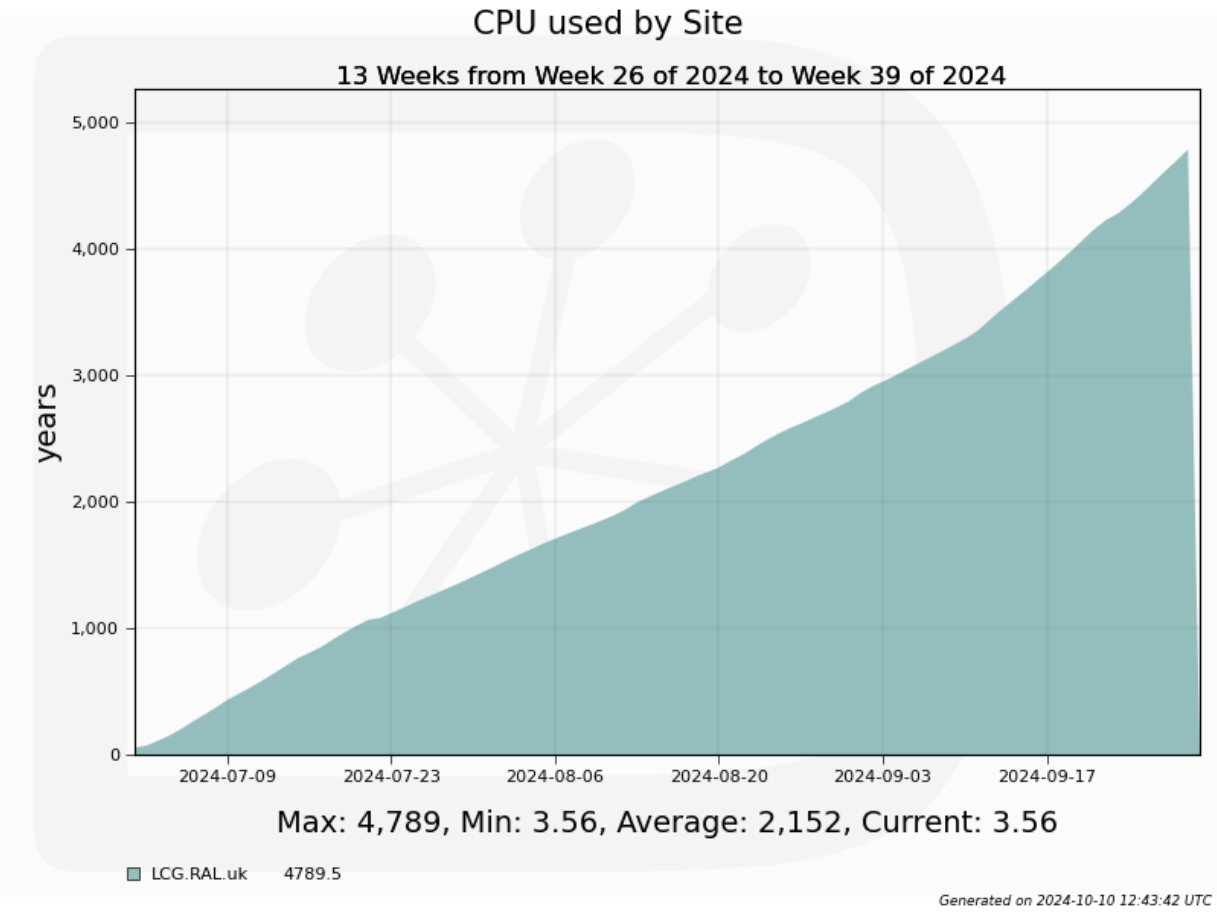
alexrg

Resource Review Meeting (2024 Q3)

Highlights

- Disk and tape pledges increased
  - Both by ~6PB
- CRL expiration issue in July
  - Caused major outage for a few hours
- Issues with direct access jobs
  - Due to xrootd bugs and misconfiguration, fixed by xrootd devs, to be deployed
- Load balancing issue
  - Bug in code, fixed
- A few file loss incidents
  - Some due to ECHO issues, some due to DIRAC problems

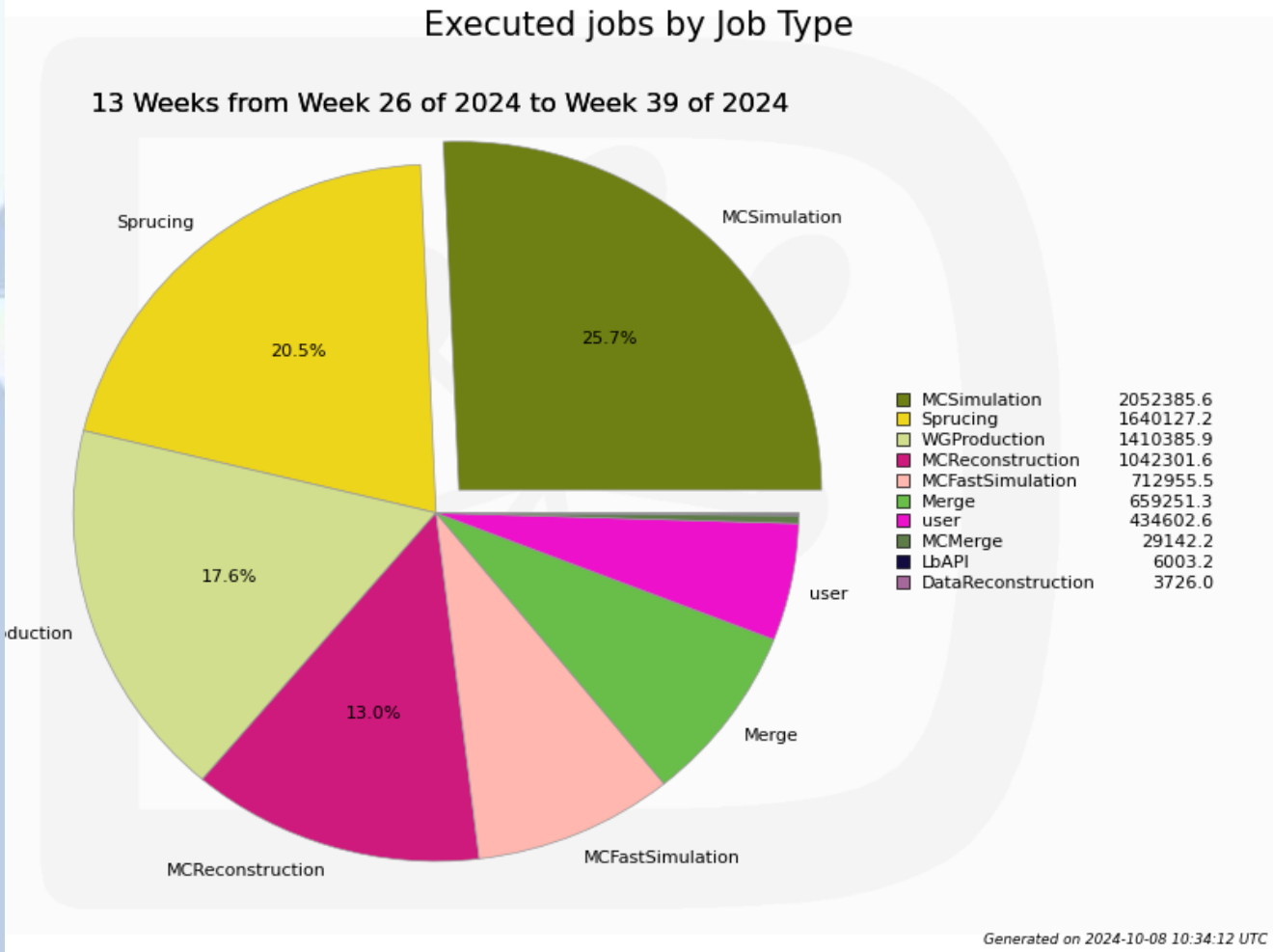
Computing resources



- Normalized values from LHCb can not be trusted
- Using raw cputime, we have: 4789.5*365*12.7/92 = 241323.1 HS23
  - 12.7 normalization factor is used, though it went up after the introduction of 2023 Gen in mid September, so the exact number is even higher
- Pledge is 180kHS23 < 241kHS23

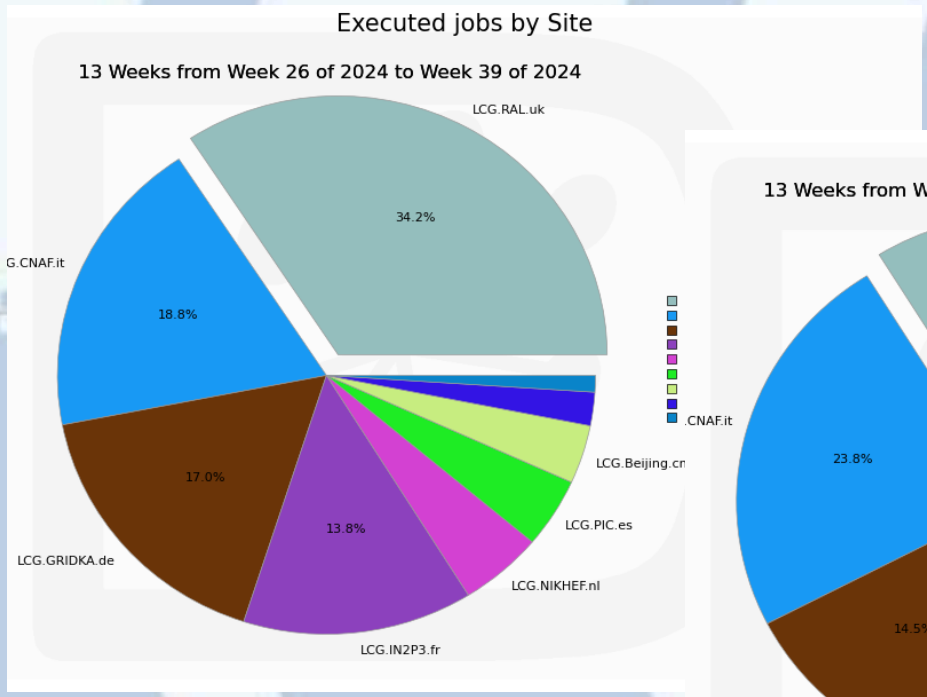
Computing resources

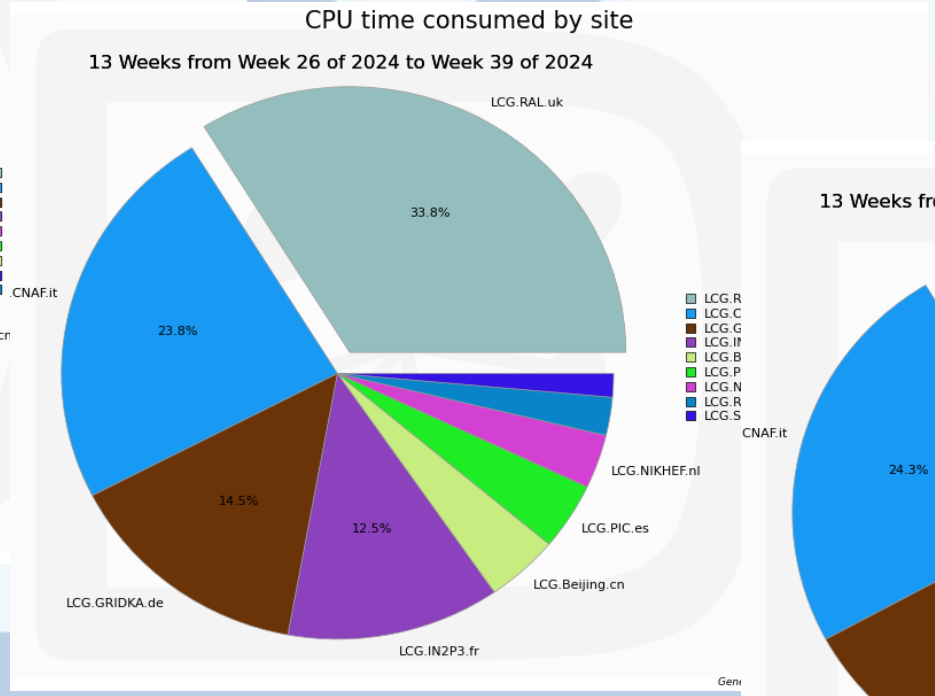
Huge increase in Sprucing and WGProd jobs, due to the data taking.

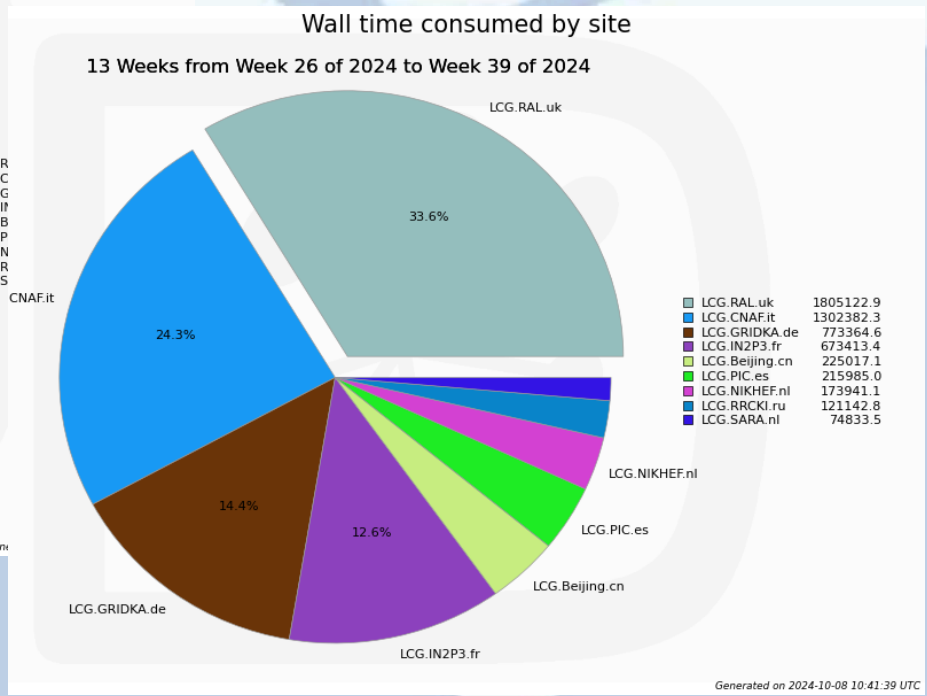


Comparison

RAL provided the most computing resources for LHCb among T1s (both in terms of Time [CPU/wall] and Number of Jobs), around 1/3 of all T1 contributions

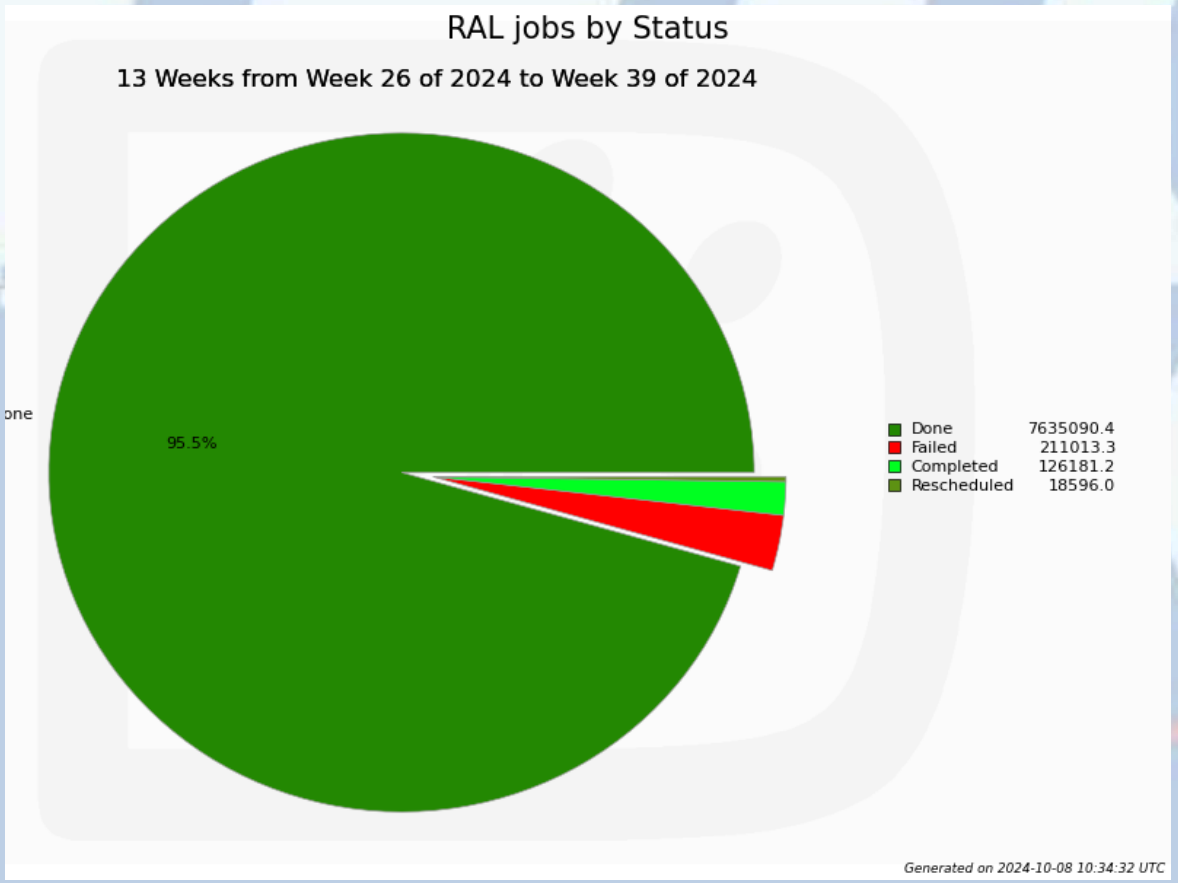


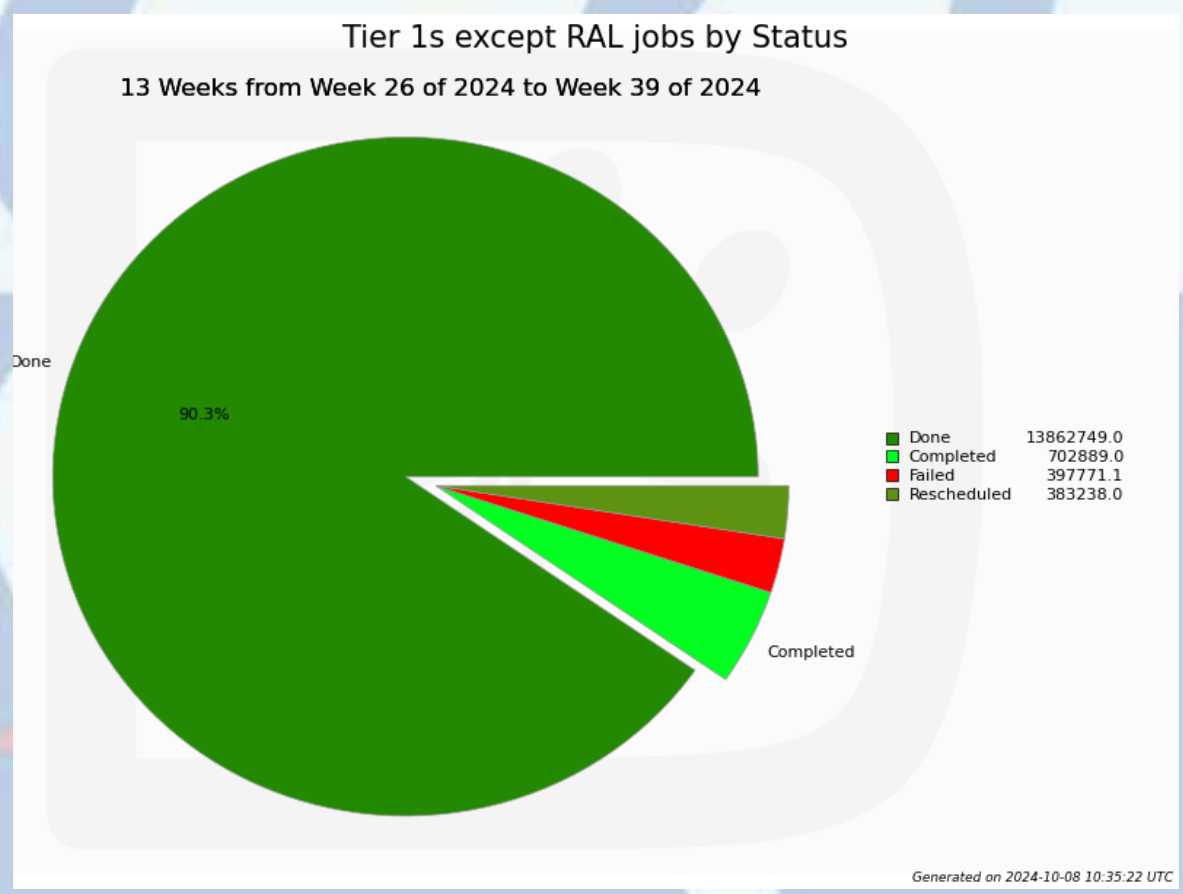




Comparison

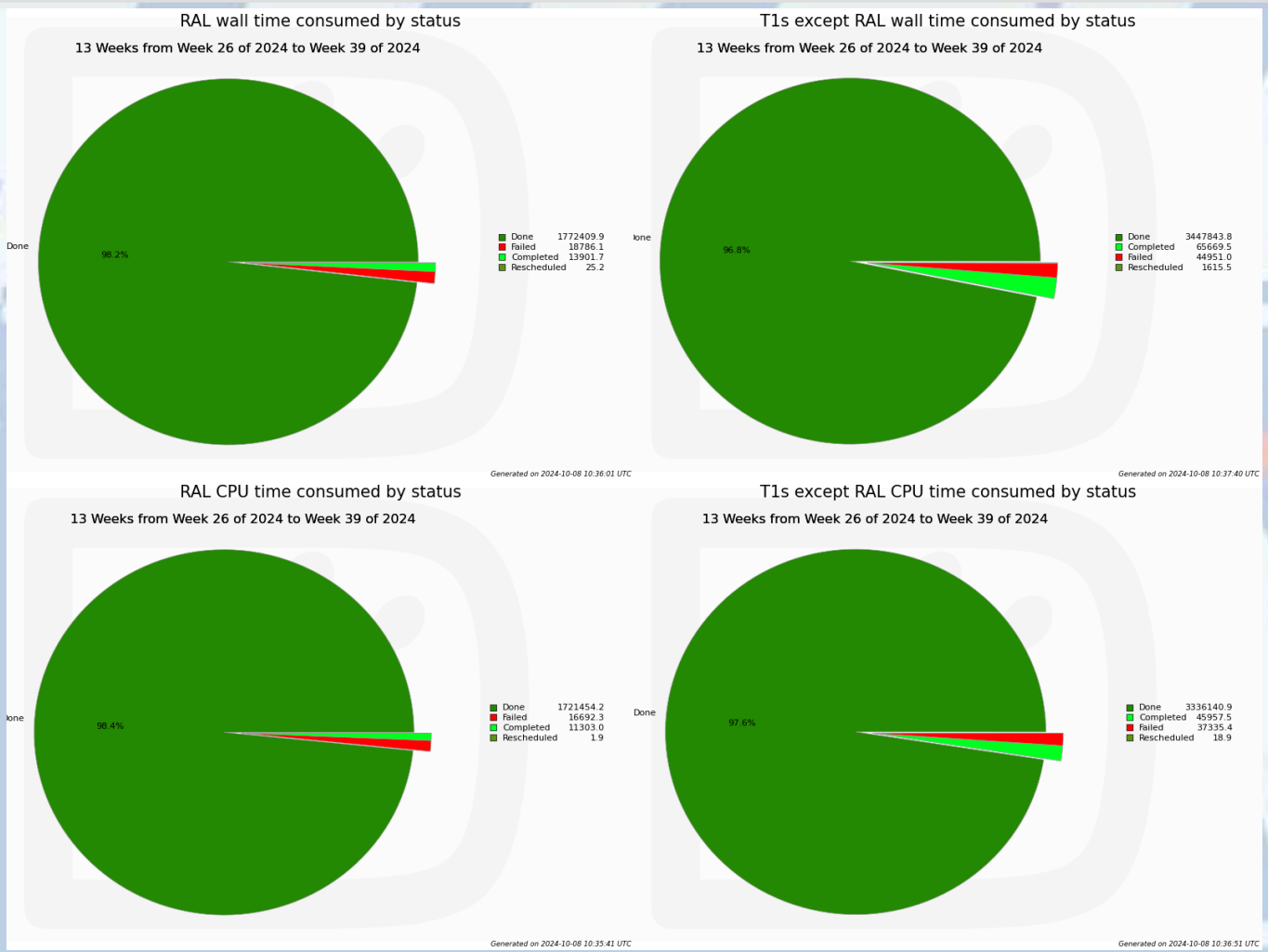
- RAL Job failure rate is comparable to other T1s





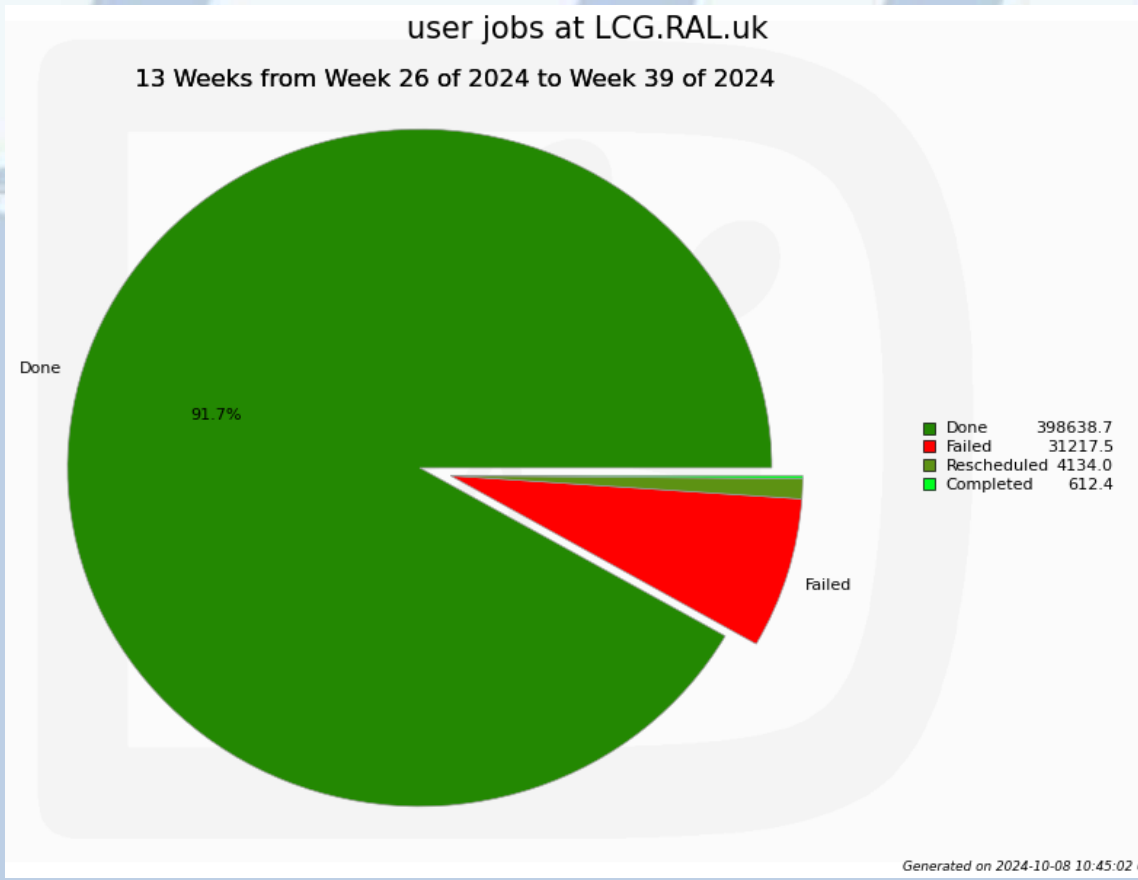
Comparison

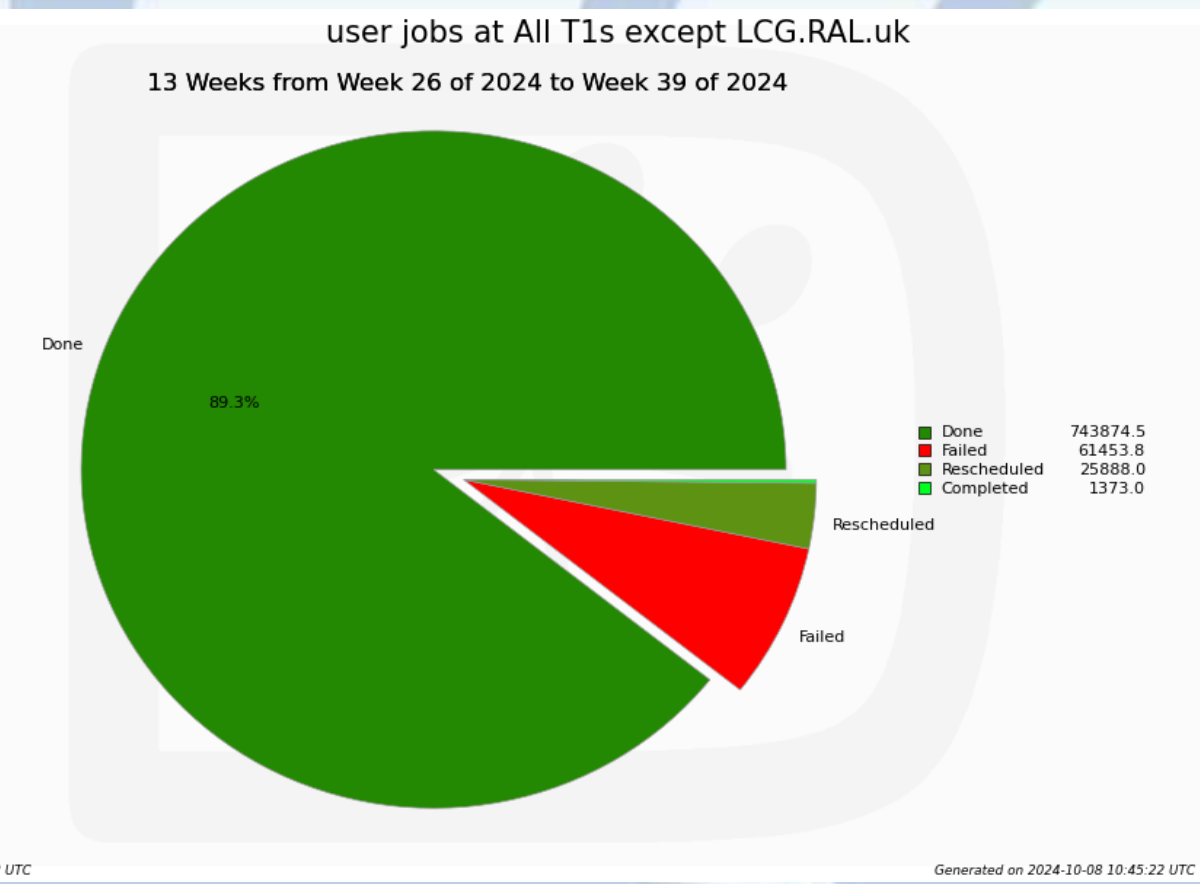
The same is true for “wasted” CPU Time/walltime



Comparison (User Jobs)

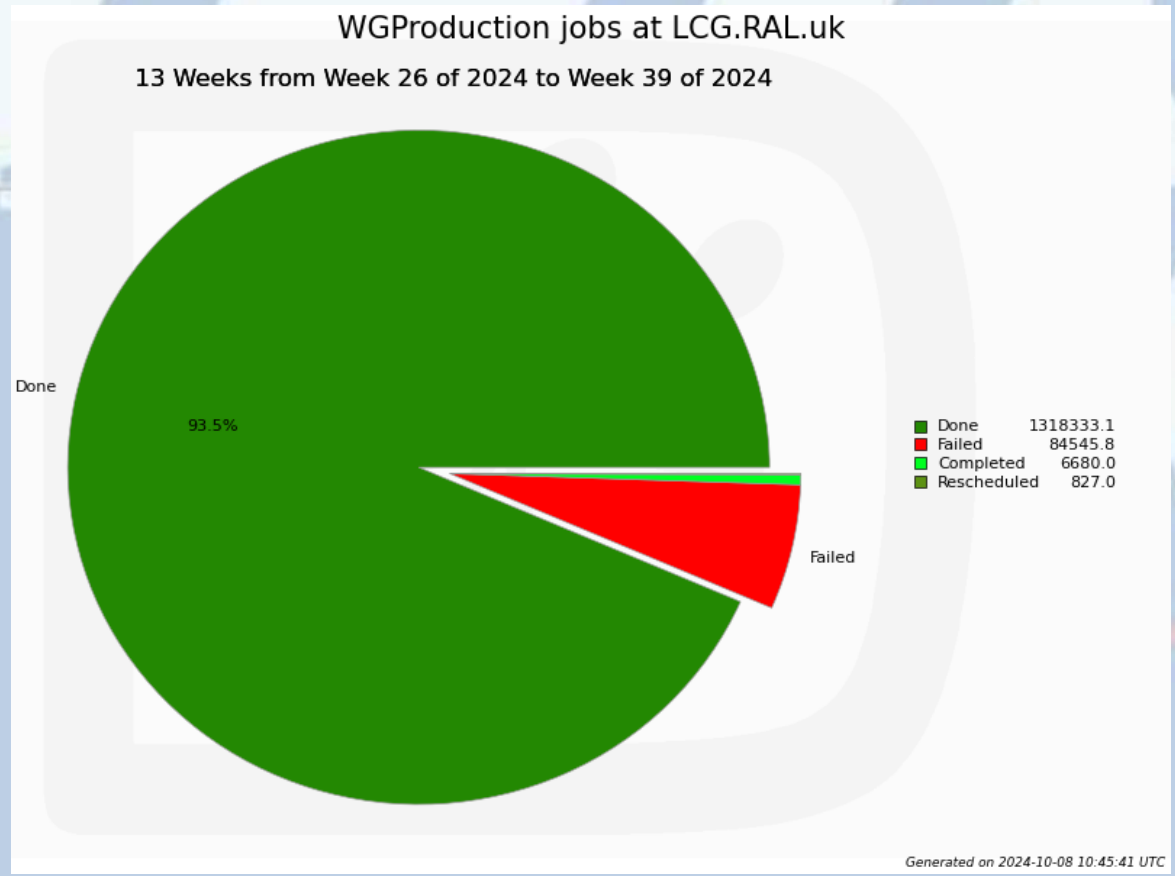
- Among all job types, user jobs have one of the highest failure rates
- For RAL it is lower than for the other T1s

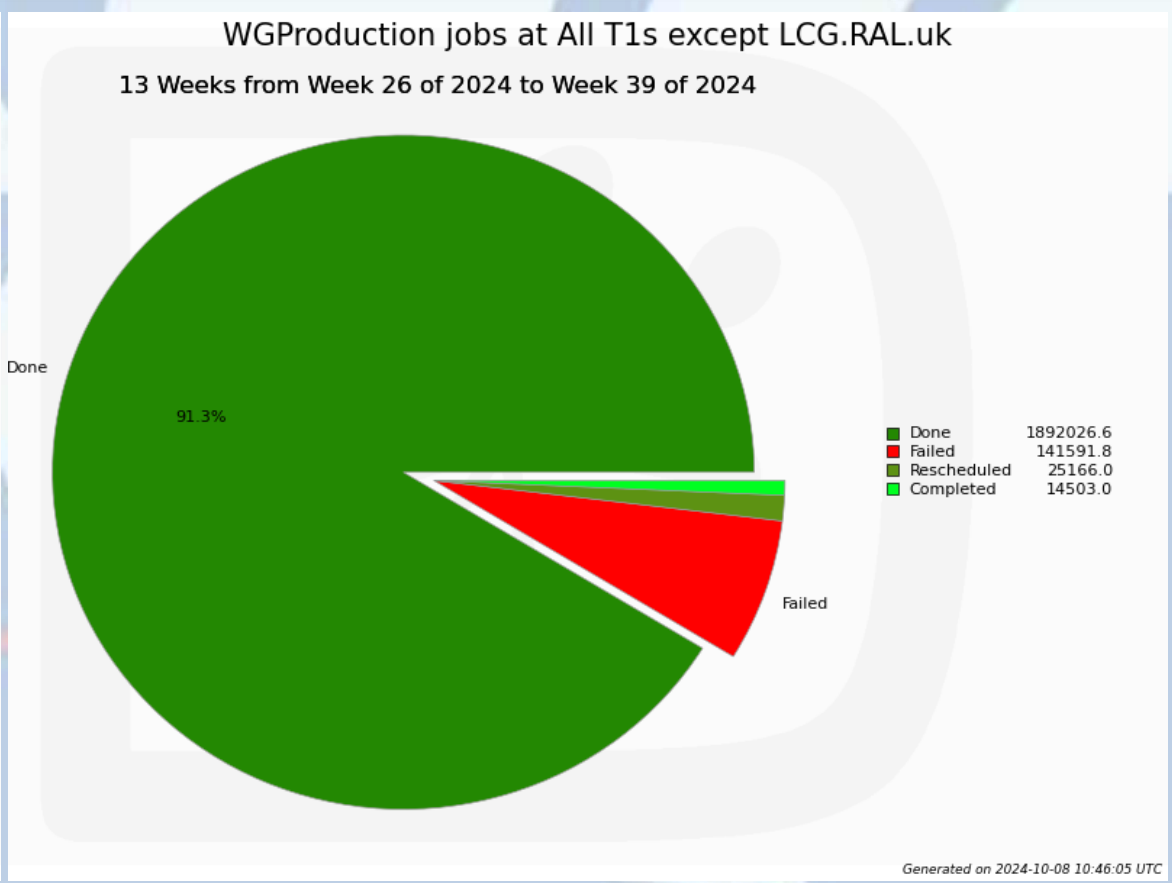




Comparison (WG Prod)

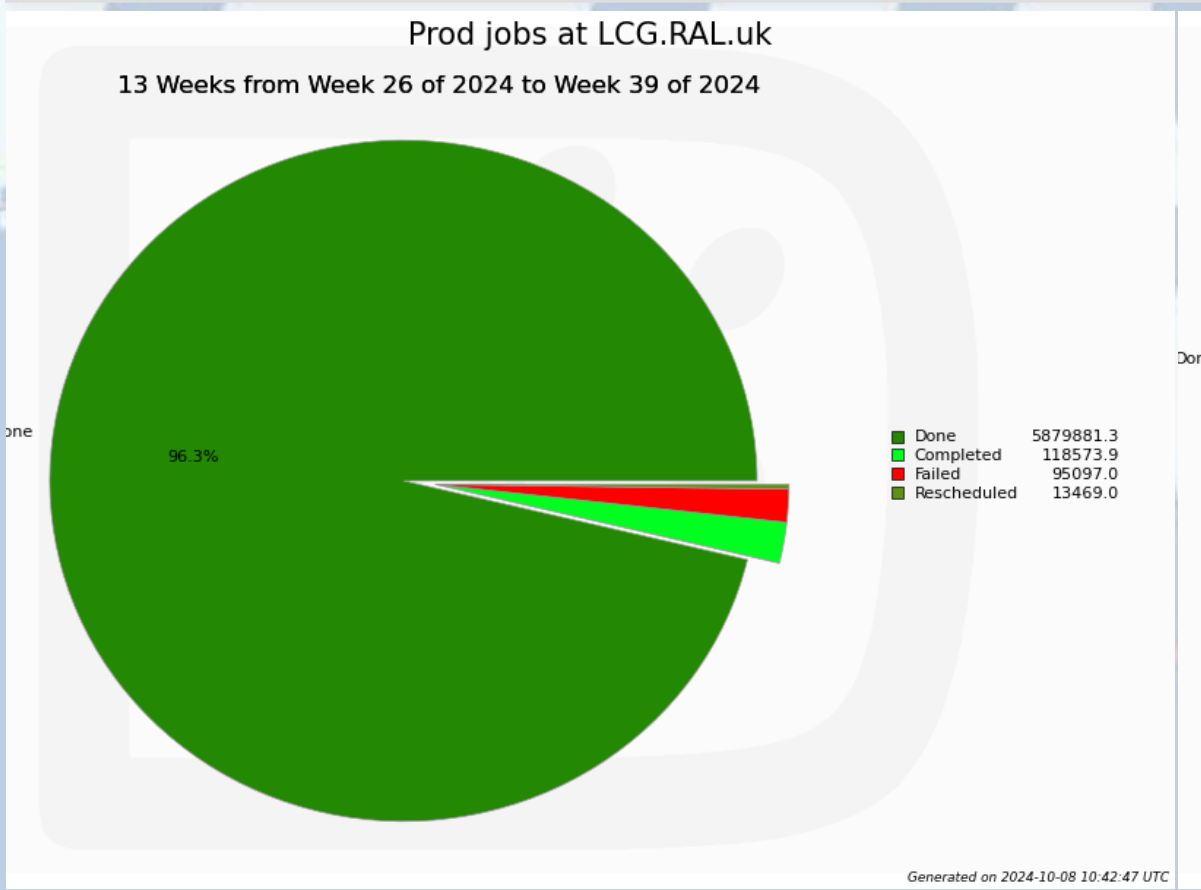
- Same is true for WG Production jobs

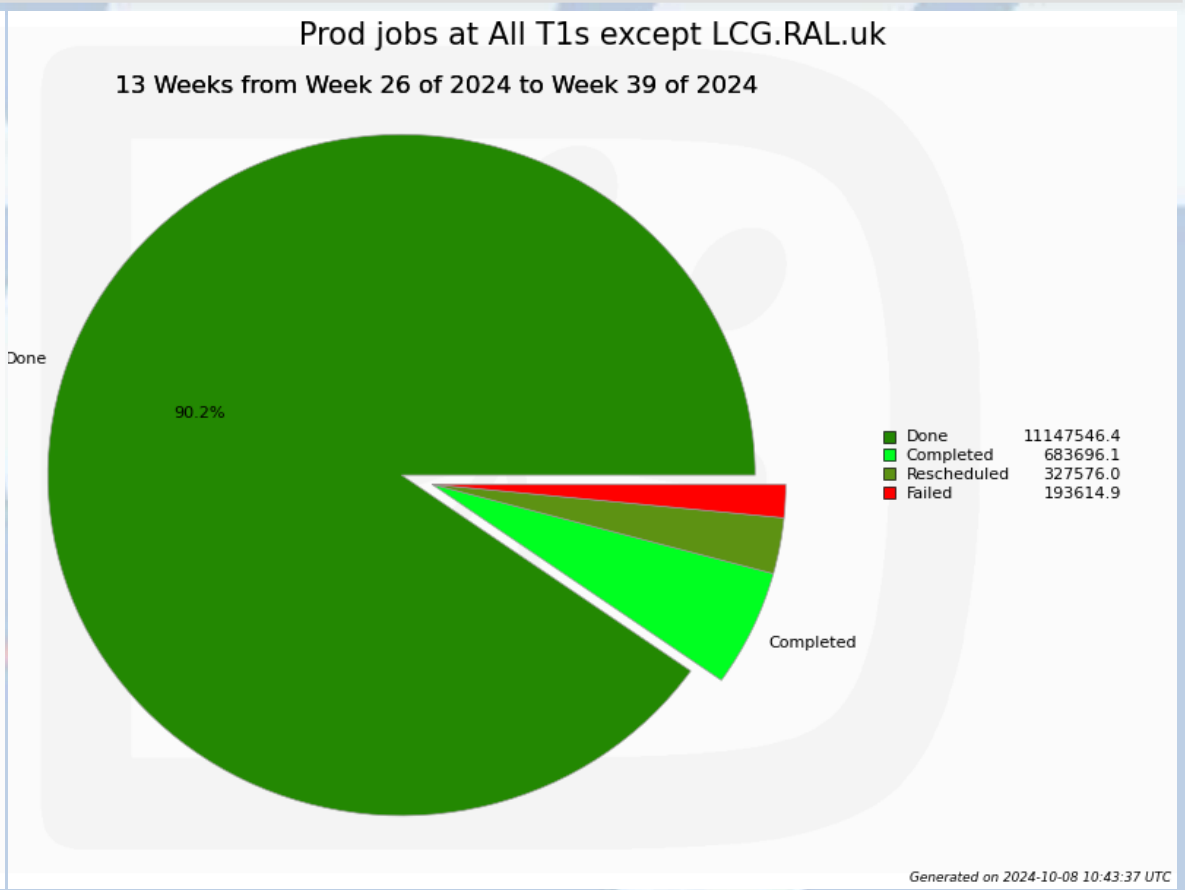




Comparison (Sim+data proc)

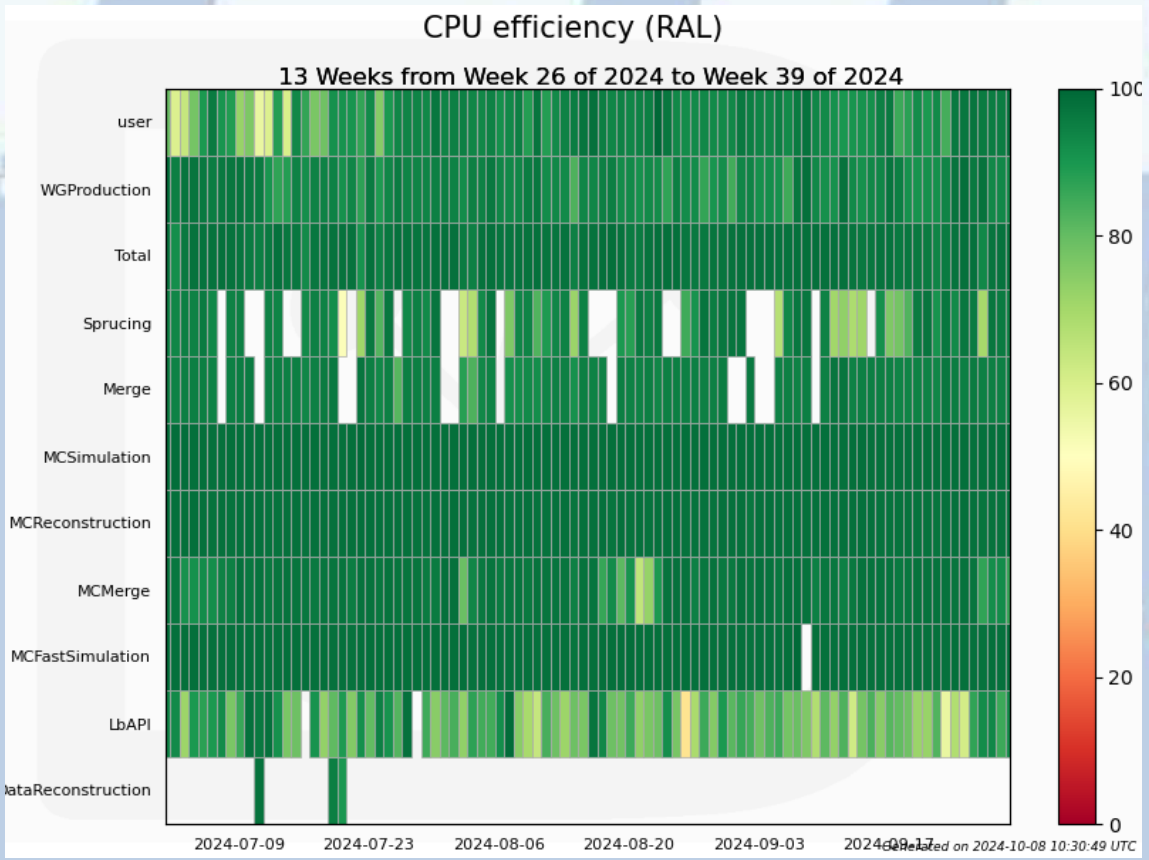
- For prod jobs failure rate is higher than usual
  - But comparable with others

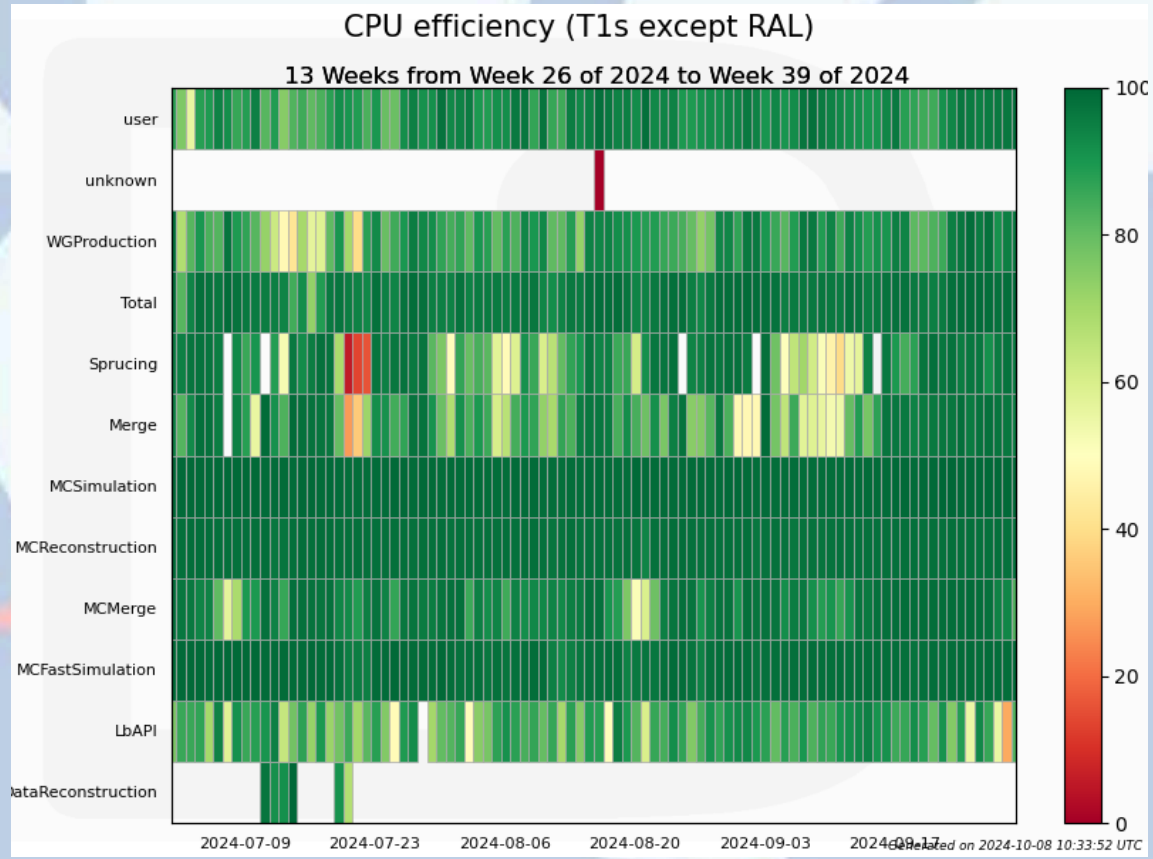




Efficiency

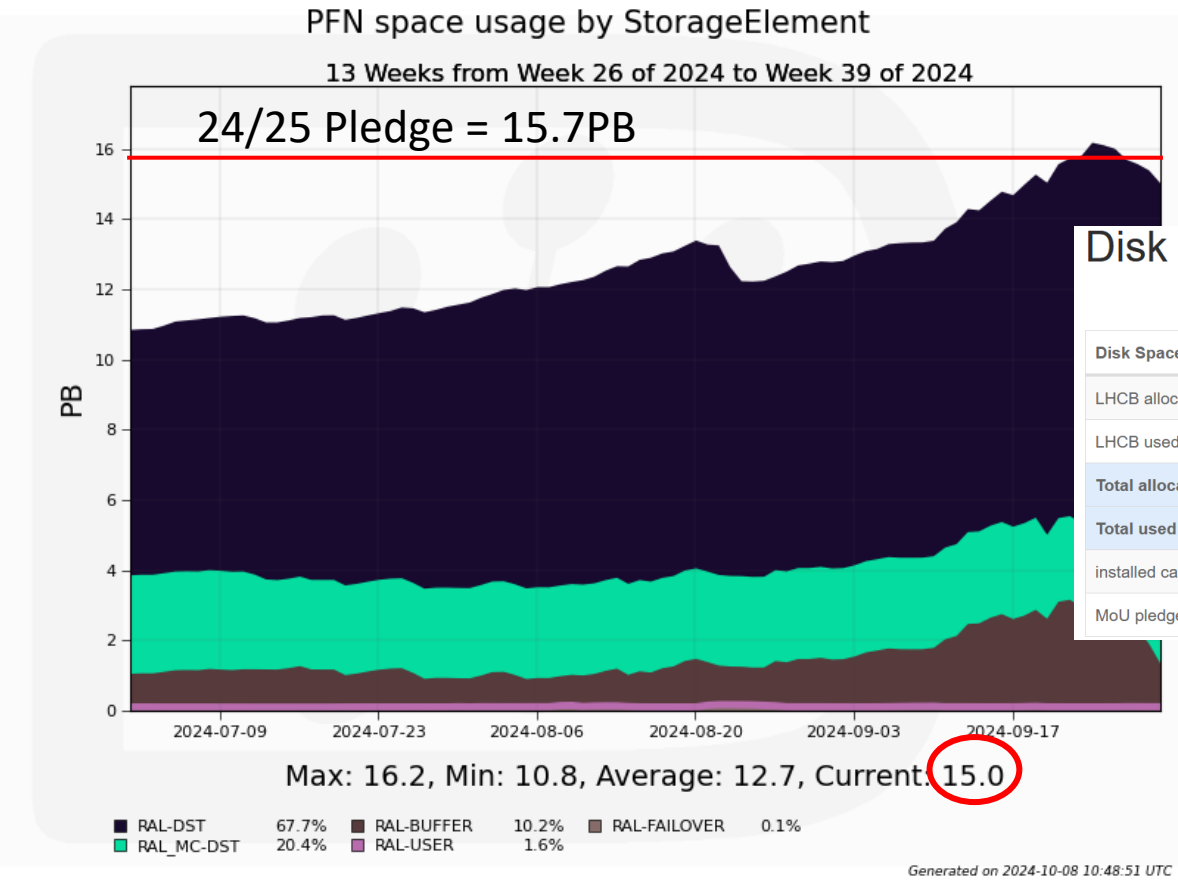
- Good efficiency for almost all job types





Disk Usage

- Increased usage due to Data Taking
  - 25/26 pledge released to LHCb in September
    - 24/25 pledge then was exceeded
- Good match between DIRAC and CRIC accounting



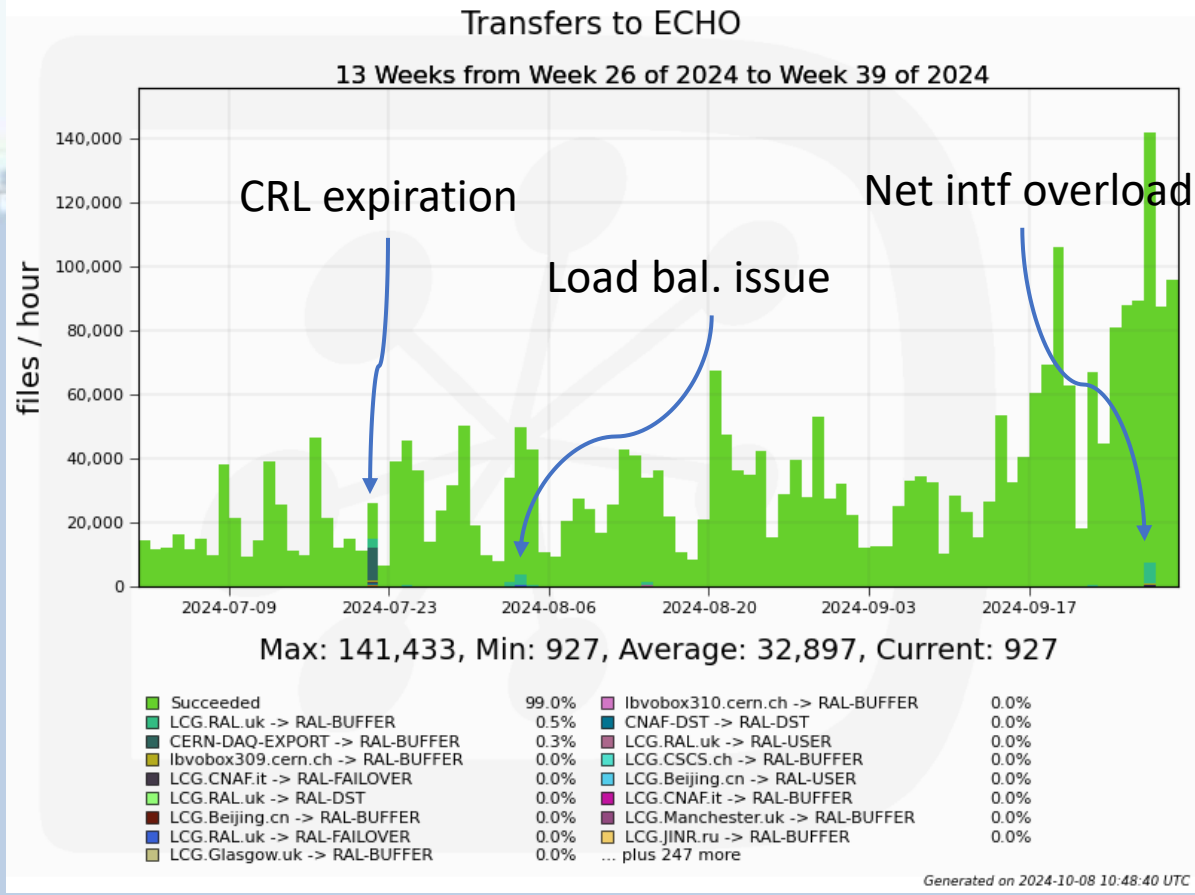
Disk Space - TBytes

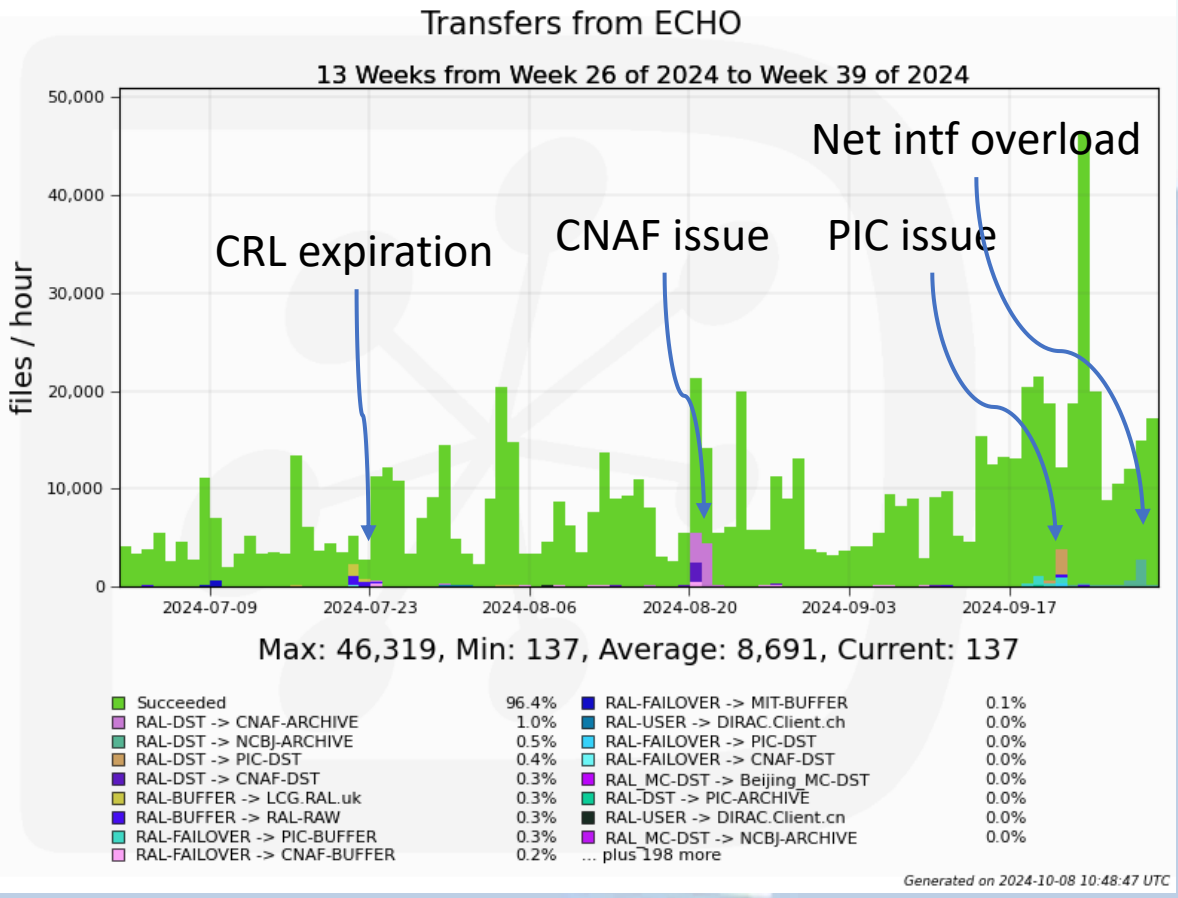
Search:

Disk Space - TBytes	Jul 2024	Aug 2024	Sep 2024	Total	% MoU
LHCB allocated	15,720	15,720	20,090	51,530	
LHCB used	11,174	12,670	15,040	38,884	
Total allocated	**15,720**	**15,720**	**20,090**	**51,530**	**109%**
Total used	**11,174**	**12,670**	**15,040**	**38,884**	**82%**
installed capacity	0	0	0	0	
MoU pledge	15,724	15,724	15,724	47,172	

Disk transfers

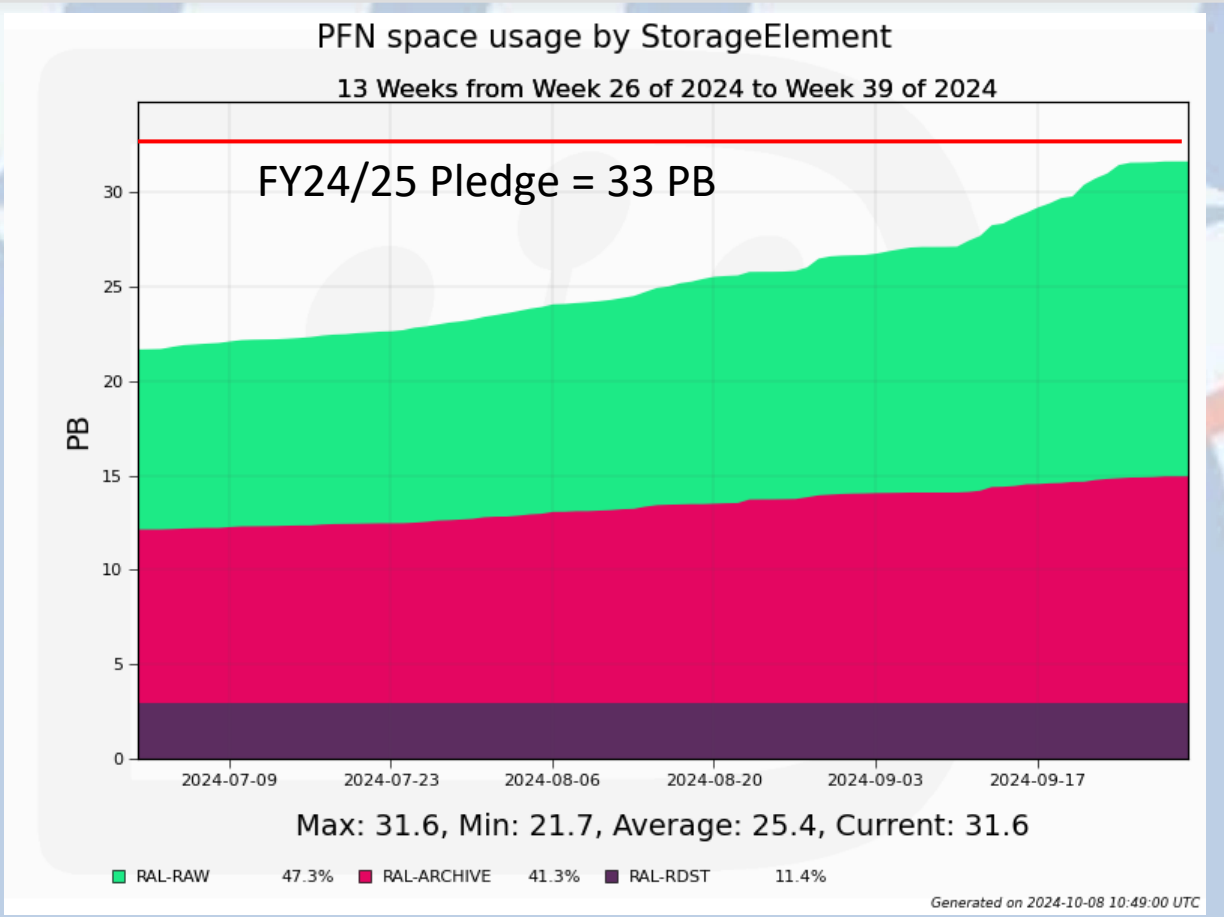
- Good transfer efficiency, with with some known issues
  - CRL expiration
  - Load balancing issue
  - ECHO network interfaces overload
  - Other sites' issues





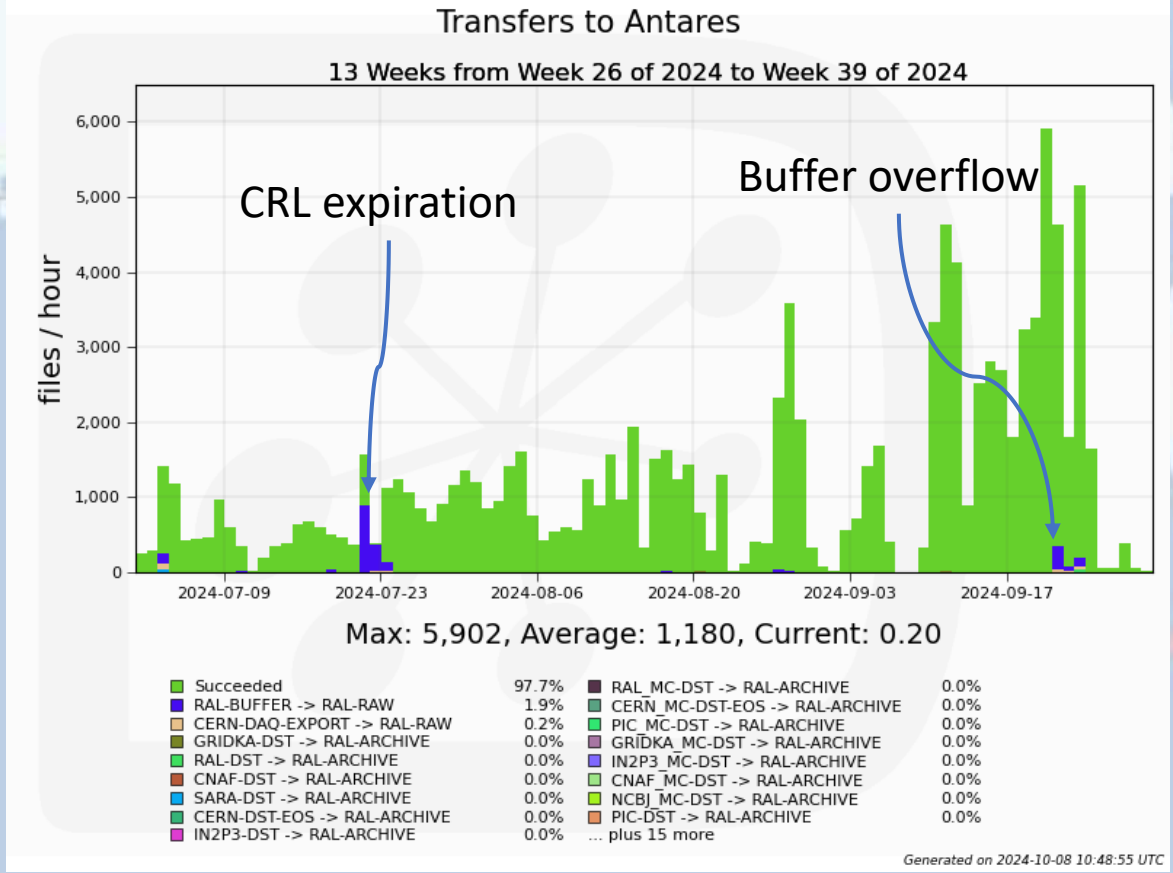
Tape usage

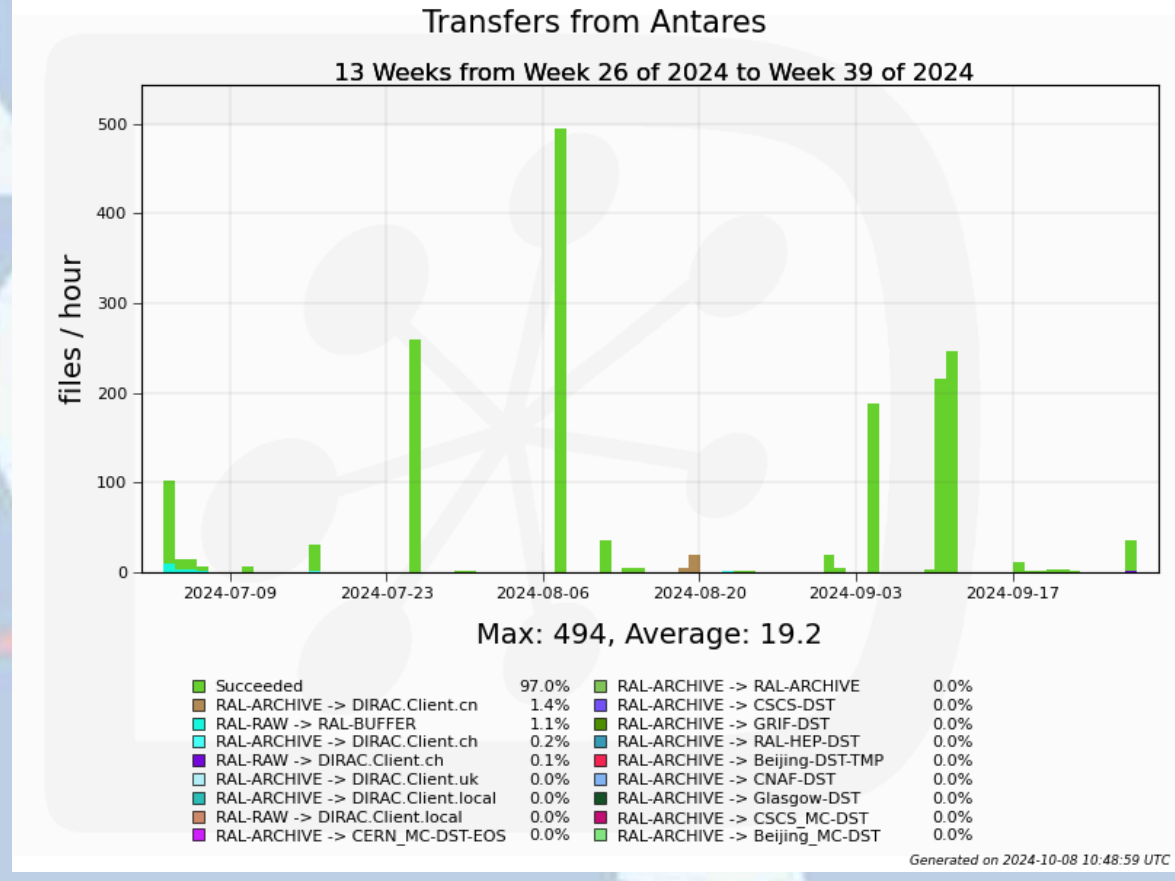
- Almost all 24/25 (Q1?) pledge is used
- Pledge increased in September alongside with the disk one



Tape transfers

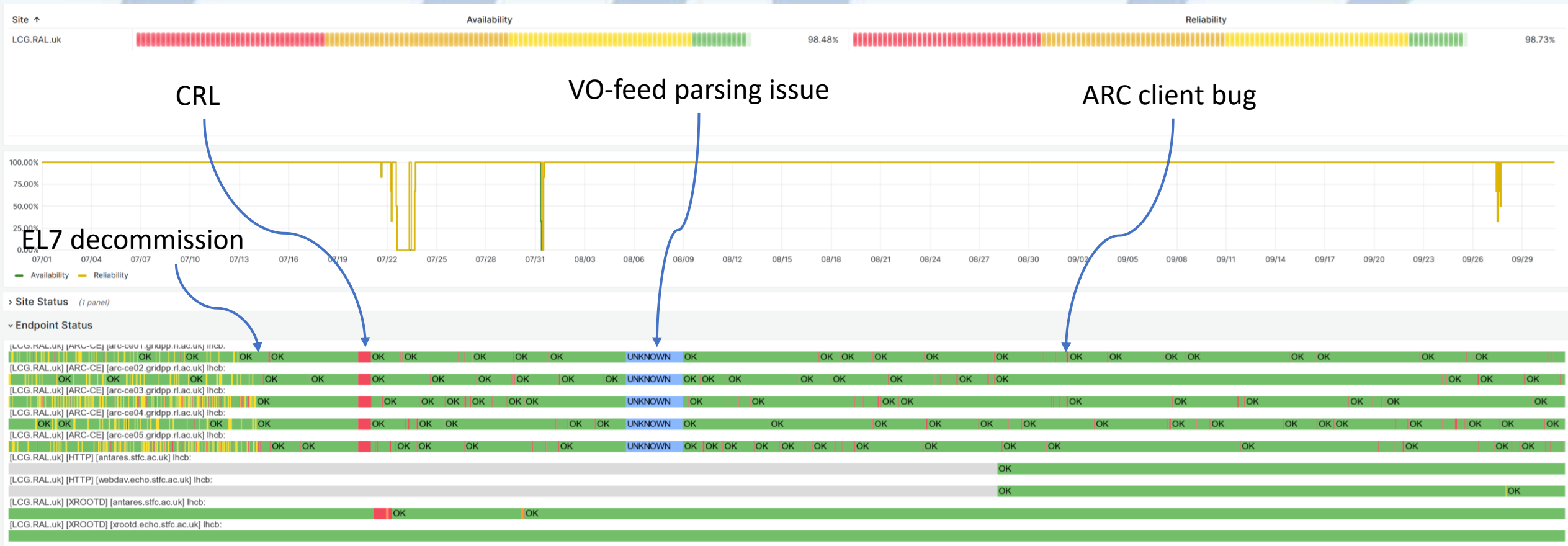
- Good transfer efficiency, with a few known issues
- Very few tape recalls (expected)





ETF tests

- Overal A&R looks good
- A few issues with test infrastructure (not RAL's fault)
- HTTPs storage tests added
  - Added to the dashboard – were running before but not considered for A&R calculation



Summary

- RAL saved LHCb Data Taking campaign by provisioning additional space
  - Thanks a lot!
- Good performance during the third quarter of 2024
- Issues addressed in a timely manner