



# ATLAS Dress Rehearsals

*Kors Bos  
NIKHEF , Amsterdam*

# M3 Cosmic Ray Test



- Back in June
- Was mostly detector test
- Last few days also wrote data into Castor 1
- Only 1 SFO could be used → rate limitation
- Data used for detector studies

# Tdaq technical run



- In August
- To test writing into Castor 2
- Used all 5 SFO's → ~50 MB/s achieved
- Expected 320 MB/s (64 MB/s per SFO)
- Problem with writing/reading in SFO's

# M4 Cosmic Ray Test goals



- August 23 – September 3 : still ongoing
- Using 4 SFOs: rate  $< \sim 250$  MB/s
- Data written into Castor 2 ( $\sim 60$  TB)
- Full T0 operation:
  - RAW written to tape at CERN
  - Processed in reconstruction farm  $\rightarrow$  ESD
  - ESD written to tape and disk at CERN
  - RAW & ESD exported to T1's
- ESD data subscribed from T1 to T2s
- Analyse M4 data at T2s

# Metrics for success

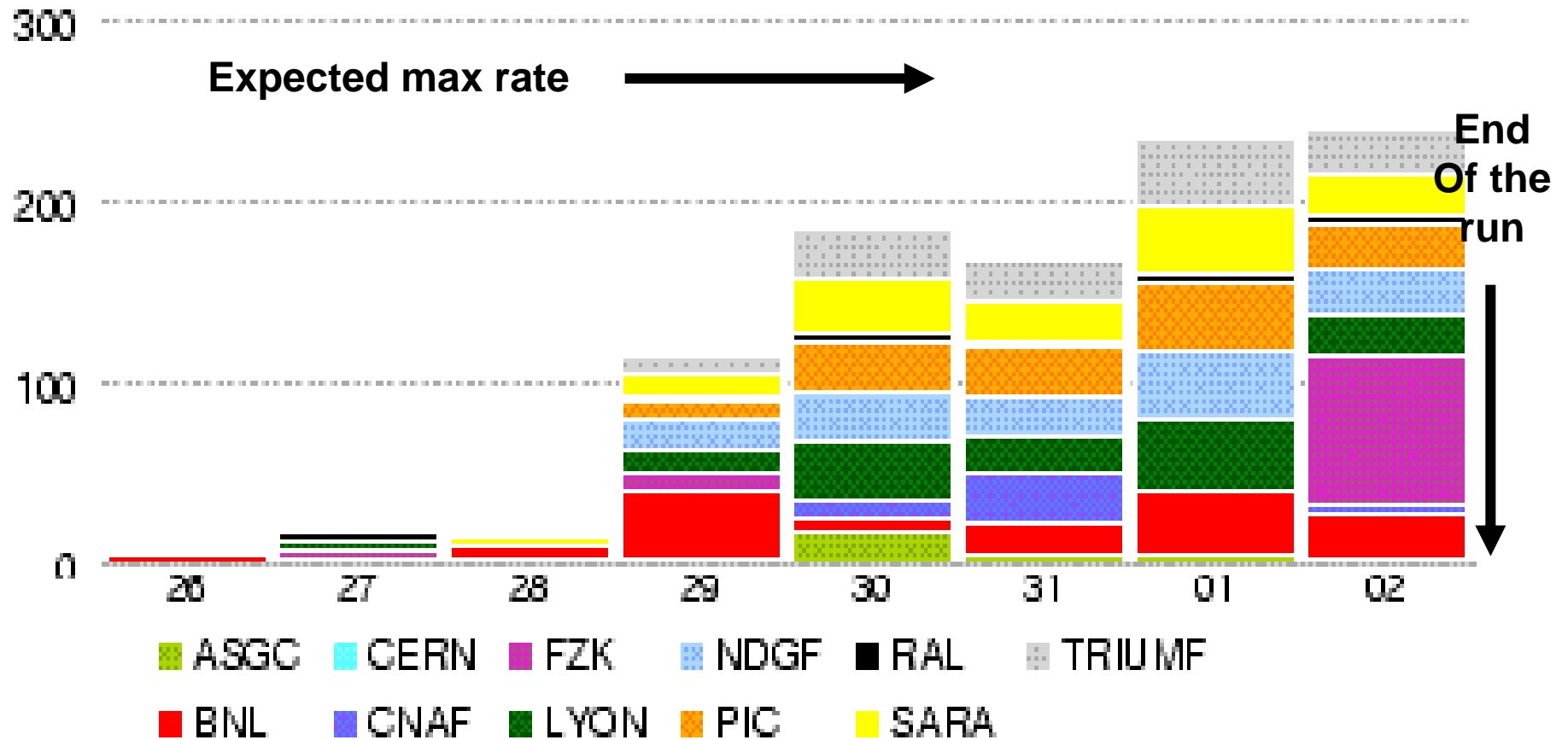


- Full rate T0 processing
- Data exported to 5 / 10 T1's and stored
- For 2 / 5 T1's exports to at least 2 T2's
- Quasi-rt analysis in at least 1 T2
- Reprocessing in Sept. in at least 1 T1

# M4 run by the day



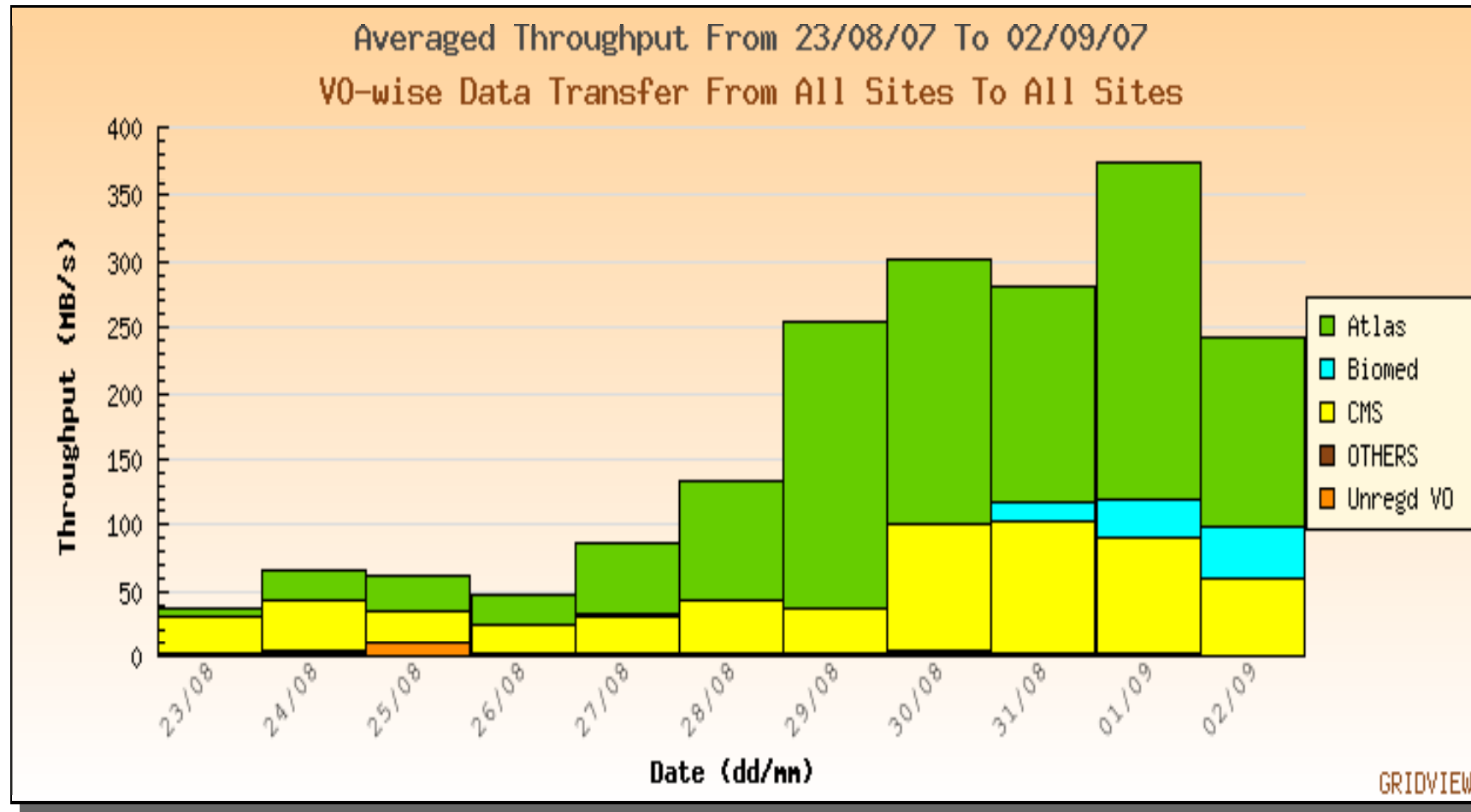
Troughput in MB/s from T0 to all T1's



# Not quite alone



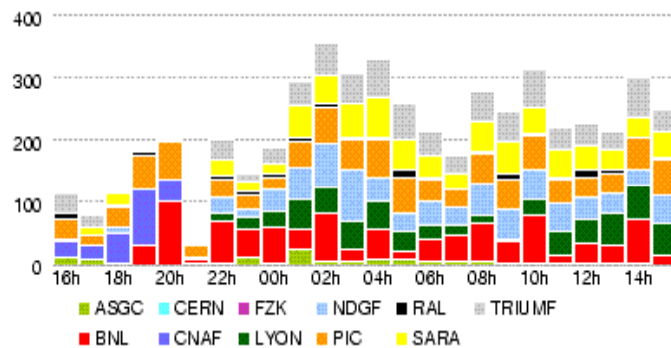
## GidView



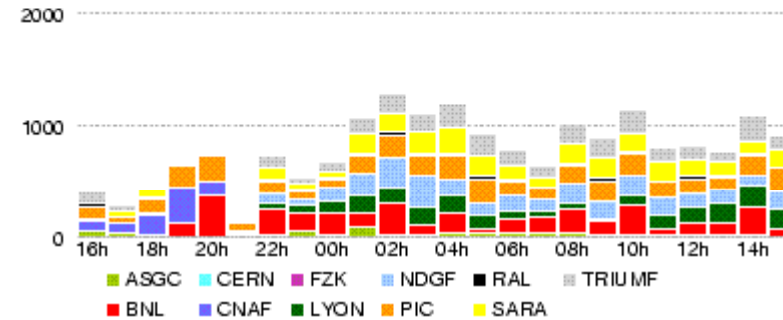
# M4 data taking August 31



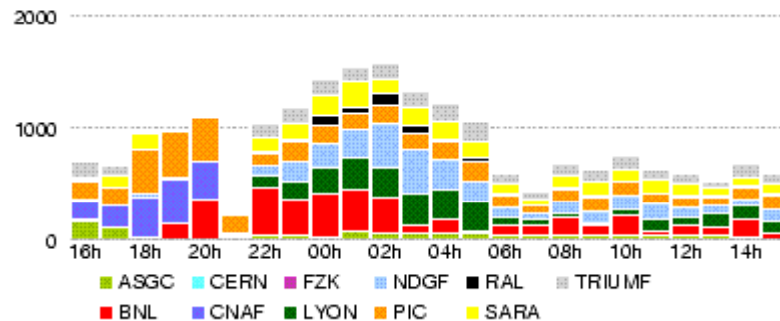
### Throughput MB/s



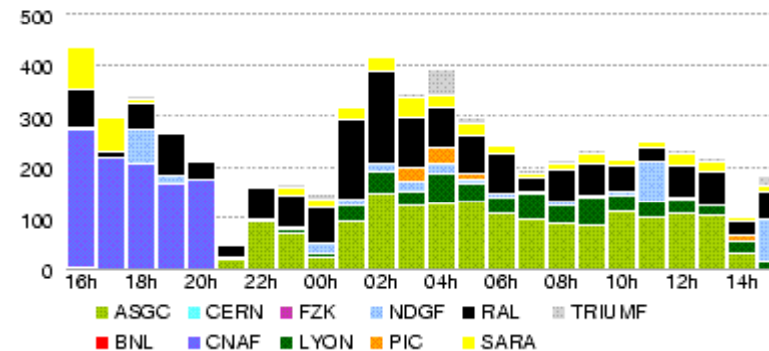
### Data transferred GB



### Completed filetransfers



### Total number of errors

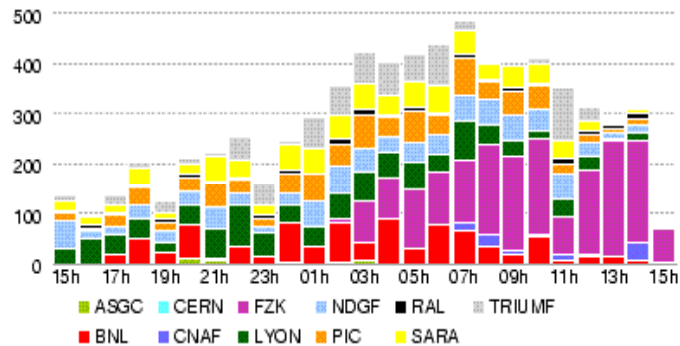




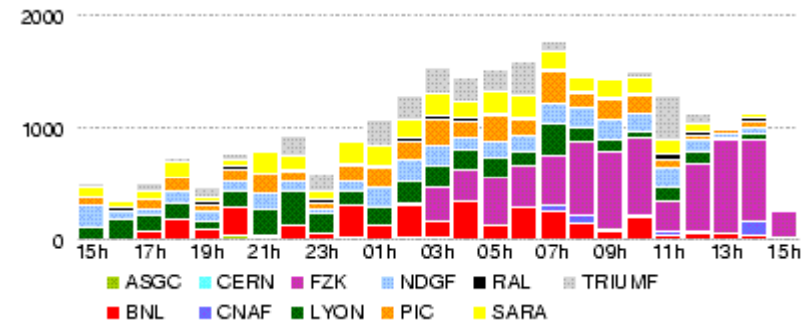
# Recovery works



Throughput MB/s

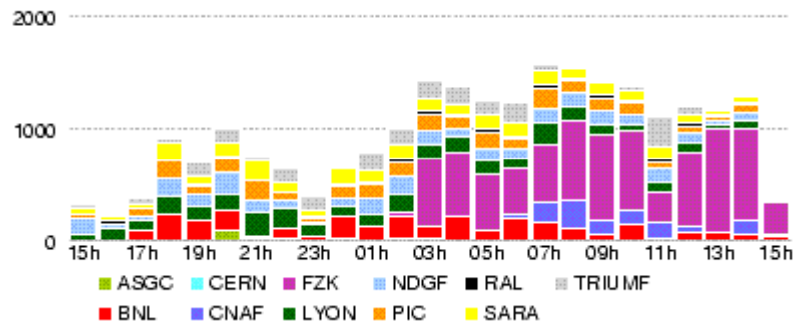


Data transferred GB



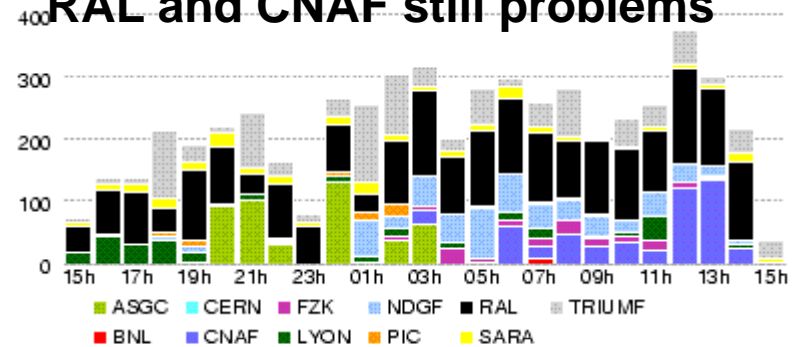
**FZK recovered at 02:00 on Sept.2**

Completed filetransfers



Total number of errors

**RAL and CNAF still problems**



# Prelim. conclusions



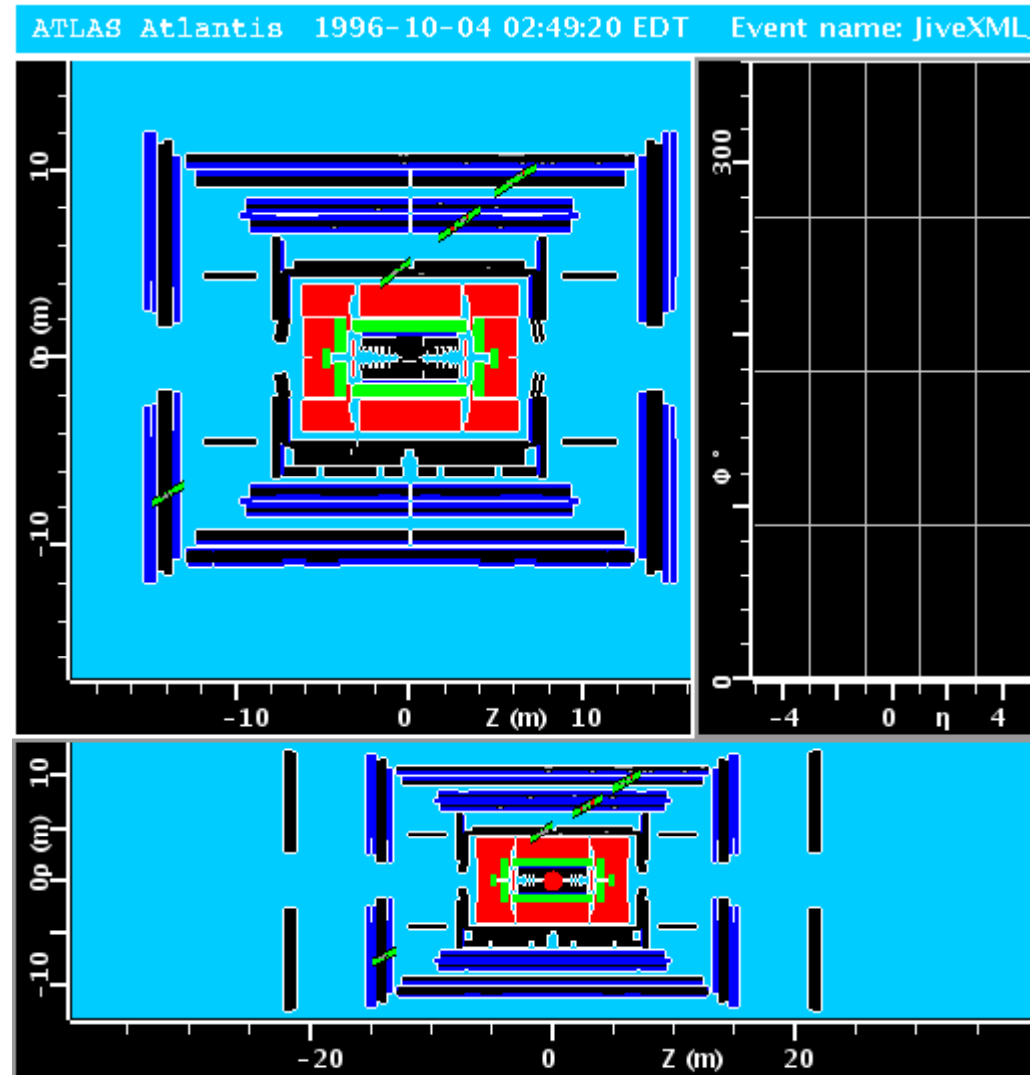
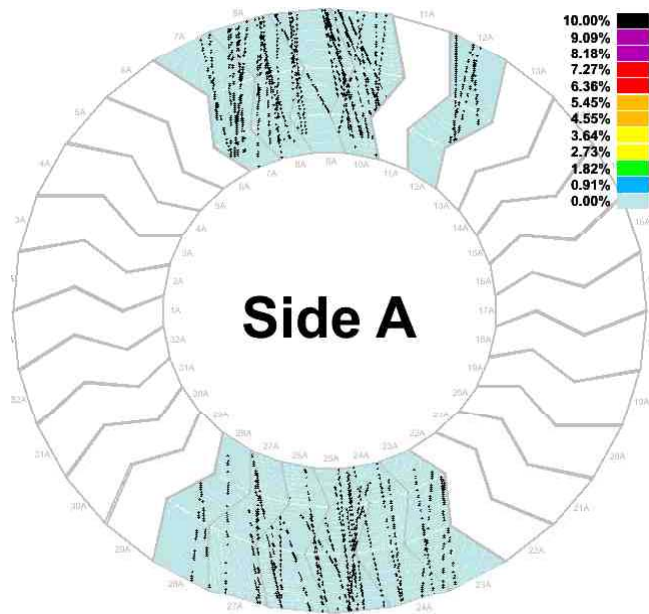
- Ability to write at 200 MB/s SFO→Castor2
- Little data produced in first 5 days
- T0 (including Castor2) worked well
- Exports to all T1's worked
  - Longer (than few hours) down time in:
    - RAL : to be studied
    - CNAF : 2 day cooling system upgrade
    - FZK : disk array down (fuse)
- Still problems with exports T1 → T2
- Another 12 hours until end-of-run

# Real-time M4 data analysis



Tracks in the muon chambers  
And in the TRT

Analysis done simultaneously  
In European and US T1/2 sites



# Metrics for success

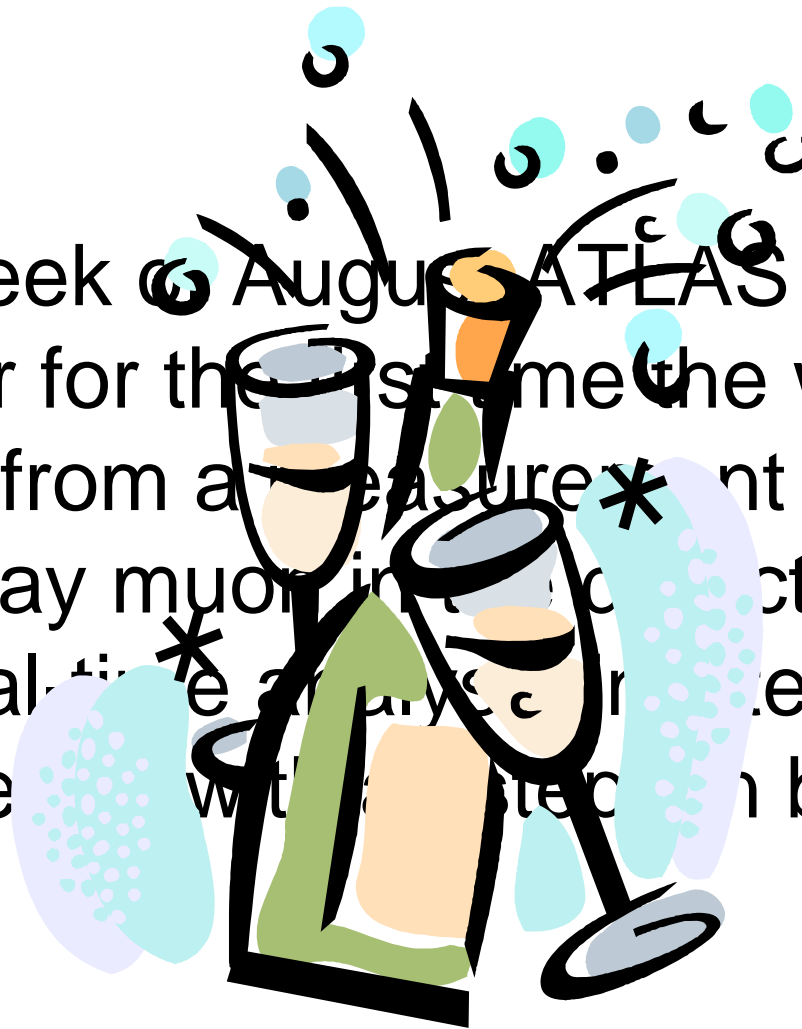


- Full rate T0 processing **OK**
- Data exported to 5 / 10 T1's and stored **OK, and did more !**
- For 2 / 5 T1's exports to at least 2 T2's **not yet all done**
- Quasi-rt analysis in at least 1 T2 **OK, and did more !**
- Reprocessing in Sept. in at least 1 T1 **not yet started**

# An important milestone



This last week (6 August) ATLAS has shown to master for the first time the whole data chain: from a measurement of a real cosmic ray muon in the detector until an almost real-time analysis of the data in Europe and the US with a latency of less than 100 ms between.



# M5 and M6 and beyond



- M5: October 16 – 23
- M6: end December
  - With incremental goals
  - Reprocessing challenges in between runs
- In 2008: cosmic ray data taking is the default

# Other goals



- Stable T0-T1 exports at nominal rate with test data
- T0 running + T0 exports with test data simultaneously with other experiments
- MC/Reco data production at nominal rate with corresponding data transfers
- Any request for data collection from detector groups (f.e. regular muon chamber calibration runs)

# FDR production goals



- Simulated events injected in the tdaq
- Realistic physics mix
- Bytestream format including luminosity blocks
- File & dataset sizes as expected for real data
- Realistic trigger tables
- datastreaming
- Use of conditions database
- Data quality-, express line-, calibration- running
- T0 reconstruction: ESD, AOD, TAG, DPD
- Exports to T1&2's
- Remote analysis



# FDR analysis goals



- at the T1's
  - Reprocessing from RAW → ESD, AOD, DPD, TAG
  - Remake AOD from ESD
  - Group based analysis → DPD
- At the T2&3's
  - Root based analysis
  - Trigger aware analysis with Cond. and Trigger db
  - No MC truth, user analysis
  - MC/Reco production in parallel

# FDR preparations



## Round 1

1. Data streaming tests DONE
2. Sept/Oct 07 Data preparation STARTS SOON
3. End Oct07: Tier 0 operations tests
4. Nov07-Feb08. Reprocess at Tier1, make group DPD's

## Round 2

### ASSUMING NEW G4

1. Dec07-Jan08 New data production for final round
2. Feb08 Data prep for final round using
3. Mar08. Reco final round ASSUMING SRMv2.2
4. Apr08. DPP prod at T1's
5. Apr08 More simulated data prod in preparation for first data.
6. May08 final FDR

*See also Dario's slides later on Combined Data Management*