Co-ordination & Harmonisation of Advanced e-Infrastructures for Research and Education Data Sharing

The CHAIN-REDS Project

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EU-LAC ICT & e-Infrastructures Conference for R&D cooperation

Research Infrastructures – Grant Agreement n. 306819

Outline

- Regional e-Infrastructures
- The CHAIN-REDS project
- Objectives and actions
- Activities and achievements
- Final considerations

The many faces of eInfrastructures

- The High Speed Communication Network
- The High Performance Computing for highly parallel applications
- The Grid for High Throughput Computing and resource sharing
- The Clouds for elastic resource provisioning
- Data Infrastructures with several issues such as: Large data volumes, Curation, Access, High Availability, etc.
- The Human Network: researchers working together sharing motivations, objectives, tools and resources

Why ?

e-Infrastructures support wide geographically distributed communities

enhance international collaboration of scientists

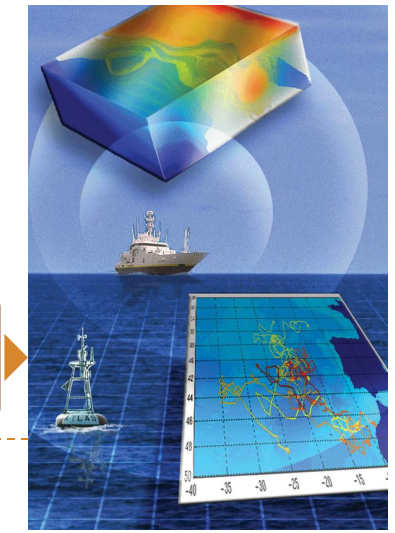
promote collaboration in other fields.

Grids and networks allow the access of many researchers to scientific resources (laboratories and data)

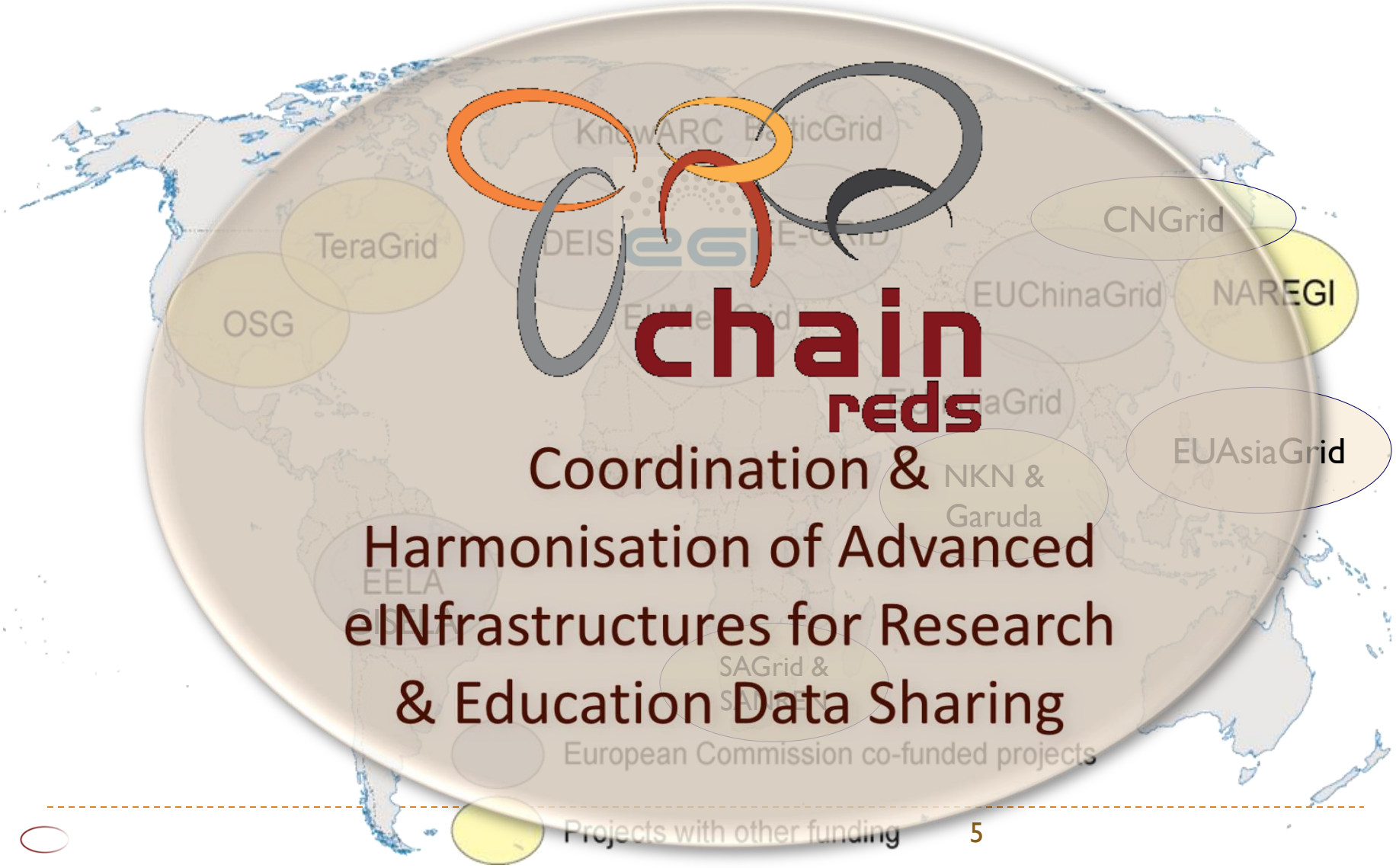
Disparity can be reduced and larger participation and contributions to high quality research.

The e-Infrastructures promote the usage of network connectivity and stimulate scientific and technical development of countries

contribute to fight the digital divide and brain drain.



Regional Grid infrastructures



Coordination &
Harmonisation of Advanced
eINfrastructures for Research
& Education Data Sharing

Status

- Co-ordination & Harmonisation of Advanced e-Infrastructures for Research and Education Data Sharing
- Research Infrastructures – Support Action
- Grant Agreement n. 306819
- Total Costs of € 2.3 M
- Max. EC contribution: € 1.52 M
- Start date: 1 December 2012
- Duration: 30 Months

Partners and roles

- INFN (IT) – Coordinator
- CIEMAT (ES) – WP4 Leader
- GRNET (GR) – WP3 Leader
- CESNET (CZ) – WP5 Leader
- UBUNTUNET (MW) – Africa
- CLARA (UR) – Latin America
- IHEP (CN) – China
- ASREN (DE) – Arab States
- SIGMA-ORIONIS (FR) – WP2 Leader
- C-DAC (IN) - India

CHAIN-REDS Objectives

- Extend and consolidate international cooperation of Europe with other regions of the world in the domain of e-Infrastructures for Research and Education
- Promote, coordinate and support the effort of a critical mass of non-European e-Infrastructures for R&E to collaborate with Europe addressing interoperability and interoperation of Grids and other DCIs
- **Study the opportunities of data sharing across different e-Infrastructures** and continents widening the scope of the existing CHAIN Knowledge Base to Data Infrastructures and Cloud implementations
- **Promote trust building towards open Scientific Data infrastructures** across the world regions, including organisational, operational and technical aspects
- **Demonstrate the relevance of intercontinental cooperation in several scientific data fields** addressing existing and emerging VRCs and propose pragmatic approaches that could impact the everyday work of the single researcher, even if not structured in a VRC
- **Provide guidance and recommendations for roadmaps** for long-term global collaboration in e-Infrastructures and harmonization of existing polices

Action lines (1/2)

DCI

Distributed Computing Infrastructure

- Provide ongoing support of the DCI road-map for intercontinental DCI collaboration, specified within the CHAIN project

ROC

Regional Operation Centres

- Support stability of existing and emerging Regional Operation Centres. Cooperate with other projects & initiatives (e.g. AfricaConnect, TEIN3) to support the development of eInfrastructures and key VRCs in Africa, Asia, Latin America and the Middle-east

Cloud

Clouds for Research and Education

- Support for coordination of Cloud developments for Research & Education with other regions (e.g. China, India, Latin America)

Action lines (2/2)

Data

Infrastructures and Repositories

- Extend the CHAIN Knowledge Base with information on Data Infrastructures: collecting issues, best practices and identifying data repositories of direct interest for VRCs

  Support the study of data infrastructures for a target subset of VRCs (e.g. Agricolture, Climate Change, Health, Biomedicine, etc.)

SG

Science Gateways

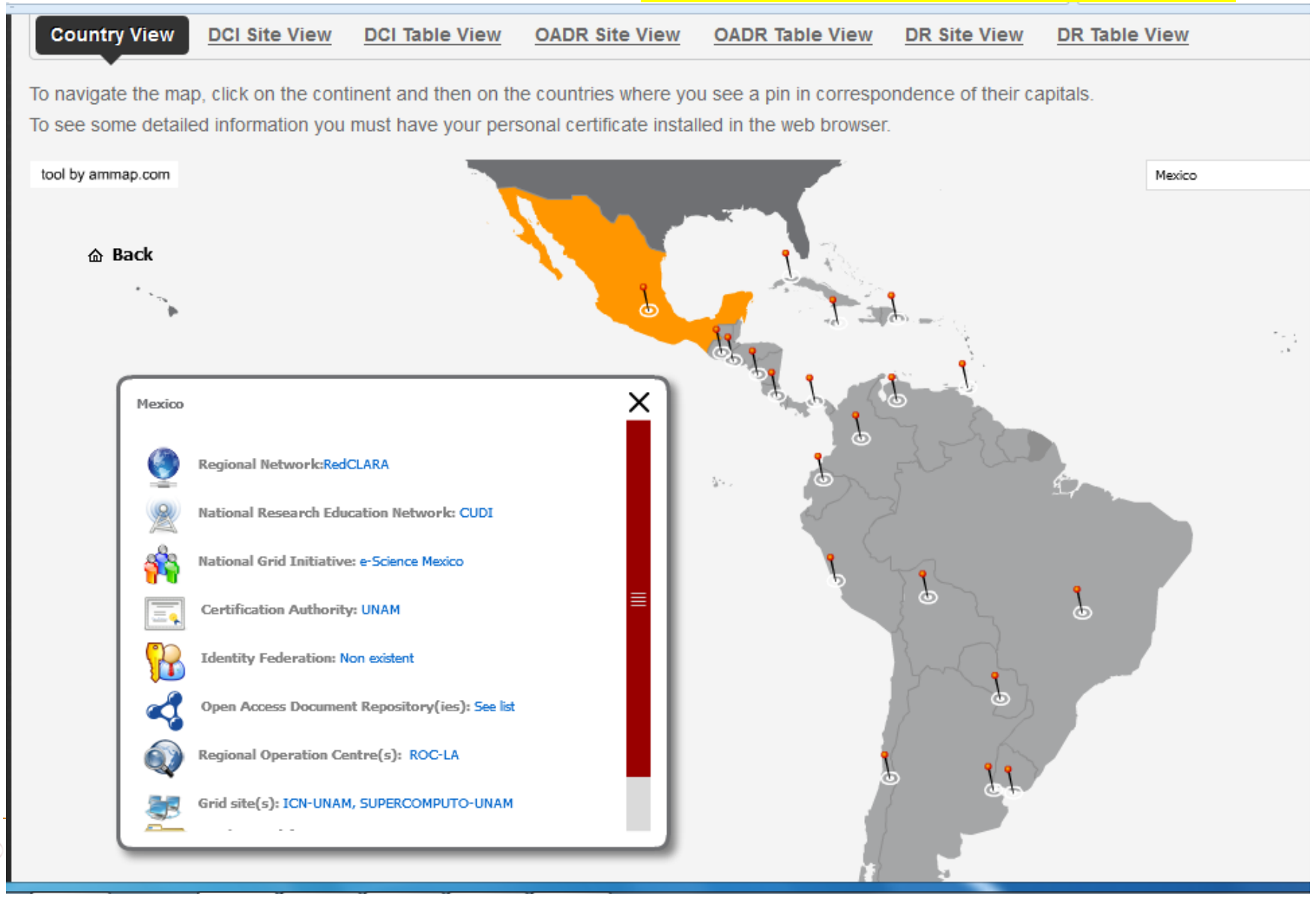
- Promote the usage of Science Gateways as a means for attracting new communities and promote the use of eInfrastructures for every researcher

IDF

Federations of Identity Providers

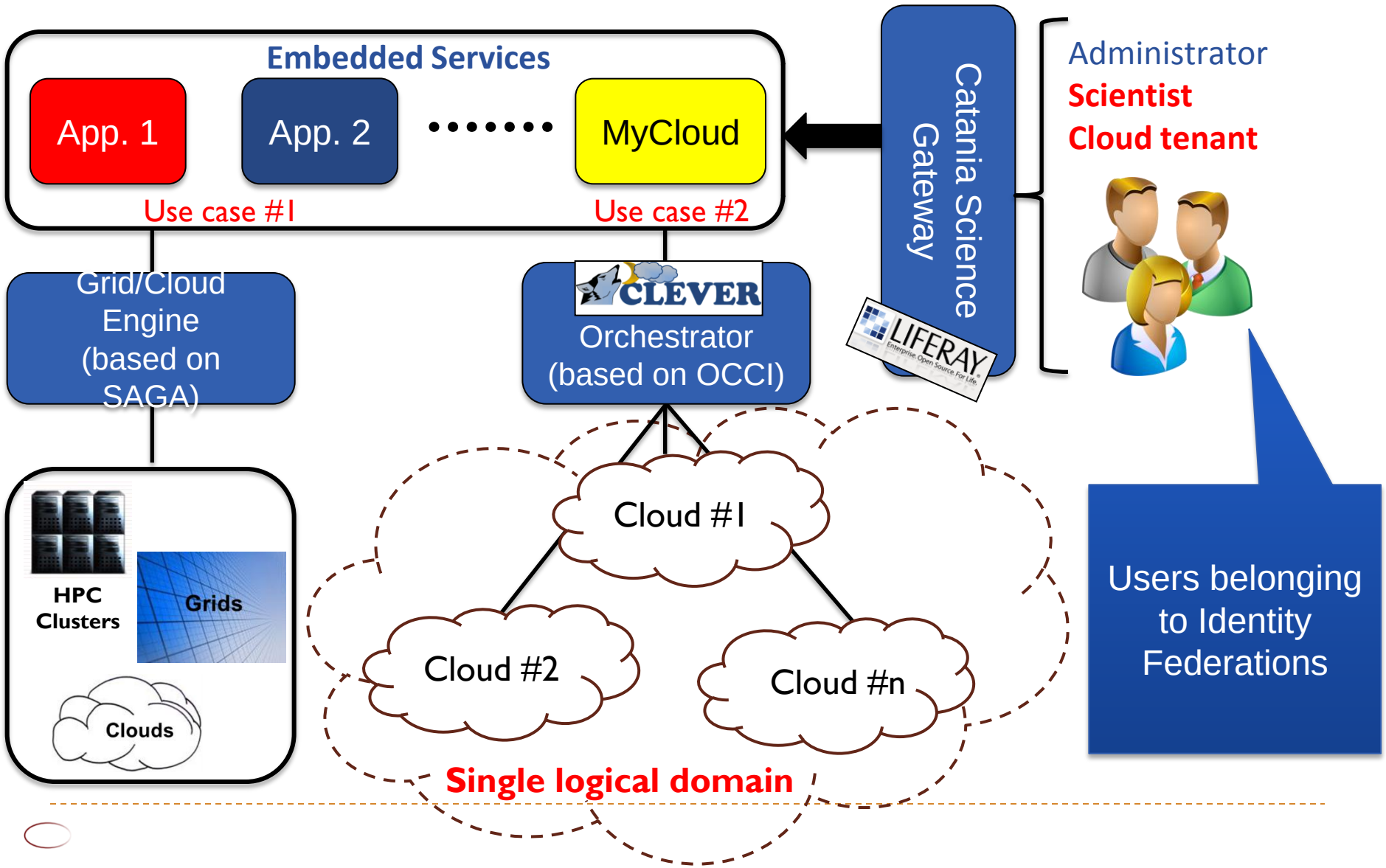
- Foster the creation of Identity Federations in cooperation with Certification Authorities; promote and coordinate their usage. Support integration of different AA approaches

Extend Knowledge Base to Data



Open Access Document Repositories

Promote the Science Gateway model



Cloud Computing for R&E

- Cloud infrastructure for R&E should be based on Open SW & Standards
- Financial:
  - Public institutions are frequently receiving project driven funding. Difficult to fund long term contracts with commercial Cloud providers
- Technical:
  - Resource sharing is an issue if institutions get services from different providers. Building security across several administrative domains is difficult: Federation of Clouds is still not a reality
  - Long term preservation of data has still many issues to be addressed (e.g. what happens to the data after the project end ? Who provides user support for the data ?)
  - Requirements of scientists evolve and new technical challenges appear that will push for innovation

www.chain-project.eu

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Home | Project Area | Knowledge Base | Linked Data | Applications | Science Gateway | Events | News | Old Project

CHAIN-REDS is a FP7 project co-funded by the European Commission (DG CONNECT) aiming at promoting and supporting technological and scientific collaboration across different e-Infrastructures established and operated in various continents, in order to define a path towards a global e-Infrastructure ecosystem that will allow Virtual Research Communities (VRCs), research groups and even single researchers to access and efficiently use worldwide distributed resources (i.e., computing, storage, data, services, tools, applications).

Harmonisation of e-Infrastructures

Knowledge Base

Semantic Search on Linked Data

Application Registry

News

CHAIN-REDS workshop at ISGC 2013

View Event

MoU CHAIN-Reds and ENGAGE

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Thank you !

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CAPACITIES
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