



ILC GLOBAL SYSTEMS MEETING

CONVENTIONAL FACILITIES AND SITING GROUP

Report on the CFS AD&I Meeting at SLAC

V. Kuchler, J. Osborne, A. Enomoto



Overview of Goals and Format

- ***Oriented to Working Sessions Rather than Formal Presentations***
- ***Focused on Interactive Discussion to Identify Criteria Relevant to the CFS Design Solution***
 - ***Identify And Evaluate Machine Layout***
 - ***Heat Loads and Cooling Requirements***
 - ***Utility and Other Support Requirements***
- ***A Generic Spreadsheet has been Developed for Each Area System, CFS Tasks Identified in the R&D Plan and Each of the AD&I SB 2009 Working Assumptions***
- ***The Meeting Allotted Time for Interaction with Each Area System and General Discussion***
- ***Meeting Participants were E. Paterson, T. Lackowski, V. Kuchler and Area System's Points of Contact (N. Walker Also Participated in some Discussions)***



Area System Participating Points-of-Contact

Electron Source

John Sheppard

Positron Source

Norbert Collomb

Damping Ring

Norbert Collomb

Ring to Main Linac

Nikolay Solyak

Main Linac

Chris Adolphsen

Beam Delivery System

Andrei Seryi



Global Design Effort - CFS

Monday, July 20, 2009

- 8:30 – 10:00 Introduction and Overview of Goals – Ewan Paterson, Vic Kuchler, Tom [Lackowski](#)
- 10:00 – 10:30 Break
- 10:30 – 12:00 Electron Source - Axel Brachman and John Sheppard
- 12:00 – 1:00 Lunch
- 1:00 – 2:30 Ring To Main Linac – Nikolay Solyak
- 2:30 – 3:00 Break
- 3:00 – 5:00 Main Linac – Chris Adolphsen

Tuesday, July 21, 2009

- 8:30 – 10:00 Positron Source – Jim Clarke, Norbert Collomb
- 10:00 – 10:30 Break
- 10:30 – 12:00 Damping Ring – Susanna [Giuducci](#), Norbert Collomb
- 12:00 – 1:00 Lunch
- 1:00 – 2:30 Beam Delivery System – Andre Seryi
- 2:30 – 3:00 Break
- 3:00 – 5:00 Overview of Central Region – Ewan Paterson, Vic Kuchler, Tom Lackowski



Global Design Effort - CFS

CFS SB 2009 Area System Criteria				
Damping Ring				
CFS Lead	CFS Support	Area/Technical System Point (s) of Contact		
J. Osborne	T. Lackowski	S. Giuducci, N. Collomb		
	General Description	Specific Criteria	Source of Information	Date of Information
What is status of Current Design	Current design is fairly well understood.		Discussion with Norbert Collomb and Ewan Paterson in the CFS AD&I meeting @ SLAC	July 20-21, 2009
How does the Current Design differ from the RDR Layout	Current ring is 3.2 km and racetrack in shape. Location is offset from line of Main Linacs (50-60 m). Damping ring is in the same plane as the BDS.		Discussion with Norbert Collomb and Ewan Paterson in the CFS AD&I meeting @ SLAC	July 20-21, 2009
Is there a working lattice file	A working lattice file is in place		Email from Susanna Giuducci	July 27, 2009
What is the new position of the system with respect to adjacent systems	See above		Discussion with Norbert Collomb and Ewan Paterson in the CFS AD&I meeting @ SLAC	July 20-21, 2009
What are the constraints for the beamline connections to the adjacent area systems	Damping ring should clear the IR hall by a minimum of 10 m		Discussion with Norbert Collomb and Ewan Paterson in the CFS AD&I meeting @ SLAC	July 20-21, 2009
What are differences/similarities to the RDR heat loads and/or cooling requirements	Magnet power losses are 70% of RDR. RF power and radiation power is half, but wiggler radiation is 88% of the total radiation power. RF power requirements would be half for the smaller ring.		Email exchange between marc Ross and Susanna Giuducci	July 15, 2009
What are differences/similarities to the RDR electrical requirements	Electrical requirements are reduced and scale with the heat loads.		Discussion with Norbert Collomb and Ewan Paterson in the CFS AD&I meeting @ SLAC	July 20-21, 2009
What are support requirements i.e. control racks, power supplies, additional service tunnel or alcoves	This configuration for the main RF will remain the same as in the RDR. One alcove will remain in each curved section. Each injection and extraction line contains 12 kicker magnets.		Discussion with Norbert Collomb and Ewan Paterson in the CFS AD&I meeting @ SLAC	July 20-21, 2009
Milestone Description	Expected Completion Date			



Overview and CFS Near Term Plan

- *Small Discussion Groups Proved to be Very Effective to Identify Criteria Specific to CFS Requirements*
- *Spreadsheets Provide a Method of Documentation that can be Updated as More Information and Decisions Become Available*
- *Information Gained at the SLAC AD&I Meeting Provided Sufficient Information to Begin the Development of 2D and then 3D Drawings for the Entire Machine Layout*
- *All Presentations and Spreadsheets have been Posted to the Indico Agenda*



Overview and CFS Near Term Plan cont.

- *Weekly CFS Video/Webex Meetings Will Continue to be Used to Meet with Area Systems for Further Development of CFS Criteria*
- *Guidance from the Project Managers as well as the Area System will Also be Required to Finalize a Position on Each of the SB 2009 Working Assumptions*
- *We Plan to have a Full Machine Layout for the Upcoming CFS AD&I Meeting at Daresbury*
- *Final Details for the CFS Machine Design will be Finalized at that Meeting in Preparation for the Next ILC Meeting in Albuquerque*