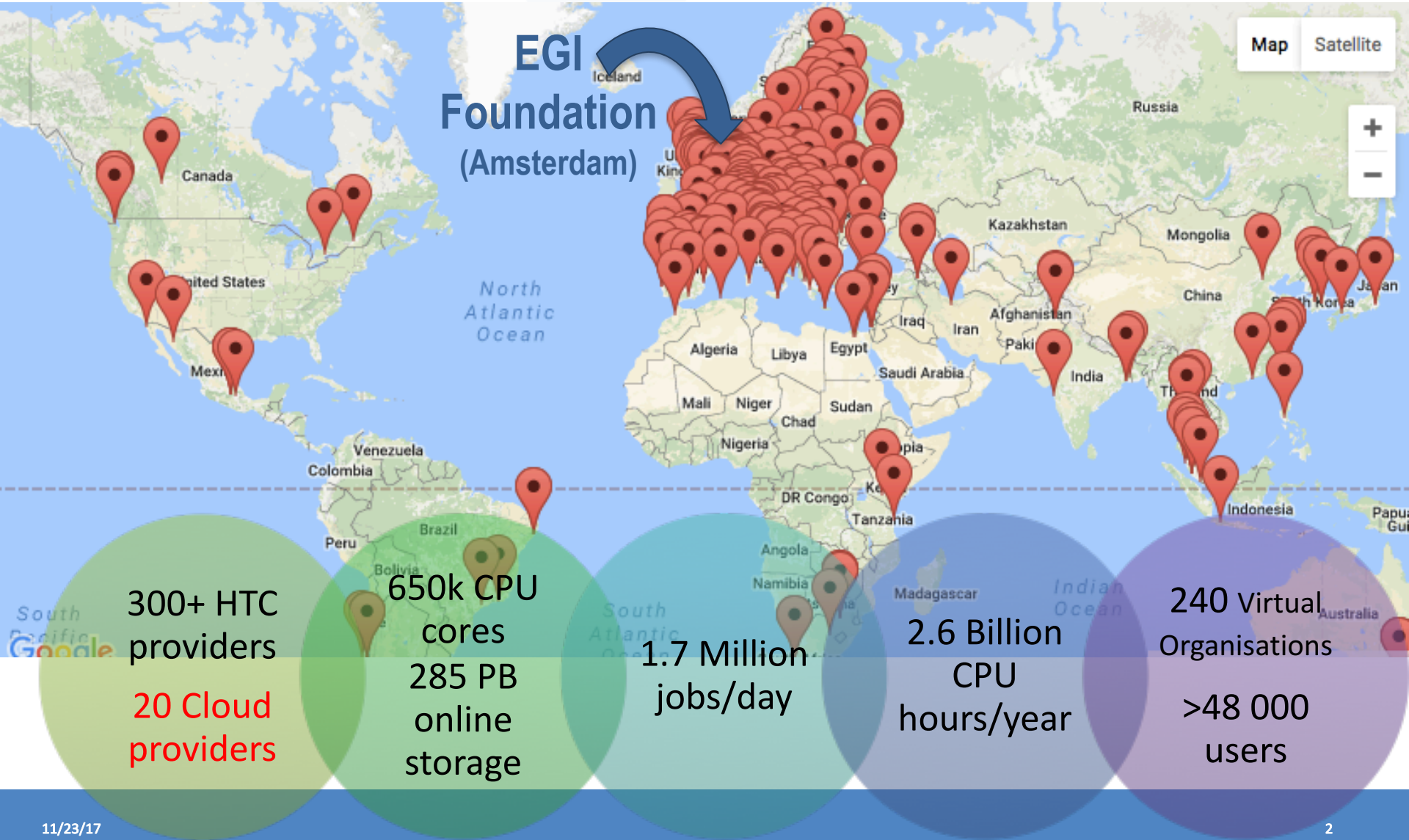


EGI FedCloud use cases

User Community Support Team @ EGI

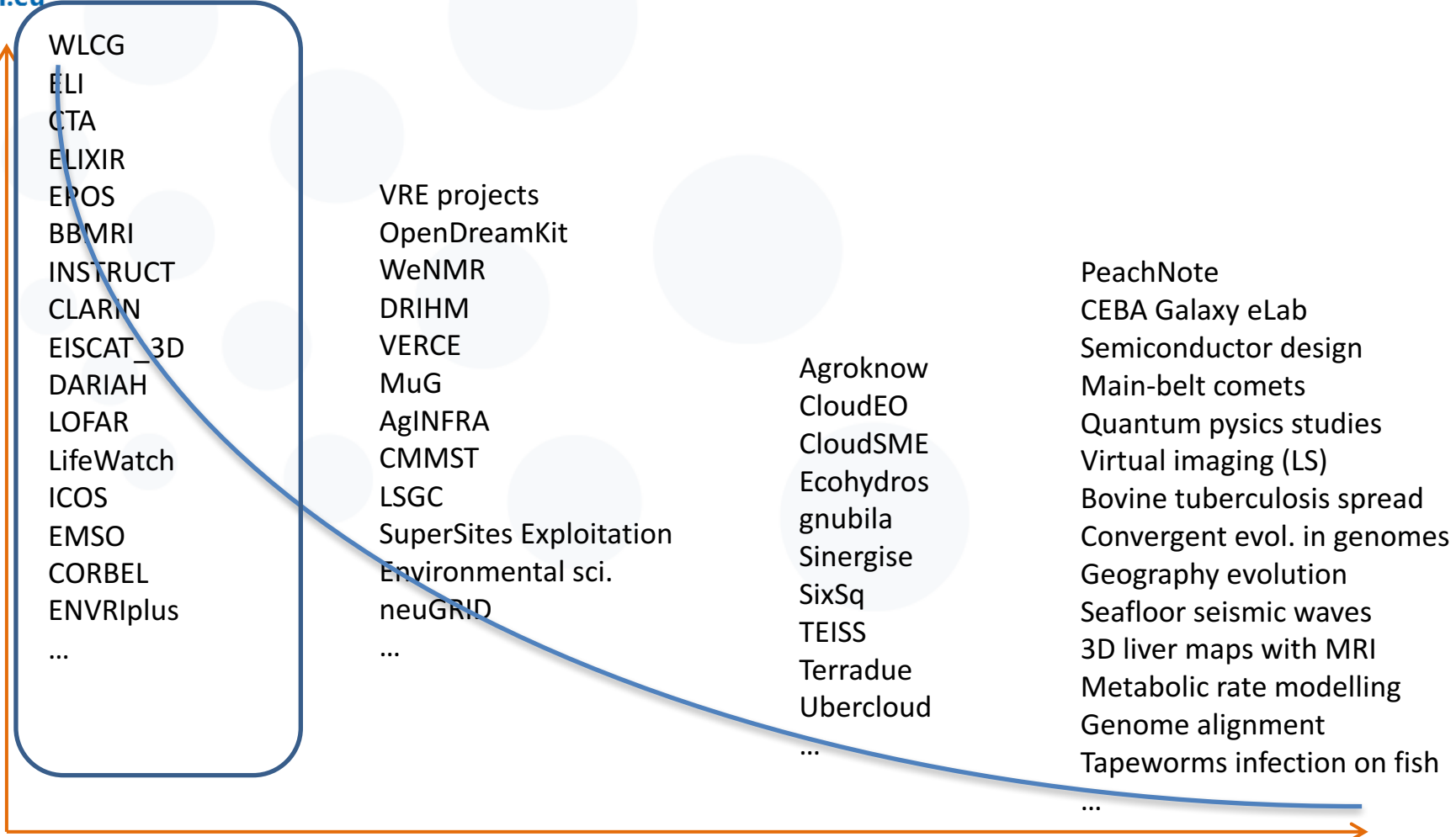


Largest distributed compute e-Infrastructure of the world



EGI serves researchers and innovators

Size of individual groups



ESFRIs, FET flagships Multinational communities, (e.g. H2020 projects) Industry, SMEs 'Long tail of science'

- RI are primarily data providers
 - Single/few data sources: **push data to multiple sites** (scalable access in local cloud, fault tolerance, archival)
 - Many data sources: **federate data** (complex analysis, sharing across borders)
- Federation needs
 - AAI (users to access applications in the cloud)
 - Data (for users and apps to interact with data from multiple sources)

EMSODEV Data Management Platform

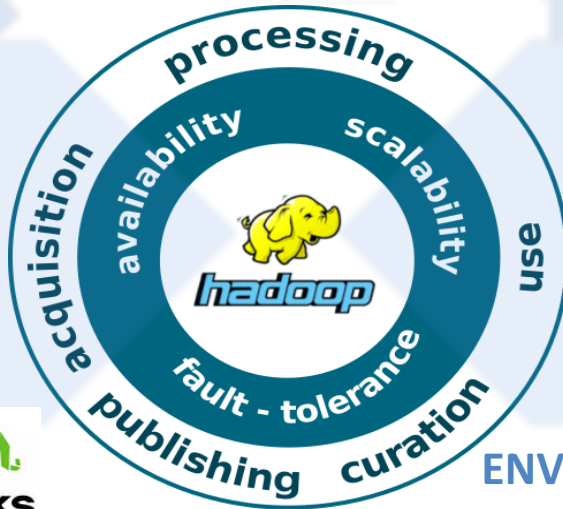
European Multidisciplinary Seafloor and water column Observatory (EMSO)

Data MGM Platform: Acquisition, processing publishing and curation of all the data collected by the deep sea observatories

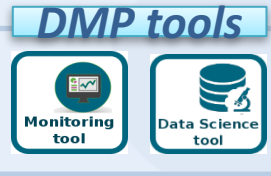
DATA MANAGEMENT PLATFORM

Asynch real-time ingestion.

Data ingestion



Data access



Cloud Compute



Online Storage

ENVRI Reference Model v2.0

EGI-EMSODEV SLA (vo.emsodev.eu):

- 4 Resource Providers: RECAS-BARI, INFN-Padova, CESSGA, LIP
- **Cloud Compute: ~ 300 cores ~ 600 GB RAM & Online Storage: 9 TB**
- Current deployment: **~10 VMs (8 CPUs + 16GB RAM + 40GB HD), 5TB**


- An infrastructure that provides secure and privacy-protecting access to key resources in order to support biomedical research and to support healthcare/public health advancement
- Federate private clouds:
 - by integrating BiobankCloud and EGI technologies,
 - allowing biobanks to easily setup their private clouds on their own hardware,
 - enable users from outside to access these private clouds as a part of multitenancy aware “access procedure”.




ICOS Carbon Portal Footprint tool





Mission: enable research to understand the greenhouse gas budgets and perturbations in Europe/adjacent regions

ICOS Carbon Portal use case 1: Footprint calculation and visualization tool




-  Cloud Compute
-  Online Storage
-  Data Hub

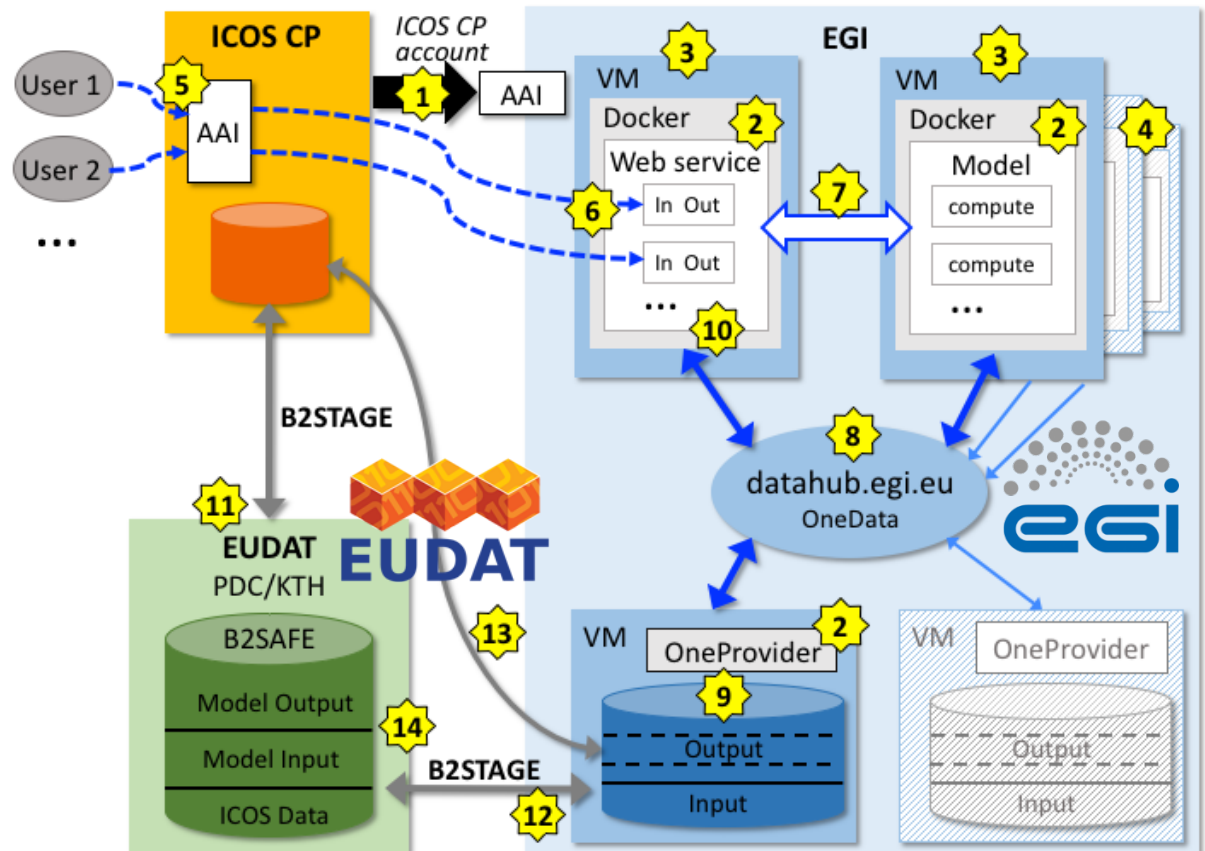




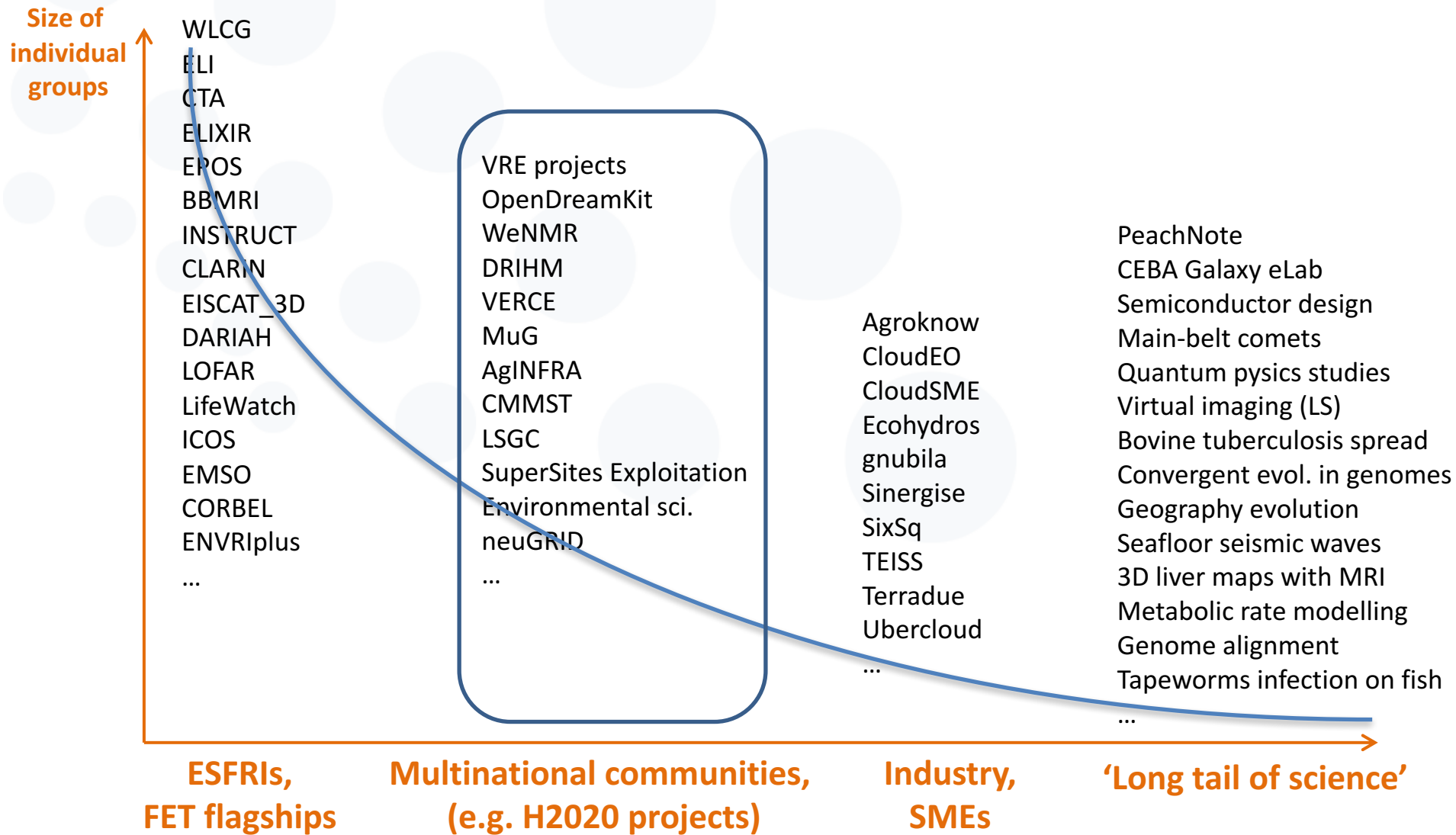
B2STAGE



B2SAFE



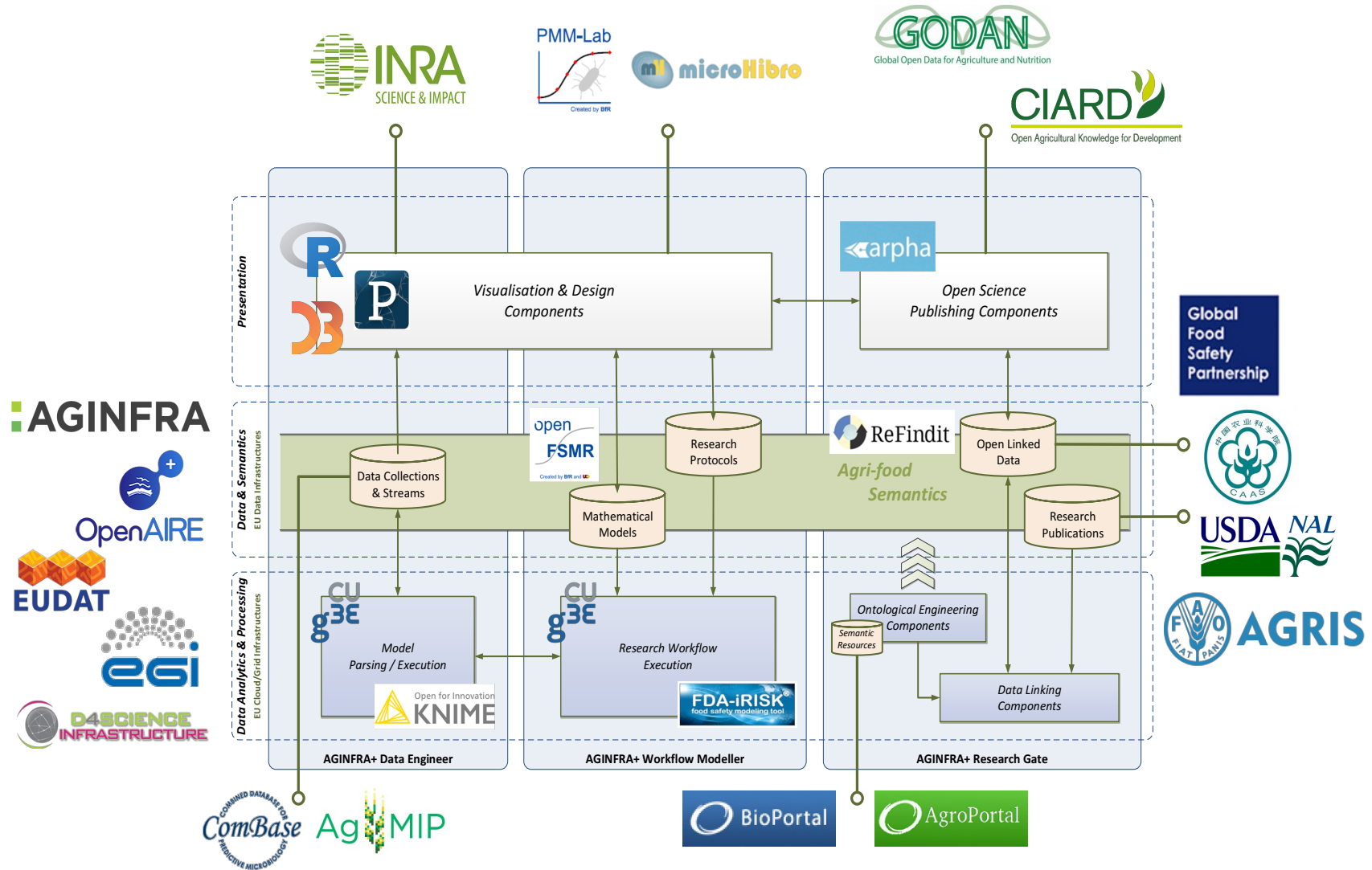
EGI serves researchers and innovators



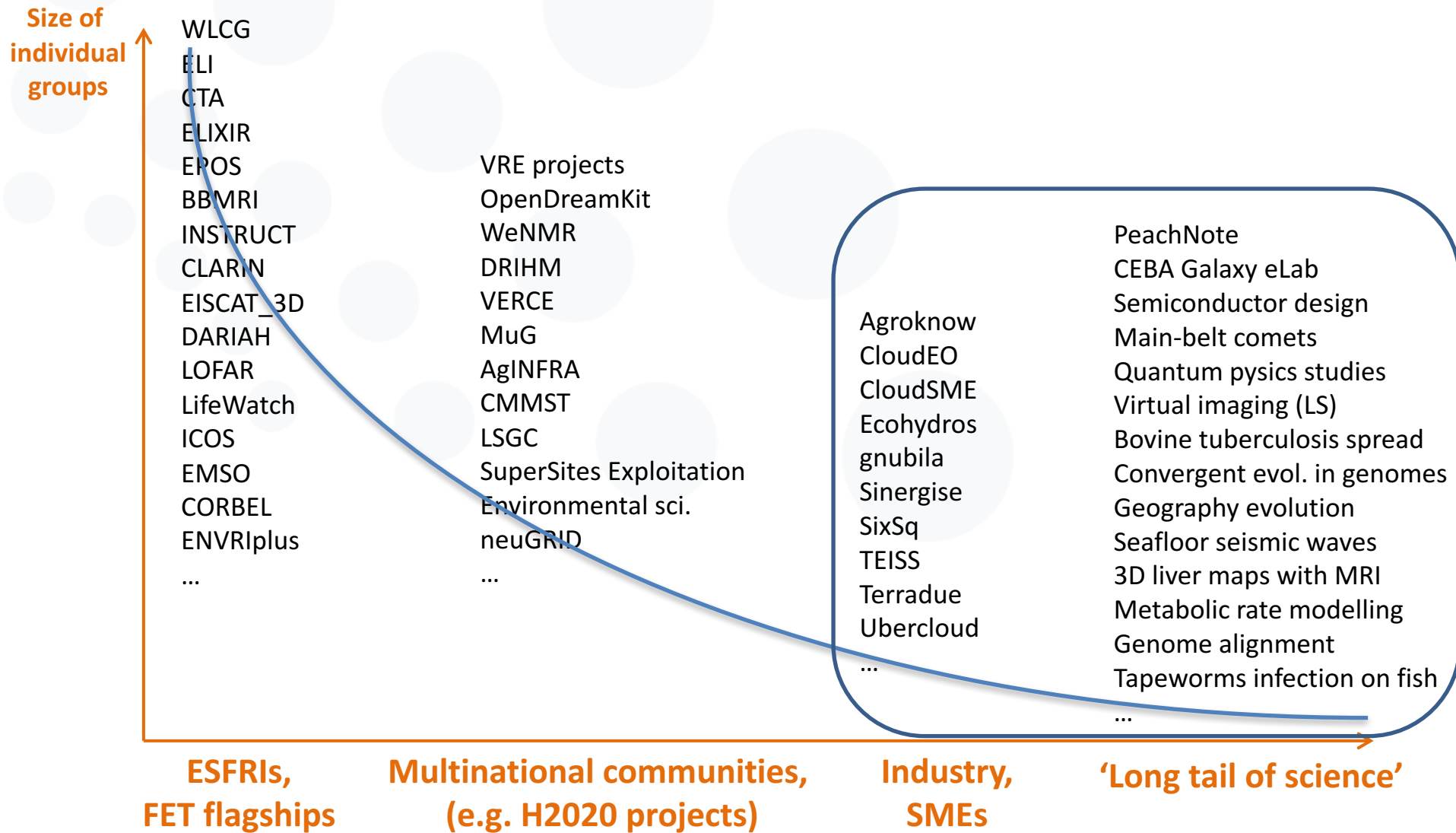
- CANFAR is a community platform for astronomy based on IVOA standards running on Compute Canada resources
 - Offers data access to astronomical data (archives and catalogues), Access control (GMS), user storage (VOspace), cloud processing integrated with telescope data collections (OpenStack)
- Technical Integration:
 - GMS Interoperability with EGI AAI
 - General Purpose VOspace development
- Infrastructure integration:
 - OATs-INAF (Italy) deployment of CANFAR tools and federation of OpenStack cloud into EGI

- VRE hosting platform
 - Integrates collaboration tools (shared files, forums, wiki, ...) and data catalogues (CKAN) with the *DataMiner* framework for execution of a large array of data analytics tasks on datasets
- Use EGI as a resource provider
 - Spawn VM on demand to execute user workloads
 - AppDB Cloud MarketPlace, jOCCI SDK, EGI VOMS
- Supporting
 - iMarine, BlueBridges, ENVRI+, SoBigData, FAO, AGINFRA, Parthenos

The AGINFRA+ Vision: How?

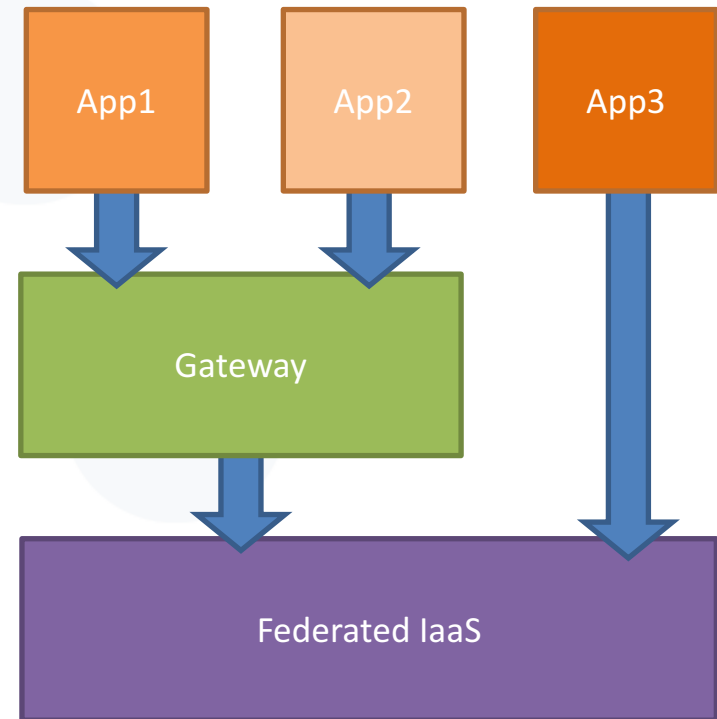


EGI serves researchers and innovators



Mid and long-tail needs

- Interest in SaaS/PaaS:
 - Galaxy, Hadoop, Spark, ...
 - (federated) IaaS as a foundation layer
- IaaS Portability
 - No hard dependency on a single provider
 - VMs compatible and available at every provider
 - As homogeneous as possible
 - Easy & automated discovery



Platforms built and running on FedCloud

PeachNote	NBIS	GeoHazards TP	AoD	D4Science
1.6M users +64M page views	8 different services 10K users from 73 countries	+500 registered users 50% resources on EGI	Beta open for NILs Easy to access applications	VREs on a Hybrid Data Infrastructure
104 vCPUs 162 GB RAM 8TiB Storage	172 vCPUs 400 GB RAM 9TiB Storage	360 vCPUs 800 GB RAM 10TiB Storage	167 vCPUs 244 GB RAM 4TiB Storage	210 vCPUs 584 GB RAM 12,5 TiB
CESNET, FZJ	RECAS-BARI, IN2P3, ULAKBIM	RECAS-BARI, 100IT, GRNET, GWDG, CYFRONET, BELSPO, CESGA	CESGA, BIFI, RECAS-BARI, INFN-CATANIA	IISAS, CESGA, UPV-GRYCAP, RECAS-BARI, GWDG

- Data as the main driver for federation
 - Move computation to data
 - Discovery and distributed access to data
- Portability
 - Good discoverability and support for automation are more important than uniform API at the IaaS
 - Use of IaaS provisioning tools to handle heterogeneity
- Higher level services
 - EGI FedCloud as a support layer for building end-user tools and services

Thank you for your attention.

Questions?



www.egi.eu

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