Further To Do List for BAW-1

- The key issues to address for the cavity performance evaluation are:
  - Reduction in the horizontal bin size, if justified by the gradient measurement error
    - Work not yet done by Camille; error evaluation likely by BAW
  - Cavity performance tracks/changes from vertical test to horizontal test to cryomodule test in current data samples
    - Work in progress by Sebastian; first iteration by BAW
  - Cavity performance evaluation to be extended to 3rd pass process, if a sufficiently useful data set become available
    - no progress; current data set limited
  - Radiation emission to be added as further quantitative evaluation of the cavity performance.
    - Insufficient specification so far

Further To Do List for BAW-1

- The primary tasks planned for completion by September 2010 are:
  - To create a standard plot tracking cavity performance for new vendors if there are new data available.
    - No new data available
  - To study Q_0 at the 31.5 MV/m operating gradient and Q_0 at the 35 MV/m vertical qualification gradient for data in the first- and second-pass data selections, for cavities which reach these gradients. This requires the adoption of a common algorithm to interpolate between measurements. As a later step, we will include this information in the ILC database.
    - Algorithm specified by DESY DB group to be used: linear interpolation between neighboring points below and above
    - Data partially available; remainder likely by BAW
  - To evaluate annual progress of the maximum field gradient, at least, at the first-pass evaluation, which can be widely and easily applied to cavity production in various projects (e.g. XFEL, Project-X) in a consistent fashion with the ILC R&D cavities.
    - To be completed by Camille by BAW

BAW-1 Gradient Spread Items

- The question relates as to how cavities are ‘accepted’ during production:
  - A hard cut on gradient which all cavities for the machine must pass, OR
  - An allowable range (+/- XX%) which maintains the overall average but takes advantage of cavities performing better than average
- If the second is to be used
  - What is the gain in cavity acceptance rates?
  - What range of gradients is allowable from the RF side?
  - What if any is the implication of Field Emission / Q0 at the higher gradients?
  - How might this be implemented over a 5 year production plan?
- For the BAW
  - Plots of the current data set are already in the R&D plan (done)
  - RF input is required on the allowable range, for instance
    - Is it acceptable to assume that we can use cavities at the very upper end of performance or is this actually limited by the installed RF?
    - Are there ways to groups cavities that should be assumed in the model
    - ….
- Inputs to this discussion are pretty much already available. Discussion should be on whether the R&D plan supports coming to a conclusion…..