

# UTA MC Production Farm & Grid Computing Activities

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- UTA DØMC Farm
- MCFARM Job control and packaging software
- What has been happening??
- Conclusion

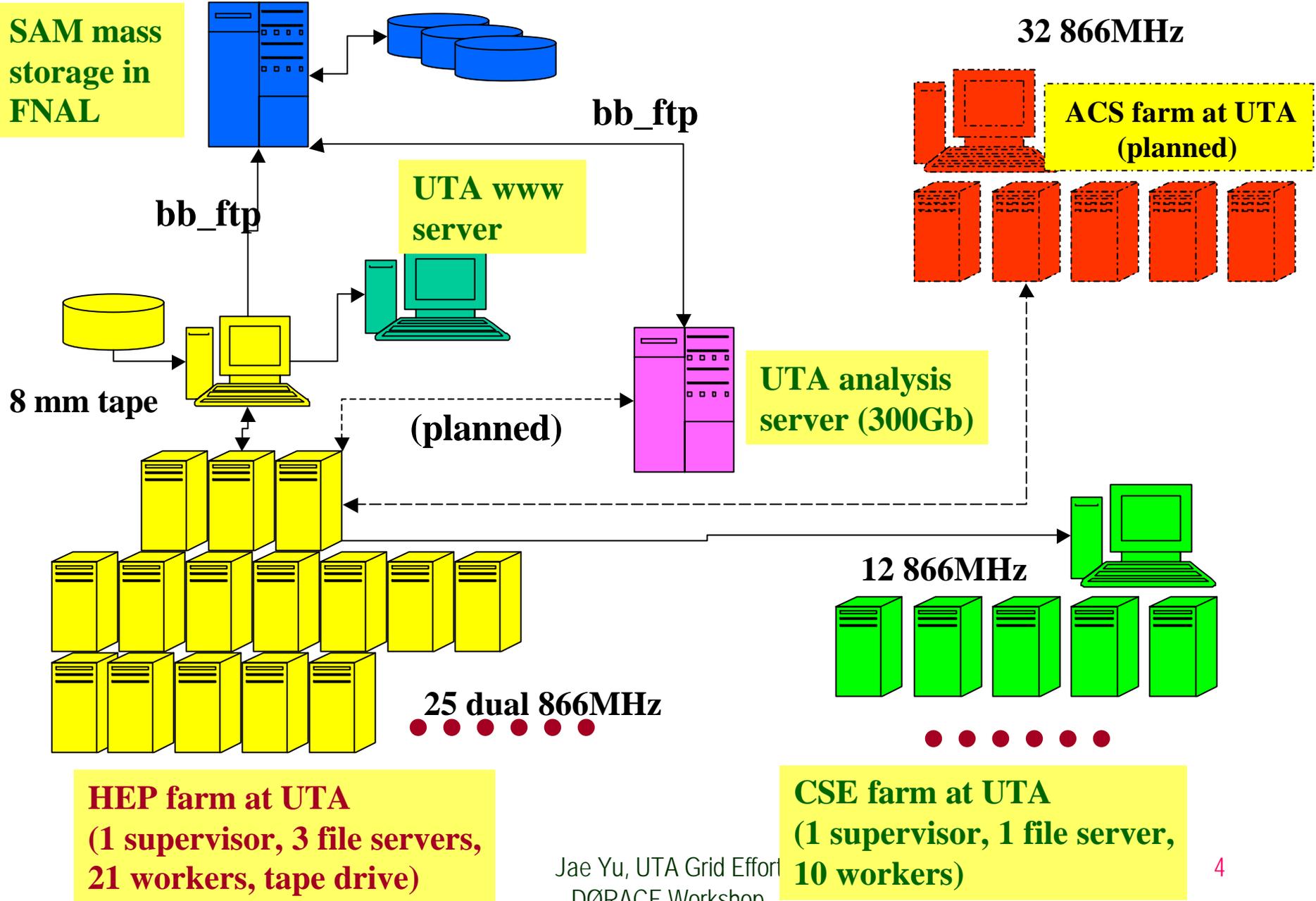
# UTA DØ Monte Carlo Farm

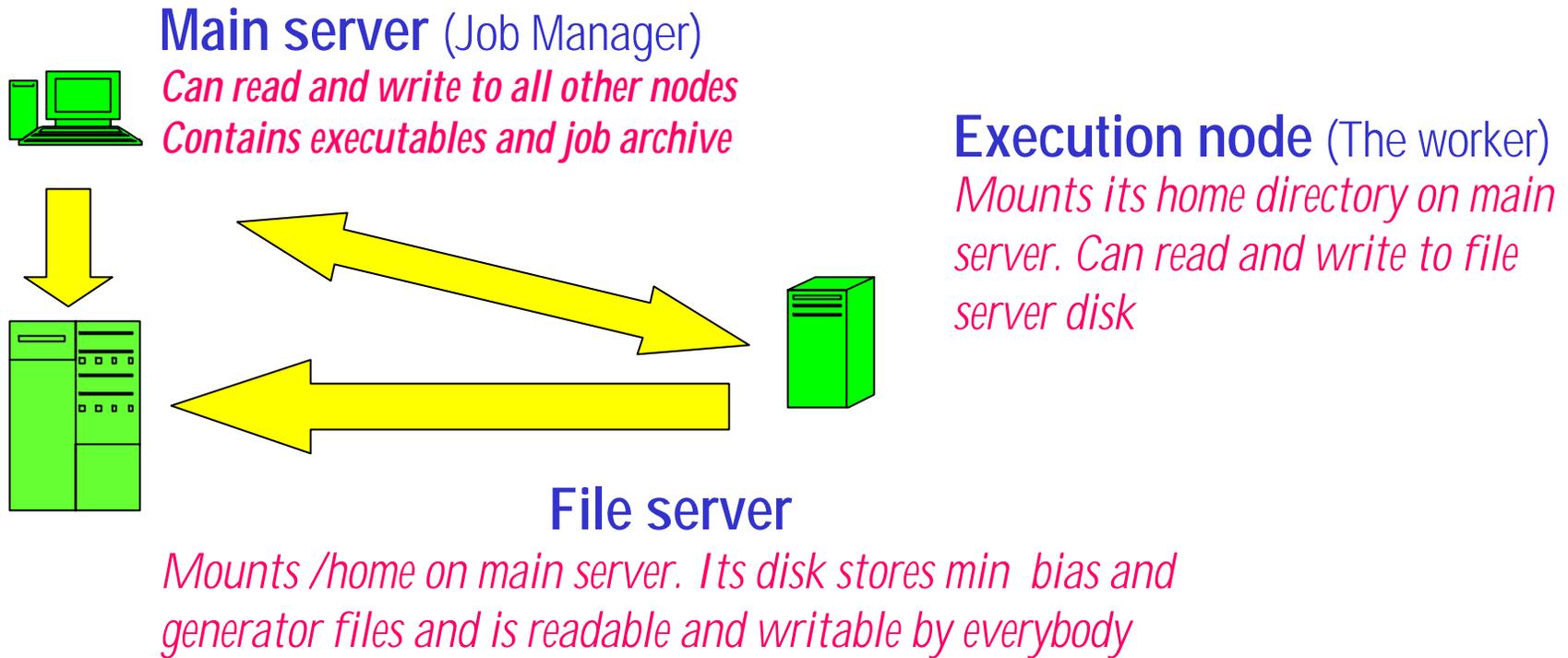
- UTA operates 2 Linux MC farms: HEP and CSE  
HEP farm: *6x566 , 36x866 MHz processors, 3 file servers, (250 GB) one job server, 8mm tape drive.*  
CSE farm: *10x866 MHz processors, 1 file server (20 GB), 1 job server*  
Exploring an option of adding a third farm (**ACS**, *36x866 MHz*)
- Control software (job submission, load balancing, archiving, bookkeeping, job execution control etc) developed entirely in UTA by Drew Meyer
- Scalable: *started with 7 and 52 processors at present*  
<http://wwwhep.uta.edu/~mcfarm/mcfarm/main.html>

# MCFARM – UTA Farm Control Software

- MCFARM is a specialized batch system for:  
*Pythia, Isajet, D0g, D0sim, D0reco, recoanalyze*
  - Can be adapted for other sites and experiments with relative minor change
  - Reliable Error recovery and check point system: *It knows how to handle and recover from typical error conditions.*
  - Robust – *even if several nodes crash the production can continue*
  - Interfaced to SAM and bookkeeping package, *easily exports production status to WWW page*
- <http://www-hep.uta.edu/~mcfarm/mcfarm/main.html>

# UTA cluster of Linux farms and current expansion plans

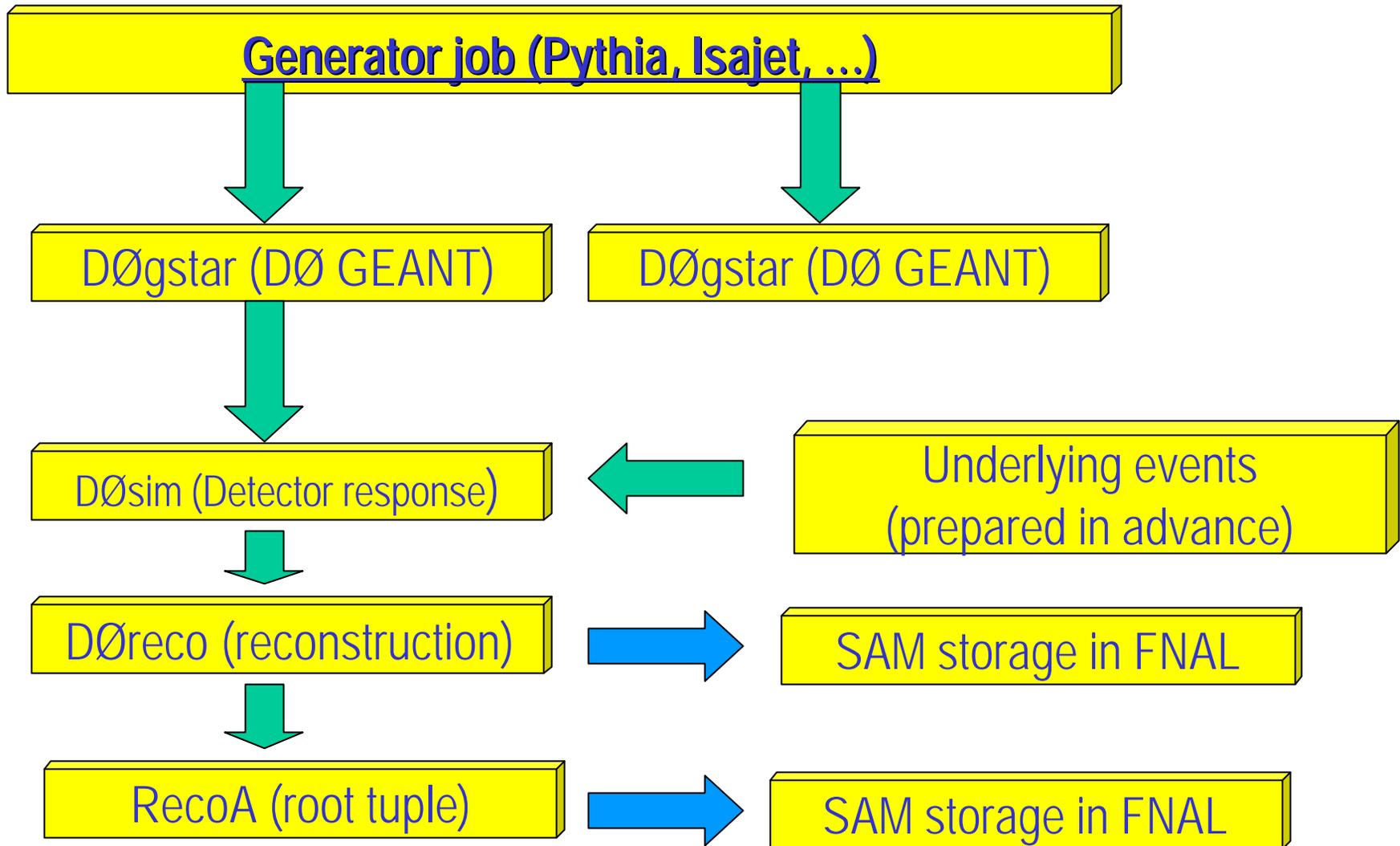




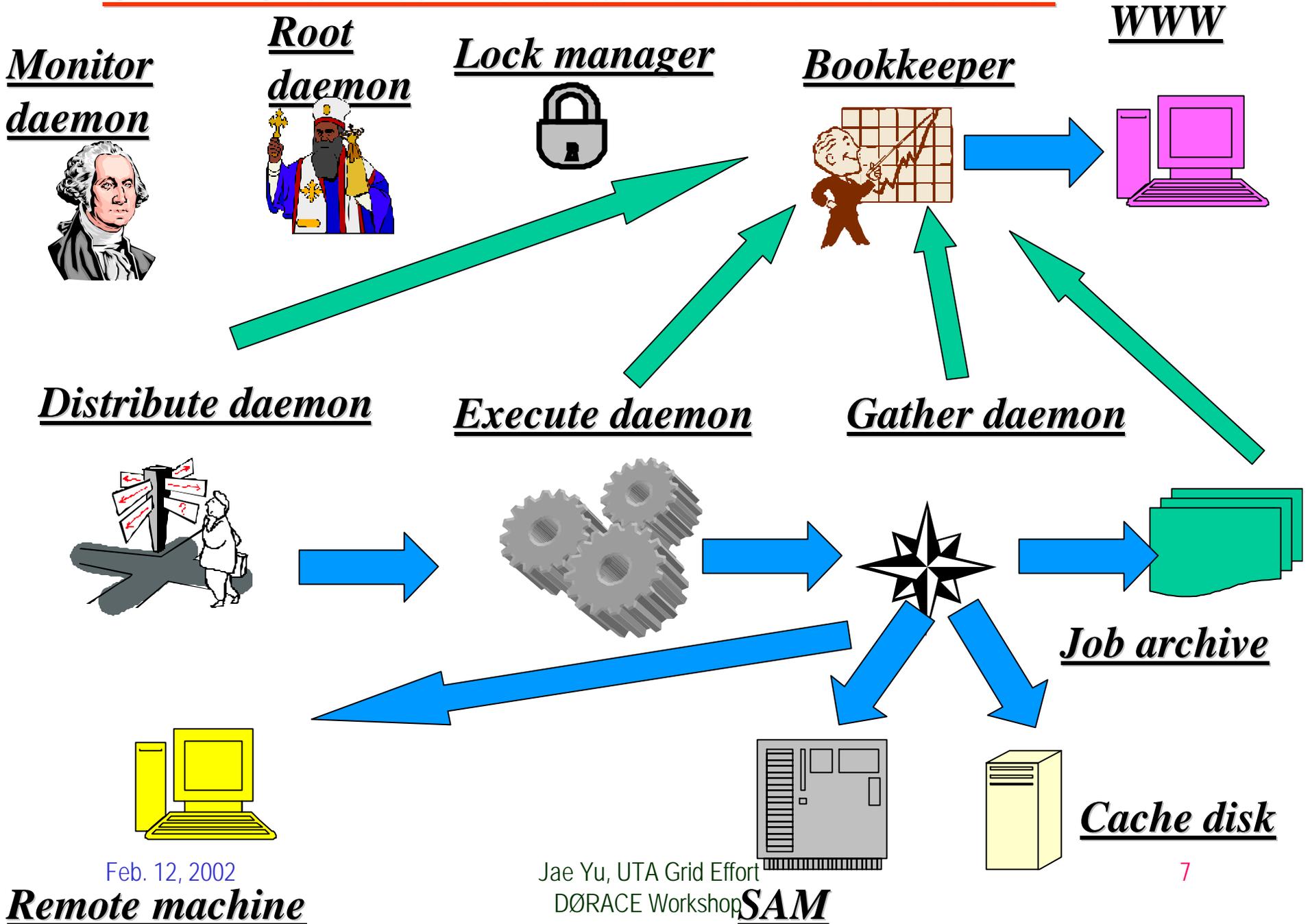
HEP and CSE farms share the same layout, differing only by the number of nodes involved and by the export software

Flexible layout allows for simple expansion process

# DØ Monte Carlo Production Chain



# UTA MC farm software daemons and their control



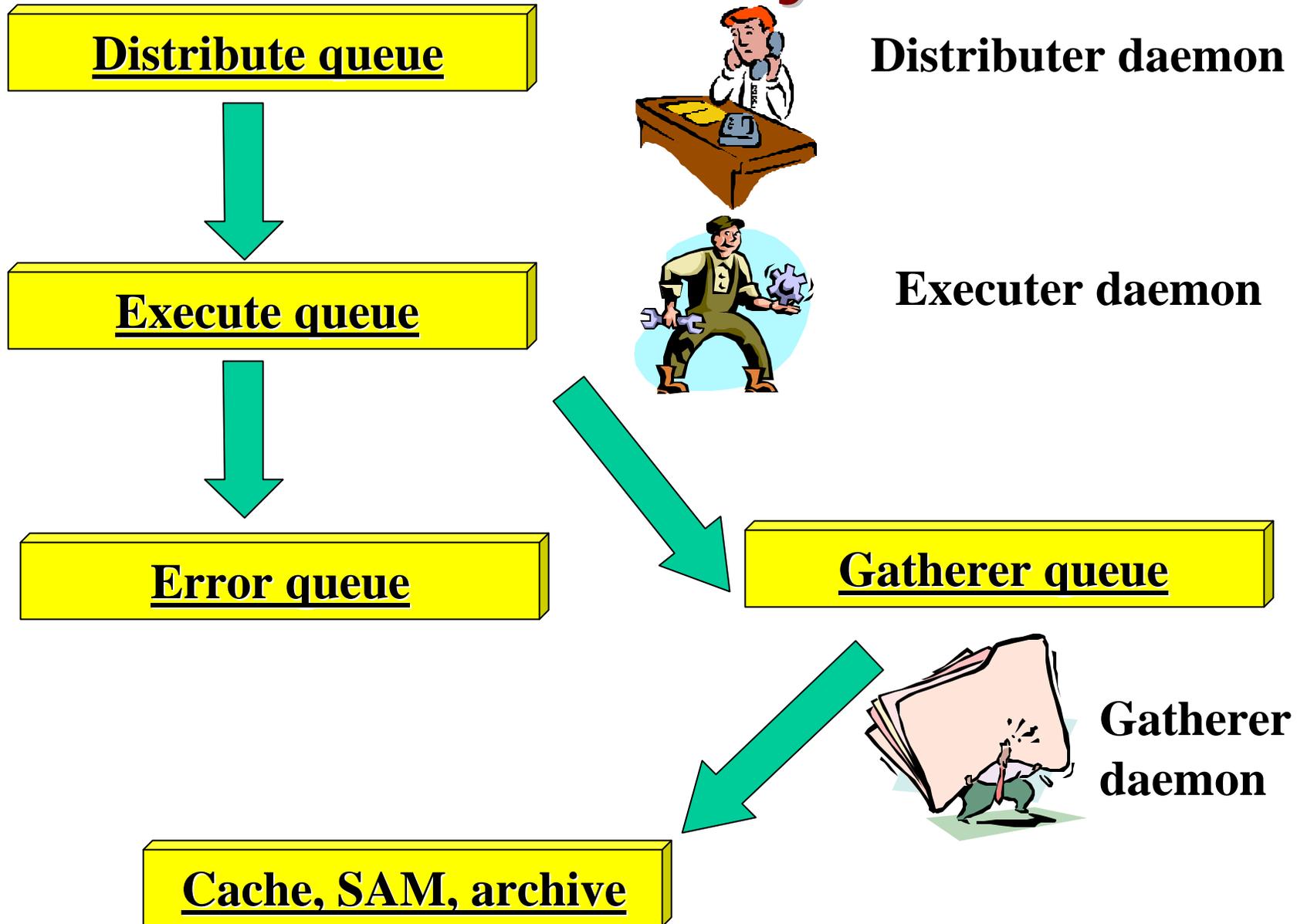
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Remote machine

Jae Yu, UTA Grid Effort  
DØRACE Workshop

SAM

# Job Life Cycle



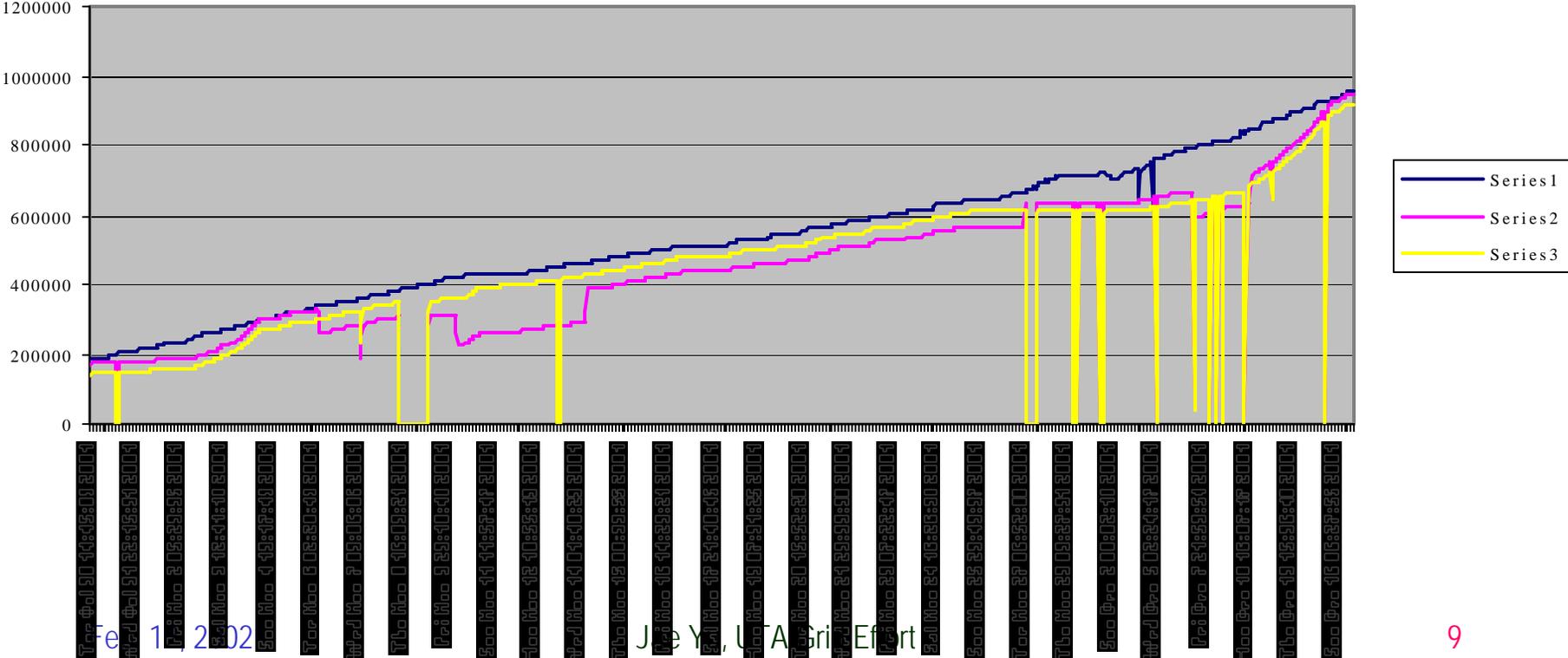
# Mcp10 production (Oct2001-now)

*Jobs done*

*recoA files  
In SAM*

*Reco events  
in SAM*

HEP farm production status



# What's been happening for Grid?

- Investigating network bandwidth capacity at UTA
  - Conducting tests using normal FTP and bbftp
  - The UTA farm will be put on a gigabit bandwidth link
- Would like to leverage on our extensive experience with Job packaging and control
  - Would like to interface farm control to more generic Grid tools
  - A design document for such higher level interface has been submitted for perusal to the DØGrid group.
- Expand to include ACS farm
- Exploit SAM station set up and exercise remote reconstruction
  - Proposed to the displaced vertex group to reconstruct their special data set → More complex than originally anticipated due to DB transport
- Upgrade the HEP farm server

# Conclusions

- The UTA farm has been very successful
  - The internally developed UTA MCFARM software is solid and robust
  - The MC production is very efficient
- We plan to use our farms for data reprocessing, not only MC production.
- We would like to leverage on the extensive experience of running MC production farm
  - We believe we can contribute significantly in higher level user interface and job packaging