

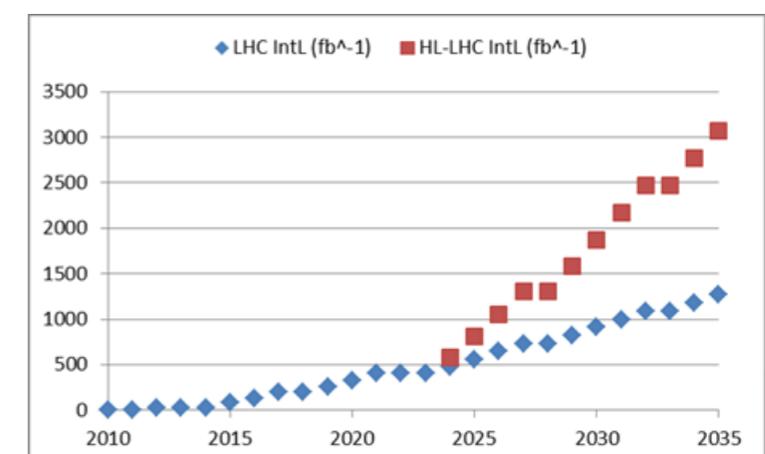
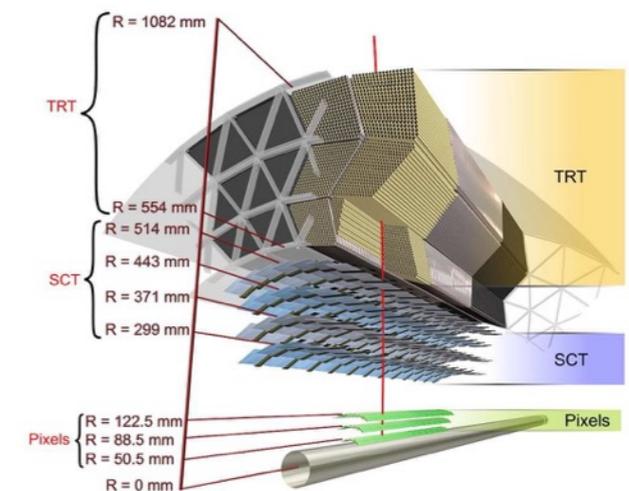
WLCG Workshop Lisbon Feb 2016

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Purpose of the meeting

- First two days looking at medium term (LHC Run 2,3) issues and plans
- Last day looked beyond to Run 4 (~2023?)
- Attempt at a discussion format
 - Not entirely successful, perhaps needed a broader engagement before the meeting
- Broad issues
 - New detectors
 - Higher luminosity
 - Higher trigger rates
 - Changing hardware & software architectures
 - Changing funding landscape
 - Push to more sharing with other users



Medium term issues

Compute

- Clouds
 - Nothing surprising here
 - Lot of discussion of use of technologies, containers, VMs
 - GDB the right forum to continue the discussion
 - Also discussion of commercial cloud use
 - HNSciCloud to explore some aspects
- HPC
 - Useful at some times, for some workflows
 - Discussion if the effort this far justified by the return
 - **Part of a broader strategy to generalise usage**
- IP connectivity and storage access
 - Fixing this would be a broader benefit

Data

- Object storage
 - Scalable as embedded storage, nice tools
- Smaller sites
 - Needs demonstrations
 - Many possible roles
 - **Personal statement: this should emerge from the experiments**
- Federated storage
 - Single endpoint across several sites, fewer endpoints
 - Redundancy and replicas needed
- Common issues/observations
 - Changed analysis role at smaller sites, more simulation
 - Effects on T1s (and larger T2s) e.g. WAN

Data: Possible plan?

- SRM
 - Slowly decommission except for tape
- Data Access
 - Consolidate around xrootd?
 - More http support
- Data Transport
 - Investigate alternatives to gridFTP
 - Data deletion remains the big challenge

Information Systems etc

- Information
 - Is it needed? Probably (AGIS? but then experiments have their own)
 - IS needs to be automated, too much by hand
 - Benchmarking separate from operations
- Benchmarking
 - Real benchmark needed (HS06 or update)
 - Fast calibration benchmark in pilot
 - Even more need using opportunistic resources
- Accounting
 - Need to review the requirements from FAs, sites, experiments
 - Review of the current system (evolution, not design)
 - Containers/VMs help

Security etc

- Full traceability required
 - Freeze glexec, use experiment framework
 - VMs/Containers, big data tools help
- Incident response, threats
 - Now need to co-ordinate with other communities
 - Policy
- AAA
 - External tools for AAA (e.g. eduGain etc)

Longer term issues

General

- Predication is difficult, especially when it concerns the future....
- Actual upgrades still under review, scoping exercise
- Requirements in terms of current operations known to some extent, but more work needed
- Revolutionary changes may be needed in computing models
- Software efficiency and sustainability a big theme
- As ever, commonalities to be sought
 - But we are not all doing the same thing

Ian's Solution

- Set up a study group to
 - Establish the resource requirements (isn't this something the experiments have to do?)
 - Look at the evolution of the computing models (see above, but clearly external views are important to avoid missing new ideas)
 - Build a cost model
- Strengthen HSF
 - Software performance (but this is again very much experiment specific)
 - Techlab
 - Technology review (reformed PASTA)
- Performance evaluation/modelling
- Prototyping exercises (common activity, could help for more coherent software solutions)
 - Run under operations team

Conclusions

- Medium term
 - Lots of activity
 - Suggestion of a technical forum to discuss the activity (but isn't that the GDB?)
 - Suggested: Chair, GDB Chair, 4x experiment
- Longer term
 - 3 areas of work proposed
 - How much this is for WLCG is for discussion
 - Prototypes are a possible route to common solutions
 - More flexible computing, T2s handle more workflows
 - More caching, more data movement