

690835-MUSE-H2020-MSCA-RISE-2015

Minutes of the MUSE Scientific Board (SB), Friday, February 24th, 2017 - 5:00 pm (GMT)

Attendees: D. Cauz (Skype, at INFN-TS), R. Chislett (Skype), S. Donati (chair, at INFN-PI), C. Ferrari (Skype, at Fermilab), S. Giovannella (Skype, at INFN-LNF), M. Lancaster (Skype, at UCL), M. Martini (Skype, at INFN-LNF), S. Miscetti (Skype, at INFN-LNF), G. Tassielli (Skype, at INFN-LE).

Agenda:

1. Discussion on the advancement status of the 7 Work Packages

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1. WP1 "g-2 detectors": M. Lancaster (UCL) reported on the activities relative to the g-2 detectors.

(a) **Milestone 1: Tracker DAQ Integration (due June 1, 2017).**

The tracker DAQ software and hardware are essentially complete. Integration of the tracker DAQ with the calorimeter DAQ and clock and control systems are well advanced. Experiments expect to have a first freeze the DAQ in April 2017 to demonstrate the completion of the milestone.

(b) **Deliverable 1.2: Report on installation and initial commissioning of Muon (g-2) trackers.**

Four trackers are already at Fermilab and three will be installed in the near future to check the level of noise induced when the kickers fire. The plan is to have one full instrumented station, composed of eight trackers, for the June 2017 commissioning data taking and the other two stations for the first physics run in November 2017.

2. WP2 "Mu2e detectors":

(a) M. Lancaster (UCL) reported that the funding review in UK is now complete and the announcement of award is expected in the next few weeks. UK Institutions have joined the Mu2e Collaboration at the February 2017 Collaboration Meeting. The design on the Mu2e HPGe detector is proceeding to schedule, procurement is expected at the end of 2017.

- (b) S. Miscetti (INFN) reported on the status of the Mu2e electromagnetic calorimeter. Pre-production CsI crystals have been received from 3 producers and several tests have been performed, including a check of the mechanical specifications, quality assurance for light yield, irradiation tests. Pre-production SiPMs have been received and partially tested, quality assurance has been completed, irradiation tests just begun. Pre-production of front-end electronics and waveform digitiser is in progress. The 10 % reduced-scale prototype named "Module" is beginning to be assembled at INFN Frascati. The full size mockup is being used to test fake crystals assembly and crystal supports and shims fabrication with a 3D printer. All the experience matured with the prototypes will be used for the Mechanical Design Review planned for March 2017 at Fermilab.

3. WP3 "Calibration":

- (a) **Deliverable 3.2 "Calibration system for the Muon (g-2) straw tracker (due July 1, 2017).** M. Lancaster (UCL) reported on the progress relative to the simulation code. Significant changes have been implemented to the simulation code Garfield++ which now agrees with the older Fortran version. The model of electronics and drift-time and efficiency have been developed based on experimental data taken at Lab.3.
- (b) D. Cauz reported on the Muon (g-2) calorimeter calibration system. One calorimeter station has been installed in the ring and has been connected to the optical fibers. This has allowed to acquire some data using the DAQ. For the laser calibration system, the plan is to freeze the configuration in April, and practice in May, hoping for beam in June. The Secondary distribution boxes have been completed and embedded in the calorimeters. Corrugated tubes necessary to protect the optical fibers have been installed. Safety systems for lasers are ready. Laser source monitors are being constructed and installed. Software is being developed.

4. WP4 "Software tools":

- (a) **Milestone 7: Mu2e HPGe reconstruction code (due May 1, 2019)** M. Lancaster (UCL) reported that different pulse fitting algorithms are being implemented and implications relative to rate and deadtime are being examined with analog and digital readout and processing.

5. WP5 "Dissemination and Outreach":
 - (a) S. Donati reported on the Summer School "Summer Students at Fermilab and other US Laboratories". We are receiving the applications from the students and the selections will be done in April. In the next couple of months we will collect the Training Programs from all the Fermilab Divisions. We expect to have the list of the selected students in May. This year 3 students interested in neutrino physics will spend 4 weeks at the University of Oxford in July to get a preliminary training on Fermilab neutrino experiments.
6. WP6 "Transfer of Knowledge":
 - (a) No significant news were reported
7. WP7 "Management": S. Giovannella reported that the Deliverables and Milestones expected in 2016 were all completed, and gave an overview of the Deliverables and Milestones expected for 2017. Plans and agenda for the Midterm Review and General Meeting planned for May 2017 at INFN Frascati were discussed.

The meeting is closed at 6:30 pm