



International Linear Collider
at Stanford Linear Accelerator Center

Status of TTF3 Coupler Assembly Program

November 26, 2007

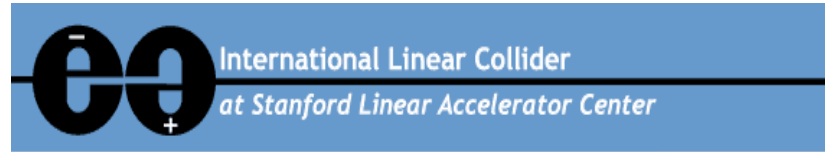
Jeff Tice

Overview



- **Background**
 - **TTF3 coupler cleanroom status**
 - **Cleanroom Layout**
 - **SLAC TTF3 Couplers Website**
 - **Metrology Reports**
 - **Coupler Assembly**
 - **Schedule**
 - **Production & R&D**

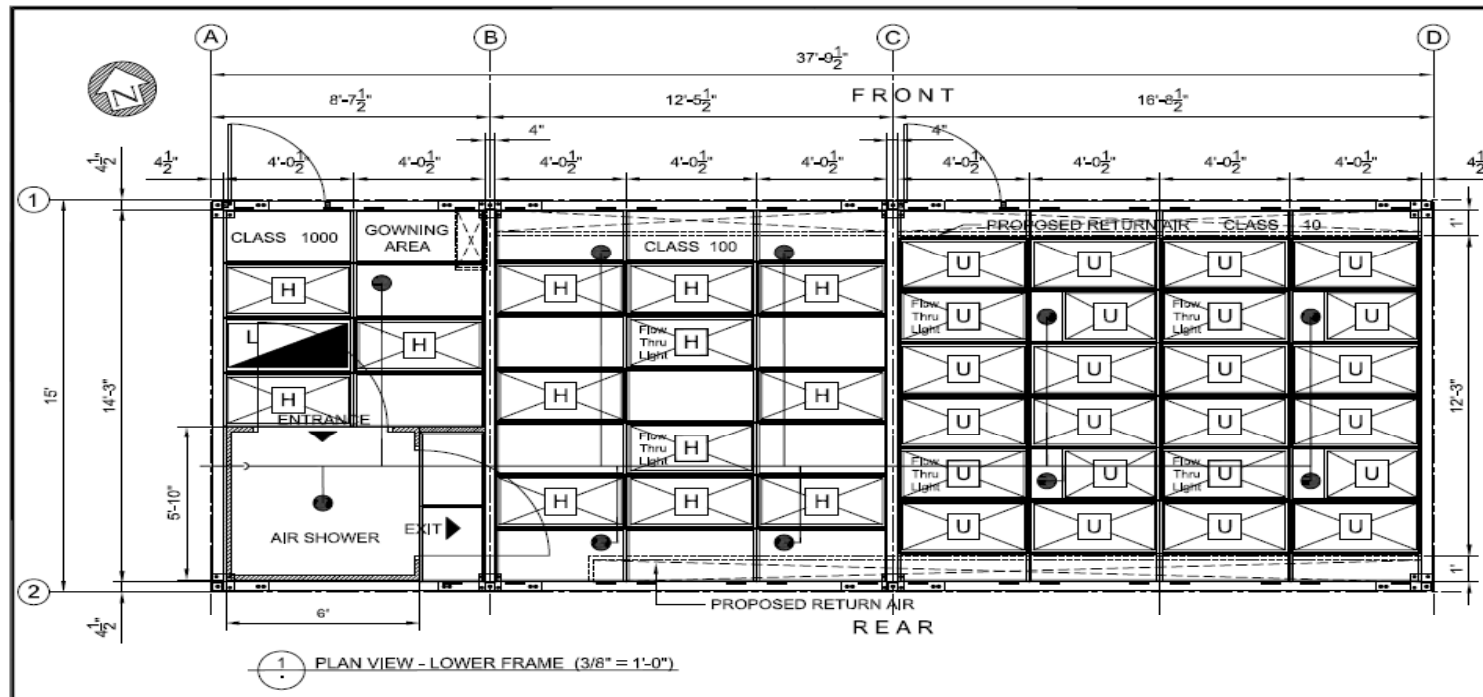
Cleanroom Status



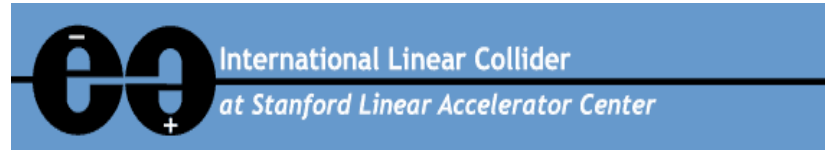
- **Cleanroom awarded to vendor Flowstar**
 - **Flowstar has worked at SLAC in building laser room at ESB**
- **All construction prints have been submitted to SLAC ES&H Construction for approval.**
 - **SLAC is still reviewing for approval**
 - **All but seismic has approved to start construction of cleanroom**
 - **Should have approval on 11-28**
- **Cleanroom fabrication is 8-10 weeks.**
- **Vendor has ordered long lead items for cleanroom fabrication**

Cleanroom Layout

- Cleanroom layout
- Class 1,000 Gowning area
- Class 100 cleanroom 10 HEPA Filters (99.97% @ 0.3)
- Class 10 cleanroom 24 ULPA Filters (99.999% @ 0.12)




SLAC Coupler Website



- **SLAC ILC TTF3 Website is up and running**
 - Website location is on the ILC @ SLAC website under Test Facilities TTF3
 - URL <http://www-project.slac.stanford.edu/ilc/testfac/ttf3.html>
- **Website has the following information available for all collaborators to view:**
 - **Drawings**
 - [DESY](#)
 - [LAL](#)
 - **Images**
 - [1st Pair of Couplers at SLAC](#)
 - [Test Stand Prototype](#)
 - **Inspection**
 - [Coupler Parts Kit List](#)
 - **Metrology**
 - [Blank Inspection Report form \(.xls\)](#)
 - Completed Inspection Report
 - **Assembly and Cleaning**
 - [LAL Coupler Testing - Assembly and Cleaning Procedures](#)
 - SLAC Coupler Testing - Assembly and Cleaning Procedures
 - **RF Processing**
 - **Delivery to FNL**
 - **Assembly to Module**

SLAC Coupler Website



International Linear Collider
at Stanford Linear Accelerator Center

- ILC @ SLAC Home
- Program Office
- ILC Program Description
- Accelerator Design
- Experiments & Prototypes
- Test Facilities
- Documentation
- Past Seminars/Workshops
- International Links

[Site Map](#)
Search ILC @ SLAC

 [More searches](#)

SLAC People Search

 [More people searches](#)

Test Facilities: TTF3

TTF3 Coupler

Drawings

- [DESY](#)
- [LAL](#)

Images

- [1st Pair of Couplers at SLAC](#)
- [Test Stand Prototype](#)

Inspection

- [Coupler Parts Kit List](#)
- Metrology**
 - [Blank Inspection Report form \(.xls\)](#)
 - Completed Inspection Report
 - [CP3H41-CP3C41](#)
 - [CP3H42-CP3C42](#)
 - Coupler Serial #3
 - Coupler Serial #4
 - Coupler Serial #5
 - Coupler Serial #6
 - Coupler Serial #7
 - Coupler Serial #8
 - Coupler Serial #9
 - Coupler Serial #10
 - Coupler Serial #11
 - Coupler Serial #12
 - Coupler Serial #13
 - Coupler Serial #14
 - Coupler Serial #15
 - Coupler Serial #16
 - Coupler Serial #17
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 - Coupler Serial #20
 - Coupler Serial #21
 - Coupler Serial #22
 - Coupler Serial #23
 - Coupler Serial #24

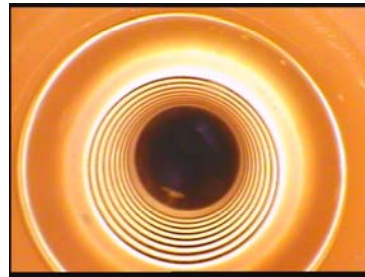

Assembly and Cleaning

- [LAL Coupler Testing - Assembly and Cleaning Procedures](#)
- [SLAC Coupler Testing - Assembly and Cleaning Procedures](#)

- **The first set of CPI couplers have been inspected**
 - **Metrology reports on SLAC TTF3 website for viewing**
- **Inspection of couplers focus on the following:**
 - **Borescope: Visual inspection of all internal surfaces**
 - SLAC has two new Olympus borescopes to use for inspection
 - **CMM: Coordinate Measuring Machines of critical dimensions of coupler parts**
 - **Visual: Visually inspect outside of coupler body**

Coupler Metrology Reports

- **SLAC TTF3 Metrology Report**
 - Report has hyperlinks for:
 - CMM reports
 - Prints
 - Borscope images

TTF3 Coupler Metrology Report
Inspection of Cold Part 3964320-A.010

Item	Inspection Criteria	TEST Point Number	LAC Point Number	Findings	Pass	Fail	Comments
1	Visual - Non-ferrous coupling cavities	3964320	3964320		X		
2	Visual - Machining surface finish	3964320	3964320		X		
3	Visual - Bevel geometry, working of punch - mating	3964320	3964320		X		
4	Visual - Bevel geometry, working of punch - mating	3964320	3964320		X		
5	Visual - Bevel geometry, working of punch - mating	3964320	3964320		X		
6	Visual - Bevel geometry, working of punch - mating	3964320	3964320		X		
7	Visual - Bevel geometry, working of punch - mating	3964320	3964320		X		
8	Visual - Bevel geometry, working of punch - mating	3964320	3964320		X		
9	Visual - Bevel geometry, working of punch - mating	3964320	3964320		X		
10	Visual - Bevel geometry, working of punch - mating	3964320	3964320		X		
11	Visual - Bevel geometry, working of punch - mating	3964320	3964320		X		
12	Visual - Bevel geometry, working of punch - mating	3964320	3964320		X		
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49	Visual - Bevel geometry, working of punch - mating	3964320	3964320		X		
50	Visual - Bevel geometry, working of punch - mating	3964320	3964320		X		

- **Fixturing to hold couplers is completed:**
 - V Block support stand to hold coupler during inspection
 - Linear actuator stand to move coupler during borescoping



SLAC TTF3 Coupler Assembly
November 26, 2007 SLAC

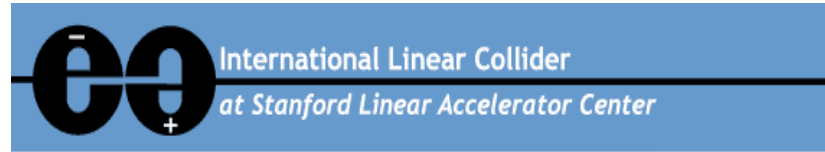
Coupler Assembly

- **Coupler assembly in building 033 cleanroom**
 - Support stand ready for fabrication
 - **CPC (Coupler Processing Cavity) one built two being fabed**
 - Vacuum leak detector up and running for couplers
 - **SLAC techs received Varian Vacuum training certification**
 - **Couplers to be cold tested on CPC**



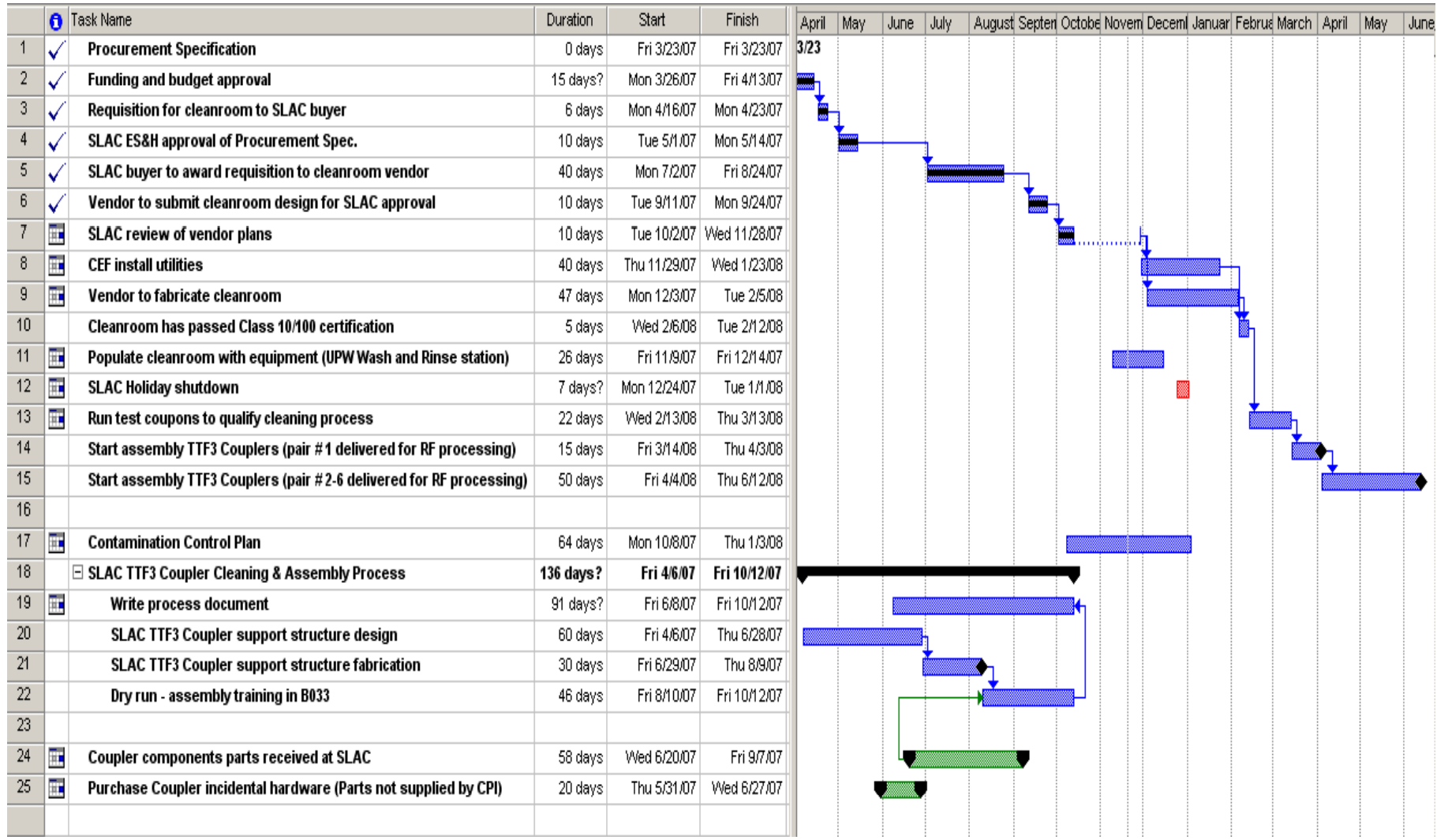
SLAC TTF3 Coupler Assembly
November 26, 2007 SLAC

Schedule



- **TTF3 Schedule:**
 - **Cleanroom is biggest driver (should be up and running February 08)**
 - **All long lead items for cleanroom equipment have been received and are at building 006**
 - UPW system
 - Ultrasonic bath
 - Remote Particle Counter
 - Oven at ESB
 - Vacuum Leak Detector

Schedule



- **Production of Couplers to start once cleanroom is up and running.**
 - Ordering more CPI Couplers for SLAC FY08 (10 total)
 - Have received 8 total Couplers of the FNAL order for processing
- **R&D**
 - Validate cleaning process through coupon testing
 - Coupon testing of Ultrasonic parts vs. High Pressure washing
 - Review process and streamline any nonessential procedures