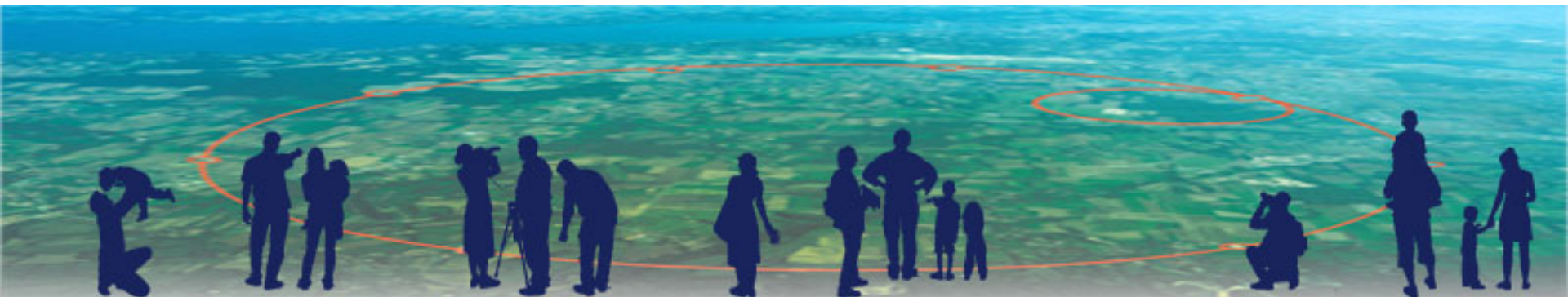


LHC Status Report

RRB 27 April 2009

Steve Myers

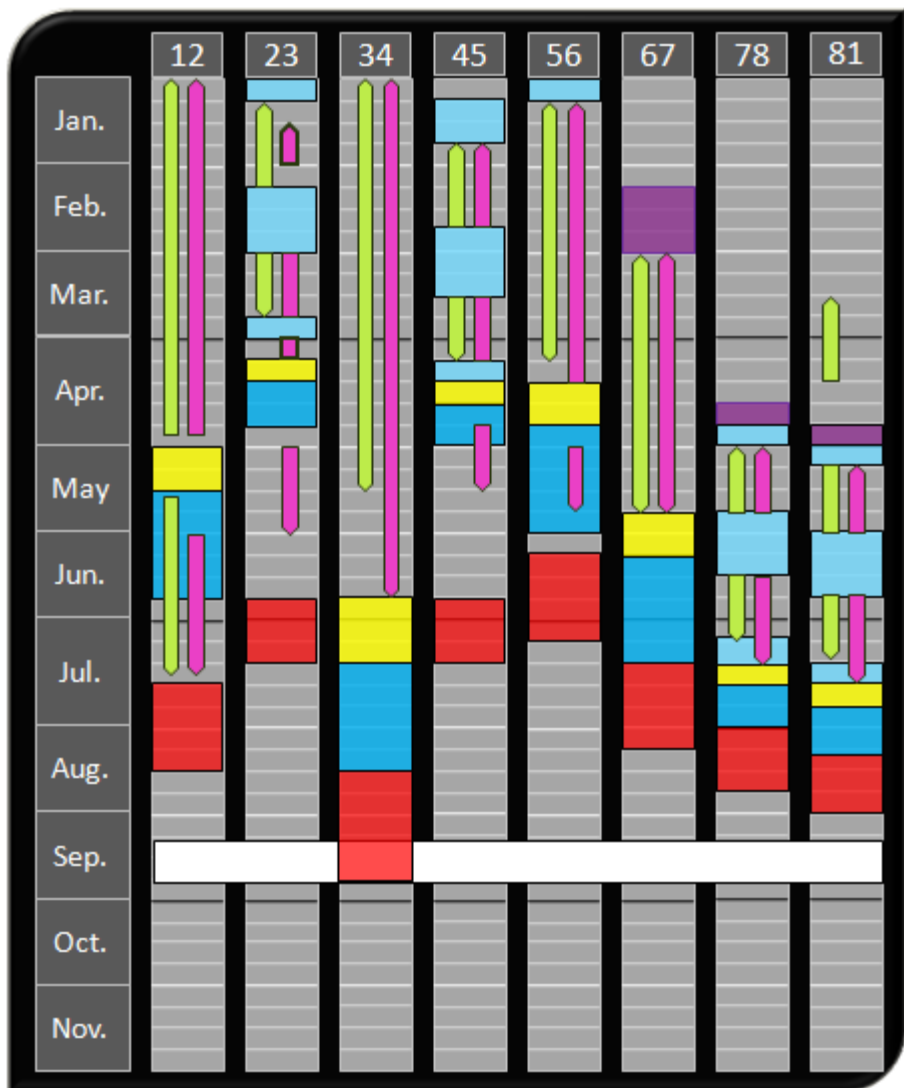


LHC SHUTDOWN SCHEDULE AND PROGRESS

**2 months after the LHC workshop in
Chamonix**

4/8/2009

Baseline Schedule – February 09



- Machine cold
wk 34
- Powering Tests start
wk 24
- LHC Machine starts
wk 39

Baseline evolution

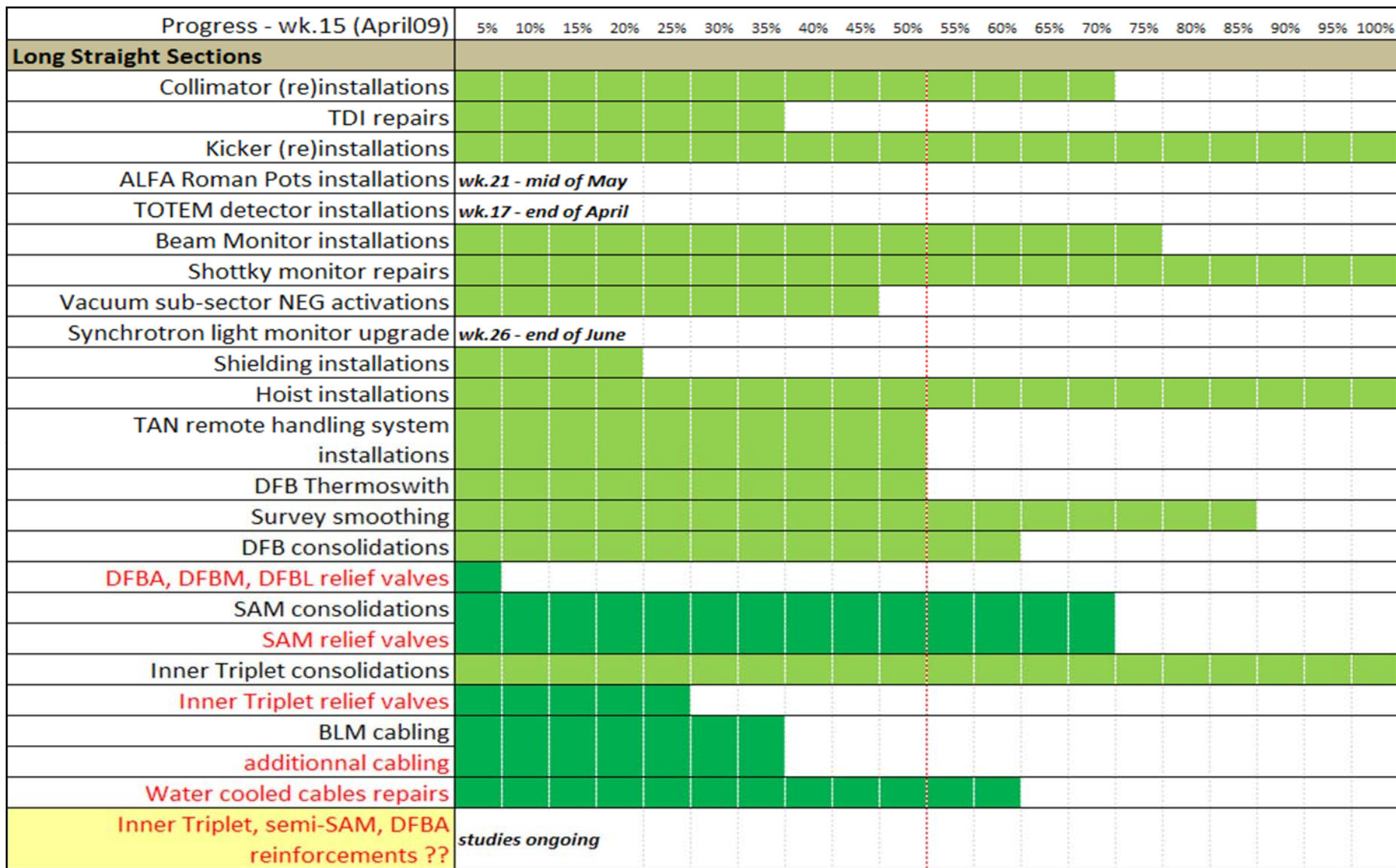
- Works added after the LHC workshop in Chamonix
 - QPS/UPS cabling
 - Additional cables for EN/EL
 - Relief valves on stand-alone, Inner Triplet, DFBL, DFBA and DFBL
- Some Constraints resolved
 - Liquid helium storage
 - Time windows between the intermediate cool-downs for PIMs have been extended by 1 week

Progress and status – Service Areas

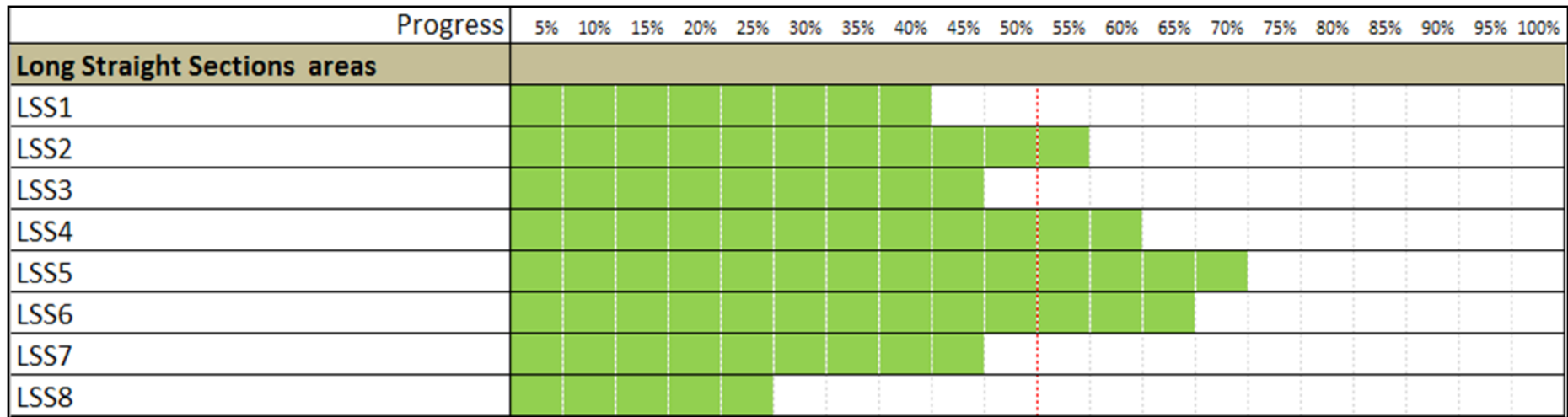
Progress - wk.15 (April09)	5%	10%	15%	20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%	85%	90%	95%	100%	
Service areas																					
Cooling Maintenance	█											█									
Cryogenic Maintenance	█																				
Electricity Maintenance	█										█										
AUG Tests	█										█										
TZ76/UJ76 modifications	█																				

Progress	5%	10%	15%	20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%	85%	90%	95%	100%		
Service areas																						
Point 1	█											█										cleaning
Point 1.8	█																					
Point 2	█										█										cleaning	
Point 3	█																					
Point 4	█										█										cleaning	
Point 5	█										█										cleaning	
Point 6	█										█											
Point 7	█																					
Point 8	█																					

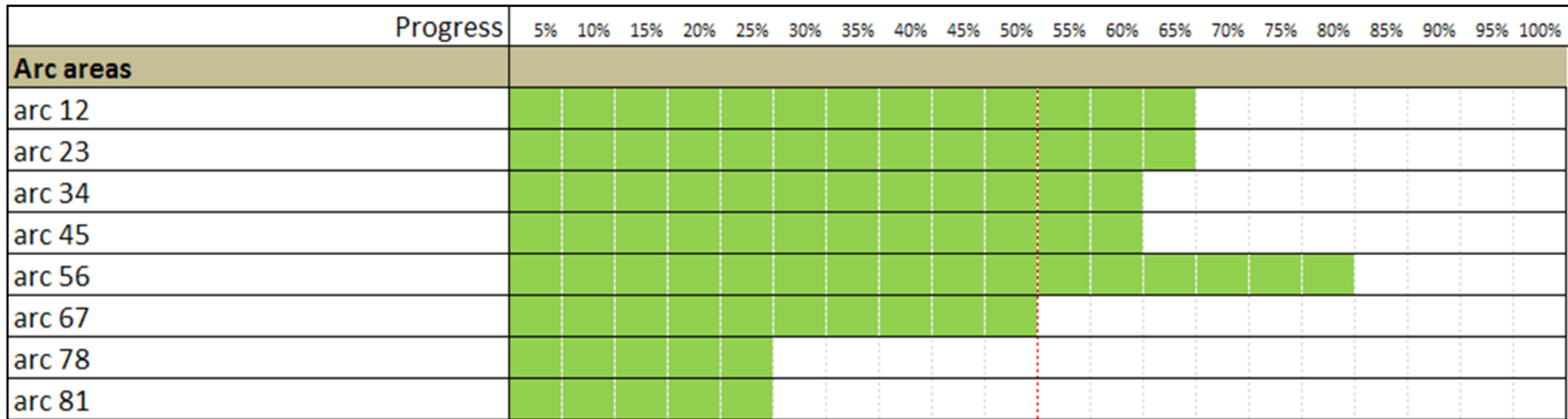
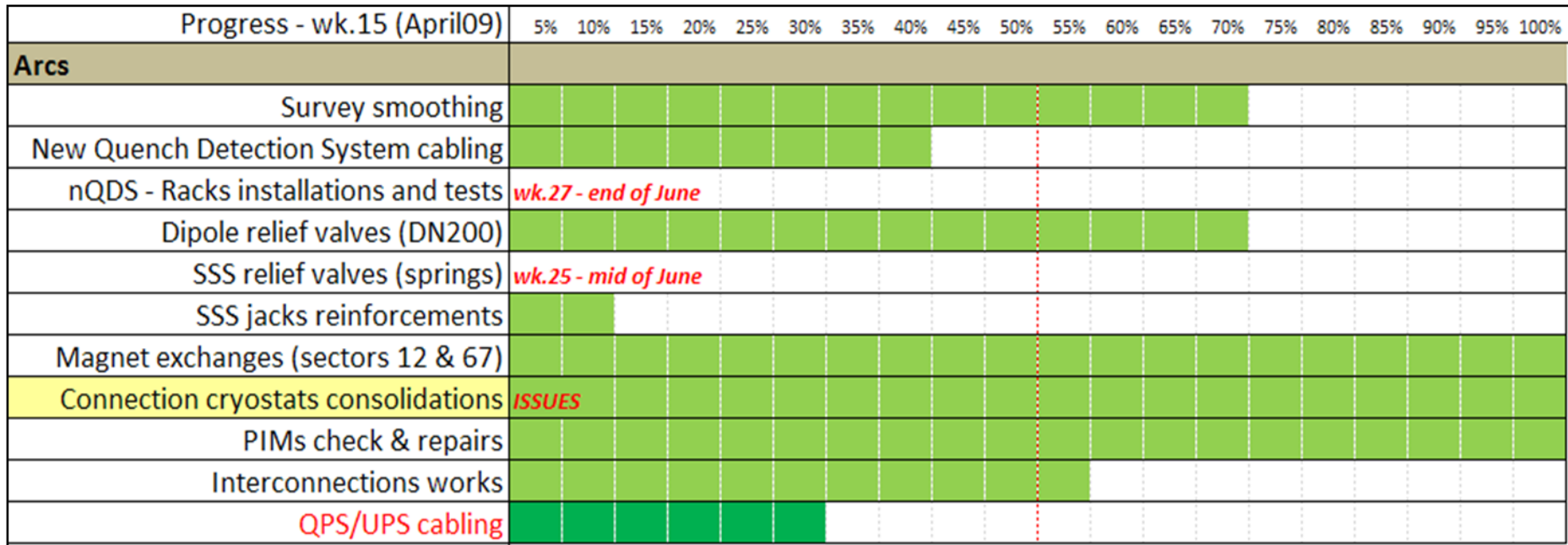
Progress and status – LSS



Progress and status – LSS



Progress and status – Arcs



Issues / warnings

- Connection cryostats in the sector 56
- Installation of the last SSS week 18
- Support reinforcement of LSS elements (DFBA, semi-SAM, IT)

studies ongoing

- Additional relief valves on DFBA
- Some materials are not yet at CERN (SSS springs, QPS upgrade equipment)

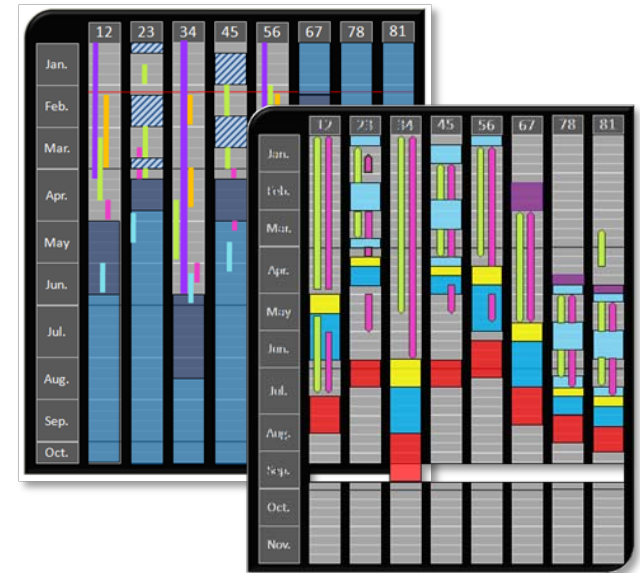
hope they arrive in time !

Powering overview – February09

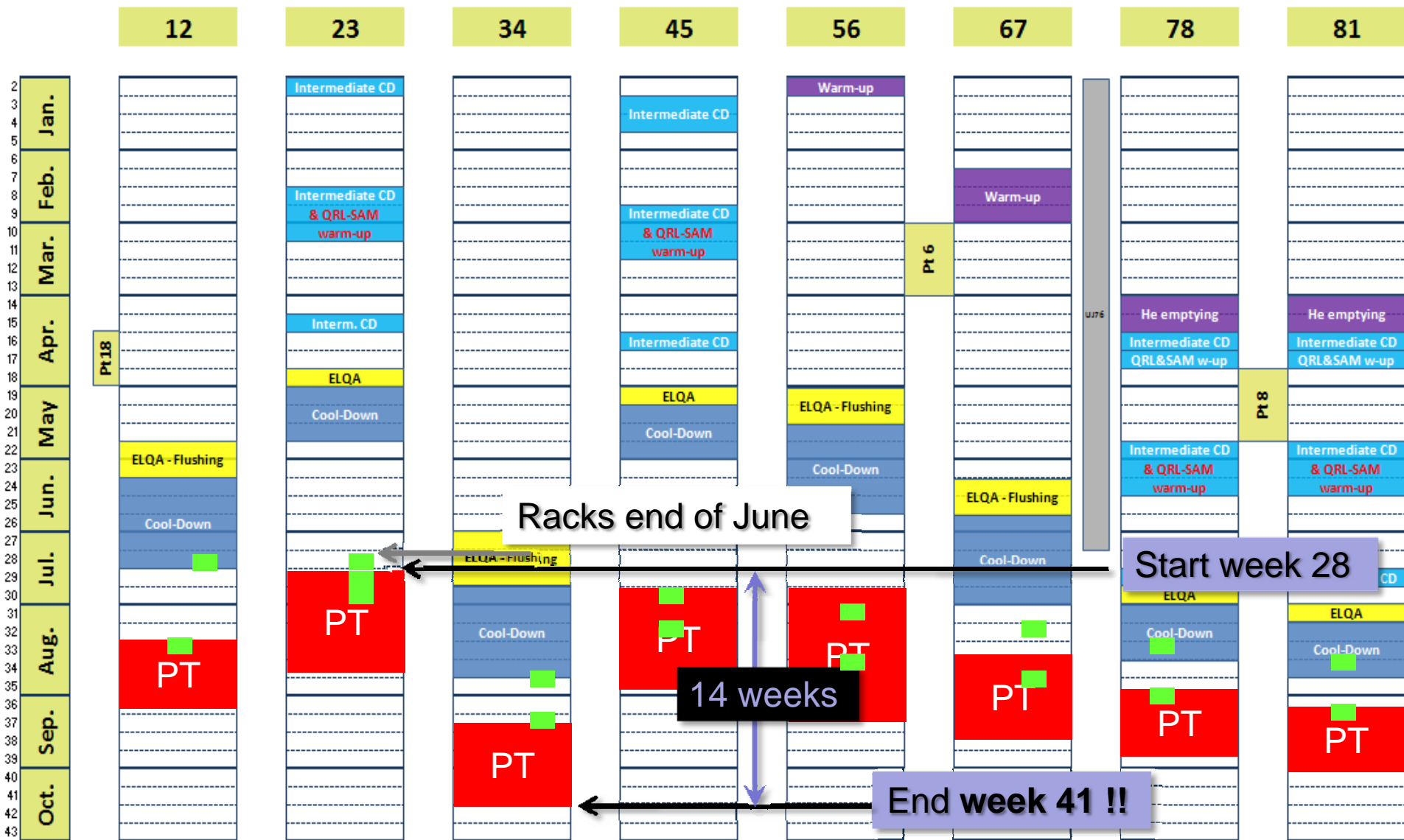
- Start on week 24
- End on week 38
 - 15 weeks

- BUT :

- No details of the Powering Tests
- No details of the ELQA
- nQDS racks were available end of April



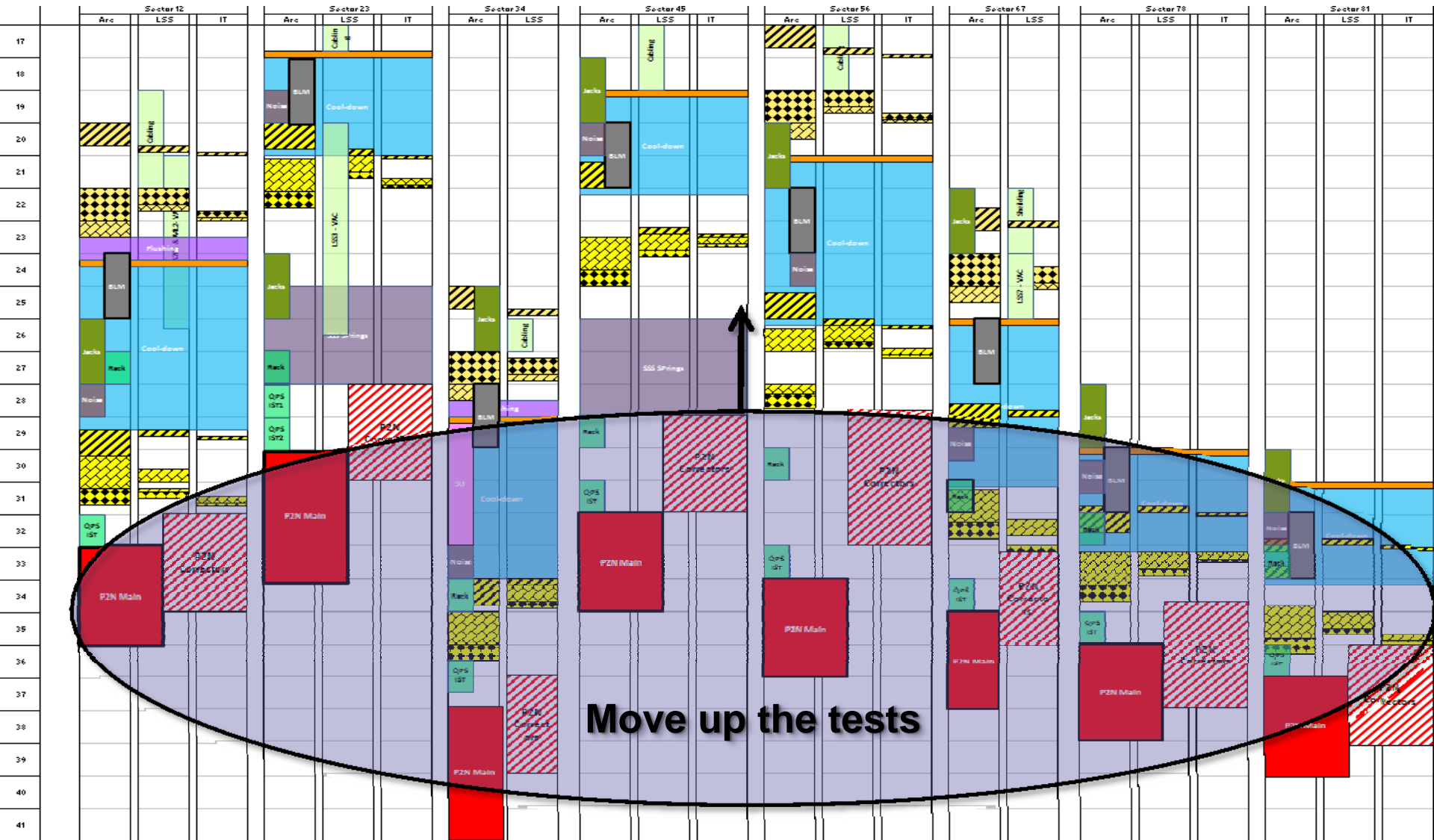
LHC workshop – Chamonix09



Target: gain time !

- How to gain time ?
 - Starting the Powering Tests as soon as possible
 - Performing everything which can be performed instead of waiting to do everything at the same time (*i.e symmetric quench detectors*)
 - Finding more human resources
 - *Works in parallel*
 - *3 shifts (24h/24h, 7d/7d)*

ELQA and PT schedule: work in progress



Beam Conditions for Physics (2009/10)

- **5TeV/beam for Physics**
- Machine Protection will be Tested with beam (at 0.5TeV energy levels)
- 4 TeV “on the way” to 5TeV (limited in 2010)
- Estimated integrated luminosity
 - during first 100 days of operation.. $\approx 50\text{pb}^{-1}$
 - » Peak L of $5 \cdot 10^{31} \eta$ (overall) = 10% gives $0.5\text{pb}^{-1}/\text{day}$
 - » Peak L of $2 \cdot 10^{32} \eta$ (overall) = 10% gives $2.0\text{pb}^{-1}/\text{day}$
 - During next 100 days of operation.. $\approx 200\text{pb}^{-1}$
- Then towards end of year **ions** (to be planned in detail soon)

Conclusions

- No delay for the activities in progress 😊
 - Continuous struggle on a daily basis, e.g. technological, purchasing, admin, ☹️
- Installation of the last dipole on time 😊
- DN200 finished in arcs 😊
- QPS successful radiation test for electronic cards 😊
- A new schedule of the Powering Tests is in progress to start earlier and gain time
- **Additional consolidations to be scheduled in details (especially reinforcements)**
- **Availability of**
 - **QPS upgrade materials** (busbar splice detectors, power supplies, controller boards, crate) – end of June
 - **Symmetric quench detectors** – August