

CERN-RRB-2009-105

ATLAS Resources Review Board, October 12, 2009

For RRB information (2009 FDL Status)
For RRB approval (2010 TDAQ Budget)

ATLAS Full Design Luminosity Detector Activities Status Report 2009 - 2010

Introduction

The ATLAS management, supported by the ATLAS Executive and Collaboration Boards, kindly invites the RRB to take note of the status report for the 2009 – 2010 Full Design Luminosity activities and approve the 2010 TDAQ budget.

The initial ATLAS construction period finished by the end of 2008. The initial detector configuration was determined in 2002, following an updated financial plan endorsed by the RRB at that time. As described in the Cost to Completion (CtC) plan (CERN-RRB-2002-114 rev.), original CORE items worth some 30 MCHF were staged to liberate financing to bridge the gap between cost to completion (CtC) and available firm financial pledges. It was understood that once the CtC budget of 72.6 MCHF was fully pledged, the deferred funds would be returned to complete the Full Design Luminosity (FDL) detector, as defined in the Technical Proposal (CERN/LHCC/94-43). While waiting for remaining pledges and the deferred funds to become available, related planning has started and the first steps in this direction were reported in the April 2009 RRB (CERN-RRB-2009-066).





FDL TDAQ BUDGET REPORT ELEMENTS		1. Completion of the TDAQ System
	Initial TDAQ scope	Following the closing of the ATLAS detector for the start-up of LHC in September 2008, some 2.5 MCHF worth of TDAQ equipment remains to be installed at ATLAS, before the liberation of deferred funds to be used to complete the TDAQ system (see CERN-RRB-2009-066).
	TDAQ 2009 status	
	De-staging	
	TDAQ 2010 budget	

Table 1 provides an update of the planned TDAQ CORE contributions for 2009, as part of the remaining TDAQ CORE funds. The total planned expenditure amounts to 2.4 MCHF, corresponding to purchasing some 350 High Level Trigger (HLT) boxes and related equipment, and preparing the expansion in 2010.

It should be noted that Table 1 also includes de-staging of some 1.7 MCHF worth of related TDAQ hardware, funded by Italy and Canada. This is above the remaining TDAQ budget of 2.5 MCHF and are part of the planned efforts to enhance TDAQ performance beyond 2010.

Table 2 shows the planned TDAQ budget for 2010, amounting to 1.8 MCHF. These payments cover the installation of additional HLT boxes and related auxiliaries.


2. Other FDL Detector activities

OTHER FDL

ACTIVITIES

REPORT ELEMENTS

 Status of IBL

 Description of other FDL activities

 Next steps

The status of other FDL-related activities was given to the RRB in April 2009 (CERN-RRB-2009-066). Work is progressing well towards an Interim-MoU for the Insertable b-layer project (IBL) and submitting the TDR to the LHCC by early 2010. As part of the FDL detector configuration (CERN/LHCC/94-43), a replacement of the Inner Detector (Pixel) b-layer was envisaged.

The active detector part of this replacement effort was included in 2002 in the Pixel M&O (Category-B) budget, currently amounting to 4.4 MCHF. Some common items, such as the corresponding beam pipe replacement, tooling and installation manpower is included in M&O Category-A at 4.0 MCHF. New project money is planned at 1.2 MCHF, thus adding up to a total of 9.7 MCHF. Discussions continue with Funding Agencies concerning institute participation and sharing of funding between M&O, FDL and new project money as part of the so-called Phase 1 efforts.

The work on Forward Detectors (CERN/LHCC/2004-010) and the Zero Degree Calorimeter (CERN/LHCC/2007-001) continues being supported by some Funding Agencies on a voluntary and supplementary basis. The estimated additional cost of the forward detectors is 1.5 MCHF (see e.g. CERN-RRB-2008-083). These efforts require also centralized technical support from ATLAS and are currently being evaluated.

ATLAS management continues its informal discussions with the Funding Agencies concerning its FDL and Phase 1 plans, and will report progress to the RRB in 2010, once more experience is gained from operating the ATLAS detector in multi-TeV collision energies.

Planned FDL Contributions to ATLAS Detector during 2009

by Funding Agency

(Payments, in kCHF)

Funding Agency	Inner Det.	LAr Cal.	Tile Cal.	Muon cham.	Trigger /DAQ	Common Items	total
Argentina						0	0
Armenia						0	0
Australia						0	0
Austria						0	0
Azerbaijan						0	0
Belarus						0	0
Brazil						0	0
Canada					630	0	630
Chile						0	0
China NSFC+MSTC						0	0
Colombia						0	0
Czech Republic						0	0
Denmark						0	0
Finland						0	0
France IN2P3						0	0
France CEA						0	0
Georgia						0	0
Germany BMBF						0	0
Germany DESY						0	0
Germany MPI						0	0
Greece						0	0
Israel						0	0
Italy					1045	0	1045
Japan						0	0
Morocco						0	0
Netherlands						0	0
Norway						0	0
Poland						0	0
Portugal						0	0
Romania						0	0
Russia						0	0
JINR						0	0
Serbia						0	0
Slovak Republic						0	0
Slovenia						0	0
Spain						0	0
Sweden						0	0
Switzerland					230	0	230
Taipei						0	0
Turkey						0	0
United Kingdom						0	0
US DOE+NSF						0	0
CERN					445	0	445
from deferrals							
total sub-detector	-	-	-	-	2,350	-	2,350

Planned FDL Contributions to ATLAS Detector during 2010

by Funding Agency

(Payments, in kCHF)

Funding Agency	Inner Det.	LAr Cal.	Tile Cal.	Muon cham.	Trigger /DAQ	Common Items	total
Argentina						0	0
Armenia						0	0
Australia						0	0
Austria						0	0
Azerbaijan						0	0
Belarus						0	0
Brazil						0	0
Canada						0	0
Chile						0	0
China NSFC+MSTC						0	0
Colombia						0	0
Czech Republic						0	0
Denmark						0	0
Finland						0	0
France IN2P3						0	0
France CEA						0	0
Georgia						0	0
Germany BMBF						0	0
Germany DESY						0	0
Germany MPI						0	0
Greece						0	0
Israel						0	0
Italy						0	0
Japan						0	0
Morocco						0	0
Netherlands						0	0
Norway						0	0
Poland						0	0
Portugal					150	0	150
Romania						0	0
Russia						0	0
JINR					100	0	100
Serbia						0	0
Slovak Republic						0	0
Slovenia						0	0
Spain						0	0
Sweden						0	0
Switzerland					600	0	600
Taipei						0	0
Turkey						0	0
United Kingdom						0	0
US DOE+NSF						0	0
CERN					930	0	930
from deferrals							
total sub-detector	-	-	-	-	1,780	-	1,780