LArSoft Coordination Meeting

Release and project report

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on behalf of
the SciSoft team
Fermilab

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Today's agenda and speakers

- Release and project report (Erica)

- (Reprise) Proposed changes to recob::Hit (Erica)

- Hit reconstruction issue (Anselmo Meregaglia)

- AOB

Releases

- Summary of changes from Mar 5 to Apr 2 LCM

  - Migrated to *art* 3.14.04 + ROOT v6.28.10b with v09_86_00

  - New geometry release candidate (RC1) using *art* 3.14.04 and ROOT v6.28.10b

  - Updated to ROOT 6.28.12 to address bug in v6.28.10b

  - Updates to ML code in `larrecodnn` and `larpandoracontent`

Releases

- Since Apr 2 LCM:

  - v09_89_00 released Apr 2

    - New features / updates
      - [LArSoft/larsim#133](#)
        - *Update* MCReco *to use* MCParticle *instead of* MCParticleLite
        - *Follow-on to* [LArSoft/larg4#52](#) *the disabled storing of* MCParticleLite
      - [LArSoft/larsim#134](#)
        - *Replace the* fast_acos *function with one that is faster and more precise*
        - *See talk by Marc Paterno at* [the March 5, 2024 LCM](#)

Releases

- Since Apr 2 LCM:

    - v09_89_01 released Apr 10

        - New features / updates
            - LArSoft/larsim#136
                - *Add option to* MUSUN generator *to rotate coord system to match detector coord system*
            - LArSoft/larsim#137: Update Default dropped particle list to match default `larg4` output

        - Bug fixes
            - LArSoft/larpandoracontent#64: v04_08_01 removes Eigen dependency from previous PR
                - *Will not alter the products for any experiment.*
            - LArSoft/lareventdisplay#22: Revert to deprecated `cet_rootcint()`
                - *See https://cdcvs.fnal.gov/redmine/issues/28702*
                - *Also reverted* `nuevdb`

Status of PRs

- **Under discussion**

    - [larsim#135](#): Add automatic voxelization option to $\mathrm{PhotonVisibilityService}$
        - Sent suggestions to author
        - Have requested an LCM presentation

    - [larwirecel#44](#): (opened Jan 17)
        - Enable multiple signal response simulation across YZ-plane

- **No approvals in progress**

    There will be no release this week

Status of coming updates (updated since Mar 5, 2024 LCM)

- ***art v3.14.04* completed with v09_88_00**
  - Notes
    - Migrated to root 6.28.12

    - New Triton (v2_25_0d), TensorFlow (v2_15_0), libtorch (v2_1_1b)
    - New Eigen (v23_08_01_66e8f)
    - New version of clang-format (15)
      - Expect small differences in many files due to version change
      - LArSoft clang-format configuration is unchanged
    - Upgrade to **cetmodules 3.24.01 is required**

Status of coming updates (updated since Mar 5, 2024 LCM)

- **Geometry refactoring**

  - Current release candidate v10_00_00rc1 based on v09_86_00 + art 3.14.04

  - Feature branches / PRs needed to update experiment code are available
    - See [Release and Project Report, page 6, at Dec 12 LCM](#) for v10_00_00rc0
    - Should work for v10_00_00rc1. If not, contact scisoft-team@fnal.gov

  - Final presentation on the new system at the [Feb 20 LCM](#)

  - Experiments formally asked on Feb 27 to validate new geometry system
  - **Requested sign-off or validation plans by Tues, March 12. (!!)**

  - Reminder sent out Fri, March 29.
  - **Please let us know!!**

Status of coming updates (no update since Mar 5, 2024 LCM)

- **Geant4**

    - Plan to build LArSoft release candidate with Geant v4_11_2_p01
        - The most recent production version recommended by Geant4 group

    - Will require experiment sign-off prior to migration

    Please email scisoft-team@fnal.gov with any problems or concerns

Status of coming updates (no update since Mar 5, 2024 LCM)

- **Spack**
  - Current plan:
    - Migration to spack-based builds and development before SL7 EOL
    - SL7 build machines scheduled to shut-down mid-May
    - Decided: Containers can be used for code that requires UPS under SL7
    - Firm: No plan to support UPS under AL9.

  - Have Spack builds of LArSoft v09.81.00 under AL9 and SL7
    - To set up in AL9
      ```
      source /cvmfs/larsoft.opensciencegrid.org/spack-packages/setup-env.sh
      spack load larsoft/e3ryycs
      ```

    - To set up in SL7:
      ```
      source /cvmfs/larsoft.opensciencegrid.org/spack-packages/setup-env.sh
      spack load larsoft/2vibnrv
      ```

  - More information on model for developing under Spack coming soon.

The end