Workshop objectives

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Overview

This is my view / vision of the goals

- Context
- Overall themes
- Other goals

Context

- Program created to address needs of users and collaboration
- Motive: make explicit some of the implicit goals of the meeting
- Session types
  - Communicate (developments, …)
  - Discuss (needs, results/validation, open issues)
  - Identify future joint work with users
  - Organize future (collaboration) effort

Overall themes

- Validation for existing/new use cases
- Improving Physics performance
- ‘Configurations’ of physics models
- New capabilities and needs
- Prepare for launch of ‘new’ era
  - New Collaboration Agreement & Structure

Validation for ‘key’ use cases

- Surveying validation undertaken
  - Identify ‘missing’ validation
- Extending validation to further key cases
  - Identifying potential interested parties
- ‘Maintaining’ existing validation
  - Capturing essential ‘tests’ to maintain them
- Clear need for continued joint effort!
  - Geant4 and user groups

Physics performance/verification

- New or improved physics models
  - Identify improvements undertaken
  - Move to make them available to users
    - Potentially as options
- Communicate status and upcoming developments
- Assess open issues
- Identify how to document key performance values at each release (release notes!)
  - “Energy scale”, …

Physics “configurations” / lists

- Survey, consolidate existing options
  - Enable ‘global’ picture (‘portal’?)
  - Establish ‘corresponding’ validation
    - Eventually survey usage
- Improve
  - Testing and use of tested components
  - Document underlying use of physics models
  - Enable use of further, new models
- Priority: preparing and testing for 8.0 !
  - Port hadronic lists to new particles
  - Improve documentation of models in most-used physics lists.
- Key deliverable of Geant4 collaboration
  - Maintain user service & confidence, clarity, ‘unified’ picture
  - Organize further

New & emerging capabilities

Communicate & discuss new functionality

- Examples
  - Enabling standard scoring
  - Propagating in many geometries ‘together’ in presence of an EM field
    - Geometries: mass, biasing, scoring, fast sim, ..
  - Python interface
  - Fast navigation in regular geometries
    - phantoms, CT generated

Prepare for ‘new Constitution’

- New Collaboration Agreement
  - Three parties have signed
    - SLAC, CERN, HIP
    - Representing about 12.5 FTEs
- Thursday
  - CB meeting
  - Collaboration session
  - TSB/CB joint meeting

Other ‘parallel’ goals

- Finalize recent developments
- Discuss emerging functionality

- ‘1001’ other matters
  - Address other open items
  - Identify future key deliverables …
  - Meet, exchange experience, establish common interests

Focus areas of plenaries

Monday

- Requirements, new and existing
- Feedback
  - from user meetings
  - from established and new applications
- Discussion of emerging application areas

Tuesday

- Verification (closed)
- Status of physics
- Overview of validation
  - Validation in HEP
  - Release validation
- Tools to validate / verify
- Discuss validation
  - For all areas

Focus areas of plenaries (cont.)

Wednesday

- Assessing state and possible revisions of physics lists (closed)
- Optics & Fast simulation
- Developments in kernel
  - Materials, particles
  - Geometry
  - Run / event / detector

Thursday

- Interactivity
  - User Interface
    - Python
  - Visualization
- Examples
- Grid
- Platforms
- Reports from parallel sessions
- Collaboration matters (afternoon, closed)