PD Consortium report

Ettore Segreto

TB meeting

September 14

Meetings

- First Consortium meeting held on Tuesday 12th September
  - ✓ *Dave Warner appointed as TL and Leon Mualem as Deputy TL*
- First meeting with WG conveners -> next Monday
- Regular Consortium meetings: each Tuesday at 11:00 CDT
- Weekly meetings for these first months -> probably bi-weekly in the future. In any case we want to see what happens when WG meetings start before taking a final decision

Proposed WG structure

- The proposed working group structure has been built on the basis of our list of deliverables, with the idea that each WG is responsible for a sub-set of deliverable – ab initio

- Proposed WG structure:

1) Light collector
2) Photosensors
3) Electronics
4) Simulation and physics
5) Integration

Light Collector

- Deliverables
  - ✓ Engineering Design
  - ✓ Materials Selection
  - ✓ Prototyping
  - ✓ Fabrication
  - ✓ Test Stand Development
  - ✓ Testing

- Conveners: Flavio Cavanna (FNAL), Denver Whittington (Syracuse), Ana Machado (UFABC)

Photosensors

- Deliverables
  - ✓ Evaluation, Qualification, and Selection
  - ✓ Development of Packaging
  - ✓ Development of Array & Ganging Configuration
    - Cold Board Design
    - SiPM Procurement
    - Cold Board Assembly
    - Test Stand Development
    - Testing

- Conveners: B. Rossi (waiting for a definitive answer), Vishnu, ...

Electronics

- Deliverables
  - ✓ Read-out
  - ✓ Firmware programming
  - ✓ Warm Low-Voltage Cables
  - ✓ Warm Bias-Voltage Cables
  - ✓ Low-Voltage Power Supply
  - ✓ Bias-Voltage Supplies
  - ✓ Cold signal cables
  - ✓ Cold bias voltage cables
  - ✓ PDS Calibration System

- Conveners: D. Moreno (UAN, Colombia) –TBC, G. Franchi (UNICAMP), Z. Djuric (ANL)

Simulation and Physics

- Deliverables
  - ✓ Software Deliverables
    - Simulation Code
    - Reconstruction Code
    - Calibration Run Control Software
    - Analysis Software
    - Calibration Database
    - Hardware Database
    - Data Collection
    - Data Monitoring Code
  - ✓ Physics Deliverables
    - Further development of PDS subsystem requirements
    - Validation of PDS Requirements with respect to Physics Performance
    - PDS Performance Validation via ProtoDUNE Data Analysis
    - Demonstrate PDS radiological/cosmogenic background rejection capabilities
    - Develop strategies for using PDS information to trigger on interesting events
    - Develop strategies for online reduction of PDS data volume.
    - Study potential light-enhancement strategies involving reflective cathode planes

- Conveners: A. Szelc (Manchester University), K. Scholberg (Duke) - TBC

Integration

- Deliverables
  System Engineering
  Development of QA Plan (specification of tests/facilities)
  Development of QC Plans (for all components)
  PDS Integration Test Facility
  Detector Integration Test Facility
  Collaboration with HV System consortium on potential light-enhancement strategies involving reflective cathode planes
  PDS Electronics Infrastructure
  Signal Flanges

- Conveners: N. Buchanan (Colorado), E. Kemp (Unicamp)

WBS

- First draft prepared by our TL – Dave Warner - and sent to Eric. Distributed to the Consortium members for comments