KILC 12 and the TDR

Nick Walker (for the PMs)

Technical Design Report volumes

2007 **2011** **2013***

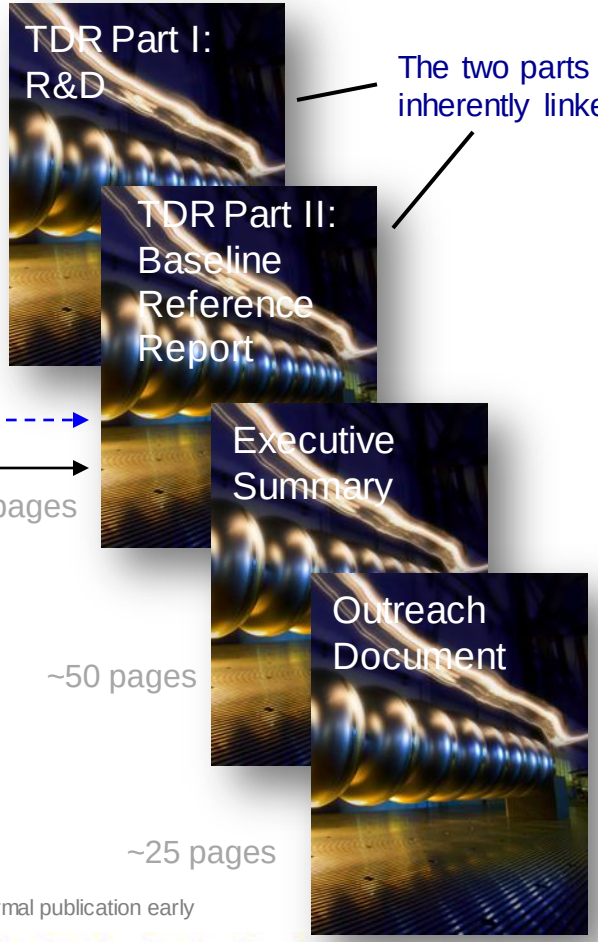
Reference Design Report

ILC Technical Progress Report
(“*interim report*”)

AD&I

Technical Design Report

~250 pages



The two parts are inherently linked

~300 pages

~50 pages

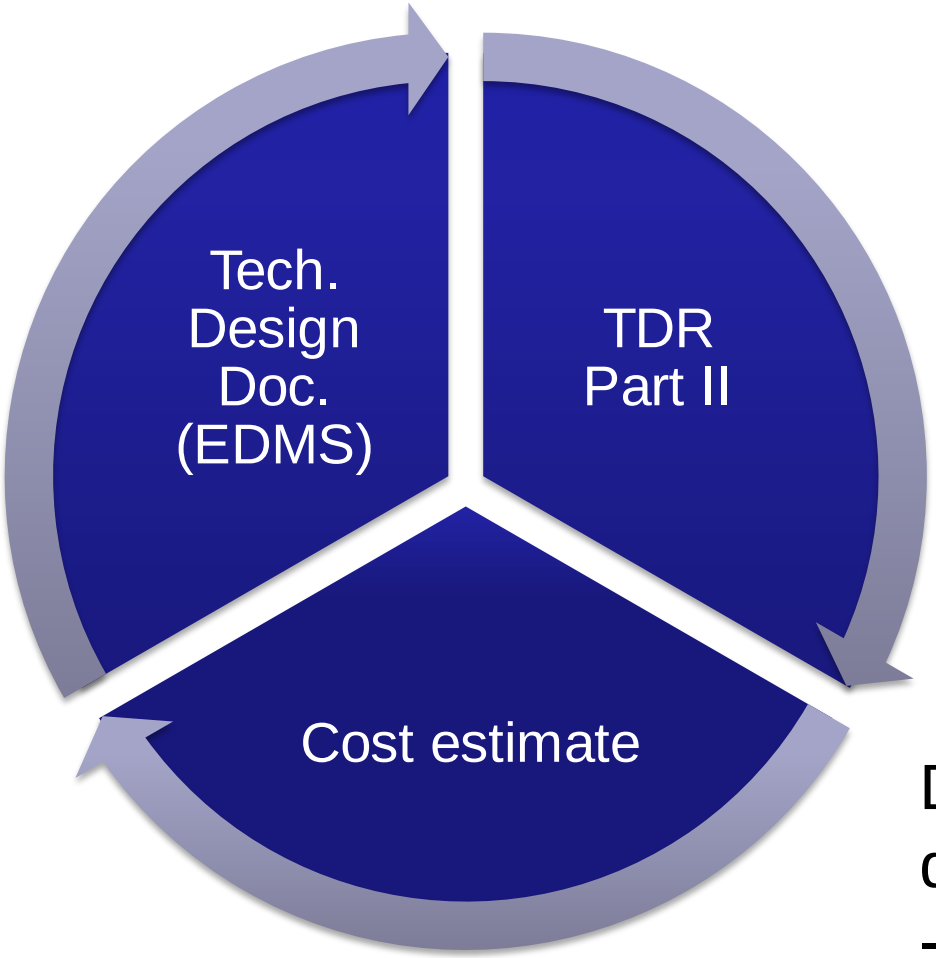
~25 pages

* end of 2012 – formal publication early 2013

Part I: Tech. Design Phase R&D

- **Comprehensive report on TDP R&D programmes**
  - where and how we spent the money
- **Similar in scope to R&D sections in interim report**
  - more technically detailed
  - more conclusive
- **Report R&D results should support baseline (decisions) in Part II**
  - But scope can be broader, i.e. R&D on alternative concepts

TDR Part II



Dealing with design duality?

- Kamaboko / RDR like
- KCS

Deadlines

First-draft sections	*** TODAY ***
Complete edited draft	22 October (ILCWS 12)
Final draft (for PAC)	15 November
PAC review	15-16 December

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206 Days (29 Weeks and 3 Days) …. AND COUNTING!

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FINAL (and formal) publication at Lepton Photon conference (SF, June 2013)

Expect international reviews Q1-22 2013
(Both technical and cost)

Technical Editorial Board

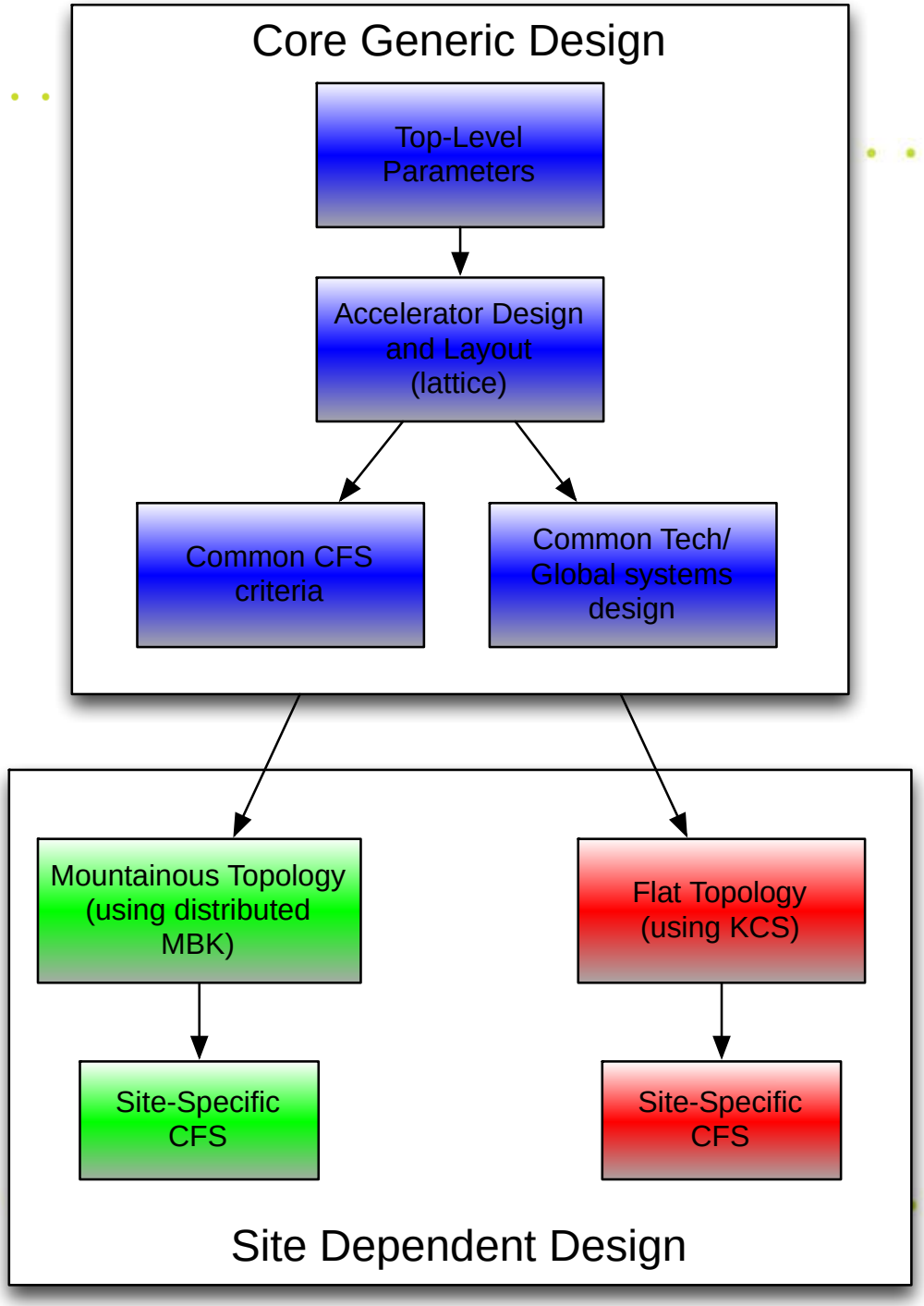
- **Chair: John Carwardine (ANL)**
- **Part I (R&D) editors**
  - Jim Kerby (FNAL)
  - Hitoshi Hayano (KEK)
  - Eckhard Elsen (DESY)
- **Part II (Baseline) editors**
  - Nan Phinney (SLAC)
  - Nobu Toge (KEK)
  - Phil Burrows (OXU)
- **PMs (Ross, Walker, Yamamoto)**
- **Tech. support**
  - Benno List (DESY)
  - Maura Barone (FNAL)

ilc-tdr-teb@desy.de

They cannot start their work until <u>you have done yours</u>!

Dealing with Design Variants

- **Part II *and the cost estimate!***
- **Need to describe our (primarily) two design variants in a clear and coherent manor**
- **Should not "bury" site-specific design in multiple places in report, but…**
- **Should not continually repeat common design approaches**



- **Most of our design description and costs are <u>site independent</u>**
  - *fortunately* ☺
- **CFS is the most significantly influenced by site-dependent designs.**
- **Driven by HLRF choice (technical)**

Part II Chapter 2: Overview

- **2.1 Introduction**
- **2.2 Top-level parameters**
  - 2.2.1 Physics related machine parameters
  - 2.2.2 Special considerations for low CM running
- **2.3 Accelerator Overview**
  - 2.3.1 SCRF Main Linac ← description of HLRF options still here
  - 2.3.2 e- source
  - 2.3.3 e+ source
  - 2.3.4 DR
  - 2.4.5 RTML
  - 2.4.6 BDS
- **2.4 Site specific designs**
  - 2.4.1 Flat topology
  - 2.4.2 Mountainous topology
- **2.5 Upgrades**

CFS

references

Costs

- **G. Dugan (T. Shidara, W. Bialowons)**
- **We are mandated to constrain the costs!**
- **Need to carefully review costs as they are developed**
  - Focus is new SCRF and CFS numbers but…
  - scrubbing legacy RDR costs *were possible* also important!
- **Roll-ups needed ASAP to avoid 'last minute surprises'**
  - And last minute design modifications!!

Remaining BTR homework

- **SCRF homework**
  - HLRF PDS solution (incl. controls margin)
  - Main linac parameters → EDMS (signed-off)
  - Tuner mechanism (maintainability)
  - ML quad for TeV upgrade (conceptual)
  - Final lattice

- **CFS**
  - detector hall review
  - (global) unit costs
  - Consolidation (reconciliation) of regional costs
    - common WBS

Remaining Work (AS)

- **DR – no outstanding tech. work?**
  - costs and writing
- **Sources**
  - e- OK?
  - e+ OK? (input on remote handling?)
- **RTML – no outstanding tech. work?**
- **BDS**
  - lattice work on-going (finish this summer)

Check/update/review TS requirements
- mag & ps
- vacuum
- instrumentation
- controls
- …

Questions & DIscussion

- **TDR drafts (John)**
  - what is available today?
  - what will be available by when?

- **Cost estimates (Gerry)**
  - any (fundamental) problems in providing them?

- **Technical issues pertaining to TDR content**
  - Is everything clear?
  - what issues remain that need to be answered?

- **TDD (EDMS, Benno)**
  - Are all the supporting documents available and EDMS?
  - If not when?

- **Any questions / comments concerning the structure of this workshop?**

Closing Plenary

- **Ninety minutes**
- **PM would like to ask John and Gerry for a summary (2x25')**
- **Leaves 60' for**
  - Brief *informal* summaries from WGs
  - 5-10' each
  - Importance of 'close-out' discussion given our TDR goals
- **Closing comments from PM (short)**