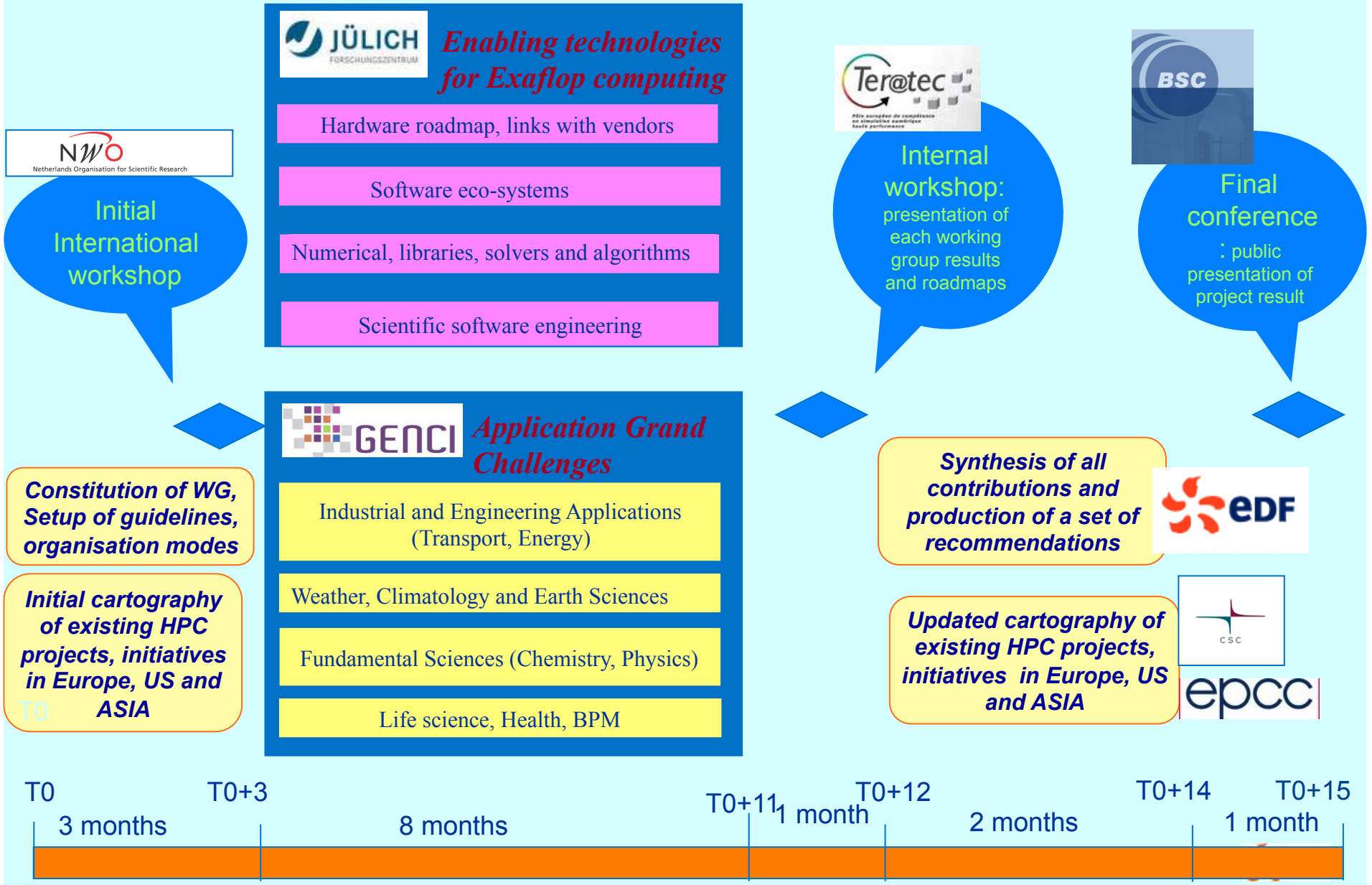
Make a thorough assessment of needs, issues and strategies
Develop a coordinated software roadmap
Provide a framework for organizing the software research community
Engage and coordinate vendor community in crosscutting efforts
Encourage and facilitate collaboration in education and training

Cartography of existing HPC projects and initiatives in Europe, US and ASIA

Coordination of "*disciplinary working groups*" at the European level

Synthesis, dissemination and **recommendation** to the European Commission

European Exascale Software Initiative AGENDA



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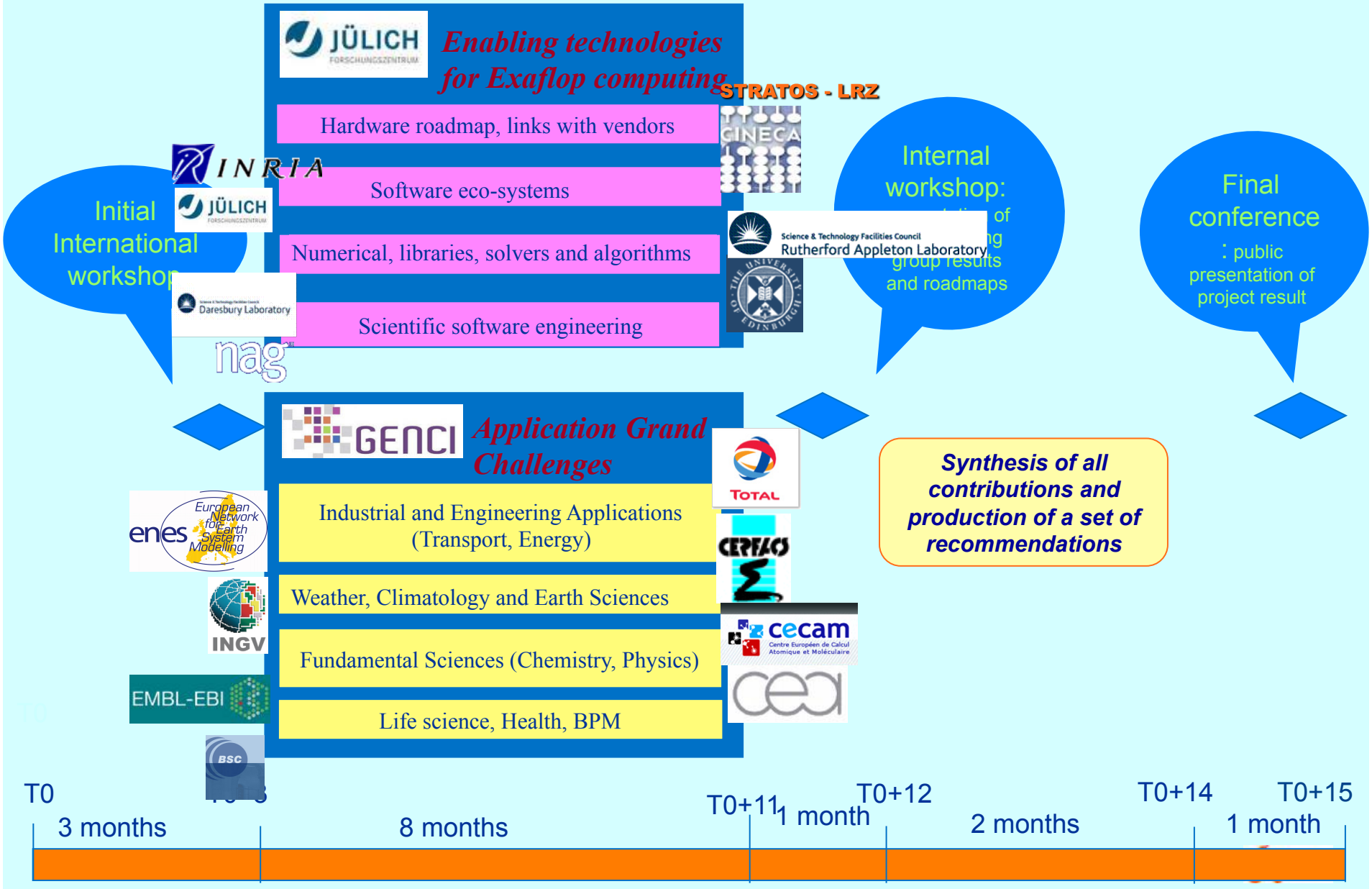


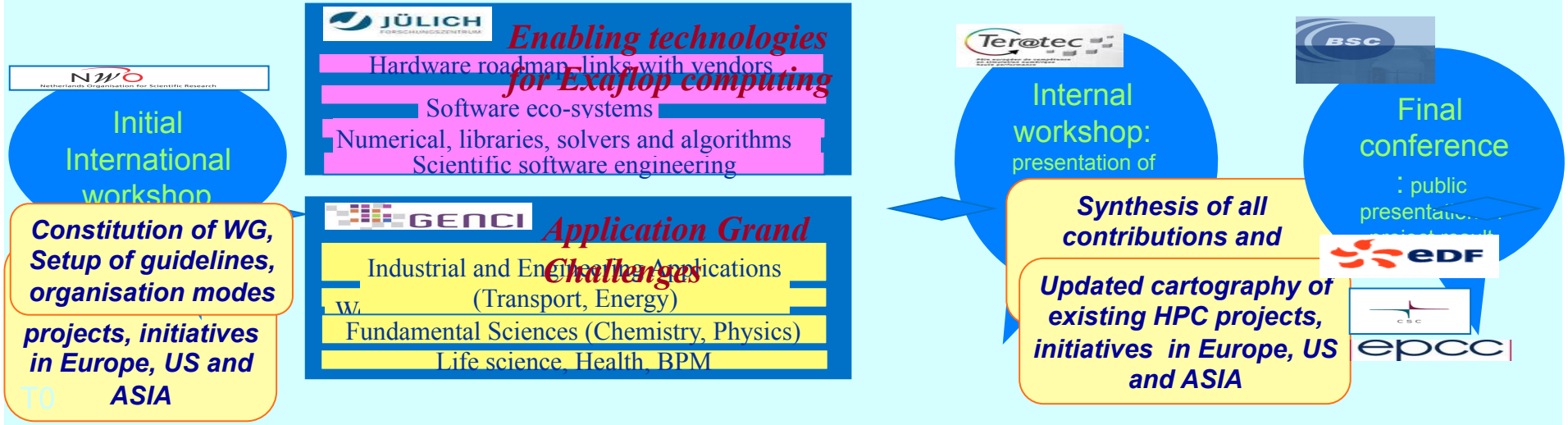
European Exascale Software Initiative AGENDA

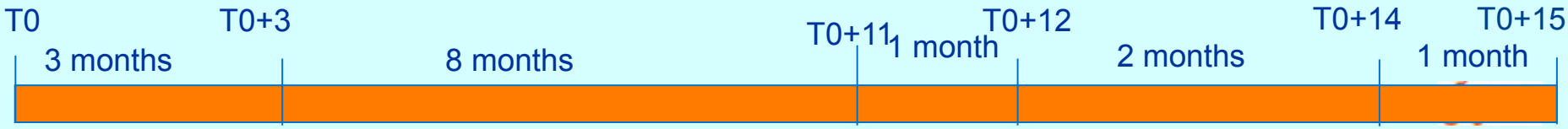
NWO Netherlands Organisation for Scientific Research

JÜLICH FORSCHUNGSZENTRUM

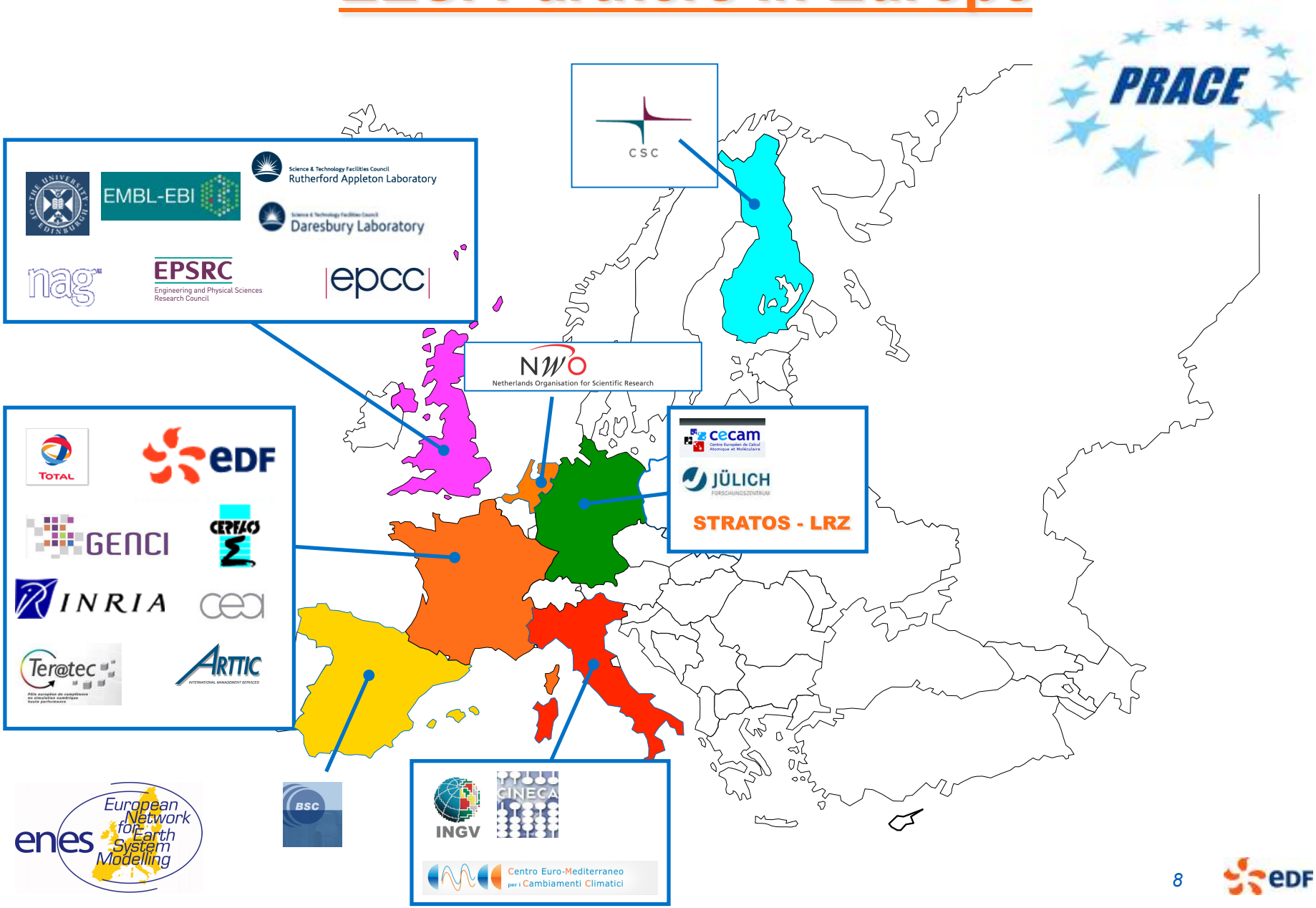
Link with US and ASIA

Preparation and participation to IESP boards/meetings, transfer to the EESI partners/contributors, identification of US, ASIA and European cross actions





EESI Partners In Europe



EESI Partners around the world