Accelerator Design and Integration Goals for ALCPG09

Ewan Paterson

Joint all WG Session (1) 8:30 to 10:00, Wed

Joint all WG Session (2) 16:00 to 17:30, Fri

Published Charge to the GDE ALCPG Working Groups

- Progress on **risk mitigating R&D**, primarily the global high-gradient SCRF programme; electron cloud suppression and ultra-small emittance generation in the damping rings (CESR-TA, ATF, DAFNE, etc.); ATF2 programme for demonstration of the final focus optics and beam stabilisation. Review of TTF/FLASH 9mA experimental run.
- **Technical progress** on engineering design work, specifically the SCRF linac (cryomodules) and development of 'plug compatibility' interface specifications. Global 31.5 MV/m cryomodule test ("Global S1"); development of world-wide infrastructure and SCRF test facilities; development of cost effective high-level RF power sources (including HLRF solutions associated with a single-tunnel option).
- **Machine Detector Interface** (jointly with ALCPG), including CFS for collider hall.

- **Accelerator Design & Integration (AD&I)**: review of the "Straw-man Baseline 2009" (SB2009) elements, including reports on on-going studies and plans towards a baseline proposal. Assessment of associated cost increments and risk (via the development of the Risk Register). This workshop will also provide an open forum for discussion of the proposed design modifications with the physics and detector community.

Definition of AD&I from

ILC Research and Development Plan for the Technical Design Phase

Release 4

July 2009

ILC Global Design Effort

Director: Barry Barish

Prepared by the Technical Design Phase Project Management

Project Managers: Marc Ross
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AD&I SB2009 STUDIES

1) Main Linac length consistent with optimal choice of average accelerating gradient

2) Single-tunnel solution for the Main Linacs and RTML with two possible variants of the HLRF

3) Undulator-based e+ source located at the end of the electron Main Linac

4) Reduced parameter set (with respect to the RDR) with 1312 bunches and a 2 msec RF pulse

5) ~3.2 km circumference damping rings at 5 GeV, 6mm bunch length

6) Single stage bunch compressor with a compression factor of 20

7) Integration of the e+ and e- sources into a common "central region beam tunnel", together with BDS and RTML

8) Evaluate cost differences compared to RDR designs

AD&I SCHEDULE

- **ALCPG** Thru 3 Oct 2009 **Review and consolidation of SB 2009 studies**
- **PAC/Korea** 2 Nov, 2009 **Report to Project Advisory Committee on SB 2009 studies**
- **DESY** 2-3 Dec, 2009 **Assemble final written report with recommendations for re-baseline.**
- **AAP/Oxford** 5-6 Jan 2010 **Review Report and Recommendations with Accelerator Advisory Panel.**
- **LCWS 10 / Beijing** 26-30 March 2010

Present new ILC Baseline Design to the community.

THIS WEEK at ALCPG 09

- **There will SB 2009 discussions in the WG parallel sessions.**
- **Also, in special joint WG sessions**
- **And with Cost Management Group**
- **……**
- **Leading to, I hope, a successful Wrap Up AD&I Session, Friday 16:00 to 17:30**

AD&I Wrap up Friday 16:00 to 17:30

- **Very brief reports from WG's on SB2009 work in parallel sessions.** WG Convener
- **New issues needing work, if any ?** WG Convener
- **Time to resolve these issues?** WG Convener
- **Status of cost reviews?** Costing group
- **Instructions on report writing** Editors

Kick off this morning with some issues of interest to all systems

- **Report from Task Force on "AVAILABILITY" -- Tom Himel**
- **Report on "Tunnel Life Safety and Egress" – Vic Kuchler**