



LHC Schedule and WLCG Resource Planning



November 2008

capacities and procurements

The WLCG MB has agreed that with the information currently available to us and the present understanding of the accelerator schedule for 2009:

- The amount of data gathered in 2009 is likely to be at least at the level originally planned, with pressure to run for as long a period as possible this may be close to or exceed the amount originally anticipated in 2008 + 2009 together
- The original planning meant that the capacity to be installed in 2009 was still close to x2 with respect to 2008 as part of the initial ramp up of WLCG capacity
- Many procurement and acceptance problems arose in 2008 which meant that the 2008 capacities were very late in being installed; there is a grave concern that such problems will continue with the 2009 procurements
- The 2009 procurement processes should have been well advanced by the time of the LHC problem in September
- The WLCG MB thus does not regard the present situation as a reason to delay the 2009 procurements, and we urge the sites and funding agencies to proceed as planned. It is essential that adequate resources are available to support the first years of LHC data taking.



January 2009

Timetable - for WLCG

- Feb 6: Await results of Chamonix workshop to understand better the likely running schedule for 2009 and 2010
- Prepare an updated plan for resource procurement /installation/ commissioning taking into account new schedule and site constraints
- Discuss this plan with the LHCC on Feb 16 (mini-review) and following days
- Present this to the RRB in April



Schedule for 2009 - 2010

Schedule with running in winter months

- Gains 20 weeks of LHC physics (independent of “slip”)

Year	2009												2010														
Month	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	
Baseline	SH	SH	SH	SH	SH	SH	SH	SH	SU	PH	PH	SH	SH	SH	SH	SH	SH	SU	PH	PH	PH	PH	SH	SH	SH	SH	
	24 weeks physics possible																										
Base 1	SH	SH	SH	SH	SH	SH	SH	SH	SU	PH	PH	PH	PH	PH	PH	PH	PH	PH	PH	PH	PH	SH	SH	SH	SH	SH	
	44 weeks physics possible																										
Gain 20 weeks of physics in 2010 by running during winter months																											
HIGH price Electricity																											
Delay (4W)	SH	SH	SH	SH	SH	SH	SH	SH	SU	PH	PH	PH	PH	PH	PH	PH	PH	PH	PH	PH	PH	SH	SH	SH	SH	SH	
Delay (8W)	SH	SH	SH	SH	SH	SH	SH	SH	SU	PH	PH	PH	PH	PH	PH	PH	PH	PH	PH	PH	PH	SH	SH	SH	SH	SH	

From Chamonix summary: <http://indico.cern.ch/conferenceDisplay.py?confId=45433>



Likely scenario

- Injection: end September 2009
- Collisions: end October 2009
- Long run from ~November 2009 for ~44 weeks
 - This is equivalent to the full 2009 + 2010 running as planned with 2010 being a nominal year
 - Short stop (2 weeks) over Christmas/New Year
 - Implications for service support – piquets etc?
 - What are experiment plans in this time?
- Energy will be limited to 5 TeV
- Heavy Ion run at the end of 2010
 - No detailed planning yet
- 6 month shutdown between 2010/2011 (?) – restart in May ?



Implications for resources

- This extended run is equivalent to the original plans for 2009 + 2010
- 2009
 - Start is delayed until October (we always planned to be ready for machine switch-on)
 - Thus should have full 2009 resources commissioned by September
- 2010
 - Assume starts in May
 - Need to have full 2010 resources commissioned by April (as planned)
 - NB have always said will stage installation of disk during 2010
 - What are the appropriate dates? April + August (?)
- This is close to the original plan, but with an initial delay in 2009
 - Allows newer equipment (in some cases!)
- Alternative would be to install as much as possible before Oct 09
 - But – budgeting is an issue; buying too early;



Issues?

- No allowance for any change in experiment requirements
 - No change in budgets, but delay *in some cases* allows for more resources for same cost
 - How to handle the ATLAS request for additional Tier 0 resources?
 - How do experiment models deal with no shutdown?
 - Tier 1 issues with installation schedules for 2010?

- Funding agencies (and some sites) see the delay as a reason to push back all procurements by ~ 1 year (i.e. 2009 is like 2008 should have been etc.)
 - What is the counter-argument? (not cosmics!)
 - → must ensure that we have adequate resources to rapidly exploit the data from this first period of running – the computing must not be the block to extracting physics

- Goal is to get physics out as rapidly as possible –
 - Is it useful to revisit the idea of a full analysis simulation exercise now (at least ATLAS+CMS simultaneously)?