

690835-MUSE-H2020-MSCA-RISE-2015

Minutes of the MUSE Scientific Board (SB), Monday, October, 24th, 2016 - 5:00 pm (GMT)

Attendees: D. Cauz (Skype, at INFN-TS), R. Chislett (Skype), S. Donati (chair, at INFN-PI), A. Ferrari (Skype, at HZDR), C. Ferrari (Skype, at Fermilab), S. Giovannella (Skype, at INFN-LNF), M. Lancaster (Skype, at UCL), M. Martini (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) **Deliverable 1.4: Tracker DAQ Integration.** The DAQ system for the tracker and the calorimeter have been operational at Fermilab since July. The system has taken several million triggers a day from the two detectors. We expect to have final integration completed within December 2016, which is well in time for the deadline of the Deliverable at M17.

(b) **Deliverable 1.3: Installation and commissioning of straw trackers.** A cosmic test stand with 2 trackers has been running at Fermilab since July with DAQ collecting several million events a day from cosmics and Fe/Sr sources. Tracker production is proceeding well at Liverpool and next detector is expected at Fermilab in the next few weeks. The plan is to establish the first tracker in the ring in November to integrate with ring infrastructure and test the effect on vacuum and magnetic field. Commissioning of system with beam is expected in summer 2017, well in time for the deadline of the Deliverable at M24.

2. WP2 "Mu2e detectors":

(a) M. Lancaster (UCL) reported that the funding proposal is under review by funding body (STFC). Subsequent review is expected in January 2017 news relative to funding allocation in March 2017. Design of the Germanium detector is proceeding and we expect to have it completed ahead of the M27 deadline.

- (b) M. Martini reported on several aspects of the Mu2e calorimeter project. The bids for crystal procurement are in progress: 3 vendors have been selected for pre-production, each vendor will provide 24 pieces for our tests. These pieces will be used for Module-0 assembly. The plan is to have Module-0 ready for the test-beam at the Frascati BTF in early 2017. SiPM pre-production is in progress, we have received SiPM from Hamamatsu, SensL and Advansid and we have to proceed with the tests.

3. WP3 "Calibration":

- (a) C. Ferrari (INFN) reported on the development and assembly of the g-2 laser calibration system. The laser test station has been completed at Fermilab in July and has been used to perform quality control of the optical fiber bundles and of light distribution panels assembled in the last two months. Production of light distribution panels is now almost complete, all quality controls were successful. All the optical components necessary to assemble the laser hut next to the ring have been procured a plan is being developed for the assembly, including the installation of the optical fibers from the laser hut to the calorimeters in the ring. All the components are available.

4. WP4 "Software tools":

- (a) **Deliverable 4.2: Stress test of g-2 analysis framework with 10^{11} simulation muon samples.** R. Chislett (UCL) reported on the status of the stress test of g-2 analysis framework with 10^{11} simulated muon samples. The first MDC0 production with 100 million events has been completed and it has been used for testing, validation and development of analysis algorithms. MDC1 production with 100 billion events is underway, with the several improvements, including the latest version of art, Geant4, and ROOT. Simulation has been validated and production should begin soon. Work is in progress also on a new MDC2 with 100 million events, which includes extra auxiliary detectors (fibre harps) and uses the inflector gun, which allows to fully track the muon orbit. This new sample will be used for studies that require the full muon orbit, for example to study lost muons. We expect the deliverable to be in time for deadline at M12.

5. WP5 "Dissemination and Outreach":

- (a) No significant news were reported
6. WP6 "Transfer of Knowledge":
- (a) No significant news were reported
7. WP7 "Management": S. Donati briefly reported a Summer of the activities of the General Meeting in Pisa in September 2016. Some ideas relative to trainings were discussed, including trainings already offered by each participant Institutions, or trainings on software tools and management already organised at Fermilab. A brief summary was made on the networking activities performed in 2016: neutron irradiation tests at HZDR, exchange activities between INFN and Prisma, and between INFN and Caen. The status of the Secondments of the year 2016 was discussed: Secondments are proceedings according as planned. Also the Deliverables and Milestones planned for 2016 have been completed or are going to be completed according to plans.

The meeting is closed at 6:30 pm