



# ATLAS & Service Challenge 3

GDB meeting  
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# ATLAS SC3 goals

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- ❑ Exercise ATLAS data flow
- ❑ Integration of data flow with the ATLAS Production System
- ❑ Completion of a "Distributed Production" exercise
- ❑ Tier-0 exercise
  
- ❑ More information:
  - <https://uimon.cern.ch/twiki/bin/view/Atlas/DDMSc3>

# Schedule



- ❑ Now until September, in parallel to SC3 throughput phase
  - Test migration from EDG RLS to LFC
  - Test LFC and FTS
- ❑ September
  - Deployment of new ATLAS Data Management and Production System into SC3 resources
- ❑ October
  - Start SC3 Phase 2 with small scale "Distributed Production" exercise
- ❑ November-December
  - Ramp-up of SC3 Phase 2
  - Tier-0 exercise
  - "Distributed Production" exercise

# Usage of pilot resources



- Prior to the start of SC3 Phase 2
  - Exercise migration of EDG RLS to LFC, initially to a single central LFC and later to a distributed set of LFCs (one per site)
  - Exercise POOL File Catalog interface to LFC
  - Querying/producing overviews of data location (of DC2/Rome data that was migrated from EDG RLS)
  - FTS will be used to
    - Integrate with ATLAS Data Management System (DQ2)
    - Exercise transfers of larger blocks of files

# Distributed Production



- ❑ Early October(?)
  - Test of Production Infrastructure
    - New ProdSys & DMS (using well tested ATLAS release)
  - Scale
    - $10^{**6}$  events (full chain EvGen-G4Sim-Digits-Reco-AOD)
    - Volume of data  $\sim$  5TB
    - In 2 weeks
    - Data produced at Tier-2 and stored at Tier-1
  - The request for "data" comes from the Physics community
    - if the infrastructure is not ready we will consider to produce the data in a "conventional" way (using the DC2/Rome infrastructure and tools) and to do the test with SC3 infrastructure and new tools later.
- ❑ November-December
  - Move to new ATLAS software (release 11)
  - Start generation of data for DC3 (Computing System Commissioning)
    - Scale  $10^{**7}$  events ( $\sim$  50TB)

# Tier-0: responsibilities



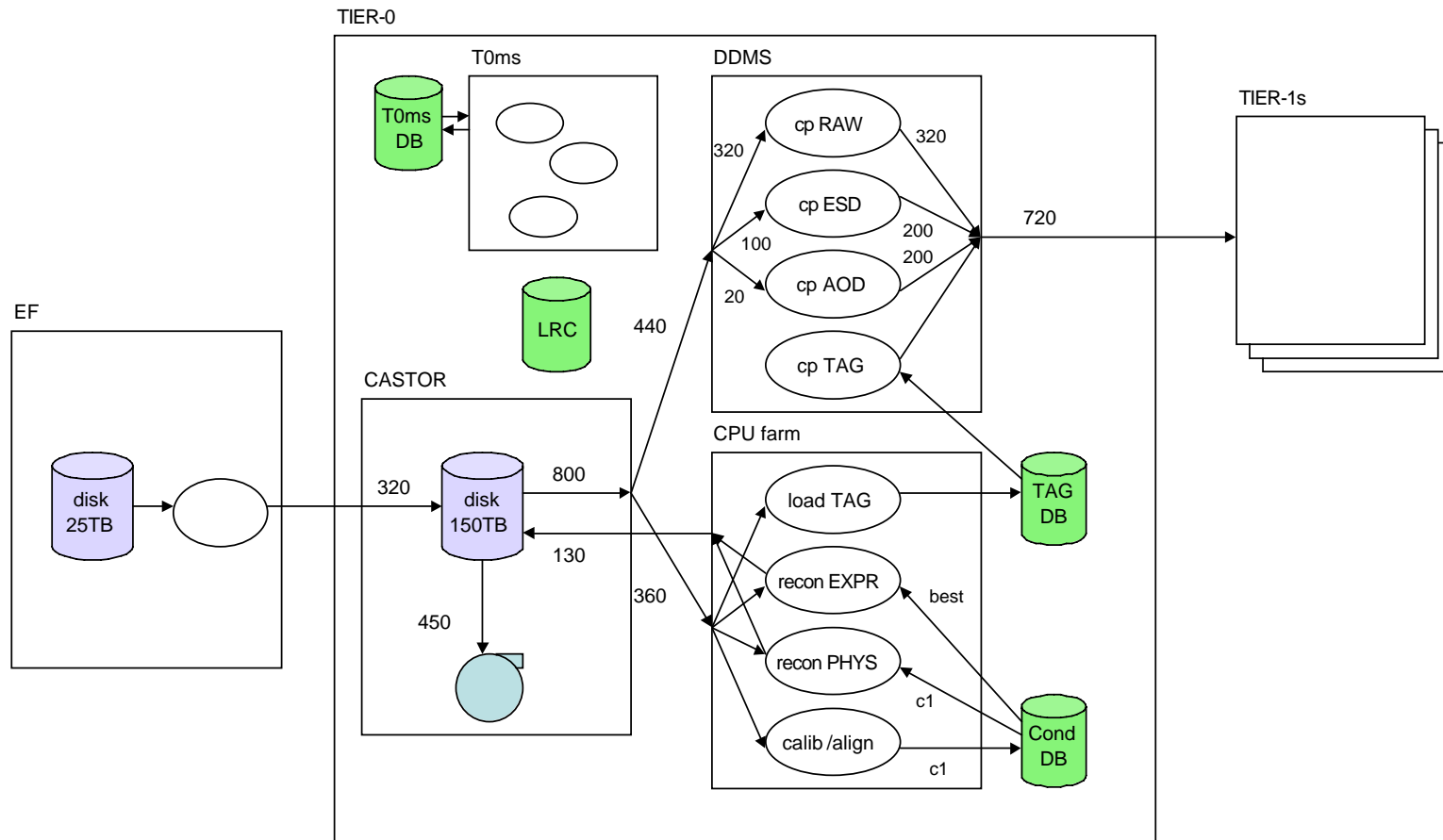
- Calibration and alignment
- First-pass ESD production
- First pass AOD production
- TAG production
- Archival of primary RAW and ESD/AOD/TAG
- Distribution of primary RAW and ESD/AOD/TAG

# Tier-0: components



- ❑ CASTOR Mass Storage System and catalog
- ❑ CPU farm
- ❑ Conditions DB
- ❑ TAG DB
- ❑ T0 management system (+prod DB)
- ❑ Data Management System

# Tier-0





# Tier-0: Data in/out



- In: from Event Filter
  - 320 MB/s
    - physics
    - calibration/alignment (45 MB/s)
    - express (6 MB/s)
    - pathological (<<<)
- Out: to Tier-1s
  - 720 MB/s
    - RAW/ESD/AOD/TAG

# Tier-0 exercise (end October?)



- ❑ Main ideas:
  - Reconstruction:  $x\%$  of data on  $x\%$  of resources ( $x=10?$ )
    - Data distribution: as close as possible to "real" conditions (full bandwidth)
  - Sustained effort on ~4 weeks
- ❑ Scaling test: reconstruction
  - 10% of real jobs on 10% of resources
  - $10^{**6}$  events/day on ~300 kSI2k
  - Input data prepared in advance
  - Use of Conditions DB
- ❑ Scaling test: data distribution
  - Raw data: 320 MB/s (10 times what is reconstructed)
  - ESD:  $2 \times 100$  MB/s (2 Tier-1)
  - AOD:  $10 \times 20$  MB/s
  - Total: 720 MB/s

# Early 2006



- ❑ Continue production for DC3
  - Scale  $10^{**7}$  events
- ❑ ATLAS release 12 scheduled for early February
- ❑ New production with "mis-align" detectors
- ❑ Add calibration/alignment in the production chain
  - First pass alignment/calibration
- ❑ Add re-processing in "Distributed Production"
  - "Improved" constants produced at Tier-1s
  - Re-processing at Tier-1s
  - Distribution of new ESD/AOD/TAG
- ❑ Tier-0 exercise
- ❑ Analysis of data