LArSoft Coordination Meeting

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Today's agenda and speakers

- Release and project report (Erica)

- Changes to photon reconstruction (Gleb Sinev)

- Changes to EMShower (Mike Wallbank – TBC)

- Modules to measure track and shower efficiencies (Aaron Higuera)

- AOB

Releases

- **Last two weeks**

  - First v05 release: v05_00_02 on Feb 16

  - v05_01_00: Feb 19

    - New GENIE: 2.10.4

      - Had a problem...

  - v05_01_01: Feb 24

    - Fixed the new GENIE: 2.10.4a

  - v05_01_02: Mar 2

    - Changes to single IOV detector pedestal and channel status providers

      - Allows reading from CSV file instead of DB, implementing a feature already in interface

- **This week**

  - Working on GEANT4 v10 migration

GEANT4 v10 migration

- Have a build with v10

    - Tests all ran

    - Still need some fcl changes before we can cut a release candidate

    - Could not create a build that worked for both v9 and v10

        - Will need to have dual releases for comparison / validation

- The process from here

    - Will create a release this week with necessary changes / new code

        - v05_02_00

    - Will create a release candidate immediately afterward for v10 validation

        - v05_03_00_rc1 from v05_02_00 + GEANT4 v10

        - Create RC's as needed based following from v05_03_00_rc1

    - Release v05_nn_00 whenever v10 validation is completed

GEANT4 v10 migration

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- Th

  - code

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    - v05_03_00_rc1 from v05_02_00 + GEANT4 v10

    - Create RC's as needed based following from v05_03_00_rc1

  - Release v05_nn_00 whenever v10 validation is completed

> Need experiments to validate v10 in v05_03_00_rc1, ...
>
> Positive sign-off on v10 will be required before full release
>
> Can this happen in time for release next week??

GEANT4 v10 migration

- One more issue: physics lists

    - We are using QGSP_BERT in v9

    - Previously reported that this list would be removed from v10 – Not True!!

    - From the release notes:

        - "*Physics lists that used LEP in a restricted energy range have been retained but revised: LEP has now been replaced by Fritiof and/or Bertini models. Typical of this case was the use of LEP modes to bridge the gap between QGS and the intra-nuclear cascade model, in particular over the region of 9.5-25 GeV in QGSP_BERT which was replaced by use of the FTF/Fritiof model.*"

    - Will not matter for BNB, but might in tails for NUMI and LBNF (?)

    - Raises the more general question

        - Do we need to re-examine what we are using and why we are using it?

        (Answer of course might be "no"…)

Major changes

- Status of major changes

  - v05 (completed)

  - GENIE upgrade to v2.10.4 (completed)

  - GEANT4.10 upgrade (in progress)

    - Target next week or the week after

  - Migrate to root 6 (completion target: the end of March)

    - art v1.18 (a change from the last time we talked about this)

    - No art / nutools repository re-structuring

  - Repository restructuring (completion target: the end of March?)

    - Separate parts of larcore, lardata and larsim that will be shared with LArLite

      - LArSoft / LArLite integration work will be waiting for this split

    - art v1.19

      - Repository splits in art and nutools

Proposed breaking change for recob::Track

- **Proposal**

    - To move methods

        - recob::Track::ProjectedLength

        - recob::Track::PitchInView

      to new class / method in RecoAlg library

    - Would retain same signature, except now taking a recob::Track const pointer as a new argument

- **Motivation for the change**

    - To remove the use of art services from recob::Track

        - As currently written, requires direct access to art framework, so is not compatible with, e.g., LArSoft / LArLite integration

- **Impact**

    - A breaking change that cannot be entirely fixed in automated way

Status of on-going sub-projects

- Usability project report

    - No update this week

- CI system operations

    - Vito di Benedetto

- LArLite integration project

    - Will have status update at next meeting

- Profiling and optimization project

    - No update this week

- Common document repository

    - No update this week

The end

LArSoft Workshop

- Will have a LArSoft Workshop on "usability" issues

  - Includes all aspects of using the code

    - Building

    - Installing / porting

    - Interfaces

    - Learning / documentation

- Will come immediately after the FIFE workshop (like last year)

  - Tentatively scheduled for Wednesday, June 22

    - The week after the Fermilab User's Meeting

Send ideas, comments, suggestions, complaints to erica@fnal and ruth@fnal.gov