Basic & Extended Examples For 10.3

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for N&E Examples WG

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Outline

- Newly added extended examples
- Ongoing tasks
    - Examples Review
    - Applying Coding Guidelines
    - MT Migration

New Extended Examples

- 3 new extended examples added since the last CM
  - Included in Geant4 testing and in the Web documentation (generated automatically with Doxygen)
- 1 more example in WG work plan for this year:
  - runAndEvent/monitoring – by A. Dotti
  - Requires changes in kernel to be applied first,
- A brief overview on the next two slides, a less brief overview in the parallel session 4B on Tuesday

New Extended Examples (2)

- hadronic/Hadr07
  - Michel Maire
  - Survey energy deposition and particle's flux from a hadronic cascade.
- hadronic/AmBe
  - Michel Maire
  - Example of neutrons source. It illustrates the cooperative work of nuclear reactions and radioactive decay processes.
  - Changing the name proposed in parallel session to avoid confusion about Geant4 capabilities to simulate Am
- medical/dna/chem4
  - P. Piersimoni, S. Okada, M. Karamitros
  - The example shows how to activate chemistry code and score the radiochemical yield G.

Ongoing Tasks

- The WG Wiki pages were updated for Work Plan 2016 items, see

- https://twiki.cern.ch/twiki/bin/viewauth/Geant4/NoviceExtendedExamples

  - The link to Wiki pages is also available from the WG Web page

  - Access is restricted to Geant4 developers

TWiki > ■ Geant4 Web > NoviceExtendedExamples
(2015-05-04, IvanaHrivnacova)

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N&E Examples WG

- Adding A New Example
- Extended Examples Review
- Applying Coding Guidelines
- Examples Doxygen Documentation
- Status of Examples MT Migration
- List of Extended Examples

-- IvanaHrivnacova - 04 May 2015

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r18 < r17 < r16 < r15 < r14 | Backlinks | Raw
View | WYSIWYG | More topic actions

Examples Review

- The list of obsolete features in extended examples with the lists of examples (or files) where they are present was reduced
- Done:
  - Commands to set cuts per particle
  - Obsolete /vis/drawTracks, fDrawTrack
  - Obsolete /event/printModulo, fPrintModulo
- Pending:
  - Explicitly defined physics lists in examples not demonstrating physics
    - Reduced from 23 (2015) to 12
  - Explicit use of std:cout, std::cerr, exit()
- New:
  - Improve main() as in basic examples (G4UIExecutive at the beginning, remove G4VIS_USE, G4UI_USE macros)

Macros Review

Objectives:

- Make sure that all provided macros run without problems

  (usually the examples are tested only with one macro while they provide several ones)

- Make sure that provided macros cover all commands implemented in example

- Make sure that all macros are commented in README

- The review procedure agreed in parallel session 4B

Macros Review (2)

- WG coordinators will check if the examples run with all macros (*.mac, *.in) and report non-working macros to examples developers
  - Helper script: process_macro.sh – automatically detects and runs an example executable with all macros (files eneded .in or .mac)
- The list of commands defined in examples which are not present in any macro was generated for all examples and pploaded on the wiki page:
  - https://twiki.cern.ch/twiki/bin/view/Geant4/ExtendedExamplesReview
  - The list of commands is generated with newly introduced (not committed) command: /control/list
  - Helper script: check_commands.sh – checks if all commands defined in the checked example are used in some macro
- The example developers will be asked to check the files and either remove the commands not used or include them in some macro if they are useful

Coding Guidelines

- Following the coding guidelines is requested when adding a new example
- Progress with automating the procedure of checking
  - Now also the guidelines for class members names can be checked automatically (using modified Doxygen built from sources)
- The biggest violators RE05, TestEm10, Pol01 were fixed
- The number of violations reduced:
  - 663 data member names (sep15) => 95 (july16)
  - 32 member function names (sep15) => 18 (july16)
- The list of violators (examples files) is available on the wiki page
  - All developers which are responsible for the examples, where a violation of guidelines was detected, will be reminded by e-mail after the collaboration meeting

Migration to MT

- The status & planning for MT migration of extended examples is monitored at the dedicated Wiki page:
  - https://twiki.cern.ch/twiki/bin/view/Geant4/ExampleMTMigration
- ~ 70% of extended examples migrated to MT
- 14 examples not yet migrated
  - Listed in Table 1 on the wiki page
  - The status to be updated with:
  - Done for 10.3, To be done for 10.3, To be done after 10.3
- 21 examples which will not be migrated
  - Listed in Table 2 on the wiki page with the status with a comment why the example wiil not be migrated:
    - Most of them: MT irrelevant, or use of external packages

Conclusions

- The number of extended examples is growing
  - 107 (last CM) => 110 (this CM)
- Started effort on reviewing macros
- Progress with eliminating of obsolete features (most done) and coding guidelines
- Migration to MT ongoing