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# CMS status

— G. Bagliesi - CdG T1 6-7-2018 —

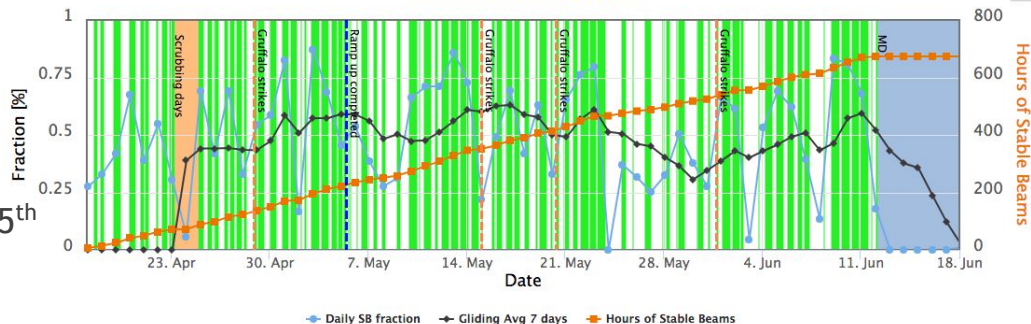
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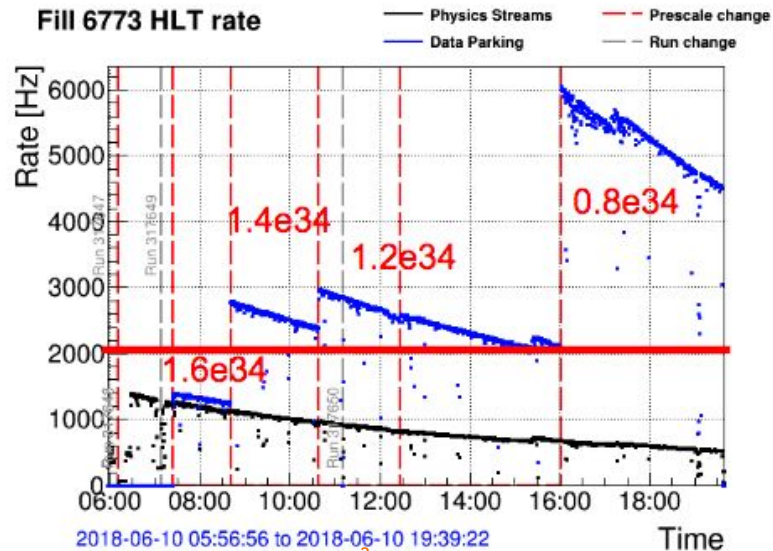
# Status of the run

- ▶ Data taking started on Apr 17<sup>th</sup> - **very fast commissioning and ramp to full machine by May 5<sup>th</sup>**
- ▶ 23/fb collected (2018 goal is >60)
- ▶ May 10<sup>th</sup>: **started B parking data taking**
  - ▶ +2 kHz parking in order to collect 15B events/ 10B B unbiased B's ( $R_K$ ,  $R_{K^*}$ , Bphysics)
  - ▶ A lot of work on this with also trigger/DAQ:
    - ▶ Use the **last part** of the fill (smaller events)
    - ▶ Implement a “**red button**” to stop Bparking
    - ▶ Handshake with DAQ on “**alarm thresholds**” on Storage Manager, T0 buffers and on tape backlog
    - ▶ Up to now, 3.1 B events collected
    - ▶ 0.5 B reconstructed for initial analyses / purity estimates

Stable Beams [45.3%]



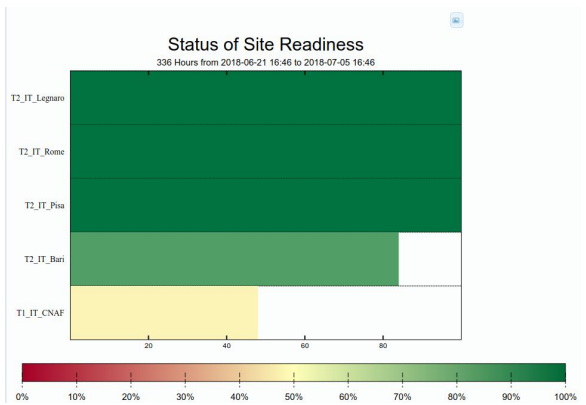
Fill 6773 HLT rate



# Site readiness

		T1_IT_CNAF																												
LifeStatus:		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Site Readiness:		Q	E	E	Q	Q	Q	E	E	E	E	E	E	E	Q	Q	Q	Q	Q	E	E	Q	✓							
Maintenance:		Up	Up	Up	Up	Up	Up	Up	Up	Up	Up	Up	Up	Up	Up	Up	Up	Up	Up	~	~	Up								
HammerCloud:		98%	99%	100%	100%	100%	100%	100%	100%	100%	99%	98%	100%	100%	100%	100%	100%	100%	100%	95%	100%	100%								
SAM Availability:		100%	32%	61%	100%	100%	100%	99%	100%	99%	100%	100%	100%	99%	96%	98%	100%	100%	100%	64%	32%	93%								
Good T1 links from T0:		2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2							
Good T1 links from T1s:		23/23	27/27	36/36	37/38	37/38	37/38	37/38	37/38	37/38	37/38	37/38	37/38	37/38	37/38	37/38	37/38	37/38	37/38	37/38	37/38	37/38	37/38							
Good T1 links from T2s:		31/35	36/38	36/38	36/38	31/37	34/37	25/37	25/36	25/37	25/36	18/36	21/34	16/33	17/32	14/31	12/27	11/27	11/27	11/27	11/27	11/27	11/27							
Good T1 links to T1s:		24/25	26/28	28/28	28/28	28/28	27/27	27/28	25/28	25/28	25/27	25/27	27/28	27/28	27/28	26/28	26/28	26/28	27/27	26/28	28/28	27/27	25/27							
Good T1 links to T2s:		80/93	80/95	88/93	80/93	81/94	80/93	85/96	86/93	89/93	89/93	85/93	85/93	81/91	81/91	80/96	85/96	82/93	80/93	83/94	83/93	86/93								
Active T1 links from T0:		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2							
Active T1 links from/to T1s:		26(d)-26(u)	26(d)-26(u)	26(d)-26(u)	26(d)-26(u)	26(d)-26(u)	26(d)-26(u)	26(d)-26(u)	26(d)-26(u)	26(d)-26(u)	26(d)-26(u)	26(d)-26(u)	26(d)-26(u)	26(d)-26(u)	26(d)-26(u)	26(d)-26(u)	26(d)-26(u)	26(d)-26(u)	26(d)-26(u)	26(d)-26(u)	26(d)-26(u)	26(d)-26(u)								
Active T1 links to T2s:		96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96							
		14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	01	02	03	04	05							
		Jun																					Jul							

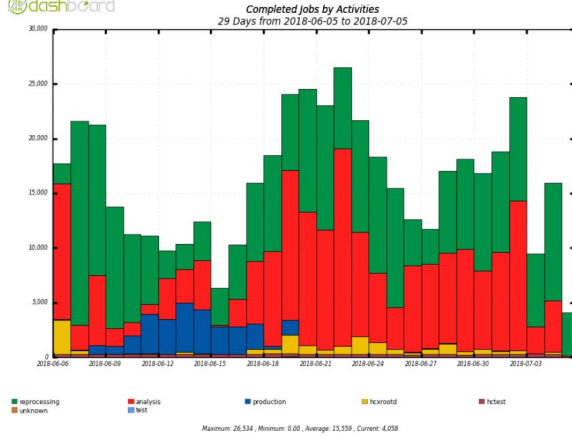
Problemi Isf  
Problemi PhEDEx  
debug instance



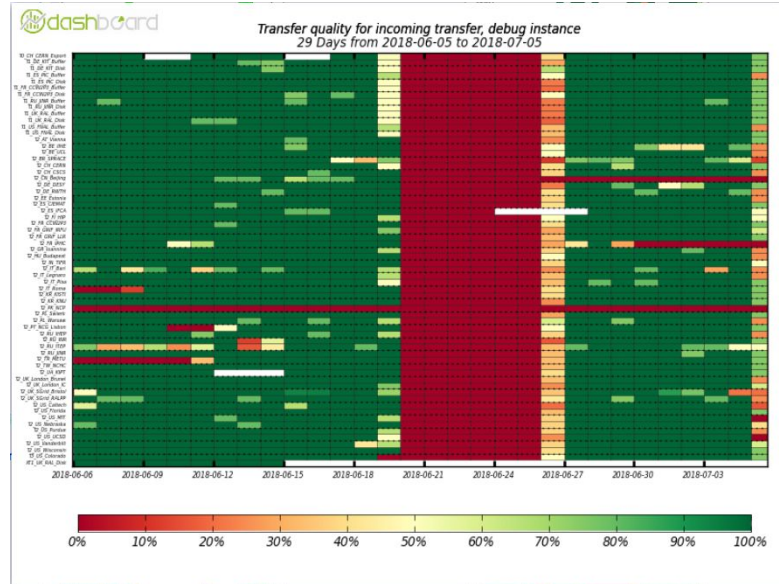
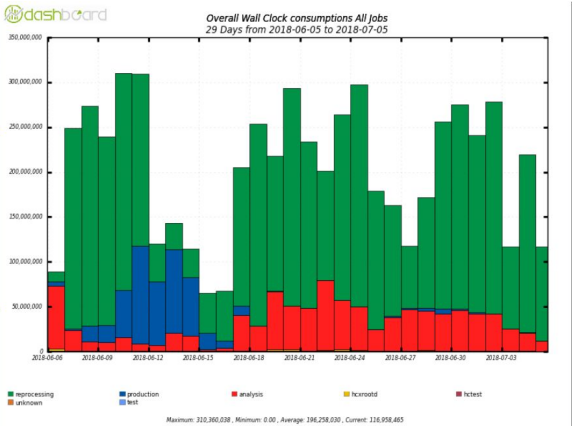
Ultime due settimane  
Potrebbe andare meglio!  
Molto simile alla  
situazione di un mese fa  
Ma il CNAF fa peggio

# Tier1 usage

dashb@rd

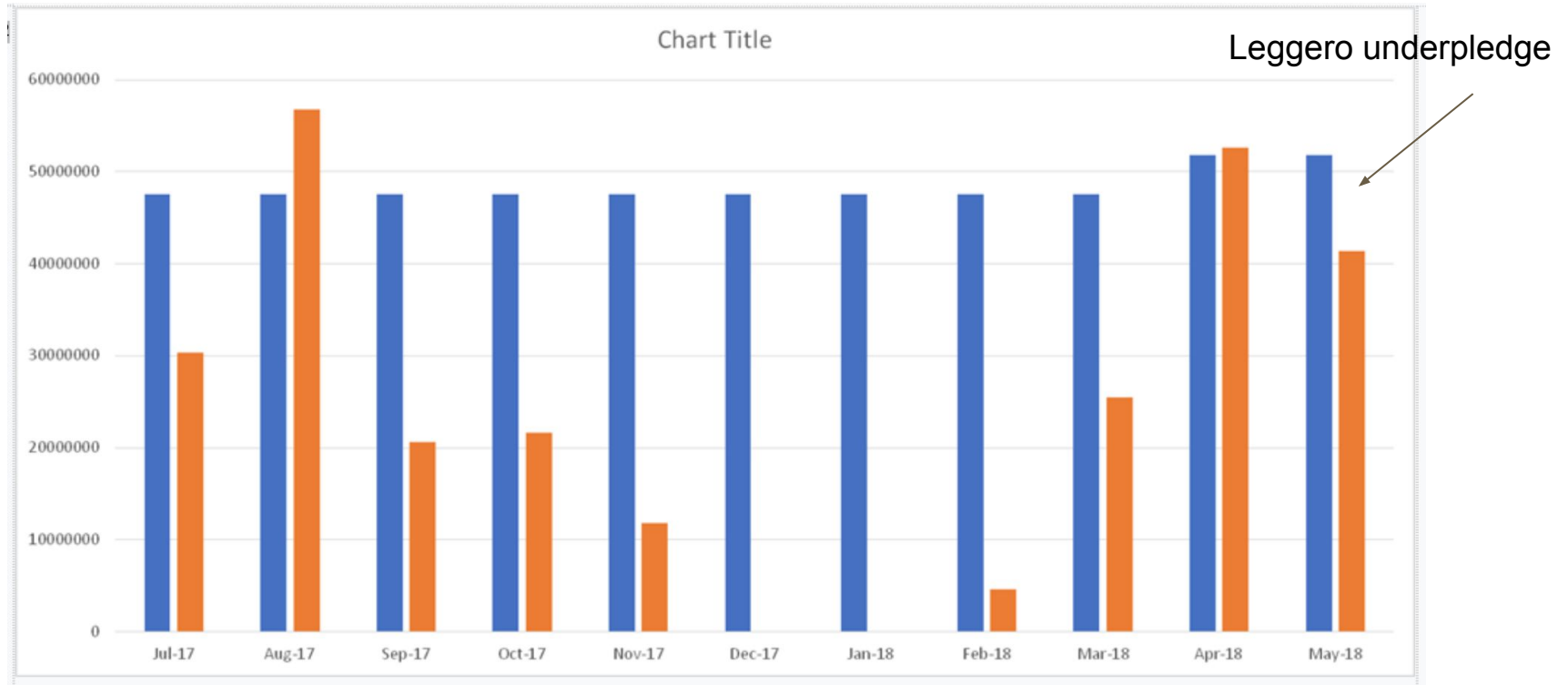


dashb@rd



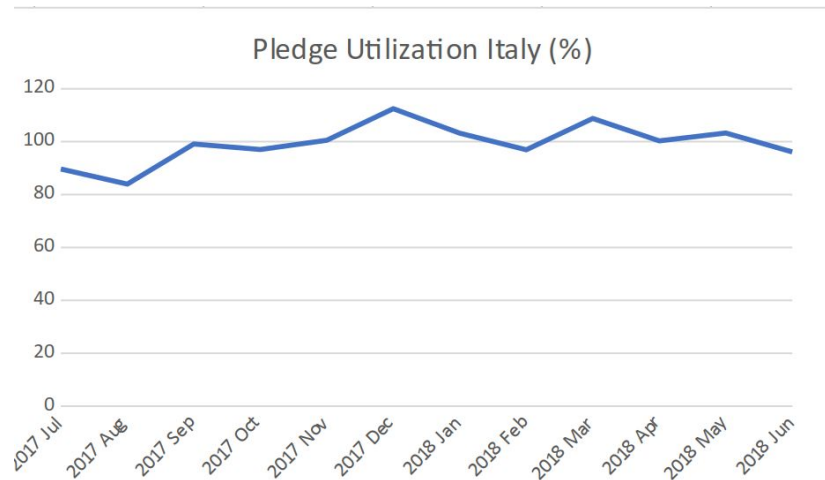
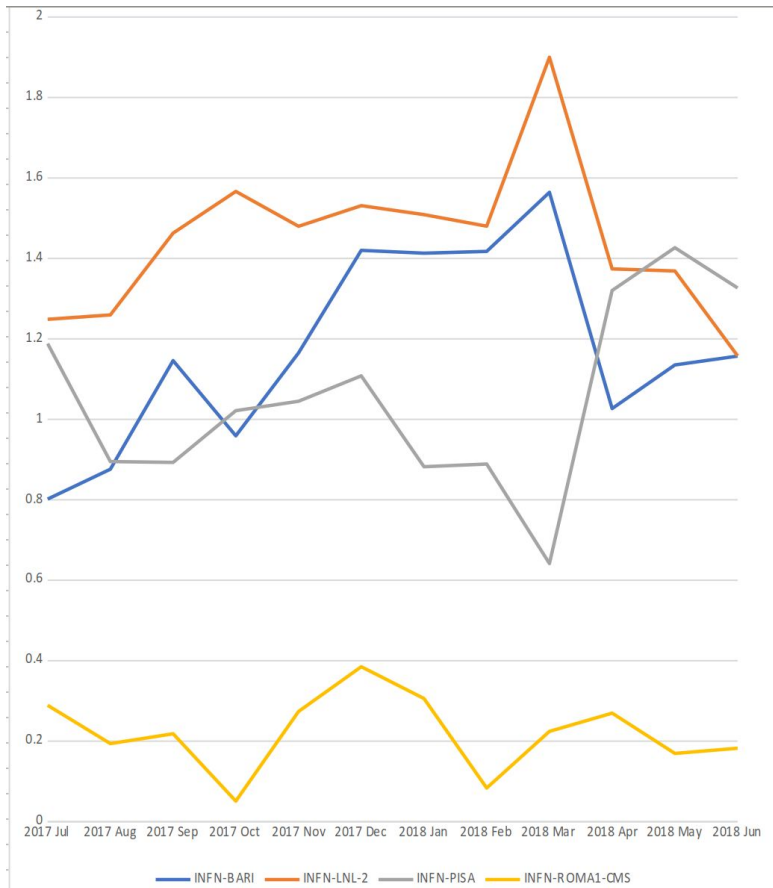
PhEDEx agents “zombie” per diversi giorni  
L’errore era non tanto esplicativo (perl error)

# Tier1 Italia utilizzo vs pledges (CMS)



Source: <https://accounting.egi.eu/>

# Tier2 Italia utilizzo vs pledges (CMS)



Il fatto che a volte superiamo il pledge (con le CPU 2017 installate solo un mese fa), vuol dire che siamo bravi a utilizzare risorse "opportunistiche"

Roma underpledge:

- E' atteso, e dovuto alla permanenza in Waiting Room, con conseguente esclusione dalla produzione MC

Source: <https://accounting.egi.eu/>

# CMS 2019: scrutiny 2018

Risorse raccomandate dallo scrutiny group (Aprile 2018)

Resource	Site	2018 CMS Approved Request (Oct17)	2018 CMS REBUS Pledge	2019 CMS Request (Apr18)	2019 CMS Request Increase (Apr18)
CPU (kHS06)	T0+CAF	423	423	423	+0%
	T1	600	562	650	+8%
	T2	900	940	1000	+11%
Disk (PB)	T0+CAF	26.1	26.1	26.1	+0%
	T1	60.0	55.4	68.0	+13%
	T2	70.0	66.7	78.0	+11%
Tape (PB)	T0+CAF	99	97	99	+0%
	T1	188	166	220	+17%

**Table 5:** CMS resource request for 2019. The first column shows CRSG Spring '17 recommendations for 2018, the second shows the current resource pledged for 2018 (in REBUS), the third shows the current requests for 2019, and the fourth the relative increase in relation to the 2018 CMS request.

PhD per funding Agency  
**Italy → 13.56%**  
 RRB - Sep 2017

Institute FA	PhD #	PhD %
Austria	18	1.28%
Belgium-FNRS	24	1.71%
Belgium-FWO	17	1.21%
Brazil-FAPESP	7	0.50%
Brazil-RENAFAE	21	1.50%
Bulgaria	8	0.57%
CERN	73	5.21%
China	21	1.50%
Colombia	3	0.21%
Croatia	10	0.71%
Cyprus	7	0.50%
Ecuador	2	0.14%
Egypt	3	0.21%
Estonia	4	0.29%
Finland	10	0.71%
France-CEA	14	1.00%
France-IN2P3	46	3.28%
Germany-BMBF	53	3.78%
Germany-Helmholtz	42	3.00%
Greece	14	1.00%
Hungary	10	0.71%
India	43	3.07%
Iran	5	0.36%
Ireland	1	0.07%
Italy	190	13.56%
Korea	32	2.28%
Lithuania	2	0.14%
Malaysia	3	0.21%
Mexico	13	0.93%
New Zealand	2	0.14%
Pakistan	3	0.21%
Poland	14	1.00%
Portugal	8	0.57%
RDMS-DMS	23	1.64%
RDMS-Russia*	74	5.28%
Serbia	3	0.21%
Spain	42	3.00%
Switzerland-ETHZ	15	1.07%
Switzerland-PSI	6	0.43%
Switzerland-UNIV	9	0.64%
Taipei	16	1.14%
Thailand	3	0.21%
Turkey	12	0.86%
United Kingdom	59	4.21%
USA-DOE	301	21.48%
USA-DOE-NP	27	1.93%
USA-NSF	81	5.78%
USA-OTHER	7	0.50%
<b>Grand Total</b>	<b>1401</b>	<b>100.00%</b>





# Richieste 2019 Tier2

Situazione Fine 2018		
	kHS06	TBN
Bari	30.5375	2073
Pisa	25.6375	2224
Legnaro	26.7875	2623
Roma1	25.0375	1481
<b>Totali</b>	<b>108</b>	<b>8400</b>



Situazione Fine 2019		
	kHS06	TBN
	36.0375	2508
	31.1375	2659
	32.2875	3058
	30.5375	1916
<b>Totali</b>	<b>130</b>	<b>10140</b>

- Italia: 13% di CMS
- 1 TBN = 170€
- 1 HS06 = 10€
- CPU Bari 2018 ??
  - N.B. Gli 8 kHS06 tramite Recas NON sono arrivati
  - Aggiungiamo 7.9 kHS06 (2018) alla richiesta di Bari 2019
- Si aggiunge un "gettone" del 20%\*Assegnaz.(2018) per le CPU di LNL, Pisa, Roma per recuperare extra-costo acquisto CPU

	TOT	disco TBN	disco Eur	CPU kHS06	CPU Eur	Rete Eur	Server Eur	Recupero pledges CPU 2018
<b>Bari</b>	<b>294835.75</b>	575	97750	18.0	179550	7830.25	9705.5	
<b>Pisa</b>	<b>175821.00</b>	435	73950	8.4	83600	4356.75	5514.25	8400
<b>Legnaro</b>	<b>302923.20</b>	611	103870	16.3	163400	7498.75	9354.45	18800
<b>Roma1</b>	<b>215455.75</b>	435	73950	11.9	118750	5411.25	6744.5	10600
<b>TOT</b>	<b>989035.70</b>	<b>2056.00</b>	<b>349520.00</b>	<b>54.5</b>	<b>545300.00</b>	<b>25097.00</b>	<b>31318.70</b>	<b>37800.00</b>



# Calcolo CMS fino al 2021 e CNAF 2019

Stime preliminari e ufficiosi per fine 2021

Incrementi stimati	2021/2019	Frazione Italia
CPU	30.00%	13.00%
Disk	30.00%	13.00%
Tapes	22.00%	13.00%

Parametri ancora da definire con precisione:

- LHC luminosity
- CMS Trigger rate

Resource	Site	Frazione Italia 2018	2019 CMS request	Frazione Italia 2019	2021 CMS estimated	Frazione Italia 2021	Incremento Italia 2021-2019	Incremento italia 2021-2018
CPU kHS06	T0+CAF		423		549.9			
	T1	72	650	84.5	845	109.85	25.35	37.85
	T2	108	1000	130	1300	169	39	61
Disk (PB)	T0+CAF		26.1		33.93			
	T1	7.2	68	8.84	88.4	11.492	2.652	4.292
	T2	8.4	78	10.14	101.4	13.182	3.042	4.782
Tape (PB)	T0+CAF		99		120.78			
	T1	24.44	220	28.6	268.4	34.892	6.292	10.452

Disco tier2 da acquistare nel triennio 2019-21:  
**4782 TBN + 4480 (dismissioni) = 9262 TBN**

Sarebbe auspicabile fare un accordo quadro!

# CNAF: varie

- Situazione pledges 2018?
  - N.B. Comunicare a CMS (tramite HN) l'aumento di storage una volta installato
  
- Richiesta uso tape (throughput )
  - Nel 2019 si prevede un uso analogo al 2018
  - N.B. per il Run III (2023) e' richiesto almeno un fattore 2x di velocità di recall, rispetto al 2019