

Management of Geant3 geometry



ATLAS Software Workshop

LBL

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Outline



- Status of geometry description in DICE
- Geometry update
 - To be updated
 - Some consequences
- Summary

Status of geometry description

- Inner Detector & Calorimeters
 - ~ stable since February 1998
 - | digitization routine for the COIL
 - | bug fix to crack scintillator position
 - new digitization for the TILE calorimeter implemented

- Muon
 - M 2.8 database in October 1998
 - | new matter
 - | new digitization

- No modifications after October 1998

Status of geometry description

■ Physics TDR data

■ Production based on

- | 97_6 Jets, some calorimeter & B-physics studies
- | 98_2 (a) if 'muon' not critical
- | 98_2 (b) with AMDB M.2.8 for muon studies

■ All executables based on CMZ version

■ PCSF (NT) intensively used for data production

Status of geometry description

- Everything ported to srt/cvs in June 1999
 - new (reduced) simulation performed at the same time
- testing requested to the 'Physics' community
 - to validate the "srt/cvs" DICE simulation
 - took more time than expected
 - See <http://www.cern.ch/Atlas/GROUPS/SOFTWARE/HELP/testing/>
- decided to build the 'Production Release'
 - 1.0.0 completed 26 April 2000
- ready for a new version!

Geometry update ...

■ Inner Detector

- PIXB minor + digitization
- PIXE 5 disks instead of 4
- SCTT minor (straw shorter in all directions)
- ZSCT minor (electronic & cooling)
- XTRT modular geometry by default
- INAF new services
- request to have non-homogeneous magnetic field by default

■ Beam pipe

- size, external radius (+1 cm).
- consequences on B-layer !!
- Meeting on May 15th!

Geometry update ...



■ Muon Spectrometer

- more complete detector description from AMDB database
 - | considered as consolidation from Physics TDR
- RPC layout updated (overlapping)
- CSC new type of chambers
 - | new geometry
 - | new digitization
 - | new code

Geometry update ...



■ Packages to be modified

■ commons

| cleaning of 'structure'

- avoid duplication (introduced for historical reasons)

| add dedicated directories (e.g. atutil)

■ dice, atutil

| new 'structure'

| new code

■ Who

■ responsible from the sub-detectors

To be updated ...



- 1st step (end May)
 - AMDB Database
 - new matter added (used for reconstruction only)
 - new RPC layout
 - ATUTIL
 - | UTAMDB
 - matter description from database
 - | UTMUON
 - some utilities transferred from Muonbox
 - | UTFIELD
 - minor changes
 - DICE
 - | RPC related code
 - | Inner Detector part
 - already intensively tested
 - COMMONS

To be updated ...



- 2nd step (mid July?)
 - Database
 - | AMDB introduce CSC's
 - ATUTIL
 - | **UTAMDB**
 - for CSC's
 - DICE
 - | **CSC related code**
 - heavy
 - | **beam pipe**
 - | **B-layer**
 - COMMONS

Some consequences ...



- Update of reconstruction code
 - AxxxRec
 - | data preparation to be adapted
 - iPatRec
 - | take into account geometry modifications
 - **xKalMan ++** instead of xKalMan
 - | magnetic field (non homogeneous)
 - | new pixel geometry
 - | **TRT modular geometry to be added**
 - MuonBox
 - | **obvious reasons (see J.F. Laporte talk)**

Summary ...



- Geometry modifications
 - essential for Detector studies
 - essential for Trigger studies (TDR next year)
- Update at least in 2 steps
 - still modifications till the end of the year (?)
- Serious modifications of reconstruction packages will be needed