

**BDS EDR kick-off meeting**  
**SLAC, ROB A/B, October 11-13, 2007**  
**Tentative agenda and goals**

The BDS EDR kick-off meeting will address the goals set by ILC PM, to plan for creating of an updated ILC value estimate and a of a project execution plan, and for prioritization the Engineering Design activities in support of EDR based on risk mitigation, cost reduction and project preparation.

To address the goals, the work of BDS EDR kick-off meeting will be organized in three iterations: understand the present status; understand the derivatives and dependencies (or plan for that); and then, after discussion of the options, plan the EDR work. The meeting will correspondingly have the following sessions:

- Goals and introduction
- RDR completeness
- System optimization discussion
- Options and alternatives
- EDR planning

The goals of these sessions, in more details, are:

- Goals and introduction
  - Introduction to the agenda and goals; the overall status of design; performance risks; R&D planned by S4; cost split of subsystems; cost drivers.
- RDR completeness
  - Assess technical maturity of RDR design and completeness of the value estimate. Evaluate performance acceptability. Examine each (Tech./Global) cost and check for inconsistencies, inaccuracies, cross check with existing machines.
- System optimization discussion
  - Quantify the worth/cost value, discuss cost drivers, evaluate performance/cost derivatives, review design decisions in terms of cost impact and discuss possibilities of further refinement.
- Options and alternatives
  - Evaluate existing options and alternative designs and discuss their merits for the project, needed resources for development and possible timeline.
- EDR planning
  - Present the work packages that would cover the EDR goals of updating the ILC cost estimate, reducing the risk, reducing the cost, and preparation of the project execution plan.

Specific instruction for each session

- Goals and introduction
  - Explained above.
- RDR completeness

- Should include (following the cost split order): beamline tunnels and facilities; experimental hall and facilities; magnet system; installation; dumps and collimation; cryogenics; instrumentation; control; vacuum system.
- System optimization discussion
  - Aim to identify the performance driven specifications for accelerator components and especially CFS and discuss how engineering cost-performance trade-offs will be performed.
  - Should include updates and findings happened between writing the RDR and kick-off meeting
  - Should include discussion of machine-detector connection and optimization, and specifically include discussion of the integrated engineering of push-pull IR, based on IRENG07 workshop, aimed to reduce the risk of performance and cost of this solution.
- Options and alternatives
  - Discussion should include e-e-, gamma-gamma, head-on and 2mrad IR designs, permanent magnet and Rutherford cable design for 14mrad IR, fixed target, muon shield, other diagnostics, crystal collimation, etc.
- EDR planning
  - Develop sub-work packages, forming WBS, and reflecting available resources.

The sessions will include the following presentations, prepared and/or lead by corresponding people:

- Goals and introduction
  - Introductions and goals A.Seryi
- RDR completeness
  - Beamline tunnels V.Kuchler
  - Experimental hall and surface buildings J.Osborne
  - BDS facilities T.Lackowski
  - Magnets, warm, DC J.Tompkins, C.Spencer
  - Magnets, pulsed T.Mattison
  - Magnets, SC M.Anerella, B.Parker
  - Power supplies P.Bellomo
  - Installation F.Asiri
  - Dumps and collimation C.Densham, T.Markiewicz
  - Cryogenics T. Peterson
  - Instrumentation M.Wendt
  - Control system J.Carwardine, C.Saunders
  - Crab cavity P.McIntosh, L.Bellantoni
  - Vacuum system Y.Suetsugu
- System optimization discussion

- Introduction and status and plans of design study in support of requirement specification and optimization of beamlines and of the IR design D.Angal-Kalinin, N.Mokhov, H.Yamamoto
- Detector design optimization for push-pull IR and for surface assembly T.Markiewicz, T.Sanuki, Y.Sugimoto
- IR magnets and cryo system optimization for push-pull IR B.Parker, K. Tsuchiya
- Optimization of conventional construction of IR hall and external systems for push-pull IR Vic Kuchler, A.Enomoto, J.Osborne
- Power supply and cooling facility optimization P.Bellomo, T. Lackowski
- Optimization of beamline tunnels and facilities V.Kuchler
- Optimization of installation F.Asiri
- Optimization of magnets J.Tompkins, C.Spencer, V.Kashikhin
- Optimization of instrumentation, control, crab cavity, vacuum M.Wendt, J.Carwardine, C.Saunders, P.McIntosh, L.Bellantoni, Y.Suetsugu, VacName (SLAC), P.Burrows, M.Woods
- Alignment R.Ford, R.Ruland
- Operation and MPS T.Himel, N.Terunuma, E.Elsen
- Options and alternatives
  - Physics goals and value of options H.Yamamoto
  - Design status of head-on IR O.Napoly
  - Design status of 2mrad IR P.Bambade
  - Rutherford cable for 14mr IR A.Zlobin
  - Permanent magnets for 14mr IR Y. Iwashita
  - Facilities and hardware needs for gamma-gamma V.Telnov, J.Gronberg
  - Hardware needs for e-e- L.Keller
  - Alternatives for muon spoilers and crystal collimation N.Mokhov
  - Alternatives for beam diagnostics K.Moffeit, B.Morse
  - Facilities and hardware needs for fixed target Y.Kolomensky
- EDR planning
  - Introduction to EDR structure and planning A.Seryi
  - ATF2 construction, commissioning & operation T.Tauchi
  - Accelerator and physics requirements and design integration D.Angal-Kalinin, SysEngName (SLAC)
  - Interaction Region & IR integration B.Parker, T.Markiewicz
  - Crab cavity system P.McIntosh, L.Bellantoni
  - Beam Dump system C.Densham, R.Arnold
  - Collimation system N.Watson, N.Mokhov
  - BDS magnet & PS J.Tompkins, C.Spencer
  - BDS instrumentation P.Burrows, M.Woods
  - BDS Vacuum system Y.Suetsugu, VacName (SLAC)

Total we have about 45 presentations, including three  $\frac{3}{4}$  hour talks; other talks are 20min in average. The EDR talks are  $\frac{1}{2}$  hour each. Discussion is 10min in average per each talk. This gives about 24 hours in total, which should fit into three full days. Fine tuning of the talk duration may be done based on relative relevance of the topic. Combining some of the talks in RDR completeness session may be also possible.

As shown above, in some cases the same topic may be touched three times, even by the same people: during the RDR completeness, System optimization and EDR planning sessions. It is important to follow the guidelines to separate the presented information for each of these sessions. One can consider a specific example of magnets and power supplies. In this case, in RDR completeness session one would discuss the work done for RDR, describe the assumptions, assess its completeness, etc. In the System optimization session one would discuss, for example, how the design is affected by water delta temperature, number of penetrations to service tunnels, power supply model, the assumed energy range and 1TeV PS upgrade plan, etc. And in the EDR session, one would discuss how the observed derivatives and dependencies are incorporated and will be further studies and used during the EDR phase.

The very tentative list of participants is shown below. For in-person attendance, there are about 50 people. For Webex participants, the tentative count is 32 but this could be of course much larger, since the meeting is open.

Participants connecting to the EDR kick-off meeting remotely could gather at some local places (e.g. Daresbury) for convenience; however there will be only one centralized agenda for the work and only one flow of discussion. Any significant issues discussed at remote gathering sites during off-agenda-hours (e.g. lunches), should be promptly brought to attention of the host and re-discussed.

John	Amann	SLAC	in-person
Mike	Anerella	BNL	in-person
Deepa	Angal-Kalinin	STFC	in-person
Ray	Arnold	SLAC	in-person
Fred	Asiri	SLAC	in-person
Philip	Bambade	LAL	in-person
Leo	Bellantoni	FNAL	in-person
Paul	Bellomo	SLAC	in-person
Grahame	Blair	RHUL	in-person
Phil	Burrows	Oxford Univ.	in-person
Clay	Corvin	SLAC	in-person
Chris	Densham	RL	in-person
Eric	Doyle	SLAC	in-person
Richard	Ford	FNAL	in-person
Vladimir	Kashikhin	FNAL	in-person
Lew	Keller	SLAC	in-person
Jim	Krebs	SLAC	in-person
Vic	Kuchler	FNAL	in-person
Tom	Lackowski	FNAL	in-person
Zenghai	Li	SLAC	in-person
Tom	Markiewicz	SLAC	in-person
Takashi	Maruyama	SLAC	in-person
Peter	McIntosh	STFC	in-person
Ken	Moffeit	SLAC	in-person
Nikolai	Mokhov	FNAL	in-person
Olivier	Napoly	Saclay	in-person
Yuri	Nosochkov	SLAC	in-person
John	Osborne	CERN	in-person
Brett	Parker	BNL	in-person
Tom	Peterson	FNAL	in-person
Nan	Phinney	SLAC	in-person
Tor	Raubenheimer	SLAC	in-person
Robert	Ruland	SLAC	in-person
Sergei	Seletskiy	SLAC	in-person
Andrei	Seryi	SLAC	in-person
Cherrill	Spencer	SLAC	in-person
Yusuke	Suetsugu	KEK	in-person
Mike	Sullivan	SLAC	in-person
SysEngName	SysEngName	SLAC	in-person
Toshiaki	Tauchi	KEK	in-person
John	Tompkins	FNAL	in-person
VacuumName	VacuumName	SLAC	in-person
Nigel	Watson	Birmingham Univ.	in-person
Tom	Weber	SLAC	in-person
Manfred	Wendt	FNAL	in-person
Glen	White	SLAC	in-person
Mark	Woodley	SLAC	in-person
Mike	Woods	SLAC	in-person
Hitoshi	Yamamoto	Tohoku Univ.	in-person

Alexander	Zlobin	FNAL	in-person
Rob	Appleby	Manchester Univ.	webex
Stewart	Boogert	RHUL	webex
Graeme	Burt	Lancaster Univ	webex
John	Carwardine	ANL	webex
Norbert	Collomb	STFC	webex
Olivier	Dadoun	LAL	webex
Chris	Damerell	STFC	webex
Amos	Dexter	Lancaster Univ	webex
Sasha	Drozhdin	FNAL	webex
Eckhard	Elsen	DESY	webex
Atsushi	Enomoto	KEK	webex
Jeff	Gronberg	LLNL	webex
Mike	Harrison	BNL	webex
Tom	Himel	SLAC	webex
Yoshihisa	Iwashita	Kyoto ICR	webex
Animesh	Jain	BNL	webex
Andrea	Jeremie	LAPP	webex
Yury	Kolomensky	LBL	webex
Michael	Lamm	FNAL	webex
Oleg	Malyshev	STFC	webex
Tom	Mattison	UBC	webex
Bill	Morse	BNL	webex
Tomoyuki	Sanuki	Tohoku Univ.	webex
Claude	Saunders	ANL	webex
Yasuhiro	Sugimoto	KEK	webex
Valery	Telnov	BINP	webex
Nobuhiro	Terunuma	KEK	webex
Eric	Torrence	Oregon Univ.	webex
Kiyosumi	Tsuchiya	KEK	webex
James	Volk	FNAL	webex
David	Warner	Colorado Univ.	webex
John	Weisend	SLAC/NSF	webex