





Hybrid Storage Deployment Models

Cloud Storage and Synchronization Services
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Where we come from?



Helix Nebula Science Cloud

- Provided an **Hybrid cloud** platform for the European research community
- **Collective effort of 10 procurer Research Organisations** forming the Buyers Group
- Expressing the need to **increase the analysis capability and capacity** offered to their users



GÉANT IaaS Framework

- Provision of **Infrastructure as a Service (IaaS)** for the NRENs





Helix Nebula Hybrid Cloud Model



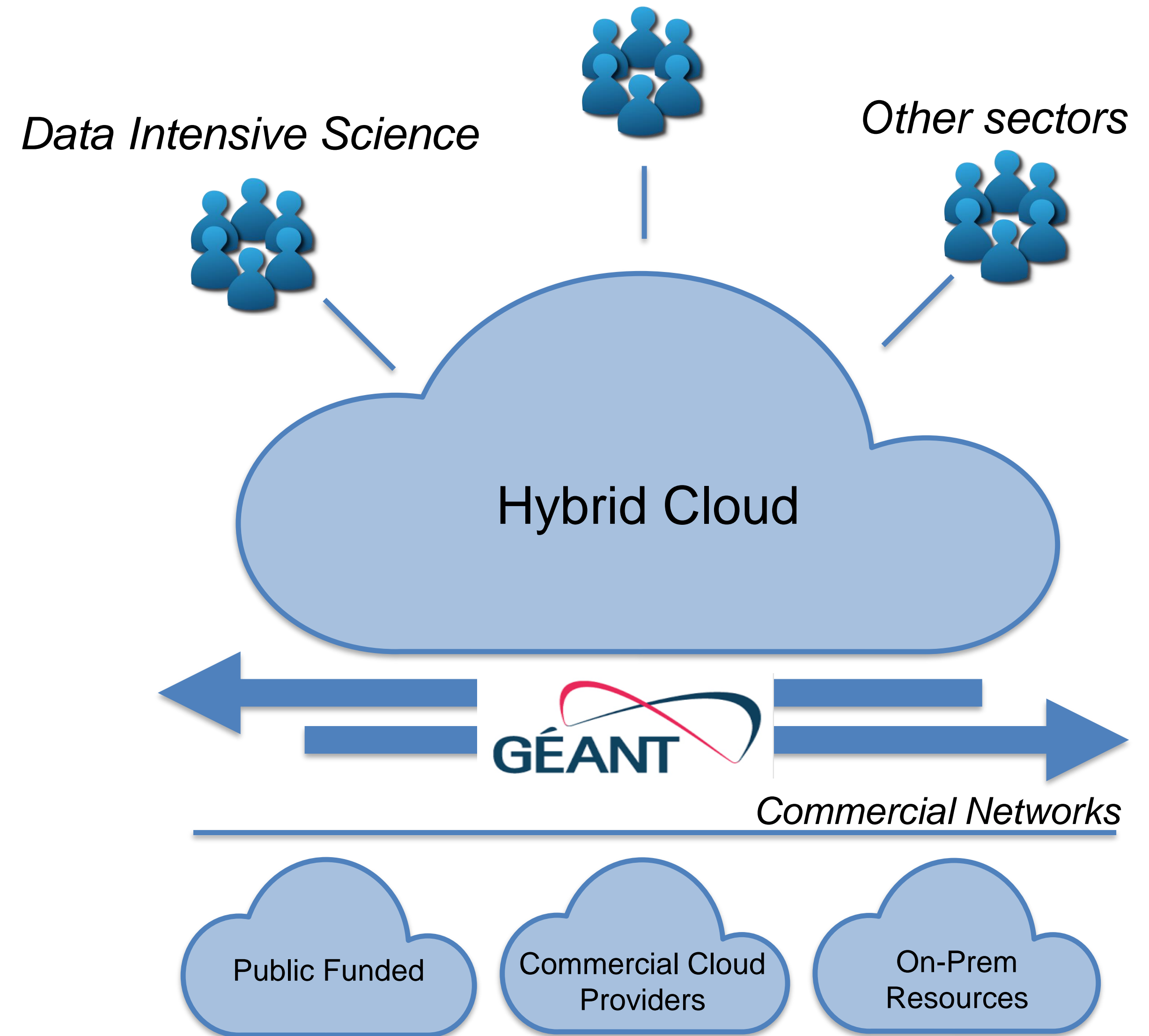
Medium Scale/Long Tail

Bringing together:

- **Research Organisations**
- **Data Providers**
- **Publicly funded e-infrastructures**
- **Commercial cloud providers**

with:

Procurement and Governance
suitable for the dynamic cloud market

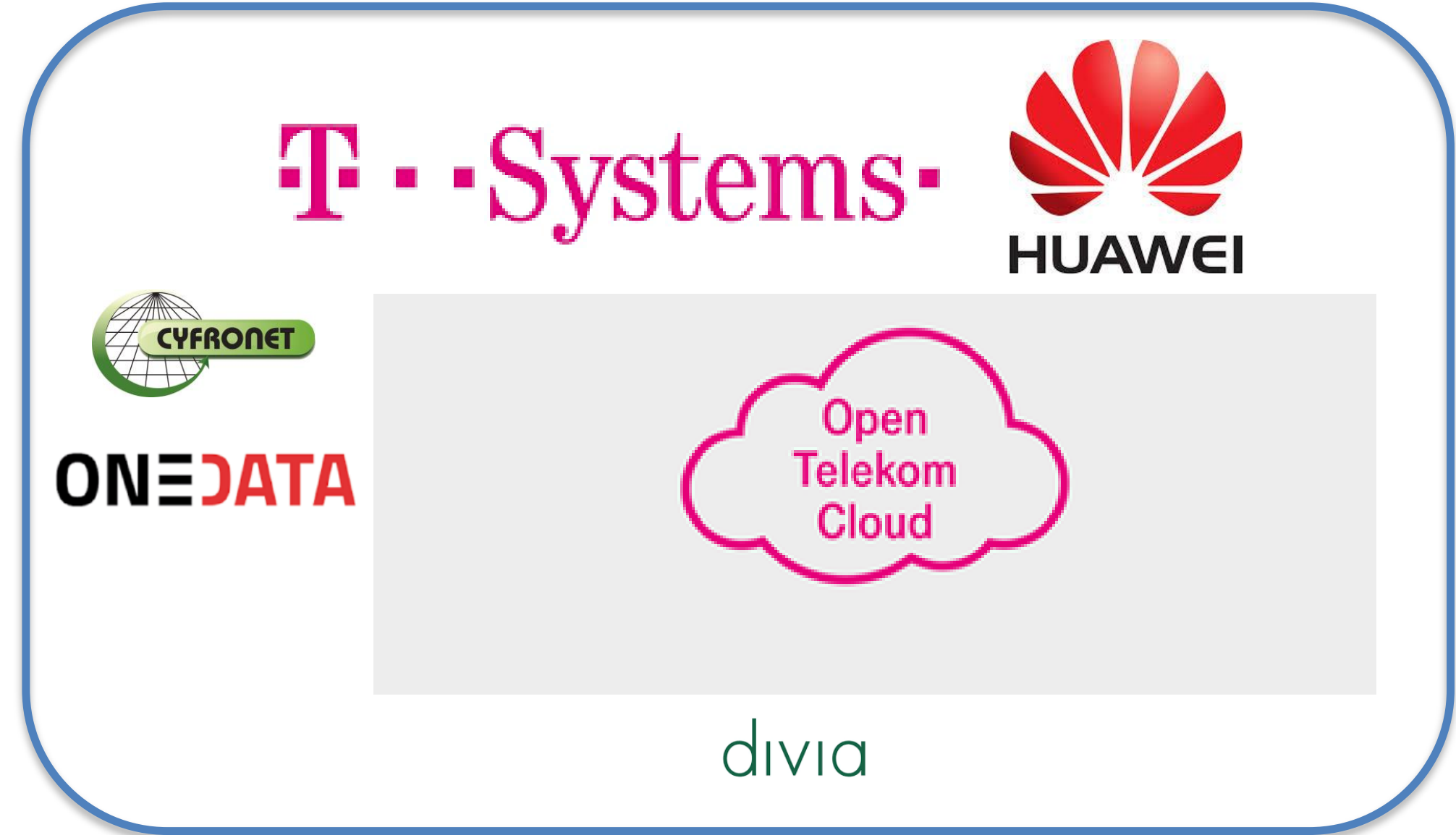




HNSciCloud Pilot Deployments



- **T-Systems**
- *IaaS based on OTC*



- **RHEA**
- *IaaS provided by Exoscale*





OCRE | Open Clouds for Research Environments

A consortium formed by



<http://www.ocre-project.eu>

- *Procurement of digital services for the European Open Science Cloud*
- *Procurement Budget: 9.5M euro*
- *Starting Date: 1st of January 2019*
- *Duration: 36 Months*
- *Coordinating Partner: GÉANT*



European Commission





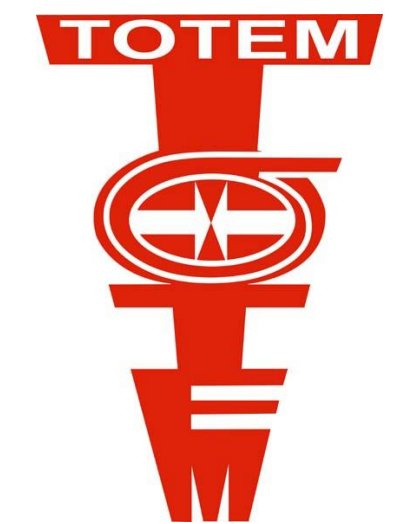
Examples of use cases

☛ Integration of commercial cloud capacity in production batch services



☛ On demand computing facilities generation

- ☛ Hybrid Cloud auto-scaling with Kubernetes
- ☛ Scientific Data Management integration (Rucio) with commercial clouds
- ☛ DODAS, Lightweight WLCG sites deployments
- ☛ Interactive user analysis services (TOTEM)



☛ S3 object stores

- ☛ Hybrid S3 services for data replication using Ceph
- ☛ Use S3 for AODs for preparatory analysis jobs



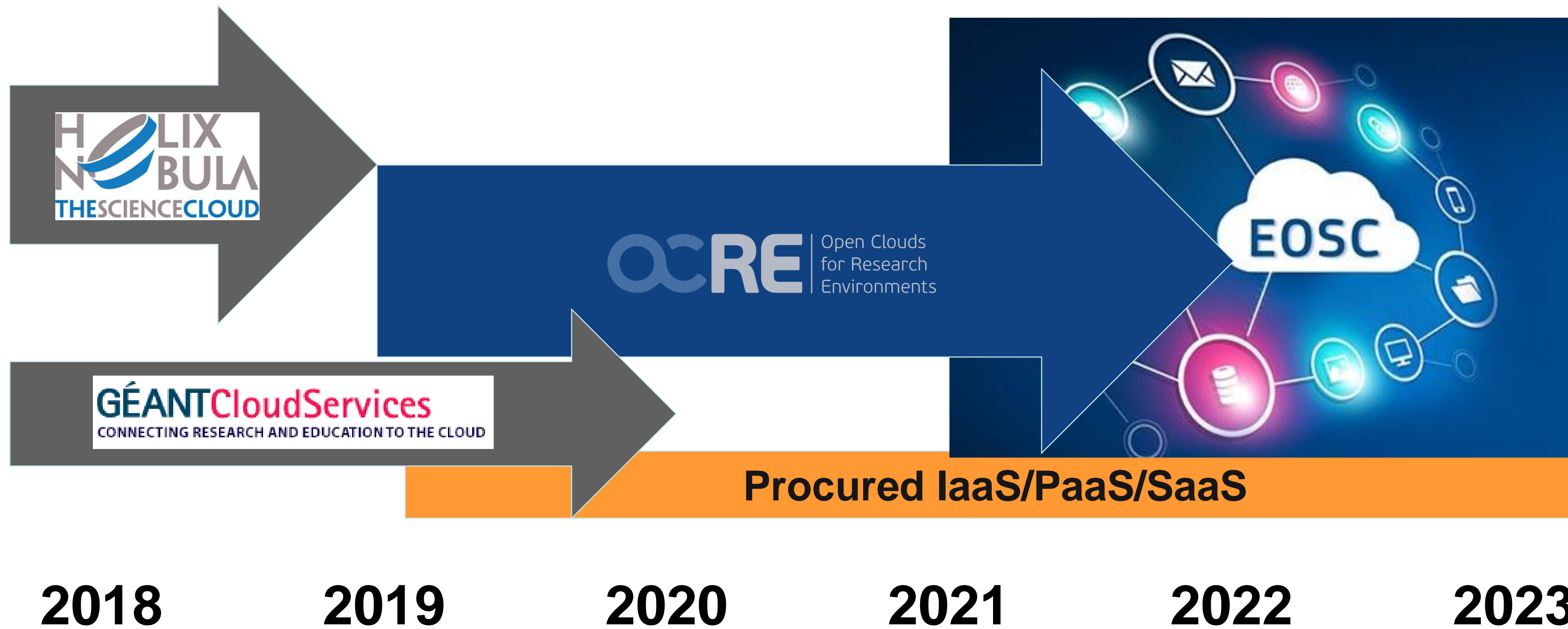
☛ Deep Learning for Simulation

- ☛ Scale out model training for Neural Network optimization
- ☛ Extend to other hardware accelerators (FPGAs) for inference
- ☛ Generalise the approach to satellite imagery analysis and medical applications





OCRE Timeline





<http://www.archiver-project.eu>

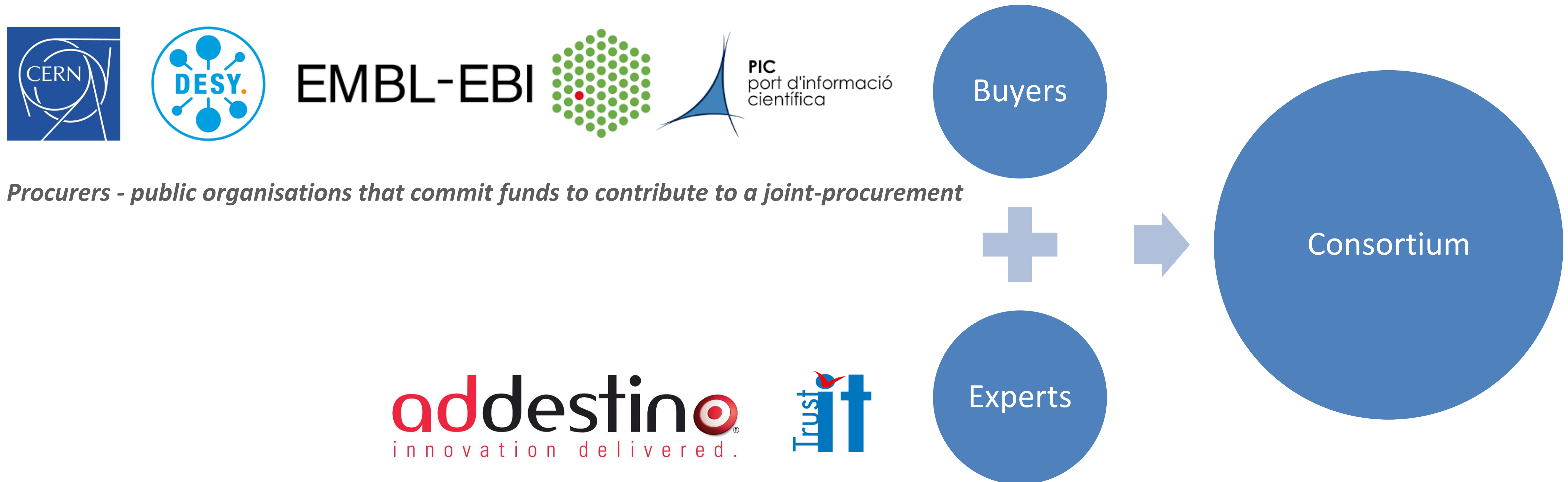
- ***Pre-Commercial Procurement***
- ***Focus: Archiving and Data Preservation Services in commercial clouds***
- ***Procurement Budget: 3.4M euro***
- ***Starting Date: 1st of January 2019***
- ***Duration: 36 Months***
- ***Coordinating Partner: CERN***



European Commission



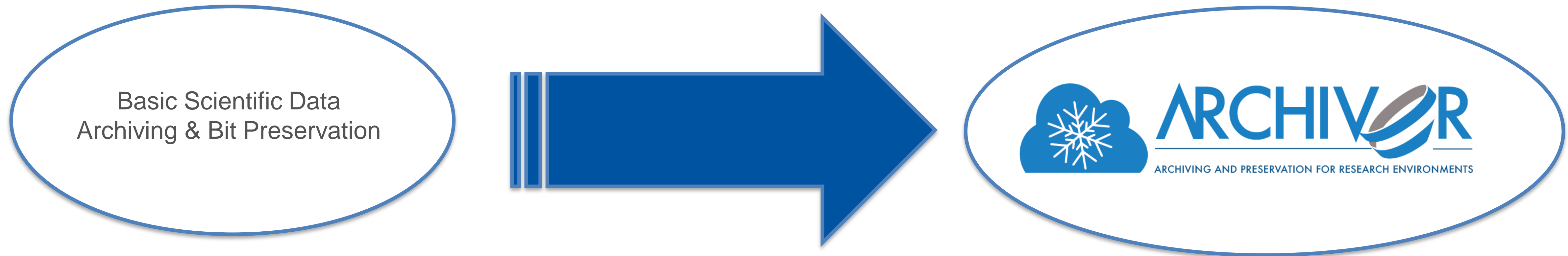
Includes Buyers and Experts in the preparation, execution and promotion of the project



Procurers - public organisations that commit funds to contribute to a joint-procurement

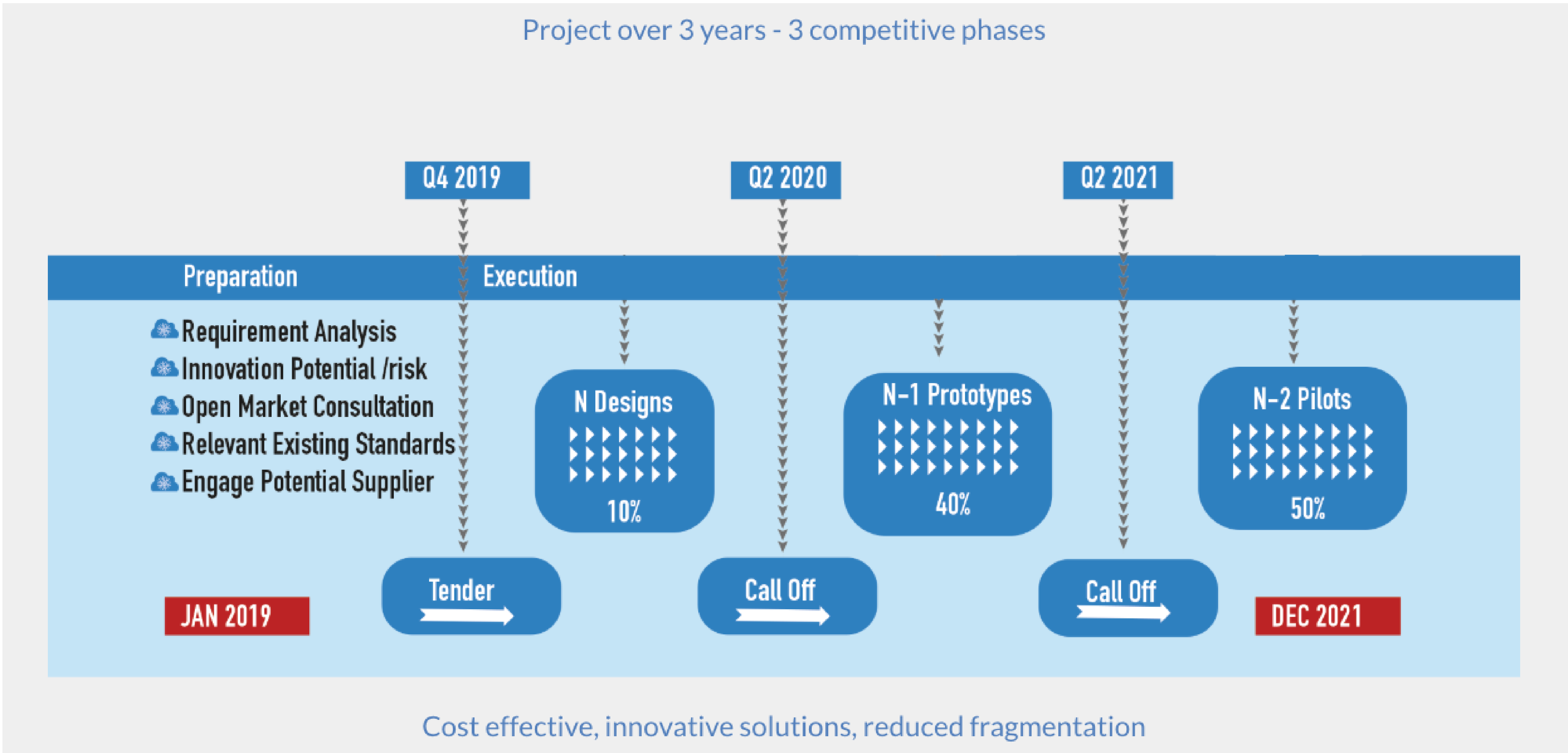
Experts - partner organisations bringing expertise in the requirement assessment and promotion activities but are not part of the Buyers Group

In addition, a number of Early Adopters organisations have expressed interest



*R&D to demonstrate functionality of hybrid services for long-term preservation and archiving
(Analysis Preservation, Software capture, reuse, etc.) for scientific data in the PB range under F.A.I.R. principles*

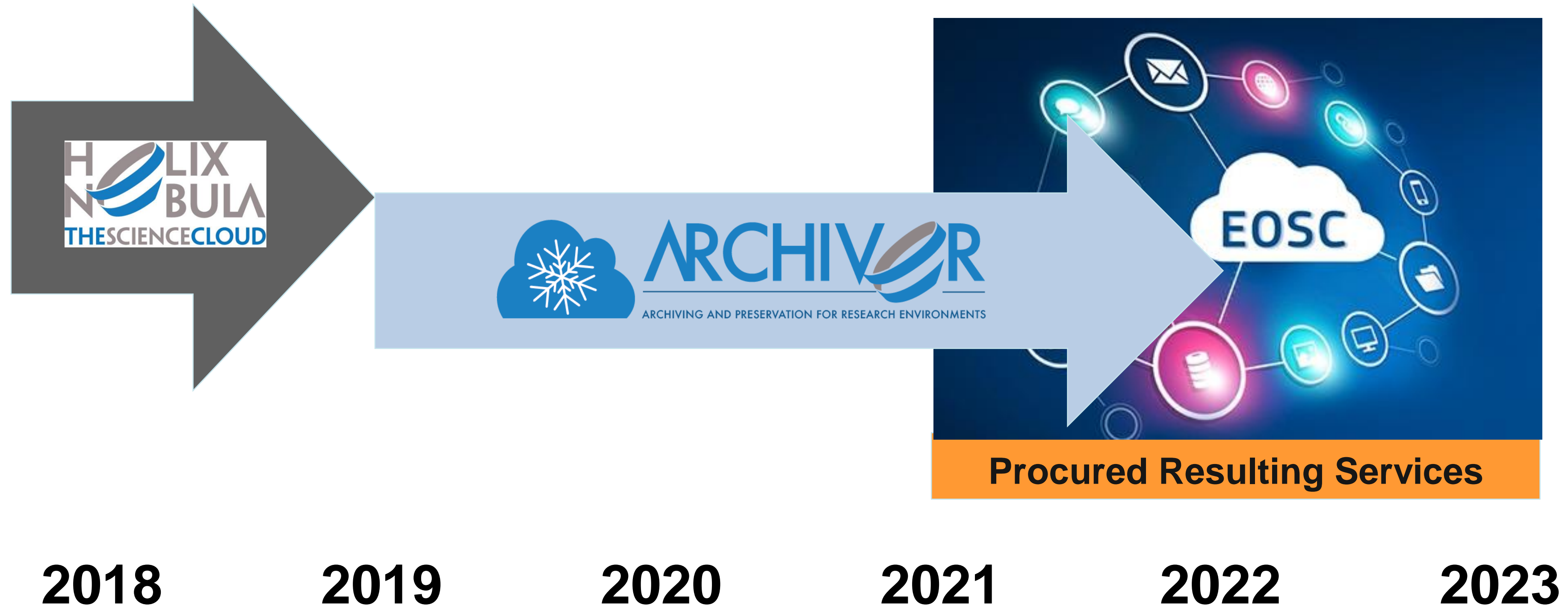
- Generalize and expand existing solutions to several scientific domains*
- R&D on hybrid data management with access and ingestion at very high rates (1-10 Gbps/day)*
- Resulting Services under the OAIS reference model and relevant standards*
- Define Business Models for cost-effective services*



Suppliers to sign a framework agreement in order to participate in the call-offs



ARCHIVER Timeline





Summary & Next Steps

- ☛ *OCRE will become THE Procurement arm of the EOSC*
- ☛ *Procuring services of ALL cloud providers across the stack: IaaS/PaaS/SaaS*
- ☛ *Suppliers readiness will be technically validated through a test-suite*
- ☛ *Access to cloud services with vouchers/credits will start in 2019*
- ☛ *Webinars to be organized on the 11th and 15th of March 2019*
 - ☛ *Interested in attending? Please register here: <http://eepurl.com/gePYFb>*

More information about OCRE at: <http://www.ocre-project.eu>

- ☛ *ARCHIVER Pre-Commercial Procurement will run an open tender process*
- ☛ *Contractors will produce the R&D to the next generation of digital archiving and LTDP services*
- ☛ *Resulting services to be integrated on the EOSC catalogue*
- ☛ *Open Market Consultation events to kick-off in Q1 2019*
 - ☛ *Interested in attending? Please register here: <https://goo.gl/forms/ysSO6mvZOCFhPzaS2>*

More information about ARCHIVER at: <http://www.archiver-project.eu>

