



ATLAS

15<sup>th</sup> March 2010

**Minutes of the 29th LHC Resource Review Board Meeting  
(CERN, Geneva, 12 October 2009)**

Present:

R.C. Shellard (CBPF, Brazil)  
I. Blain (NSERC, Canada)  
W. Davidson (National Research Council of Canada, Canada)  
R. McPherson (University of Victoria, Canada)  
M. Qi (Nanjing University, China)  
Y. Zhang (National Natural Science Foundation of China, China)  
J. Ridky (Institute of Physics, Czech Republic)  
V. Vrba (Institute of Physics, Czech Republic)  
J.D. Hansen (Niels Bohr Institute, Denmark)  
E. Augé (CNRS/IN2P3, France)  
D. Fournier (Laboratoire de l'Accélérateur Linéaire (LAL) (IN2P3), France)  
B. Mansoulié (Saclay, CEA, France)  
P. Rebourgeard (DSM, IRFU-DIR, France)  
S. Bethke (Max Planck Institute for Physics, Germany)  
K. Ehret (PT-DESY, Germany)  
V. Guelzow (DESY, Germany)  
P. Mättig (BMBF, Germany)  
M. Pantea (BMBF, Germany)  
E. Gazis (National Technical University of Athens, Greece)  
E. Rabinovici (Hebrew University, Israel)  
G. Mikenberg (Weizmann Institute of Science, Israel)  
U. Dosselli (INFN, Italy)  
F. Ferrini (Permanent Mission of Italy, Italy)  
K. Tokushuku (KEK, Japan)  
M. Yamauchi (KEK, Japan)  
A. Van Rijn (NIKHEF, Netherlands)  
B. Jacobsen (The Research Council of Norway, Norway)  
A. Lipniacka (University of Bergen, Norway)  
J. Królikowski (Univ. of Warsaw and Ministry of Science and Higher Education, Poland)  
M. Turala (IFJ PAN, Poland)  
G. Barreira (LIP, Portugal)  
F.D. Buzatu, (Institute of Atomic Physics, Romania)  
Y. Kozlov (Federal Agency of Science and Innovations, Russia)  
A. Petrov (Federal Agency of Science and Innovations, Russia)  
A. Sissakian (JINR, Russia)  
V. Savrin (Institute of Nuclear Physics, Moscow State University, Russia)  
D. Bruncko (IEP SAS Kosice, Slovakia)  
Z. Hlavacikova (Ministry of Education of the Slovak Republic, Slovakia)  
E. Higon (University of Valencia, Spain)  
T. Ekelöf (Uppsala University, Sweden)  
K. Jon-And (Stockholm University, Sweden)  
A. Clark (DPNC, Université de Genève, Switzerland)  
T. Nakada (CHIPP EB member, Switzerland)  
S.C. Lee (Institute Of Physics, Academia Sinica, Taipei)  
A. Medland (STFC, United Kingdom)  
A. Boehnlein (U.S. Department of Energy, United States of America)  
S. Gonzalez (U.S. Department of Energy, United States of America)  
H. Gordon (Brookhaven National Laboratory, United States of America)  
M. Pripstein (U.S. National Science Foundation, United States of America)  
M. Procaro (Office of High Energy Physics, DOE, United States of America)

M. Tuts (Columbia University, United States of America)

## CERN

S. Bertolucci (Chairman), P. Bloch, J. De Groot, R. Heuer, T. Lagrange, S. Lettow, R. McLaren (Secretary), J. Salicio Diez, S. Schmeling, E. Tsesmelis, E. Van Hove

## ATLAS

D. Charlton, P. Fassnacht, F. Gianotti, A. Lankford, M. Nesi, M. Nordberg

## Scrutiny Group

B. Loehr (Chairman)

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

**1. Introduction.** S. Bertolucci, Director of Research and Scientific Computing.

S. Bertolucci welcomed delegates to the 29th 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.

The minutes of the last RRB CERN-RRB-2009-072 were approved without comment.

**3. ATLAS Progress report (part I).** M. Nesi, Technical Coordinator.  
CERN-RRB-2009-101 (slides)

M. Nesi gave a summary of the shutdown activities and the opening of the detector at the end of 2008. He described in detail specific detector activities/status and outlined today's major concerns.

Turning towards the future, he illustrated the plan for the ATLAS run schedule over the next three months, with and without beam and collisions. He continued by looking at specific hardware plans for the period 2010-2015, including the IBL project, and phase II (sLHC).

M. Nesi summarised his presentation as follows:

The ATLAS detector is ready for a long run in 2009/2010. The detector is closed and is in the global cosmics run phase, waiting for beam.

The best use was made of the 2009 shutdown. The detector is operational at the 98-99% level. Some potential problems are being monitored and solutions are being prepared.

ATLAS is organizing the work over the next 5 years, to prepare for LHC phase I. The first project, the IBL, has been set up and is making good progress. A TDR is expected in Spring 2010.

The detector community is very active in planning and preparing the work for a sLHC detector. The process is going through the preparation of a LOI, which will be presented in

early summer 2010. The LOI should cover all possible upgrade activities, should link the present R&D activities to the project and define the type of organization required.

*There were no questions arising from this presentation.*

**4. ATLAS Progress Report (part II).** F. Gianotti, Spokesperson.  
CERN-RRB-2009-102 (report), CERN-RRB-2009-103 (slides).

F. Gianotti's presentation focussed on four main areas:

- Collaboration, management and organization
- Status of Software and Computing
- Detector commissioning with cosmic data
- Preparing for physics with early LHC data

She concluded that:

ATLAS detector, trigger and data acquisition, data quality, calibration and alignment, data processing and world-wide distribution is ready for LHC collision data.

During the Winter 2008-2009 shut-down, all components of the experiment have been improved and consolidated. The fraction of non-working channels is at the permil-percent level in most cases.

Main concern for the first (long) run is performance and reliability of some components: Inner Detector cooling, CSC ROD, liquid-argon opto-transmitters and LVPS.

About 400 M cosmics events, as well as single-beam data in Sept 2008, have been collected successfully in 2008-2009 with the full detector operational. These data demonstrate better detector performance than expected at this stage. Calibration and alignment accuracies good enough for first physics have already been achieved.

Software and Computing have been exercised with massive simulations as well as real detector and real (cosmics) data, and have been confronted with the complexity of a world-wide distributed system.

Trigger strategy and menus for early data, as well as preparation for physics, are being finalized.

The project has proceeded within the framework of the accepted 2002 Completion Plan. All resources requested in that framework are needed to cover the costs of the initial detector now installed.

A coherent plan for detector consolidation, repairs and upgrade from now to 2015 ("Full Design Luminosity detector") will be presented at the RRB in 2010.

ATLAS is "even more ready" to take and analyse data than last year. We hope that the exciting physics program, demonstrated over the years by increasingly realistic detector simulations, will reward 20 years of efforts of the international community (R&D, design, prototyping, construction, accurate quality controls and certification, test beams, installation,

commissioning, ... ) to build an experiment of unprecedented technology, complexity and performance

ATLAS is very grateful to all the Funding Agencies for their huge contributions to the success of the experiment and their continuous support during more than 15 years.

*E. Gazis, on behalf of the Greek funding agencies, presented his warmest congratulations to the ATLAS management and collaboration for producing a detector which was now 100% ready to take data. F. Gianotti thanked E. Gazis and emphasised that it was the result of the huge contributions and efforts of the whole collaboration.*

*U. Dosselli requested that the budgets for M&O and construction of new components, for example the IBL, were kept separate.*

**5. LHCC Deliberations (paper only).** E. Tsesmelis, LHCC Scientific Secretary.  
CERN-RRB-2009-104

E. Tsesmelis reported that the LHCC had concluded that ATLAS has made excellent progress in all areas of the experiment and that ATLAS will be ready for beam this year.

**6. Financial matters.** T. Lagrange, Head of CERN Finance and Procurement Department  
CERN-RRB-2009-091

T. Lagrange presented the changes with respect to the above report.

There was now 4.4 MCHF outstanding for contributions for Common Fund, Construction Completion and Commissioning & Integration. This issue must be resolved before the books can be closed.

For the M&O-A, a cash contribution of 18 kCHF from Poland was received after the last reporting period. Outstanding contributions from Member States now total 639.5 kCHF and 1.2 M CHF for non Member States. Poland has confirmed that they will pay 56 kCHF by the end of 2009.

*U. Dosselli reported that Italy would pay the outstanding amount, and part of the 2010 contributions, before the end of 2009.*

*I. Blain reported that the 1.5 MCHF funding from Canada had been approved. The invoices that have been received will be paid in the next few weeks. The remaining instalments will be paid as foreseen.*

**7. Budgets.** M. Nordberg, Resources Coordinator.  
CERN-RRB-2009-105 (report), CERN-RRB-2009-106 (report), CERN-RRB-2009-131 (slides)

a. FDL Detector Status Report

M. Nordberg informed the delegates of the status of TDAQ, the Insertable b-layer and the Forward luminosity detectors. He then asked for approval of the 2010 TDAQ budget: 1.8 MCHF (Table 2).

*The RRB approved the request.*

## b. M&O Budgets 2010

He then showed the 2010 M&O-A and M&O-B budget estimates, highlighting the major cost drivers and adding a few comments on M&O (A, B) for 2010-2014.

Moving on to M&O-A and M&O-B contributions, M. Nordberg showed the status of contributions of member and non-member states; with the outstanding totals. He thanked Russia for their contribution.

He then invited the RRB to:

- Take note of the 2009 FDL Status
- Approve FDL TDAQ budget proposal for 2010
- Approve M&O budget proposal for 2010

*It was clarified that the SG, at the request of ATLAS, scrutinises and gives an opinion concerning the ATLAS M&O B budget.*

*U. Dosselli repeated his earlier request that the budgets for M&O A & B were kept separate. He was of the opinion that the RRB approved M&O A and took note of M&O B.*

*M. Nordberg recalled that the M&O MoU states that the RRB approves both M&O A & B. He also noted that the SG scrutinises both A & B; the question here is to what degree the SG looks at Cat B. He reminded the delegates that the RRB had asked the SG to look in more detail at Cat B. following a request from the UK.*

*The RRB was informed that JINR had transferred 300 kCHF 3 days ago.*

*E. Gazis reminded the meeting that a small in-kind contribution had been made to the outreach program.*

*M. Procaro stated that the US supports the work on the IBL for this year and looks forward to seeing a more complete review.*

*A. Medland emphasised that the UK would appreciate a well presented needs and resource assessment in order to secure the necessary funds..*

*B. Loehr remarked that the money for the IBL M&O A for 2010 is exclusively for tooling of the beam-pipe and has nothing to do with the construction of the device.*

*M. Pantea asked for clarification; is it the case that the SG recommends that the costs of the EVO system should be covered by M&O A but in the long term another solution should be found?*

*S. Bertolucci replied that another product was currently under test. If this was adopted, the funding model would be based on a one-time purchase of a license and support.*

*M. Pantea asked for an explanation of the situation concerning the FTEs for IT.*

*S. Bertolucci replied that much of the effort of computing was financed by European Projects which were coming to a close. This is part of a larger problem which CERN management is addressing. However, the experiments will have to support part of the costs.*

*P. Mättig asked why these costs could not be covered by the host organisation. S. Bertolucci argued that the tools required were very experiment specific; CERN was putting resources into this area but participation from the experiments was unavoidable.*

*F. Gianotti's opinion was that it was difficult to draw a defining line between general support and experiment specific tools.*

*B. Loehr repeated his comments from the Planary explaining again that although the experiments had offered to provide an in-kind contribution, the IT department had insisted on an FTE to allow them to provide a reliable service. There is no clear-cut definition in the MoU.*

*M. Pantea was concerned that this could result in double-funding. She requested the SG to recommend how to proceed.*

*B. Loehr stated that the SG could not influence the response from the IT Department, he saw this as an issue for CERN management.*

*S. Bertolucci agreed to review the situation and draft a report.*

*E. Auge commented that the question of Grid infrastructure was very important and that it was necessary to look at the whole picture.*

c. M&O Scrutiny Group Report. B. Loehr, Chairman Scrutiny Group.  
CERN-RRB-2009-078 (report)

*B. Loehr gave a summary of the report of the Scrutiny group. The SG approves tooling of the beam-pipe as an M&O A item for 2010. The IBL is not a project; before the SG can recommend a budget, it requests an evaluation of the IBL by the LHCC. The same applies to the inner detector cooling compressors.*

*F. Gianotti commented that in September the LHCC had given some preliminary positive feedback on both projects.*

*B. Loehr replied that the LHCC should draft a report with a clear recommendation.*

*E. Auge tried to summarise the situation; he understood the IBL would be endorsed at the next RRB.*

*M. Nordberg outlined the process which would take place. An interim MoU for the IBL would be drafted by the end of 2009. All funding agencies would be invited to participate. No money will be spent until there is a clear understanding. The LHCC will be invited to review the TDR.*

*M. Pripstein asked for clarification; the MoU would concern the participating institutes, but everyone contributes to M&O A and B.*

*M. Nordberg explained that the interim MoU would be signed by the institutes participating in the IBL project. The related M&O A and B parts are there for monitoring and reporting purposes. The Funding Agencies which contribute to the initial b-layer replacement can move contributions from*

*M&O B into project funding. M. Nessi further clarified that M&O A will cover installation, radio-protection, beam-pipe etc. as in the construction phase, and that all technological activity is either in M&O B or in the project part of the IBL.*

*The RRB approved the FDL TDAQ budget proposal for 2010 and the M&O budget proposal for 2010.*

**9. Summary.** S. Bertolucci, Director of Research and Scientific Computing.

S. Bertolucci summarised that ATLAS is technically and financially in very good shape and was ready for beam. There are issues to be addressed; how to best use the resources of the host laboratory and the experiments. Past experience may be a guide, but this is a new landscape with significantly larger experiments, each one the size of a physics laboratory. He extended his thanks to the Scrutiny Group for their excellent work and added that the membership will remain unchanged in 2010.

*I. Blain observed that the SG had several CERN staff members and wondered if that could lead to a conflict of interest. S. Bertolucci replied that the SG scrutinises money bought to experiments, not to CERN. The SG does comment on the use of money to fund services supplied by the host laboratory.*

*He added that composition of the SG could be changed if the RRB desired. However, other delegates expressed their satisfaction with the present composition.*

*U. Dosselli pointed out that being a member of the SG is a difficult task with a long learning curve. He suggested it might be more efficient to extend the mandate of the members from 2 to 3 years.*