

Minutes of the FCC software informal meeting, 4 September 2014, 12:30pm

Present: Alberto Ribon, Fabiola Gianotti, Clément Helsens, Colin Bernet, Carlos Solans, Patrick Janot, Julia Hrdinka, Andy Salzburger

A month after our last meeting, the situation with the software framework was summarized briefly. Some details can be found in Benedikt's presentation at the FCC-ee physics meeting (1 September, <https://indico.cern.ch/event/326783/>). Despite Benedikt's intense activity in August, several important steps are missing before we can have a working example going from generators to the physics plot, passing through a parameterized simulation, the most urgent of which being (i) to decide of a event data model (likely based on LCIO); and (ii) have a complete documentation, including the basic use of GitHub, for a beginner to start working with the framework. For the latter point, a tutorial will be organized in the course of September.

A basic, working example of the geometry/full simulation step using DD4HEP and Geant4 is still missing: after months of restrain and frustration, Clément, Andrea and Carlos could not get hold of a working version of DDG4 (the interface between DD4HEP and Geant4) and have decided to move forward and produce plots for the FCC-hh calorimeter simulation with plain Geant4. The DD4HEP effort will be taken over by Andy and Julia. Fabiola and Patrick will intervene with the DD4HEP developers, and ask them to provide a working end-to-end example, as well as a continuous support for DD4HEP and DDG4 use.

The need of following the two parallel paths in the software effort, namely having a fast/parameterization to perform preliminary studies and choose wisely detector parameters, on the hand, and being able to have a full simulation integrated in the software framework, was confirmed: should we give up on the integrated full simulation now, we would not be able to do detailed studies in a couple years from when more detailed detector designs become available.

A crash effort, and the people to do the corresponding work, is now needed to get things working from both ends. While we are now welcoming students to work with us (in addition to Julia Hrdink, a doctoral student, Anna Zaborowska, will work with Benedikt on the framework for three years, and a student from Gangneung University, Themis Williams, will work in the next six months with Federico on the simulation), we definitely have to propose well-defined projects to external institutes. There will be a FCC institution board meeting next week (9-10 September) during which the representatives of 52 institutes will meet: they will be eager to have projects to work on. All the members of the software group are kindly requested to think of projects, and to send their proposals to the conveners.

Speaking of conveners, Colin Bernet and Benedikt Hegner have very kindly accepted to take over from Fabiola and Patrick for the coordination of the FCC software group.

Next meeting: Thursday 18 September, 1pm-2pm, B40 lobby – t.b.c.

