

**Minutes of the 35th Plenary Meeting of the LHC Resource Review Boards (RRB)
(CERN, Geneva, 29th October 2012)**

1. Welcome. S. Bertolucci, Director for Research and Scientific Computing

S. Bertolucci welcomed delegates to the 35th Plenary meeting of the RRB.
The minutes of the April Plenary Session CERN-RRB-2012-065 were approved.

2. CERN Status and News. S. Bertolucci, Director for Research and Scientific Computing

S. Bertolucci reported on the:

- Discovery of a Higgs-like Boson in July
- Excellent performance of the LHC
- European Strategy for Particle Physics meeting that took place in Krakow. The Briefing Book is in preparation. A meeting in January in Erice will lead to a draft recommendation
- Extension of the proton run and the rescheduling of the Ion run and LS1
- Good progress of the preparations for the Long Shutdown
- Plans for the restart of the LHC with higher energy in fall 2014

S. Bertolucci referred to the letter, CERN-DRC-2012-043, which had been sent to the delegates. This document defines the Formal Agreement on the Implementation of the New Operating Arrangements. Several Funding Agencies had requested signed letters and these would be sent. This topic would be discussed in each RRB and the minutes would record the decisions.

Turning to matters concerning the Scrutiny Groups, S. Bertolucci announced that B. Loehr and D. Espriu have concluded their mandates. There were two proposals for new chairmen, C. Touramanis for the M&O Scrutiny Group and J. Flynn for the Computing Resources Scrutiny Group. He expressed his thanks to the retiring chairmen, and invited the delegates to join him in a round of applause.

The RRB endorsed the proposals for the new chairmen.

S. Bertolucci encouraged the Funding Agencies to propose new members for the Scrutiny Groups, especially for the smaller countries.

P. Chomaz opened the discussion on the letter CERN-DRC-2012-043 asking how many addenda would be drafted; was there one per experiment or one per project. He was worried about many addenda on relatively small parts. S. Bertolucci replied that the approach was different for each experiment and would be addressed in the individual RRBs.

C. Wulz stated that the position of the Austrian Ministry was that they could not agree to the extension of the MoU until they have received a letter that clarified the changes since the original MoU and defined the new period of validity. S. Bertolucci replied that he would send a letter to the Austrian Ministry. To conclude the discussion on the letter, S. Bertolucci requested a show of hands. The results were:

- *no votes against the proposal*
- *no abstentions*

The RRB therefore approved the Formal Agreement on the Implementation of the New Operating Arrangements as proposed in CERN-DRC-2012-043.

3. LHC Machine Status. S. Myers, Director for Accelerators and Technology.
The presentation is available via the RRB agenda page.

S. Myers gave a review of the past 6 months with details of:

- 2012 Priorities
- Performance in 2012
- Some Issues after TS2 (after 4 July)
- Up to the Minute Status (after TS3)

He concluded by summarising that the:

- Integrated luminosity goal for 2012 had been exceeded
 - ~ 6 weeks proton physics to go
 - For physics production we will continue with 50ns
- Proton-lead run was in excellent shape (some published results already)
- LS1 plans were in good shape (? Quadrupole diodes)
- Operation after LS1
 - 25ns: injector brightness, e-cloud, HOM, beam-beam related, UFOs
 - 50ns: β^* levelling (maximum permissible pile up)

There were no questions arising from this presentation.

4. M&O Scrutiny Group (SG) Report. B. Loehr, Chairman
CERN-RRB-2012-114 (report). Slides can be viewed via the LHC-RRB home page

B. Loehr reminded the delegates of the composition of the Scrutiny Group in 2012 and thanked the members and the Resource Coordinators for their hard work.

He continued with some general points of discussion followed by comments on the:

- Excellent performance of the LHC in 2011 and 2012
- Very efficient operation of the experiments
- Continuous support by Funding Agencies at high level
- Major parts of the experiments are in operation now for about 10 years
- Preparations for design energy and design luminosity
- Replacement of EVO by a CERN supported VIDYO

The Scrutiny Group acknowledged that CERN has taken a positive attitude in showing leadership in safety and infrastructure related items which enabled M&O A budget reductions in respective areas.

B. Loehr also mentioned the revised agreement for Maintenance & Operation budget of the online systems of the LHC experiments ALICE, ATLAS and CMS.

Moving on to the scrutiny of each experiment, he reported on the closing report, the request for 2013 M&O A, M&O B and projections to 2016, highlighting the main cost items and major points of discussion.

In summary, the Scrutiny Group made the following recommendations:

The Scrutiny Group recommends approval of the ALICE M&O A closing report for 2011 and the budget request for 2013. The Scrutiny Group also recommends approval of the ALICE M&O B budget for 2013.

The Scrutiny Group recommends approval of the ATLAS M&O A closing report 2011 and of the budget for 2013. The Scrutiny Group also recommends approval of the M&O B closing report for 2011 and approval of the M&O B budget request for 2013.

The Scrutiny Group recommends approval of the CMS M&O A closing report for 2011 and approval of the M&O A budget request for 2013. The Scrutiny Group also recommends approval of the CMS M&O B budget request for 2013.

The Scrutiny Group recommends the approval of the LHCb closing report for 2011 and the M&O A budget request for 2013. The Scrutiny Group also recommends the approval of the LHCb M&O B budget request for 2013.

The Scrutiny Group recommends the approval of the TOTEM closing report for 2011 and the M&O A budget request for 2013. The Scrutiny Group also recommends approval of the TOTEM M&O B budget request for 2013.

B. Loehr concluded with some acknowledgements:

The Scrutiny Group thanked all Resource Coordinators and Managers of the experiments for their efforts and for the high quality information that was provided. The Scrutiny Group also acknowledged the cooperation of the M&O B subsystem project managers and subsystem resource managers for this year's successful scrutiny process.

B. Loehr thanked:

- All members of the Scrutiny Group during the last four years for their fruitful and effective work,
- The CERN management and all Funding Agencies for their support.

T. Medland thanked the Scrutiny Group for their clear and concise report and for the very constructive approach to general issues. He asked for details of plans for the Scrutiny of Upgrade projects. S. Bertolucci replied that the current proposal was to put in place an oversight committee looking at funding issues for approved projects. To avoid overlap this committee will be formed by members of the Scrutiny Group and the LHCC. This will be organised before next RRB.

5. Information about the new Tier0. F. Hemmer, head IT Department.

The presentation is available via the RRB agenda page.

F. Hemmer presented information about the new Tier0, with details of the:

- Background
- Capacity Planning
- Scope of the Call for tender
- Outcome of the tender
- Evaluation Methodology
- Data Center Layout & ramp-up
- Status (September 2012)
- Connectivity (100 Gbps)
- Free Cooling
- Risk Mitigation & Next steps
- Summary

G. Barreira asked about the installed power and the cooling model. F. Hemmer replied that there was air-cooling for the computers and water-cooling for special devices. Power for IT load is about 1 MW per room of computers. The current power efficiency factor is estimated at 1.5, so 1.5 MW of power is needed for 1 MW per room.

6. Summary. S. Bertolucci, Director for Research and Scientific Computing

S. Bertolucci concluded that the RRB had endorsed changes to the Scrutiny Group and approved the Formal Agreement on the Implementation of the New Operating Arrangements as proposed in CERN-DRC-2012-043.