EGI Towards H2020

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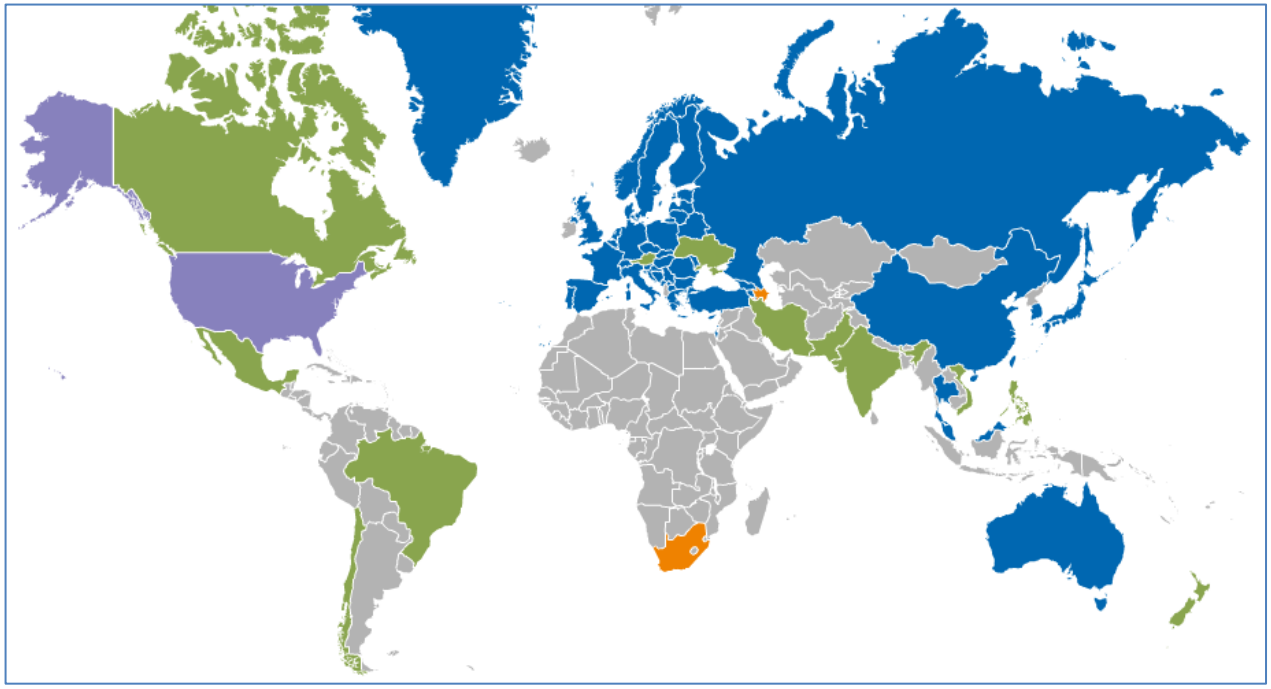
Outline

- Status of e-Infrastructure
- EGI Federated Cloud
- EGI-InSPIRE future activities
  - EGI Core Activities
- Governance

EGI in 2013

From 14 Regional Operations Centres (EGEE-III) to
337 RCs in 34 NGIs/EIROs
430,000 logical CPU cores
1.2 M job/day, EGI-InSPIRE PY3: +44.7% increase of CPU wall clock time use (HS-06 h)
53 High activity VOs
98.3% Availability (NGI services)
99.7% Availability (EGI.eu core infrastructure)

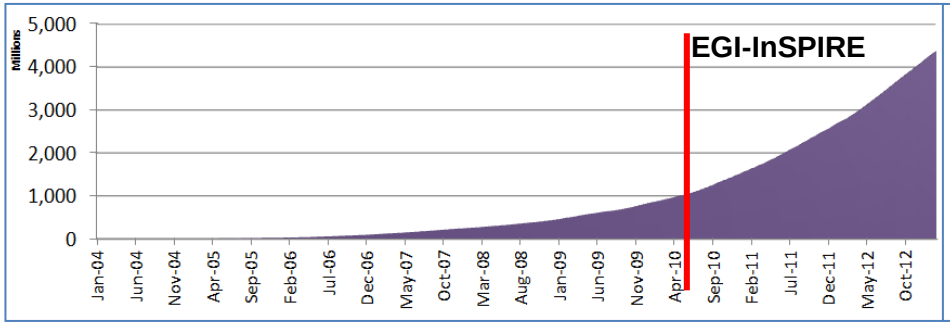


Integrated EGI-InSPIRE Partners and
EGI Council Participants
Internal/External RPs being integrated
External RP
Peer RP

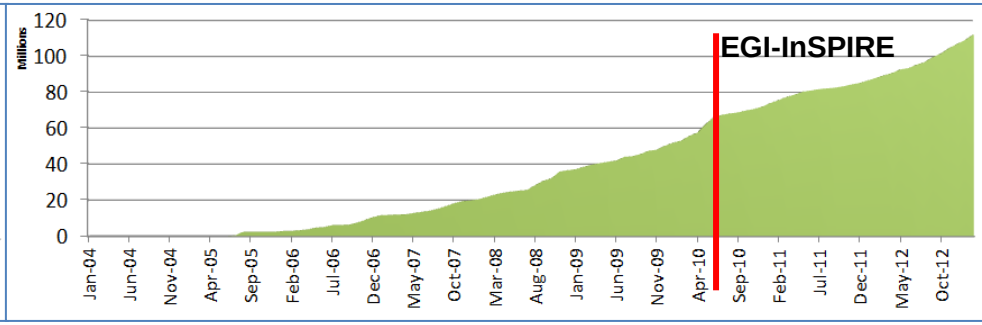
10 years in production

Jan 2004 – Sep 2013		Value
CPU wall time consumed (Jan 2004 – April 2013)	Billion hours	5.7 (CPU wall time) 44.8 (normalized HEP-SPC06)
PY3 estimated overall resource utilization		82%

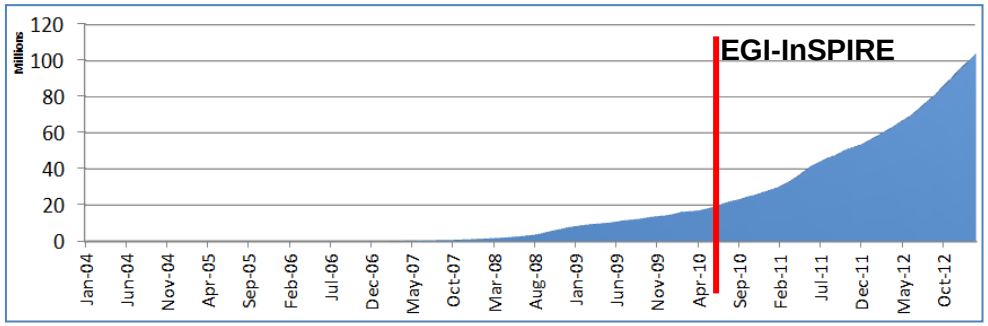
HEP: 4.5 Billion hours



LS: 116.7 Million hours



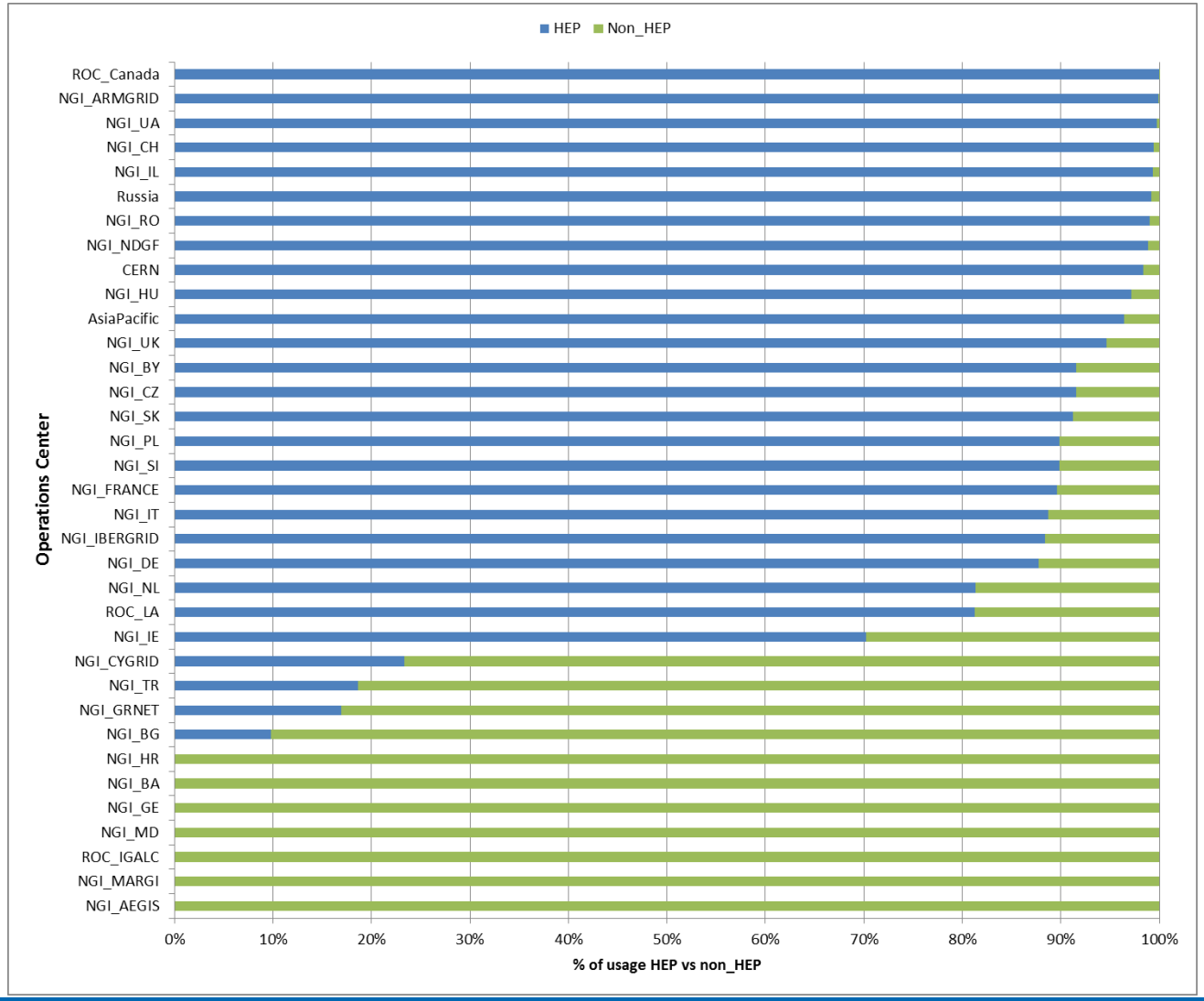
AA: 110.3 Million hours



CPU Usage

EGI Metrics 2012-2013		Value (yearly increase)
CPU wall clock time	Total norm. CPU wall clock time consumed – Grid jobs (Billion HEP-SPEC 06 hours)	15.2, PY3: +44.7% PY2: +53%, PY1: +55.9%
% of total norm. CPU wall time consumed	High-Energy Physics	93.78%
	Astronomy and Astrophysics	2.82%
	Life Sciences	1.52%
Relative yearly increase	Other Sciences	+199.45%
	Earth Science	+123.45%
	Computational Chemistry	+78.31%
	Astronomy and Astrophysics	+76.64%
	Life Science	+65.12%
	High-Energy Physics	+40.97%

HEP and other disciplines



HEP Non_HEP

Non-HEP in large NGI:

- From 20% NGI_NL
- To 7% NIG_UK

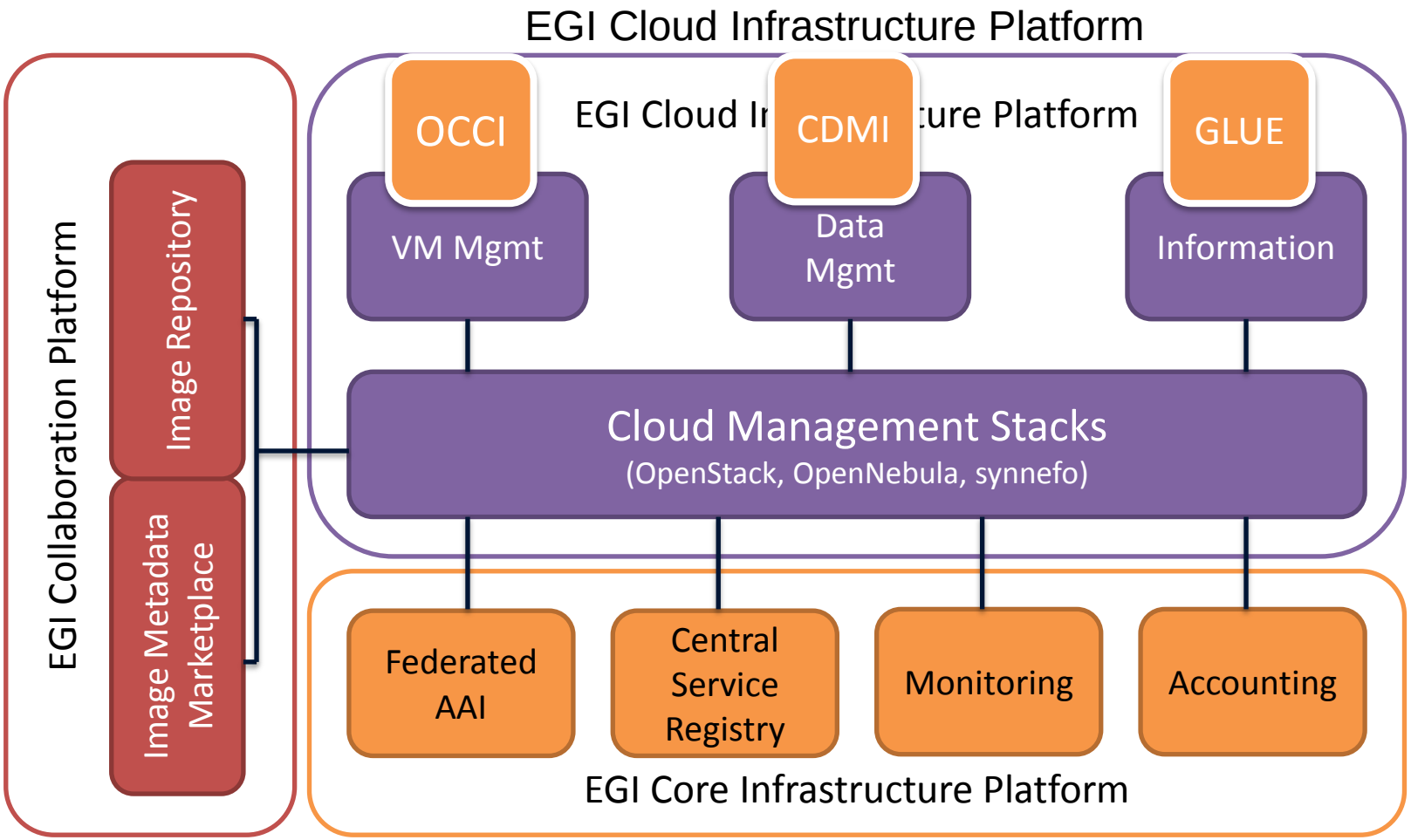
Federated Cloud

- New services to meet user demand
  - Use case driven
- Proof of concepts being successfully demonstrated (http://go.egi.eu/PoC)
  - Hosting of services for data dissemination (SaaS) – ENVRI, EISCAT_3D
  - Digital Libraries and Digital Preservation services for memory institutions and human science - DCH-RP
  - Integrated Cloud Iaas-SaaS services to avoid large data transfers (ESA)
  - Virtual laboratories (PaaS and IaaS) – BioVel, LifeWatch
  - Hadoop clusters on demand (PaaS) – Peachnote, BioVel
  - …
- Definition of business models
- Hybrid private-public provisioning - EGI Federated Cloud is part of Helix Nebula

Roadmap

- Define the Cloud Federation layer
  - Promote adoption of common interfaces (OCCI,CDMI)
  - Investigate the capabilities for the federation of clouds
- Integrate the cloud services with the EGI core platform
  - auth and authz, accounting and monitoring, service registry, service
- 70 partners from 40 institutions and 13 countries
  - 4 resource centres, 1000 cores, 16 TB Storage
  - Capacity building in 2014
- Production in Spring 2014

Cloud Infrastructure Platform



EGI-InSPIRE PY1-PY4

- Federated operations for integrated grid/cloud resources
  - based on consolidated NGI and EGI.eu services
- Software agnostic infrastructure
  - mature software provisioning and deployment processes
  - Unified Middleware Distribution Release Team
- Enhanced operational tools for operations integration with other e-Infrastructures
  - New functionality, better GUIs, increasing integration
  - Standards adoption (GLUE2, usage record schemas)
  - Accounting extending to support storage, cloud, billing
- Adoption of service management best practices
- Innovation driven by the user and operations community
  - Requirements gathering
  - Working groups and task forces

EGI-InSPIRE PY5

- End of PY4: April 2014
- 6-8 months project extension being discussed to support strategic activities
  - Business model development
  - Collaborate with industry
  - EGI Federated Cloud in production
  - Outreach through a distributed competency centre
    - Expert users, NGIs, Technology Providers
  - Distributed pool of resources (compute and storage) with different quality of service offering
    - 30 million guaranteed CPU hours, distributed across about 5,700 cores, and 170 TB of storage contributed by six NGIs
  - Mini Projects

EGI Core Activities

- Message Broker Network
- Operations Portal
- Accounting Repository and portal
- SAM central components and central monitoring services
- Security monitoring and security operations support tools
- Service registry (GOCDB)
- Operations support services
- Security coordination
- Software acceptance criteria, staged rollout, and provisioning infrastructure
- Collaboration tools
- Incident management helpdesk (GGUS)
- 1st and 2nd level support

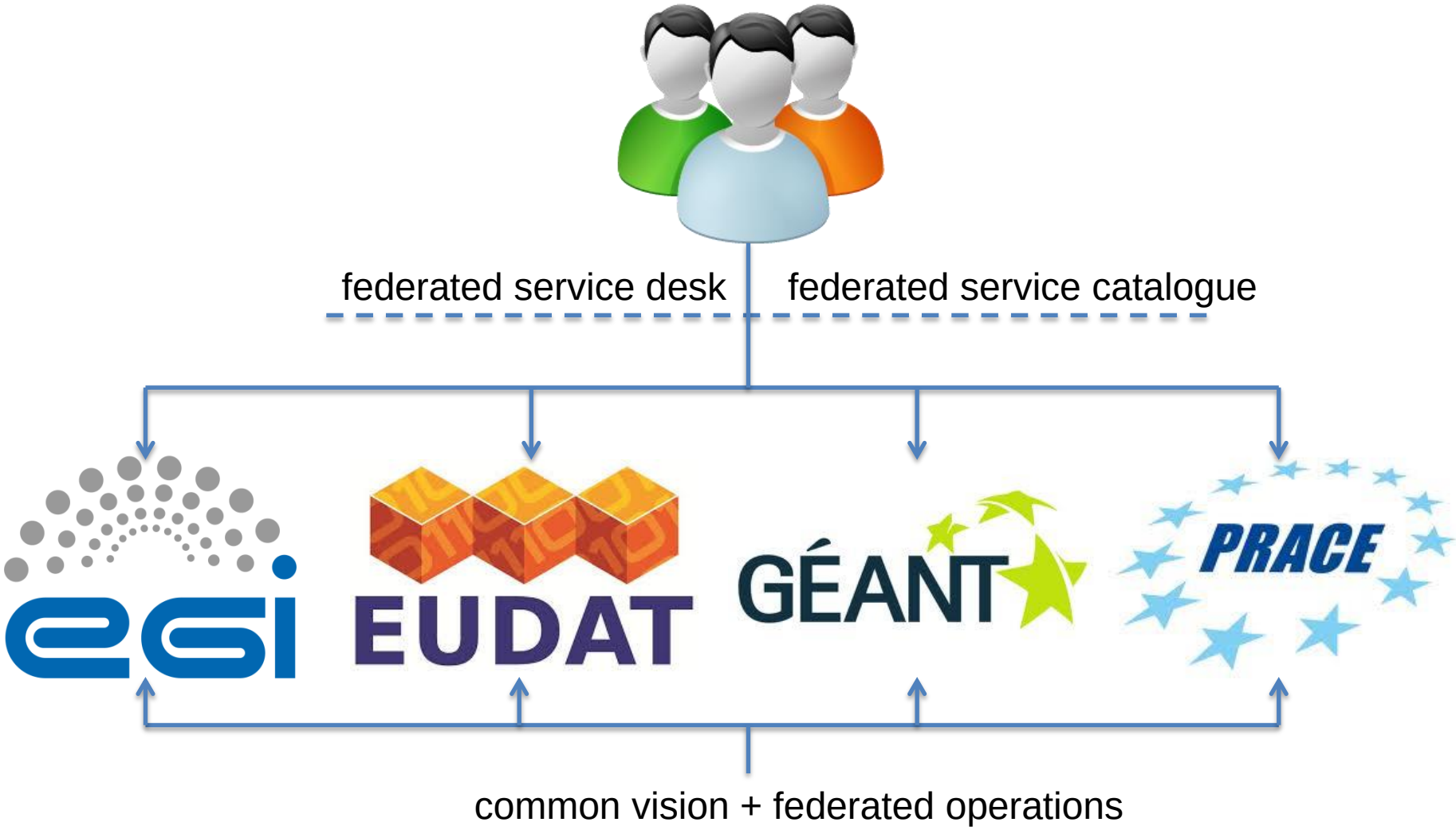
EGI Core Activities (cont)

- In EGI-InSPIRE: supported by EC, EGI Council fees and NGIs
- After April 2014
  - Services provided by a number of EGI partner consortia with no EC support
  - Technical transition being planned
  - Evolution of funding to a pay per use model

Towards Horizon 2020 e-Infrastructure integration

- EGI adoption of the e-IRG e-Infrastructure Commons 2020 to improve
  - Coordination and integration of existing e-Infrastructures services → federated service catalogue
  - Integration of technical support services, training
  - Adoption of common services for authentication, authorization, PIDs, service discovery, foster adoption of Federated ID provisioning
  - Visibility of e-Infrastructure services
  - Sustainability
  - Commercial provisioning of services
  - User representation to steer e-Infrastructure strategies
- Discussions in progress

User and e-Infrastructures



Towards Horizon 2020: Governance

- To foster user-driven service provisioning
  - User participation to define user community-EGI commitments in the medium and long term, business models, sustainability
  - User community participation in development of EGI strategies
- To evolve the current NGI-based governing structure

WLCG-EGI

- Improve collaboration, representation, participation
  - What future services does WLCG need from EGI?
  - Interest in the EGI Federated Cloud?
  - Adoption of a uniform European AAI framework
    - Policies for IdP federation, attribute providers federation, differentiated level of assurance → input from user communities needed
  - Join forces with other EGI user communities
    - E.g. data preservation
- EGI towards Horizon 2020 Workshop
  http://go.egi.eu/H2020