



GDE: Status & Next Steps

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ILC@DESY Project Meeting

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Global Design Effort



RDR Documents Status

- Three draft documents ‘published’ at Beijing:
 - **Incomplete draft of the RDR (~270 pages)**
 - **Stand-alone overview (~30 pages)**
 - Chapter 1 of RDR
 - Will evolve into Executive Summary, including physics and detector sections.
 - **Companion document (~30 pages):**
“International Linear Collider: Gateway to the Quantum Universe”
 - Written for non-scientists – a must read 😊
- All available for download at linearcollider.org



Remaining RDR timeline

- RDR missing sections and final editing to be complete by **April 1st**
 - Instrumentation
 - LLRF
 - Controls
 - Accelerator Physics
 - Availability, Commissioning & Operations
 - Installation
 - Dumps & Collimators
- Deadline for technical comments: 2.03.2007
 - Send via email to ml-rdr@lcdev.kek.jp
- Draft Executive Summary also available April 1st.



Reviews

- April 28-29: ILC MAC (FNAL)
 - Will review R&D plans (short and long term)
 - Probably based on S0,1,2... task force reports
 - Will be constrained by 'real world' funding and existing programmes
 - R&D Board together with EC to organise
- May (or June): International Cost Review
 - Full ILC cost review by international committee
 - Arranged by FALC
 - x2 per region nominated by FALC
 - x2 per region nominated by ILCSC
 - Total 12 (committee will probably be ~15)
 - Based on input from this review, final version of RDR will be published in Summer (ILCSC/ICFA meeting)



Important RDR work still remaining

- Analysis of the Value Estimate Risk
 - **Component costs: bottom-up analysis of the total inherent uncertainty of our cost (value) estimate.**
 - DESY will use @RISK software for risk estimate
 - Commercial firm producing risk analysis for cold-mass and vacuum vessel
 - **Technical risk: failure of foreseen R&D programmes to attain their goals:**
 - High-gradient programme
 - Electron cloud R&D
 - ...
 - **Currently on-going**
 - This is a critical component for the FALC cost review.



Goodbye RDR...Hello EDR!

- Next major GDE goal (2009/2010)
Engineering Design Report (EDR)
- What, exactly, is the EDR?
 - “demonstrating readiness for construction by 2010”
 - “fully engineered design....”
 - “30% engineering design....”
- It is more than the RDR, and must serve the following:
 - **Maintain (increase) our current world-wide momentum**
 - **Refine (control) the cost estimate via engineering design (so-called value engineering)**
 - **Produce a document which will support approval for the project.**
- EDR phase must incorporate and respond to the world-wide R&D programme.



RDR
matrix

Area Systems

e- source	e+ source	Damping Rings	RTML	Main Linac	BDS
	Kiriki	Gao	ES Kim	Hayano	Yamamoto
Brachmann	Sheppard	Guiducci	Tenenbaum	Lilje	Angal-Kalinin
Logachev		Wolski		Adolphsen	Seryi
		Zisman		Solyak	

Technical Systems

Vacuum systems	Suetsugu	Michelato	Noonan
Magnet systems	Sugahara	Bondachuk	Thomkins
Cryomodule	Ohuchi	Pagani	Carter
Cavity Package	Saito	Proch	Mammosser
RF Power	Fukuda		Larsen
Instrumentation	Urakawa	Burrows	Ross
Dumps/Collimators	Ban	Densham	Markiewicz
Acc. Physics	Kubo	Schulte	

Global Systems

Ops. & Avail.	Teranuma	Elsen	Himel
Controls	Michizono	Simrock	Carwardine
Cryogenics	Hosoyama	Tavian	Peterson
CF&S	Enomoto	Baldy	Kuchler
Installation	Shidara	Bialwons	Asiri

RDR 'matrix'
responsible for
technical design
and generating the
cost estimate



EDR Phase Structure

- Away from the RDR ‘matrix’:
 - **More traditional top-down project management structure**
 - **Definition of “tens” of well-defined “technical Work Packages”**
 - Including scope, deliverables and schedule
 - Suitable for distribution to single institutes or *consortia*, who will take on the responsibility the WP.
 - **Top-level project management team, lead by a Project Manager** (replacement for RDR Management Board)
 - EC currently searching for PM.
 - **Example WP structure**



Constraints!

- Project structure (WBS) and WP definitions must function in a globally distributed environment.
- Clear lines of responsibility, reporting are needed
- Better overall 'project integration' needed
- Shift towards 'Engineering'
 - **Will require significant ramp-up of resources in this area**
- Real World Constraints:
 - **Existing (i.e. funded) programmes**
 - **Stated ambitions of institutes/regions**
 - **Current and projected funding situation**
- WBS and EDR schedule must include R&D programme
 - **Married at the hip!**

EC forming a Task Force to evaluate possible WBS modules

Choice of PM critical.



When will this happen

- Plans will be presented at Hamburg Workshop.
- Transition from RDR to EDR will begin shortly after
 - **Plans for this have not yet been fully discussed**
 - **Distribution of WPs will be a delicate task!**
- Organising a global project remains a major ILC challenge
 - **If you have any good ideas let me know.**



DESY and the ILC (Machine)

- Goal: strengthen synergy between XFEL – ILC
 - **Better communication between projects**
 - **Look for scenarios that benefit both projects**
- High-gradient programme:
 - **(via XFEL) will continue to support ILC**
 - US and Japan infrastructure/knowledge will take time to ramp up
 - **Possible FP7 programme (30 additional cavities for ILC)**
- FLASH is an important focus
 - **Unique test facility**
 - **Will remain so for several years**
- All under discussion. Input to ED (as opposed to R&D) unclear.
 - **We must be realistic given the XFEL commitment**