



Feasibility Study on a Common Analysis Framework for ATLAS & CMS

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- This talk is about an initiative between IT-ES, CMS and ATLAS for investigating commonalities in analysis frameworks
 - Environment highly resource constrained and likely to be more so in the future
 - This, together with recent successes in the area of common solutions – in part funded by EGI-InSPIRE (finishing April 2013) – lead us to look for further synergies and savings
- ATLAS and CMS recognized that they benefit from a common solution
- IT-ES computing professionals play a key role in both experiments
 - Several years of work in software development and operations
 - People uniquely qualified to identify and implement **common** solutions

- Concept of providing more commonality is not new
 - What is different is that both experiments are looking at the long term development effort needs
- This seems perfectly aligned with the high level goal of EGI to work toward sustainable infrastructure
 - IT-ES through EGI project support has a team of highly motivated people with expertise in both systems
- There have been several, admittedly more contained, examples of successful common services

- Common development and maintenance reduces the number of people needed to complete the same task
 - Typically the WLCG Computing projects spend about 60% on people and 40% on hardware
 - Commonality does not necessarily mean fewer positions, but it does mean less duplicated effort and more effort for interesting development

- Experiments have discussed commonality before at the high level services
 - This effort might also not succeed
- Commonality suffers in two areas
 - “Not developed here” a distrust of code not developed in house, and what that means for continued development and support
 - “No disruption here” all experiments are in operations and working. Long Shutdown 1 is good timing
- Already the openness of the participants and the willingness to discuss collaboration is a source for optimism

- We have performed a feasibility study to assess the potential for using common components for analysis in a distributed environment, based on elements from the PanDA and glideinWMS systems
- A small working group consisting primarily of technical experts in the current experiment systems was formed
- Weekly reports and steering by IT-ES, ATLAS and CMS management
- Technical results from this WG will be presented next, followed by discussion

- Goals
 - Determine what elements of an analysis framework could be provided in common, and how to interface a common system with the existing experiment services
- **Timeline:**
 - ✓ Deliver **by CHEP 2012** a report describing the proposed use of common components and services
 - Proposal to build proof-of-concept prototype by **Autumn 2012**
 - If successful a further implementation and deployment phase would follow **during LS1**
- **Resources:**
 - Important to understand availability of needed expertise for all potential stages of the project up-front as well as long-term operational and support savings

Feasibility Study: Look at CMS system with eye for introducing some common components with ATLAS. Where are the interfaces, what is reused, how much work is it?
Primarily this is work for developers. Since people in IT-ES have experience with both systems, they are uniquely qualified

Proof of Concept: Implement defined functionality to verify the initial conclusions of the feasibility study. Assess what we will be gaining/losing in terms of functionality by introducing common elements

Operations Study: Look at the cost of operating and sustaining various proposals. Development support can go down, but operations effort needs to be assessed also. Can be partially in parallel with the prototype development

- Feasibility Study proved that there are no show-stoppers to design a common analysis framework
- Needed functionality has a lot of overlap
 - Sometimes requires a careful evaluation to determine that the two experiments are talking about the same thing
- Specific actions to an experiment are rare and normally confined to a small area

- With the close of the feasibility study we will specify a program of work for a proof of concept prototype
 - Details in the next presentations
- As we move forward, we would also like to assess and document the process
 - This should not be the only common project, and looking at the make-up of the groups, what went well and badly, and how to improve will be helpful