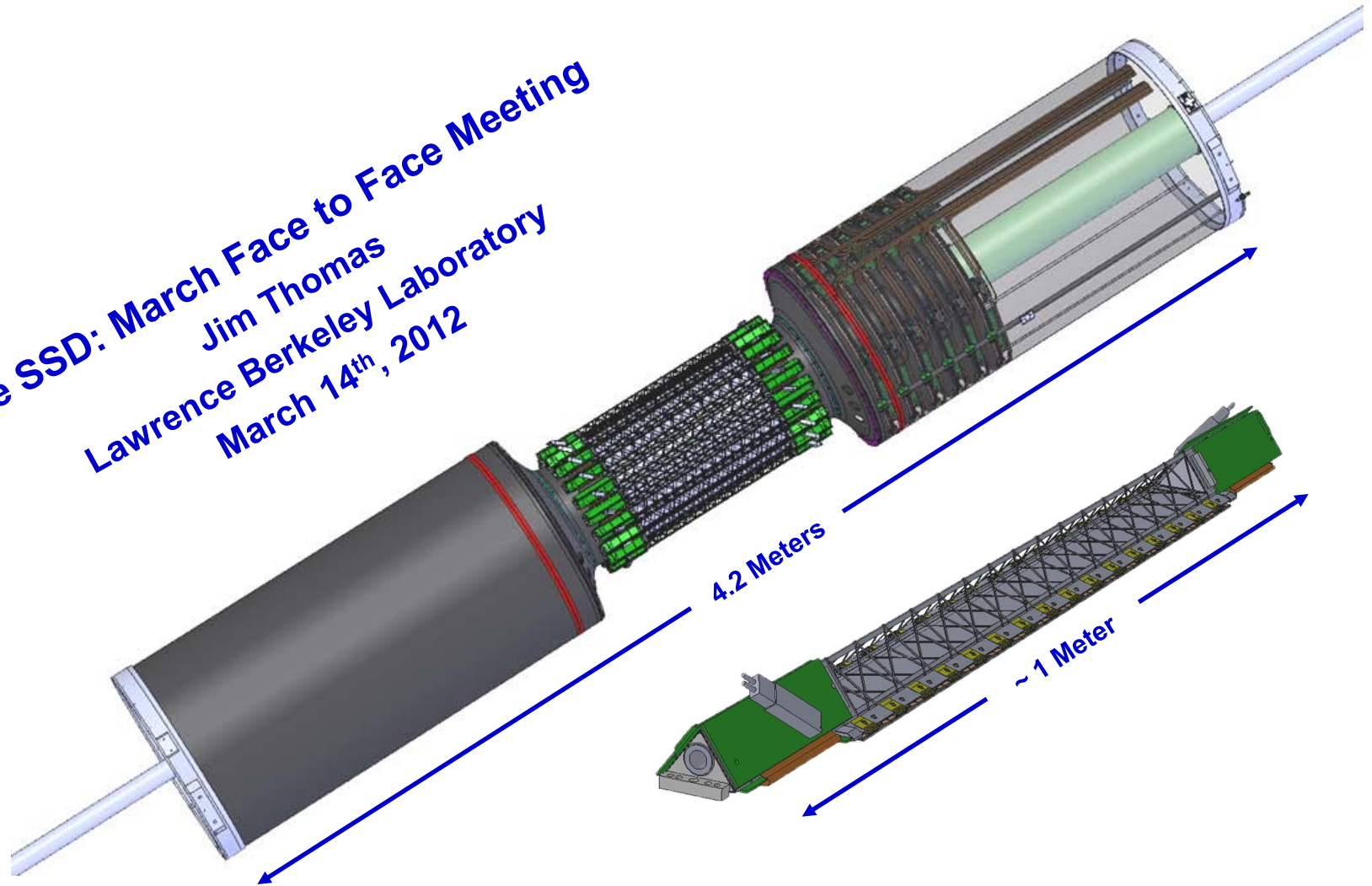
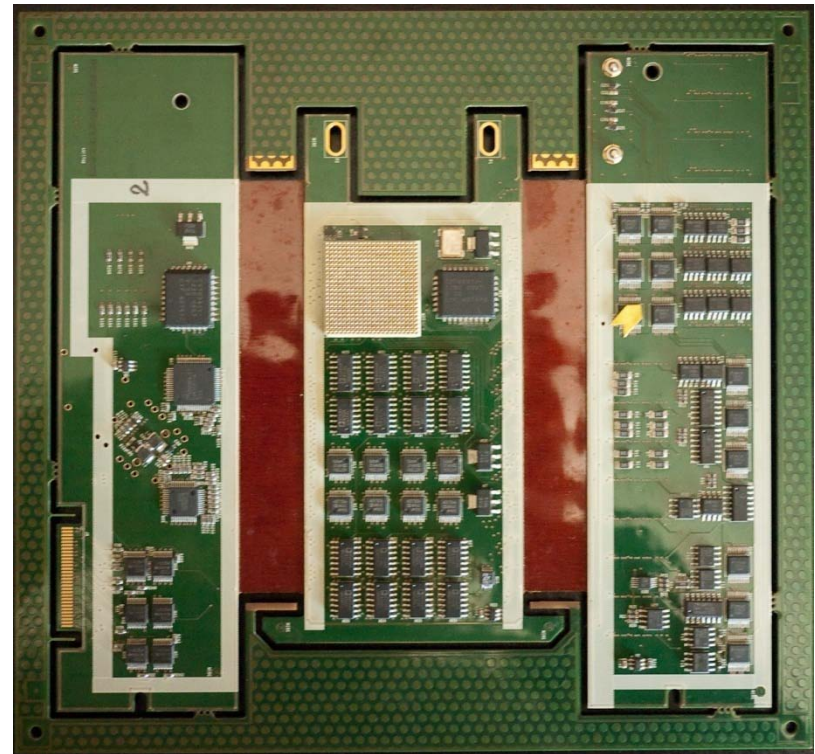


# The SSD

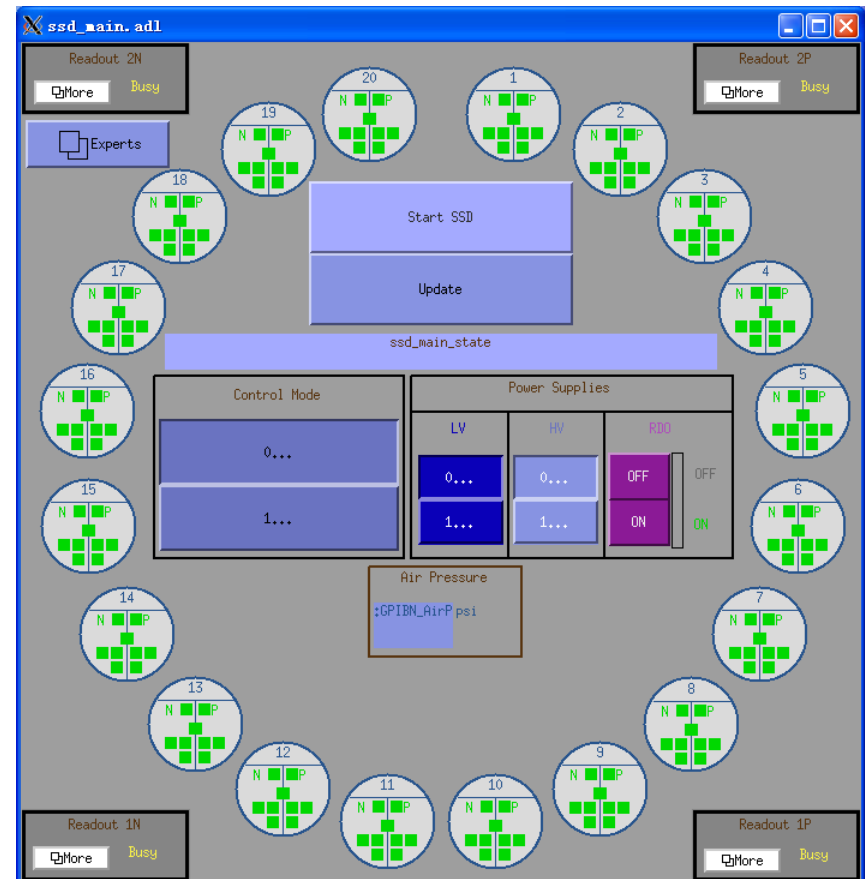
The SSD: March Face to Face Meeting  
Jim Thomas  
Lawrence Berkeley Laboratory  
March 14<sup>th</sup>, 2012



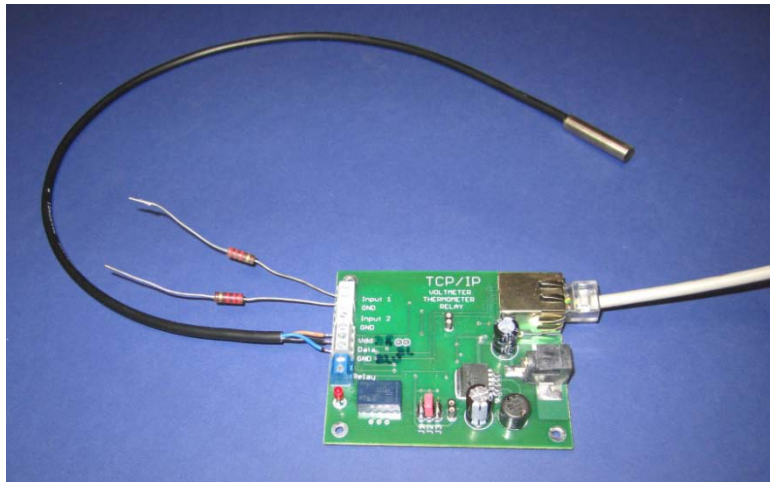
- **The contract between BNL and Armines (Subatech) has been signed. Work by Christophe on the Ladder Board and RDO boards has begun in earnest.**
- **The most significant issue to be addressed is the layout of the FPGA pins whose rows and columns were inverted on the prototype board. This will be complete by July 2<sup>nd</sup>, 2012**
- **We have completed a new schedule and overall, the LB and RDO board activities will be 1-2 months late in 2012**
- **2013 schedule still looks OK due to some remaining slack and inefficiencies in schedule**



- Weihua has recovered the old SSD slow controls interface
- Adopted new orientation of ladders ( $\phi$  rotation by 9 degrees) and included in GUI
- HV interface re-engineered for Wiener crate and ISEG module
- We have ordered a Wiener crate and one ISEG Bias supply and one ISEG LV supply
  - 14 week delivery time ☹
- Next step is to reverse engineer the JTAG to Corelis Board interface and update ala Micheal



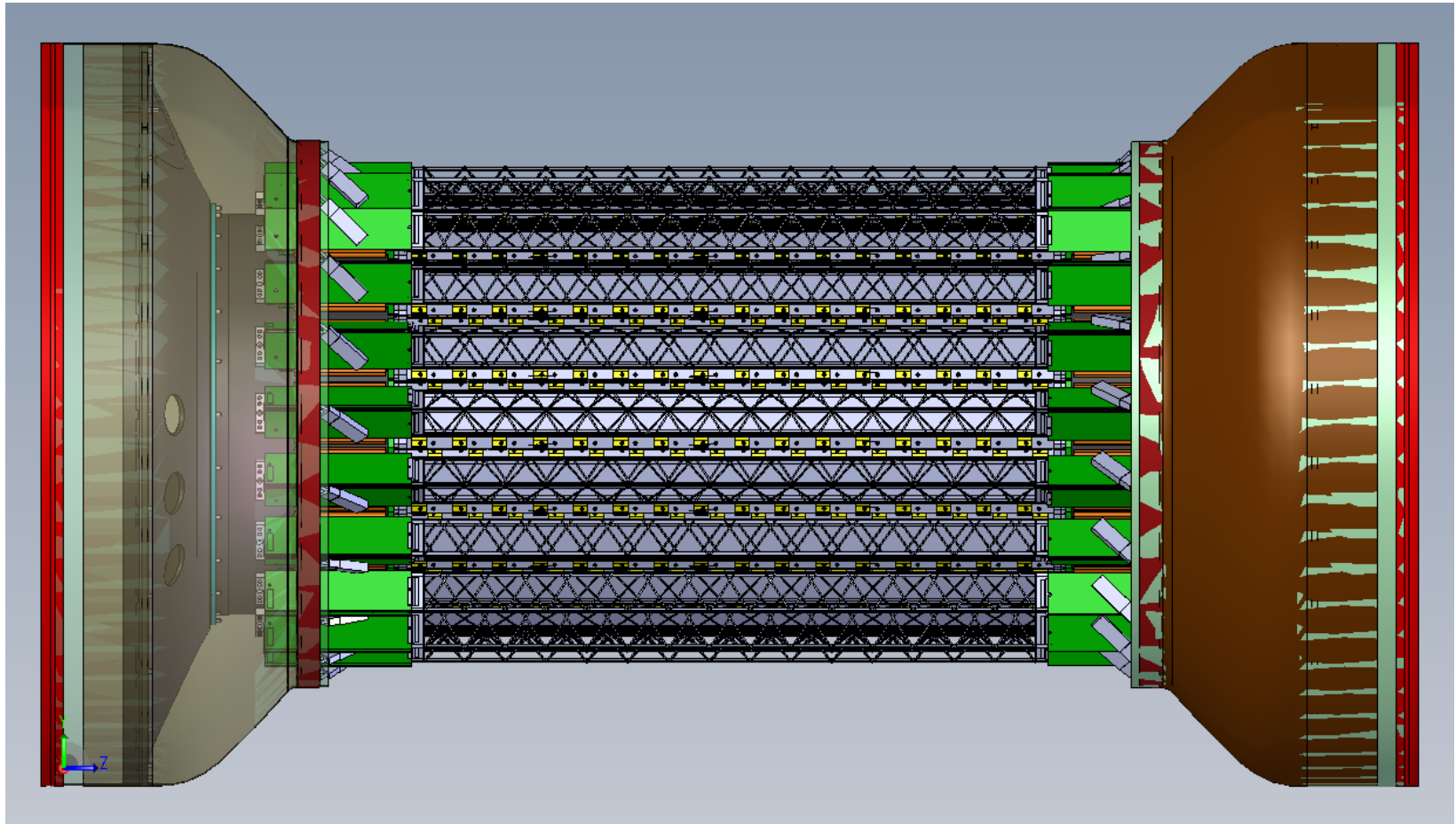
- **Survey Plan**
  - A ladder is on its way to Berkeley for the purpose of developing a survey plan and designing equipment for use in the survey shop
  - This ladder will also be used at BNL for testing JTAG communications
- **Cooling**
  - Diagnostic equipment has been a boat load of fun and a distraction from other aches and pains



**TCP/IP Voltmeter and T probe**



**Mass Air Flow Sensor (Volvo)**



- A great deal of useful discussion about the shroud has taken place in the last 3 months. Desirable to make more space near ladder ends for cabling and optics
- Attractive options include enlarging the ID of the shroud and/or extending it in Z
  - need assembly plan for the shroud, may involve clamshell design, etc.
  - pending electrostatic calculations and other thoughtful work

# Milestone Progress



WBS	Task Name	Date
1.4.2.1.1.2	L2 CP - SSD Prototype Ladder Board Design Finished	10/15/2010
1.4.2.2.1.22	L2 CP - SSD QRDO Board design finished	7/19/2011
1.4.2.2.1.20	L3 CP - QRDO Complete	8/23/2011
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
1.4.2.3.2.2	L3 CP - Production DAQ Design Review Completed	11/28/2011
1.4.2.2.1.7	L3 CP - SSD RDO Design Finished	1/27/2012
1.4.1.2	L3 CP - Mechanical Design of SSD components on OSC complete - HFT design Review to sign off	6/1/2012
1.4.4.2.9	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
1.4.2.1.2.9	L3 CP - Preproduction Ladder Board PCB Received	8/10/2012
1.4.2.1.3.2	L3 CP - Production Ladder Board Internal Review Completed	10/8/2012
1.4.2.1.3.4	L2 CP - SSD Production of Ladder Boards Ready to Begin	11/6/2012
1.4.2.1.3.7	L3 CP - Production Ladder Board PCB Received	1/22/2013
1.4.4.4.2.10	L3 CP - Slow controls ready for testing	1/30/2013
1.4.2.2.3.7	L3 CP - Production RDO Board Received	3/22/2013
1.4.1.4	L3 CP - Mechanical Components on OSC Installed	4/1/2013
1.4.2.5	L3 CP - Electronics Complete	6/14/2013
1.4.3.1.5	L3 CP - Survey Complete	7/9/2013
1.4.4.3.15	L3 CP - Installation of cooling on STAR platform and Magnet Endcap complete	8/16/2013
1.4.3.2.7	L2 CP - SSD Assembled on OSC Ready for Installation	8/28/2013

- **PCB for Cable work waiting for Indiana contract**
- **SSD RDO Design will be delayed few weeks**
- **Mechanical Design is next major milestone**
- **All RDO and LB milestones delayed 1 to 2 months**
- **L2 - RDO design review late 1.5 mo (7/13 – 8/31/12)**
- **L2 - begin LB production likely to be one month late (11/6 – 12/3/12)**

Complete

Future

Late

Design Review for Cooling Complete	5/1/2012 17:00
L3 CP - Mechanical Design of SSD components on OSC complete - HFT design Review to sign off	6/1/2012 8:00
L3 CP - Power Supply Design Review Complete	6/29/2012 17:00
Preproduction Ladder Board Design Review Completed	8/3/2012 11:12
L2 CP - SSD Preproduction Design Review of RDO	8/31/2012 17:00
Design Review for Cables and PCB Cable Complete	9/10/2012 17:00
L3 CP - Production Ladder Board Internal Review Completed	10/31/2012 17:00
RDO Production Internal Review Completed	3/11/2013 17:00

- **This is what we have in the schedule, probably not optimal**  
**We will re-address the frequency of reviews in coming weeks**
  - **Need a date for a Safety Review**
  - **More consistent approach to completion of design work (Mech and Elec)**
  - **LB layout, final review at end of Christophe's work**
  - **RDO board layout, final review (going on now)**
  - **Periodic FPGA programming reviews, esp. JTAG**
  - **etc.**

- **We would like to consolidate procurements for the RDO components for the prototype, pre-production, and production boards**
- **Ditto for Ladder Boards**
- **Ditto for Power supplies**
- **Essentially this means moving procurements at LBL from next fiscal year into this fiscal year**
  - **Need permission from Sarah**
  - **Will review with her (and anyone else interested) in detail**

**Goal is to maximize efficiency in overall SSD activities**



- **The contract with Subatech started on February 1<sup>st</sup>**
  - Most difficult activities will complete by July 2<sup>nd</sup>
  - Almost back on schedule, only 1 to 2 months late ...  
(keep your fingers crossed)
- **Minor delays on RDO board, 1 to 2 months late**
  - Full production of RDO comes later than Ladder Boards (that's new)
- **Currently rethinking delivery, shipping and survey schedule for ladders to try to make up this 1 to 2 month delays**
- **Mechanical Engineering and conventional systems need attention**
  - Many small tasks slipped while we tended to more pressing matters
- **We hope to accelerate the procurement of Ladder Board parts**
  - Weiner crates and LV and HV modules, too
  - No reason to wait ... can only cause us pain, later, if late on delivery
  - Need guidance from Sara on target date for next contract with LBL

**Yes, there is a good chance we can install the SSD in the summer of '13**