LArSoft Coordination Meeting

Release and project report

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Today's agenda and speakers

- Release and project report (Erica)

  - PtrMaker (Saba Sehrish)

- Generator output from root trees (Leigh Whitehead)

- A new GDML generation framework (Kevin Wierman)

- Parallelizing LArSoft using MPI and OMP (Eric Church)

- Interface / access to calibration database (Brandon Eberly)

- Changes in accessing `art::Assns` with metadata (Gianluca Petrillo)

- AOB

Releases

- **Last week**

  - v06_16_00 released on Nov 30

    - LArSeedService in larsim replaced by NuRandomService in nutools

      - This is a breaking change!!
      - Exactly the same functionality / interface, as discussed at previous CM

- **This week**

  - New GENIE version is 2.12.2 expected soon

    - Bug fixes we believe + possibly breaking changes (??)
    - Should we include this right away?? (might be next week)

  - Develop + Things from this meeting…

Schedules

- Holiday release schedule

  - Plan to have a release the week of Dec 19

  - No release the week of Dec 26

- LArSoft Coordination Meeting schedule

  - Will meet on Dec 20

  - No Coordination Meeting on Jan 3, 2017

Impromptu poll:

How do people feel about moving to weekly, 1 hr meetings?

Handling of `genie_xsec` product

- GENIE uses cross section splines

  - Spline files provided by `genie_xsec` product

  - Particular splines needed depends upon run-time (fcl) GENIE configuration

- When you set up version of LArSoft, you also get:

  - A particular version of GENIE

  - A particular version of `genie_xsec`

- This is a potential problem

  - The run-time configuration is specified in fcl, so is stored in the output file

  - But nothing in configuration of environment is saved or controllable by fcl

- Bottom line

  - **Cannot ensure consistency** between configuration (fcl) and splines (ups)

  - **Cannot tell by looking at the output** file whether they are consistent

Handling of `genie_xsec` product

- **MicroBooNE has noted this problem**

  - Is developing a "local" solution

- **The question here**

  - Should the community push for a solution?

  - LArSoft can assist with developing a generalizable approach

Comments?

- **LArSoft proposes the following immediate change**

  - **Remove automatic setup of genie_xsec and genie_phyopt** when setting up LArSoft

    - Would recommend experiments also avoid setting it up by default

  - Would require generator jobs to specify it explicitly along with fcl file

Comments?

Multiple GENIE versions

- Meet a few weeks ago to discuss a request to allow multiple GENIE versions for a given version of LArSoft

- After discussion with experts, concluded this *will* be required to evaluate systematic uncertainties

- Two technical approaches

  - Run GENIE in a stand-alone mode

    - Easy, but adds a step / file format conversion to the workflow and bookkeeping

  - Completely decouple GENIE from LArSoft

    - Can make it such that the GENIE version is a run-time choice

    - Requires re-factoring nutools, which needs broad agreement with the problem / solution

- Absent objections, will try to pursue second solution
  (Assume the first option is a given in the interim...)

Other changes

- PlaneGeo::SignalType()

  - This was deprecated about a month ago

  - **Propose removing it** from the code

- canvas product dependencies

  - Currently there are **three libraries within canvas**

  - *art* team **proposes merging these into one**,

    - This will simplify build configuration

  - LArSoft intends to support this change

Any comments, objections?

Track interface / design

- A long thread recently on larsoft list about interface to track

- Many of the issues, problems, trade-offs have in some form been discussed before

  - See for ex: https://indico.fnal.gov/conferenceDisplay.py?confId=13448

- Eventually decided to table the discussion for the time being

- Are now picking this up again as follow-on to Kalman fitter work

  - Need to address various problems in the track interface

    - access to full set of fit results
    - easier access to all types of associated data

Status of on-going sub-projects

- LArG4 re-factoring project

  - Hans Wenzel

- CI system operations

  - Vito di Benedetto

- Usability: associations

  - Saba Sehrish

- Profiling and optimization project

  - No report this week

- LArSoft documentation

  - Katherine Lato

The end