

CERN-RRB-2010-012

ATLAS Resources Review Board, April 20, 2010

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

**ATLAS Full Design Luminosity Detector Activities
Closing Report 2009 and Status Report 2010**

Introduction

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

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 started in 2009 and the progress was reported in the October 2009 RRB (CERN-RRB-2009-105).








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<i>F D L T D A Q B U D G E T</i>	
<i>R E P O R T E L E M E N T S</i>	
 Initial TDAQ scope	1. Completion of the TDAQ System
 TDAQ 2009 status	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).
 De-staging	
 TDAQ 2010 budget	

Table 1 provides the final TDAQ CORE contributions made in 2009, as part of the remaining TDAQ CORE funds. The total planned expenditure amounts to 1.9 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 1.1 MCHF worth of related TDAQ hardware, funded by Chile a Italy. This is above the remaining TDAQ budget of 2.5 MCHF and is part of the planned efforts to enhance TDAQ performance beyond 2010.

Table 2 shows the planned TDAQ budget for 2010, amounting to 1.7 MCHF. These payments cover the installation of additional HLT boxes and related auxiliaries.

2. Other FDL Detector activities	
<i>OTHER FDL</i>	
<i>ACTIVITIES</i>	
<i>REPORT ELEMENTS</i>	
 Status of IBL	The status of other FDL-related activities was given to the RRB in October 2009 (CERN-RRB-2009-105). Currently, the main emphasis is on preparing the Interim-MoU for the Insertable b-layer project (IBL) for signature. A draft version is currently in circulation between the institutes, National Contact Physicists and Funding Agencies concerned. The IBL TDR is planned to be submitted to the LHCC for summer 2010.
 Description of other FDL activities	
 Next steps	

The active detector part of this effort was included in 2002 in the Pixel M&O (Category-B) budget as b-layer replacement, 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 4.1 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.

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. An Interim-MoU for Forward Detectors is planned for later in the year.

ATLAS management continues its informal discussions with the Funding Agencies concerning its FDL plans and beyond. It continues reporting progress to the RRB in 2010, as more experience is gained from operating the ATLAS detector at multi-TeV collision energies.

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					608	0	608
Chile					92	0	92
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					150	0	150
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						0	0
Taipei						0	0
Turkey						0	0
United Kingdom						0	0
US DOE+NSF						0	0
CERN						0	0
from deferrals							
total sub-detector	-	-	-	-	1,895	-	1,895

Table 1 (Page 3)

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						0	0
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					830	0	830
Taipei						0	0
Turkey						0	0
United Kingdom						0	0
US DOE+NSF						0	0
CERN					767	0	767
from deferrals							
total sub-detector	-	-	-	-	1,697	-	1,697

Table 2 (Page 4)