

TESLA Technology Collaboration

Report of the

COLLABORATION BOARD

April 26, 2007

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Fermi National Accelerator Lab

TESLA Technology Collaboration

ADVANCING

SUPERCONDUCTING RF TECHNOLOGY

and

THE SCIENCE SUPPORTING IT

Current Responsibility Chain

- The Collaboration Board is the ultimate authority and appoints agents to act in its interest:
 - The Chair, Deputy Chair, Executive Committee and Technical Board
 - *Chair* - MT; *Deputy Chair* - Dieter Proch; *Executive Com* - Nobu Toge (Asia), Olivier Napoly (Europe), Marc Ross (Americas)
 - *Technical Board* - H. Edwards, H. Hayano, E. Kako, P. Kneisel, L. Lilje, W.D. Moeller, S. Nagaitsev, N. Ohuchi, C. Pagani, B. Petersen, T. Peterson, D. Reschke, K. Saito, S. Schreiber, S. Simrock, H. Weise *Chair*

TTC
Technical areas of interest,
Final version, October 06

1 SC Cavity issues:

1.1 Cavity

- 1.1.1 Cavity design (layout for fundamental and HOM mode)
- 1.1.2 Cavity fabrication
- 1.1.3 Cavity processing
- 1.1.4 Superconducting materials development

1.2 Cavity auxiliaries

- 1.2.1 Coupler (input, HOM)
- 1.2.2 Tuner (slow & fast)
- .2.3 Helium vessel, shielding, etc

1.3 Industrialization (technology transfer, standards, compatibility)

2. Module issues

2.1 Module (design, assembly)

2.2 Module auxiliaries (magnets, absorber, diagnostic hardware, etc.)

2.3 Cryogenics (including string and plant)

2.4 Industrialization (technology transfer, standards, compatibility)

3 Linac and integration issues

3.1 Warm systems

3.1.1 LLRF & timing

3.1.2 RF power

3.1.3 Controls & diagnostics (controls, diagnostics, MPS)

3.2 Beam and operation

3.2.1 Beam physics (beam dynamics)

3.2.2 Studies and Operating experience

3.2.3 Alignment, vibration, environment, radiation

3.2.4 Reliability/availability

4. Major test facilities

- As we have experienced this week and heard reviewed today, great progress in these areas has been achieved in the past 6 months: *gradients up again, performance uniformity in single cells much better, test facilities progressed, Ilrf advanced and diagnostics improved.....*
- Also as we have heard - **GREAT CHALLENGES REMAIN** on all of these fronts

- At this meeting we have made plans for continuing to address these challenges and to collect systematically what we know relative to those challenges that we may firm up our foundation for proceeding collectively to address them.
 - The TB will be meeting by phone and video in the interim before our next meeting to keep the process moving. Your help and suggestions will be most welcome.
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Induction of New Members

- At yesterday's meeting of the CB we heard strong presentations in application for membership from:

- TRIUMF (Canada)



- RRCAT (India)



- BARC (India)

- IUAC with Univ. Delhi (India)

EACH WAS ACCEPTED AND VOTED INTO
MEMBERSHIP IN THE TTC

We now have 49 members

Next Plenary Meeting of the TTC

- In view of the International SRF Workshop to be held in Beijing in October, the **next TTC meeting** will take place in **late January or early February @**

DESY

mark your calendars

In Closing this most fruitful meeting

Our profound thanks for their support to

F R A and The Fermilab Directorate

And to

Jeff Appel

And

Shekhar Mishra

For their great skill and infinite patience in making things happen at the right place and the right time!!