DDM Operation and Production

Pavel Nevski

DDM Operation Workshop
CERN, January 26, 2007

Outlook

- DDM Operation in Job Definition

- DDM Operation in Data Replication

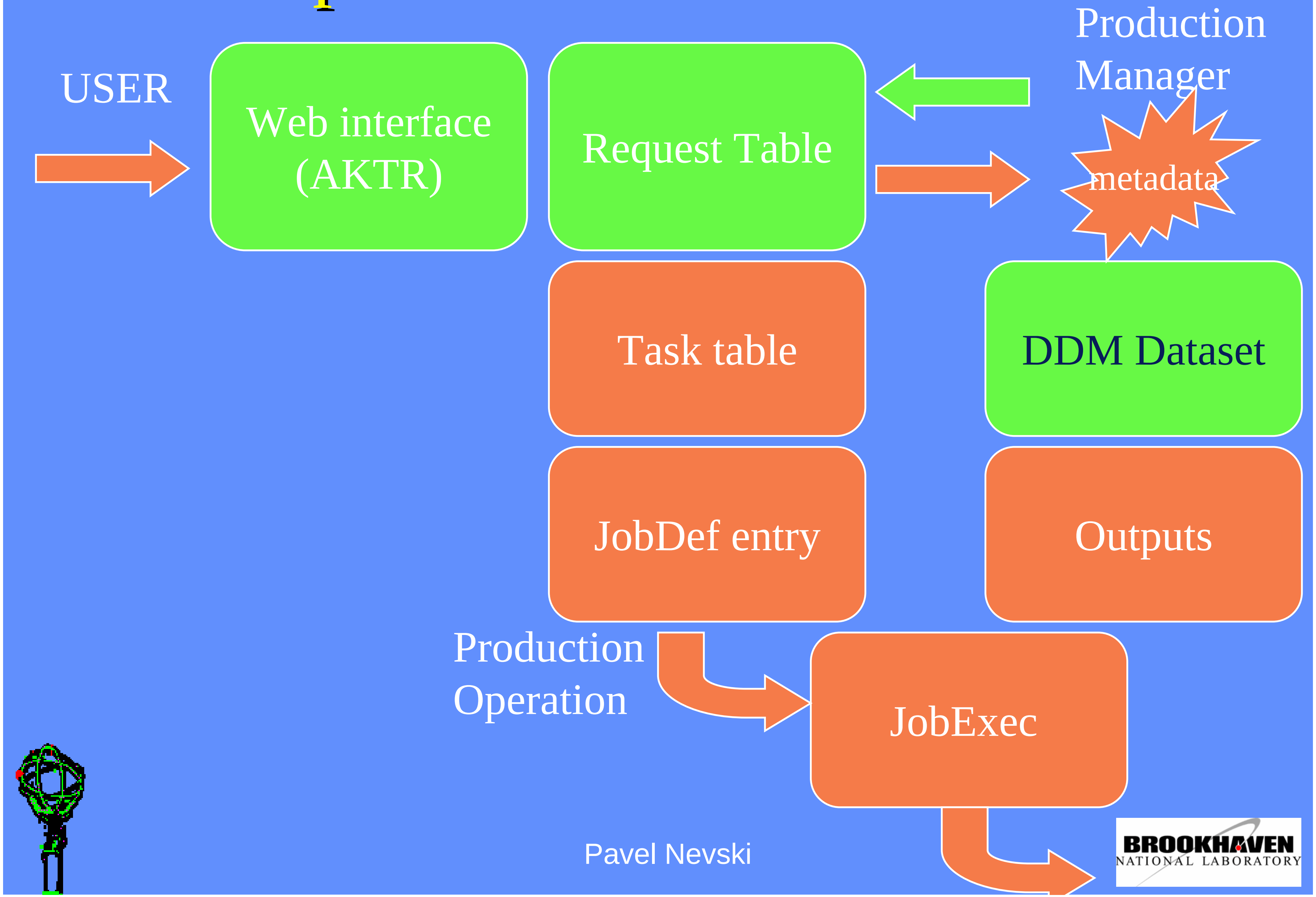
DDM and Job definition

- Atlas Jobs are defined dynamically – i.e. only after verification that input exists ***on the proper GRID***
- This mode requires some data validation before jobs can be submitted
- Currently only event generation (*evgen*) input and output from a different GRID are accepted
- Other types of job are running on their original GRIDs

Modified Flow Control

- Tasks are going through a chain of states:
  - After is requested it goes to **Pending** state to allow possible user's correction, input verification and output Dataset creation
  - After a delay (~3 hours) output datasets are created and task goes to ***submitted*** or ***submitting*** state
  - When **Submitted** and jobs start to succeed it goes to **Running**
  - When all jobs are terminated (DONE or ABORTED) task is **Done, Finished or Failed**

Components and their relations



Input Data Control integrated with DDM

- If input data were produced on the same grid flavor, jobs are released in ***TOBEDONE*** status
  - still, simulations jobs are in WAITING status to allow ***evgen*** file replication
- If input data were produced on a different grid flavor, jobs are defined in ***WAITINGCOPY*** status
- If user input (events) is required, jobs are defined as ***WAITINGINPUT*** until input is fully available
- Input data needed are first collected at CERN or BNL
- Inputs are moved using DDM

Event Input

- Input events are registered by users on a site they are working (typically CERN, BNL; sometime Lyon, RAL)
- Job Definition cron detects *evgen* jobs which require input events and put them in WAITINGINPUT state
- The same cron updates a list of requested inputs with the proper destination grid GRID
- Another cron is trying to locate inputs and copy them to the proper GRID

Input replication

- Till december 2006 copying was done using subscription mechanism
  - A lot of problems with delayed execution and especially error analysis.
  - Repeating subscription almost never helps
  - Few cross-GRID submissions succeeded
- Since December copying is done using dq2_cr
  - Smooth operation, most of errors are corrected by dq2_cr internally
  - Remaining problems fixed with repeating copy
  - A few dozen of tasks succeed during last month

Reconstruction inputs

- A validation procedure is developed to verify that outputs are registered in a T1 catalog
- For the moment it is too slow to use for all job submission
- However it allows to verify at least *a posteriori* that a task is closed properly
- More work is needed to optimize the dataset validation

Dataset replication using local subscription agent

- Presence of a dataset from a “list of interest” is detected on a T1
- Verification of T2 replica (incomplete)
- If no replica exists on T2 , subscribe it
- Process is repeated until data reach T2
- Needs verification on T2 (?)

Conclusion

- Job definition for ATLAS distributed production is integrated with DDM

- Common set of scripts is developed to support Production and central Data Distribution