

WLCG

Technical Evolution

[WLCG/HSF Workshop May 2024](#)

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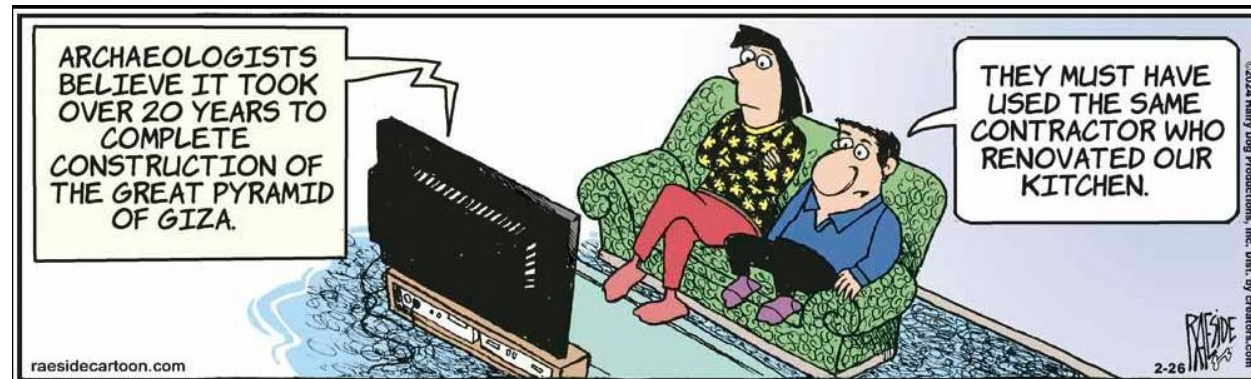


Intro

I've been tasked with exploring ideas for organizing the WLCG technical evolution

After 15+ years of continuous operations with constant evolution, it is not unreasonable to rethink how we are doing things:

- it was quite of a challenge to make all this ambaradan working from 2008 till now, we did it and we are still doing it: a lot of good stuff!
- ... and sure we can do things better - without breaking what's working nicely, but to make an omelette we need to break some eggs - we need people willing to do so, there is no free lunch



What problems are we tackling?

Problems/challenges are just part of life, otherwise we would get bored ;-)! For what concern WLCG technical evolution, here is my personal view:

- **Evolution of the Technical Landscape**
 - need for a structured approach to keep pace with these changes and to effectively manage technical evolution within WLCG.
 - Changes are more and more frequent → Adapt to a fast changing world
- **Increased Scrutiny and Demand for Accountability**
 - The scrutiny faced by scientific collaboration like WLCG in securing funding has increased in the past years (growing competition and diversification of research interests): we need to have clearer technical evolution roadmap with timelines to demonstrate accountability and ensure continued support.
- **Maintaining Relevance and Engagement:**
 - Address the challenge of maintaining relevance and engagement within the scientific community in a post-Higgs discovery era. (aka we are not as sexy as we were a while ago!)

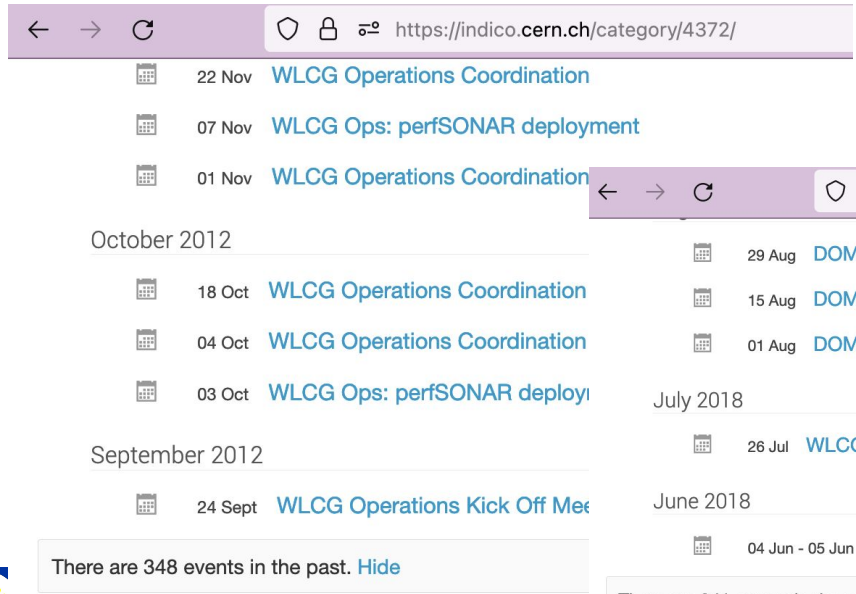
Basically: sustainability (and longevity) of WLCG services and infrastructure.



What do we have already? (how are we organized?)

- Several technical meetings (and various tf/wg), the biggest being:

- GDB (started in 2002)
- WLCG Ops (2012)
- DOMA (2018)
- ...



← → ↻ <https://indico.cern.ch/category/4372/>

- 22 Nov [WLCG Operations Coordination](#)
- 07 Nov [WLCG Ops: perSONAR deployment](#)
- 01 Nov [WLCG Operations Coordination](#)

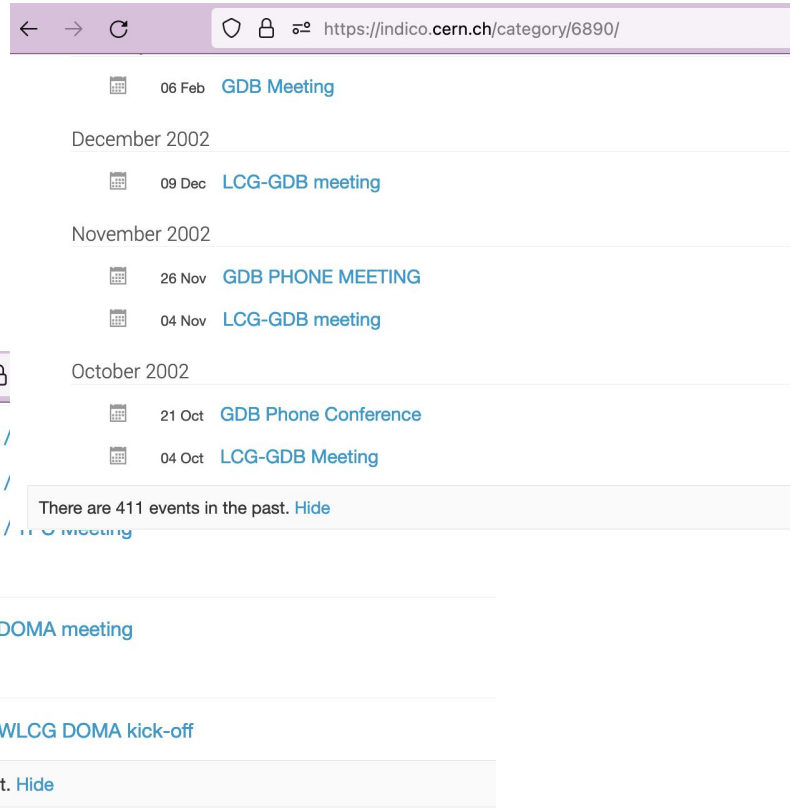
October 2012

- 18 Oct [WLCG Operations Coordination](#)
- 04 Oct [WLCG Operations Coordination](#)
- 03 Oct [WLCG Ops: perSONAR deployment](#)

September 2012

- 24 Sept [WLCG Operations Kick Off Meeting](#)

There are 348 events in the past. [Hide](#)



← → ↻ <https://indico.cern.ch/category/6890/>

- 06 Feb [GDB Meeting](#)

December 2002

- 09 Dec [LCG-GDB meeting](#)

November 2002

- 26 Nov [GDB PHONE MEETING](#)
- 04 Nov [LCG-GDB meeting](#)

October 2002

- 21 Oct [GDB Phone Conference](#)
- 04 Oct [LCG-GDB Meeting](#)

There are 411 events in the past. [Hide](#)



There are 341 events in the past. [Hide](#)

WLCG technical evolution

- What are we doing, what do we need to do?
 - what would we like to do and what do we really need to do?
- Who does what?
- By when?

Experiments have their own plans (in the format of e.g. CDR, Roadmaps, TDR, etc), Computing Centers have their own evolution strategy/plans, Funding agencies support several projects impactful for the “WLCG ecosystem”:

- there are opportunities for looking at overlaps and do things better together: for today’s experiments and for the future
- How much do we need to be more structured wrt today?
 - Balance between useful expectations management and bureaucratic hurdles.
 - No need of additional meetings: actually less meetings but more focused, with well defined scope (e.g. tech meeting, reports, etc), and brief but clear minutes (discussion points and actions/follow up needed)

WLCG technical evolution: GDB → ... ?

- GDB was a useful meeting to bring the community together discussing the grid deployment challenges in the past years
- ... but to tackle the challenges mentioned earlier, we might want to have a board with the mandate of defining(collecting and complementing) the technical challenges and the requirements of the WLCG experiments and their computing infrastructure providers in 5 and 10 years from now
 - ... a Technical Coordination Board?
 - N.b.: replacing, rescoping and reorganizing, not adding!

Grid Deployment Board → Technical Coordination Board

- Just a change of name?
 - Not really: sometimes you need major renovations!



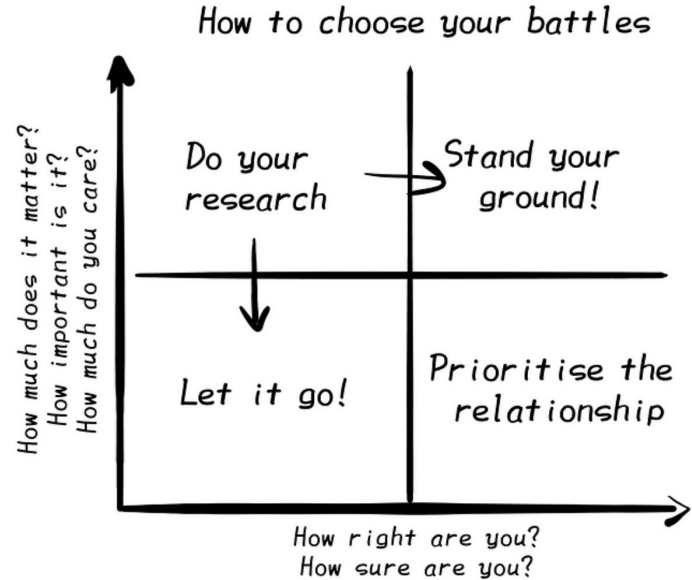
TCB: what do we need to do? Tentative ideas

As a community, we need to define the detailed mandate of it, the participation, the reporting lines, the timeline, etcetc.

- Starting with acknowledging if we do have a (this) problem, and how do we want to tackle it!
- Evaluate the existing technical capabilities, infrastructure, and resources of the WLCG in comparison to the anticipated requirements of the LHC experiments for Run4 (2028/9) and Run5 (2034)
 - why LHC Run4 and Run5?? ... for the sake of simplicity: computing never stops (and during LS there is often even more activity) still it's important to identify key dates to be able to plan.
- Develop a technical roadmap:
 - align the scientific goals of the LHC experiments taking into account the needs of the facilities and the technology evolution (and optimize the utilization of available resources)
- Foster consensus on priorities:
 - relative priority between technical initiatives and projects (based on their impact feasibility, resource availability, and alignment with the technical roadmap.)
- Facilitate collaboration and synergy exploitation
- Provide recommendations (to WLCG MB) on all the above

A few more thoughts 1/3

- Whatever (almost!) structure we will come up with as a community, it won't work well if we do not engage
 - Engaging with very low commitment is very risky (too much [context switch](#) not effective)
- It's important to have great dreams, but it's also important to align our aspirations with our capabilities
 - Yes pushing ourselves up - but within reasonable limits: we need to pick our battles, we can't be fragmented on too many activities!
 - Balance between a few "risky" R&D projects and some more "solid" evolution ...



A few more thoughts 2/3

How do we relate with the already existing activities/wg?

- Might be a good moment to check what we have and wonder: does it still need to exist, should we review/refresh/clarify the mandate, etc
- How do we relate with the [HEPIX working groups](#)?
 - HEPIX could be (is it?) the right place to foster technical discussion and sharing of expertise between sites

This new board could re-use/extend the (successful) DOMA approach

- DOMA could be an integral part of the new board
- Not just to data management, but also to the other activities which will come out from the roadmap → simplification and less fragmentation in terms of global overview, with activities spinning up (and stopped!) as needed



A few more thoughts 3/3

- We should not forget the importance of the human factor:
 - I do believe that the people are the strongest asset of the WLCG community!
 - Critical to define and share clear goals as a team
 - We need to have innovative projects to engage newcomers
 - Reduce our tech debt to minimize frustration in supporting old stuff!



What's next?

What's your point of view:
what do we need to do?



"You said I'd be part of a team."