

Basic & Extended Examples Work Plan 2015 Status

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Outline

- Status of developments and work plan
 - Examples Review
 - Migration to MT
 - Coding Guidelines
- WG organization
- Items for discussion
- AOB

WG Group Wiki

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Novice & Extended Examples Working Group

The mandate of Geant4 Novice & Extended working group is the following:

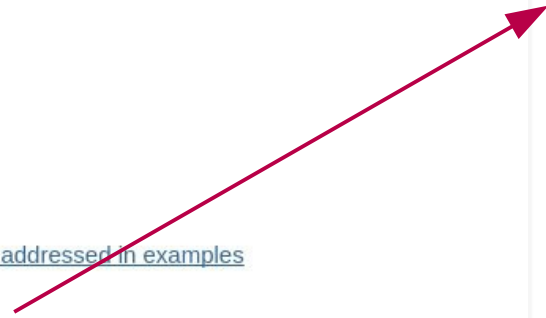
1. Coordinate the design, implementation and maintenance efforts of N&E examples;
2. Ensure the Geant4 toolkit functionalities, options and controls are well mapped into t
3. Maintain scenarios to organize the structure of the N&E examples;
4. Ensure the code quality of the examples, provide coding guidelines to developers, a review;
5. Ensure cross-references between examples:

Work plans

- [2014](#)
- [2013](#)
- [2012](#)
- [2011](#)

WG documents

- [Coding guidelines](#)
- [Users questions to be addressed in examples](#)
- [WG Wiki pages](#) 



- The link to Wiki pages is available from the WG Web page
- Access is restricted to Geant4 developers

TWiki >  [Geant4 Web](#) > [NoviceExtendedExamples](#) (14 Apr 2014, 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](#)

-- [IvanaHrivnacova](#) - 11 Apr 2014

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Examples Review (1)

- List of obsolete features with the lists of examples (or files) where they are present
 - Explicitly defined physics lists in examples not demonstrating physics: in **was:26, now: 23**
 - Commands to set cuts per particle: was: **was: 5, now: 2**
 - Obsolete /vis/drawTracks, fDrawTrack: **was: 6, now: 4**
 - Obsolete /event/printModulo, fPrintModulo: **was: 12, now 5**
 - Explicit use of std:cout, std::cerr, exit(): **was:14, now: 41**
- Progress ongoing
 - Was = September 2014, Now = September 2015
 - The developers of examples with std:cout, std::cerr, exit will be reminded by e-mail

Examples Review (2)

- Start reviewing examples macros and tests: make sure that provided macros cover all commands implemented in example and the cdash test covers all important example use cases
 - This item was already in Work Plan 2014
 - Still not started, any volunteers ?

Migration to MT (1)

- The status & planning for MT migration of extended examples has been updated before Collaboration Meeting
 - <https://twiki.cern.ch/twiki/bin/view/Geant4/ExampleMTMigration>
- The old table with all examples status was split in two which include examples not migrated in 10.1
- Table 1: the examples which were not yet migrated
 - 20 examples
 - The status , can be:
 - Done for 10.2, To be done for 10.2, To be done after 10.2
- Table 2: the examples which will not be migrated
 - 21 examples
 - With a comment why the example will not be migrated:
 - Most of them: MT irrelevant, or use of external packages

Migration to MT (2)

- Status & planning:
 - 20 examples not yet migrated
 - **4 examples migrated since last release**
 - 3 to be decided
 - 1 will be migrated after 10.2
 - **12 not yet communicated**

Coding Guidelines (1)

- 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 list of violators (examples files) is available on the wiki page
 - Generated for ref-08 tag
 - All developers which are responsible for the examples, where a violation of guidelines was detected, were reminded by e-mail two weeks ago
 - The files will be updated with the next reference tag
 - Three examples which were not yet processed at all:
 - RE05, Pol01, TestEm10

Coding Guidelines (2)

- Automated checking the guidelines for class members names (using modified Doxygen built from sources)
 - Previous outputs, extracted from the Web documentation, were not ordered per example, but alphabetically per member
 - New outputs generated from doxygen are sorted by example; easy to find all violations for an example

```
...
config          in file extended/eventgenerator/HepMC/MCTruth/include/MCTruthManager.hh
directParent    in file extended/eventgenerator/HepMC/MCTruth/include/MCTruthTrackInformation.hh
bSiSD           in file extended/exoticphysics/channeling/include/ExExChDetectorConstruction.hh
bBeamPipe       in file extended/exoticphysics/channeling/include/ExExChDetectorConstruction.hh
...
```

- Long lines (guideline 3.1), separators (guideline 3.2), empty lines (guideline 3.3)
 - The output from scripts; sorted by example; easy to fix

Adding A New Example

- The steps to be followed can be found on a dedicated Wiki page since April 2014
 - <https://twiki.cern.ch/twiki/bin/view/Geant4/AddingANewExample>
- Agreed at the last Collaboration meeting in Okinawa
- Adding a new example must be approved by the WG coordinator before proposing the first tag
 - The new example must be compliant to coding guidelines, must contain the documentation files and must be included in ctest

Working Group Organization

- The working group started in 2011
 - All other working group coordinators were asked to join this WG
 - Since then, all developers responsible for one or more examples were invited to join the group
- At present the group has 22 members
 - Most of members contribute with a small percentage of time
- The working group operates via e-mail communication
- Once per year we meet at the parallel session during collaboration meetings to discuss actual issues
 - Since last two years we invite the developers of new examples to shortly present new examples

G4VIS_USE, G4UI_USE

- The main() function in most extended examples was defined according to basic examples
- Just before the 10.1 release, main() functions in all basic examples were improved:
 - **G4VIS_USE** and **G4UI_USE** macros were removed from all basic examples, which makes the function main() easier to understand to users
 - **G4UIExecutive** is instantiated at the same beginning of main(), if interactive mode is enabled. This makes possible to handle the output and eventual exception via the Geant4 UI since the beginning of running example
 - With QT, all output now appears in the Qt driver output window
 - Exception is issued in its Qt window
- A question is how to proceed with extended examples
 - Should we add this as an item to the list of obsolete features?

Discussion

- How to improve physics lists in examples will be discussed with physics lists WG in parallel session 5A on Thursday
- C++11 in examples ?
- Any other items?