

A dark space background featuring a large, dark planet on the left side and a smaller, dark planet in the upper right corner. The background is filled with numerous small, white stars.

Improving examples

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2010 Geant4 Collaboration Meeting
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Examples



- We all know that examples are the entry point of most of the users, and examples guide the users to develop their specific applications.
- Do you know how many examples we have in our examples directory?
 - Novice : 7
 - Extended : 78
 - Advanced : 18

Are they all maintained?

- Some are obsolete, unmaintained
- Too many code duplications
 - For example, do we have to have all 78 extended examples be fully executable?
 - The original idea of extended example is showing one particular feature, i.e. not necessarily having full set of classes.
- How many different physics lists do we have in our examples?
 - Are they all well updated?
 - Do they use best options?

Are they helpful?

- Some examples are irrelevant, unorganized
- Need more cross-references to Documentation and to other examples.
- Recommendations not clearly exposed/visible
 - e.g. use of phys. list when relevant, geometry implementation, sensitive detector implementation
- Are they consistent?
 - Large spread of individual/historical “styles”

Are they properly implemented?

- For example, I see following improper implementations in `UserSteppingAction()` method in our examples.
 - Awful number of string comparisons
 - Volume name, particle name, process name, etc.
 - Touchable is taken from the track, which should be identical to `PostStepPoint`.
 - Open five files one after another, write one line each, and close them for every single step!!!
- When I was working for the code cleaning for ATLAS, I wondered why ATLAS Geant4 users were so ignorant. But now I realize that they are just inherited from our examples. However hard we improve the performance of our code, as far as we offer such examples which people start with to implement their applications, we have no hope.

How should we do?

- I would like to invite everyone to example walkthrough.
 - Send your comments to the individual authors and/or me and Marc.
- We need the example working group.
 - Organize examples
 - Organize collaboration-wide efforts of walkthrough