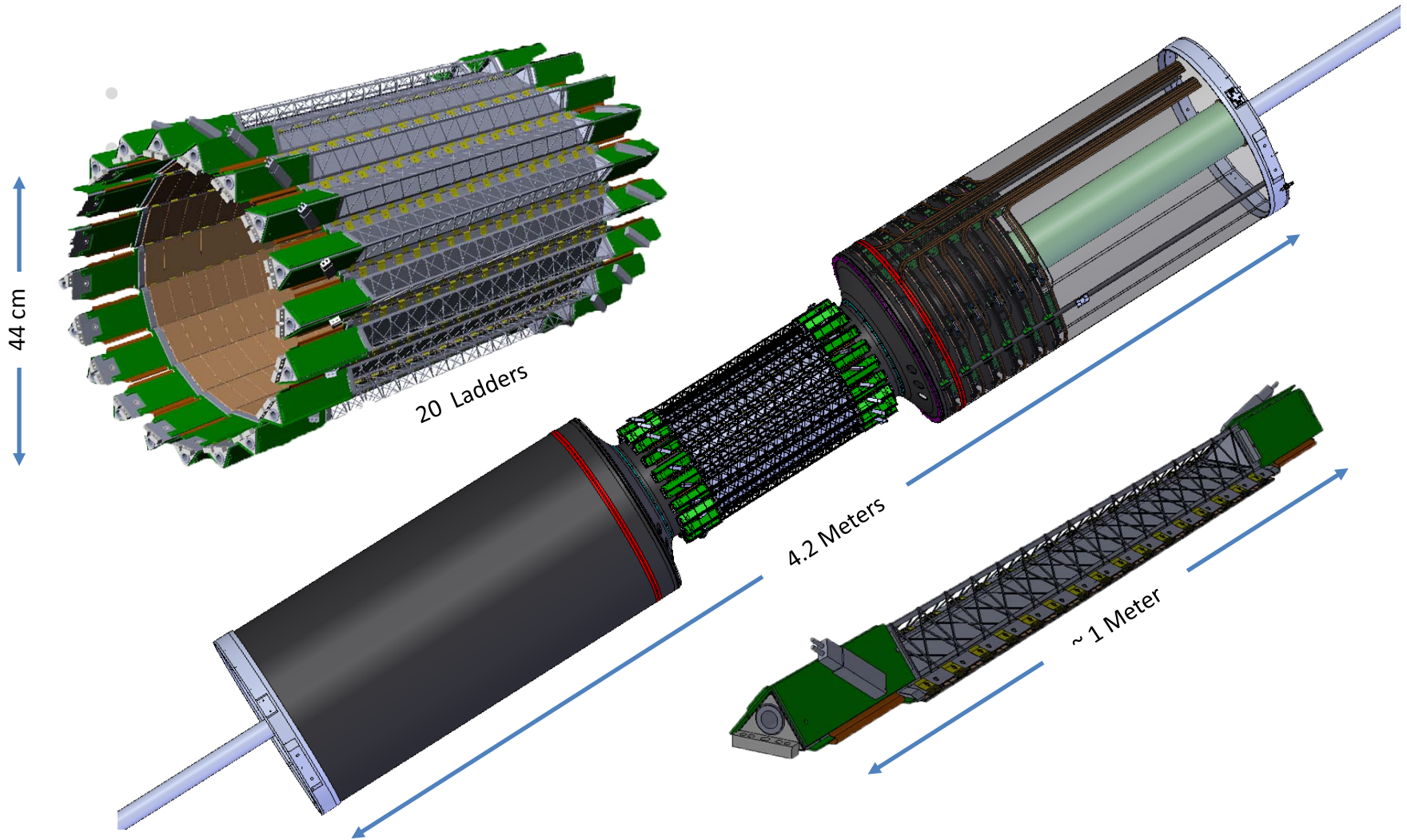


The SSD: Face to Face (with reality)



Outline

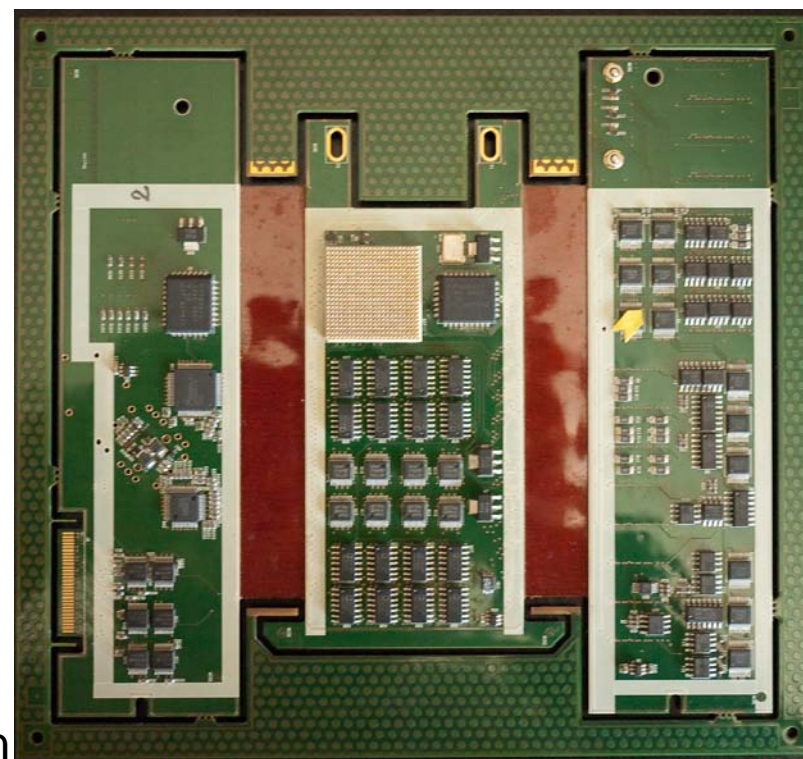


- Recent Progress
- Upcoming Milestones
- Issues

Most Recent Milestone



- 10/31/2011 - We have completed work on the Ladder Board: Phase I
 - In particular, this says the LB design is complete; we are now in the pre-production phase of the effort
 - Short list of elec and mech changes: Micheal will give more detail in his report
- Contract news
 - The contract with Subatech is making good progress
 - Three steps:
 - ✓ MOU and Proposal to STAR
 - ✓ Forms 9 and 10
 - Contract between BNL and Sub
 - fine tuning document and waiting for signatures
- Signing the contract will allow Christophe to start on Phase II design



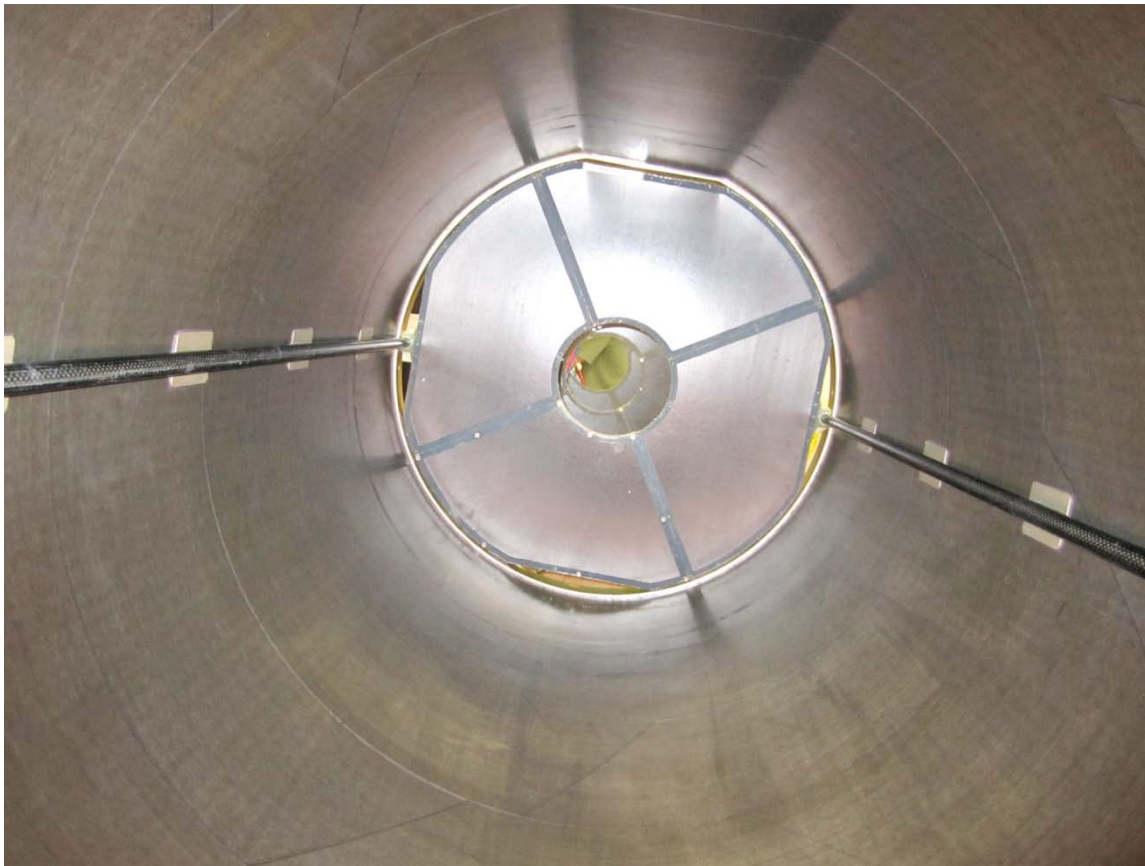
More Good News



- Weihua Yan has joined the SSD project
 - New student from Tsinghua University
 - (sorry, don't have his picture)
- He is highly motivated
 - He will be our Slow Controls expert
 - Learning the STAR environment
 - Currently in EPICS discovery mode
 - Learning about GUIs
 - Databases are next
 - Working with the FGT crate and power supplies to learn how STAR has solved similar problems in the past
 - More complex problems will be addressed as time and knowledge permits
 - (We might even meet our (revised) Slow Controls milestones :-)

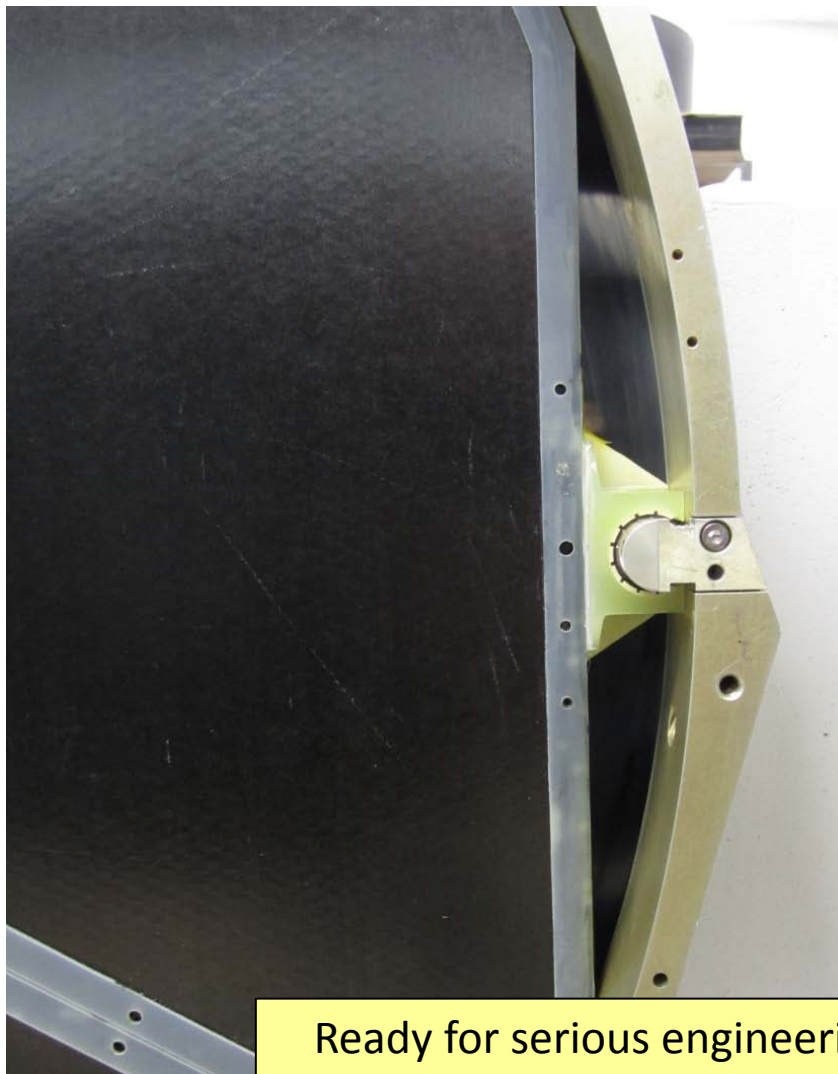


Space for Cables

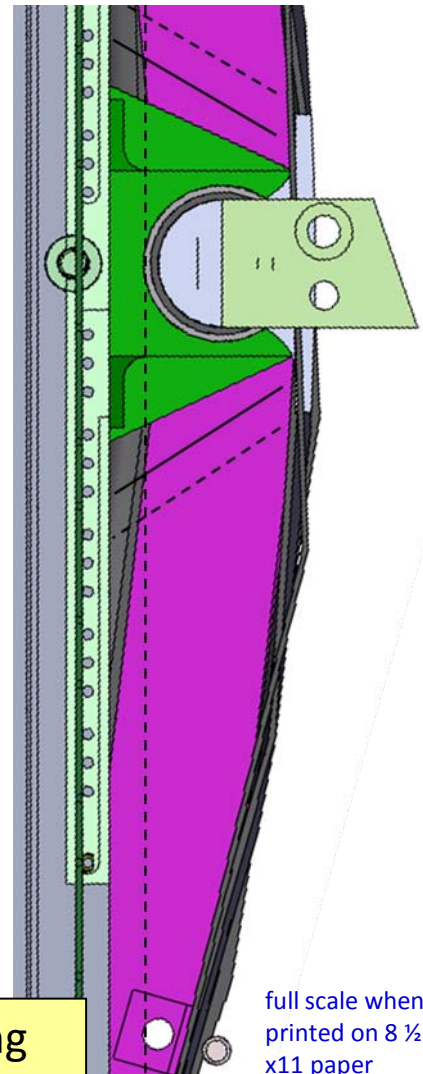


- A view from inside the West Support Cone (WSC).
- One FGT disk is shown at the entrance to the support cone.
- The SSD power and data cables will be put in cable trays above and below the rails
- The SSD cables must not interfere with the motion of the FGT disks as they slide in and out
- Cables are confined to the space near the rails that is defined by the flat spots (left and right) on the FGT disks.

More about space



Ready for serious engineering



full scale when
printed on 8 1/2
x11 paper

Cables trays go above
and below the rail(s)

The slider occupies
central area

The slider is bigger
than on the drawings
(solid lines)

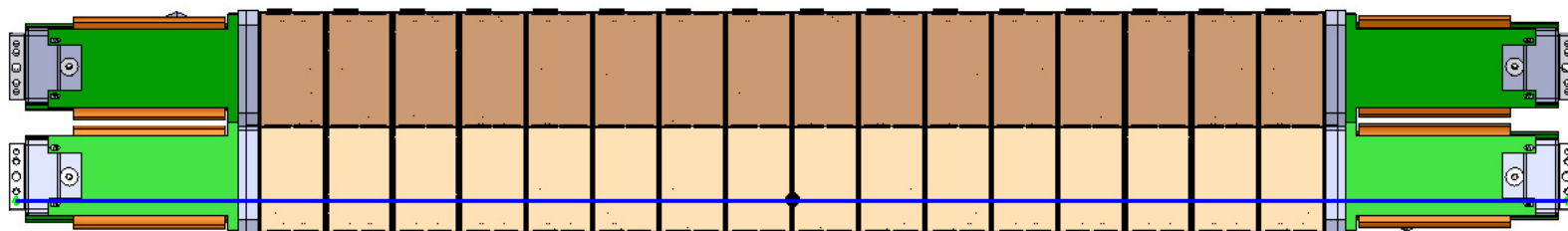
Provide 5 mm stay
clear zone so cables
don't rub FGT disks
(dashed lines)

Whew ... it will work!

1 cm² allowed per
ladder (power & data)

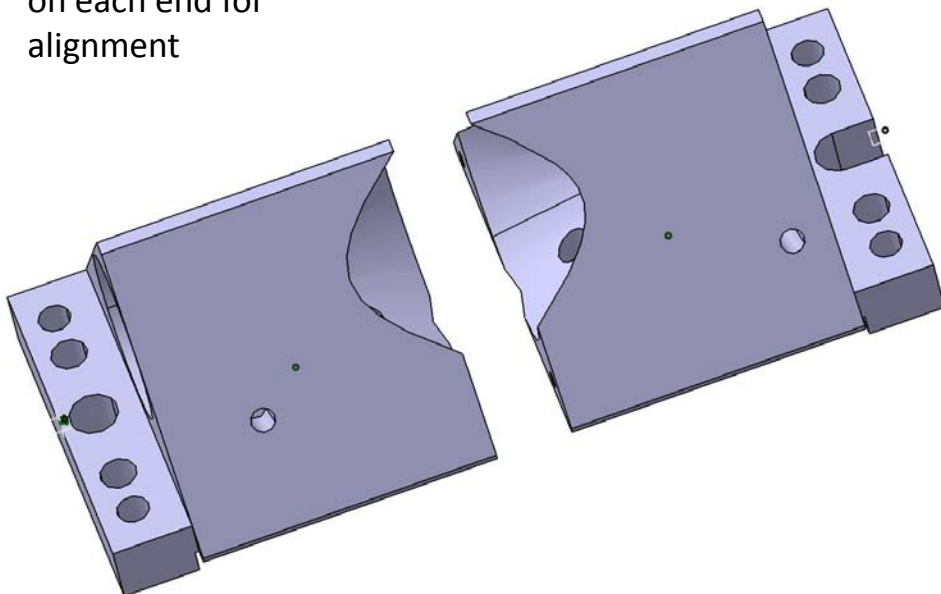
Spherical Cow
approximation allows
for 18 gauge wires x4
for 20 ladders = 80 tot

Mounting Hardware – some old news



Center Dist: 1013.5mm

6 mm pins used on each end for alignment



January to June is the time to design mounts for the ladders on the OSC

Upcoming Milestones



1.4.2.1.1.16	L3 CP - Ladder Board Prototype Phase I Complete	10/31/2011
1.4.4.1.1.2	L3 CP - PCB for Ladder Board Cable Ready for Fabrication	11/2/2011
1.4.2.3.1.3	Prototype DAQ Software Complete	11/4/2011
1.4.2.4.5	First Generation Test Software Complete	11/4/2011
1.4.2.2.1.4	All Pinouts for FPGA Designs Finished	11/10/2011
1.4.4.3.5	Preproduction Test Complete	11/14/2011
1.4.2.3.2.2	L3 CP - Production DAQ Design Review Completed	11/28/2011
1.4.4.4.1.4	Slow Control Hardware Assembled	11/30/2011
1.4.1.1	Mechanical Design of SSD components on OSC Begins	1/3/2012
1.4.4.2.4	Power Supply Vendor Selected	1/11/2012
1.4.2.2.1.7	L3 CP - SSD RDO Design Finished	1/27/2012
1.4.4.4.1.9	Slow Control Test System Complete	3/5/2012
1.4.4.4.2.1	Begin work on Final slow Controls System	3/5/2012
1.4.4.3.9	Design Review for Cooling Complete	5/1/2012
1.4.2.2.1.14	RDO Prototype Phase I Complete	5/22/2012
1.4.1.2	L3 CP - Mechanical Design of SSD components on OSC complete - HFT design Review to sign off	6/1/2012
1.4.2.4.8	Testing Complete	6/4/2012
1.4.2.1.2.5	Preproduction Ladder Board Design Review Completed	6/22/2012
1.4.4.2.9	L3 CP - Power Supply Design Review Complete	6/29/2012
1.4.2.2.2.4	L2 CP - SSD Preproduction Design Review of RDO	7/13/2012
1.4.4.1.1.11	Design Review for Cables and PCB Cable Complete	7/13/2012
1.4.2.1.2.9	L3 CP - Preproduction Ladder Board PCB Received	8/10/2012

L2

L3

Internal Only

- ✓ LB Phase I complete
- Power Supplies & Cables: Jan - June
- Mechanical design of mounting hardware begins: Jan - June
- Ladder Board PreProd design: Jan - June
Fab after June review
- RDO design complete end of Jan. PreProd design: Jan - June
Fab after July review
- DAQ and Slow C software must make incremental progress

- Contract with Subatech – moving but needs a watchful eye
- Contract with Indiana – just starting needs more than watchful eye
- Choice of power supplies, design cables ... patch panels etc.
- Cable trays for cables, how to attach to wall?
- Cable, Fiber, and Air routing near the Ladder ends ... needs definition
- Survey – when and where ... scheduling issues. Perhaps remap the WBS to allow for parallel work. Survey at LBL while electronics design continues at Subatech and BNL?
- Technical: How to communicate between various SSD sub-systems
 - Micheal likes USB for RDO communications
 - VME crates for RDO access, and perhaps Flow meter input, etc.
 - Extra dollars for VME(USB) crate controller ... but otherwise a good idea
- What is current thinking on 2nd set of cones?
- Will need FGT experts to disassemble the FGT in summer 2013 so we can install SSD cables (not in the current plan, option that I do it)

- SSD is making excellent progress
 - Electronics moving along quickly
 - Software is making incremental progress but needs continuous *push*
 - Mechanical issues are very straight forward, but need to stay in sync
- Recently remapped WBS to account for previously delayed activities
 - New schedule has no free slack ... gone!
 - Nearly perfect execution of tasks is required, from now on
 - Need to seriously investigate running (even more) tasks in parallel
- The key to success is good people
 - We have that ... just have to make all the subsidiary issues behave themselves (such as signing contracts in a timely manner)