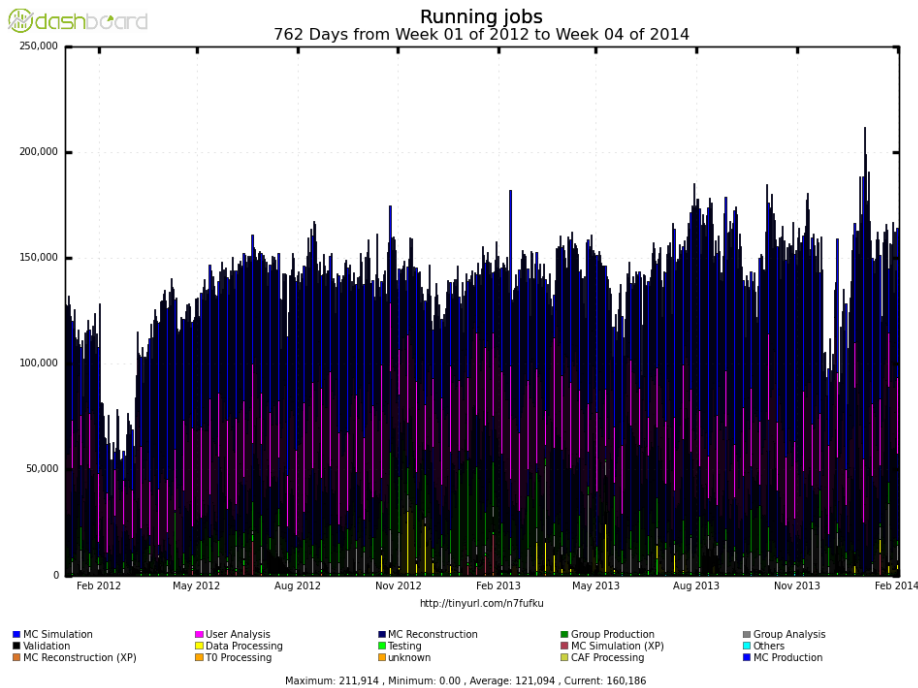


ATLAS Plans in 2014

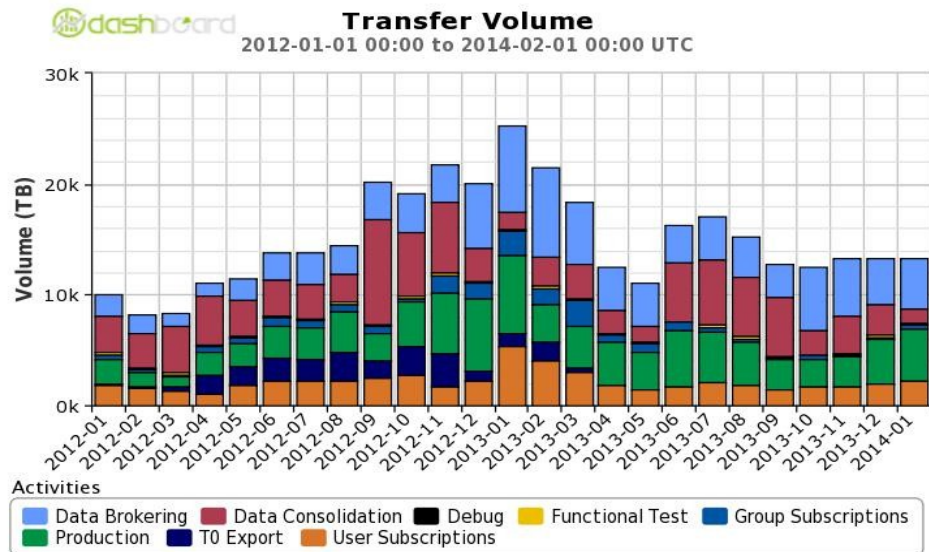
Andrej Filipčič
Alessandro Di Girolamo

ATLAS Computing since 2012

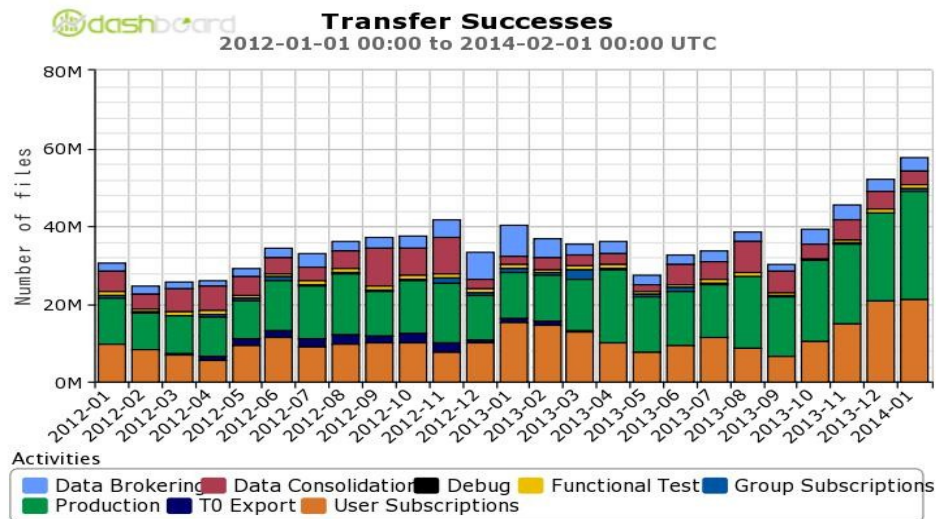


- Fairly stable grid usage
- MC production, data reprocessing, user analysis shares stable over the last 2 years
- Much more computing cores used than pledged
 - ➔ unpledged part of Tier1, Tier2
 - ➔ many Tier3s fully integrated in WLCG
 - ➔ opportunistic resources

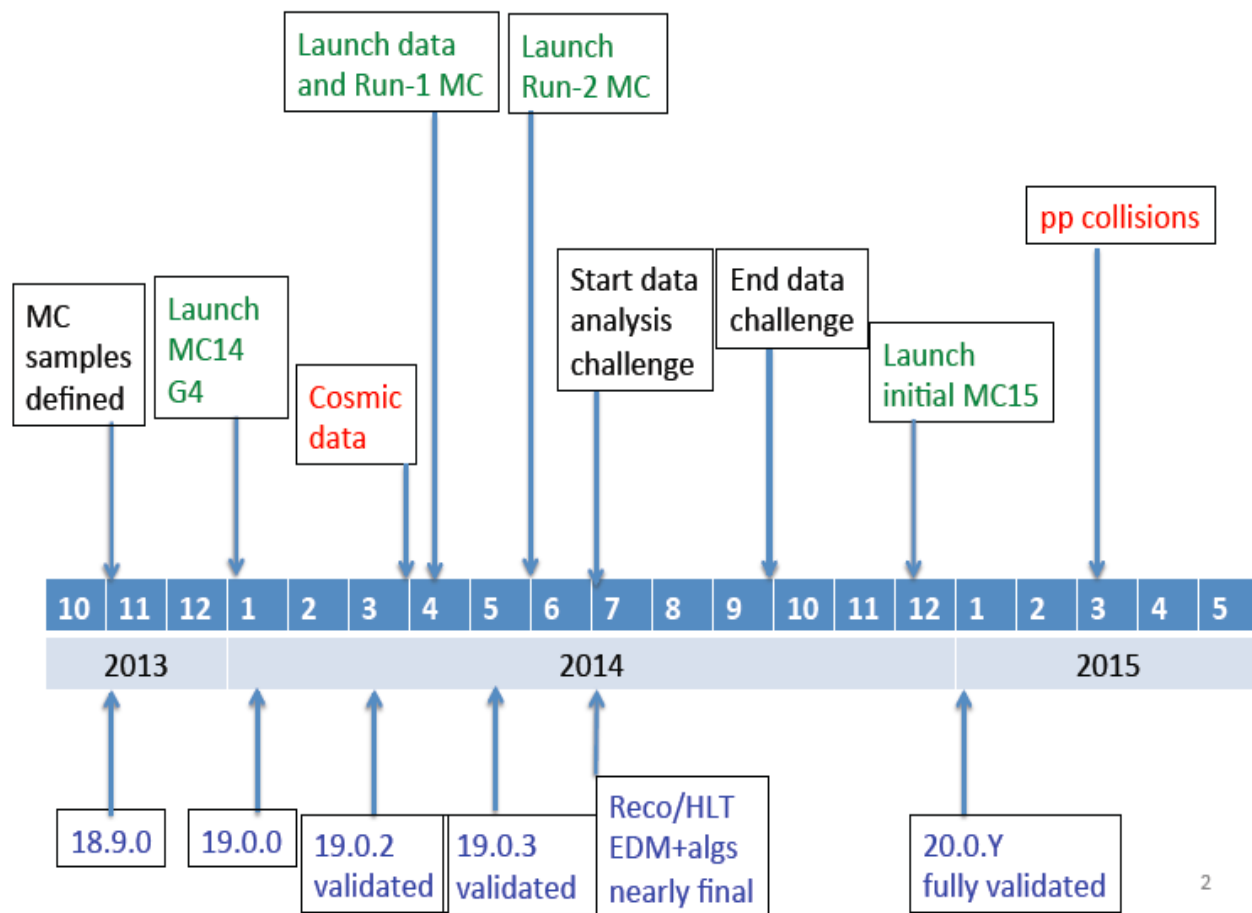
Data Transfers since 2012



- From 10 PB/month since January 2012 to 20 PB/month in the last few months of data taking
- Mostly steady at 15PB/month in 2013
 - ➔ data reprocessing
 - ➔ extensive MC12 production
- Increase in number of files transferred in 2nd half of 2013
 - ➔ extensive analysis
 - ➔ derived datasets
 - ➔ Run2 preparation, validation (FTK...)



Plans for this year



- Extensive MC12 still ongoing the next few months
- MC14 simulation started on 1.1.2014, all running with AthenaMP on 8 cores (20k core slots on T1s and some T2s)
 - ➔ WLCG multicore task force
- Release 19 needed for MC14 reconstruction
 - ➔ to start in April
 - ➔ possibly with AthenaMP due to higher memory requirements
- Full migration to xAOD

Distributed System Commissioning

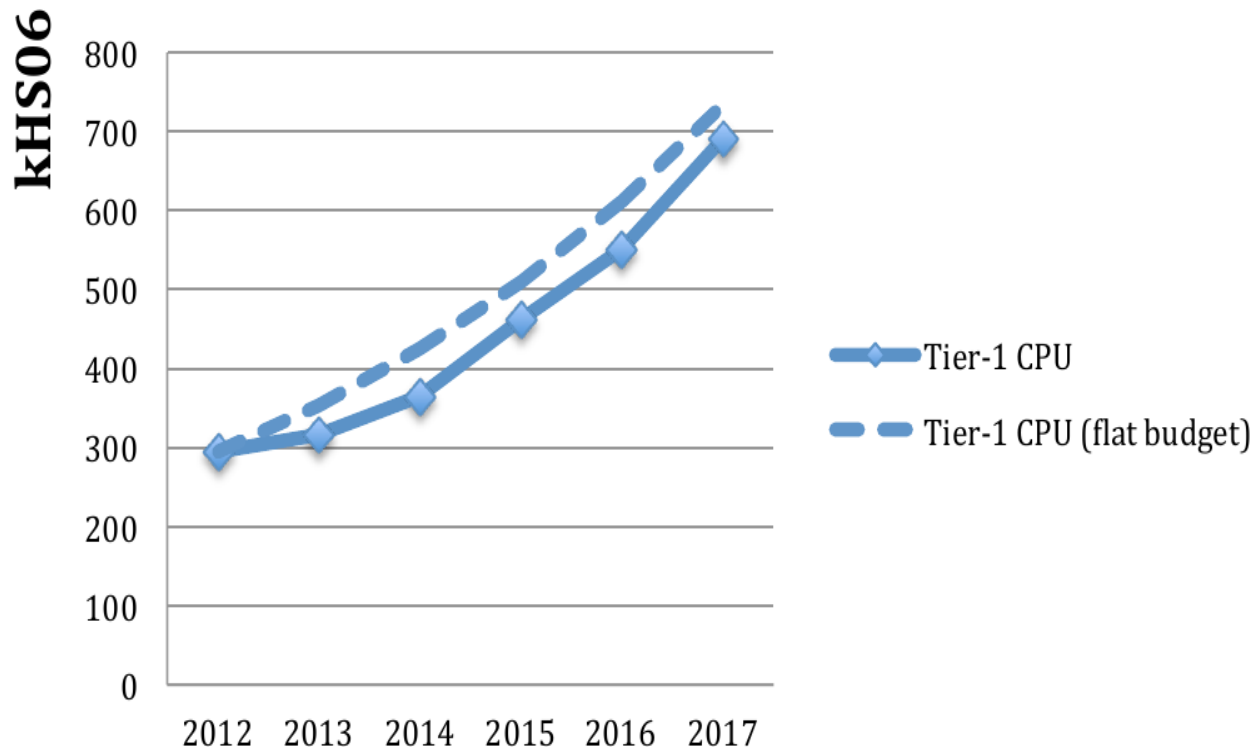
- Rucio – new data management system to replace DQ2, ongoing
 - ➔ file namespace renaming almost finished
 - ➔ LFC to Rucio File Catalog switching
 - ➔ SE migration site by site
 - ➔ Rucio fully in operation by this summer
- FTS2 to FTS3 migration
 - ➔ 2/3 of storage endpoints served by FTS3 at RAL
 - ➔ yet to decide on number/location of instances
- Emerging data technologies:
 - ➔ FAX based on xrootd, direct I/O over WAN
 - ➔ replacing srm, gridftp by WebDAV/https, xrootd
- Prodsys2: JEDI + DEFT
 - ➔ new, fully dynamic production and analysis service
 - ➔ dynamic job definition, automatic recovery of lost files, analysis gains benefits of the production system
 - ➔ testing JEDI for Analysis on-going
 - ➔ in the next few months fully in operation

Estimates for Run-2

- T0 tests:
 - storage workflow under discussion with the CERN IT/DSS team
 - batch system tests (started), need to sustain 20k job slots, 80k/day
 - 2Hz submission rate
 - job status every minute for ~25k active jobs
- Data Volume:
 - factor of ~2 increase in T0 data export as expected for 1KHz trigger rate
 - 10% increase in simulation cputime due to more complex events
 - number of jobs will be possibly reduced with JEDI

Planned Computing Resources

Evolution of ATLAS Tier-1 CPU Requirements in Run-2



- Flat budget for computing resources is assumed
- All the resources will grow for a factor of ~ 2 by 2017
- This gives an estimate on what we can expect in terms of future usage
- Potential opportunistic resources might bring a significant computing power for less I/O-intensive workloads
- Network evolution will possibly bring more relaxed policies on data transfers

Summary

- ATLAS will commission new components of distributed system which will significantly change the central operation
 - top priority to make it work for Run-2
- Expected computing activities in the next few years are expected to grow for a factor of 2
 - the impact on the computing resources does not need a significant stress testing