



EGI Federated Clouds Task Force

HEPiX Spring 2012 Workshop

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Outline

- Objectives
- Outputs
- Guiding principles
- Mandate and Operations
- TF Members
- Workgroups
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- Demo
- Blueprint

Objectives

- **Integration**: integration of virtualised resources within the EGI's production infrastructure – e.g. monitoring, accounting and resource publishing.
- **Technical feedback**: feedback to technology providers on any changes needed for the deployment of their cloud implementations.
- **Early adopters**: identify and work with user communities willing to be early adopters of the resulting EGI virtualised infrastructure.
- **Recommendations**: identify issues that need to be addressed by other areas of EGI – e.g. policies, operations, support and dissemination.

Outputs

- **Blueprint document:** advice/full documentation to resource providers/users on how to engage with the federated cloud infrastructure. This will be a living document on the EGI Wiki.
- **Test bed:** deploy interfaces and services for a federated cloud on the basis of the Task Force blueprint, and the available standards and technologies.
- **Engagement:** identification of resource centres, technology providers and user communities willing to commit actively to the Task Force.
- **Dissemination:** periodic “success stories” through dissemination channels.

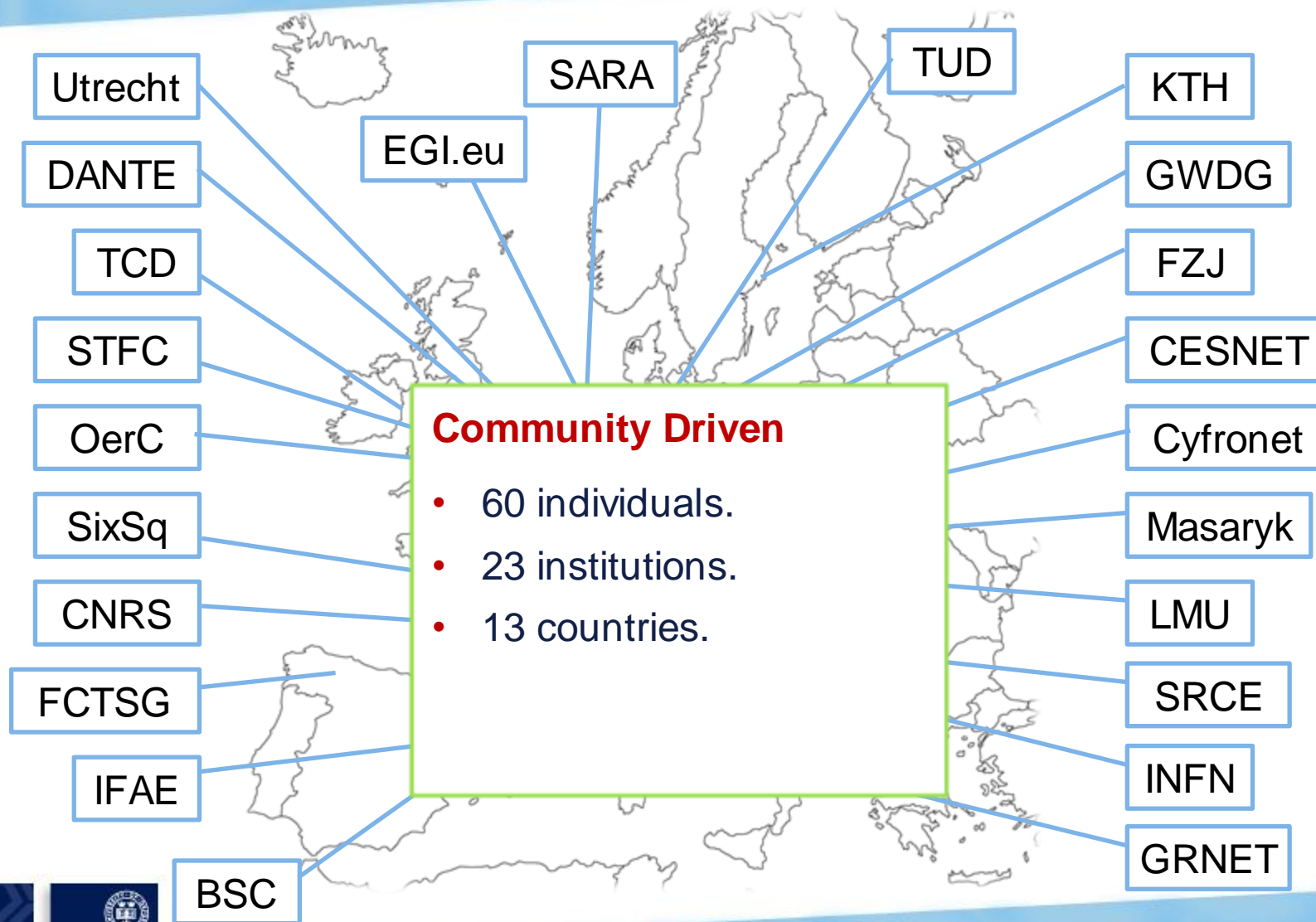
Guiding Principles

- **Standards and validation**: the goal of the TF effort is to produce a validation procedure for clouds federation based on the emerging standards in Cloud Computing. E.g. OCCI, CDMI, OVF, etc.
- **Resource typologies**: EGI offers already a number of validated services to the community. Virtualisation and Cloud Computing should be considered just as another type of resource to integrate into the existing production infrastructure.
- **Heterogeneous implementation**: there should be no specific mandate on the implementation of virtualisation/cloud technology but only the validation of a prescribed set of functionalities, standards and interfaces.
- **Provider agnosticism**: no distinction should be made on the nature of each provider. Private, public, research and business oriented should make no difference once the federation criteria have been established and agreed upon.

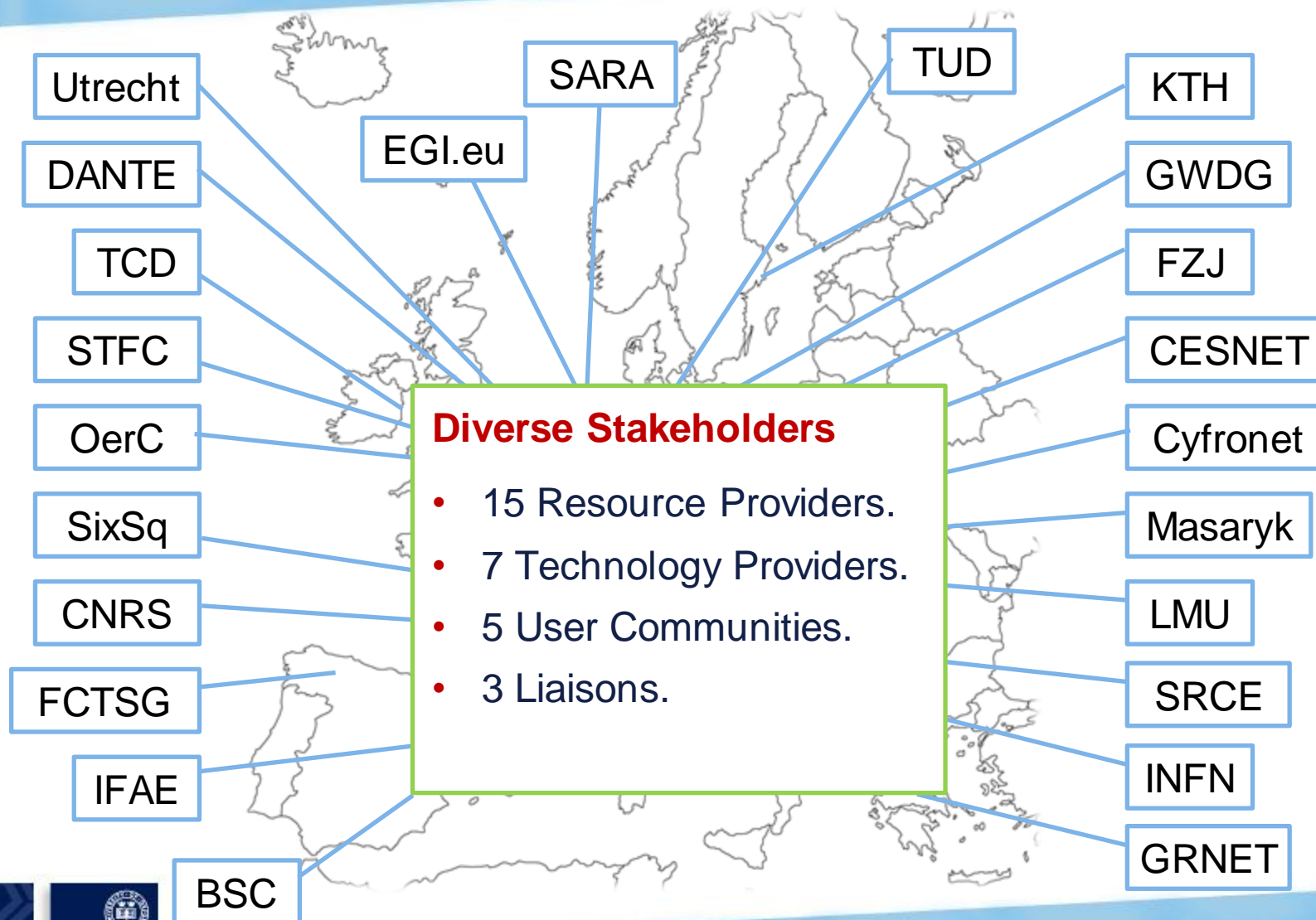
Mandate and Organisation

- **Mandate:** 18 months, September 2011 – March 2013.
- **Activities:** divided into 3 blocks of 6 months each. Goals, deadlines and workgroups leaders are set up at the beginning of each 6 months block.
- **Workgroups:**
 - working units within the Task Force;
 - investigate a specified set of capabilities for a federation of clouds;
 - have leaders and collaborators.
- **Workbenches:** sections of the TF Wiki site collecting and documenting the activities of each workgroup.
- **Meetings:** weekly conference call. F2F roughly every 3 months.

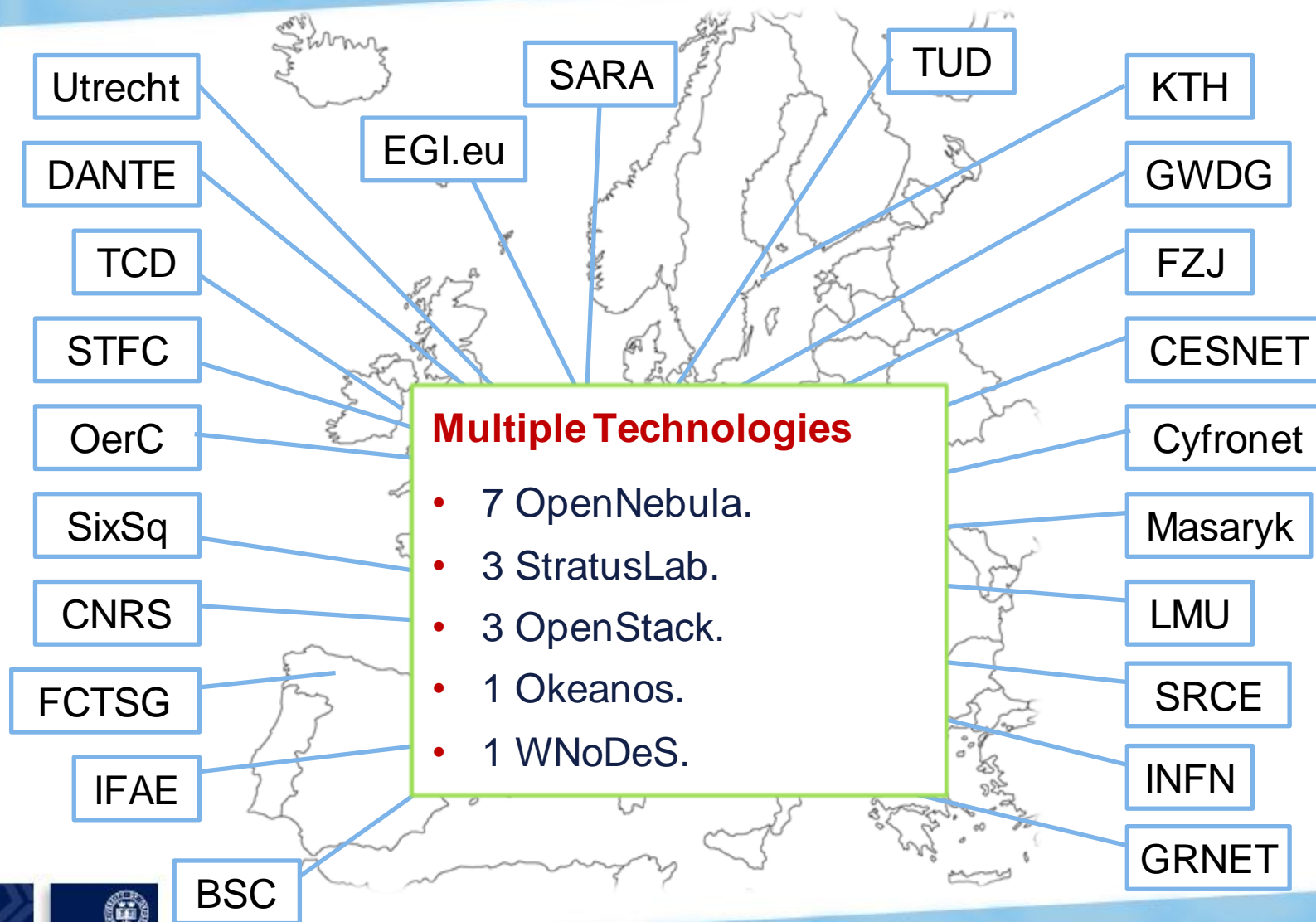
Task Force Members



Task Force Members



Task Force Members



Workgroups – Sep 2011/March 2012

VM Management

- . OCCI 1.1 proxy for multiple IaaS

Data Management

- . CDMI proxy for multiple IaaS
- . OVF

Information Systems

- . Extended GLUE2 schema
- . LDAP server

Accounting

- . Cloud Usage Record (UR) schema
- . UR server
- . UR client for each IaaS

Monitoring

- . Nagios with cloud probes

Notification

- . Push system (ActiveMQ)

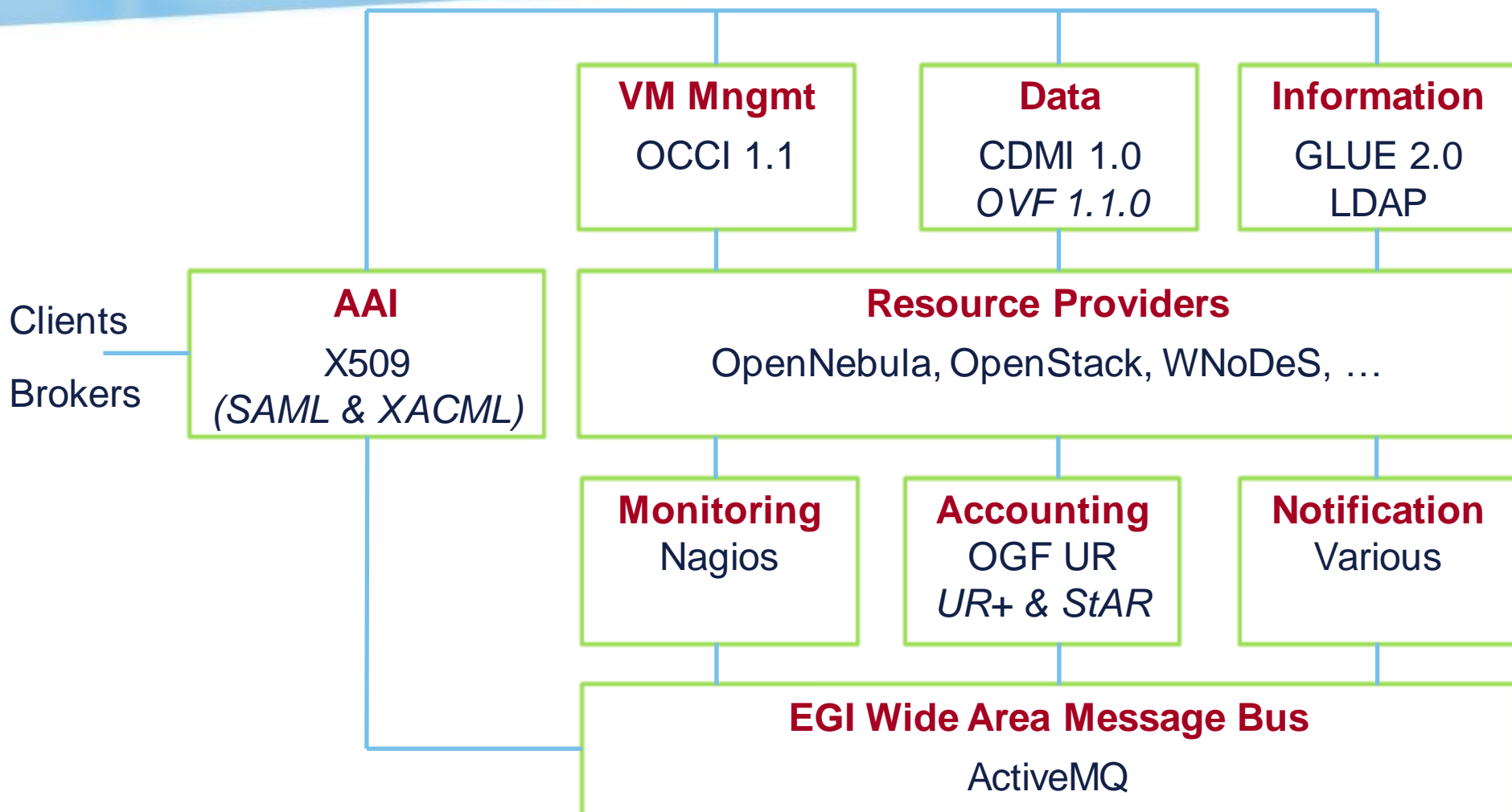
Federated AAI

- . X509 certificates
- . Support for Virtual Organisations (Vos)

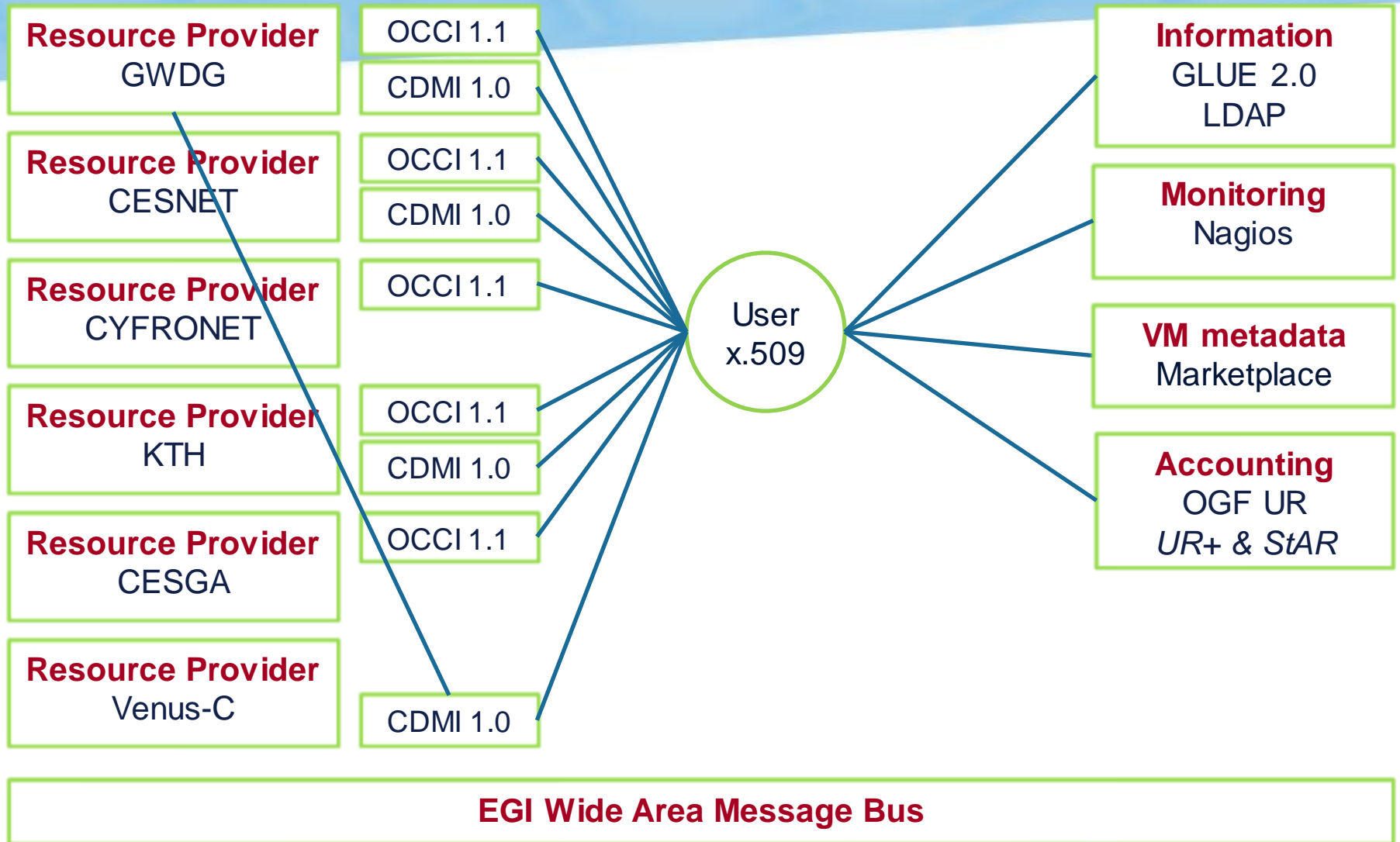
VMs repository

- . StratusLab marketplace

Federation Testbed



EGI CF2012 – Demo



Blueprint

fedcloud-tf | [discussion](#) | [edit](#) | [history](#) | [move](#) | [watch](#)

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Fedcloud-tf:Blueprint:Introduction

Main | **Members** | **Resources** | **Blueprint** | **Scenario Workbenches** | **Administrative**

[Introduction](#) | [Overview](#) | [VM Management](#) | [Data integration](#) | [Information discovery](#) | [Accounting](#) | [Monitoring](#) | [Notification](#) | [Solutions Intentry](#) | [Conclusions](#) | [References](#)

Introduction [\[edit\]](#)

This blueprint document will be assembled and written by the Task Force members providing EGI Resource Centres with all information necessary to provision computing and storage resources through a cloud management layer so that they can be easily and securely federated as part of the EGI production infrastructure.

Six high-level scenarios [\[edit\]](#)

The blueprint is based on a collection of six high-level Cloud usage scenarios that were collected and validated at a number of occasions in the EGI community. Those usage scenarios represent six archetypical Cloud scenarios that are common (or perceived to be common) in a distributed, hybrid Cloud landscape provided by EGI resource centres. Associated with these six scenarios are six key capabilities that, when implemented on a technical level, ensure interoperability across individual Cloud providers.

The following sub-sections illustrate the six usage-scenarios providing an overview of the technical issues that the Task Force is dealing with.

Scenario 1: VM Management [\[edit\]](#)

"I want to start a single existing VM image on a remote cloud."
"I want to use my existing identity, and not re-apply for new credentials to use the service."

Contents [\[hide\]](#)

- 1 Introduction
- 2 Six high-level scenarios
 - 2.1 Scenario 1: VM Management
 - 2.2 Scenario 2: Running my data and VM in the Infrastructure
 - 2.3 Scenario 3: Integrating multiple resource providers
 - 2.4 Scenario 4: Accounting across Resource Providers
 - 2.5 Scenario 5: Reliability/Availability of Resource Providers
 - 2.6 Scenario 6: VM/Resource state change notification
- 3 Key Capabilities
 - 3.1 VM Management
 - 3.2 Data access
 - 3.3 Information discovery
 - 3.4 Accounting
 - 3.5 Monitoring
 - 3.6 Notification
- 4 Security
 - 4.1 VM Auditing
 - 4.2 IPv6

<https://wiki.egi.eu/wiki/Fedcloud-tf:Blueprint>

Conclusions

EGI Technical Forum: Prague 17-21 Sep 2012

- End of the second TF cycle.
- Consolidation of the test bed.
- Demo with real use case: CLARIN.

TF cycle #2

- Brokering.
- EGI AAI integration.
- Closer collaboration with OGF.

Task Force resources

- Mailing List: fedcloud-tf@mailman.egi.eu
- Wiki site: <http://go.egi.eu/tf-fedclouds>
- Indico site: <https://www.egi.eu/indico/categoryDisplay.py?categId=56>



Thank you

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Chair – Federated Clouds Task Force

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