Minutes of the FCC software informal meeting, 05 June 2014, 1:00pm

Today's meeting was quite intense with lots of discussions, which have not contributed to reduce the entropy of the system. The discussions cannot be reproduced here in details, but the main points are summarized below.

1) Generator - DD4HEP – Geant 4 interface
   Carlos and Clement made some progress with the help of Benedikt, and managed to shoot single pions in a G4 simulation of a calorimeter (and produced simple n-tuples with the hits). On his side, Peter had managed to send complete events in Geant4, store the outcome in LCIO, as an interface to the event reconstruction.

   Carlos, Clément and Peter were encouraged to get together and share their experience.

2) Event data model
   The discussion then moved to the use of LCIO in the FCC software. Federico advised *not* to use LCIO, and suggested to contact Axel Neumann to understand the reticence of the ROOT team toward this product. Instead, Federico suggested to use simple objects within "vanilla" Root, as much as possible, while still getting inspiration by how LCIO define the objects – without suffering from undesired LCIO design features.

   Benedikt agreed and recalled that we already discussed this issue in one of the first meetings. Most importantly, **Benedikt promised to get together with Colin next Tuesday, and come with a first iteration of the design for the data model by the next FCC software meeting**.

3) Documentation
   Benedikt also started to include a proto-documentation (with so far only the file one has to source to get the software environment definitions) in the twiki (see https://twiki.cern.ch/twiki/bin/view/FCC/FccSoftware), and will develop it regularly.

   Clément was encouraged to add a proto-documentation on his achievements with DD4HEP (e.g., how to reproduce the displays he showed in the FCC hh workshop), and progressively improve from that point.

4) Python analysis framework
   Colin expelled from his python analysis framework (aimed at reading root files from the simulation/event generation, schedule a set of analysers, and produce flat root-tuples for selection and plots) from all dependencies with the CMS software. The corresponding code is now maintained/developed in GitHub.

   Colin will adapt the analysis framework to the FCC event data model during / after the meeting with Benedikt next Tuesday, and provide

some documentation in the FCC software twiki whenever things get more stable.

5) Central Git vs GitHub
As agreed last time, Federico discussed with the IT Head (Frederic) about the use of GitHub (as opposed to the central Git system provided by IT) for the FCC software development. Frederic was very clear that it is IT policy to meet the needs of the experiments in using the IT provide framework and services. Colin argued that many people at CERN routinely use GitHub for very good reasons. A discussion followed about the shortcomings of the central Git. In conclusion, it was decided to write a list of requirements for the central Git to make it reach the level of GitHub (e.g., relation between repositories, task tracking system, …). **Colin will provide a first list, to be completed by others.**

In the meantime, Benedikt will add a pointer to the documentation for the use of Git with the FCC code. Peter mentioned that he could not access the code: **Benedikt will check why it happens**.

6) Twiki access
Speaking of access rights, Andrea mentioned that we had to open the FCC twiki in reading mode to the whole world, in order to allow those without a CERN account (or those who indicated a non-CERN e-mail address in the fcc e-groups) to read the pertaining information.

To overcome this issue (and give read/write to the FCC members only), all FCC members with an external e-mail address probably need to create a "lightweight CERN account" related to that address. **Andrea will check if a method exists to automatically create this account to each member of our mailing lists and automatically send them a mail through which they would define their "twiki password".**

7) MC sample bookkeeping
Carlos gave a short presentation (see slides in the indico agenda) with a proposal for automatic MC sample production and bookkeeping through a web interface.

Federico suggested to stay as simple as possible, and **proposed to listen to a related proposal from an ALICE person about the metadata handling implemented in ALICE. Colin will also shortly show his proposal of a lightweight MySQL database in use in the CERN/CMS group**.

8) Framework
As if it was not enough, the general software framework was also questioned. Patrick mentioned that he received a communication from Fons Rademakers with an offer to work with "FairRoot", see http://fairroot.gsi.de

It was decided to invite Mohammad Al-Turany (the author of FairRoot) at our next meeting for a 10' presentation with pros and cons of FairRoot. It was also decide to invite, e.g., Pere Mato, for a similar presentation about Gaudi.

It is important to come to a decision extremely (on this point and on all the other points addressed today), in order to be able to start working in an effective manner.

9) CLICdp Meeting, 10-11 June
Lucie paid us a visit at the beginning of the meeting (she had just finished the CERN relay race, and needed to go back quickly to get her prize), and was wondering whether we had enough material to present anything interesting at her plenary meeting.

She agreed to have a look at Benedikt's and Clement's FCC-hh workshop slides, and come back to us with a decision on whether we had enough material.

Next meeting:
Thursday 12 May, 1pm-2pm, room to be decided

Next Events (where software progress will be presented):
CLICdp collaboration meeting: 10-11 June
FCC-ee physics workshop: 19-21 June