

LArSoft Coordination Meeting

Release and project report

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Fermilab

December 5, 2017

Today's agenda and speakers

- Release and project report (Erica)
- Changes to recob::Vertex (Giuseppe Cerati) [*schedule change*]
- Preliminary profiling results of LArSoft/ProtoDUNE (Soon Yung Jun)
- LArSoft vectorization tests (Guilherme Lima)
- New features in LArPandoraContent (Andrew Smith)

Releases

- Last week
 - v06_58_00 released on Nov 29
 - BackTracker service redesign - **breaking change**
 - Required changes to argoneutcode, dunetpc, sbndcode, uboonecode are in feature/JStock_BackTrackerintegratedUpdate branch
 - ifdhc v2_2_2
 - **v2_2_1 included in v06_57_00 is not recommended**
 - *Did not include art v2_09_02 as previously planned*
- This week
 - Code management is temporarily unavailable
 - Will announce intentions soon
 - Not ready for art v2.09.02 this week either
 - Will likely go straight to v2.09.03 to pick up an important bug fix

Repositories for art-independent code

- Have created a few repositories for art-independent code
 - larcorealg, lardataobj, lardataalg, etc.
 - Need a clear general policy for the expanding set of code shared between LArSoft, gallery, LArLite, other external frameworks / environments

Repositories for art-independent code

- Policy for handling art-independent LArSoft code
 - Code can depend on
 - canvas
 - message_facility
 - fhiclcpp
 - Repository names
 - Will end in “alg”, or “obj” (for those with data products)
 - Will continue to reflect functional area to which the code pertains
 - e.g., larreco (art dependent) → larrecoalg (art independent)
 - Exceptions from existing name roots allowed when clarity demands
 - External product dependencies will be isolated to interface repositories
 - Can depend on other lar*obj/alg repositories + the external product
 - No other lar* repository should depend on the external product
 - e.g., larpandora, larwirecell

Repositories for art-independent code

- Changes needed to make existing code available in gallery, etc
 - Service providers
 - DetectorClocks,
 - DetectorProperties, LArProperties,
 - Pedestal, channel status, electronics calibration, PMT gain providers
 - DetPedestalRetrievalAlg, SIOVChannelStatusProvider, SIOVElectronicsCalibProvider, SIOVPmtGainProvider
 - Space charge correction
 - Electron lifetime
 - BackTracker
 - Will probably move to lardataalg
 - Functions / tools for electron transport
 - Will go into larsimalg when ready

Track / vertex revision deployment plan

- Changes aimed at making these usable for physics
 - Primarily via adding fit information, transparent navigation of associations via proxy classes, introducing TrackTrajectory
 - Making details of content, organization independent of producer

Will require removing some constructors

- The plan
 - Short term:
 - Remove TVector3 from Track interface, retain legacy interface / constructors
 - I.e, allow legacy track creation, ignore Track vs TrackTrajectory distinction initially
 - Adapt existing producers to follow content, organizational conventions
 - Promote the use of proxies to access hits, clusters, other associated data
 - Longer term
 - Remove legacy interfaces and constructors for LArSoft v07
 - NOTE: this breaks backwards compatibility!! Will need methods to bring data forward.
 - This change becomes easier once use of fitted tracks / vertices becomes widespread

Genie work

- Simulating nuclear recoils produced by Genie
 - Geant4 / LArG4 currently does not
 - Facilitated a meeting between Genie, Geant4 MicroBooNE, LArSoft
 - The experts worked out short term (temporary) and long term (permanent) plans to fix this
 - Will hear details about this at a later meeting

The end