

Digi EDM Proposal | Raw HGC/CALOROC Hit

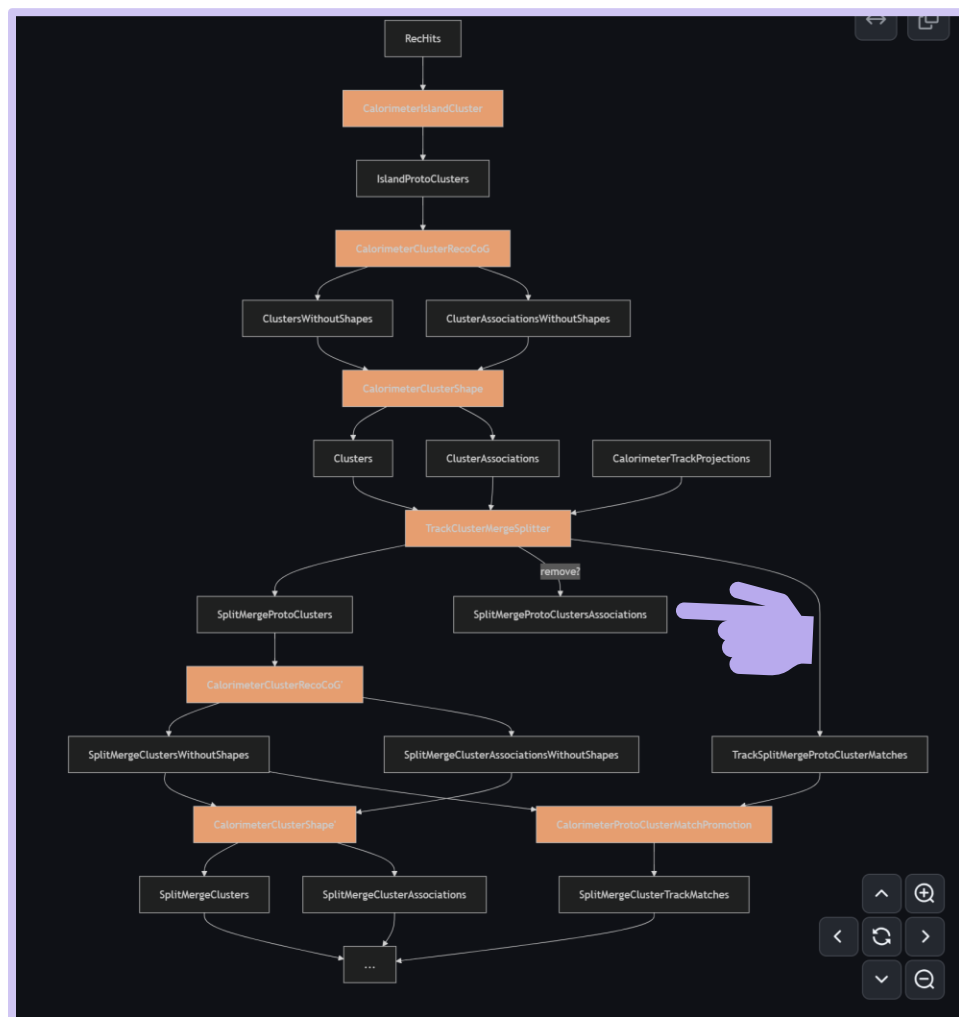


```
248 + edm4eic::RawCALOROCHit:
249 +   Description: "Raw hit from a CALOROC/HGCROC chip"
250 +   Author: "D. Anderson, S. Joosten, N. Novitzky"
251 +   Members:
252 +     - uint32_t type           // Chip type, 0 - type 1A, 1 - type 1B
253 +     - uint64_t cellID        // Detector specific (geometrical) cell id
254 +     - int32_t samplePhase    // Phase of samples in [# samples], for synchronizing across chips
255 +     - int32_t timeStamp      // [TDC counts]
256 +   VectorMembers:
257 +     - uint32_t amplitude      // Iff type == 0, amplitudes of waveforms are stored here [ADC counts]
258 +     - uint32_t lowGainAmplitude // Iff type == 1, low gain amplitudes of waveforms are stored here [ADC counts]
259 +     - uint32_t highGainAmplitude // Iff type == 1, high gain amplitudes of waveforms are stored here [ADC counts]
260 +     - int32_t timeOfArrival    // Calculated times of arrival [TDC counts]
261 +     - int32_t timeOverThreshold // Calculated times over threshold [TDC counts]
262 +   ExtraCode:
263 +     declaration: "
264 +       bool isType1A() const {return getType() == 0;}\n
265 +       bool isType1B() const {return getType() == 1;}\n
266 +     "
```

- [edm4eic#101](#): adds raw hit from HGC/CALOROC chip
 - Conversation seems to have converged!
- **For discussion:** possible change before merge
 - **Change amplitudes from vectors to array + template no. of samples**
 - Is this supported by our PODIO version?
Any examples?



PF EDM Proposal | ProtoCluster-Track Match



- **PFAO:** currently working on updating TrackClusterMergeSplitter algorithm in [EICrecon#1699](#)
 - ☞ Necessary to update it somehow st. connections b/n tracks and merged/split clusters propagated downstream
- **Initial idea:** ingest clusters, output clusters + track-cluster matches
 - Required duplicating large chunks of ClusterRecoCoG algorithm
 - › Was attempting to make reconstructed merged/split clusters consistent
 - Dima had much better proposal: **ingest clusters, output protoclusters** (see diagram to left)
 - › But this needs a data model change to propagate track-cluster information...

PF EDM Proposal | ProtoCluster-Track Match



```
edm4eic::TrackClusterMatch:  
  Description: "Match between a ProtoCluster and a Track"  
  Author: "D. Kalinkin, D. Anderson"  
  Members:  
    - float weight // weight of this association  
  OneToOneRelations:  
    - edm4eic::ProtoCluster protocluster // reference to the protocluster  
    - edm4eic::Track track // reference to the track
```

- **Above:** proposal for protocluster-track match, [EDM4eic#108](#)
 - Would be accompanied by a “promotion” algorithm to copy protocluster-track matches to relevant cluster-track matches
- **Alternative:** could be to use clusters everywhere instead of protoclusters...
 - But that would require updating several algorithms...