

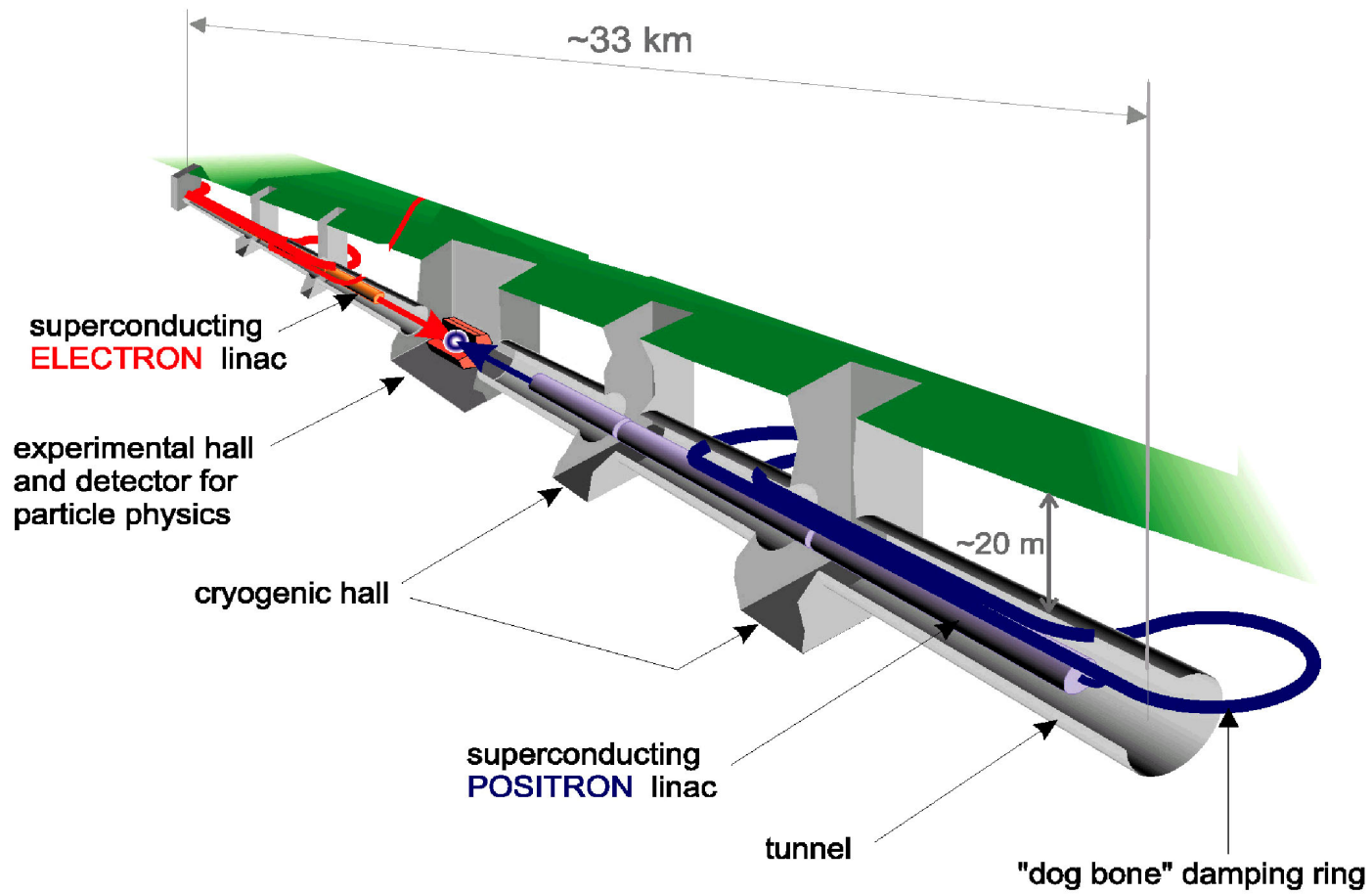
12th International Workshop on RF Superconductivity

July 15, 2005

The I L C - Challenges of International Collaboration

- What is it?
- History
- Organization
- Challenges
- Outlook

What is it?



e^+e^- collisions at ~ 1 TeV in the CM

What is it?

- Much more than a piece of hardware - will need to cross three frontiers
 - ♠ **energy frontier** in e+e- physics
 - ♠ **technology frontier** in colliders
 - ♠ **social frontier** in project and resource organization

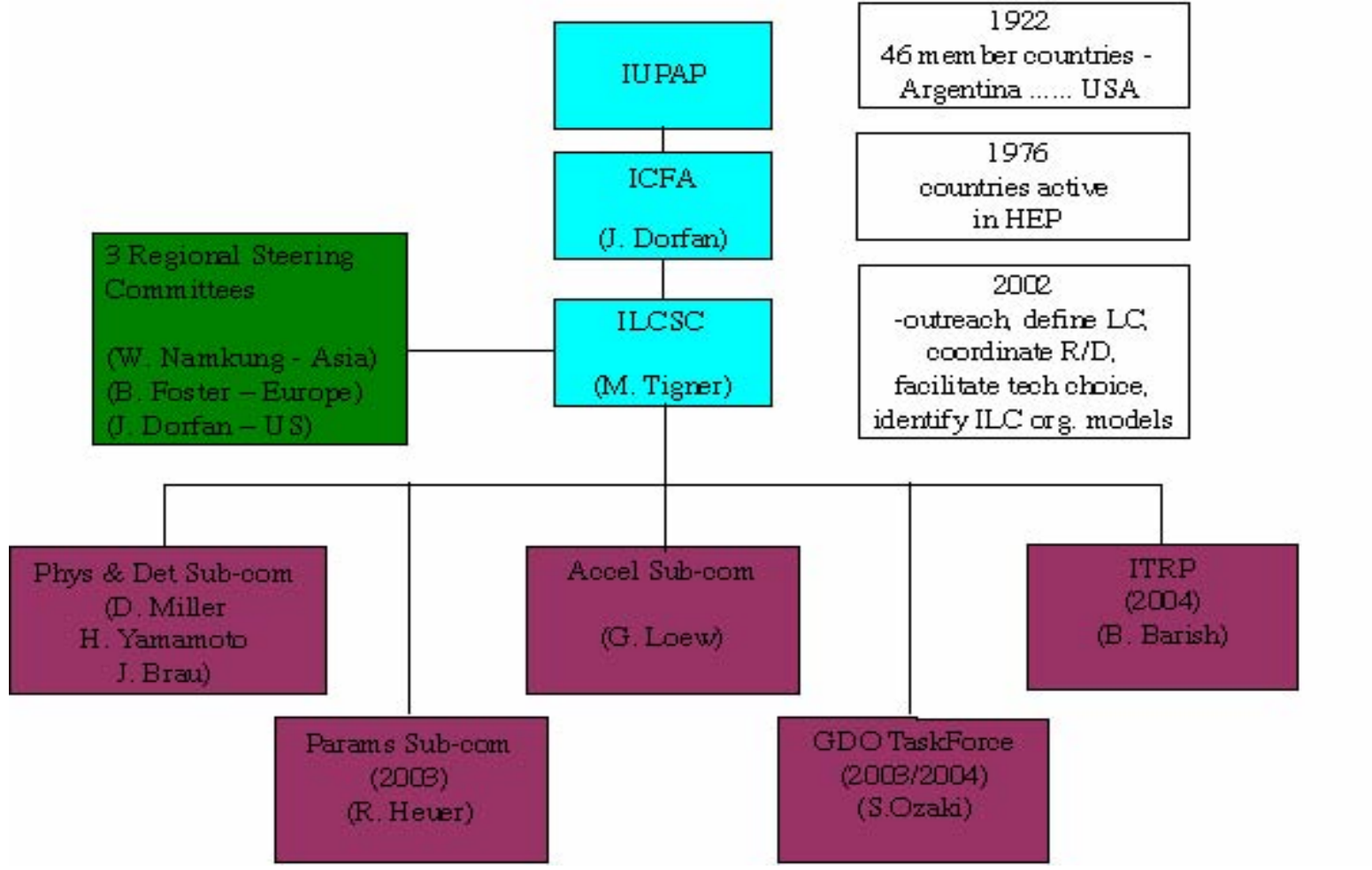
OVERARCHING PRINCIPLES:

- ✓ *project - not a new "laboratory" institution*
- ✓ *all share intellectual ownership and access*
- ✓ *as much work as possible from existing institutions*
- ✓ *MOU expresses mutual obligations to cooperate*

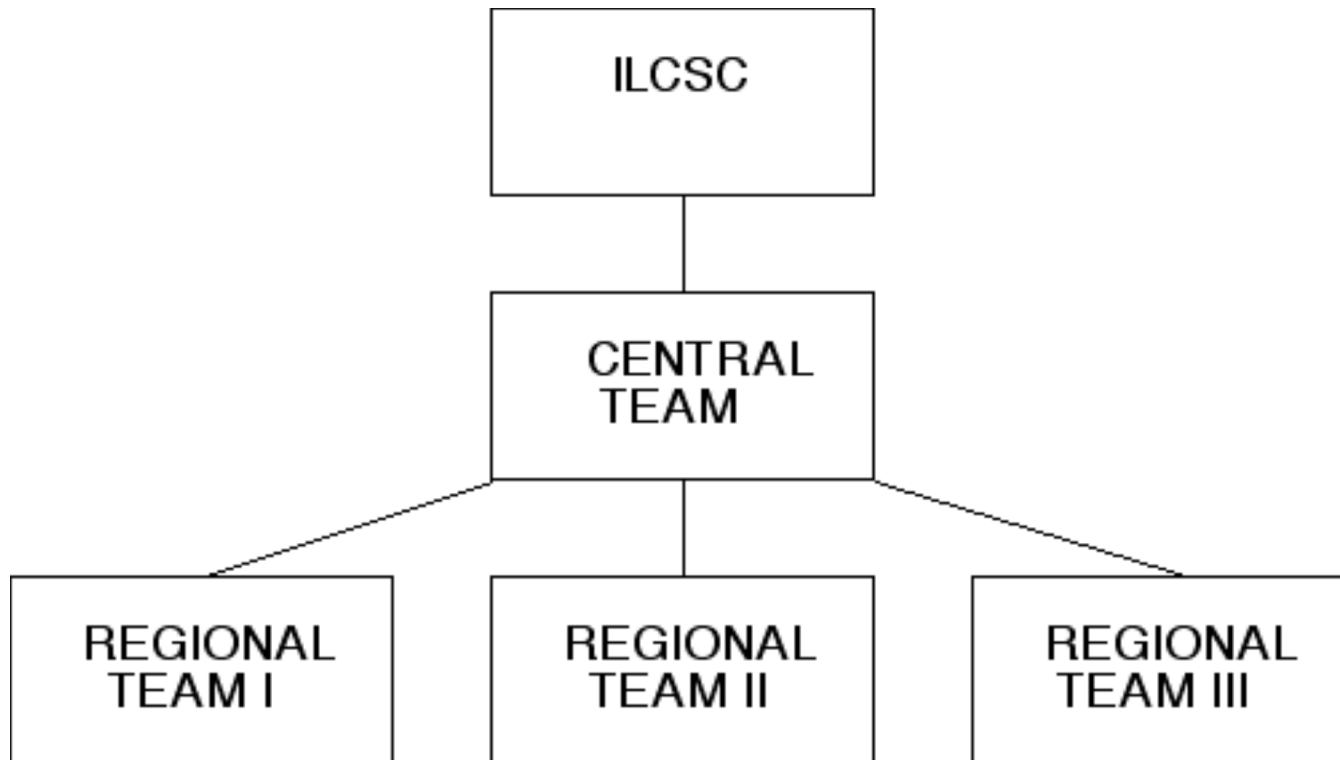
History

- LC first discussed in 1965 ($\Delta E / \Delta n \propto E^4 / R$)
- In 1983 Accelerator Conf - long paper on Novosibirsk (BINP) ideas on how to build a 1 TeV LC and the SLC was underway. By 1993 KEK, SLAC, DESY, BINP hard at work on cold and warm
- In 1993 an Interlaboratory Collaboration Toward TeV Scale Electron - Positron Linear Colliders - focus global efforts on common goals. First TRC under Greg Loew
- 2001 ICFA appoints a second TRC, again under Greg Loew
- ICFA commissions a study on how to proceed internationally leading to the formation of the ILCSC
- 2004 technology choice and first ILCWS @ KEK
- 2005 Global Design Effort Central Team formed - 2nd ILCWS Snowmass (Aug 14 - 27) (special tutorials planned)

Organization (initial framework at "grass roots" stage)



Organization (current schematic - in effect now)



Organization (Central Team composition - evolving)

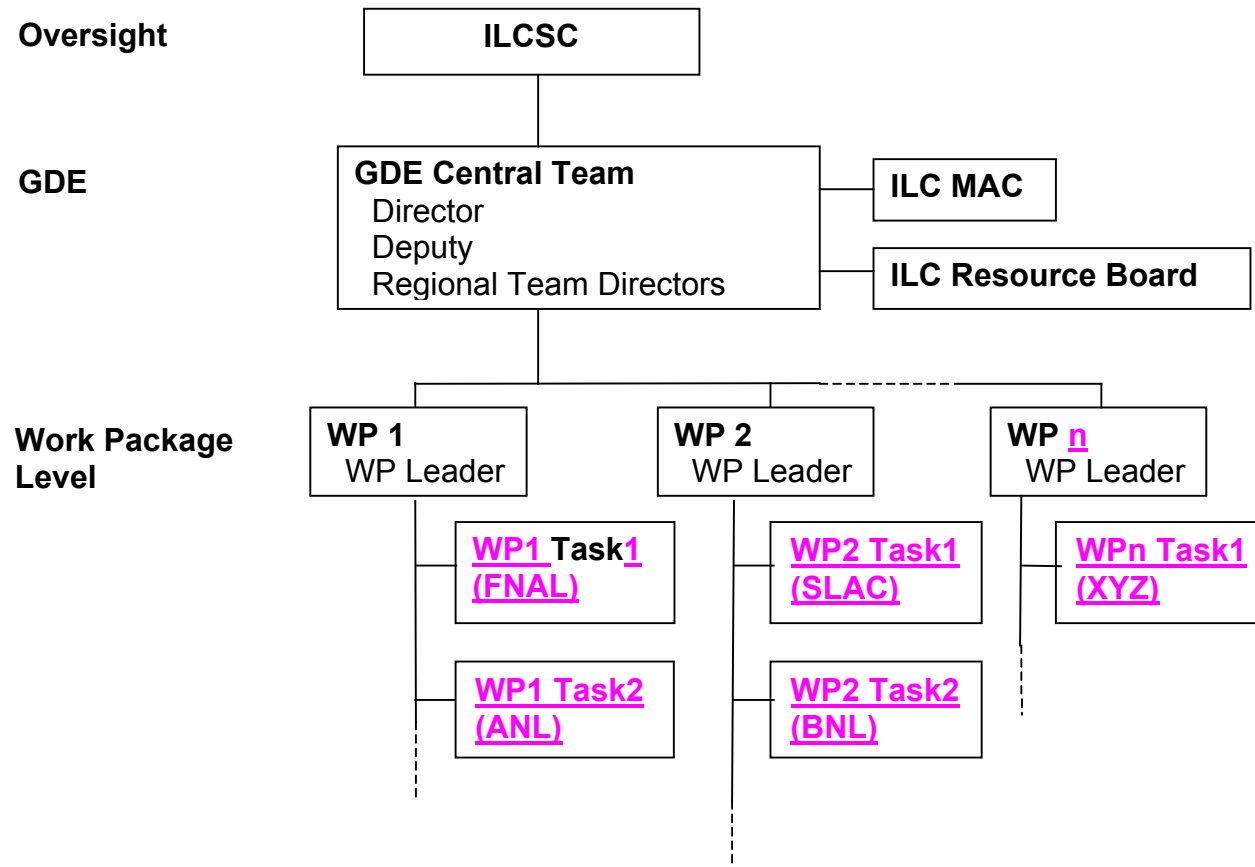
- √ Director - Barry Barish (appointed March 18)
- √ Three Cost Engineers - T. Shidara, W. Bialowons, TBA
- √ Three Regional Directors - F. Takasaki, B. Foster, G. Dugan
- √ Other Technical Principals and their support
- √

Location will be "virtual" - rotating among the three regions, Asia, Europe, Americas.

Central Team Principals will remain stationed at home institutions and travel

Organization - example of possible work package arrangement

ILC Work Structure Technical Direction



Challenges (For SRF community)

- Produce a "good" cryomodule in about 4 years
 - √ does the job as defined this year by GDE Central
- Have a "better" (as defined by GDE Central) design in the works to be available as needed

Challenges (For Whole community)

- Achieve agreement on GDE objectives
 - √ what's needed to convince world agencies that we have technology and cost under control
- Achieve agreement on appropriate work sharing
 - √ focus resources in an effective way
- TDR and cost estimate ready on GDE Central time scale (~ 4 yr)
- Segue from grass roots community governance to international agency based governance

Outlook

- Outlook is POSITIVE

Community Dimensions

- √ worldwide srf community has worked together for 25 years, solving common problems
- √ community selected a technology to pursue for the ILC
 - √√ impressed our patrons very favorably
- √ community now pursuing a unified design based on that selection under a leadership selected by a worldwide process
 - √√ impressed our patrons very favorably
- √ process in train to produce a proposal and cost estimate bearing the international community stamp

THIS WILL HAPPEN

Government Dimensions

- √ OECD Ministers endorse international collaboration in preparation for ILC
 - √√ **“Ministers expressed their appreciation for the work of the OECD Global Science Forum Consultative Group on High–Energy Physics. They welcomed the report from the Group and commended the clarity and world–wide consensus they found amongst the high–energy physics community in developing the Roadmap for future large accelerator based facilities. the Ministers note several important points that were articulated in the report: preparing for the development of a next–generation electron–positron collider,.....”**
- √ Agencies formed FALC - Funding Agencies for the Linear Collider (so far United Kingdom, France, Italy, Germany, Japan, Korea, China, Canada, US.....)

√√ discuss means for beginning agency governance of the project and financial support for the r/d preceding the TDR and cost estimate needed for commitment decisions

√ Formed also the FALC Resources group (third meeting last week) to interface between the GDE and the collective agencies

TOGETHER WITH OUR PATRONS WE'VE BUILT A SOLID FOUNDATION FOR PROCEEDING TO A REAL PROPOSAL

NOW IT'S UP TO US TO COME THROUGH, MEETING THE TECHNICAL AND SOCIAL CHALLENGES OF THIS PIONEERING ENTERPRISE, SHOWING ONCE MORE THAT **WE CAN DO IT!**