



CSC Trigger Review

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Outline:

- **Milestones**
- **Project Planning**



Muon Trigger Status/Plans

Prototype 1 tests now complete

Prototype 2 and production follow EMU components to optimize technology

MPC, SP, CCC modules, backplane* milestones:

- **Apr-02 Prototype 2 designs done ✓**
 - Freeze CSC-DT interface
 - Determine DDU compatibility with OSU module for EMU
- **Sep-02 Prototype 2 construction: ✓**
- **Apr-03 Prototype 2 testing done: Jan-04?**
- **Sep-03 Final designs done: July-04?**
- **Oct-04 Production done: Jan-05?**
- **Apr-05 Installation done**

(*backplane schedule ~3 months ahead of above dates to provide platform for testing and integration)

CSC Sorter module: only 1, final design: Jan-04 (GMT?)



FY02-03 L4 Milestones

MPC Proto 2:

- Conceptual Design & Firmware Complete 2/28/02 ✓
- Schematic Complete 5/31/02 ✓
- Layout Complete 7/31/02 ✓
- (Fabrication/Assembly Complete 9/30/02 = L3 Milest.) ✓
- (Finish MPC Proto. 2 Test 3/18/03 = L3 Milest.) single ✓

SR/SP Proto:

- Conceptual Design Complete 3/30/02 - 4/15/02 ✓
- Schematic Complete 5/31/02 ✓
- Layout Complete 9/30/02 ✓
- Transition Board Complete 4/30/03 in production 8/03
- (Fabrication/Assembly Complete 11/30/02 = L3 Milest.) 1/30/03 ✓
- (Finish SR/SP Proto. Test 4/1/03 = L3 Milest.) 1/30/04

Backplane Proto 2:

- Specification Complete (use EMU) 12/31/01 ✓
- Routing Complete 9/30/02 ✓
- (Fabrication/Assembly Complete 11/30/02 = L3 Milest.) 2/28/03 ✓
- (Finish Bckpl Proto. 2 Test 11/30/02 = L3 Milest.) 5/30/03 (Sort,Trans)

CCC Proto 3:

- Specification Complete 12/31/01 ✓ (EMU)
- Design Complete 5/15/02 ✓ (EMU)
- Layout Complete 6/15/02 ✓ (EMU)
- (Fabrication/Assembly Complete 8/19/02 = L3 Milest.) ✓ (EMU)
- (Finish CCC Proto. 3 Test 10/28/02 = L3 Milest.) 5/30/03 (needs redes.) ✓



Testing Plans

MPC	10/1/02-12/31/02 - Done
SR/SP	2/1/03-3/30/03 - 01/30/04
MPC-TMB	7/1/02-12/31/02 - Done
<ul style="list-style-type: none">• Include TMB tests 7/1/02-9/30/02 (but redo w/new TMB)	
MPC-SR/SP	3/1/03-4/30/03 - 09/10/03
<ul style="list-style-type: none">• Include Optical tests• 2 Front-stuffed SR/SP testers	
Fast Site Chain Testing	4/03 - 05/30/04 - TTC!
<ul style="list-style-type: none">• Include TTC components• Concerns: EMU SW, test beam schedule	
Structured Beam Test	5/03 - Done but redo: 6/04
DT-CSC	7/1/03-9/30/03 - 10/15/03
<ul style="list-style-type: none">• Include Transition Board	



FY02-05 L2,3 Milestones - I

Begin Proto. 2

- Begin MPC Proto. 2
- Begin SR/SP Proto.
- Begin Bckpl Proto. 2
- Begin CCC Proto. 3
- Begin Sort Proto.

5/14/01 ✓

10/1/01 ✓

10/1/01 ✓

10/1/01 ✓

10/1/01 ✓

5/14/01 ✓

Finish Proto. 2

- Finish MPC Proto. 2
- Finish SR/SP Proto.
- Finish Bckpl Proto. 2
- Finish CCC Proto. 3
- Finish Sort Proto.

6/24/03 ✓

9/30/02 ✓

1/30/03 ✓ (w/o PT mem)

2/28/03 ✓

8/19/02 ✓

3/31/03 ✓

Finish Proto. 2 Test

- Finish MPC Proto. 2 Test
- Finish SR/SP Proto. Test
- Finish Bckpl Proto. 2 Test
- Finish CCC Proto. 3 Test
- Finish Sort Proto. 2 Test

9/30/03 **2/28/04**

4/30/03 9/30/03 (needs SR/SP)

4/30/03 1/30/04

4/30/03 2/28/04

4/30/03 ✓ but needs redes.

9/30/03 2/28/04 GMT?

Finish Final Design

- Finish MPC Final Design
- Finish SR/SP Final Design
- Finish Bckpl Final Design
- Finish CCC Final Design
- Finish Sort Final Design

3/31/04 **7/30/04**

3/31/04 3/31/04

3/31/04 7/30/04

3/31/04 7/30/04

3/31/04 7/30/04

3/31/04 7/30/04



FY02-05 L2,3 Milestones - II

Begin Production

- Begin MPC Production
- Begin SR/SP Production
- Begin Bckpl Production
- Begin CCC Production
- Begin Sort Production

8/1/04 *

4/1/04

8/1/04 *

8/1/04 *

8/1/04 *

8/1/04 *

Finish Production (include system tests)

- Finish MPC Production
- Finish SR/SP Production
- Finish Bckpl Production
- Finish CCC Production
- Finish Sort Production

3/31/05

3/31/05

3/31/05

3/31/05

3/31/05

3/31/05

Begin Installation

- Begin MPC Installation
- Begin SR/SP Installation
- Begin Bckpl Installation
- Begin CCC Installation
- Begin Sort Installation

4/1/05

4/1/05

4/1/05

4/1/05

4/1/05

4/1/05

Finish Installation

- Finish MPC Installation
- Finish SR/SP Installation
- Finish Bckpl Installation
- Finish CCC Installation
- Finish Sort Installation

5/1/05

5/1/05

5/1/05

5/1/05

5/1/05

5/1/05



FY02-05 L2,3 Milestones - III

Begin Trigger System Tests

6/1/05

- Begin MPC System Tests 6/1/05
- Begin SR/SP System Tests 6/1/05
- Begin Bckpl System Tests 6/1/05
- Begin CCC System Tests 6/1/05
- Begin Sort System Tests 6/1/05

Finish Trigger System Tests

9/30/05

- Finish MPC System Tests 9/30/05
- Finish SR/SP System Tests 9/30/05
- Finish Bckpl System Tests 9/30/05
- Finish CCC System Tests 9/30/05
- Finish Sort System Tests 9/30/05



Trigger L2 Tasks

Tasks	start	finish:	
• Produce TDR	8/00	12/00	✓
• Design Final Prototypes	11/00	12/01	✓
• Construct Final Prototypes	6/01	6/02	12/02
• Test/Integrate Final Prototypes	12/01	12/02	1/04
• Pre-Production Design & Test	6/02	6/03	7/04
• Production	4/04	3/05	1/05
• Production Test	4/04	3/05	
• Trigger System Tests	5/05	9/05	
• "Slice Test" NEW	10/04	11/04	
• Trigger Installation	4/05	5/05	
• Integration & Test w/DAQ & FE	5/05	9/05	
• Maintenance & Operations	10/04	-----	



CSC Trigger Slice Test

Requirements for 3-station 20 degree slice test of 12 CSCs (w/2 ME1/1):

- Need: 3 MPC, 1 SP/SR, 1 CCB module, 1 backplane
- Integrate w/3 partially populated peripheral crates + 1 DDU

Schedule:

- **Sep-02** Prototype 2 designs done
- **Dec-02** Prototype 2 construction done
- **Jan-04** Prototype 2 testing done
- **Jul-04** Final designs done
- **CSC Sorter module: only 1, design by Jan-04**
 - Not needed for Slice Test I: use trigger output from CCB
- **Jan-05** Production done
- **Apr-05** Installation begins in USC55

Slice Test Phase I: Start w/ 3 CSCs from structured beam test

- **Aug-04 to Nov-04**
- **Use Prototype 2 modules** (need more MPC, CCB protos?)

Slice Test Phase II:

- **Nov-04 to Mar-05**
- **Use Production Modules (& Proto. Sorter)**