Computing Board Report

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CHIPP Plenary Meeting, 24th August 2026

Reminder

CHIPP contributes to the World-Wide LHC Computing Grid (WLCG) by providing a Tier-2 Computing Cluster, operated by CSCS

We currently pledge > 450 kHEPScore23 (translates to ~180 nodes)

- cf. 7.4 MHEPScore23 provided (4.3 M pledged) by all Tier-2 centres, 4.4 MHEPScore23 Tier-1 (3.5 M pledged)

Close to 20 PB of disk across ATLAS, CMS, and LHCb (1.25 EB total, > 2 EB tape)

Our CPU pledges amount to about 6% of the total WLCG grid capacity (not counting Tier-0 and ALICE) — an important contribution of CHIPP to the overall effort

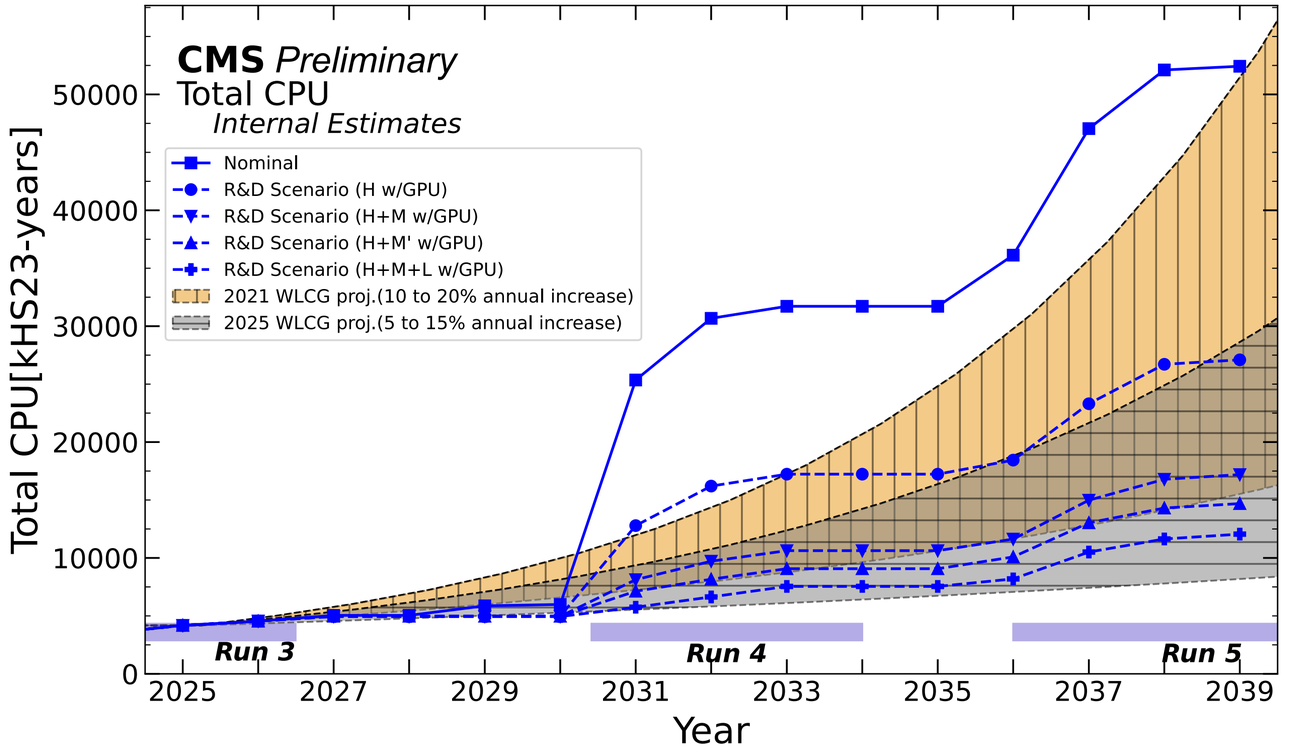
- Furthermore, analysts profit from having their required data sets available close-by

Computing Model Evolution Towards HL-LHC

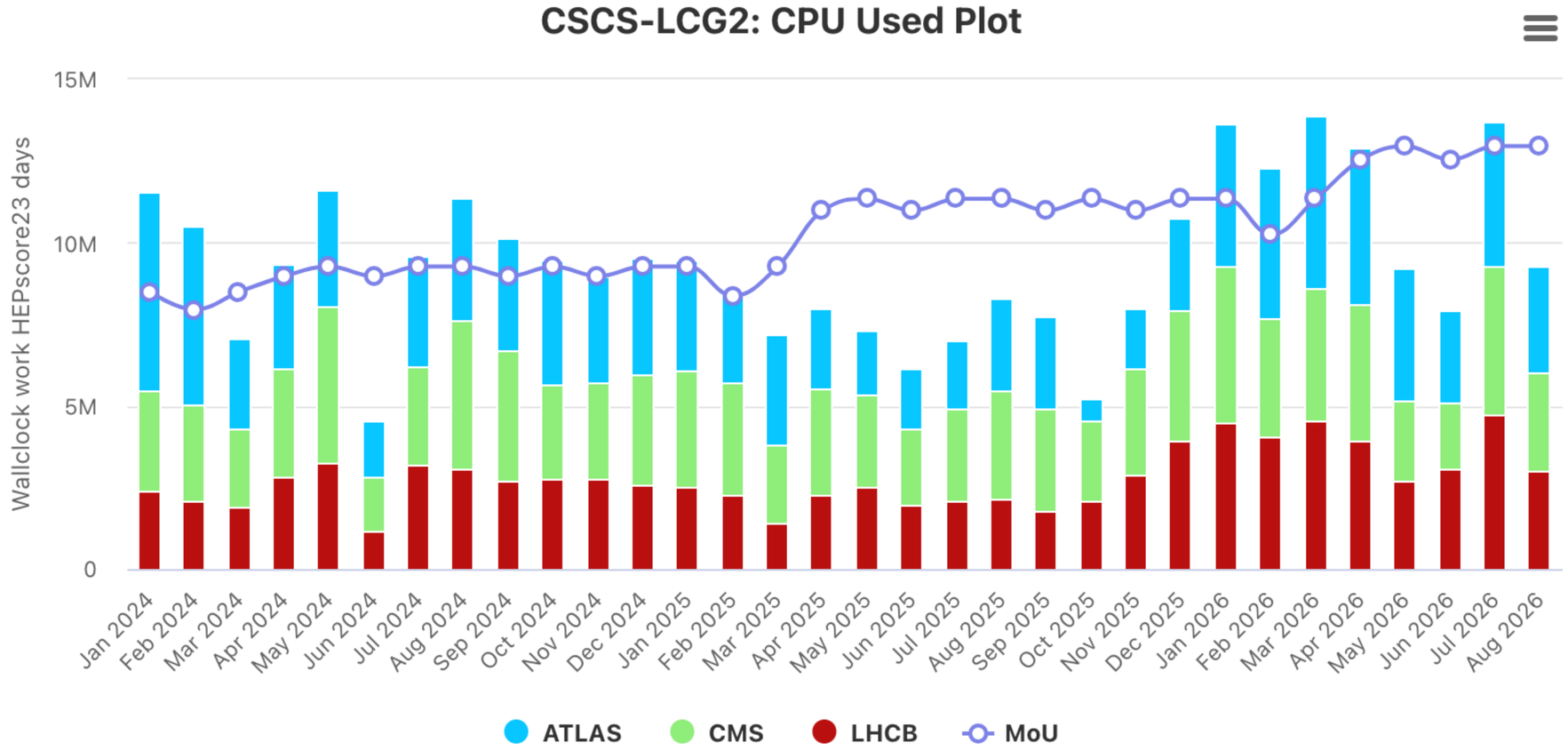
Event size and complexity will explode for HL-LHC detectors

Challenging times ahead, e.g. CMS currently does **not** have a valid computing model for HL-LHC

Dedicated R&D required on several fronts (heterogeneous computing, workload & data management, analysis tools, …) → we possess a lot of expertise in CHIPP for that



Performance



Overall performance mixed, but now recovering and making up for earlier deficits (CSCS provisioned additional nodes for free)

Also, accounting broken earlier, now fixed

Reviewed in monthly meetings plus several additional meetings to solve issues

> Small misconfigurations showed to have bigger implications

2027 RRB Requests

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At the WLCG RRB earlier this year, the following computing resource requests were made:

	ATLAS	CMS	LHCb
Tier-2 CPU	100%	100%	94%
Tier-2 Disk	108%	106%	98%

I pointed out during the session that this will be impossible for any site that needs to purchase new computing equipment

> Reminder: 4x increase in memory, 2x in SSDs, 1.5x for spinning disks (Mar ’26)

Requested vs. Expected Pledges

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Asked CSCS to estimate what we will be able to afford with current funding, keeping ratio of CPU to disk fixed

	ATLAS	CMS	LHCb
Tier-2 CPU requested	100%	100%	94%
Tier-2 Disk requested	108%	106%	98%
Tier-2 CPU expected	78% (-22%)	78% (-22%)	78% (-16%)
Tier-2 Disk expected	78% (-30%)	78% (-28%)	78% (-20%)

- No new nodes will be purchased (just paying their operating/maintenance fee)
- Some fraction of storage needs to be renewed
- additional costs due to dedicated (“VAST”) scratch space (currently provided for free)

Conclusions

After another bumpy ride, Tier-2 at CSCS now catching up

For 2027, expect to have to lower pledges by ~22% (while CMS and ATLAS requested increases by 6 and 8%, respectively)

> Expect to be able to stay at 2027 level for 2028

Spent a lot of time exploring alternative options (not shown), they each come with their own challenges and require further discussion


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