

Baseline Workshop Preparation

- At the close of each BAW, we would like to write down a summary that is based on our common understanding of the issues.
- Developed prior to (and at) the meeting itself
- To be done –
 - develop a set of questions to be answered
 - Also serves as a draft outline for the summary document
 - (examples for BAW – 1) →

Discussion Topics: Single-tunnel HLRF system in the 1st BAW, Sept. 7-8, 2010

- KCS:
 - RF power margin required for cluster operation, including gradient spread, as consistent with cavity production strategy,
 - Tuning and control strategy, including impact on high gradient operation and required gradient operational margin
 - RF amplitude and phase performance tolerance within a cluster; allowed common-mode and normal-mode fluctuations,
 - R&D required, including demonstrations of component performance and demonstrations with small clusters
- DRFS:
 - Cavity and klystron sorting and resulting required RF power margins
 - Installation strategy; needed tunnel infrastructure and access
 - RF amplitude and phase performance tolerances, including gradient spread, as consistent with cavity production strategy,
 - R&D required in the remaining half of the TDP (and beyond) including radiation shielding, klystron lifetime, redundancy strategies
- Backups:
 - Original RF system in RDR, in single tunnel, just in case, as a backup,

For the Workshop at KEK in September, we should have key aspects of the discussion already 'in-hand'. Of greatest interest, of course, is:

- KCS R & D strategy –
 - what we will complete by the end of 2012,
 - what we will not be able to show without a full system test and
 - what we should plan to do after 2012.
- Parameters and tolerances – what are the differences between RDR, DRFS and KCS main linac designs? Here is a list of specific questions:
 - RF power overhead margins required for cluster operation, including gradient spread, as consistent with cavity production strategy, - what is the connection between HLRF scheme and gradient specification?
 - Tolerances on RF amplitude and phase within a cluster; allowed common-mode and normal-mode fluctuations,
 - Tuning and control strategy, including impact on high gradient operation and required gradient operational margin. This can be reinterpreted as required single-cavity resonance and power controls.
 - Implications for cryomodule design and performance – esp. piezo tuner.
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- To be discussed 3 August, SLAC
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Workshop # 2 proposal

(SLAC)

- January 18 2011: Reduced RF, focusing on parameters, running scenarios and development plans
- January 19: Reduced RF focusing on cost and performance projections and potential upgrade paths and summary/recommendation,
- January 20: Positron Source Location, focusing on running scenarios and technical issues
- January 21: Positron Source Location, focusing on cost and performance projections and summary/recommendation.

Discussion expected at SLAC - BAW

1. Reduced RF

- Global Parameters
- Pulse length, n_b , power and cryogenic consumption
- AS impact – sources, damping rings and BDS
- Upgrade paths
- R & D strategies
- Cost impact – key cost items
- Performance impact – luminosity performance and impact on physics

2. Positron Source Location

- Running Scenarios – key aspects and luminosity as a function of energy
- Technical parameters – operational issues as a function of energy
- Variable repetition rate issues – power and cryogenic consumption; sources and damping ring performance
- Cost impact – key cost items
- Performance impact – luminosity performance and impact on physics