

Event refreshing

Redrawing events on switching
viewers, etc.

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Persistent and transient objects

- Persistent or run-duration objects can always be refreshed
 - Geometry, axes, scale...
- Transient (end-of-event or user drawn) objects are lost on change of view or viewer
 - Trajectories, hits...
 - Except for simple change of view parameters for “stored” drivers
 - OGLS*, OI*
 - Spawned or off-line viewers (DAWNFILE, HepRep/WIRED)
 - Valuable but limited

(A) Re-issue /run/beamOn

- Vis manager stores random number status
 - Start of last run and start of last event
 - *Before* primary event generation
- /vis/scene/transientsAction rerun
 - When scene is reprocessed, re-issues /run/beamOn for last run or last event (depending on endOfEventAction)
 - Refreshes even after switch to a different driver
- Cannot handle primary events from file (N04)
- Relies on existence of G4RunManager
- This method is currently available (8.1)

(B) Event copying

- At end of event, vis manager
 - Copies events' primary tracks and vertices
 - Stores random number status *after* primary event generation
- Scene reprocessing
 - Reprocess event (eventManager->ProcessOneEvent)
 - Last run or last event (endOfEventAction)
- Needs enhancement to G4Event, G4PrimaryTrack and G4PrimaryVertex
 - Not currently approved

(C) Keep events

- Would be the simplest way
 - All information is there, including hits and trajectories
- But events not available after end of run
 - Run manager deletes
 - G4RunManager manages multiple events
(SetNumberOfEventsToBeStored)
- Needs a reference counting scheme* for events so that run manager and vis manager can manage multiple events independently

*Thanks to Jane Tinslay for this idea

(D) Some other way

- Needs discussion

Summary

- Currently available method (A) is limited
 - Cannot handle input of primary tracks and vertices from file
 - Relies on existence of G4RunManager
- (B) and (C) need kernel enhancement
 - But decouples Vis and Run categories
- (C) looks most attractive
- Needs discussion