



IBL Introduction & Project Organization

*ATLAS Upgrade Week
CERN, 25 February 2009
Session: IBL*

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ATLAS Week Agenda page:

<http://indico.cern.ch/conferenceDisplay.py?confId=45460>



ATLAS IBL Project

- *By appointing the IBL Project Leader, ATLAS made a first step in the IBL project organization:*
 - This mandate will start March 1st, and will last two years.
 - *The IBL (insertable pixel b layer) is **the first ATLAS upgrade project** being defined. The mandate, the management and the operation mode of this new project within ATLAS is described in **ATU-ORG-MG-0001***
<https://edms.cern.ch/document/982037/1>
 - **I am too fresh from my mandate (technically not started yet)** to come today with a solid organization proposal. I bring here some ideas, but many more need to be developed, also after consultation with the many persons I have to rapport with.
 - Since the today IBL session is “technically oriented” I will concentrate on TDR issues.



IBL Project Plan

IBL Organization plan (just a few words, see Marzio and my talk at the plenary AUW session of yesterday):

- IBL will be the **first project in the ATLAS Upgrade**
- **Activities & Deliverable** are defined in the WBS (Workpackage Breakdown Structure).
- An **IBL PL and a IBL TC** (technical coordinator) will be part of the IBL organization structure. The technical structure to drive the project will be proposed by IBL PL, IBL TC and ATLAS Upgrade Coordinator.
- **Reporting lines** are defined in the project mandate both to the ATLAS Upgrade and to the Pixel Group. It must be implemented correctly.
- We must also integrate very soon **common IBL & Pixel working activities**.
- Important document is the **IBL TDR to present to LHCC** (beginning of next year). The TDR will also fully demonstrate the project feasibility.



Towards a TDR

Today we will have a full day technical session that will cover most of the WBS workpackages:

- Sensors will not be discussed today in the IBL session. Several sensor R&D projects had separated sessions during the AUW. IBL sensors will come from short term and dedicated lines of these R&Ds. We have to bring them into the IBL.

TDR.

- I think to select **two editors** for the TDR (one on looking after physics performance, the second after technical design).
- **WBS will be mapped to the technical design in the TDR.** Simulation and physics performance are not part of the WBS.
- **Working groups** (associated to WBS packages) have to provide the background information that will go into the TDR. IBL PL and TC, will be integral part of the preparation of the TDR as well as the Upgrade Coordinator and ATLAS TC.
- TDR should also include the **hardware & software integration in the existing Pixel detector** (Interlock, DAQ, DCS, etc).
- We need a **template** for the TDR (the old one was in FrameMaker) and decide the writing tool (LaTeX?).



WBS and Working Groups

WBS constructed on "IBL strawman". Has to be revised when better knowledge of the design:

- Groups & people interests assigned with less granularity (WBS xx.xx);
- WBS is the backbone for TDR
- WBS on EDMS: <https://edms.cern.ch/document/982037/1>

WBS	Name	Deliverables	qty	Cost
1	Sensors	<i>Total cost</i>		*****
2	Electronics	<i>Total cost</i>		*****
2.1	<i>FE-I4</i>	<i>FE-I4</i>		
2.1.1	FE-I4 v1 engineering	FE-I4 v1 engineering		
2.1.2	FE-I4 v2 engineering	FE-I4 v2 engineering		
2.1.3	FE-I4 Production & QC	FE-I4 Production & QC		
2.2	<i>End-of-stave (EOS) - Chip</i>	<i>End-of-stave (EOS) - Chip/card</i>		
2.2.1	EOS Chip design & protot	EOS Chip design & prototype		
2.2.2	EOS Chip Production & Q	EOS Chip Production & QC		
2.2.3	EOS card design & protot	EOS card design & prototype		
2.2.4	EOS card production & Q	EOS card production & QC		
2.3	<i>Opto (on detector)</i>	<i>Opto-chip (Doric/VDC) v1</i>		
2.3.1	Opto-chip (Doric/VDC) v1	Opto-chip production & QC		
2.3.2	Opto-chip production & Q	EOS card design & prototype		
2.3.3	Opto-package (VCSEL, PI	EOS card production & QC		
2.3.4	Opto-board design			
2.3.5	Opto board production an			
2.4	BOC			
2.5	ROD		68	***
2.6	Powering Scheme			
2.6.1	Local powering: parallel, serial, DC/DC			
2.6.2	PP2 power regulation		36	***
2.7	Lab/beam Testing (TPLL/TPCC upgrade)			
2.7.1	New Hardware		10	***
2.7.2	Software			
3	Hybridisation	<i>Total cost</i>		*****
4	Local Support (stave)	<i>tal cost</i>		*****
5	Internal Services	<i>tal cost</i>		*****
6	Beam Pipe & Interfaces	<i>tal cost</i>		*****
7	Surface Intergration (Package preparation)	<i>Total cost</i>		*****
8	External Services - Routing and insta	<i>tal cost</i>		*****
9	External Cooling and Gas	<i>tal cost</i>		*****
10	Installation in the Pit	<i>tal cost</i>		***
11	DAQ, DCS and Interlock integration	<i>tal cost</i>		***
12	Irradiation and Test Beam	<i>Total cost</i>		***

Prototypes, Stave-0 will be included
R&D are not in the costs

Design understanding modifies WBS:
EOS chip does not look to exist anymore,
Clean up the WBS

Costs

Groups & people

- Cost evaluation must be completed.
- WBS interfaces need more details.
- Milestones must be defined.



What inside TDR (first ideas)

Layout of the TDR contents:

- Introduction
- Requirements and Layout
- Pixel Performance

• *Mapping of WBS packages*

WBS	Name
1	Sensors
2	Electronics
3	Hybridisation
4	Local Support (stave)
5	Internal Services
6	Beam Pipe & Interfaces
7	Surface Intergration (Package preparation)
8	External Services - Routing and installation Procedures
9	External Cooling and Gas
10	Installation in the Pit
11	DAQ, DCS and Interlock integration
12	Irradiation and Test Beam

- “Stave-0” (evaluation of full scale prototype)
- Material Summary (Material Budget)
- Commissioning of IBL in ATLAS
- Project Management



Requirements & Performance

Requirements discussed in previous meetings

- Today Ian Dawson will update on IBL **n fluences**
- Other requirements are:
 - IBL design **Peak Luminosity** = 3×10^{34} ,
 - **Integrated Luminosity** seen by IBL = 550 fb^{-1}
- *Physics performance: (no time to fit a sub-session today)*
 - New results from Sahsa on b-tagging will be presented this week in another session.
- **Installation date.** (This is not a “physics requirement”). This will coincide with the superconductive triplets of quadrupoles in the ATLAS/CMS interaction regions. Was scheduled for Winter 2012 before the LHC accident. Triplet schedule is at least 6 month delayed. No new SLHC phase I schedule available (soon).



Organization: Collaborative Infrastructure

The tight interconnected activities need support of “*Collaborative Tools*”

- **Mailing list**: general IBL mailing list, working group mailing lists;
 - Information has to be transmitted by official mailing lists. Avoid personal mailing list;
 - I will create a first mailing list: atlas-ibl-general@cern.ch and I will put by default all the addresses present atlas-pixel-upgrade@cern.ch that will continue to be the general mailing list for the SLHC Phase II.
 - Other mailing lists will be linked to working group activities
- **Collaborative Workspace** (SharePoint is a strong candidate)

📄 Documents:

- Official approved document in **EDMS**.
- Build up of reference documents / tables / specification in defined accessible place: **Collaborative Workspace**.
- **Indico Agenda**: create a IBL category under Inner Detector.

📄 Information Portal

- **WEB based portal** as starting point to search for Mailing archives, Documents, News, Indico agendas.
- Also **forum** based discussion could be considered.

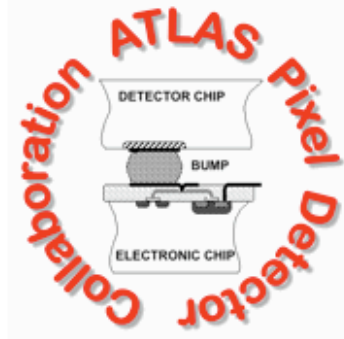


Collaborative Tools – Share Point Example

ATLAS Pixel Upgrade for SLHC - Electronics

Welcome Giovanni Darbo

This Site



ATLAS Pixel Upgrade for SLHC - Electronics

Home System Design TF

Site Actions

View All Site Content

Documents

- Shared Documents
- Bonn
- CPPM
- Genova
- Nikhef
- LBNL
- FE-test-2007
- FE-I3 & MCC-I2.1

Lists

- Calendar
- Tasks

Discussions

- Team Discussion

Sites

People and Groups

Site Hierarchy

- ATLAS pixel chip upgrad
- System Design TF

This Collaboration Workspace (SharePoint) is for Management of the design of the FE-I4

Announcements

Pixel indico directly from SharePoint 27/08/2008 14:45
by Giovanni Darbo
Next 14 days Pixel meetings visible form direct link in SharePoint

[Add new announcement](#)

Upcoming Pixel meetings

2009-02-24	17:00	ATLAS Pixel DSP Meeting
2009-02-25	17:30	ATLAS pixel chip upgrade engineering meeting
2009-02-25	17:30	Pixel Offline software
2009-02-26	16:00	ATLAS Pixel Detector and Calibration Meeting
2009-02-27	14:00	Pixel General Meeting
2009-03-03	16:30	Inserted B-Layer Eng. Meeting
2009-03-03	17:00	ATLAS Pixel DSP Meeting
2009-03-04	17:30	ATLAS pixel chip upgrade engineering meeting
2009-03-05	16:00	ATLAS Pixel Detector and Calibration Meeting
2009-03-06	09:30	Pixel General Meeting

Calendar

There are currently no upcoming events. To add a new event, click "Add new event" below.

[Add new event](#)



Links

- ATLAS HighLumi R&D - 3D Sensors
 - ATLAS High Luminosity Upgrade
 - Pixel indico
- [Add new link](#)



IBL – Toward a MoU

- *Construction MoU will develop during TDR writing:*
 - People involved in TDR activities will more naturally move to deliverables as they build up expertise.
- *In the present phase of the project we have to prepare an interim MoU (iMoU)*
 - IBL PL and ATLAS TC will consider the groups interested to participate into the IBL, the technical expertise offered and money contribution they could make available.
 - The iMoU, draft in June, revised at the next AUW, will finally become a MoU when the TDR will be submitted (early 2010).



PO Review Office

- *The Review Office of the Project Office is the body helping in the review of progress milestones, select amongst main technical options and put in place FDRs and PRRs,*

- *Several reviews must be put in place soon. Examples:*
 - **Cooling option** – early selection of cooling option avoids duplicated efforts.
 - **Reduce sensor options** – the number of sensor options has to be reduced. Also design specification has to fix for the selected technologies.



IBL Schedule

Schedule has to be developed:

- Need better guess for installation date coming from LHC machine (today assumed 2012, but probably late, at least, by 6 months).
- Hope a better scenarios will be known next months.



(Next) Meetings

General IBL meetings: .

- Next IBL General Meeting: **25-26 June**. Theme will be TDR.
- One in Fall. The next ID week is not known yet.

IBL Technical Coordination meetings:

- IBL TC need to define how to monitor all the WBS activities and the progress of project. The IBL TC will have to propose what is the better structure and frequency of the meetings that he will call.

Working group meetings:

- In person/phone meetings.
- Have to cover most of IBL activities.
- Organized by working group chairs, PE(s) and TC.

Kick-off meetings:

- When activities have not started yet, or are lacking initial boost and need clustering interest from groups;
- Example are: internal services (from FE to PP1), Installation/Safety, etc...



Meetings

● *IBL Summary Session in the AUW:*

- To keep a “foothold” in SLHC phase II upgrade.
- People in SLHC phase II are interested to be kept up to date.

● *Have an IBL slot in PO and Pixel meetings:*

- PL and TC have to report to both groups.



And Now...

Time is running fast, we need to work hard!!!



Are you a gifted graphic?

We need a logo for the IBL project collaboration.

- I have made an interim logo (iLogo) but we need a better one;
- It should represent ATLAS and Pixel together;
- It must look nice is small and large size;
- Send me your proposals and we will select the one will receive the highest number of preferences in the next IBL general meeting (June)

IBL iLogo

