Software update

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LCDG4 Status

- New version v03-20 released:
  - Upgrade to Geant4.7.0.p01
    - several minor fixes to physics processes, including EM-standard, EM-low and multiple scattering
    - hadronic physics lists are now part of distribution
    - new classes G4UnknownParticle and G4UnknownDecay
    - New solids G4TwistedBox and G4TwistedTrap
    - New features of GPS (General Particle Source)
    - a few interface changes
  - Jeremy: small fixes to produce good *heprep* files
  - Fixes to decay hierarchy from generator:
    (Ronan) Pythia output contains non-DOCUMENTATION daughters with identical DOC parents. Fix is to identify and eliminate the redundancy.

LCDG4: things to do

- Compare single-particle distributions with v03-18, last version based on G4.6.2.p01 (use this for LCWS in two weeks)
- V03-21 under tests
  - New ILC-oriented physics list: LCPhys
  - Shenjian's updates (more capabilities from XML files)

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- Post-LCWS:
  - Non-projective endcaps (Norman)
  - LCDG4 port to latest compiler version (g++ 3.4) is pending on xerces-c++
  - Simpler MC particle handling (could be used in SLIC)

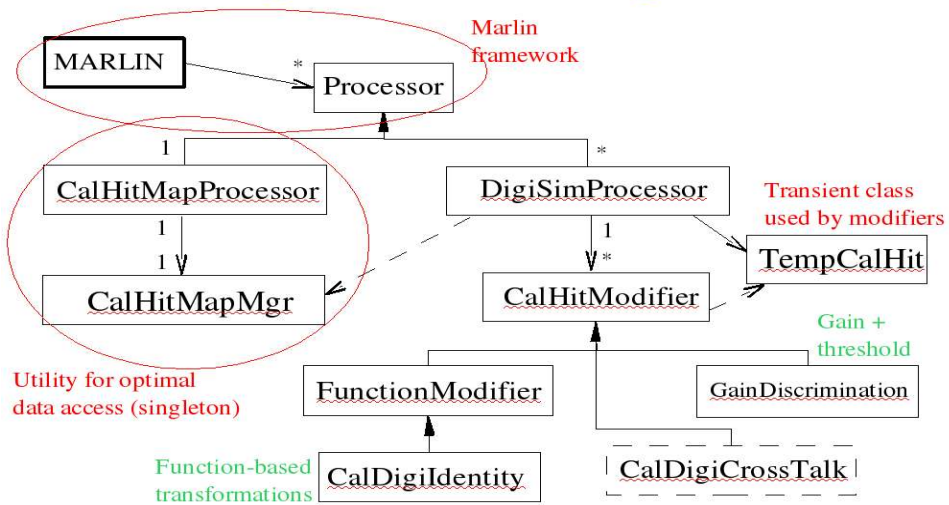
Interface to (pre-)clusters

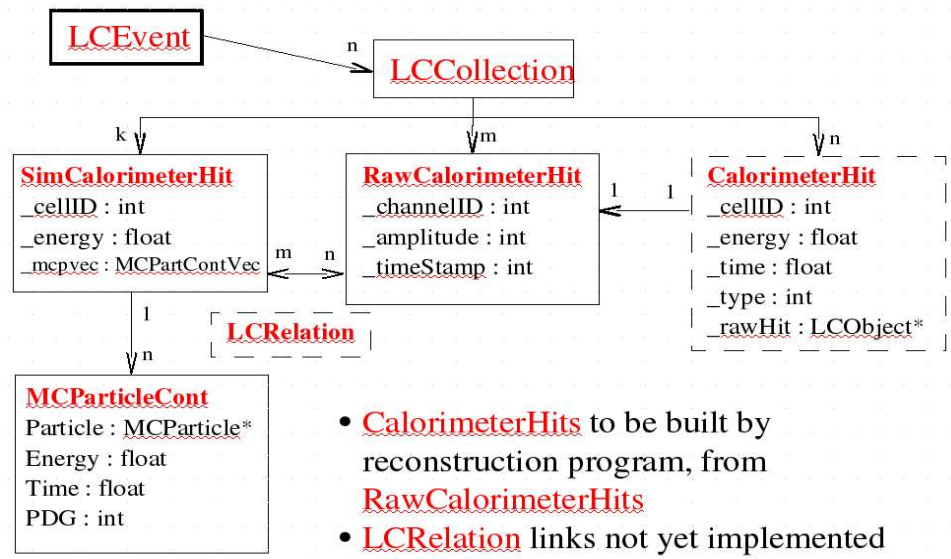
- Options:
  - Design our own (under tests when gone for vacations)
  - Norman: use an existing interface from hep.lcd
  - Last Monday: use Cluster interface from LCIO library
    it allows for clusters to be a collection of hits and/or other (pre-)clusters
- Question: how to save info about the clustering algorithm used?
  - Data field in ClusterCollection class
  - Name of cluster collection appended to the event
- What's the goal for LCWS?

DigiSim Status

- No updates since winter CALICE meeting
- For spring meeting and LCWS:
  - Could add real gain, discrimination and saturation soon
  - LCRelations and cross-talk modifiers to be added

DigiSim class diagrams





- CalorimeterHits to be built by reconstruction program, from RawCalorimeterHits
- LCRelation links not yet implemented

For Calice and LCWS

- LCDG4
  - status
  - Geant4 7.0 vs 6.2
  - plans
  - LCPhys vs. LHEP?
  - confusion analysis?
- DigiSim
  - Status (LCRelations? x-talk?)
  - Effects on single particles? physics events? (No PFA)
  - plans