

Parallel Session 6B

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1.1: Data Libraries in Geant4: Performance

- Reading files may be limiter at large scales (see talk by Tom LeCompte in Plenary 7).
- **Further studies in 10.4 on this, including different data formats**
 - **gzip, sqlite, ...**
- Review interfaces to read/parse data into Geant4 object, driven by format studies and Usability topic (next slide).

1.2: Data Libraries in Geant4: Usability

- **Replace 10 environment variables with single PATH-style “G4DATA_PATH” in 10.4**
- New C++ API to remove direct use of `getenv()`, further discussion on how to get/specify required data library versions.
- Add support for self-location using `binreloc/GetModuleFileDir` to remove hard requirement to set “G4DATA_PATH” when Geant4 itself installs data.

2.1: Migration of Geant4 to Git

- **Driven by ending of CERN SVN service in Q4 2018, potential usefulness of Git/lab/Hub**
- Report from Andrea on experiences from range of experiments with similar codebase scales.
- Useful discussion covering how to structure code in repository and development model
- **Clarified several aspects of Git that match well to current SVN development model**
- **No blockers identified, but lots to think about!**

2.2: Migration of Geant4 to Git: Task Force

- **Will propose to SB setting up of Task Force on Git Migration with Remit:**
 - To propose a git repository structure for Geant4 code
 - To propose and document a model for committing, branching, tagging and merging new developments
 - To propose a Git hosting solution, including tooling and integration for testing and releases.
 - To propose a backup SVN hosting solution should Git not be a suitable option for Geant4.

3.1: CMake and Library Structure

- Reported on new CMake implementation to allow studies of Geant4 Library Structure
 - Module based dependency tracking, allowing different compositions of Modules into Libraries without changing build scripts.
- **Will be ready for use in Jan 2017 as a build option**
- **Testing to confirm Global Libraries built with same structure and performance before making it default and beginning restructure studies.**

3.2: CMake Docs, C++ Preprocessor

- Geant4 CMake will be documented (10.4)
 - **New system will use reStructuredText to comment/markup. Sphinx generation dependent on discussion with Documentation WG**
- Improvements to use of preprocessor for robust builds
 - Replace `-D` flags with header `#define` directives
 - **Will implement and test in 10.4**