

# Legacy Group Production

Tested/validated during summer in ProdSys2 with direct help from physics groups. However could not switch to ProdSys2 due to missing functionality by Rucio to replicate output to group disk. At last Software week this was decided to be done in ProdSys2 till Rucio is ready. Implemented/tested by Oct. 17th. DEFT was opened to groups on Oct. 20th for testing. Savannah was shutdown on Oct. 24th, use fully DEFT and JIRA since then. No feedback from groups on DEFT yet.

- Request from Rucio developers: how to select the best destination from available group tokens, specify a generic name on DEFT/ProdSys2 and Rucio decides about the best destination among available group tokens.
- Request from ProdSys2 developers: Task management by groups via VO role(s), e-groups, etc. so that group can act on only their tasks. Work started already by imposing VO roles, to be finalized. Also enabling of email notifications using the e-groups for task submissions/abortions.

# Derivation/Train Production (I)

- Built 8 caches (AtlasProduction and AtlasDerivation) before we launched the full production on Oct. 20th to fix various issues from output file naming conventions to trf/software errors.
- Used ProdSys2 as a validation tool as a proper validation suite/tests were not in place, took longer to validate as we had to wait for task submission/execution and browsing task pages was very slow (fixed last week).
- We run derivation production in single carriage mode, namely not trains yet, due to the trf for multiple-output merging was not ready/tested. Also interference tests across group derivations have not been done yet, goal is to run group trains first in the second round of production.

## **Production Request placing via DEFT:**

- DEFT was slow to submit full production on DCI4 8TeV MC and periodB data samples, created >8k tasks. Even though submitted in bunches (~1k tasks) the submission still takes 1-2 minutes for a bunch after a first optimization done. OK for now as full production submission is not an every day task.
- DEFT currently works fine by uploading the task submission list files. Making the list files locally is a tedious manual work by receiving the requests from groups via Savannah/JIRA tickets as text files for the list of MC samples/derivation type/skim vs. no-skim and running a python script on the text files to make DEFT ready list files.
- **Request from DEFT developers: move manual work to DEFT for automation. DEFT already has a dataset search filter for groups to select samples. Presented to developers on Oct. 14th and was put as an action item for the work to start after Nov. 1st.**

# Derivation/Train Production (2)

## Task Management via Web UI:

- Works fine when aborting/obsoleting 100s of tasks however gets stuck for 1000s of tasks. So had to abort in bunches.
- Request from developers: fast task management. Dedicated manpower in place now, collect requests from all parties via JIRA ticket to prioritize the requests.

## Job parameters tuning:

- JEDI uses what is requested for events\_per\_job parameter on DEFT. Number of events per input file is not known to JEDI till Rucio is ready. For MC processing it is straightforward use events\_per\_job=5k or 10k covers all productions. For data it is problematic as AODs are merged differently, some with 1k and mostly with 10k. In Run-1 we had to split the production into two accordingly.
- Request from Rucio and JEDI developers: dynamic job splitting as design goal. w/o worrying about 1k vs 10k parameter JEDI should split the jobs by preserving the lumiblock boundaries. Not in place yet, waiting for Rucio for number of events in input files. Maybe some work already done by Tadashi for getting the lumiblock info from input files which has 1b interval, discussed briefly with Rod at the Software week. To be checked with Tadashi.
- merging: default size in merging is set to 4GB by JEDI, would work fine for derivation production output which needs merging.
- Request from merging trf developer: No merging should be done when Reco job failed to produce output.

# Derivation/Train Production (3)

## Error codes:

- Need to urgently improve on error codes reported by the trf and pilot to distinguish between software errors and site/service problems. Same error code is currently reported for 3 different reason; **trans:** Unknown transexitcode error code. Some effort on this at: <https://its.cern.ch/jira/browse/ADCMONITOR-347>. Need to extent to other error codes and converge quickly.
- Request from trf and pilot developer: improve on error codes based on recent productions (specially derivation production) production managers provide input to them.

## p-tag creation and step name:

- p-tag making still uses ProdSys I interface, not tested yet in AML. step name is still “merge”, was agreed to change it to “deriv”, I expect this change will take place only when using AML’s interface. To be checked if it is already added in AML.

## Mismatch between DDM and AML for number of events in derivations:

- AML double counts the number of events, “um” namely unmerged datasets should be excluded. Tadashi provided the sql to Solveig for selecting only the merge jobs, will be put in production today.

## Train production I/O:

- proddisk at T2s is filling up very rapidly as reported by Stephane/Simone. Production was submitted with priority=560, highest priority in group production. Only priority=950 brokers all jobs to T1s. Jobs are short, 1-2 hours. Merging is also done at T2s, is unmerged datasets cleaned up by JEDI?

# Derivation/Train Production (4)

## Monitoring:

- Trying to monitor a new production on a new monitoring page was difficult due to slow task pages (fixed on Oct. 23rd) and not being able to see an overall progress of production easily for what fraction of the production is completed already.
- Request from task/bigpanda monitoring developers:
  - can overall status pages be improved as above?
  - can Reco job still has a status of finished though only subsequent merging step failed?
  - can new features/updates on the dev version ([https://prodtask-dev.cern.ch/prodtask/task\\_table/#!/?time\\_period=all&task\\_type=production](https://prodtask-dev.cern.ch/prodtask/task_table/#!/?time_period=all&task_type=production)) be moved to bigpanda ([http://bigpanda.cern.ch/prodsys/prodtask/task\\_table/](http://bigpanda.cern.ch/prodsys/prodtask/task_table/)) for a more uniform monitoring page be referred to other interested parties?
  - can output types be added to the job pages similar to input types already available?