Silicon tracking progress & status. SIT, SET, ETD

ILD DETECTOR OPTIMIZATION December 14th 2011

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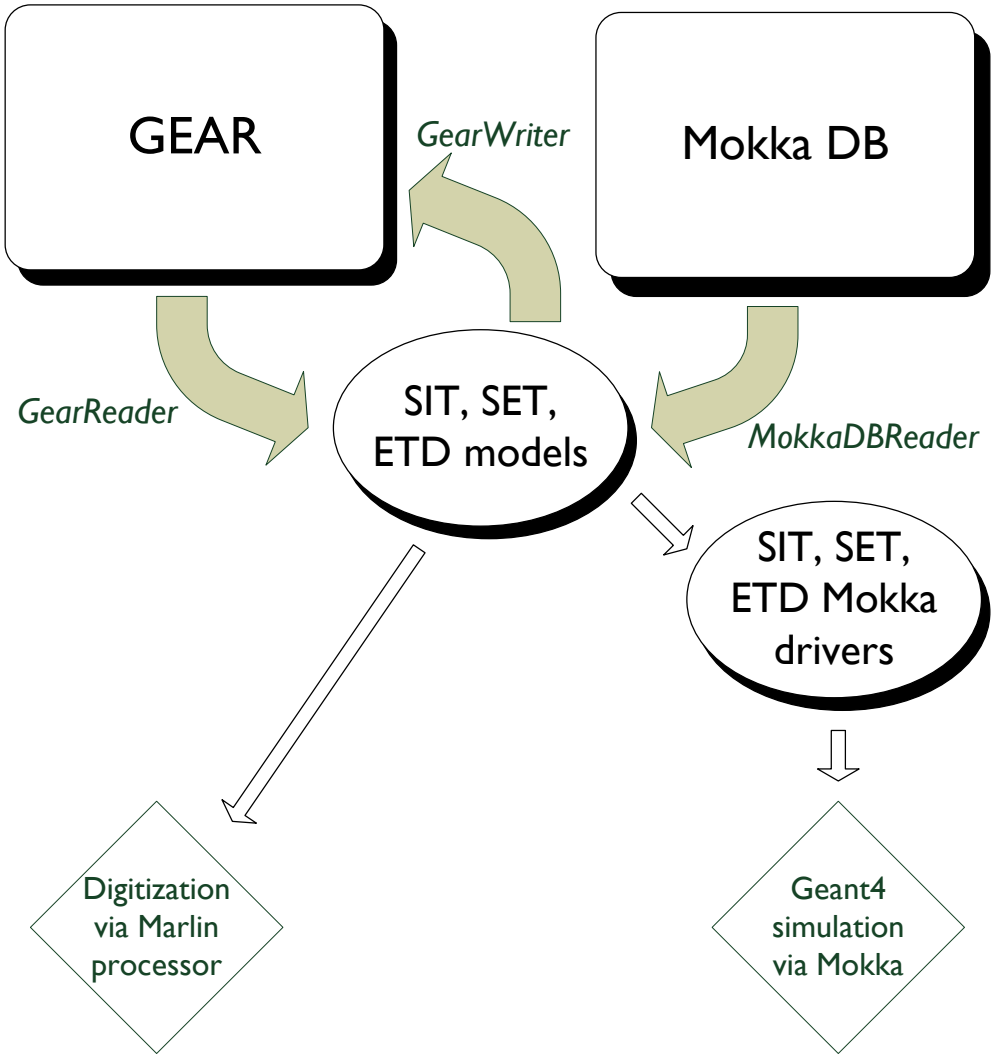
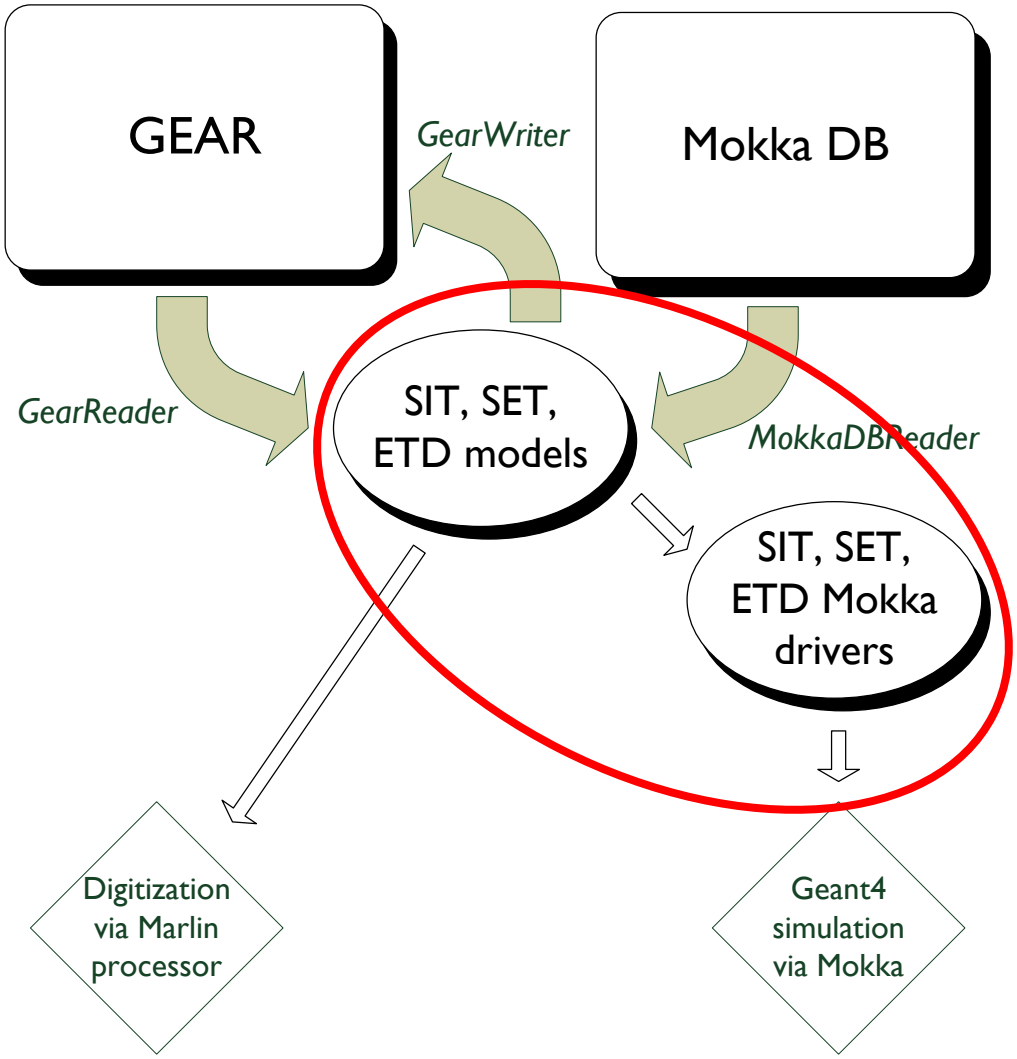
Synoptic view of the main connections of the SIT, SET, ETD sub-detectors software



- The SIT, SET, ETD geometry description models are the same for both these sub-detector digitization via Marlin processor and these sub-detectors GEANT4 simulation via Mokka geometry drivers
- The same set of main parameters for each sub-detector geometry model is included both into the Mokka and GEAR databases

SIT, SET Models & Mokka driver

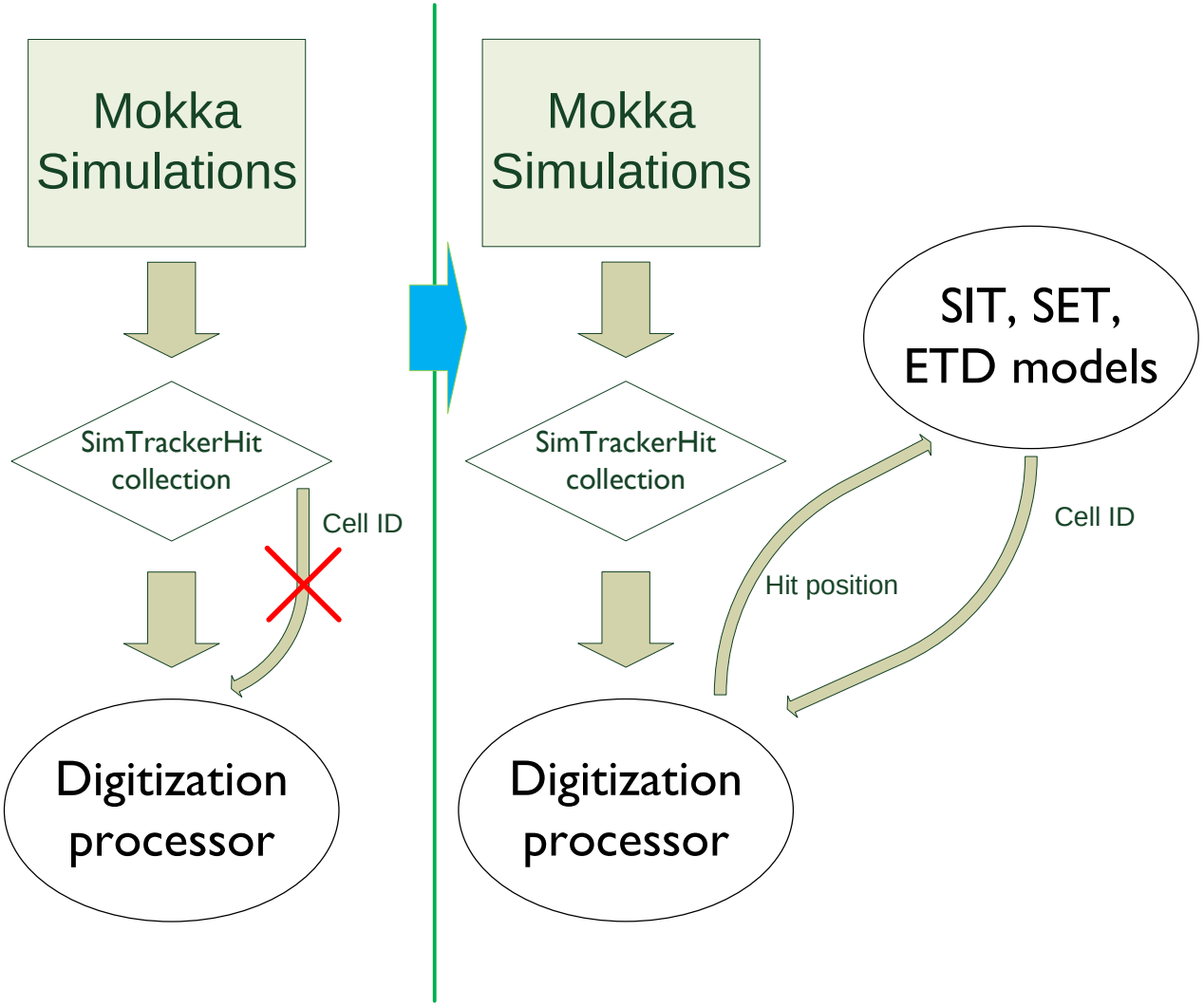


A lot of work these last weeks devoted to:

- Multiple internal consistency fixes

  (*from inherited software*)
- Values which goes to ZPlanarParameters interface provider for SIT and SET are fixed

Independent Cell ID identification



- Cell IDs from Mokka simulations are not valid
- An independent Cell ID identification was implemented

Digitization and clustering Marlin processors

- The original Zbynek's code was reorganized and adapted for a single strip sensors
- Common geometry provider for SIT, SET, ETD is implemented
- Internal system of units and physical constants definitions are changed for their definitions at "CLHEP/Units/SystemOfUnits.h" and "CLHEP/Units/PhysicalConstants.h"
- LCIO TrackerHitPlane interface is now used to output information about hit positions after the clusterization

Concluding remarks & Work plan

- Digitization and clustering processors for SIT and SET are almost ready, but still some adjustments need to be done
- Planning: make a commit of updated Mokka driver and Marlin processor before Christmas
- Several parameters in Mokka database will be changed to fit with the current SIT and SET models description.
- Will proceed on the ETD in a similar way, over Christmas break.
- A lot of work has been achieved in order to fully debug, simplify and make the SIT/SET code well integrated in the overall MOKKA framework and ready for use, from an inherited version that aimed to be too general and standalone.