Fermilab View of SMTF

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Fermilab View of SMTF
Outline

- The Fermilab Long Range Plan
- Fermilab, ILC, PD, and SMTF
- Organization
- Resources
- Next steps

The Fermilab Long Range Plan

http://www.fnal.gov/directorate/Longrange/Long_range_planning.html

- The overarching vision presented within the Fermilab Long Range Plan is that Fermilab will remain the primary site for accelerator-based particle physics in the U.S. in the next decade and beyond.
  - As host to a linear collider Fermilab would be established as a world center for the physics of the energy frontier for decades.
  - If the linear collider is constructed elsewhere, or delayed, Fermilab would strive to become a world center of excellence in neutrino physics, based on a (SClinac) multi-MW "Proton Driver", still with significant LC participation.
- The ILC is established within the FLRP as the primary goal. However, in the event of delay the Proton Driver would provide a forefront physics program while at the same time advancing preparations for an ILC.

Fermilab, the ILC, and the Proton Driver

- In response to the FLRP Fermilab is pursuing linear collider and proton driver R&D in parallel.

  ⇒The cold decision has allowed alignment of these paths.

- Fermilab stated publicly to the ITRP "In the event of a cold decision Fermilab would be ready and able to assume the leadership role in establishing a U.S. collaboration to push the SCRF development under the aegis of an international LC organization."

Following the cold technology decision Fermilab, with help from our collaborators, is now preparing to follow through on that commitment.

Fermilab Perspective on SMTF

- Following the ITRP recommendation the first imperative is establishment of US-based capability in the fabrication of high gradient superconducting accelerating structures.
  - Expanding upon existing scrf expertise at: Argonne, Cornell, Fermilab Jefferson Lab, LANL, MSU, SLAC
  - Engage international partners: DESY, KEK, INFN
  - Provisional goal is to have at lease one US-assembled and one European 1.3 GHz cryomodule under test, with beam, by 2008.

  ⇒ **Fermilab is committed to providing the US leadership with close coordination with the ILC-Americas collaboration.**
- From Fermilab point of view SMTF is the primary mechanism for providing this leadership while allowing us to simultaneously integrate our ILC and PD R&D activities.
- Infrastructure created for this purpose will be of more general utility to a variety of scrf-based U.S. projects .

Fermilab Perspective on SMTF
What is SMTF?

- The primary motivation is development of U.S. capabilities in support of ILC and other scrf based projects of interest to U.S. laboratories.
- Fermilab views SMTF as a facility. It is meant to be responsive to the needs of the U.S. scrf-based accelerator community.
  - ILC, Proton Driver, 4th generation light sources, ERL's, etc are viewed as distinct from SMTF. However, these activities and SMTF are very closely coupled, and will require very close coordination in their execution.
  - Everyone who is participating in the SMTF discussions is interested in one of these areas

  ⇒ **The people proposing to implement SMTF are the same people who will be developing the hardware to be tested.**
- Fermilab views itself as holding overall responsibility for implementing the test facility. In parallel we expect to play a leading role, within the context of the larger collaboration in ILC, PD, and RIA R&D programs.

Fermilab Perspective on SMTF

Next Steps

- Upon receipt of the SMTF Expression of Interest in October 2004 Fermilab did the following:
  - Organized a briefing for the Department of Energy to outline the potential of the facility and to have a preliminary discussion on how such an effort might be organized.
  - Requested the SMTF collaboration to develop and submit a full proposal addressing.
- Fermilab will discuss with DOE, NSF, and other major laboratories how to proceed on SMTF once the proposal has been received.
- Goal should be to have something through the system that can be supported formally in FY06.
  - Fermilab has started with infrastructure improvements in Meson in FY05

Fermilab Perspective on SMTF

Summary

Fermilab views SMTF as the central element to securing the future of the laboratory and are committed to doing everything we can to make it happen.

- Integrating mechanism for ILC and Proton Driver Programs
- Opportunity to demonstrate leadership within the world SCRF program.
- “Form North American base of international collaboration” on ILC and other SCRF programs

Integration of US-Japan activities into SMTF/ILC could be a critical element of establishing a vibrant facility based on international collaboration.