ND Software Integration Workshop Overview

Mathew Muether

Mathew.Muether@wichita.edu

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- **WELCOME!**

- Thanks to Alan for helping to organize and to the speakers to agreeing to participate on short notice.

- Workshop Goal: Understand status of the software efforts of the MPD, Lar and 3DST and begin planning merging as needed to produce physics output from a full ND simulation suite.

- Slack: #nd_software_integrate

- Do we need a regular meeting for this effort?

Initial thoughts/Questions

- Merging event generation and particle tracking: Need a unifying GEANT4 simulation (single GDML, common physics lists, etc)

- Detector response simulation is independent.

- Reconstruction are independent pieces currently but we consider what level of unification is needed.

- Do we need to included 3DST?

- What about the ND hall?

- What are the needs of the physics groups?

Current Status of ND Software

- Overviews from each system this morning.
- After lunch we will discuss more technical details.
  - Session 3: State of geometries and particle tracking (ND Detectors and Hall)
    - What tools are being used?
    - How final/complete is the geometry?
    - What are the expected timelines for integration?
  - Session 4: Discussion of other ND Software Topics
    - Event Generation
    - Detector Response
    - Reconstruction
    - What level and what form of integration is needed?

Common Toolsets

- As we move towards an integrated ND software suite it will be helpful to document and distribute common tools.

- Mike Kordosky pointed me to: https://cdcvs.fnal.gov/redmine/projects/dune-neardet-design/wiki/DUNE_NearDet_Design

- Are there other similar resourse? Is anything missing/old news?

- What is the timeline for integration?
  - What do the physics groups need and when?
    - This will be the focus of session 2.
  - What's the critical ND Design work for each system and is it at the stage that integration makes sense?
  - What resources are needed and available?
  - Are there bigger picture DUNE computing decisions that might alter the timetable?

Computing Framework/Needs

- What are the data processing/handling/database/storage/framework need for the ND group and how does this fit into the integration effort?

- Computing Interface Document: https://docs.dunescience.org/cgi-bin/sso/ShowDocument?docid=15238

- DUNE computing workshop to discuss the Data Model for DUNE
    - BNL Aug 14-16
    - https://indico.fnal.gov/event/21160/overview
    - Request to cover the ND software/computing needs.

Thanks!

Questions? Comments.