

ADI Meeting notes - 9th May

Participants

Nick Walker (host), Marc Ross, John Carwardine, Andrei Seryi, Benno List, Chris Nantista, Ewan Paterson, Gerry Dugan, Jim Kerby, Karsten Buesser, Sabine Riemann, Tetsuo Shidara, Tom Peterson, Tom Lackowski, Wilhelm Bialowns, Kauro Yokoya, Akira Yamomoto.

Agenda and slides

<http://ilcagenda.linearcollider.org/conferenceDisplay.py?confId=5615>

Nick: Action Items

- Current ADI action item list has been circulated, and is also posted on the URL above.
- Too long too comprehensively review in this meeting. Please check status of your AI, and inform Nick of status/updates: our goal is to reduce the list as quickly as possible. Today we will focus on CFS related items (see below).
- There was also a long list of action items coming out of KILC 12, and these will need to be consolidated and added to the spreadsheet.

Vic: CFS status of action items (please refer to AI list for details)

- Items 1-6 are complete
- Item 7: all items are posted in EDMS, waiting updates for DKS (Shigeki will work on this item over next couple of weeks)
- Item 43: cartoon isometric with shaft and tunnel labels. John Osborne is updating the EU version. Atsushi is developing one for the Asian region. Nick: will we have consistent shaft numbers, etc? Will be very confusing if we can't translate between one and the other. Not exactly - Atsushi is just starting to come up with separate nomenclature (lettering). Marc: LHC scheme proposed by John might be a good starting point.
- Items 45, 46: 2D drawings are done.
- Item 47: All unit costs are on single spreadsheet, but in different currencies and bases dates. Information sent to Gerry, who will convert them. Gerry: did preliminary look, and the difference between America and Asian costs have become even bigger than those reported at the CERN BTR. The reason is unknown, but it will be reviewed.
- Item 51: Completed.
- Item 52: Task is complete from CFS perspective. Marc has report assembled with three recommendations that will appear on action item list. Two are for CFS.
- Item 53: Will contact Marc directly - already made estimate of reduction, needs verification.

- Item 54: Completed.
- Item 55: TBD. Martin Gastal needs to work with Atsushi to work out how to fold in the Asian site approach. Marc: there will be a meeting the week of 21st May.
- Item 56-58: Completed.
- Item 59: Not yet complete.
- Item 60: CFS needs input on what requires uninterrupted power sources. John C: need to ask for estimates on two types of UPS: generator backup with short term outage versus true Battery backup. Most should be on generator, but should be small fraction of total power usage. Check with Argonne, Fermilab, LHC approach to general Akira: we should assume nontrivial amount for cryoplants. Work in progress. Akira to take lead on this item.
- Item 61,62,63: Completed.
- Item 64: insulation of RF loads in tunnel - 'Not CFS'. Marc: it's part of the main linac integration, PDS to be specific. However results will alter CFS requirements for main linac tunnel load to air. [Akira to take lead?]

TDR draft text: all available CFS draft text will be collected on Friday, will be forwarded to Maura on Monday.

John C.: TDR in general - tracking of TDR authoring/editing is tracked separately. Will have periodic all-authors meeting, can provide summary for next ADI meeting

Nick: will make list of TDD documents we're still missing, particularly for the Main Linac.

Akira: Site-dependent main linac layouts (cryo)

- Table of cavity, CMs, and FODO lattice unit is now fixed and is the same for both site configurations. Top-level parameters should be common between DKS and KCS.
- RF units: 4.5 CMs per RF source for DKS, 3 cryomodules per RF unit for each CTO for KCS. [Note that the concept of an RF unit as defined in the RDR is now misleading and should be avoided].
- Cryo layout from RDR with 5 cryo plants per linac is the basis for reference. Standard string for Cryo unit is 12 cryomodules between cold-boxes (2 FODO cells).
- Flat topography site (KCS) has optimised shafts and cryo layout and now has 6 cryo plants per linac. Shorter section with each KCS shaft having two Cryo systems. Last cryo plant shafts (PM±8) are now no longer at the end of the linac. Vic noted that the last KCS shafts (PM±7) had been moved at KILC to the end of the linacs, and the presented drawing was now out of date. [EDMS version is correct].
- Mountain topography (DKS) solution retains approximately the same layout as RDR, but documents will need to be updated appropriately. (Largest differences are the removal of the undulator-based e+ source in the middle of the e- linac, and the addition of 1.4% linac).

- PMs have agreed there is no time to completely change the layouts (too much work). Therefore, the current KCS documentation should be considered final for the flat topography sites, and the updated 5 plant scheme for the mountainous site will be provided as soon as possible.
- Akira estimates the difference in total ML length between the two site variants is one warm section (7.652m).
- Peterson: Needs to know the list of cryo loads for the central region. Didn't have list for RDR to any level of detail. Marc: the total cryo load is more than in RDR, especially now as we have to consider the 10-Hz mode. Also the cryo loads are different for the E+ and E-, and it's possible we would have different solutions for the two sides.
- Nick: there is clearly more work to be done. Benno and Tom Lackowski should work together to make drawings of the locations of the cryo loads for the central region. Propose that we return to this topic in 2 weeks with a presentation on the possible solutions for both site variants.
- Important message for today: we have two different layouts for the cryo systems for the KCS and DKS layouts (latter is essentially RDR layout). Documentation to follow.

Nick: TDR-2 outline updates

- Understanding how best to present the site-dependent design differences is a difficult issue.
- The EC is concerned that the TDR should be very clear on the separation of the two configurations for people reading the TDR. PMs trying to simplify the outline accordingly.
- Today: only SCRF outline; CFS and other to follow.
- Current layout has site specific items down at 3rd heading level in the outline. Much of the design information is generic, and idea is to factor that out.
- Approach: separate out generic and site-specific items into three chapters. Mainly the information is the same as previous outline, but reorganized, and promoted to a higher level (higher visibility).
- Need to avoid an increase to the page counts from previous version.
- Ewan: do we want to apply the same philosophy for other sections in report, i.e. CFS, central region integration. Nick: yes, certainly for CFS which is somewhat structured in similar way. MDI (detector hall) is a little tricky and needs further finessing.
- Marc: for CFS, if editors shuffle content around, it doesn't change essentially the material that people are working on. The task of reorganizing CFS material is made easier that the relative maturity of CFS site designs is relatively similar, but will take work for editors to streamline according to the new proposed philosophy.
- Akira: this proposed approach is fine. Small comment: could we have single LLRF section? Carwardine: most will appear in the common section, but there are subtle differences that need to be highlighted. Nick: lets see the text first and

then we can fine-tune the outline accordingly.

- Nick: PMs will make some minor tweaks and then send to TEB/Carwardine for distribution to authors.

Other business

GDE PAC review is next week at Fermilab. Agenda is posted at

<http://lcagenda.linearcollider.org/conferenceTimeTable.py?confId=5530#20120515>

Next meeting (23rd May, 13:00 GMT)

Tentative agenda:

- Report from the PAC - PM
- Update on Design Register and TDD – Benno list
- Central region cryo solution for both sites variants – (Akira, Peterson,..)
- Status report on TDR writing – John Carwardine