AIDA Tracking WP Overview

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AIDA – Tracking WP

- Biggest single software issue for ILD
- DBD↔AIDA – differences in time frame
- For both the ILD DBD and CLIC CDR, we need to maintain a somewhat practical approach

Work So Far

- Started by looking at generic tracking packages available:
  - Kaltest
  - Atlas Tracking
  - GenFit
- While they are certainly all well written: as they are, none of them really fits the bill, mainly due to external dependencies
- Take the best of these as a starting point…

Framework

- To move forward with ILCSoft, we need to make a Kalman Filter easily accessible and familiar to everybody using Marlin
- currently two initial implementations exist
  - Kaltest – Li Bo and Keisuke
  - GenFit – Andreas Moll

- For the AIDA WP we first need to establish a set of abstract interfaces for people to work with
- Thus ensuring freedom of implementation whilst protecting against the inherent problems of software dependency

Event Data Model

- Started to put down some criteria for creating a more extensive tracking EDM
  - The tracking framework will need a non persistent tracking model to work with (The tracking EDM in LCIO is not applicable here)
  - support for 1D, 2D, and 3D position measurements
  - hits need a close coupling with their measurement surface, which themselves need to be fleshed out
  - extended track classes for different track models
  - some form of hit association collection for use during patrec – convenient for adding and removing hits, with some form of intelligent ownership awareness

Next Steps

- Establish a Working Group to coordinate the effort within the AIDA WP – happy to see the number of people working on tracking has increased
- As not of all these will be working directly on the AIDA project, we must maintain an efficient work flow exchange between the detector groups and avoid duplication of effort
- Obviously it goes without saying that it is imperative to work extremely closely with the geometry project