Plenary RRB

Minutes of the 47th Plenary Session of the LHC Resources Review Boards
CERN, Geneva, 29th October 2018

Documents and slides of all presentations can be found on the RRB Indico pages, accessible via the LHC-RRB home page http://cern.ch/committees/LHCRRB

The minutes of the last Plenary Session CERN-RRB-2018-064 were approved.

CERN Status and News. E. Elsen, Director for Research and Computing

Summary:
- The schedule of the European Strategy for Particle Physics Update:
  - Deadline for submission of community reports: Dec 18, 2018;
  - Town meeting May 13-16, 2019 in Granada;
  - May 2020 Strategy Update submitted to Council;
- Composition of Scrutiny Group 2018-2019:
  - New member in 2019: Ariane Frey (University of Göttingen, DE)
- Composition of C-RSG:
  - Donatella Lucchesi’s (IT) term comes to an end. Pekka Sinervo (CA) will succeed her as chair of C-RSG.

There were no questions arising from this presentation.

LHC Machine Status. F. Bordry, Director for Accelerators and Technology

Summary:
- Successful Run 2. LHC has delivered more than 189 fb⁻¹;
- Solid preparation for LS2 activities, which will start in December;
- Linac 4 ready for connection and successful MD in 2018;
- HL-LHC Civil Engineering off to a good start – HL-LHC machine on schedule;
- Run 3 will be at 14 TeV;

There were no questions arising from this presentation.

Status of the LHC Experiments. E. Elsen

Summary:
- Some recent physics results:
  - Observation of ttH coupling in ATLAS and CMS;
  - Observation of H→bb in ATLAS and CMS;
  - Measurement of the Ω_c⁰ – lifetime by LHCb;
  - Exploring Jet-Splitting in vacuum and strongly interacting medium by ALICE.
- LHC Data setting new records
- Status of Phase I Upgrades:
  - Overall status excellent;
  - ATLAS New Small Wheel on critical path;
  - Issues with ATLAS VMM3a board for NSW understood;
  - ATLAS FTK – many boards to develop;
  - LHCb SALT 128 for Upstream Tracker – new submission imminent.
- Neutrino platform:
  - Beautiful results for protoDUNE-SP.

**M&O Scrutiny Group Report.** F. Simon, Chairperson LHC Resources Scrutiny Group

Summary:
- Good alignment for all experiments between CERN Finance Reports and the experiments M&O A budgets.
- Long term projections for the online computing replacement accounts investigated. These accounts should not accumulate excessive reserves, and are allowed to go negative.
- Entry fees for new institutes are not subject to the same level of scrutiny as the M&O expenditures and are at the discretion of the collaboration managements.
- Acceptable levels for M&O B reserves have been defined and plans for down-spending have been implemented for sub-projects with excessive reserves. The discussion was extended to ALICE and LHCb.
- Changes in operation costs for upgraded detectors (in particular ALICE and LHCb) were discussed.
- The support by collaborating institutes for detector systems beyond M&O B will become critical for Phase II Upgrade.
- The Scrutiny Group recommends the approval of all experiments’ M&O A and M&O B closing reports for 2017, and their budget requests for 2019.

*On the question by M. Fleischer why CMS shows a 10% increase in its budget request for the shutdown year 2019, F. Simon replied that ATLAS uses the online replacement account to keep its budget constant by design. CMS adjusts its budget on a yearly basis according to actual need.*

**Computing Resources Scrutiny Group Report.** D. Lucchesi, Chairperson WLCG Resources Scrutiny Group

Summary:
- The lower number of high-pileup events and the mature experiment’s computing models have made data processing easier than the previous year.
- The experiments resource usage for 2018 is as expected.
- The experiments are requesting less than 20% increase for CPU, but more than 15% increase for disk and tape for LS2.
- Compatibility with a flat budget cannot be guaranteed due to large fluctuations of costs on the market.

The C-RSG requests that:
- The experiments provide a section in their reports that addresses the recommendations from the previous scrutiny.
- The experiments report on resource utilization beyond the WLCG facilities, including opportunistic resources from HPC centres, grids and commercial clouds. The format for this reporting will be provided in the guidance for the next scrutiny submission.
- CERN formalize in writing the expected resources in terms of tape, disk and CPU for the experiments for Run 3 as well as their expected growth in time.

There were no questions arising from this presentation.

**Phase-II Upgrades.** E. Elsen

**Summary:**
- TDRs in place;
  - Tremendous effort has been made by the LHCC and the UCG in reviewing TDRs;
  - LHCC/UCG work is very well supported by the community (including cross-refereeing);
  - Upgrade Progress will be monitored by two standing sub-committees of the LHCC, the UCG (continues to review remaining and forthcoming TDRs) and the P2UG (Phase II Upgrade Group, reviews the execution of the approved TDRs).
- Money matrices:
  - Cost containment fulfilled;
  - Timing detector estimates included in Phase II Upgrade; TDRs yet to come;
  - Encouraging involvement of the Funding Agencies.
- Goal for this RRB:
  - Agree on the overall cost envelope as stated so that MoUs can be finalised and sent to Funding Agencies.

When asked about the timescale of the MoUs E. Elsen replied to M. Fleischer that this would be at the end of this year, and to N. Pastrone, that the Funding Agencies will be informed about the drafts. Some of the drafts are already being discussed with the Funding Agencies.

As a subcommittee of the LHCC, the P2UG will report on critical items, thus, in response to M. Coles, feeding back information so that problems can be corrected. The P2UG is composed of experienced members and chairs, with large overlap with (previous) LHCC members.

In response to M. Mikuz, E. Elsen stated that CERN contributes an equal amount of 55 MCHF to both ATLAS and CMS.

**Report from the Scientific Computing Forum.** E. Elsen, Chairperson SCF

There were no questions arising from this presentation.

**Summary.** E. Elsen

On behalf of the RRB, E. Elsen thanked A. Medland, the STFC (UK) delegate, who will retire after many years of service, for his numerous and constructive contributions.

The proposed dates for the next RRB are 15-17 April 2019.

Reported by: E. van Herwijnen