

Software workshop

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SLAC

What we have

- Simulation
 - ▶ SLIC/Geant4 with detector geometry
 - ▶ hps-java readout and trigger sim
- Analysis
 - ▶ hps-java reconstruction
 - ▶ ROOT DSTs
- Monitoring
 - ▶ hps-java online reconstruction and monitoring framework
- Calibration
 - ▶ C++ tools for SVT/APV25
 - ▶ Millepede for SVT alignment (incomplete)
 - ▶ hps-java tools for track-based ECal calibration

What we need

- Simulation
 - ▶ Muon system geometry and readout
 - ▶ Nonuniform B-field
 - ▶ Move to JLab batch system (Auger)
 - ▶ More standard samples, more events
- Analysis
 - ▶ Reconstruction components — Kalman filter for tracks, SVT time fitting with pileup
 - ▶ Event filters and streams
- Monitoring
 - ▶ Decide what to monitor, add UI
 - ▶ Fast low-level monitoring tool?
 - ▶ Event display (Wired?)
- Bookkeeping
 - ▶ Data management
 - ▶ Conditions
- And more

Schedule

- We need a schedule that we can hold ourselves to and use to prioritize tasks
- Let's have a rough schedule ready for the DOE review
- Inputs:
 - ▶ Full list of software milestones, rough dates for each
 - ▶ Identify requirements for each milestone
 - ▶ Major tasks, durations, dependencies

Milestones

- Start of MC production
 - ▶ Full final geometry
 - ▶ Full detector readout simulation
 - ▶ Enough DAQ/trigger description to simulate
 - ★ EVIO description can wait but we need to know what to save in readout
- Working physics analysis
- Working calibration and monitoring
- What else?

Groups, responsibilities, czars

- Software group: Maurik chair, Sho and Omar deputies
 - ▶ ECal subgroup: Sho
 - ▶ SVT subgroup: Omar
 - ▶ Muon subgroup: Sarah
 - ▶ Monitoring subgroup: Jeremy
- Data analysis working group (DAWG): Matt chair, Sarah deputy
- Software release czar: Jeremy
- Detector geometry and sim production czar: Sho

Software subgroups

- Subgroups should organize in the coming weeks
 - ▶ If you want to contribute to a subgroup, let the subgroup leader know!
 - ▶ Subgroups should report lists of projects and milestones at an upcoming software meeting
- Detector subgroups (ECal, SVT, muon) are responsible for MC, reconstruction, calibration and monitoring tasks
 - ▶ Many detector-specific tasks should be done by detector experts with support from software experts
- Monitoring subgroup is responsible for monitoring infrastructure and integrating the monitoring tools for each detector