

Ian Bird

WLCG Management Board;

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Summary of EU-T0 discussions

Today

- Summary of recent discussions
 - Workshop held April 28-30th
 - Presentation at WLCG OB (9th May)
- What is relevance for WLCG?
 - What should our position be?
- What are WLCG MB concerns?

Open questions

- ❑ What exactly will EU-T0 do?
- ❑ What is the relationship to EGI.eu?
- ❑ What is the relationship to WLCG?

What?

- ❑ **EU-T0** is an Association of HEP/AP research institutes & funding agencies which support projects in HEP, nuclear, astroparticle, cosmology, astrophysics & photon science
 - CERN, CIEMAT, DESY, IFAE, IN2P3, INFN, KIT, STFC
- ❑ **EU-T0** is a hub of knowledge and expertise that optimises the investment of the funding agencies in proven e-infrastructure by broadening, simplifying, and harmonising access, driven by well-defined user requirements
- ❑ **EU-T0** aims to build a federated virtual European **Tier 0** data-management and computing centre, implementing the connection and coordination among the major national e-infrastructures
- ❑ **EU-T0** contributes to the implementation of the vision towards a “general purpose European computing and data e-infrastructure for research”

Rationale

- Considerable overlap between the research funding agencies in Particle, Nuclear, Astroparticle Physics, Cosmology and Astrophysics.
- APPEC promotes opportunities to cooperate in designing new software methods, computing and data processing infrastructures for the current and future major research projects.
- Promoting a large cluster of major research projects and key representatives around e-Science and data management issues.
- The EU-T0 federation was launched officially on the 11th February 2014 by some major research institutes in the above mentioned domains, and the participation is going to be extended to more institutes.
- The approach aims to be a “core” project for a larger multi-domain federation.
- Bringing the research communities closer each other to support their needs and:
 - avoid fragmentation and repetitions;
 - increase cross-fertilisation;
 - share standards, expertise and developments;
 - provide and share services;
 - promote outstanding CCs in Europe.
- According to a “data and researchers centric” approach, the EU-T0 e-infrastructure accounts for the “user needs” and the expectations of research communities committed in major ESFRI RIs and ERF.

Rationale

- Vision is service-based – set of services to scientists and research projects, built on common underlying infrastructures:
 - Advanced, high speed, high capacity international networks among CCs archiving and processing data.
 - A functional Authorisation, Authentication and Accounting (AAA) infrastructure.
 - Coherent set of data services and tools, capitalizing on the experience of existing major projects

Rationale

- There is an important need for a number of coordination activities which embrace all e-infrastructures. :
 - Organization and repositories for sharing services, software, data across communities;
 - Recognize shared/common needs for developments and services;
 - Efforts to develop new services/tools where needs are identified;
 - Policy development (shown to be essential for successful infrastructures);
 - Security coordination – policy development and incident handling (CSIRT);
 - Collaboration beyond Europe and with more scientific communities;
 - Integration with other forms of e-infrastructures including Capability HPC (PRACE) and
 - volunteer computing;
 - Coordination/negotiation with industry;
 - Creation of a training network to create key skills for the future including “data scientists”

Status

- Delegation met EC representatives in Brussels on April 24.
 - Vision to be developed over the coming few months:
 - Converging on an explicative document in a few weeks.
 - Taking part to a series of discussions on the e-infra. future in Europe.
- A workshop (28-30 April) discussing some possible immediate H2020 engagements.
 - Discussions are now taking place with EUDAT and EGI.
- Long term goal to create sustainable environment for IT needs of the ERA
- But also potential synergies with US and Asia would be interesting.

Status



- A few pillar projects just started:
 - ✓ The EU-T0 data backbone: heterogeneous storage managed in a federated way; interoperable (EUDAT-compatible); fulfilling the real-time ingestion and the archive access requirements;
 - ✓ The EU-T0 cloud: extremely hybrid distributed computing architecture, scheduling, virtualizing and configurable for all users; serving also long-tail science;
 - ✓ The EU-T0 VRE and software: organization, repositories and provision of services, preserving data, and new software programming test-bed provision across communities;
 - ✓ The EU-T0 training: “data scientist” building profile and promoting careers;
 - ✓ The EU-T0 pilot: new business model and interaction with private sector for co-developments around big-data services and cloud (Helixnebula).

Relationship with WLCG

- How does (or does not) this benefit WLCG, and what the relationship to LCG should be?
 - The WLCG project provides global computing resources to store, distribute and analyse the data annually generated by the LHC experiments. Its evolution respond to the LHC projects and requirements.
 - The EU-T0 project aims to promote the proven expertise acquired by the WLCG centers: in which way ?

These centers are involved in other large international projects. The cross fertilizations between projects will help to promote the WLCG services but also to participate to new developments which could be revealed interesting for LHC and viceversa.
 - EU-T0 would represent the federated platform for development and rationalization of services.

The approach being “data and researchers” centric, will be steered by researchers.
- *One more consideration:*
 - Some major world-wide future research infrastructures involving even some of all EU-T0 partners’ CCs would benefit of a common “desk” where finding inputs from the beginning to adopt the best computing model.
 - The “data-management” part of any project in Europe is not often well considered (and funded) at the starting phase. The federation would help to focus investments for common developments at the services of all RIs but also for multi-disciplinary usage when researchers are looking for a scientific analysis and data management system for their needs.

Relationship with EGI

- How will EGI fit into this landscape? Why EU-T0 is different than EGI?
 - This would deserve a long discussion and the future is in the hands of the shareholders (funding agencies).

- Here I (Giovanni) summarize only few common feelings.
 - EU-T0 stays underneath any “transversal initiatives in Europe” which would have as main target the “long-tail research” and/or the provision of SE and CE freely.
 - NGIs support EGI for these targets.
 - EU-T0 partners can today step-down (see Germany) from EGI because FAs have as main objective the support to their RIs. The operations have to be guaranteed independently on any transversal initiative.
 - The Grid usage and the Grid resources in Particle and Astroparticle RIs come thanks to the expertise in the WLCG centers and paid by our FAs. EGI has not effect/role on it.
 - Cloud developments can be envisaged in large cooperation framework also together with EGI and other partners in EIROforum, but... if Cloud is a synonymous of a new technological paradigm for heterogeneous “distributed data and computing infrastructures” system, this should be the core of EU-T0 dev.

My (IB) view

- EU-T0 is an initiative/alliance of several of the larger European HEP/AP funding agencies
 - Want to work together to attract H2020 funding
 - See the success of WLCG as a body of expertise and knowledge to help other new large HEP/AP experiments set up their computing models and infrastructures
- The vision is of a more federated data and compute infrastructure across Europe
 - This is broadly in line with the EIROforum vision paper
- WLCG can benefit in some areas
 - Building AAA services on federated identities
 - Focussed developments on (e.g.) federating cloud infrastructures, data management, data preservation, etc.
 - However there are many H2020 calls with “known” communities expected to respond – EU-T0 has to work with them and not compete
 - More important – positioning for the 2nd work programme of H2020 (2016→) where indications are that we can have strong influence
 - The EIROforum vision paper was well received by the EC
- WLCG has to engage with EU-T0 to ensure the direction is what we need

Questions/Opinions?