

Subject: Revised version of BDS CCR reply
From: Tetsuo Shidara
To: Nobu Toge
Cc: W.Bialowons, P.Garbincius, A.Seryi
Date: Tue, 15 Aug 2006 21:05:45 +0900

Dear Toge-san,

Here are some comments from CEs concerning the BDS change request, although your questions were already answered by Andrei.

Cost saving: The cost for 14/14 is 16.7% cheaper than that for 20/2.
CCR Class: This cost saving corresponds to Class 2.

Note 1: Due to our ILC-GDE confidentiality protocols, actual cost numbers are not shown here. If you think you need these numbers and related cost information for your review process, review-mode access might be possible by your request under Non-Disclosure Agreement (NDA) condition.

Note 2: Assessment is based on the file "BDS_WBS_v1.6" prepared by the BDS AS leaders, where they are considering counts and cost of components, power and cooling requirements, reduction of the tunnel length and hall volume, and so on, for each scheme.

Note 3: The present assessment concerns only the initial construction cost. If we also consider the operation cost of this system, an appreciable amount of cost saving will be expected by this reduction of necessary electric power and cooling water capability.

Note 4: Reconsideration will be necessary for 2 mrad-line magnet system, related power and cooling requirements, as well as CF&S optimization and a study of beam-dump-sharing scheme. We might need a review of the beam optics for this BDS configuration by experienced experts.

Note 5: It is out of our scope to assess the physics, related with this BDS change request. But validity of abandoning the low-crossing-angle scheme should be reviewed by experts.

Tetsuo Shidara for CEs

Subject: RE: Revised version of BDS CCR reply
From: A.Seryi
To: T.Shidara, N.Toge
Cc: W.Bialowons, P.Garbincius, A.Seryi, D.Angal-Kalinin
Date: Tue, 15 Aug 2006 17:13:23 -0700
Thread-Topic: Revised version of BDS CCR reply

Dear Colleagues,

I would like to comment on the Note 4 of this list, which sais:

"Note 4: Reconsideration will be necessary for 2 mrad-line magnet system, related power and cooling requirements, as well as CF&S optimization and a study of beam-dump-sharing scheme. We might need a review of the beam optics for this BDS configuration by experienced experts."

The team who designed the 2mrad beamline ARE the experienced experts, who worked very hard to come with this design.

The 2mrad beamline idea was first discussed at 1st ILC workshop at the end of 2004, and the first versions of optics were made in the beginning of 2005.

After many iteration of optimization, the UK-France-US team came up with the final design at the end of 2005.

The problems that we see right now with 2mrad beamline performance are due to fundamental difficulties of extraction the beam in small angle case, and also due to immaturity of the design, as we state in the BDS BCD.

Of course it is up to Cost Engineers how to phrase this response, but I think it might be more appropriate to change the Note 4 to something like this:

Note 4. It is recognized that the current excessive cost and performance issues of the 2mrad solution can in part be attributed to its relatively immature design. Further optimization of the 2 mrad-line beamline, including optics, magnet system, related power and cooling requirements, as well as CF&S optimization and possibly a study of beam-dump-sharing scheme, are encouraged.

This is essentially the same what is written in BDS BCD, where it is stated that the design efforts and R&D studies for the alternatives need to continue.

Best regards
Andrei