Availability meeting Notes - June 23/24, 2009

Marc Ross, Chair

Notes provided by Nick Walker and John Carwardine (thanks!). This summary lists Marc's conclusions.

Attendees: Carwardine, Elsen, Fukuda, Michizono, Paterson, Ross, Shidara, Terunuma, Walker (Himel - apologies over confused date indication)

Presentation material by Marc (adapted from Tom's Xfel 071114 presentation) and John. Indico meeting location: http://ilcagenda.linearcollider.org/conferenceDisplay.py?confId=3684

NEXT Availability meeting: June 30 (2100 SLAC, 2300 Fermilab)/July 1 (0600 DESY, 1300 KEK) 2009.

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 The meeting consisted of a general discussion, led by Marc and guided by Tom's XFEL presentation.

To review:

The goal of the availability task force is to provide viable availability models for SB2009. These are to be presented at the upcoming GDE meeting "ALCPG09", Sept 29 - Oct 3, 2009 for review and comment by the GDE community at large. The models (possibly revised) will be submitted to the Project Director by the end of 2009 along with the recommendation that they become part of the ILC TDP2 baseline. It is important to note that the components of SB2009 which most strongly impact ILC availability are the ML single tunnel, the low power option and the two HLRF options (KCS and DRFS) and the task force work will be limited to these dominantly ML issues.

There will be two models, one for each of the proposed ML HLRF configuration modifications to the Reference Design (RD):

 0) Each model will include a viable single tunnel design which is consistent with the availability performance expectations prepared for the RD.

1) Each model will include a basis analysis done using the Excel/Matlab Monte Carlo tool 'Availsim', written and developed by Tom Himel. (Group 1)

2) Each model will include a 'first-principles' availability estimate for ML availability performance done using a direct formulaic approach, as a check and as a way to benchmark the ML availability performance. (Group 3)

3) Each model will have an appendix which outlines a proactive, practical plan for realizing the component performance and operations model included in it. (Group 2)

The 3 task force sub groups, led by Tom, John and Tetsuo, are responsible for providing the pieces of the model listed above.

Discussion:

Q: Who will provide the HLRF component performance and interconnection details?

A: this is to be provided by the HLRF TAG, led by Shigeki Fukuda. Important note: the TAG will provide this information for both SB2009 HLRF options, as needed.

Q: Who will provide the operations / maintenance models (OMM) for the task force to use?

A: We expect the TAG to provide suggested models and that Availsim results will be used in an iterative process. Given the very different nature of the two hlrf schemes, the OMM may also be very different. Initial Working Assumptions: 1) virtually all equipment associated with a KCS RF source can be serviced during machine operation - up to the over-moded waveguide input coupler and its isolation system. 2) the DRFS RF source components will have much longer lifetimes and, because of their smaller size and lower power consumption, can be exchanged quickly. 3) (Important) we will not accept an SB2009 model that has performance dominated by very simple components or by components which are very few.

(Note from Ewan: OMM should include detector considerations - at the very top level.)

Q: How will we avoid an SB2009 single tunnel ML model that has an availability that is dominated by electronic components? (In Tom's material, this is often the case).

A: (See the comment directly above). We may expect that, because of its size and specialized technology, that different components may be deployed. (Tom confirmed that standardized components were used in the 2006 RD models.) We would like subgroup 2) to identify root causes for this unlikely result and to recommend responses.

Task force planning and homework:

At the next meeting we will have reports from the 3 subgroups:

Group (1): Tom is due more concise answers to the 'top' questions he posed at our first meeting (June 16/17). Many of these have been answered or deferred, but Marc suggests Tom review the list and that we go through it. Shigeki should report progress toward next week's Hlrf Tag report (July 7/8).

Group (2): John will not attend our next meeting - Marc suggests Ewan review the questions there may be for John's presentation.

Group (3): Marc has asked John to recommend a prescription for the process to be followed by this group.

Also, Marc will ask Chris to attend and give a brief presentation on the availability aspects of the KCS.

I believe two face-face meetings (~1 1/2 day elapsed time) would useful during this initial phase (up to ALCPG09) of the task force:

1) At Slac - with a focus on initial Availsim output and analysis

2) At kek - with a focus on Hlrf and subgroup 3 activities. For the latter, we heard dates in August which do not work and I have proposed Aug 26-28.

John has asked the meeting time be moved to Friday, and perhaps shifted to the usual slot. I will summarize his request at our next meeting.