



Main Linac Technology System Kick-off Meeting

Cavity Summary

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DESY

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Global Design Effort



Cavity Kick-off Meeting

- 2 SCRF EDR Kick Off meetings:
 - **Cryomodule & Cryomodule**
 - **Cavity – production, processing and integration**
- Hosted by KEK and DESY
 - **(Thanks!)**



Fermilab GDE Meeting 22-26.10

- Please prepare & post parallel session agenda!
- At the Fermilab GDE meeting there will be 2 hours of closing plenary presentation for these critical systems.
 - **ACD R & D and its goals/achievements**
 - The role of XFEL in the ILC;
 - The differences
 - **focus on difficult/complex issues**
 - (the kick off meeting discussions)
 - Compatibility
 - Interface specification
 - Validation
 - New initiatives, cost reduction, ?



Findings from this meeting - integration

- It should be possible to construct a *CM* with a choice of key components from different suppliers
 - (also a *linac*, also a *cavity assembly*)
 - ‘plug compatibility’

Develop a schematic plan for how this would be managed
- There are valid reasons to explore this possibility, even while retaining a ‘unified design’ goal
 - New shapes, cost cutting →

List these reasons and develop supporting arguments
- Definition – requires interface and performance specifications
 - Develop mechanics, and actual specifications to enable**
- Some of the interface and performance specifications require development
 - ‘reliability’ and ‘maintainability’

Identify ‘difficult’ specifications and draft

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Findings – ‘S0’

- Gradient R & D remains top priority
 - Review the justification for this priority, and its impact**
- DESY ‘production’ 4 results represent the largest systematically prepared set of cavities to date
 - (to be published SRF 07)
 - Encouraging and stimulating results
 - Review and summarize these results for basis of coming work**



Findings – ‘S0’

- Taken together with US and KEK '07 results, we have substantial, new, information to guide EDR R & D
 - **Field emission generally reduced!**
How should the program take this into account
- US and KEK cavity processing and testing capacity is coming online in late 07/early 08.
What is planned for commissioning and initial program
- Steady progress in diagnostics and analysis of cavity processing and interior surface
Review and summarize these developments; prioritize directions



Findings - Organizational

- A preliminary functional WBS exists and appears appropriate
 - Complete this using project format (to be delivered!)**
- The 'down-selection' process effort appears to be included
 - Develop an example such process**
- Validation tests are expected to be time consuming and may be 'critical path'
 - Time for new R & D initiatives?**
 - Develop and recommend a testing plan**



Findings - Industrialization

- XFEL Production plan, based on in-kind contributions from EU, is nearing maturity
 - **Very exciting start for the project and for new infrastructure (SACLAY)**

Review this plan and summarize strategic implementation

- Substantial opportunities for mutually beneficial activities
 - **But this will take ongoing discussions and effort**

Plan for these discussions - schedule



Findings - Industrialization

- Lessons for ILC mass production are valid, even with design differences
 - Evaluate 'plug-compatibility' suggestions v/v industrialization plan**
- Design differences are interesting and should be discussed
 - This should be part of the upcoming GDE / collab meetings**



Thanks to DESY &
ILC Main Linac Tech Hosts!

We look forward to the Fermilab meeting –
and getting

Comments from our community concerning
these findings / recommendations.