LHCb 29th June 2010

Minutes of the 24th LHC Resource Review Board Meeting
(CERN, Geneva, 21st April 2010)

Present:

E. Augé (CNRS/IN2P3, France)
E. Aslanides (CPPM, CNRS/IN2P3, France)
S. Kern (BMBF, Germany)
M. Turala (Institute of Nuclear Physics, PAN, Poland)
T. Nakada (CHIPP, Switzerland)
T. Bowcock (Univ. Liverpool, United Kingdom)

LHCb
C. D'Ambrosio, A. Golutvin, M. Pepe-Altarelli, A. Schopper, U. Straumann, W. Witzeling

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

B. Loehr (Scrutiny Group Chair)

EVO
K. Ehret (DESY, Germany)
P. Campana (INFN Frascati, Italy)
U. Dosselli (INFN, Italy)
F. Ferroni (Universita' Sapienza e INFN Roma, Italy)
F. Muheim (Univ. Edinburgh, United Kingdom)
A. Medland (STFC, United Kingdom)

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

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

S. Bertolucci welcomed delegates to the 24th meeting of the LHCB LHC Resource Review Board. Many delegates were unable to attend in person due to the eruption of the Eyjafjallajökull volcano in Iceland.

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-2010-006 were approved without comment.

3. Status of the LHCb experiment. A. Golutvin, spokesperson
CERN-RRB-2010-038 (report). The slides of this presentation are on the RRB Agenda page.

A. Golutvin's presentation focussed on eight main areas:

- Introduction
- Detector Subsystems
- Trigger/Online/Computing
- First Look at the data
- Cost and funding issues
- Collaboration matters
- Preparation for LHCb upgrade
- Physics goals in 2010

He gave a brief summary of the experiment:

- Commissioning of LHCb with data was the main activity since last RRB
- Detector is time aligned to optimal working point within 1–2 ns. Data taken with and without magnetic field for position alignment
- A total of 300k collision events at 900 GeV recorded in 2009. Overall operation went very smoothly. Due to beam optics Vertex Detector (VELO) modules can approach only ±15 mm from the beam. The VELO powering and closing procedures have been optimized and commissioned
- In 2010, from first collisions onwards, LHCb is taking successfully data at 7 TeV with high efficiency
- LHCb is in excellent shape for the Physics Run in 2010-2011

And concluded that:

- LHCb is successfully taking data with high efficiency !!!
  - LHCb operation between 30/3 and 13/4
  - On the ~82 hours of collision delivered:
    - Technical program completed at 95%
    - 98% DAQ efficiency
    - 95% detector efficiency
    - Velo closing efficiency 94%
      - Mostly in beginning
      - Long fill help
  - In 2010 we have so far recorded ~14M collisions at $\sqrt{s}$ = 7 TeV

- First data are being used for calibration of the detector and trigger in particular.
  - First results of low Pt physics are available at LHC energies
  - Some high class measurements in the charm sector may be possible with 50 pb-1. Charm resonances have been reconstructed.
- With ~ 200 pb-1 data sample LHCb will reach Tevatron sensitivity in a few golden channels in the beauty sector

- Further consolidation is important prerequisite for efficient long term operation (e.g. R&D on improved reliability of readout cards in EPFL)

A. Golutvin finished his presentation by thanking W. Witzeling for his outstanding contribution as Technical coordinator. He will replaced by R. Lindner on July 1st. W. Witzeling thanked the delegates for their support and confidence. S. Bertolucci also praised his very smooth approach to running a complicated experiment.

U. Dosselli expressed his satisfaction with progress and congratulated the LHCb experiment.

E. Augé asked if the increase to 40 MHz would require an upgrade to the trigger, or would LHCb simply record more events? A. Golutvin replied that he would favour a staged approach; taking data at $1*10^{33}$ will require an upgrade to 40 MHz and a full software trigger would allow the flexibility to explore New Physics. Taking data at $2*10^{33}$ would need an increase of the area covered by the silicon trackers.

4. LHCC Deliberations (paper only). E. Tsesmelis, LHCC Scientific Secretary.
CERN-RRB-2010-044

E. Tsesmelis reported that the LHCC considers that LHCb has made excellent progress in all aspects of the experiment and the Committee congratulates the LHCb Collaboration on its achievements.

5. Financial matters. T. Lagrange, Head of CERN Finance and Procurement Department
CERN-RRB-2010-045 (report), CERN-RRB-2010-058 (slides)

T. Lagrange presented the changes with respect to the report on the 28th February.

Outstanding contributions for the Common fund are 13.7 kCHF from the Ukraine.

The M&O-A account had received many additional contributions from the United Kingdom, CERN, Russia, France-IN2P3, Netherlands, USA, Germany-MPI totalling 1706 kCHF. The outstanding contributions for M&O-A stand at 829 kCHF from member states and 468 kCHF from non-member states. This includes 184 kCHF from the Ukraine.

S. Bertolucci reported that Brazil would be paying their contribution in the very near future.

M. Turala, replacing J. Królikowski, announced that the Deputy Minister of Science and Higher Education, J. Szwed, had agreed to grant all four experiments the funds required to pay both outstanding and future contributions.

6. Construction Budgets. C. D'Ambrosio Resource Coordinator.
CERN-RRB-2010-040 (report). The slides of this presentation are on the RRB Agenda page.

C. D'Ambrosio reported that expenditure of the Common Funds at end of year 2009 stood at 1987 KCHF with 615 kCHF uncommitted in March 2010.

Concerning the Core Funds, most of the Core spending came to an end in 2006. Purchasing for DAQ and data storage would continue throughout 2010 with the future DAQ – FARM expenditure planning being finalized in June. It would be funded by Core and non-Core resources.

Turning to M&O A, D'Ambrosio gave a summary and forecast for M&O A spending, by sub-system, for the years 2008 – 2013. He then highlighted the main cost drivers in 2009. The book closing at the end of 2009 showed a budget of 2508 kCHF, 2387 CHF of which had been spent. He proposed to keep the difference as a buffer.

Continuing his presentation on M&O A the Resource Coordinator gave a breakdown, by Funding Agency, for the budget for 2010 and for the projected budget for 2011.

D'Ambrosio concluded that the M&O Cat A budget had been shown to be well balanced over the recent years. For the near future, he did not expect large fluctuations of the main expenditure lines inside an essentially constant total budget. He warned that some adjustments could possibly come from Online and Offline Computing and Communication.

There were no questions on this presentation

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

S. Bertolucci summarized that LHCb had shown that it was ready for data taking and is well placed for the search for New physics.