

MEXT Review Process in Japan

2014/7/16

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Committee under MEXT

ILC Task Force in
MEXT

Academic experts
committee

http://www.mext.go.jp/b_menu/shingi/chousa/shinkou/038/index.htm

Particle-Nuclear physics WG

Members are physicists from;
HEP(6), Nuclear physics, Cosmic-ray,
Astronomy, Accelerator(2), Particle theory,
Nuclear theory, Cosmology, Science
communication

TDR validation WG

Members are accelerator physicists
from;
KEK(3), JAERI, Riken(2), NIRS, HiSOR,
JASRI/Spring8, CROSS-Tokai

We need information from
detector groups

Particle-Nuclear Physics WG

- Mandate
 - Review the issues listed below concerning the contents of scientific studies which ILC aims, and supplement the discussion at the Academic Experts Committee for ILC:
 - Scientific role which ILC plays in the future plan of particle and nuclear physics
 - Other related issues
- Schedule
 - This WG will last between May 2014 and March 2016 (can be extended if necessary)
 - Review meetings will be held ~1/month
 - 1st meeting was held on June 24

Particle-Nuclear Physics WG

- Discussion points (example)
 - What programs are suitable to tackle the challenges to be uncovered in particle physics?
 - From the programs above, what scientific outcome is expected for particle physics in future? What is the importance of the outcome?
 - Based on the expected results from upgraded LHC, what program can we expect to produce new rich results?
 - What is the expected outcome of ILC? How do you evaluate its certainty? What impact does the expected outcome give to particle physics?
 - Does ILC have scientific advantage over other future plans (FCC, CLIC, CEPC, etc.)?
 - Can you get enough discussion and wide agreement in the community of the related scientists taking other future projects into account?
 - How much human resources do you expect to gather from abroad?

TDR validation WG

- Mandate

- Review the issues listed below concerning the cost and technical performance, and supplement the discussion at the Academic Experts Committee for ILC:
 - Validity of the cost estimation, necessary human resource, and technical feasibility described in the TDR
 - Other related issues

- Schedule

- This WG will last between May 2014 and March 2016 (can be extended if necessary)
- Review meetings will be held ~1/month
 - Detector will be discussed in January 2015

TDR validation WG

- Discussion points (example)
 - Cost
 - Items to calculate the total cost (including items which are not included in the official documents)
 - Validity of the cost which is published
 - Cost increasing factors
 - Possibility of cost reduction (alternatives)
 - Human resource
 - Estimation of human resource during construction and operation (amount, level and field of expertise)
 - Cost of human resource (except for what is included in M&S)
 - Technology
 - What part is achievable with present technology? What part requires further R&D?
 - Feasibility, necessary time, and additional cost of the R&D
 - Possibility of alternative technology

Involvement of LCC

- Accelerator and CFS
 - Akira Yamamoto consults with LCC members
- Detector
 - LCC P&D Associate Director (Hitoshi) set up following working groups
 - Physics WG (Convener: K.Fujii, C.Grojean, M.Peskin)
 - ILC Infrastructure & planning WG (Convener: S.Yamada)
 - Physics WG prepares materials for Particle-Nuclear Physics WG
 - ILC Infrastructure & Planning WG prepares materials for TDR validation WG

ILC I&P WG

- Members
 - Convener: Sakue Yamada
 - ILD: Karsten Busser, Frank Simon (, Mary-Cruz Fouz)
 - SiD: Marty Breidenbach, Marcel Stanitzki
 - Local: Kiyotomo Kawagoe, Yasuhiro Sugimoto
- Mandate
 - Study of the human and budgetary resource needs during construction and operation
 - The time profile of the resources and their reality to quire
 - The organizational structure to interact with the ILC laboratory (Not relevant to MEXT review)

Resource survey in ILD

- Very premature study has been done and presented at ILD session of AWLC2014
- There are several comments
 - Manpower needed is overestimated
 - FTE*year might be more appropriate than FTE
- We need more information from sub-detector groups
- Human resource needs for operation period also has to be clarified

- Excel file (and Word file for instruction) has been sent to sub-system contacts to survey manpower needed for construction and operation period
- Rough estimate of time profile of budget is also asked
- Newly proposed detector hall scheme (Hybrid-A') and CMS style detector assembly is assumed for the schedule
- Detector construction period of 8 years is assumed to cope with possible early start with 250GeV CMS energy

Resource survey in ILD

- Timeline

- Time line was drawn based on the schedule in TDR (Figure 14.10. in Vol.3-II) and recent CFS study
- Assembly hall is assumed to be built in 2 years from ground breaking
- Duration of “Assembly on site” can be modified by sub-system groups

ILD assembly timeline for Hybrid option (CMS style assembly)

Sub-detector	Y-3		Y-2		Y-1		Y1		Y2		Y3		Y4		Y5		Y6		Y7		Y8		Y9		Y10										
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
Detector Hall					Excavation/Utilities																														
Assembly Hall					Construction										Extention																				
VTX					TDR				Construction off site										Assembly on site		Ins														
SIT					TDR				Construction off site										Assembly on site		Ins														
FTD					TDR				Construction off site										Assembly on site		Ins														
TPC					TDR						Construction off site										Assembly on site		Ins												
FCAL					TDR						Construction off site										Assembly on site		Ins												
ECAL (Barrel)					TDR				Construction off site										Ass. On site		Install														
ECAL (End cap)					TDR				Construction off site						Ass. On site		Install																		
HCAL (Barrel)					TDR				Construction off site						Ass. On site		Install																		
HCAL (End cap)					TDR				Construction off site						Ass. On site		Install																		
Coil					TDR		Bid		Modules construction off site				Modules const. off site/assembly on site				Ins					FM													
Iron Yoke					TDR		Bid		Modules construction off site				Modules construction off site/ring assembly on site																						
Muon det					TDR						Construction off site						Ass. On site		Install																
DAQ					TDR						Construction off site						Ass. On site		Assembly on site	Commissioning		Operation													
Computing/software					TDR						Bid		Delivery on site		Operation																				
Physics	Simulation						TDR						Simulation										Analysis												

Ins: Install
FM: Field mapping

Resource survey in ILD

- Numbers to be specified by each sub-system group

VTX	Now	Y1				Y2				Y3				Y4				Y5				Y6				Y7				Y8				Y9				Y10	Total in construction phase	TDR value											
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4														
Timeline	R&D	TDR				Construction off site												Assembly on site				Ins								Physics Run																					
Budget						0.34				0.68				0.68				0.68				0.68				0.17				0.17				0.1																	
Annual budget (MILCU)						0.34				0.68				0.68				0.68				0.68				0.17				0.17				0.1																	
FTE from external labs/univ																																																			
Item																																																			
Sensor	1.5	3				3				2				2				2				1				1				1				1					17												
Electronics	1.5	3				3				5				5				5				3				3				3				3					35												
Ladder	1.5	2				2				3				3				3				2				2				1				1					21												
Mechanical support	1.5	3				3				3				3				3				2				2				2				2					24												
Cooling	0.5	5				5				5				5				5				5				5				5				5					45												
Assembly/alignment		1				2				2				2				2				2				2				1				1					16												
Flexible cable/connectors		1				1				2				2				2				2				2				2				2					16												
DAQ	1	3				3				3				3				3				5				5				5				5				3					35								
Beam pipe/Inner suppoty tube		1				1				1				1				2				2				2				2				1				1					13								
Software	0.5	3				3				3				3				3				5				5				5				5					33												
Management	0.5	1				1				1				1				1				1				1				1				1				1					9								
Total	8.5	26				27				30				30				31				33				30				30				27				24					264								
FTE from ILC labo																																																			
Item																																																			
Cooling																						0.2				0.2				0.2				0.2				0.2					0.8								
Total		0				0				0				0				0				0				0.2				0.2				0.2				0.2				0.2					0.8				
FTE on site																																																			
Item																																																			
Sensor																										0.5				0.5				0.5				0.5				0.5					0.5				
Electronics																														1				2				2				1				0.5					0.5
Ladder																														1				2				2				2				0.5					0.5
Mechanical support																														1				2				2				2				1					1
Cooling																														1				1				1				1				0.2					0.2
Assembly/alignment																														1				2				2				2				0.3					0.3
Flexible cable/connectors																														1				1				1				1				1					1
DAQ																														1				2				2				2				1					1
Beam pipe/Inner suppoty tube																														1				1				1				1				0.5					0.5
Software																														1				2				5				3				2					2
Management																														1				1				1				1				1					1
ILC labo staff		0				0				0				0				0				0				0.2				0.2				0.2				0.2				0.2					0.2				
Total		0				0				0				0				0				0				0				10.7				16.7				19.7				16.7				8.7					

Resource survey in ILD

- Schedule
 - Reply from sub-system groups: by the end of Aug.
 - Finalize the number: at the ILD meeting in Sep.
 - Send ILD information to Sakue to make a document:
by LCWS2014