LINEAR COLLIDER FORUM OF AMERICA

INDUSTRY TIME LINES FOR PRODUCTION OF CAVITIES AND COUPLERS ANTHONY J. FAVALE AUGUST 16, 2005

INDUSTRIAL EVOLUTION TIME LINE FOR AMERICA											
TASK	05	06	07	08	09	10	11	12	13	14	15
Industry contracts with Fermilab to fabricate small number of cavities, couplers,magnets & cryostats											
Tech transfer from labs (electropolish, BCP, rf cryotest, cryomodule assembly											
Industrialization studies											
Implement R&D recommendations from industry studies											
Contracts for additional cavities (some with new shapes & materials) additional couplers, magnets & cryomodule components											
Industrial competitions											
Industrial awards					1						
Project approval											
Government procures capital equipment					V						
Industry sets up production plant											
Low rate production starts											
Full rate production											
Down scope production											

Power Coupler Industrialization A Proposed Timeline for ILC

- Assumes that XFEL coupler is adequate for ILC
 - XFEL coupler is very similar to the TTF3 coupler
 - 40+ prototype TTF3 couplers built to date
- Assumes XFEL Industrialization Program takes place according to a schedule adapted from Serge Prat presentation dated 30 March 2005
 - Award 3 contracts in January 2006
 - Complete industrialization program in September 2007
- Assumes that XFEL coupler deliveries occur at rate of 40 per month for 2 years starting 18 months after industrialization program
- Assumes that ILC couplers are similar to XFEL couplers
- Assumes that 3 vendors each provide 3000 couplers over 4 years for the ILC

Power Coupler Industrialization A Proposed Timeline for ILC

- 2005 2006
 - Industrial Cost Study (9 months)
 - Estimate costs associated with manufacturing, assembling, cleaning, and conditioning of 3,000 (and 10,000) power couplers over 4 years
 - Must take into account infrastructure requirements, automation requirements, tooling costs, conditioning requirements
 - Assume that XFEL / TTF3 coupler is baseline
- 2006
 - Fabricate 8 12 TTF3 couplers for SMTF (6 months)
 - Initiate conditioning R&D and tech transfer with industry (12 months)
 - Initiate cleaning, TiN technology transfer programs with industry (12 months)
 - Assume that XFEL Industrialization Program is ongoing or initiate equivalent program
- 2007
 - Implement R&D studies
 - Assume that XFEL Industrialization Program or equivalent program is complete in late 2007
- 2008 2009
 - Low Rate Initial Production (LRIP) of 100 couplers (2 years)
 - Include results from XFEL Industrialization Program or other Design for Manufacturability Program

Power Coupler Industrialization A Proposed Timeline for ILC

- 2009 2010
 - Industrialization Program similar to XFEL Industrialization Program
 - Order of magnitude higher quantities will require new program
 - Individual vendors design for manufacturability as part of this program
 - Firm cost proposals prepared
 - Prototypes built
 - Vendors prequalified in competition
- 2010
 - Project Approval
 - Select vendors
 - Government(s) purchase tooling, RF sources for conditioning
- 2011
 - Vendors hire human resources and tool up
- 2011 2015
 - Fabrication, assembly, and conditioning of 3000 couplers at a rate of 4 per day