

CMS

15th September 2009

Minutes of the 28th LHC Resource Review Board Meeting (CERN, Geneva, 27th April 2009)

Present:

C.-E. Wulz (HEPHY, Austria)
J. Lemonne (FWO, Belgium)
J. Sacton (FNRS, Belgium)
D. Denegri (Repr. Ministry of Science and Technology, Zagreb, Croatia)
D-O. Riska (Helsinki Institute of Physics, Finland)
J. Tuominiemi (Helsinki Institute of Physics, Finland)
E. Augé (CNRS/IN2P3, France)
P. Chomaz (CEA Saclay, IRFU/DIR, France)
Y. Sirois (LLR, Palaiseau, France)
M. Pantea (Federal Ministry of Education and Research, Germany)
K. Ehret (DESY, Germany)
H. Mahlke (DESY, Germany)
M. Fleischer (DESY, Germany)
T. Hebbeker (RWTH Aachen, Germany)
E. Gazis (NTU-Athens, Greece)
T. Csörgő (MTA KFKI-RMKI, Hungary)
P. Mukherjee (Department of Atomic Energy, India)
A. Gurtu (Tata Inst of Fundamental Research, India)
U. Dosselli (INFN, Italy)
F. Ferroni (INFN, Italy)
M. Diemoz (INFN, Italy)
J. Królikowski (University of Warsaw, Poland)
G. Barreira (LIP, Portugal)
Y.I. Choi (Sungkyunkwan University, Republic of Korea)
D.M. Lee (KICOS, Republic of Korea)
J.E. Ha (Ministry of Education, Science and Technology, Republic of Korea)
A. Petrov (Russian Permanent Mission, Switzerland)
Y.F. Kozlov (Federal Agency of Science and Innovations, Russia)
I. Golutvin (JINR, Russia)
R. Lednicky (JINR, Russia)
V. Savrin (SINP MSU, Russia)
J. Fuster (MICINN, Spain)
Q. Ingram (PSI, Switzerland)
T. Nakada (CHIPP EB member, Switzerland)
G.W.S. Hou (NTU, Taipei)
Y.-H. Chang (NCU, Taipei)
I. Turk Cakir (TAEA, Turkey)
G. Hall (Imperial College London, United Kingdom)
A. Boehnlein (DOE, United States of America)
J. Butler (FNAL, United States of America)
S. Gonzalez (DOE, United States of America)
H. Marsiske (DOE, United States of America)
C. Newman-Holmes (Fermilab, United States of America)
M. Pripstein (National Science Foundation, United States of America)
M. Procaro (DOE, United States of America)

B. Loehr (Scrutiny Group Chair)

D. Espriu (Computing Resources Scrutiny Group chair)
G. Cosmo (Scrutiny Group member)

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

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A. Ball, T. Camporesi, R. Cousins, A. Charkiewicz, A. Petrilli, G. Tonelli, T. Virdee

Apologies

A. Sissakian (JINR, Russia)
T. Nakada (CHIPP, Switzerland)
M. Tingherides (Cyprus Research Promotion Foundation, Cyprus)

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 S. Bertolucci, Director of Research and Scientific Computing.
S. Bertolucci welcomed delegates to the 28th meeting of the RRB.

2. Approval of the minutes of the last meeting. S. Bertolucci, Director of Research and Scientific Computing.

CERN-RRB-2009-003 (report)

The minutes of the last RRB were approved without comment.

3. Status of the experiment, including Financial Plan. T. Virdee, Spokesperson
CERN-RRB-2009-030 (report) CERN-RRB-2009-031 (presentation)

T. Virdee's presentation focussed on four main areas:

- Progress since last RRB
- Shutdown Activities
- Preparations for Beam
- Upscopes and Upgrades

He concluded that:

- During the autumn 2008 cosmics run, the sub-detectors, online, offline, computing and analysis systems all performed well.
- The ensuing shutdown had included broad maintenance activities and a programme of carefully selected repairs interleaved with installation of the preshower detector; the bulk of this work had successfully been carried out. The schedule defined in mid-November for this work is being held to within a week or so.
- Much VERY useful information has been, and is being, extracted from the CRAFT data. Plan to publish these results before LHC re-start.
- Preparations for another long cosmics run with magnet-on prior to LHC beams are

underway, as is planning for the long run with beam.

- CMS will again be ready (and just as eager) for beam, well before LHC re-start.

S. Bertolucci congratulated the collaboration on the amount of work done with cosmics.

M. Pripstein (NSF, USA) asked if Computing Scrutiny Group report agreed on the increased need of computing resources for the long run. T. Virdee replied that CMS would study the report and settle any differences of opinion.

D-O. Riska (Helsinki Institute of Physics, Finland) was worried that upgrading the Tracker in an area of high radiation would raise problems. T. Virdee answered that the tracker would be completely replaced. A. Ball added that once 10^{34} had been reached, a team could spend up to 100 hours/year at the tracker end flange.

S. Bertolucci remarked that it was clear that the experiments should retain infrastructure, for example the CMS Engineering Centre and the Electronics Integration Centre, for maintaining the experiment, for testing and commissioning upgrades.

Turning to the Financial Plan, T. Virdee reminded the RRB of the three stages defined in the October 2006 RRB.

- Step 1 Activities (complete low luminosity detector, 17.5 MCHF)
No change from Nov'08 RRB
- Step 2 Activities (complete the DAQ/Filter Farm, 8.4 MCHF)
No expenses have yet been incurred. Likely to be able to attain full DAQ/Filter Farm capability using remaining Step 2 funds (4.74 MCHF have been used to cover deficit in Step 1 as reported in the Nov'08 RRB) and replacement slices funded via M&O Cat A.
- Step 3 Activities (upgrade to design-luminosity detector, 16.6 MCHF).
Likely that some activities covered by Step 3 funds will start this year (e.g. upscope of forward RPC system)

T. Virdee then presented the infrastructure which was necessary for long and sustained periods of running and for upgrades.

- Continue, and reinforce, the CMS Engineering Centre, in future including electrical and electronic systems integration aspects (along with mechanical).
- Electronics Integration Centre - Bldg 904: Plan to have a full-functionality DAQ/Trigger setup and to test electronics chains, burn-in power supplies etc.

He stated that these were considered to be crucially important centres for upscales /upgrades as well as for maintenance and good operation of CMS. The question of how to finance this infrastructure is being addressed and a proposal will be made at the October 2009 RRB.

He concluded by thanking the Funding Agencies that have already made commitments to the various steps and reminded the delegates that to cover the deficits mentioned in the

Tables 2 and 3 requires ALL of the Funding Agencies to fulfil their obligations.

4. LHCC deliberations (paper only). E. Tsesmelis, LHCC Scientific Secretary
CERN-RRB-2009--035 (report)

Delegates had no comment to make and the RRB took note of the report of E. Tsesmelis.

5. Financial matters. T. Lagrange, Head of CERN Finance and Procurement Department
CERN-RRB-2009-036 (paper) CERN-RRB-2009-37 (presentation)

Status of Common Fund accounts

T. Lagrange presented the changes with respect to the report on the 28th February. He reported that Spain and Finland had since paid a total of 161 kCHF.

Looking at the contributions received for 2007-2009, Step 1 has now received a total of 10.4 MCHF, Step 2 has received a total of 5.2 MCHF, Step 3 has received a total of 2.2 MCHF.

Status of M&O_A accounts

Since the 1st of March 4.1 MCHF has been received. The outstanding contributions for member states from 2002-2008 is 108 kCHF and for 2009 is 2.5 MCHF. For the non-member states, the outstanding contributions from 2002-2008 is 467 kCHF and for 2009 is 2.1 MCHF.

There were no questions arising from this presentation.

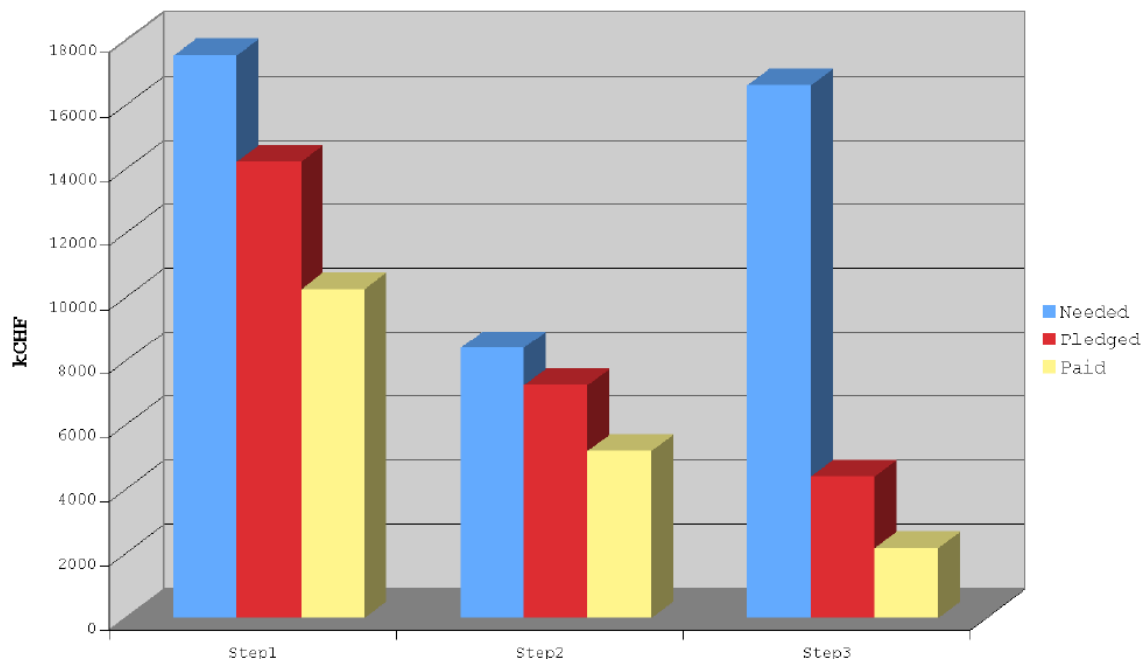
6. Construction Budgets. A. Petrilli, Resources Manager
CERN-RRB-2009-032, CERN-RRB-2009-034 (presentation)

A. Petrilli summarized the commitments of the Funding Agencies from 1995-2008.

- All Funding Agencies had committed all of their funding under MoU, CtC and CtC2005 by the end of 2008
- There are no foreseen problems with the MoU, CtC and CtC2005 funding
- Step 1, 2 and 3 funding is detailed in the CMS Status Report

Looking at the status of expenditures:

- The total funding pledged under MoU, CtC and CtC2005 has been committed, 529 MCHF
- Of these, some 521 MCHF have also been paid
- The amount not yet paid, 7.6 MCHF, is concentrated in the ECAL Preshower and the Trigger/DAQ areas as expected
- Current Steps have a total budget of 26 MCHF with an expenditure of 22 MCHF as illustrated below



A. Petrilli invited the RRB to take note of the present expenditure and thanked all the Funding Agencies that have made this project possible through all the difficulties encountered, and successfully overcome, during the last 15 years.

Referring to the Steps Funding graph above, R. Heuer (Director General, CERN) was concerned about the gap between "Needed", "Pledged" and "Paid" for Steps 1 and 2. He encouraged the Funding Agencies to help reduce the shortfall and remarked that this was especially important at a time when CERN had major expenses in other areas.

7. Maintenance and Operation budgets. A. Petrilli, Resources Manager
CERN-RRB-2009-033, CERN-RRB-2009-065 (reports), CERN-RRB-2009-034b (presentation)

Looking at the M&O-A 2002-2008 contributions, A. Petrilli reported that

- M&O-A received contributions are as indicated in the Finance report
- The budget years 2002 and 2005 are now fully paid
- Budget years 2003, 2004, 2006 and 2007 will be fully paid by 2010 April RRB
- CMS thanks all Funding Agencies for their timely payments to the 2008 M&O-A

Looking at the 2008 expenditures, the budget request was 11.9 MCHF and 11 MCHF have been paid. Full details are available in Annex 1 of the report. In addition he underlined that only 2.9% of the contributions were outstanding for 2008. Outstanding contributions from the past have also reduced.

CMS does not centrally invoice for M&O-B; the Collaboration is reporting qualitatively on these expenses. The arrangements made in 2008 are working satisfactorily and there are no reports of Institutes not participating in their fair share of M&O-B costs.

A. Petrilli invited the RRB to take note of the present expenditure report.

K. Ehret (DESY, Germany) asked about long term commitments for M&O. A. Petrilli replied that there were no legally binding long-term commitments, but there were rolling commitments.

M. Fleischer (DESY, Germany) remarked that the operational costs were high, largely due to the gas consumption; is the recycling system in operation? A. Ball explained that the system was working for the RPCs (8% fresh gas when running at low rate). An unexpected cost was from the CF4 for the CSC detector; CMS is working with CERN to develop a recycling system for CF4, the timescale is about a year. When these two systems are in place the costs should be as estimated.

Preliminary Draft Budget for 2010

A. Petrilli presented, for information only, the draft Budget Request both for Category A and Category B M&O. The totals for M&O-A and B are 14.1 MCHF and 5.9 MCHF respectively. There are also 137 FTEs of manpower from collaborating institutes.

The CMS Collaboration has now finalized the Memoranda of Agreement (MoA) to formalize the service work to operate the CMS detector during the year 2009. As a result item B.2.01, Technical Manpower at CERN, will be absorbed by the MoA and removed from the M&O-B tables. This change has already been implemented for HCAL

To conclude he invited the RRB to take note of the present, unscrutinized, cost estimates for M&O-A and M&O-B.

E. Gazis (NTU-Athens, Greece) reported that the signature of the M&O would be ready in the next few weeks.

R. Heuer enquired as to whether the energy cost for running for one year had been taken into account. A. Petrilli replied that this was not the case. R. Heuer asked the Funding Agencies to take note of the possible increase in expenses due to power costs and A. Petrilli agreed to adjust the figures.

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

S. Bertolucci summarised that CMS was preparing for a long run where there would be savings in some areas and increased costs in others. It was important to finish as much work as possible before beam as there will be a long wait until the next shutdown. He encouraged the Funding Agencies to continue to support CMS by reducing the outstanding contributions and remarked that CERN was less able to help due to many expenses in other areas. S. Bertolucci concluded by saying that there had been no surprises during the last year and that CMS was in good shape and ready to take data.