



ATLAS

3rd March 2009

**Minutes of the 27th LHC Resource Review Board Meeting
(CERN, Geneva, 10th November 2008)**

Present:

I. Blain (Natural Sciences and Engineering Research Council of Canada, Canada)
W. Davidson (National Research Council of Canada, Canada)
R. Mcpherson (University of Victoria, Canada)
Y. Zhang (National Natural Science Foundation of China, China)
P. Ji (National Natural Science Foundation of China, China)
L. Zou (National Natural Science Foundation of China, China)
J. Niederle (Institute of Physics, ASCR, Czech Republic)
V. Vrba (Institute of Physics, Czech Republic)
J.D. Hansen (Niels Bohr Institute, Denmark)
E. Augé (CNRS/IN2P3, France)
P. Chomaz (CEA Saclay, IRFU/DIR, France)
B. Mansoulié (CEA Saclay, IRFU, France)
D. Fournier (LAL Orsay, France)
S. Bethke (MPI, Germany)
K. Ehret (DESY/BMBF, Germany)
M. Fleischer (DESY, Germany)
N. Wermes (University of Bonn, Germany)
E. Gazis (NTU-Athens, Greece)
E. Rabinovici (Hebrew University, Jeusalem, Israel)
G. Mikenberg (Weizmann Institute of Science, Israel)
F. Ferroni (INFN, Italy)
M. Curatolo (INFN Laboratori Nazionali di Frascati, Italy)
K. Tokushuku (KEK, Japan)
A. Van Rijn (Nikhef, Netherlands)
B. Jacobsen (The Research Council of Norway, Norway) - part time
J. Krolikowski (University of Warsaw, Poland)
M. Turala (IFJ PAN, Poland)
G. Barreira (LIP, Portugal)
F. Buzatu (Institute of Atomic Physics, Romania)
L. Puscaragiu (Permanent Mission of Romania, Switzerland)
R. Lednicky (JINR, Russia)
A. Petrov (Permanent Mission of Russia, Geneva, Russia)
V. Savrin (SINP MSU, Russia)
Z. Hlavacikova (Ministry of Education of the Slovak Republic, Slovakia)
D. Bruncko (IEP SAS Kosice, Slovakia)
M. Mikuz (University of Ljubljana / Jozef Stefan Institute, Slovenia)
J. Fuster (University of Valencia CSIC, Spain)
F. Barreiro (Universidad Autonoma de Madrid, Spain)
P. Karlsson (Swedish Research Council, Sweden)
T. Ekelöf (Uppsala University, Sweden)
A. Clark (DPNC, University of Geneva, Switzerland)
T. Nakada (CHIPP EB member, Switzerland)
S. Lin (Academia Sinica, Taiwan)
S-C. Lee (Institute of Physics, Academia Sinica, Taiwan)
S.M. Wang (Institute of Physics, Academia Sinica, Taiwan)
I. Turk Cakir (TAEA, Turkey)
J. Seed (STFC, United Kingdom)

J. Butterworth (University College London, United Kingdom)
A. Boehnlein (DOE, United States Of America)
S. Gonzalez (DOE, United States Of America)
H. Gordon (Brookhaven National Laboratory, United States Of America)
M. Pripstein (National Science Foundation, United States Of America)
M. Procaro (DOE, United States of America)
M. Tuts (Columbia University, United States Of America)

G. Lafferty (University of Manchester, Scrutiny Group Chair)
R. Heuer (DESY and CERN Director-General Designate)

CERN

J. Engelen, E. Tsesmelis, R. McLaren, J. Salicio-Diez, T. Lagrange, S. Schmeling, E. van Hove, F. Sonneman,

ATLAS

F. Gianotti, P. Jenni, M. Nessi, M. Nordberg, S. Stapnes, K. Jon-And, P. Fassnacht

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

1. Introduction. J. Engelen, Chief Scientific Officer.

J. Engelen welcomed delegates to the 27th meeting of the ATLAS LHC Resource Review Board. He introduced T. Lagrange who replaced P. Geeraert as head of CERN's Finance department.

2. Approval of the minutes of the last meeting. J. Engelen, Chief Scientific Officer.

The minutes of the last RRB CERN-RRB-2008-059 were approved without comment.

3. ATLAS Progress report (part I). M. Nessi, Technical Coordinator.

CERN-RRB-2008-080 (report), CERN-RRB-2008-081 (slides)

M. Nessi began with a list of achievements since the last RRB, these included:

- Overall test of the magnet system, including stability tests
- Re-installation and debugging of the ID evaporative cooling plant
- Commissioning of the Inner Detectors
- Fixing of various calorimeter problems (LV, magnetic shielding,...)
- Completion of the forward magnetic spectrometer (HO wheels, gas systems, debugging and tests)
- Commissioning of the RPC system
- Final installation and commissioning of the LUCID detector
- Detector closing, including forward shielding
- 10 September preparation and operation
- Starting of the shutdown activities: opening, repairs and consolidation

M. Nessi then gave comprehensive details of the commissioning of the magnet system, the Inner Detector, the Calorimeter, and the Muon Detectors, the Forward detectors. He continued with more information on the closing of the detector and the first beam. Finally he gave a list of the activities planned during the shutdown.

M. Nessi summarized by noting that:

All initial detector components were installed, commissioned and debugged.
The detector was ready for first beam, with some advance
During first beam we managed to get a very comprehensive picture of the entire detector
Our operation model works (control room, alarms system, short access, activities synchronization, ...), plenty of cosmic data have been taken
A few elements are still problematic and need consolidation (evaporative cooling plant, calorimeters front-end electronics and LV power, temperature in the top RPC sector,...)
During the next 6 months the detector will be opened and small problems fixed. We will be ready for global running again in May 2009, in time for a substantial retuning of the readout chain and of the operation mode well before new beams and collisions.

Referring to the incident with the cooling plant, M. Pripstein asked if the current system could become more reliable with regular maintenance, or was a design change necessary. M. Nessi replied that there was a design error in the compressors and discussions are on-going with the manufacturers. However, in the longer term it is planned to provide redundancy; this could use new compressor technology.

J. Engelen asked the delegates to take note of CERN-RRB-2008-080 which summarises the in-kind contributions and the status of common projects and construction completion.

4. ATLAS Progress Report (part II), P. Jenni, Spokesperson.
CERN-RRB-2008-082 (report), CERN-RRB-2008-083 (slides)

P. Jenni gave an overview of the Trigger/DAQ Data flow system and the results of the Full Dress Rehearsal. He illustrated the wLCG Grid and showed performance measurements of the Common Computing Readiness Challenge also demonstrating the world-wide production jobs per day.

He recalled the excitement on the 10th September 2008 in the ATLAS Detector Control Room, as well as in the ATLAS Tier-0 and Data Quality Control Rooms, and showed the very first beam-splash event from the LHC in ATLAS. He went on to give several examples of commissioning analyses.

Focussing on the Trigger System, P. Jenni gave the status of the LVL1 system, spoke of the timing in the trigger and then explained the status of the High-Level Trigger.

Looking toward the future, P. Jenni presented the organisation which would steer the R&D upgrades, followed by a plan and schedule for the work. He emphasised that the upgrade work and planning have become a significant activity in the Collaboration and stated that ATLAS was glad that the LHCC had agreed to overview sLHC activities. In addition he foresaw the possible need for a dedicated budget line for upgrade R&D steering.

P. Jenni then reported that, since the RRB in April 2008 there were three formal admissions of new Institutions in the Collaboration. The Collaboration Board welcomed with unanimous votes: the Julius-Maximilians-University of Würzburg, the Palacký University in

Olomouc, Czech Republic and the University of Texas at Dallas, U.S.A. The RRB formally endorsed these admissions.

Remaining on management topics, he then showed a list of the members of the collaboration and presented the ATLAS Organization on October 2008; the management as from 1st March 2009 will be:

Spokesperson	F. Gianotti (CERN)
Deputy Spokespersons	D. Charlton (Birmingham), A. Lankford (UC Irvine)
Technical Coordinator	M. Nessi (CERN)
Resources Coordinator	M. Nordberg (CERN)
CB Chairperson	K. Jon-And (Stockholm)
CB Deputy Chairperson	G. Herten (Freiburg)

Moving to financial matters, P. Jenni gave an updated financial overview followed by the details of the Cost to Completion funding, and initial staged detector configuration.

As “dessert”, he offered some examples of early physics: Top without/with b-tagging, an example of an early surprise ($Z' \rightarrow e+e-$ with SM-like couplings) and graphs of the search for Higgs Bosons and Supersymmetric Particles .

P. Jenni concluded that:

ATLAS had proceeded within the framework of the accepted 2002 Completion Plan.

All the resources requested in that framework are needed to cover the costs of the initial detector now installed (this will also cover the additional CtC costs as reported in 2006).

The experiment (detector hardware, trigger and DAQ, data distribution for distributed analyses, data preparation which includes quality monitoring, calibrations and alignments ...) was ready at the LHC start-up in September.

With the first LHC beam-induced events, and the long cosmic ray data taking period, ATLAS has demonstrated readiness for exploiting the LHC data.

The worldwide LHC Computing Grid (wLCG) is the essential backbone for the ATLAS distributed computing resources needed for the Analysis Model.

ATLAS is on track for the eagerly awaited LHC physics.

ATLAS expects to remain at the energy frontier of HEP for the next 10 -15 years, and the Collaboration has set in place a coherent organization to evaluate and plan for upgrades in order to exploit high-luminosity upgrades to the LHC machine.

J. Engelen thanked P. Jenni for his presentation and congratulated the ATLAS team which had made this impressive achievement look straightforward. However, ATLAS was an extremely complex device and it only worked thanks to the team's ingenuity, perseverance hard work and dedication.

E. Rabinovici expressed his appreciation for the hard work over the years. He asked P. Jenni if he could be more specific on the energy which would be expected over the next few years.

P. Jenni thanked J. Engelen and E. Rabinovici for their compliments. He said that the first task was to collect a solid batch of data; 10 TeV data would provide good first physics and to get the experiment fully understood.

T. Nakada asked if the original plans to evolve from the initial detector to the TDR detector had altered. P. Jenni replied that the re-scoping would not progress as foreseen in 2002. The upgrade path would also be taken into account.

Turning to finance matters, J. Engelen pointed out that whilst the missing funding is not excessive; there remains a deficit both in the initial detectors and the CtC.

Finally J. Engelen asked the delegates to join him in thanking P. Jenni for his hard work and leadership of ATLAS.

5. LHCC Deliberations (paper only). E. Tsesmelis, LHCC Scientific Secretary.
CERN-RRB-2008-084

Delegates had no comments and the RRB took note of the LHCC report.

6. Financial matters. T. Lagrange, Head, CERN Finance Dept.
CERN-RRB-2008-066 (report)

a. Construction Common Funds

Looking at the Common Fund, Construction Completion , Commissioning and Integration, T. Lagrange presented an update to the financial report. Since 1st September 2008, 636 KCHF had been received from the USA, Russia and Armenia. Total outstanding contributions are 6.26 MCHF.

b. Maintenance and Operations A

Since 1st September 2008, additional contributions of almost 4 MCHF have been received. The total outstanding contributions were 2.4 MCHF.

E. Gazis reported that the Greek M&O contribution had been paid on the 6th October. T. Lagrange confirmed that CERN had received 178 KCHF.

7. Budgets. M. Nordberg, Resource Coordinator.
CERN-RRB-2008-120 (report), CERN-RRB-2008-085 (report), CERN-RRB-2008-086 (slides)

a. 2009 Construction budget. M. Nordberg gave an introduction to Funding Agency tables and showed the evolution of the Baseline Commitments. He continued with a report on the 2008 Baseline, C&I Income & Payments and CC-B Income & Payments. He thanked Denmark for their contribution.

Looking forward to 2009, he presented the Baseline and the status of remaining contributions and details of the projected budget balance.

M. Nordberg then explained the reasons for the budget balance situation:

Baseline & CF contributions which have not yet arrived

Russia + JINR	3.1 MCHF
Canada	1.5 MCHF (but pledged to arrive before 2011)
US	1.0 MCHF (but in progress of being paid)
Due MS fees	0.2 MCHF

Additional manpower costs 1.9 MCHF

b. M&O Budgets 2009 Looking at the 2009 M&O budget estimates, M. Nordberg detailed the Category A&B cost drivers. In response to a question from K. Ehret during the Plenary session concerning the relative cost of the two big experiments, he commented that the cost of ATLAS magnet operation was 5 times that of CMS. He then showed the evolution of M&O during 2002 - 2010. He listed the status of due M&O A&B contributions as of November 3, 2008 and the Status of M&O Signatures on October 25, 2008.

Finally he asked the RRB to take note of the 2008 budget status (baseline & CtC) and approve the 2009 budget (baseline & CtC) and M&O.

J.D. Hansen remarked that delegates had never promised to pay the cost to completion, it was on a best effort basis. With this proviso, the RRB approved the 2009 budget.

F. Ferroni announced that the M&O and the CtC from Italy will arrive before the end of the year.

c. M&O Scrutiny Group Report. G. Lafferty, SG Chairperson.
CERN-RRB-2008-087 (report)

G. Lafferty reported that the SG had checked that the amounts in each of the categories matched the sum requested and was in line with previous experience. The Scrutiny Group expected the M&O A costs to rise by 350 KCHF per year to consolidate the cooling systems. The cost of gas is rising and the leak rate of gas is unknown, the SG foresaw a need to address these issues. They approved of the movement onto M&O A of the cost of two FTEs to work on online network administration.

To conclude G. Lafferty reported that M&O had been scrutinized and recommended the figures for approval by the RRB.

J. Engelen thanked the Scrutiny Group for their comprehensive report and, there being no further comments from the delegates, stated that the M&O budget for 2009 was approved.

8. M&O Scrutiny Group in 2009. J. Engelen, Chief Scientific Officer.

As announced in the plenary session, there will be changes to the Scrutiny Group. G. Lafferty, J. Mnich and J. Kirkby will be leaving the group, requiring new delegates from the UK, Germany and CERN, and a new Chairperson will be appointed. M. Turala will join the

Scrutiny Group and J. Engelen proposed B. Loehr as a candidate. The RRB delegates will receive further information.

9. Summary. J. Engelen, Chief Scientific Officer.

Apart from a few financial issues, ATLAS has delivered as expected.

M. Fleischer asked how the running plans of the experiments have evolved and the impact on their M&O budgets. J. Engelen replied that this would be answered at the April RRB.

Following a question from M. Fleischer concerning scientific authors and the sharing of the M&O, it was agreed to add these figures to the financial report.

P. Jenni reminded delegates that this was the last RBB to be chaired by J. Engelen and expressed his thanks, on behalf of ATLAS, for 5 years of efficient and fruitful collaboration.

P. Jenni also personally thanked the delegates from the funding agencies for their patience and support.

There being no further business, the chairman thanked the participants and closed the meeting.