



ATLAS

November 2014

**Minutes of the 39th LHC Resource Review Board Meeting
(CERN, Geneva, 13th October 2014)**

Present:

E. Barberio (University of Melbourne, Australia)
R. McPherson (National Research Council, NSERC, Ottawa, Canada)
Y. Zhang (National Natural Science Foundation of China)
M. Qi (Nanjing University)
M. Losada (Universidad Antonio Nariño UAN, Colombia)
N. Fejksová (Ministry of Education, Youth and Sports, Prague, Czech Republic)
A. Kupčo (Institute of Physics, ASCR, Czech Republic)
U. Bassler, I. Wingerter (CNRS/IN2P3, France)
A.-I. Etievre, D. Vilanova, C. Guyot (CEA/IRFU, France)
H. Prasse (Federal Ministry of Education and Research, BMBF, Germany)
H. Mahlke, M. Groll (BMBF/PT-DESY, Germany)
M. Fleischer (DESY, Germany)
S. Bethke (MPI, Germany)
K. Jakobs (Albert-Ludwigs-Universitaet Freiburg, Germany)
C. Fountas (University of Ioannina, Greece)
G. Mikenberg (Weizmann Institute, Rehovot, Israel)
A. Zoccoli, F. Bedeschi (INFN, Italy)
A. Di Ciaccio (University of Roma Tor Vergata, Italy)
T. Kawamoto (University of Tokyo, ICEPP, Japan)
K. Yoshida (KEK, Japan)
S. Bentvelsen, A. van Rijn (NIKHEF, Amsterdam, Netherlands)
B. Jacobsen (The Research Council of Norway, Oslo, Norway)
F. Ould-Saada (University of Oslo, Norway)
D. Drewniak (Ministry of Science and Higher Education, Poland)
G. Barreira (LIP, Portugal)
F.D. Buzatu (Institute of Atomic Physics, Bucharest, Romania)
C. Alexa ((IFIN-HH National Institute of Physics and Nuclear Engineering, Bucharest, Romania)
N. Zimine (JINR, Dubna, Russia)
Z. Hlavacikova (Ministry of Education, Science, Research and Sports, Bratislava, Slovak Republic)
D. Bruncko (Institute of Experimental Physics SAS, Slovak Republic)
M. Mikuz (University of Ljubljana & Jozef Stefan Institute, Ljubljana, Slovenia)
D. Adams (Department of Science and Technology, Pretoria, South Africa)
J. Cleymans (University of Cape Town, South Africa)
F. del Aguila (Ministry Economy and Competitiveness - U. Granada, Spain)
P. Karlsson (Swedish Research Council, Stockholm, Sweden)
B. Lund-Jensen (Lund University, Sweden)

P. Fischer (Swiss National Science Foundation, Switzerland)
 G. Iacobucci (University of Geneva, Switzerland)
 S.-C. Lee (Academia Sinica, Taipei, Taiwan)
 G. Blair, A. Medland (STFC, United Kingdom)
 J. Sowinski, J. Stone, M. Procaro, A. Patwa (Department of Energy, United States of America)
 M. Coles, J. Shank (National Science Foundation, United States of America)
 F. Durdle (Permanent Mission of the United States of America to the UN in Geneva)
 J. Cochran (Iowa State University, United States of America)
 S. Rajagopalan (Brookhaven National Laboratory, Upton, NY, United States of America)

ATLAS: D. Charlton, F. Dittus, B. Di Girolamo, H. Gordon, B. Heinemann, T. Wengler

CERN: S. Bertolucci, C. Decosse, S. Foffano, T. Lagrange, S. Lettow, E. Tsesmelis, E. van Herwijnen (Scientific Secretary), E. van Hove

Resources Scrutiny Group: C. Touramanis

Excused: G. Taylor (University of Melbourne, Australia), A.K. Maciel (RENAFAE, Brazil), E. Rabinovici (Hebrew University, Jerusalem, Israel), V. Spannenberg (iThemba Labs, South Africa)
 S. Gonzalez (National Science Foundation (NSF), United States of America), R. Heuer (CERN)

Documents can be found in the RRB Indico pages; accessible via the LHC-RRB home page <http://committees.web.cern.ch/committees/all/welcomeLHCRRB.html>

1. Introduction. S. Bertolucci, Director of Research and Scientific Computing.
 S. Bertolucci welcomed delegates to the meeting of the ATLAS LHC Resource Review Board.

2. Approval of the minutes of the last meeting. S. Bertolucci, Director of Research and Scientific Computing.
 CERN-RRB-2014-058
 The minutes of the last meeting were approved without comment.

3. Status of the experiment. D. Charlton, Spokesperson.
 CERN-RRB-2014-065, CERN-RRB-2014-066 (slides)

In summary:

Huge yield of final Run-1 analyses during the last months

- Main H(125) measurement papers/results now out, close to completion – 4.5σ evidence of $H \rightarrow \tau\tau$ decay
- Search papers close to complete
- Most 7 TeV SM/top/B-physics measurement papers done, many 8 TeV analysis results or in progress

Substantial progress with software → approaching “Ready for Run-2” state

- The HLT farm was commissioned during LS1 and is used as a Grid resource when available
- Major work on reconstruction has paid off well – factor >3 speed-up
- xAOD is complete and event size being tuned
- New “derivation framework” to make derived xAOD-based datasets for analysis is in place, many derived samples for end analyses defined, user-testing has begun
- DC14 (which exercises the new framework and tools) programme well under way, user base expanding, substantial tutorial programme around the world
- The M&O-A core computing infrastructure and service tasks are an essential underpinning of this work. A modest increase has been requested & scrutinised by the Scrutiny Group, and is essential to strengthen the support for new features and tools (new data management monitoring, software quality and tools)

Much detailed planning and preparations for 2015 analyses in progress!

Phase-2

- The Phase-2 upgrade plans remain essentially the same as outlined in the Letter-Of-Intent (Dec. 2012)
- ATLAS plans a full recosting of the Phase-2 upgrades for mid-2015

ATLAS thanks the Funding Agencies for their support over the last >20 years which has been fundamental to the success of the experiment, and will continue to be so in future.

There were no questions arising from this presentation.

4. Detector consolidation and upgrade. B. Di Girolamo, Technical Coordinator. CERN-RRB-2014-067 (slides)

In summary:

- Consolidation in LS1
 - The detector is being closed and the last works on the Big Wheels are on-going
 - The beam pipe bake-out will be done this week
 - ATLAS will be closed by mid-December: we might decide to re-open for investigating further some isolation issue in LAr.
 - A commissioning run will take place in December and a final one before the arrival of the LHC beam foreseen in Week 11 in 2015
- Upgrades
 - Fully active Review Office
 - We are heading to construction for Phase 1
 - We are in R&D phase prior to the TDRs preparation

A. Medland thanked D. Charlton and B. Di Girolamo for their presentations which show how much work was done over the last year. He has a positive feeling over how things have gone in the consolidation program and the run up to commissioning. He would like to know what hasn't gone so well and if there are any particular concerns or where there might be a schedule risk.

B. Di Girolamo replied that there were two items of concern:

- The connection of the cooling thermo siphon system. The compressor plant being fully operational, this does not prevent ATLAS from running. The thermo siphon will reduce the maintenance costs since the compressor plant requires continuous surveillance and repair. The repair of the condenser has been taken over from the producer and is now done at CERN. It will be possible to install the condenser in January.
- The isolation problem in the liquid argon. This is not an enormous problem in terms of noise, but more will be known after the noise assessment in the coming week. The contingency in the schedule allows for re-opening, repairing and closing ATLAS if necessary.

The IBL was a worry but it was rebuilt and installed and hopefully it will stay there for some years.

D. Charlton added that for the offline there has been a huge progress in the development of new tools. ATLAS are past the point of no return, without yet having everything fully commissioned. There is a lot of work to do in a few months, and things are on schedule. In case of problems with the commissioning, there are some fall-backs. On the longer term, there may be problems with support for software development during Run 2 and thereafter. The Computing Scrutiny Group will comment on this tomorrow.

5. LHCC deliberations (paper only). E. Tsesmelis, LHCC Scientific Secretary
CERN-RRB-2014-068

The LHCC report gives information on the technical evaluation and the progress of ATLAS. The committee recognises the achievements reported in the previous two presentations. It also reports on the physics, the LS1 activities which are now coming to a conclusion and looks forward to the ATLAS upgrades. In summary, the LHCC considers that ATLAS has made excellent progress in all aspects of the experiment and the committee congratulates the collaboration on all its achievements.

There were no questions arising from this presentation.

6. Financial matters. T. Lagrange, Head of CERN Finance and Procurement Department
CERN-RRB-2014-069

There are still outstanding contributions for the construction from Morocco and Russia. Compared to the distributed report an additional amount of 3.4M CHF was received. M&O outstanding contributions from member states in 2014 682K CHF (total everything accumulated 1.1 M CHF); for non-member states for 2014 1.1M CHF which amounts to ~7% of the total for 2014.

7. Budgets F. Dittus, Resources Coordinator.

CERN-RRB-2014-070 (Full Design Luminosity Detector Activities Status Report), CERN-RRB-071 (Request for 2015 ATLAS M&O Budget), CERN-RRB-072 (ATLAS Upgrade Status Report, CERN-RRB-074

In summary, the RRB was asked to:

- take note of the projected payments in 2014 for the FDL activities, which are being completed
- approve the requested 2015 budgets for M&O-A and M&O-B
- take note of the progress in the ATLAS Phase-I and Phase-II Upgrade projects

- incl. the projected payments for Phase-I in 2014 and 2015

7.4 M&O Scrutiny Group Report Christos Touramanis, Chair, Scrutiny Group.

CERN-RRB-2014-074

- The Scrutiny Group went through the ATLAS reports in detail. ATLAS propose to increase their core computing effort by 2.5 FTE's. The Scrutiny Group is impressed by the case made by the ATLAS Computing Management and has no doubt this will be money well spent. In addition the collaboration has shown goodwill in trying to cut costs. The Scrutiny Group recommend this goes through.
- The UCG have gone through 11 TDRs in one year. ATLAS also put in place a template that will become the Scrutiny Group's standard for following projects through.
- The Scrutiny Group recommends the approval of the ATLAS 2013 M&O closing report.
- The Scrutiny Group recommends approval of the ATLAS 2015 M&O A&B budget requests.

F. Dittus had a question concerning the minutes. In April he presented ATLAS book closing for 2013 which you have in the report. The acceptance by the RRB of this exercise should appear in the minutes.

C. Touramanis replied that the book closing is scrutinized in April and it should be in the minutes that everything is signed off, the 2013 book closing and the 2015 request.

S. Bertolucci requested the RRB to approve the 2015 budget requests.

H. Prasse remarked that if decisions from Funding Agencies are required, they need some time to make them. Therefore, papers should be given to the Funding Agencies two weeks prior to the RRB meetings.

S. Bertolucci replied that this point was taken.

8. Summary. S. Bertolucci, Director of Research and Scientific Computing.

There being no further business, S. Bertolucci thanked the delegates and closed the meeting. The proposed dates for the next RRB are 27-29 April 2015.