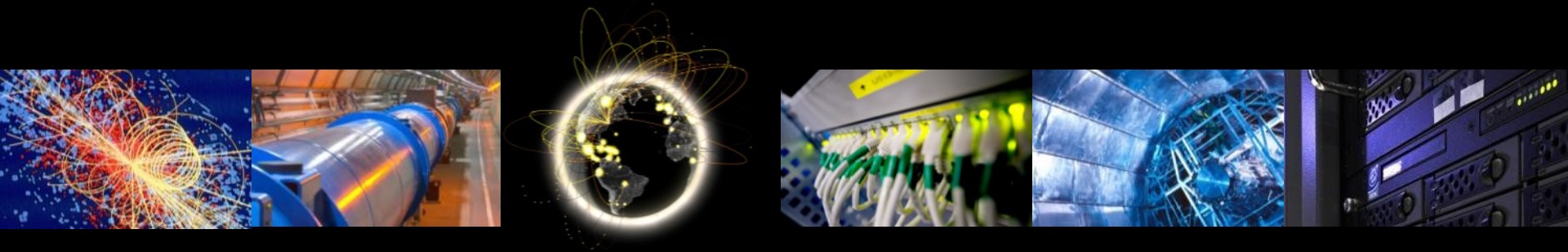


Summary from LHCC

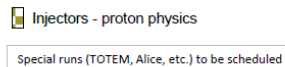
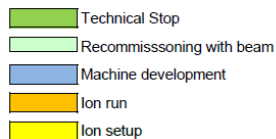
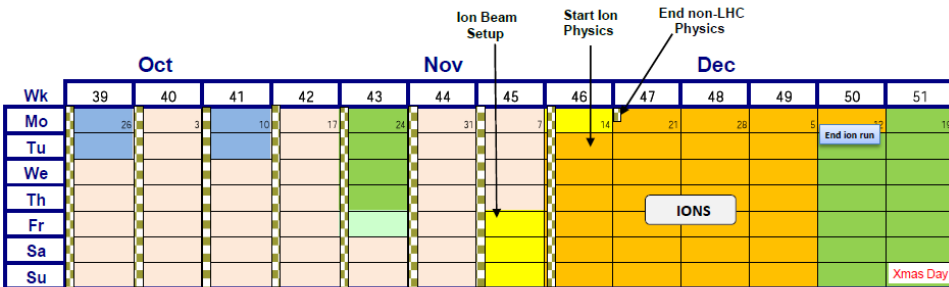
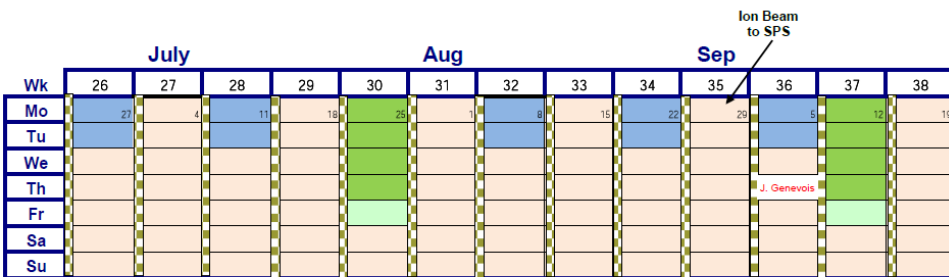
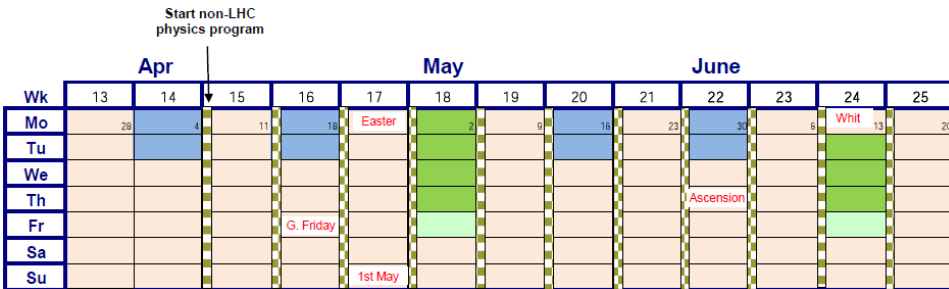
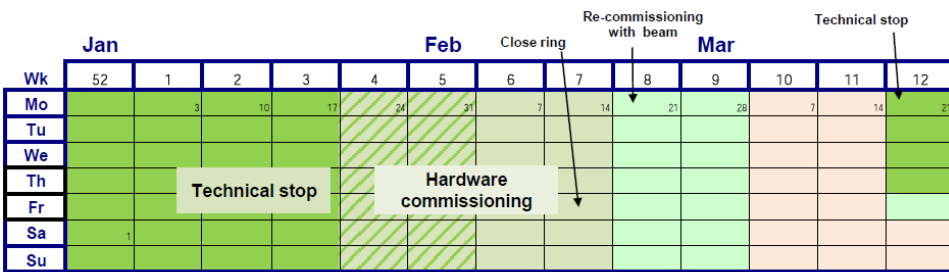
Ian Bird

MB, 23 Nov 2010



LHCC Meeting

- Open session:
 - Machine status report + experiment reports
 - <http://indico.cern.ch/conferenceDisplay.py?confId=112439>
- Closed session:
 - Report from WLCG, based on discussion with referees:
 - Status of testing for HI, status of HI running
 - Issues related to resources: Beam energy, possible 2012 running
 - See slides attached to agenda



2011

- Beam back around 21st February
- 2 weeks re-commissioning with beam (at least)
- 4 day technical stop every 6 weeks
- Count 1 day to recover from TS (optimistic)
- 2 days machine development every 2 weeks or so
- 4 days ions set-up
- 4 weeks ion run
- End of run – 12th December

~200 days proton physics

2011: “reasonable” numbers

- 4 TeV (to be discussed at Chamonix)
- 936 bunches (75 ns)
- 3 micron emittance
- 1.2×10^{11} protons/bunch
- $\beta^* = 2.5$ m, nominal crossing angle

Peak luminosity	6.4×10^{32}
Integrated per day	11 pb^{-1}
200 days	2.2 fb^{-1}
Stored energy	72 MJ

Usual warnings apply – see problems, problems above

Ultimate reach

- 4 TeV
- 1400 bunches (50 ns)
- 2.5 micron emittance
- 1.5×10^{11} protons/bunch
- $\beta^* = 2.0$ m, nominal crossing angle

Peak luminosity	2.2×10^{33}
Integrated per day	38 pb^{-1}
200 days	7.6 fb^{-1}
Stored energy	134 MJ

Usual warnings particularly apply – see problems, problems above

Summary

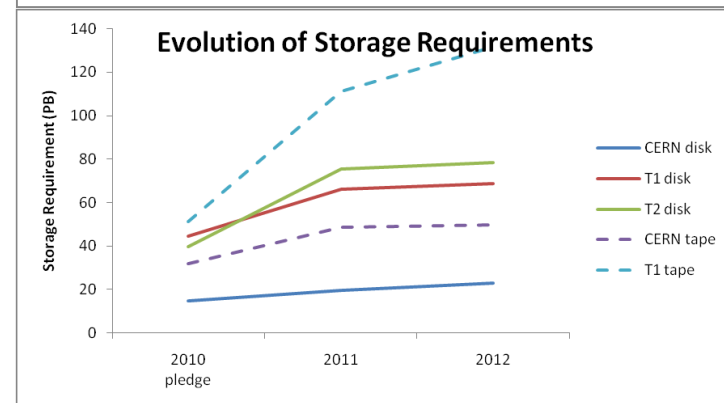
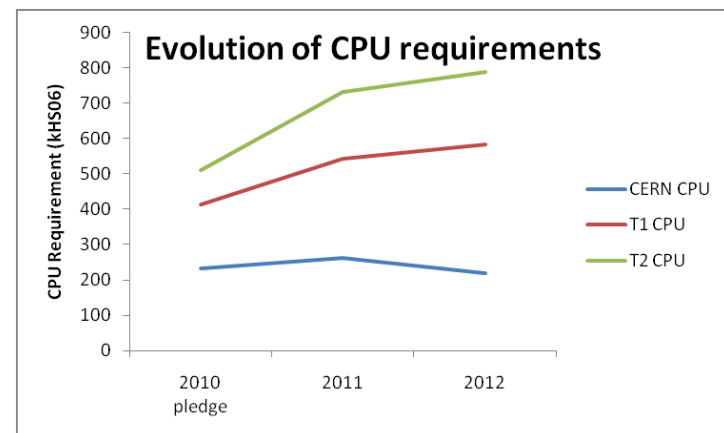
- Bunch train operation with 150ns was a big success
 - Bunch intensity \sim nominal
 - Normalised emittance ε_n in collision $\sim 2.5 \mu\text{m}$
 - Maximum bunches/colliding 1 & 5 368/348
 - Peak luminosity $\sim 2 \cdot 10^{32} \text{ cm}^{-2} \text{ s}^{-1}$
 - Delivered luminosity $\sim 50 \text{ pb}^{-1}$
 - Plenty of interesting data
 - A few interesting (intensity-related) effects
- 50ns run
 - Very useful few days
 - Should allow definition of strategy for 2011 (together with ongoing studies)
- Ion run
 - Very fast switch from p to Pb
 - Quickly up to nominal performance for 2010
- Full debriefing and more at forthcoming workshops
 - Evian (December 7 - 9)
 - Chamonix (January 24 – 28)

Change of energy?

- Change of beam energy will imply increased resource usage:
 - Re-do all simulations (and will have to keep both 7 and 8 TeV simulated data on-line)
 - This simulation load may require prioritization of other work

Run in 2012??

- Existing resource plan has essentially no increase in 2012
- Would need to plan additional resources urgently – procurements can take 1 year
- Taking data in 2012 without significant additional resources will severely limit the physics output
- Such a decision must be taken in good time, so that the April RRB can react and procurement plans be adjusted (if possible ...)



Summary

- pp run concluded without problems – nothing to remark on cf last LHCC
- HI testing successful and HI run going well – unprecedented data rates are being managed efficiently
- Resource use has grown in last months – Tier 1 and 2 resources well used
- ~10 PB on tape since April 1st
- Concern over 2012 planning – need to foresee additional resources if LHC runs in 2012
 - Procurement timescales are ~ 1 year

From discussion

- WLCG should prepare a plan for running also in 2012
 - Decision unlikely to be taken before April
- Thus we need 2 plans:
 - Existing plan with 2012 as shutdown
 - Alternate with run in 2012 – assume parameters as 2011 (but “standard” or “optimistic”?)
 - Funding agencies should be warned prior to RRB ...

Feedback from referees

- DG: 2012 running decision will be made “immediately after Chamonix” + agreed scenario from S. Myers on agreed amount of data taking in 2011+12
- WLCG must prepare requests for computing resources based on more than one possible 2012 scenario: both probably need to be scrutinised
- The experiments will need to have their new requests ready for submission to the April 2011 RRB. The committee requests that physics cases should be made to justify these requests. These should include an analysis of the effect on the physics reach of the experiment in the case of a short-fall of computing resources provided, in terms of both the breadth of the programme and the speed with which physics results could be produced.
- Feb: organise a meeting at which both CRSG and LHCC-LCG referees might be present, to review the computing requests as we did in Feb 2010.