

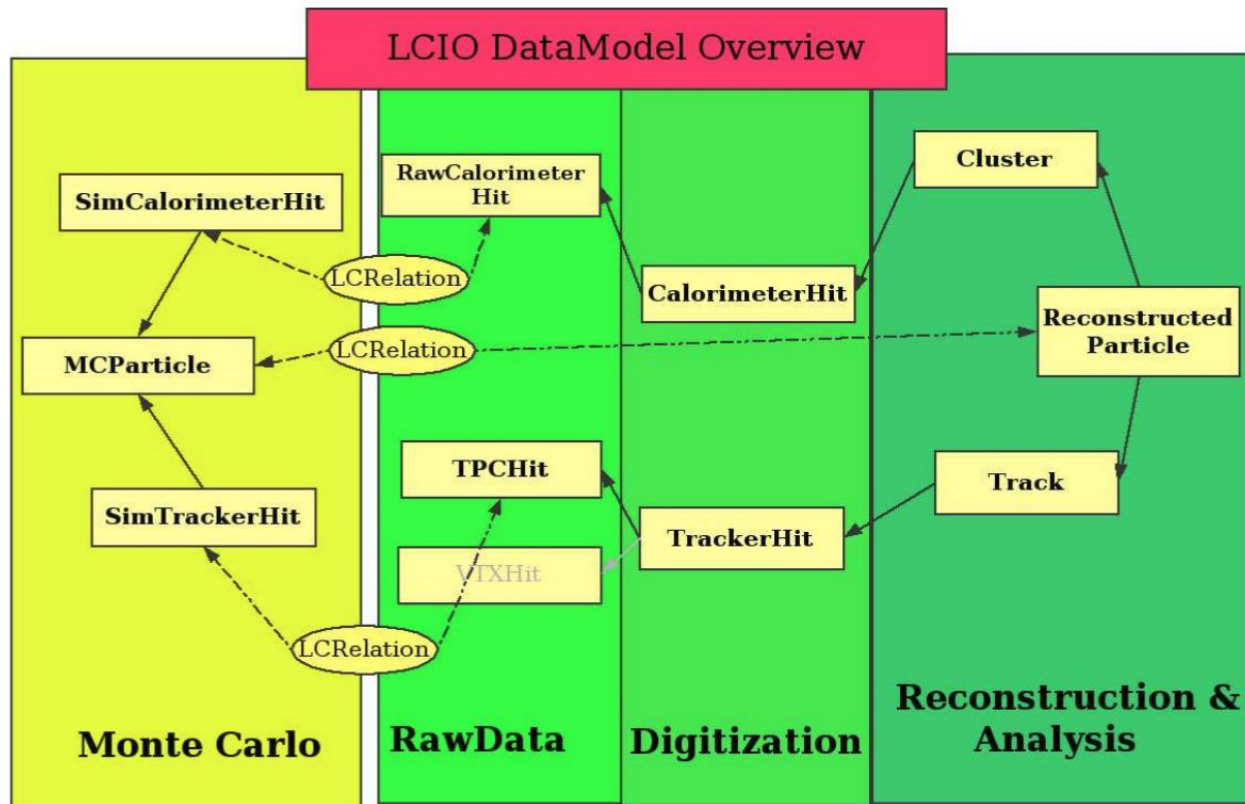
# EDM4hep 2020 Update

EDM4hep Discussion - Thursday 23.01.2020  
Valentin Volkl (CERN)

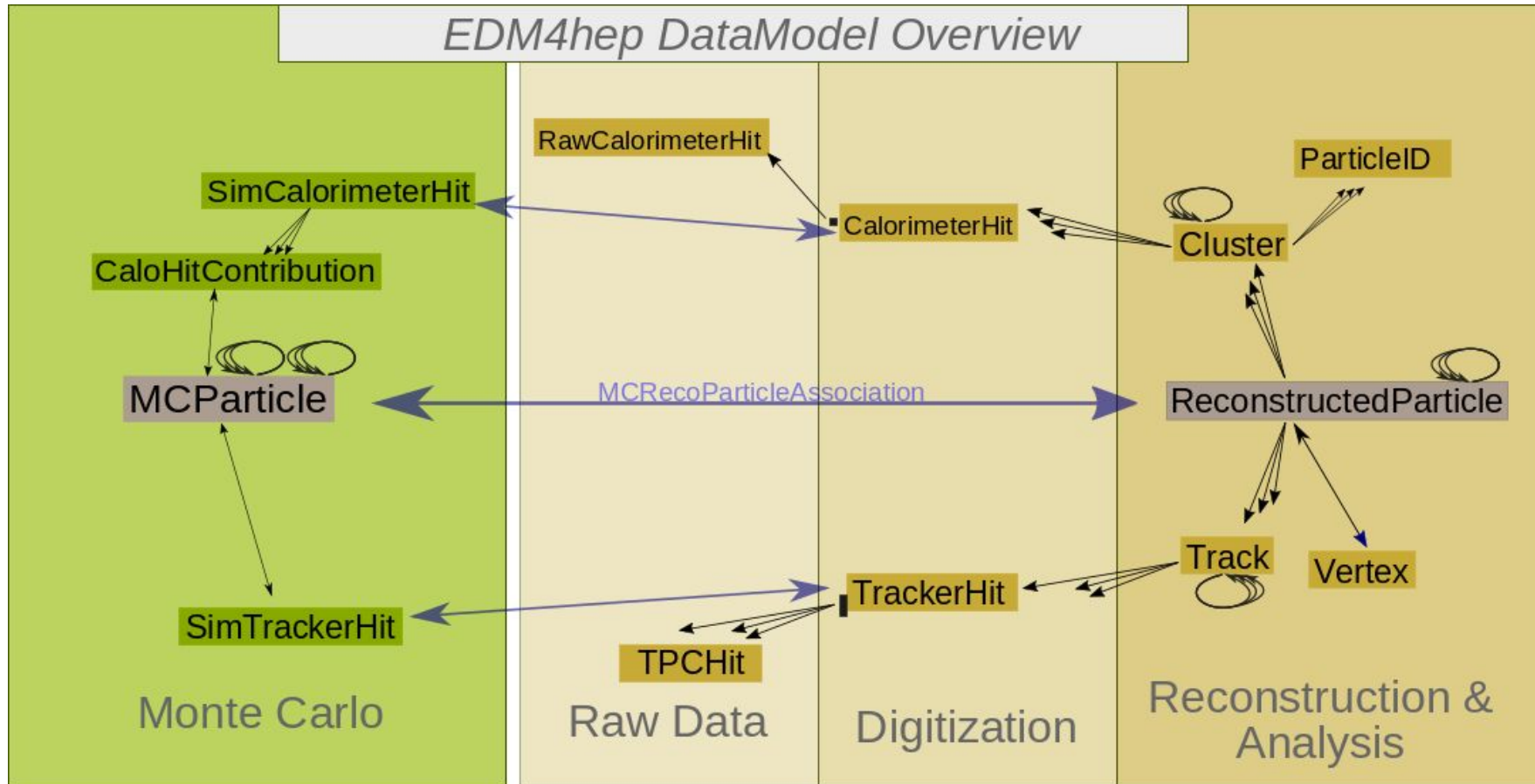
# Objectives for Start of 2020

- Without context it is hard to reason about individual types
- Progress quickly towards a usable “alpha” version
- Make a plan for

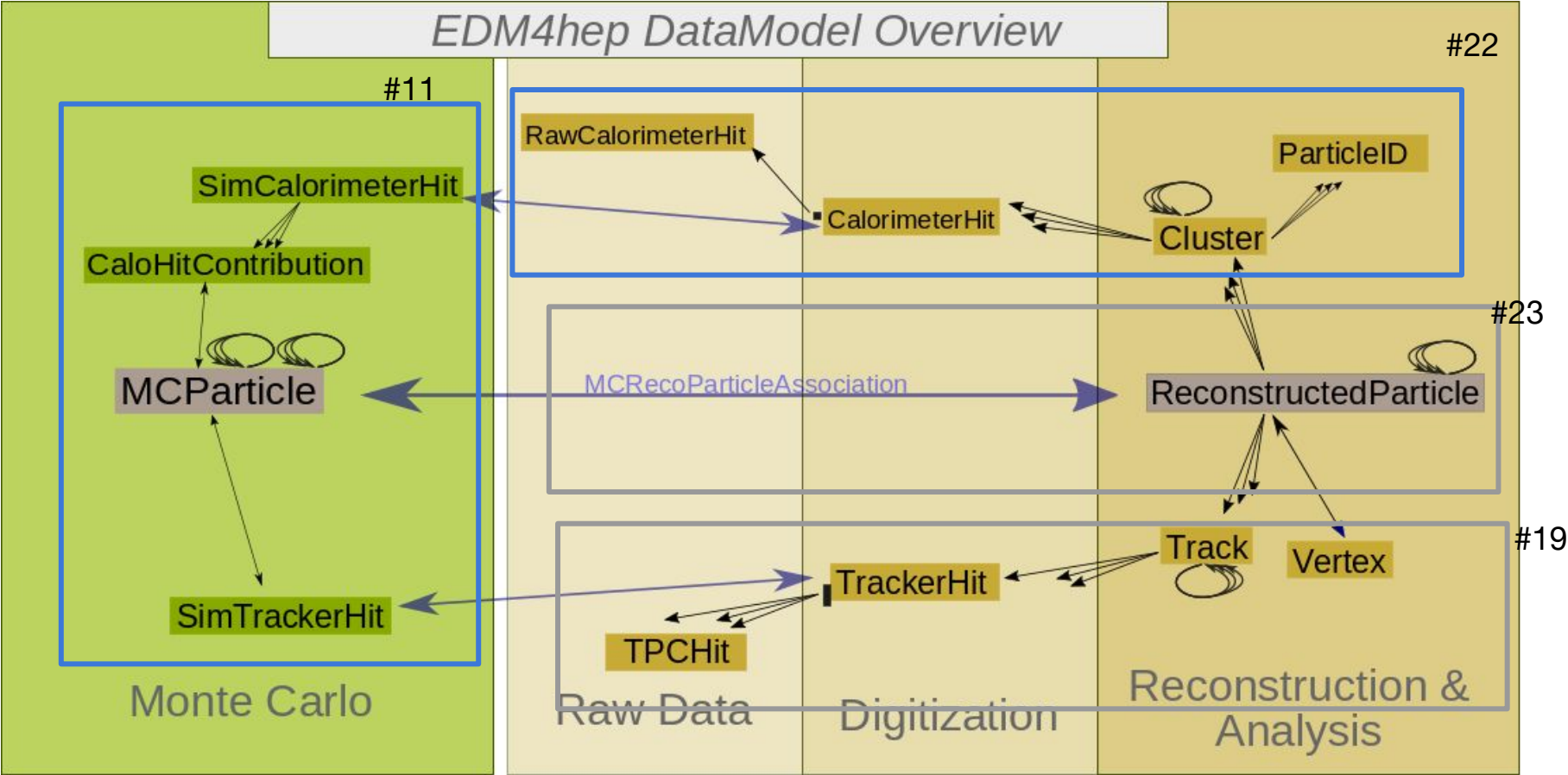
# A look at references



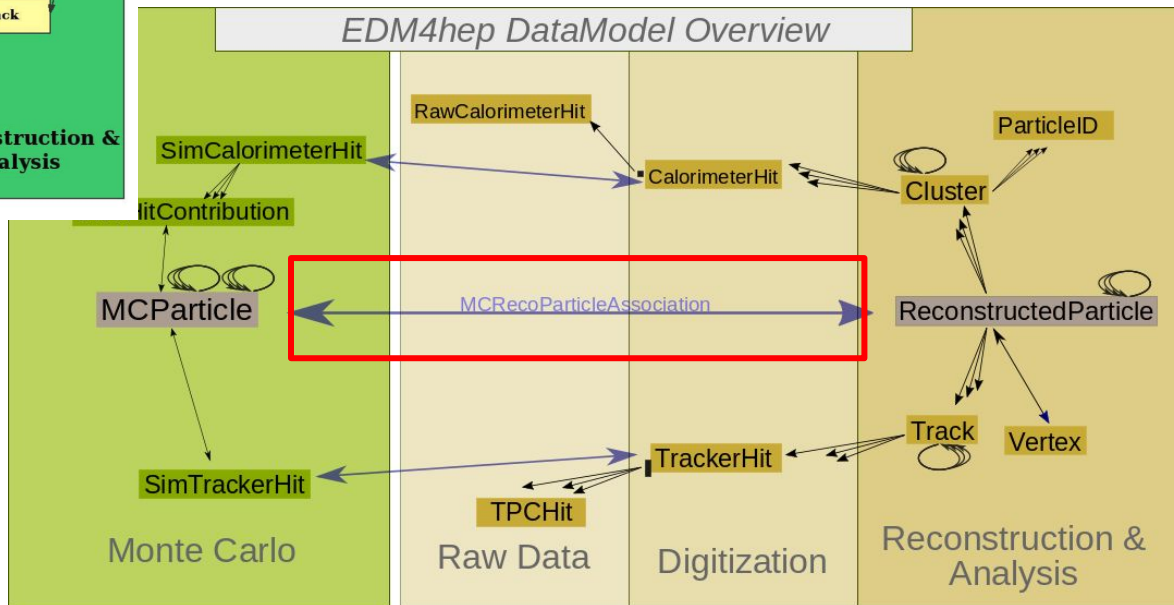
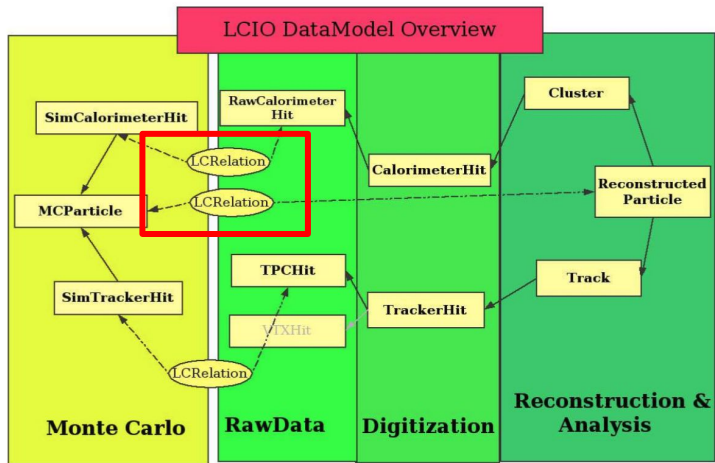
# Updated Diagram



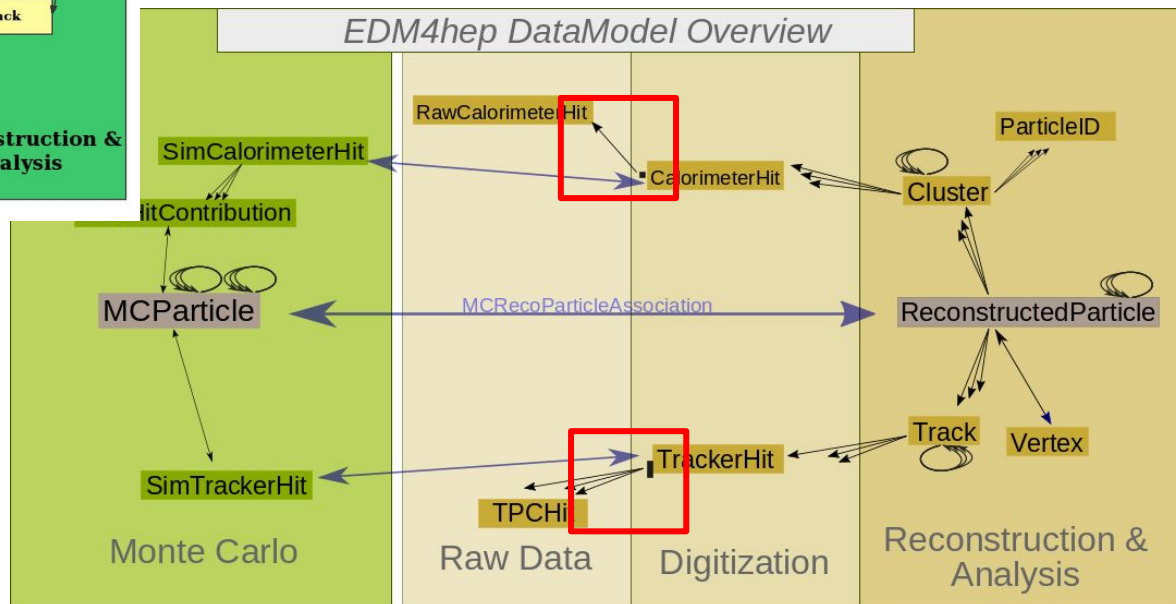
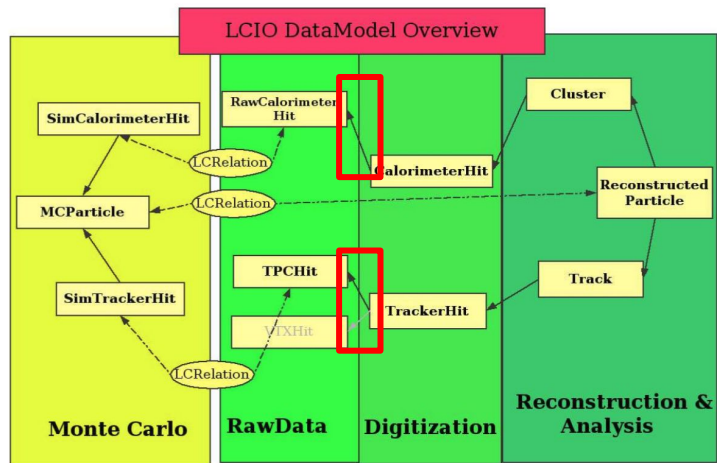
# Updated Diagram



# How to deal with LCRelation?



# How to deal with ObjectID?



# Integrations: DDSim

Standalone Full Sim application using DD4hep

Parameters -> {SimTrackerHits, SimCalorimeterHits,  
TrackerHits, CalorimeterHits...}

Should ideally be one-to-one mapping

# Integrations: TrickTrack

- `{TrackerHit}` -> `{Track}`
- A small track seeding library that encapsulates CMS Code
- Templated on Hit class, so ideally no conversions necessary
- But expects hit classes to have x, y, z, rho, phi getter methods - rho and phi could be added to EDM4hep but not really crucial.

# Integrations: RDataFrame

`{X} -> {X} (mostly {MCParticle} -> MCParticle)`

ROOT way of writing down analysis data workflows with cuts, transformations etc.

# Infrastructure changes

- If there is a separate github repository, should EDM4hep be moved?
- Where should it be installed?
  - /cvmfs/sft.cern.ch?
  - /cvmfs/hsf.cern.ch?
  - /cvmfs/key.cern.ch?
- Documentation: should start from the beginning!
  - Readme.md a good place to start.

# PodioDataSvc

- In order to use EDM4hep in Gaudi Framework, something similar to the PodioDataSvc in FCCSW is needed
  - Not really experiment dependent, can be easily extracted.
- Where should this be put?

# Build System and Tools

Some small things to fix,  
but should be ok for now.

- Currently the Travis CI Jobs just build PODIO from source before building EDM4hep
- PODIO now included in LCG\_96c\_LS
  - Could pick it up from there
  - v0.9.2
- Suggestion from Frank: additional CI builds against podio master to quickly pick up changes upstream
  - Add to nightly builds somewhere
- CMake: suggestion from Benedikt: [#13](#)
- Create Spack recipe for EDM4hep