

ILD_01 status

13th October 2010

sub-detector	technology	contact person	Inside ILD_01 ?	Comments	Réponse ?	Improvements	Services/Support	Design orTech choice ?	timeline	Comments
Beampipe/masks		Paulo Mora deFreitas	Yes	See below.	Yes	No	No	?	?	No information concerning improvements in design and supports.
VXD	three double layers or five layers	Rita DeMasi /Takubo Yosuke / Georgios Gerasimos Voutsinas	Yes	Waiting for mechanical design for support and cables and services along the beam pipe.	Yes	No needs.	Yes, inside vxd.	Yes (3 double layers or 5 single ones)	Don't have a timeline yet	"For the vertex detector, the next actions we are planning are 1) Decrease the cryostat radius from 100 to 90mm. This we expect that will have no impact on physics 2) Include a small patch-panel on the cryostat/faraday cage in order to pass the cabling outside VXD. For the second we haven't defined a timeline yet. We have to study it in details, in order to do it in a reliable way" (Voutsinas)
FTD	pixel/strips	Jordi Duarte	YES	> Missing mechanical design for disks 1,2 and 3. > Small technical details to be fix.	Yes	Yes	Yes	Non	October	Preliminary mechanical design of the micro-strips disks (4,5,6,7) defined as carbon fiber petals supporting 4 sensors pads (not defined yet the micro-strips), 16 petals per disks. So far, we don't receive the design for the 1,2,3 disks (pixels) so by the moment these disks are implemented like the micro-strips ones. The new driver already contains this new geometry (see attachments from Mokka). All the driver's modifications have been done in the 06-07 Mokka release, during this week I'll do the migration..
SIT / SET / ETD	Si strips	Alexandre Charpy	No	> Missing the definitif values in DB to fit into ILD_01 model >Missing integration with other devices (importing and exporting key parameters) to adjust and avoid overlaps.	Yes	Yes	Yes	Non	November	A first version of the SiLC framework has been committed. This one can manage the SET, SIT and the ETD sub-detectors. It is actually under testing and I will send the final defaults parameters to include in the database. Geometry: About SIT/ETD: - the distribution of the silicon modules are ready (single or double layer); gap between module are included. - the support of the module is ready - electronic is described - the support barrel is partially describe. It depends of the TPC design and the global integration. Totally depending of the mechanical engineer (INFN Turino, LLR, LAL). - no overlapping detected for the moment You can add some layer (example SIT through the steer file ^^) About ETD: - the distribution of the silicon modules are ready (XUV or XY version) - the support of the module is ready - the support is described - electronic is described - no overlapping detected for the moment More features is coming and have to be tested: module overlapping, module angle etc The ILD configuration should be stable at the end of October/ beginning of the November. I have a beam test to prepare and it is going to take time. I think November 15th the Gear interface will be done. In addition to, I probably have to write a new class for the sensitvie module: TRKSILCSi for example.
TPC		Steve Aplin	Yes	services Implemented by Gabriel in the new driver "Services"	Yes	Yes	Yes	Non	Ready	Concerning the services and support, Gabriel implemented the part corresponding to the TPC endplates as proposed by Catherine Clerc. No news concerning improvements in TPC simulation itself.

Ecal	SiW	Paulo Mora deFreitas / Gabriel Musat	Yes	>The same driver implement both options, SiW and mixing Si-ScW. >Services implemented by Gabriel in the new driver "Services".	Yes	Yes	Yes	Oui	October	Should be fine for before IWLC2010 at Cern.
	ScintW	Katsushige Kotera / Gabriel Musat	Yes		Yes	Yes	Yes	Oui	October	Should be fine for before IWLC2010 at Cern.
	Maps	Nigel Watson	No	> Using old Ecal implementation for studies, should be enough.	Yes	//vaca	Yes		October	For the DECAL, we decided to go ahead with the small changes relative to the simpler SiW ECAL driver (SEcal03), rather than implement any sophisticated model of the geometry or services. This level of detail is sufficient for benchmarking performance which we want to carry out, but clearly cannot be directly compared to the much more detailed SiW ECAL models. I will contact Gabriel in the next couple of days to get this code integrated into the next release. This includes additional db entries for active pixel size/thickness and an issue with needing a special version of Encoder64 to accommodate the potentially large number of pixels. At this stage, while there is a (old) version of digitisation code for the DECAL, it needs updating and this takes longer than time up to the start of the workshop. This is also not so critical for the performance studies which we would like to carry out, as Mark was already able to modify PandoraPFA such that it works with the non-digitised DECAL pixels (in Aug.). The full digitisation is of course essential for device level and technical studies.
Hcal	Ahcal	Angela Lucacci	Yes	>Electronics front-end inside end modules implemented by Angela. >Services implemented by Gabriel in the new driver "Services".	Yes	Yes	Yes	Non	October	The near future plans for the scintillator HCAL are presented here: http://ilcagenda.linearcollider.org/getFile.py/access?contribId=47&sessionId=8&resId=0&materialId=slides&confId=476 In a nutshell, we plan to: - introduce the electronics part in the HCAL layer and reduce the scintillator thickness (I will try to do this until IWLC2010) - introduce the electronics interface (to be done in collaboration with Gabriel, I will contact him).
	Dhcal	Gerald Grenier	No	Current implementation seems to be enough ?	Yes	No	No		?	Improvements only improvements on digitisation using a standalone Geant 4 application. No timeline yet for improvements in Mokka driver.
Muon (Coil)		Nicola D'Ascenzo / Valery Saveliev	Yes	>Better Coil description than before. >Muon detectors implementation and position should be validated.	No	Yes	?	Oui (chambers ?)	?	New implementation by Valeri Saveliev. Short description of new Muon System and Cryostat Geometry - ILD Yoke geometry: Barrel: 10 layers of iron plates, thickness 100 mm + 3 layer of iron plates, thickness of 560 mm. Yoke instrumentation gaps 40 mm. Endcap: 10 layers of iron thickness 100 mm + 2 layer of iron thickness of 560 mm. Yoke instrumentation gaps 40 mm. - Muon Detection System Instrumentation: based on the scintillation tails 30x30 mm, thickness 5 mm with SiPM readout (like HCAL), positioned in center of Yoke instrumentation gaps, and additional layer at the end of Yoke. Total amount of layers is 13 for barrel and 12 for Endcup. - Superconducting Coil Cryostat with detector instrumentation: detailed geometry of cryostat with structured coil geometry which include 3 main coils and 2 compensated coils. Instrumentation inside cryostat: 2 double scintillator strip layers, scintillator thickness 10mm, before the coils and after the coils inside the cryostat. The purpose is increasing the efficiency of muon identification at low momenta.

BeamCal		André Sailer	Yes	> Better implementation by Sailer for Clic. >Should be validated for ILD.	Yes	Yes	Yes		Ready	It's a new driver rewritten by Sailer: "I have rewritten the BeamCal sub-detector driver for Mokka to change the geometry of the tungsten plates, graphite absorber and pair monitor, so that they only have holes for the two beam pipes. The sensors remain unchanged. BeamCal services and support structure are behind all other sub-detectors and at the outer edge of BeamCal, no impact on simulation. For more details, please have a look at the description of the new geometry/driver http://sailer.web.cern.ch/sailer/beamcal/newBeamCal.pdf "
LumiCal		Bogdan Pawlik	Yes	Better and faster implementation by Bogdan.	No	Yes	Yes		Ready	Bogdan committed last year two modified versions of: SLcal02 LumicalX drivers. The purpose is to build closer to reality model of LumiCal. The support and electronic structure is added, and dead areas in sensors due to gaps between tiles are introduced.
LHCal		?	Yes	Nobody cares about Lhcal for the moment...	No	?	?		?	?
B-Field		?	Yes	The same as ILD_00, less the bug in return field in yoke.	No	Yes			Ready	Gabriel fixed a bug in the return Field value, detected by Sailer.
Services		Gabriel Musat	Yes	>Still missing part of Ecal/TPC supports along Hcal barrel-endcaps gap. >Missing perhaps a few options.	Yes	Yes	Yes	?	October	This new driver implements the cables and services between the TPC/Ecal/Hcal gaps in end caps and between Ecal/Hcal gap, following the mechanical drawings from Catherine Clerc.
Physics List		Akiya, Frank	Yes	To be confirmed before mass production?	No				Ready	The default in Mokka is now QGSP_BERT, since mokka-07-04.