Simulation WG

Closeout report

The Simulation domain

- Simulation builds on use of a common toolkit i.e. Geant

- Activity is quite mature: Geant4 is >20 years old

- Challenges are the same as for other WG's
  - HL-LHC – higher pile up
  - Physics – EM, hadronic, liquid argon (LHC, FCC, neutrinos, muons)

- Need better physics – input is feedback from experiments

- More complex detectors, more statistics – need better software performance

- There are already clear plans for on-going improvements (EM, HAD, VecGeom)

- There is an R&D programme looking at vectorisation of particle transport

- We have a lot to describe

Status of the Simulation WP

❏ During this week, we had O(10) people working on the Simulation WP during all parallel sessions

❏ The Simulation WP has 56 pages, most comments/suggestions have been integrated.

❏ Quite a lot of editing remains to be done to improve coherency of the text, to improve Figures, to organise references etc.

❏ We started to work on a self-contained Executive Summary addressing the need for a roadmap for the next 5 years (currently ~6 pages)

  ❏ addresses the challenges
  ❏ describes main elements of the work programme over a 5-year time frame

Next Steps

❑ We hope to converge on a first draft of both documents good enough for public consumption in ~1 week.

❑ We would like to circulate them widely within the simulation community (particularly experiments) for feedback, before finalising them.

❑ We can also share both documents with other WGs at the same time

❑ We would hope to complete both documents for submission by end of July