

# Status of the DCR Detector Chapter

Detector Concept Report for the ILC

## Part I

### Detector Concept Report

Version Built November 6, 2006

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C. Damerell  
J. Jaros  
A. Miyamoto

**International Linear Collider (ILC) Workshop**  
**ILC-ECFA and GDE Joint Meeting in Valencia**  
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# What's the DCR?

- Companion document to GDE's Reference Design Report (RDR) which outlines baseline and costs for the ILC machine.
- DCR has three pieces: Physics (50p)+Detector(150p)+Executive Summary
- DODs (Detector Outline Documents) provide much of the material for the Detector DCR
- WWS-OC oversees writing the DCR
  - Overall Editorial Board
    - Brau, Richard, Yamamoto
  - Physics Case for ILC Editors
    - J. Lykken, M. Oreglia, K. Moenig, A. Djouadi, S. Yamashita, Y. Okada
  - ILC Detectors and Costs Editors
    - A. Miyamoto, T. Behnke, J. Jaros, C. Damerell

# More about the DCR

- The RDR and DCR are due at the end of 2006
- The DCR must make a compelling case for ILC physics and detectors

- The Detector DCR will

*make the case that detectors can do the ILC physics  
show that detector designs are within reach  
note that advances in detector technology are needed  
show the progress on detector R&D  
ballpark detector cost  
argue for 2 detectors*

- Spirit of the DCR  
***cooperative among concepts,  
not a vs b vs c vs d vs...  
the ILC community world wide supports this work***

# DCR History (short course)

- WWS commissions Detector Outline Documents and organizes DCR. Editors appointed.
- First vision of Detector and Physics DCRs presented at Bangalore LCWS2006
- Detector DCR goals and outline presented at Vancouver VLCWS06
- Editors detail chapter outlines and recruit authors
- Rough drafts prepared for Valencia ILCWS06

# The Outline of the DCR

A. Miyamoto's Talk  
VLCWS06

- 
1. General Introduction
  2. Challenges for Detector Design and Technology
  3. Introduction to the Detector Concepts
  4. MDI Issues
  5. Subsystem Designs and Technologies
  6. Sub-Detector Performance
  7. Integrated Physics Performance
  8. Why We need 2 Detectors
  9. Detector Costs
  10. Future Options
  11. Next Step
  12. Conclusion

# Rough Drafts Available ✓

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1. General Introduction
2. Challenges for Detector Design and Technology ✓
3. Introduction to the Detector Concepts ✓
4. MDI Issues ✓
5. Subsystem Designs and Technologies ✓
6. Sub-Detector Performance ✓
7. Integrated Physics Performance
8. Why We need 2 Detectors ✓
9. Detector Costs
10. Future Options ✓
11. Next Step
12. Conclusion

# Detector DCR Wiki

(thanks Akiya)



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## DCR - Detector Chapter

### DCR Detector Section page

**Proposed outline**

- Introduction
- Challenges for Detector Design and Technology
- Introduction to the Detector Concepts
- MDI Iuuses
- Subsystem Designs and Technologies
- Subsystem Performance
- Integrated Physics Performance
- Why we need 2 IRs and 2 Detectors
- Detector Costs
- Future Options
- Next Step
- Conclusion

**Editors**

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**Table of Contents**

- DCR - Detector Chapter
- DCR Detector Section page
- Proposed outline
- Editors
- Presentations

**Rough Drafts Available Now!**  
(thanks Ties)

**Caveat: Drafts are evolving rapidly. It's too early for comments.**

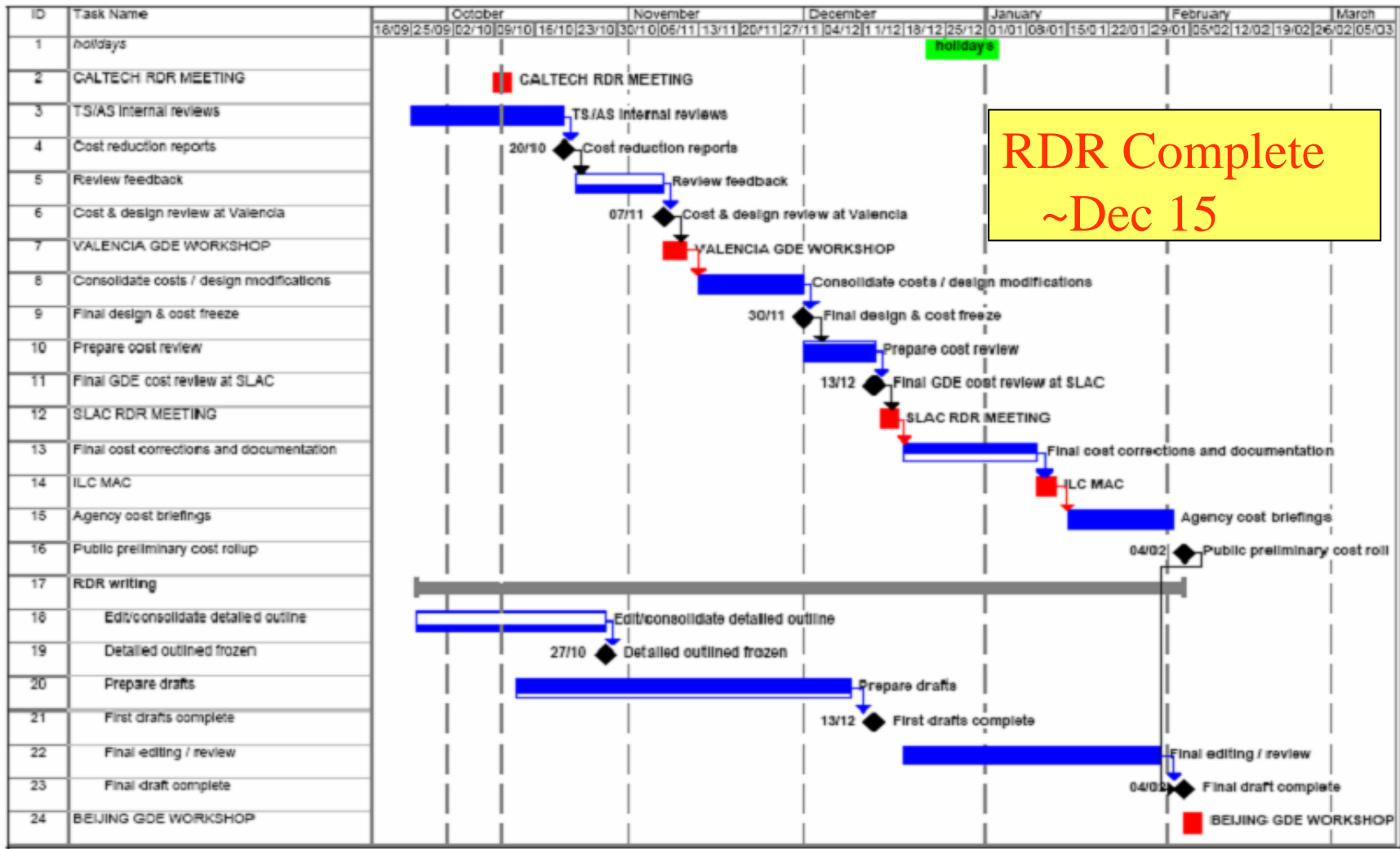
[http://www.linearcollider.org/wiki/doku.php?id=dcrdet:dcrdet\\_home](http://www.linearcollider.org/wiki/doku.php?id=dcrdet:dcrdet_home)

# Missing Pieces

- Introduction...  
...will come post Valencia
  - Integrated Physics Performance...  
...depends on input **at** Valencia. We are still hoping for examples of benchmark analyses based on full MC
  - Detector Costs...  
...depends on meeting of the concepts **at** Valencia and WWS OC strategy for generating a “representative” cost
  - Next Steps...  
...depends on how ILCSC views the detector roadmap
  - Conclusions...  
...will come when we’ve concluded!
  - Executive Summary...  
... will come post Valencia
- Lots more to do**



# Schedule is Driven by RDR



# Finishing the DCR

- Refine/Edit Rough Drafts
  - Add Missing Pieces
  - Complete Draft DCR
  - Solicit Comments/Final Edits
  - DCR Complete
- Thru November
- Early December
- Thru December
- End December

# Signing the DCR

- The ILC Physics/Detector Community will be invited to sign the completed document upon its completion.
- Register on [indico.desy.de](https://indico.desy.de)  
<https://indico.desy.de/conferenceDisplay.py?confId=146>
- Set the Author list by ACFA Beijing ILCWS
- Go public at Beijing

# SiD Homework Post Valencia

- Review Draft Contributions to  
Subsystem Performance  
SiD Concept  
Subsystem R&D (still quite incomplete)
- Comments to John, who'll pass them on to the  
appropriate editor.
- Help finish SiD01 ASAP, so SiD can contribute to  
“Integrated Physics Performance” in DCR.