

## ILD/ SiD additional manpower needs (Draft)

June xx, 2010

ILD and SiD have estimated the required manpower in the groups needed to meet the goals of the Detailed Baseline Design in 2012. Work related to push pull engineering has been studied by the MDI common task group jointly with the accelerator experts, and is described in a separate document. This document describes the detector proper needs which often require expertise of different types. This estimation is based on the detailed time plans of the works toward the DBD completion, which are attached to this document.

The request is separated into two separate parts:

- On a number of areas a close cooperation between SiD and ILD is possible and useful. Manpower for these tasks is asked for together.
- On a number of tasks SiD and ILD solutions and approaches are sufficiently different that a common request does not make sense. They are listed separately.

While SiD includes generic detector R&D in its requests, ILD does not do this. ILD does not organize nor control the R&D activities, which are done in independent R&D collaborations. While the work is closely coordinated with ILD, the funding is done independently from ILD.

In general both groups agree that the proper engineering of push-pull has a high priority. A prerequisite for these studies is settling on whether or not there is a platform and how QD0 is to be supported. Solutions should be worked out in collaboration between the concepts and the machine group, as proposed by the MDI common task group.

### Common request

The following technical issues are common between the concepts, and are likely areas for collaboration. The numbers given are the additional requests split according to SiD and ILD. We believe that with this level of support and by closely working together we can achieve the DBD goals:

		FTE		FTE
		Request	where	have
Costing	The development of a common costing model is important. Work needs to be done on the definition of the costing scheme, and eventually on the provision of a common methodology for costing. This work will become relevant only in 2011/2012	0.5 ILD 0.5 SiD	LLR	0.2ILD 0 SiD
Tracker support mechanics	Both concepts rely on light weight	0.5 ILD		0.2ILD

	silicon trackers. The proper engineering of mechanical solutions for the Silicon based detectors is a key component. A close cooperation between SiD and ILD is desirable and would optimally use any manpower resources.	1.75 SiD		0 SiD
Powering schemes	The detectors, in particular the vertex detector, will rely on novel powering schemes to provide power to the readout without introducing large amounts of material. These studies are common between the concepts, and should be shared.	0.5 ILD 0.25 SiD		(*) 0.25 SiD
Sum ILD Sum SiD		1.5 2.5		0.4 0.25

(\*) novel powering schemes will be worked on as part of the AIDA project in the EU. It is planned to utilize this work for ILD, but the details remain to be worked out.

The following requests are specific to ILD or SiD.

SiD (excluding MDI requests)

Mechanical Engineering		FTE		FTE
		request	Where	have
Solenoid	R&D into advanced conductor is more relevant for SiD than for ILD, as SiD uses a higher field.	0.5		0.5
Return yoke (iron)		0.4		0.1
Ecal		0.4		0.1
<b>Electronics</b>				
KPIX		0.5		1
Control		0.5		0
Beamcal		0.5		0
<b>Sensors</b>				
FCAL		0.5		0
VTX		0.5		1.5
<b>Software</b>				
Simulation Infrastructure		1.0		1.0
<b>Sum</b>		4.8		4.2

ILD (excluding MDI requests):

<b>Mechanical Engineering</b>		<b>FTE</b>		<b>FTE</b>
		<b>Request</b>	<b>where</b>	<b>Have</b>
Solenoid	The main focus for ILD will be the integration of the coil into the detector. R&D for novel conductors etc. will be closely coordinated with SiD, but no dedicated effort on the ILD side is currently planned	0.5	KEK	0
Detector Cooling	Novel liquid cooling schemes might be relevant for ILD in some parts of the detector. This work is using synergies with ongoing LHC/ sLHC work	0.5	KEK	0
<b>General Support</b>				
EDMS	ILD intends to utilize the ILC EDMS system hosted by DESY to provide a central document depository. This will also be used by the test beam efforts and R&D collaborations.	0.5	DESY	0.2
<b>Software</b>				
Core software support		1.0	DESY	2.5
Application software support		0.5	KEK	0
<b>Sum</b>		<b>3</b>		<b>2.7</b>

ILD considers additional software support to be of high priority, as many of the goals of the DBD depend on an efficient and well operating software support.