



ALICE Requirements for 2009-10

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Rationale

- Initial lumi 10^{29} - 10^{31} \Rightarrow cleaner conditions (less pile-up in the TPC...)
 - Unique possibility for many physics topics (e.g. very high multiplicity, heavy-flavor,...)
 - LHC start-up is prime time for ALICE proton data \Rightarrow max use of beam in this phase.
- Only statistics at 10 TeV, close to the PbPb energy (5.5 TeV) & between FNAL (2 TeV) and full energy (14 TeV)
 - Important when interpolating results (pt spectra, QCD cross sections etc..) to the PbPb energy.
 - Unlike for discovery physics, for the ALICE program (event characterization, QCD physics in pp, comparison data) 10 TeV is as good
- Our plan is to use the full DAQ bandwidth available to collect a large statistics in 2009-2010.



Requirement update

- Mandate
 - Each experiment to provide 1 page document explaining the requirements and changes relative to previous requirements to be included in the RRB document
 - Provide tables of requirements for T0, CAF, T1s, T2s showing new requirements and change relative to existing pledges. For CPU we should use the new units.
 - Present requirements corresponding to these periods, i.e. resources required at the end of each period but to be installed by the Oct and April starts.
 - Ultimately of course we would like to show the quarterly ramp-up, but given the present understanding of the LHC schedule this is probably not realistic
- Assumption
 - October '09 – March '10: 1.7×10^6 sec, 0.2 duty cycle
 - April '10 – September '10: 4.3×10^6 sec, 0.5 duty cycle
- Based on
 - Standard parameters of the ALICE CM in terms of MB/s for pp and PbPb
 - LHC schedule above



New Requirements

- CPU

	T0	CAF	T1	T2	T0	CAF	T1	T2	T0	CAF	T1	T2
	new requirements (KHEP-Spec)				old requirements (KHEP-Spec)				variation (%)			
2009Q1	31.6	10.4	32.0	32.4	36.4	10.4	79.6	57.2	-11 %	0 %	-55 %	-37 %
2009Q2	31.6	10.4	32.0	32.4								
2009Q3	31.6	10.4	32.0	32.4								
2009Q4	32.4	10.4	42.8	36.0								
2010Q1	33.6	10.4	42.8	36.0	36.4	10.4	94.4	100.4	1 %	0 %	8 %	-20 %
2010Q2	33.6	10.4	42.8	36.0								
2010Q3	34.0	10.4	42.8	36.0								
2010Q4	36.8	10.4	102.4	80.8								

- Disk

	CERN	T1	T2	CERN	T1	T2	CERN	T1	T2			
	new requirements (PB)			old requirements (PB)			variation (%)					
2009Q1		1.7	2.4			1.7	2.5	9.9	9.6	-4 %	-56 %	-54 %
2009Q2		1.9	3.0	2.6								
2009Q3		2.2	3.6	3.5								
2009Q4		2.4	4.3	4.4								
2010Q1		2.6	4.9	5.3	4.2	9.9	10.3	8 %	-0 %	21 %		
2010Q2		2.9	5.5	6.2								
2010Q3		3.1	6.1	7.0								
2010Q4		4.5	9.9	12.4								

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	CERN	T1	CERN	T1	Tape	T1	
	new requirements (PB)		old requirements (PB)		variation (%)		
2009Q1		3.3	2.4	7.7	10.6	-52 %	-44 %
2009Q2		3.4	3.6				
2009Q3		3.6	4.7				
2009Q4		3.7	5.9				
2010Q1		4.1	7.0	8.1	19.7	-18 %	-41 %
2010Q2		4.6	8.2				
2010Q3		5.0	9.3				
2010Q4		6.7	11.6				



Conclusions & remarks

		2009				2010			
		T0	CAF	T1	T2	T0	CAF	T1	T2
CPU (KHEP- Spec)	Requested	32.0	10.4	42.8	36.0	36.4	10.4	102.4	80.8
	Missing	12%	0%	-4%	43%	5%	-1%	-41%	-0%
Disk (TB)	Requested	2,408	300	4,264	4,381	4,532	340	9,869	12,365
	Missing	74%	0%	-9%	-6%	-7%	0%	-31%	-52%
MSS (TB)	Requested	3,721	-	5,887	-	6,665	-	11,648	-
	Missing	96%	-	5%	-	28%	-	-12%	-

- There are no changes in the computing model numbers
- The only changes come from the new schedule
- We have compared to the needs and not to the pledges because the difference is massive





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fca @ WLCG-MB

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