Geant4 Documentation

Geant4 Workshop
4 October 2002
Dennis Wright

• Internal documentation review
• Documentation improvements
• Plans for future improvements
Internal Review of Documentation

• Recommendation 4.5 of review panel (June 2001):
  Periodically review and update documentation

• Sept. 2001 – internal review begun
  • Focus on re-organization, missing material, physics, readability and maintainability
    • committees assigned to each major manual
    • recommendations due by Nov. 2001 for inclusion into December release

• Detailed review begun Jan. 2002 focusing on updating figures, improving English, checking references, ....
Results of the Review (1)

• Maintain overall documentation tree structure
  – Introduction to Geant4
  – Installation Guide
  – Application Developers Guide
  – Toolkit Developers Guide
  – Software Reference Manual

• Problems with above structure
  – Some duplication remains, maintenance difficulties
Results of the Review (2)

• Improve English throughout
• Many explanations unclear or too brief
• Missing sections
• Review/update references and links
• Poor continuity (text by many authors)
• List contact person or author for each section
• Figure style should be consistent throughout
• Reduce duplication of material
Documentation Improvements (1)

• Introduction to Geant4
  – Completely re-written (taken largely from Geant4 general NIM paper)
  – Aimed at a less technical level
  – Separated FAQs into their own document

• Installation Guide
  – Explanations expanded, clarified
  – Attempted to make guide more self-consistent without duplicating too much of other manuals
  – Added links to release notes, specific build procedures which are updated with each release
Documentation Improvements (2)

• Application Developers Guide
  – Completely re-organized
    • Duplicated material removed
    • More logical grouping of topics
    • More chapters, fewer sub-headings – easier to read
  – New introduction
  – Several missing sections filled in – more to come
  – More material added to existing sections
  – English revision 50% complete
  – Links repaired and updated
Documentation Improvements (3)

- Toolkit Developers Guide
  - Figure uniformity is being imposed – change to Rose UML about 25% complete (action item for category coordinators)
  - English revision 30% complete
  - Material added to some sections, other sections still missing
  - Links repaired and updated
Documentation Improvements (4)

• Physics Reference Manual
  – New introduction added (scope and purpose, some definitions)
  – Some duplicate material removed
  – Many incorrect references, links fixed and updated
  – Some missing sections filled in
  – English revision 33% complete
  – Roughly 50% of reviewers’ detailed suggestions implemented by authors
Administration

• **New policy:** no new feature or major change of the code will be included in a release until documentation is provided
  – Documentation coordinator will inform release coordinator 2 weeks before release
  – Largely successful – only a few exceptions

• **Maintenance:**
  – As volume of documentation increases, keeping it up-to-date and consistent becomes more difficult
  – Future re-organization of documents may be required
    • Complaints about too many documents, duplication
Plans and Ideas for 2002/2003

• Complete all recommendations from internal documentation review

• Documentation sub-committee (HPW, PA, DB, DW) met briefly in the spring to consider new “Models Manual”
  – Outcome: models manual not necessary – distribute material to existing documents
  – Options:
    • new addition to Application Developers’ Guide: section on example (“best guess”) physics lists
    • new addition to Physics Reference Manual: catalogue of physics processes and models
Plans and Ideas for 2002/2003

• Create an index for Physics Reference Manual
• Same for Application Developers Guide
• New analysis manual
• Web presentation upgrade
Web Presentation Upgrade

• Recommendation 5.1 of external review panel:
  – Periodic review and update of web pages

• Internal review process began in Spring 2002
  – E-mail to TSB members soliciting comments
  – Preliminary overhaul plan drawn up, circulated to TSB
  – Discuss plans at collaboration meeting
Comments on Current Web Pages

• Main page is too dense, too many links

• Outdated appearance – modernize

• Navigation is confusing

• More pictures (like the front page poster)
Proposed Changes to Web Pages (1)

- Main page – make it simple
  - Welcome statement
  - One introductory paragraph explaining G4
  - Only a few (~7) navigation links:
    - News (prominently featured with 3 latest items)
    - User forum
    - Results and publications
    - Organization
    - Search
    - Documentation
    - User Support
  - Keep main page short (no scrolling)
  - Use bigger fonts
Proposed Changes to Web Pages (2)

- Subsidiary pages
  - Enforce identical formats for all second-level pages (already done in most cases)
    - Same format as main page
    - Third-level pages may vary
  - Use two-column format where possible
  - Use redundant links – for topics which don’t fit cleanly into top 7 categories, and to ease navigation
  - Bigger fonts here too
Proposed Changes to Web Pages (3)

• More links to satellite Geant4 and external web sites

• Fix broken links (as always)
Conclusions (1)

- State of the documentation:
  - Introduction to G4, Installation Guide, Application Developers Guide in good shape
  - Toolkit Developers Manual needs lots of work
  - Many reviewer comments for Physics Reference Manual must still be implemented
  - Software Reference Manual was unchanged (not included in review)
Conclusions (2)

• “No documentation – no code” policy seems to be working, but a few leaks need to be plugged

• Document management is becoming a bigger job
  – Documentation is currently not bad, but could be a lot better
  – Many new ideas for improvement
  – the documentation coordinator needs more help
Conclusions (3)

• Initial web refurbishing plan ready
  – refine and detail
  – time to allocate labor to the task