Notes from Session 1 Topic 3 - Bruce Baller

Any DAQ event will be detector specific so it is difficult to specify what is expected of it. There are LArSoft products that can be filled.

Ideally there should be a requirement for providing a mechanism for handling data from auxiliary detector systems, e.g. a external muon tagging system, to experiment-specific reconstruction modules that may reside within LArSoft. There wouldn’t be a LArSoft data product to encapsulate this information however. Lots of questions here – at what stage is this handled? With what mechanism?

Calibration is another auxiliary system. Discussion about how information from one experiment is put into LArSoft. Example is ArgoNeuT paper on recombination that describes a new recombination model. This model was coded into LArSoft so that it can be used by other experiments via a fcl parameter. There is no obvious requirement that comes from this process however.

Discussion about the need to handle calibration factors that are extremely stable and could be put in a fcl file, that vary from run to run (in a database) or may vary event to event (put in the data stream). The mechanism for entering calibrations constants may vary from manual entry, semi-automatic or fully automatic database uploads.

The analysis people need to have a stable and well-understood reconstruction. Any turn-around between analysis and reconstruction would require a re-validation of the reconstruction. This would be a time intensive process.

Discussion about why LArLite exists – due to deficiencies of LArSoft for instance long build times. A choice between people spending time fixing LArSoft vs developing a different platform. There is now a large LArLite user community and it is being supported by SCD. The user shouldn’t have to wend their way through associations from tracks 🡪 clusters 🡪 hits and know the process names that created these products. LarLite does this but LArSoft doesn’t.

Need a standard definition of each data product.