Simulations/Reconstruction Communications with Scientific Computing

Two meetings –

- Friday, Nov. 2, with Computing Division representatives and LBNE managers
  - Liquid Argon software strategy meeting

- Monday, Nov. 5 with Lab, Computing, and Intensity Frontier representatives
  - Intensity Frontier computing needs and discussions of collaboration needs and how to meet them

A bit of overlap in topics -- especially offsite access to computing resources and help getting plugged in.

Liquid Argon Strategy Meeting

- Expression of interest in helping us with software and computing issues
  - GEANT4 help
    - Geometry
    - Physics lists
  - Accounts and getting started – streamlining, better documentation. Web pages are written "for experts"
  - Eileen to help with account access issues.

- We expressed that we already have CD help
  - ART
  - NuSoft
  - Infrastructure – computing, storage, and access

- And that we already have interfaces to geometry and physics lists within LArSoft, which is shared by the liquid argon initiatives at Fermilab. The to-do items are to use LArSoft for LBNE: Geometry, and LBNE-specific reconstruction needs.

Communication between LArSoft conveners, stakeholders, and Scientific Computing to see how we can best make use of capabilities in the Computing Division

LBNE needs to name an Offline Coordinator

Intensity Frontier Stakeholders Meeting

- Young-Kee Kim, Rob Roser, and Intensity Frontier spokespeople and other representatives present

- Rob Roser. Feedback from the trenches
  - Account creation and resource access is clumsy. Not all ssh clients work. Getting accounts set up usually takes several days and requires expert intervention.
  - Hard to test remote access from onsite.
  - Hard to run software on non-SLF platforms
  - Budget process communication could be better
  - Debugging and profiling tools could be better
  - Documentation could be improved
  - Lead times are long so difficult to get student/postdoc involvement. Can get this, but usually part time while the person also gets data on another experiment.
  - DOE discourages senior researchers.
  - Faculty are not expert in modern HEP tools (C++, Java, Root, etc).

  - Account creation being streamlined – timescale several months

  Posting scientific hires to help efforts (PD and AS). Possibly a technical writer

A Call for Feedback for a proposed Software School from Steve Brice

Dear Intensity Frontier Spokesperson,
Many of you attended a meeting this morning where
we floated the idea of having an Intensity Frontier Software School
probably early summer 2013. This would be a multiday workshop/school
whose exact format is yet to be determined and whose goal is to help
collaborators in intensity frontier experiments learn and use the software
tools that the lab supports for IF experiments.

I'd like to ensure that this workshop/school is well matched to the needs
of the collaborations and so I would like you to poll your young people to
identify what are the issues they have with the simulation and analysis software
tools. Please then feed this information back to me. If you could do this before
Friday October 26 then I can ensure that the feedback from your experiment is
incorporated into our plans.

Thanks, Steve

Example Feedback

Can we add to this list?

Users need help with (unsorted list)

- C++ (C++2011) and Art-focused C++
- Standards and best practices
- Dealing with compiler, linker, and runtime errors
- Art suite
- How to get help
- Code development tools (git, svn, cvs, srt, build systems)
- profiling and debugging tools
- Batch and Grid tools
- Sam and data handling
- databases
- LArSoft
- numerical methods
- Geant4
- Scripting languages (shell scripting, python, etc.)

Some discussion – Users have a variety of experience levels. Many need introduction to programming, or at least some practice. Discussion seemed to agree on a software school not being a C++ school but instead should have minimal prerequisites. Opportunity for homework assignments assigned online before the school.