

SCRF Cavity WebEx Meeting

May 17, 2010

- **Reports from PM (10 min.)**
 - Brief report from ILC-PAC
 - Industrialization workshop
 - as IPAC satellite meeting, Kyoto, May 23, 2010
 - TDP-R&D Plan (release 5) and homework
 - 1st draft due May 27, and the final document due June 10,
 - 1st Baseline Assessment Workshop (BAW-1),
 - KEK, Sept. 7 – 10, 2010, and homework

Brief Report from ILC-PAC

Valencia, May 13 - 14

- From Close out
 - Need more effort for better communication between GDE and Physics/Detectors
 - SCRF cavity yield progress well received,
 - Yield plot encouraged more to do
 - Differential plot in addition to Integrating plot, BAW meeting to be important
 - Support cost-containment strategy in SB2009 to prepare for possible harder condition in SCRF in future,

Industrialization Workshop as a Satellite meeting of IPAC

Final Announcement for a Workshop on
'Superconducting RF Cavity Technology and Industrialization for the ILC'

May 23, 2010, from 9h00 – 17h30
Kyoto International Conference Center (Room 157)

URL: http://ipac10.org/index_Main.Venue

The objective of the workshop is to understand the current status of SCRF Cavity R&D and to learn from laboratory and industrial partners the technical needs and inputs required to develop an optimum model for industrialization of the ILC.

An outline of the agenda is below, with speakers, registration form and a detailed agenda available at:

<http://ilcagenda.linearcollider.org/conferenceDisplay.py?confId=4530>

Agenda

09:00->09:35 Introduction

09:00 Opening Remarks (15')

Akira Yamamoto (KEK, ILC-GDE)

09:15 Current Status of SCRF Cavity development (20')

Rongli Geng (Jefferson Lab)

09:35->10:30 Industrialization Experience at European Laboratories

09:35 European XFEL cryomodule production model and status (20')

Olivier Napoly (CEA/Saclay)

09:55 CERN Industrial Experience with LHC Construction (35')

Philippe Lebrun (CERN)

10:45->12:15 Laboratory Plans in the American and Asian Regions

10:45 American Region Laboratory Plans (45')

Bob Kephart (FNAL)

11:30 Asian Region Laboratory Plans (45')

Hitoshi Hayano (KEK)

13:15->15:30 Industrial Experience / Studies / Advice

13:15 European industrial experience with large international projects (30')

Wolfgang Walter (Babcock Noell)

13:45 From Americas region (1h00')

* Industrial studies of ILC cavity and component production in the Americas (30')

Tony Favale (AES)

* The interim US market for SCRF accelerator technologies (30')

Ken Olsen (SPAFOA)

14:45 From Asian region (45')

* Industrial studies with Japanese industries (25')

Eiji Kako (KEK)

* Efforts with the Advanced Accelerator Science/Technology Association (20')

Michitaka Ono (AAA)

16:00->16:30 Nb Material Supply

16:00 Industrial comments on the material requirements for the ILC (30')

Hiroaki Umezawa (Tokyo Denkai)

(TBD: Comment from Henkel)

16:30 General Discussion (45')

All

17:15 Summary (15')

Jim Kerby (FNAL)

17:30 End



R&D Plan Release 5

Some ideas for discussion

Nick Walker

PM Meeting 19.04.2010

TDP R&D Plan, Release 5

To be updated, due June 10, 2010

Table of Content (proposed):

1. Purpose of this document: Introduction
2. Overview of Technical Design Phase 2
 1. Top-level management goals and milestones for the TDP-2
- 3. Superconducting RF Technology (Akira)**
4. Accelerator System R&D (Marc)
5. Accelerator Design and Integration (Nick)

6. Updating the Value Estimate (PHG)
7. Developing A Risk Assessment for the TDR (TBD-Ewan?)
8. Producing the Project Implementation Plan (TBD-Mike)
9. Global GDE Resources (TBD)

Section 3: SCRF Technology

Homework required due May 27

1. Achieving (assessing) the average accelerating gradient
 - >> Cavity gradient &D: R. Geng and Cavity G.
 - >> Cavity gradient yield evaluation: C. Ginsburg and data base team
 - >> Accelerating Gradient, System Design: A. Yamamoto and PMs
2. Towards a global cryomodule design, S1-Global, and plug-compatibility
 - >> H. Hayano, N. Ohuchi/H. Nakai, T. Peterson and Cavity Int. , Cryomodule, Crogenics G.
3. System integration testing ('string tests')
 1. FLASH (DESY) : >> J. Carwardine/M. Ross
 2. NML (Fermilab) >> TBD
 3. STF (KEK) >> H. Hayano et al.,
4. Development of high-level RF solutions
 - >> S. Fukuda, C. Nantista and HLRF G.
5. Main Linac Integration
 - >> C. Adolphsen and MLI G.

R&D Plan (Rel. 5) Schedule

- May 7: SCRF-ML webex and homework assignment
- June 2: 1st full draft to be gathered at PMs (SCRF webex meeting)
- June 24: FALC and R&D plan (rel 5) to be reported,

1st BAW Announcement

distributed, May 3, 2010

- Date: [Sept. 7 – 10, 2010](#)
- Place: KEK
- Subjects:
 - Single tunnel HLRF systems (Sept. 7 – 8)
 - [Accelerating gradient \(Sept. 9-10\)](#)
- Announcement
 - Distributed to GDE mailing list including physics/detector executive members,
- URL and Indico Agenda including registration
 - To be prepared in cooperation with GDE secretariat and KEK LC-office,

Subjects to be discussed

Accelerating Gradient

- Strategy for gradient **improvement** (R. Geng, H. Hayano, and collaborators)
 - Material, fabrication, surface process, instrumentation & repairing,
 - Strategy to overcome ‘quench’ and ‘field emission’,
 - Improvement of gradient and successful production yield,
- Strategy for accelerating gradient in ILC (Experts TBD and A. Yamamoto)
 - Overview of the production yield progress and prospect including gradient spread
 - Specification of Gradient, Q0, emitted radiation, resulting in cryogenic load, in the cavity vertical test,
 - Specification for cryomodule test including cavity/cromodule operational margin
 - Specification in beam acceleration, including RF and beam operation margin
 - Strategy to control ‘emitted radiation’
 - Strategy for tuning and control including tolerances and availability margin, (<< advices from R.
 - Impact on other accelerator system CFS, RF cryogenics and cost,

Preparation for the 1st BAW

- May 7: SCRF webex meeting and homework assignment
- May 26: AD&I meeting
- June 2: SCRF webex meeting and progress report from each collaborator,
- June 23: AD&I meeting
- June 30: SCRF webex meeting and preliminary draft report to be distributed
- July 21: AD&I meeting
- July 28: SCRF meeting and draft report to be distributed,
- Aug. 25: SCRF meeting and the final report (prior to the 1st BAW) to be distributed

Subjects to be discussed

Single tunnel HLRF systems

- KCS
 - Tolerance on RF amplitude and phase within a cluster
 - Operational margin of RF power, and tuning and control strategy
- DRFS
 - Assembly, sorting, and installation strategy including tolerances
 - R&D requirement in TDP including radiation shielding
- Backups
 - Ordinal RF system in RDR, in single tunnel, as the final backup