Basic & Extended Examples Status Report

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For N&E Examples WG

25th Geant4 Collaboration Meeting,
25 September 2020

Outline

- New extended examples since the last CM
- Ongoing Common Tasks
- Strategy for Migration to Tasking

New Extended Examples – 10.6

- biasing/GB07
  - Marc Verderi
  - Leading particle biasing = technique that "trims" a shower development to get faster particles going through a volume (eg, shield) and estimate the exiting flux

- hadronic/Hadr08
  - Alberto Ribon
  - While the hadronic framework does not allow hadronic models per region this example shows how it is possible to achieve in practice "hadronic-models per region" by using "generic biasing"

New Extended Examples – 10.6 (2)

- parameterisation/gflash
    - Anna Zaborowska, Igor Semeniuok
    - New sub-category gflash with 4 examples
        – The old gflash example is now gflash1
    - Three equivalent (in terms of produced showers) examples: gflash1, gflash2 and gflash3 with geometry and parametrisation defined in different ways to demonstrate how to use the parametrisation, sensitive detectors and parallel geometry.
    - gflasha: added scoring energy using a virtual cylinder sliced longitudinally and radially; the filled histograms can be then plotted with ROOT macro

New Extended Examples – 10.7

- medical/dna/chem6
    - Wook-Geun Shin, Sebastien Incerti
    - This example provides scoring of the radiochemical yield G as a function of time and LET.
    - J. Appl. Phys. 125 (2019) 104301

Common Ongoing Tasks

- Followed at the WG wiki:
  - https://twiki.cern.ch/twiki/bin/view/Geant4/NoviceExtendedExamples
- Coding Guidelines
  - Reasonably low number of violations, except for 1 example (planned to be fixed for 10.7)
- Macro and UI Commands Review
  - Started review of EM examples (relatively large number of commands and macros); 5 examples reviewed
- Reducing Obsolete Features
  - No new obsolete features this year
- New: migration to Tasking

Migration to Tasking

- Progressive migration
- First wait with extended examples migration until the basic examples failures are completely resolved
- Then start with a limited number of examples categories:
  - runAndEvent, analysis
- When the tests pass fine, go on with all remaining examples

Strategy agreed at the Examples Parallel session last week

Conclusions

- The number of extended examples is growing
  - 6 new examples since the last CM
  - 138 (in geant4-10-06-ref-08)
- A detailed status of the work plan items included in Ben's presentation at Plenary 4
- See also presentations at the Examples parallel session for more details:

    https://indico.cern.ch/event/942142/sessions/362023/#20200917