Overview

• Offical CERN schedule released
  – 4 weeks at T9/PS, July 27 – August 22
  – 2 weeks + 1 day at H4/SPS, 4-18 September
• Dedicated workshop at INFN-Pisa on March 20-23 ([web site])
  – Most of the infrastructure has either being defined and/or tested
  – A core group has been identified for the main beam tests tasks
• Highlights of the Workshop
  • Baseline solution for DAQ and data streams merge exist
    – files from both systems have been produced
  • Offline infrastructure borrowed from LAT with dedicated additions and customizations planned
    – initiated transfer of know-how from SLAC to Europe
  • MGSE for CU integration, transportation and exposure in the beam area presented and agreed
    – plan a review with a broader group by end of April
  • Beam test plan discussed and data analysis oriented for plan finalization
    – begin MC simulations with CU geometry to support plan
  • Next workshop will happen in the 2nd half of May during CU system test
    – expect data from 2 tower + 2 ACD tiles + ancillary readout system
    – review results from MC simulations
• Overall schedule in place
  – Next milestone: hardware delivery to Italy and handling and test plan review by April 13
INFN-Pisa Beam Test Workshop highlights

- Data acquisition (SLAC, INFN)
  - CU DAQ with LATTE 4
    - New online monitor for beam test in place
  - Single DAQ for all ancillary provided by INFN-Bari
  - Synchronous data acquisition with common CR external trigger + fast external veto was proven (up to 500Hz with random trigger)
    - Data merge will happen online at LDF level through specific modules to be provided
- Offline Infrastructure, Simulation/Reconstruction (SLAC, INFN, IN2P3)
  - SLAC pipeline for data process, recon files, offline reports
  - FastCopy© connection for data transfer from Pisa to SLAC established (speed optimization and CERN installation TBD)
  - Dedicated BtRelease simulation/reconstruction package to be released
    - Final ACD location agreed and transferred to simulation
    - Mass production of simulated data at SLAC following beam test draft plan will start next week
    - A prototype of lite-recon within Gleam presented as a quick local offline monitor
  - Beam test dedicated confluence pages and workbook section will be available for users forum and support
INFIN-Pisa Beam Test Workshop highlights

- Integration of modules in the 1x4 grid (INFN)
  - Standard TKR integration
  - New CAL integration from bottom
    - Same restraints and degrees of freedom as SLAC but different constraints from INFN clean room
    - New MGSE being procured
- Inner Shipping container (INFN)
  - Design presented and agreed
  - Interfaces to CU, XY scanning table, ACD tiles defined
  - Temperature and humidity control defined
- Outer Shipping container (INFN)
  - Design presented and agreed
  - OSC+ISC proof test campaign presented
- XY scanning table (LLR)
  - Design presented and agreed, interfaces to ISC and beam areas defined
- Final review of MGSE to happen soon before we start production
  - Proposed date for release by INFN is April 21, April 28 for approval
CU integration and test schedule

- Worked backwards on the schedule starting from
  - CU delivery to CERN on 7/15 (PS beam starts on 7/27)
  - leave flight spares at SLAC to last moment to support flight software test and cover LAT I&T and NRL env-test to maximum possible
  - INFN ready for integration on 5/5
    - grid rework at INFN
    - new MGSE procurement

- Delivery of spare flight modules and CU integration in 3 separate phases
  - Full system test anticipated in 2nd phase (15-30 May) with partial system to minimize system test time with complete CU
    - system test will be on 2 complete towers in the grid, 2 ACD tiles, all ancillary detectors, plus data synch and offline pipeline in place
    - next workshop will happen during system test

- Drop dead dates (but INFN is ready to receive everything as early as possible)
  - SLAC must ship (10 days to reach INFN):
    - 2 ACD tiles and spare FREE board currently not in use on 4/3
    - TKR FM8 and CAL FM101 on 4/18 (for bay 3 → TEM inversion at SLAC)
    - CAL FM109 on 5/17 (for bay 1 with TKR16 → TEM inversion at SLAC)
    - remaining ACD tiles on 5/31
  - Flight hardware handling and test plans
    - release from INFN by 4/6
    - approval from the project by 4/13
Flight Hardware Handling and Test Plan

- Follow procedures used by INFN when dealing with TKR flight hardware in Pisa
  - incorporate needs for CAL hardware in the plan
- Identify requirements for transportation and usage at CERN
- Incorporate plan to de-integrate and ship FHW back to USA in case LAT spares are needed
  - expected duration while at INFN: 4 days + 3 for customs and shipment
  - If at CERN: a stop should be considered only between PS and SPS data taking – a stop during any of the two data taking time would flaw the whole effort and would be very expensive for all the institutions involved; time estimate would be:
    - 2 days to remove ISC from area, 1 day for swiss customs, 2 days for transportation to INFN, 4 days at INFN + 3 days for customs and shipment
- Define test sequence for all hardware modules and CU system test
  - Flight hardware handling and test plan release by april 6