

HSSciCloud update

LHCONE meeting at BNL – 5th of April 2017

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Slides by courtesy of Joao Fernandes - CERN

HELIX NEBULA The Science Cloud

- Procurers: CERN, CNRS, DESY, EMBL-EBI, ESRF, IFAE, INFN, KIT, SURFSara, STFC
- Procurers have committed funds (>1.6M€), manpower, use-cases with applications & data, in-house IT resources
- Experts: Trust-IT & EGI.eu
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- Objective: procure innovative IaaS level cloud services
- Fully and seamlessly integrating commercial cloud (IaaS) resources with in-house resources and European e-Infrastructures
- To form a hybrid cloud platform for science
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- Services will be made available to end-users from many research communities: High-energy physics, astronomy, life sciences, neutron/photon sciences, long tail of science
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- Co-funded via H2020 (Jan'16-Jun'18) as a Pre-Commercial Procurement (PCP) project: Grant Agreement 687614, total procurement volume: >5M€



HNSciCloud Challenges

Innovative IaaS level cloud services integrated with procurers in-house resources and public e-infrastructure to support a range of scientific workloads

- ***Compute and Storage***

- support a range of virtual machine and container configurations including HPC working with datasets in the petabyte range

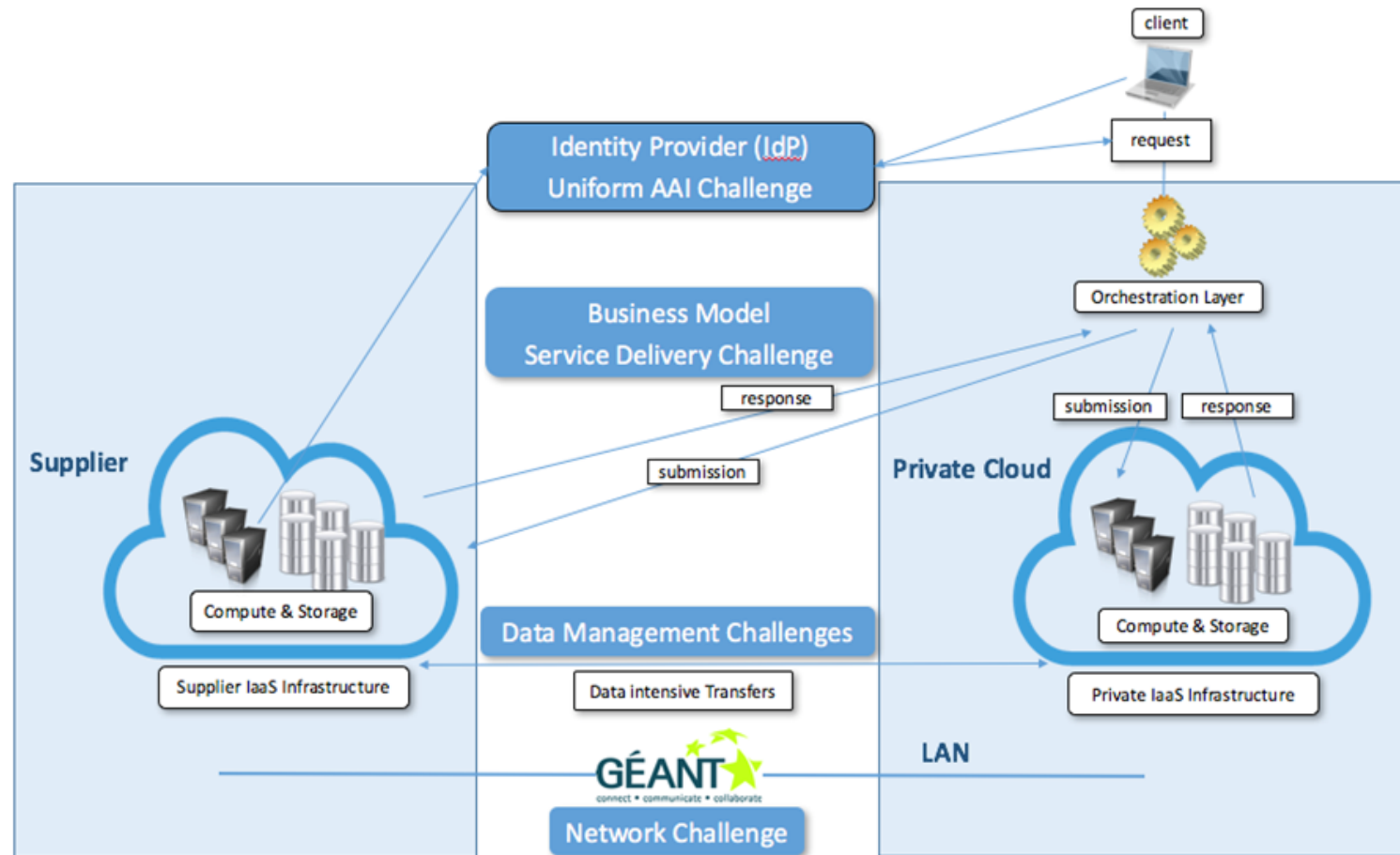
- ***Network Connectivity and Federated Identity Management***

- provide high-end network capacity via GEANT for the whole platform with common identity and access management

- ***Service Payment Models***

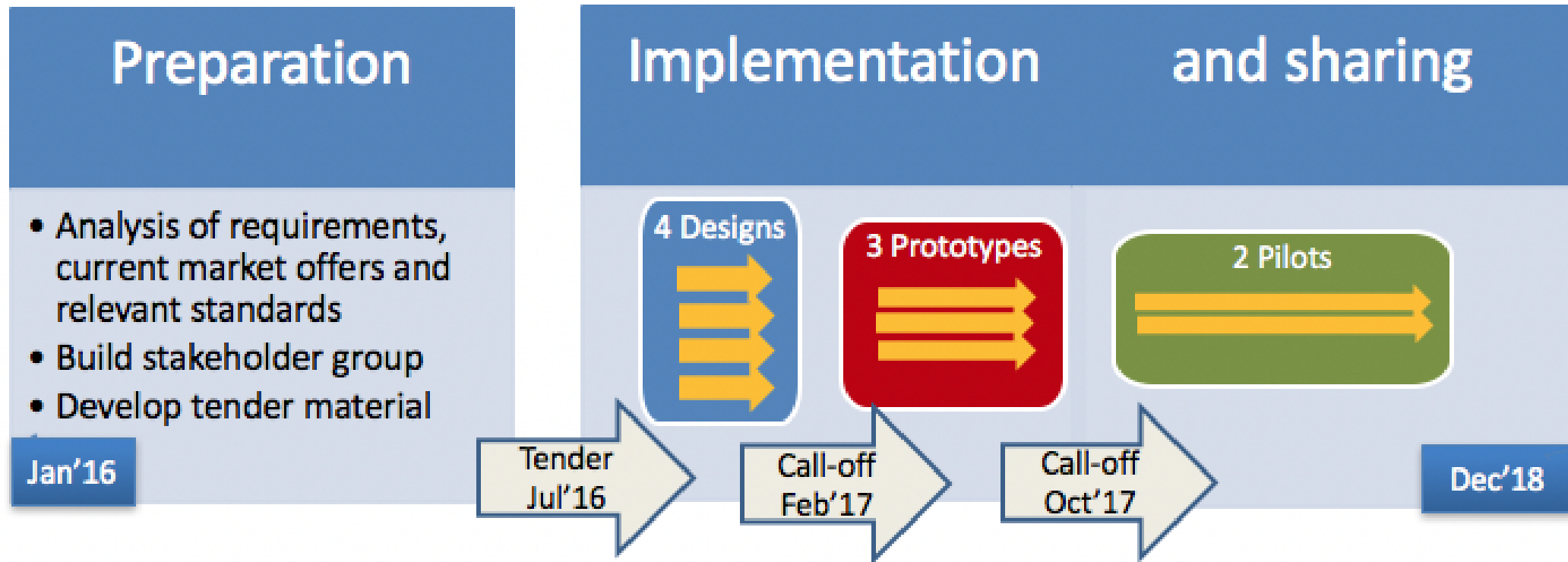
- explore a range of purchasing options to determine those most appropriate for the scientific application workloads to be deployed

High Level Architecture of the Hybrid Cloud Platform including the R&D challenges



HNSciCloud – Project Phases

We are here



Each step is **competitive** - only contractors that successfully complete the previous step can bid in the next

HNSciCloud – Recent Achievements

- Official start of project: Jan 2016, duration: 30 months
- Tender announced in Jan 2016
- 17-Mar-2016: Open market consultation
- 21-Jul-2016: Tender issued (> 200 downloads, > 70 requests for clarification)
- 07-Sep-2016: Tender information day – design phase
- 19-Sep-2016: Deadline for tender replies
 - Sufficient number of valid tenders received
 - Evaluation by administrative and technical experts
- 07-Oct-2016: Award decision, contracts
- 02-Nov-2016: Kick-off meeting with Phase 1 contractors
- 12 and 13-Dec-2016: Mid-phase reviews with contractors
- 30-Jan-2017: Deadline for end-of-phase reports and other deliverables
- 23-Feb-2017: Decision on which contractors passed design phase successfully

HNSciCloud – Design to Prototype

- Design Phase

- T-Systems, Huawei, Cyfronet, Divia
- IBM
- RHEA Group, T-Systems, exoscale, SixSq
- Indra, HPE, Advania, SixSq

Other major players not interested or dropped out just before tender submission

- Current Status: Evaluation of Bids for the Prototype Phase

- T-Systems, Huawei, Cyfronet, Divia
- IBM
- RHEA Group, T-Systems, exoscale, SixSq

- Results just announced at the Prototype Phase Kick-Off meeting (3-5 April)

- <http://www.hnscicloud.eu>

Prototype Phase

- Collect a number of tests from the Procurers
 - To test/validate the design proposed for the several project challenges
 - To be able to assess results of the tests as one of the main criteria to be eligible to the next phase (Pilot)
- Tests consist in applications and some selected workloads
- Next phase (Pilot) will be based on the Prototype to be assessed on 3 main aspects:
 - Performance
 - Scalability
 - Security