

Mu2e-doc-34759-v1



Managed by Fermi Research Alliance, LLC for the U.S. Department of Energy Office of Science

Mu2e Computing Status

Rob Kutschke, SCD
SCD Projects Meeting
August 6, 2020

Recent News

- DOE Review of Preliminary Experiment Operations Plan
 - Zoom review: May 5 and 6
 - Closeout report very good.
 - Still waiting for final report
- Lots of vacations this month
- Mu2e-II Workshop
 - Discussion of physics goals and hardware plans
 - Developed a plan for code development for Mu2e-II
 - Must continue to benefit from improvements to Mu2e S/W
 - As much as possible make Mu2e-II code run-time pluggable

Recent News

- Upgrade to art v3_06_02 was painful
 - 2 art bug fix releases needed
 - New rpms installed on interactive nodes
 - Done for all experiments.
 - New rpms installed in the grid singularity container
 - Upgraded our grid scripts to choose singularity, using latest container:
 - Default on Fermigrid is still a Docker container.
 - Still need to understand if we need to add configuration to our use POMS
- Preparing Mu2e contribution to HEP/ESnet Requirements Review: Case Study

Recent News

- Preparing to support data from tracker vertical slice test
 - Scheduled for fall 2021
 - First encounter with data for
 - Data handling
 - Conditions system
 - Calibration
 - Alignment

Backup Slides

Upcoming Computing Resource Peaks

- Summer: O(1 Mhour) for marsmu2e radiation safety study
 - Planned for Fermigrid only.
- Late summer and into early calendar 2021:
 - Mock Data Challenge to exercise calibration and alignment
 - Update estimates of physics sensitivity and of backgrounds
 - Planning the two efforts to minimize repeated work
 - CPU estimates in preparation but likely to stay within our FCRSG integral Fermigrid requests for FY2021 and 22.
 - Can run most, maybe all jobs on OSG.
 - Simulations can be run on KNL HPC if available.

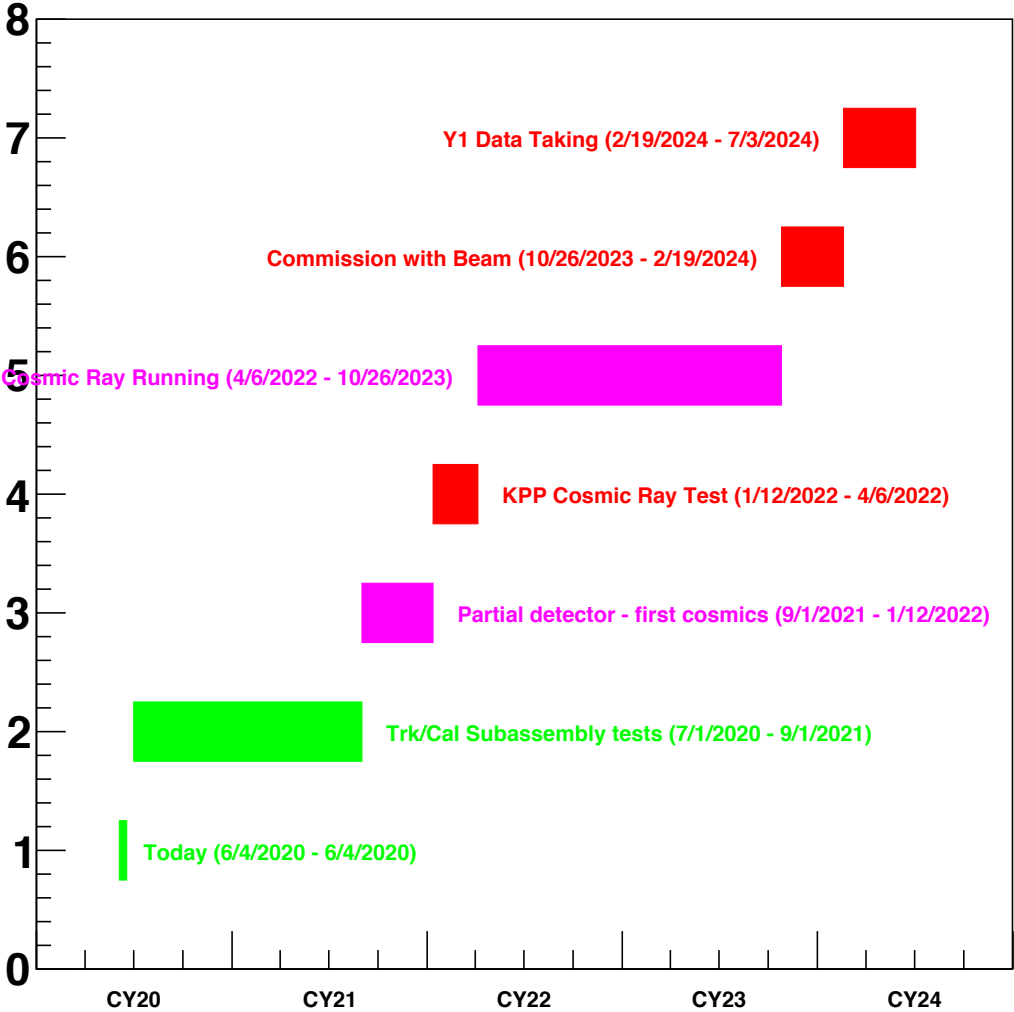
Nothing new this month

Upcoming Work

- MDC2020 Simulation campaign (fall) will be driven by POMS
 - Preparations well underway
 - POMS is a candidate to manage most of our production workflows.
 - I expect we will need discussions with POMS team and perhaps will have some feature requests.
- Offline DQM
 - We understand that SCD is supporting the use of graphana/elasticDB/kibana for DUNE DQM
 - Mu2e would like to do the same
 - Preliminary discussions between Kevin Retzke and Ray Culbertson

Nothing new this month

Pre-Covid Rough Schedule - provided for reference



- Takeaways:
- First cosmic rays: fall 2021
- First beam: fall 2023
- First physics data Feb 2024

Computing Related Working Groups

- Trigger and DAQ
 - Rivera (SCD Project L2), Echenard (Caltech, Coordinator)
 - Other SCD: Flumerfelt
- Computing and Software
 - Co-Coordiators: Kutschke (SCD), Brown (LBL)
- Simulations
 - Co-coordinators: Murat (PPD) and Di Falco (INFN Pisa)

Trigger and DAQ

- Next major step is integrating CRV data with the Tracker and Calorimeter data.
 - CRV team recently completed code to define the raw data format and populated it from simulated events.
- A lot of recent work planning the online/offline handoff with Computing (Kutschke) and Mu2e Ops Management (Rakness).

Computing and Software

- Algorithm Development
 - Trigger, Reco, Calibration, Alignment, DigiSim
 - Cosmic and Beam
 - Mock Data Challenge later this year with focus on Calibration/Alignment.
- Acquire/Configure/Build workflows for Operations
 - Data logging; data processing; DQM
 - Goal is to maximize use of common services.
 - Expect discussions with SCD over the summer
- Infrastructure improvements
 - Last good time for breaking changes in many things is this summer.

Simulations

- Update physics sensitivity and background estimates
 - Many elements in common with Mock Data Challenge.
 - Will coordinate to avoid duplication of effort.
- Validate latest shielding plan (descoped for cost reasons)
 - Radiation safety study (marsmu2e)
 - Performance of CRV (mostly THETA at ANL)