



IBL – Attività e Richieste



Bologna, June 17th, 2008

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Agenda Page:



IBL Organization

🕒 IBL TDR & IBL MoU – Marzo 2010

- *Interim-MoU inizierà dopo “IBL kick-off meeting”.*

🕒 25-26 Giugno

- *IBL General meeting*
- *2 giorni di discussione tecnica sul progetto*

🕒 8 Luglio – IBL kick-off meeting

- *Venue: Holiday Inn in St. Genis*
- *<http://indico.cern.ch/conferenceDisplay.py?confId=56905>*
- *Sarà un management oriented meeting: IBL Institute Board*

● Costo totale 9.9 MCH - suddiviso in:

- *M&O-A: beam-pipe, installazione: 4.4 MCH*
- *M&O-B/Construction CORE: 5.5MCH – di questi sono previsti 4.4MCH (2009 – 2012) nelle tabelle RRB dei M&O-B Pixel.*
- *Una possibilità è coprire i 5.5MCH con M&O-B “equivalente” per i Paesi in cui esistono i Pixel e il rimanente con nuovi contributi.*
- *Probabilmente le risorse economiche disponibili in ATLAS sono maggiori del necessario.*

WBS	Name	Cost (kCHF)	MO-A	MO-B/ Constr.
1	Sensors	kCH 642.0	0.0	642.0
2	Electronics	kCH 2 175.3	0.0	2175.3
3	Hybridisation	kCH 1 099.6	0.0	1099.6
4	Local Support (stave)	kCH 487.0	0.0	487.0
5	Internal Services	kCH 245.0	0.0	245.0
6	Beam Pipe & Interfaces	kCH 1 990.0	1870.0	120.0
7	Surface Intergration (Package preparation)	kCH 292.0	0.0	292.0
8	External Services - Routing and installation Procedures	kCH 415.9	293.6	122.3
9	External Cooling and Gas	kCH 361.0	331.0	30.0
10	Installation in the Pit	kCH 1 495.0	1495.0	0.0
11	DAQ, DCS and Interlock integration	kCH 682.0	375.7	306.2
12	Irradiation and Test Beam	kCH -	0.0	0.0
		kCH 9 884.7	4365.3	5519.4



Profilo Temporale Costo

		2009	2010	2011	2012	2013	2014	Total
	M&O-A	139.0	1 359.6	808.0	667.5	1 030.9	432.8	4 437.6
	M&O-B/New	176.9	1 028.8	2 297.7	1 210.5	655.6	76.7	5 446.2
	M&O-B only (~4.4MCH)	176.9	820.1	1 500.0	1 300.0	522.6	61.2	4 380.9
	Total	315.9	2 388.3	3 105.7	1 877.9	1 686.5	509.5	9 883.9

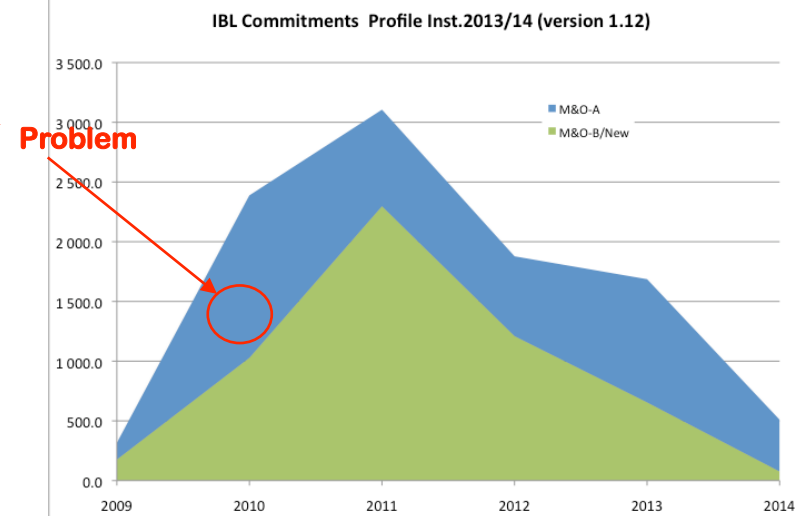
☛ **Total cost (M&O-A – M&O-B/New construction):**
9884 kCH

☛ **Subsistence not included:**

- 2 FTE 2010 & 2011
- 4 FTE 2012, 2013, 2014
- + Same amount of FTE's from Institutes

☛ **SR1/IBL operation:**

- 30k – 2010
- 50k – 2011, 2012, 2013, 2014



WBS	Name	Cost (kCHF)	MO-A	MO-B/ Constr.	2009	2010	2011	2012	2013	2014
1	Sensors	kCH 642.0	0.0	642.0	30.0	100.0	512.0	0.0	0.0	0.0
2	Electronics	kCH 2 175.3	0.0	2175.3	25.9	551.1	1 136.1	145.3	261.4	55.5
3	Hybridisation	kCH 1 099.6	0.0	1099.6	32.6	107.9	198.1	564.9	196.0	0.0
4	Local Support (stave)	kCH 487.0	0.0	487.0	48.4	156.0	127.6	155.0	0.0	0.0
5	Internal Services	kCH 245.0	0.0	245.0	19.0	38.5	107.5	80.0	0.0	0.0
6	Beam Pipe & Interfaces	kCH 1 990.0	1870.0	120.0	139.0	1 044.0	567.0	180.0	60.0	0.0
7	Surface Intergration	kCH 292.0	0.0	292.0	21.0	28.0	97.0	115.0	31.0	0.0
8	External Services	kCH 415.9	293.6	122.3	0.0	273.6	142.3	0.0	0.0	0.0
9	External Cooling and Gas	kCH 361.0	331.0	30.0	0.0	38.0	68.0	88.0	80.0	87.0
10	Installation in the Pit	kCH 1 495.0	1495.0	0.0	0.0	50.0	50.0	391.0	723.5	280.5
11	DAQ, DCS, HV & LV P	kCH 682.0	375.7	306.2	0.0	41.2	85.9	143.7	324.6	86.5
12	Irradiation and Test Beam	kCH -	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



Possibile contributo Italiano

Possibile contributo Italiano:

- *Deliverables: 1.1MCH*
- *“Tassa”: 200 kCH*
- *M&O-A: frazione secondo regole ATLAS*

Contributo totale (non M&O-A)

- *~20 % dell'IBL (=20% di 5.5MCH)*

WBS	Name	Cost (kCHF)	MO-A	MO-B/ Constr.	I	Bologna	Genova	Milano	Udine	Note
1	Sensors	kCH 642.0	0.0	642.0	151					Cost related to chosen technology assumed 3D
2	Electronics	kCH 2 175.3	0.0	2 175.3	550					Chips: FE-I4, VDC(0.13),EOS?(0.13)
3	Hybridisation	kCH 1 099.6	0.0	1 099.6	193					Assembled module yield 40% (too low?)
4	Local Support (stave)	kCH 487.0	0.0	487.0	120					Includes: prototyping, loading, QC, tooling
5	Internal Services	kCH 245.0	0.0	245.0	33					Large incertitude, estrapolated form SQP
6	Beam Pipe & Interfaces	kCH 1 990.0	1 870.0	120.0	0					Spare beam-pipe notincluded
7	Surface Intergration	kCH 292.0	0.0	292.0	0					Tool, jig and area costs
8	External Services	kCH 415.9	293.6	122.3	50					Service design and procurement
9	External Cooling and Gas	kCH 361.0	331.0	30.0	0					Baseline CO2 (more expensive)
10	Installation in the Pit	kCH 1 495.0	1 495.0	0.0	0					Hired manpower included
11	DAQ, DCS, HV & LV P	kCH 682.0	375.7	306.2	0					ROS not evaluated yet
12	Irradiation and Test Beam	kCH -	0.0	0.0	0					Cost are not in the CORE
		kCH 9 884.7	4 365.3	5 519.4	1 096					



Contributo 2009 e 2010

● Possibile contributo Italiano:

- *Deliverables: 1.1MCH*
- *“Tassa”: 200 kCH*
- *M&O-A: frazione secondo regole ATLAS*

● Contributo totale (non M&O-A)

- *~20 % dell'IBL (=20% di 5.5MCH)*

● 2009

- *Sblocco di 50 dei 200 k€*

● 2010

- *Si può considerare ~200 k€*

● Va studiato il dettaglio...



BACKUP SLIDES



WBS 1.6 - COSTS v1.12																			
WBS			Name	Deliverables	qty	Cost (kCHF)		MO-B/ Constr.	I			Bologna	Genova	Milano	Udine				
1			Sensors	Total cost		kCH	642.0	642.0	150.5										
		1.2.1	3D	Prototype wafers	30	kCH	60.0	60.0	25%	15									
		1.2.2	Planar	Prototype wafers	30	kCH	40.0	40.0											
	1.3		<i>Sensor Production & QC</i>																
		1.3.1	Sensor Production	Tiles or single FE-I4 assy	512/1536	kCH	512.0	512.0	25%	128									
		1.3.2	Sensor QC	Jigs, chuck		kCH	30.0	30.0	25%	7.5									
2			Electronics	Total cost		kCH	2 175.3	2 175.3	549.8										
	2.1		<i>FE-I4</i>																
		2.1.1	FE-I4 v1 engineering	Engineering wafers	6	kCH	504.0	504.0	10%	50.4									
		2.1.2	FE-I4 v2 engineering	Engineering wafers	12	kCH	584.6	584.6	10%	58.5									
		2.1.3	FE-I4 Production & QC	FE-I4 wafers, grinding, dicing	72	kCH	241.2	241.2	10%	24.1									
	2.5		<i>ROD</i>		68	kCH	380.8	380.8	100%	380.8									
		2.6.2	PP2 power regulation		36	kCH	36.0	36.0	100%	36.0									
	2.7		<i>Lab/beam Testing (TPLL/TPCC upgrade)</i>																
		2.7.1	New Hardware		10	kCH	42.0	42.0											
		2.7.2	Software																
3			Hybridisation	Total cost		kCH	1 099.6	1 099.6	193.0										
		3.1.1	Bump-bonding vendor qualification	Prototype assemblies/modules		kCH	326.3	326.3	10%	32.6									
		3.1.2	Bump-bonding production	Bumped modules	512	kCH	653.3	653.3	10%	65.3									
		3.2.2	HDI production and QC/QA	interconnections from module to EOS	45	kCH	50.0	50.0	100%	50.0									
		3.3.2	(Bare) module production & QC/QA		512	kCH	50.0	50.0	50%	25.0									
4			Local Support (stave)	Total cost		kCH	487.0	487.0	119.7										
		4.1.1	Bare Stave Design & Prototype			kCH	242.0	242.0	35%	84.7									
		4.1.2	Bare Stave Production & QC	Bare staves	26	kCH	100.0	100.0	35%	35.0									
5			Internal Services	Total cost		kCH	245.0	245.0	33.3										
	5.2		<i>Internal Cooling Pipes</i>			kCH	95.0	95.0	35%	33.3									
6			Beam Pipe & Interfaces	Total cost		kCH	1 990.0	120.0	0.0										
7			Surface Intergration (Packag	Total cost		kCH	292.0	292.0	0.0										
8			External Services - Routing a	Total cost		kCH	415.9	122.3	50.0										
	8.2		<i>Opto-box on ID endplate</i>			kCH	20.0	20.0	100%	20.0									
	8.3		<i>PP2 Modifications</i>			kCH	30.0	30.0	100%	30.0									
9			External Cooling and Gas	Total cost		kCH	361.0	30.0	0.0										
10			Installation in the Pit	Total cost		kCH	1 495.0	0.0	0.0										
11			DAQ, DCS and Interlock integri	Total cost		kCH	682.0	306.2	0.0										
12			Irradiation and Test Beam	Total cost		kCH	-	0.0	0.0										
										Total	1 076								



Pro rata: M&O-B or CORE Pixel?

- I 4.4 MCH dei M&O-B Pixel previsti per l'IBL possono essere divisi in percentuale:
 - *Dei M&O Pixel: l'INFN si troverebbe con 1.0 MCH*
 - *Del contributo CORE dei Pixel: l'INFN si troverebbe con 1.4 MCH*
- I due numeri possono essere presi come limiti di riferimento per definire il contributo
 - *Le risorse tecniche devo essere essere corrispondenti all'impegno finanziario.*

Funding Agency	2009	2010	2011	2012	Total P+I	Total IBL (pro-rata of M&O-B)	Pixel CORE Fraction	Total IBL (pro-rata of Pixel CORE)
Czech Republic	6	7	8	8	29	18	1.3%	57.2
France IN2P3	166	197	186	187	736	465	13.7%	602.8
Germany BMBF	395	407	390	388	1580	999	28.9%	1271.6
Germany DESY			83	83	166	105	0.0%	0
Italy	399	344	467	466	1676	1060	31.8%	1399.2
Taipei	2	2	2	2	8	5	3.2%	140.8
US DOE + NFS	599	812	632	633	2676	1692	21.0%	924
CERN	22	21	21	22	86	54	0.0%	0
	1589	1790	1789	1789	6957	4400	100%	4396
IBL	800	1000	1300	1300	4400			
	50%	56%	73%	73%	63%			