

ILCSC Report



KILC12 / Daegu

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LHC: 125 GeV?



- Since Granada, evidence is accumulating that there is a 125 GeV Higgs-like object being discovered at the LHC
 - ◆ Is it real? Will it hold up with more data?
- The community is abuzz
 - ◆ Is it a Higgs? What are its properties?
 - ◆ What else might the LHC reveal?
 - ◆ What might this “discovery” mean for physics at the TeV scale – and beyond?

LHC: 125 GeV?



- The sense of anticipation is palpable
- More LHC data is streaming in
 - ◆ At 8 TeV today, at 13 TeV tomorrow
- Immediate question:
 - ◆ What will these results mean for the linear collider?
 - Physics? Energy? Intensity?

Linear Collider



- We all recognize that the physics case for a linear collider must be built on the information that the LHC provides
 - ◆ The LHC experiments will perform better than predicted
 - ◆ The LHC will also be upgraded
 - In intensity and perhaps even in energy
- What value will be added by a linear collider?
 - ◆ What will we learn from its precision?

Linear Collider



- Intense discussions are underway
 - ◆ On the arxiv, ever day
 - ◆ At Linear Collider Workshops
 - In Korea this week; in the US in October
 - ◆ In the working groups that are shaping the European Strategy and the next KEK five-year plan
 - ◆ In preparations for a Snowmass Workshop
 - Scheduled for June 2013

CLIC and ILC



- Two technologies
- ◆ The ILC will be ready to propose in 2013
 - The GDE/RD produced an RDR in 2008. They are on track to release their TDR/DBD in summer of 2013
- ◆ CLIC will be ready later
 - The CLIC Collaboration is finishing up its CDR; final report with cost information this summer
 - CLIC is aiming for an implementation plan later in the decade, perhaps 2016

- The ILC faces the immediate challenge
 - ◆ The ILCSC, the GDE and the RD will disappear with the delivery of validated TDR/DBD in 2013
 - Their mandates will have expired – but their job will not be done. It will still be necessary to
 - Advance the SCRF R&D and industrialization
 - Complete the system tests
 - Further the accelerator design and integration
 - Continue detector R&D
 - ◆ What will take their place?

- We need a new structure, one that is
 - ◆ Robust
 - To withstand international politics and the wait for the LHC
 - To carry out the necessary R&D, build the physics case, and even to unite the community
 - ◆ Nimble
 - To move quickly when LHC results arrive
 - To respond appropriately if and when a nation steps forward with a bid to host

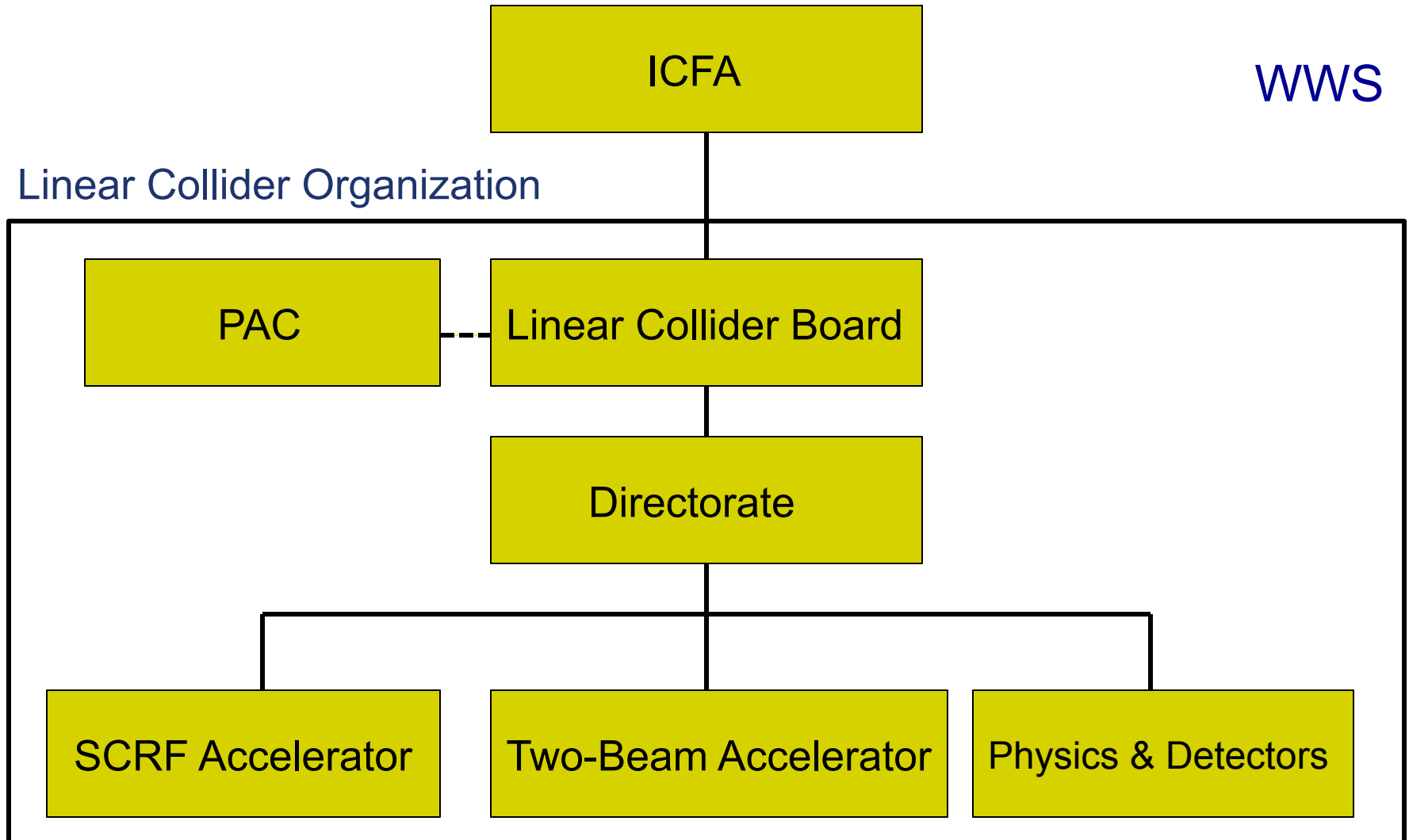
- We'd like a structure with
 - ◆ A broad reach
 - To pull together the ILC and CLIC communities
 - Recognizing and respecting the many accomplishments – both technical and sociological – that have been made to date
 - ◆ A light touch
 - To preserve the present strengths of both projects
 - To match smoothly onto existing activities
 - And yet be able to evolve with time into a new organization

Proposed Organization



WWS

Linear Collider Organization



- ICFA will endorse this proposal in July
 - ◆ It was discussed extensively this winter in Oxford
 - ◆ ICFA has empowered the ILCSC to speak for the new Linear Collider Board until it is inaugurated
 - To that end, ICFA has extended the ILCSC mandate until mid 2013
 - ◆ Likewise, ICFA has empowered the GDE to speak for the post-GDE LC (SCRF) organization
 - ICFA has also extended the GDE and RD mandates

LC Organization



- **Linear Collider Board**
 - ◆ Subcommittee of ICFA
 - ◆ 16 people, 5 per region + chair
 - ◆ Transitional organization
 - ◆ Oversees Directorate. Responsible for
 - Advancing science, technology, outreach, organization
 - Preparing a single linear collider proposal
 - With strong support of community
 - Whose timing and contents will be informed by LHC and other physics data

LC Organization



- **Directorate**
 - ◆ **Linear Collider Director**
 - ◆ **Three Associate Directors**
 - SCRF Accelerator (ILC)
 - Two-Beam Accelerator (CLIC)
 - Physics and Detectors (CLIC and ILC)
 - ◆ **Possibly Three Regional Coordinators/Directors**
 - Americas, Europe, Asia

LC Organization



- **Linear Collider Director**
 - ◆ Responsible for leading the global effort towards realizing a linear collider and its detectors
 - Science, technology, outreach, organization
 - ◆ Responsible for representing the LC to the world
 - Scientific community, government officials, industry, general public
 - ◆ Appointed by ICFA
 - Internationally known and respected physicist

LC Organization



- Associate Director, SCRF Accelerator
 - ◆ Responsible for worldwide technical activities that advance the SCRF linear collider
 - Build on the work of the GDE
 - ◆ Initially, he/she will
 - Coordinate R&D on SCRF
 - Complete system tests started in the GDE era
 - Further accelerator design and integration
 - Prepare for industrialization of SCRF cavities

LC Organization



- Associate Director, Physics and Detectors
 - ◆ Responsible for worldwide effort advancing the physics and detectors of the linear collider
 - Appropriate for either accelerator technology
 - ◆ Initially, he/she will
 - Articulate the physics case for a linear collider
 - Coordinate R&D on advanced detector technologies
 - Develop detector concepts for both accelerator technologies
 - Prepare the way for collaboration formation and detector construction

LC Organization



- Associate Director, Two-Beam Accelerator
 - ◆ This piece of the Directorate will evolve from the present CLIC Collaboration
 - Not as time critical
- Regional Coordinators/Directors
 - ◆ Will interface with regional authorities, as at present in GDE

LC Organization



- **Timeline**

- ◆ **ICFA is conducting search for LC Director**

- On track to finish soon

- ◆ **ILCSC and LC Director will search for**

- Associate Director for SCRF Accelerator
 - Associate Director for Physics and Detectors

- Search to start soon, with appointments this year, perhaps as early as this summer

- ◆ **ICFA will stand up Linear Collider Board**

- Process to start this summer

Other Activities



- ILCSC is creating a Site Criteria Working Group to determine technical site criteria
 - ◆ For either choice of technology
 - Two members from each region, chair Don Hartill
 - Report in six- to twelve months
- GDE is producing a document describing Project Implementation Planning
 - ◆ Contains the GDE's distilled wisdom on global projects. Valuable far beyond HEP

Other Activities



- FALC is aware of these activities
 - ◆ It supports the general thrust
 - But emphasizing the need to build the physics case from LHC results
- We in the LC community must develop that case!
 - ◆ We need to convince many people
 - Our LHC colleagues and our fellow scientists
 - Our government officials and our fellow citizens
 - ◆ We start today!