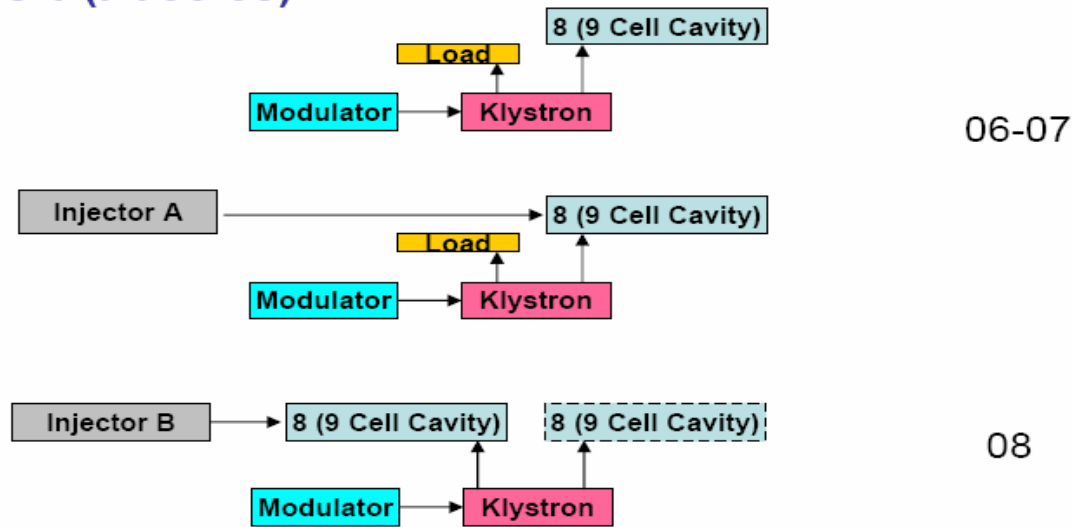


SMTF Plan Overview

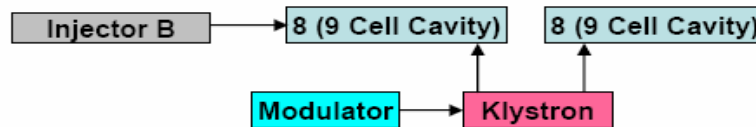
- SMTF EOI submitted Nov. 04; Fermilab director has encouraged us to submit proposal soon.
- We plan to submit the proposal to Fermilab in order to meet the FY06 budget schedule Feb. 1st 05.
- We are working to develop international collaboration.
- SMTF ILC plan is a phased approach (allows GDI input once it is formed).
- SMTF has a funding limited schedule

Phases of 1.3 GHz Test Facility

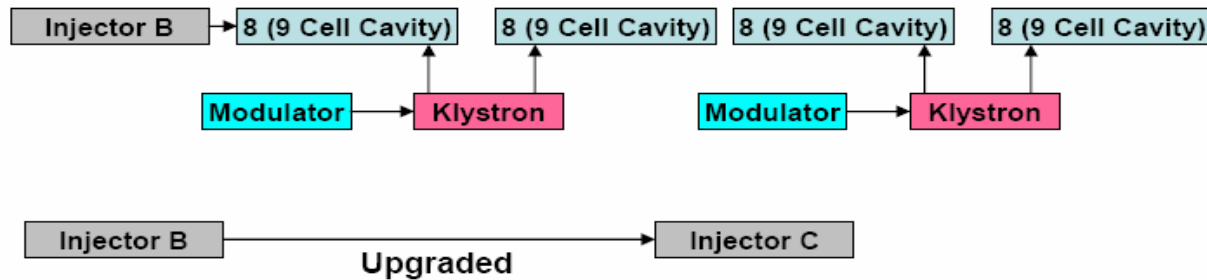
Phase 1 (FY06-08)



Phase 2 (08-09)



Phase 3 (FY09-...)



Phase 1: FY05(Oct. 04 – Oct. 05)

- Preparing Meson area with cryogenic, power ...
- Install a single cavity from TESLA (Capture Cavity for Photo-injector) and commission at Meson (Cryostat at Fermilab)
- This is the vehicle for commissioning cryogenics, RF power, LLRF, controls etc. This also gets students and post-docs involved.
- **Build Chechia**: Horizontal test stand for fully dressed cavity at full power.
- Plan to form LLRF and Controls collaboration.
- **Initiate fabrication of 3 - 4 TESLA design cavities in US**
- TESLA Cryomodule Module design improvements are being discussed.

Phase 2: FY06 and beyond (Oct. 05 –)

- Depending on Funding
- Discussing with DESY/TESLA to provide 1 cryomodule to SMTF.
- Finish building infrastructure (Clean room, tooling etc.) at Fermilab to construct a ILC cryomodule (string assembly and cold mass) .
- **Build 1 (8 Cavities) 1.3 GHz cryomodule** (4 from Industry, Cornell, Jlab & 4 from US-Japan)
- Cryomodule commissioned with cryogenic (2 deg K), RF Power, LLRF, controls etc.
- Moving **Photo-injector from A0 to Meson** is planned after the cryomodule is commissioned.
- Upgrade photo-injector

Motivation For SMTF-KEK Collaboration

- Due to limited funding and an ambitious schedule we recognize that it would be advantageous to help each other (SMTF and STF).
- Sharing infrastructure, design and resources will help start these projects as soon as possible and achieve our goals in a timely manner.
- SMTF would like to be working towards building a **US-Japan cryomodule with 4 US and 4 Japan cavities to be tested at Fermilab with beam.**
- **Discussing with INFN on cold mass construction.**
- International teams from the three regions would participate in the commissioning and studies of this cryomodule.

Draft Proposal from KEK (1)

- In email correspondence from Takasaki-san, he proposed “contributing to SMTF by building up to 4 units of 9-cell L-band cavities at KEK to be assembled into a cryomodule at FNAL by your group.”
- This is an excellent proposal and we would very much like to do this.

Draft Proposal from KEK (2)

- In email correspondence from Takasaki-san, he proposed “..would you be interested in initiating a formal collaboration channel for communicating numerous technical and engineering information....”
- **Yes.** We should discuss how you would like to proceed. Formal to us usually implies an joint MOU between institutions.

Additional Points For Discussion

- We would like to discuss additional points that would utilize US-Japan funds for the SCRF R&D.
 - We tried to think about this in a manner that helps both SMTF and STF.
 - Of course we have a better understanding of the SMTF plans.
- We will also present to you the SMTF/ Fermilab resources that could be applied to help STF in addition to US-Japan funds

Fully Dressed Cavities?

- Is it possible to use US-Japan funds for the additional components needed to dress the cavities?
- Our model is that Fermilab receives dressed cavities from Jlab.
- Our preference is to get 4 fully dressed TESLA design first.
- One possibility, since we can use the TESLA designs, we could take **responsibility for purchasing and processing**, for both STF(4) and SMTF(4), **input couplers, tuners, helium vessels** etc. using US-Japan funds with US vendors.

SMTF Possible Contribution to STF?

- SMTF is building a high power modulator
 - We might build one for STF for only the cost of the parts-Fermilab would assume cost of design and assembly (this is equivalent to a ~\$0.5 M contribution from Fermilab)
- SMTF is building a “Chechia” test stand
 - we might build one for STF for only the cost of the parts (equivalent to a ~\$200K contribution)
- SMTF may order from industry a cold mass for the cryomodule once engineering is complete
 - we might obtain one for STF for cost of production only (equivalent to a ~\$200K contribution)
- SMTF is beginning to form a collaboration to address LLRF and a control system
 - we would like to invite you to attend our meetings and work together
- If for example you were to be interested in all the above, it would represent >\$1M in kind contribution to STF from Fermilab

Electro-Polishing (EP), Klystron & Polarized Source

- We would like to work with you to develop EP at Fermilab in parallel with your work at KEK.
- 10 MWatt Multibeam Klystron
- We would be interested in collaborating with your experts on electron source topics such as polarization

Summary

- We are very excited to have the opportunity to collaborate with you
- We like your initial proposal to build 4 cavities for SMTF with US Japan funds to be installed in a US cryomodule
- We are pleased to develop a formal channel for communicating technical and engineering information with you
- We have proposed, open for discussion, a few additional items to be purchased using US-Japan funds for SMTF
- We propose a few projects that would allow Fermilab to contribute to STF
- We look forward to our collaboration and progress