



# WLCG Service Coordination

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Grid Deployment Board

CERN, July 2007

# Outline

- WLCG Collaboration Workshop in Victoria
- LHC / WLCG schedule for next 12 months
- The missing (WLCG) milestone(s)

# Pre-CHEP Workshop

- Day 1: Services
- Day 2: Experiments
- Mornings: Plenary sessions
- Afternoons: Parallel BOFs
- **Names of speakers / conveners for experiments sessions?**
- Modification key: nosmoking

# Workshop Goals

- To understand the state of {site, experiment, service} readiness for data taking {cosmics, pp collisions} according to the current LHC schedule;
- To identify the key outstanding issues and associated milestones;
- To understand experiment activities {'dress rehearsals', cosmics runs in November/December 2007, March 2008, pp from Spring/Summer on}.

# Are We Ready?

- Service readiness – summary from GDB
- Site readiness panel
  - Harry Renshall, Jeremy Coles, Volker Guelzow, Luca dell'Agnello, Kors Bos
    - People involved in site-readiness reviews
- Experiment readiness panel
  - Michael Ernst, Andreas Peters, Jan Fiete Grosse-Oetringhaus , Ian Fisk, Philippe Charpentier, Andrea Sciaba, (one more from ATLAS?)
  - “Everyone” by definition is part of the discussion!

# DM BOF(s)

1. Update on 'the plan' for SRM v2.2 production roll-out: have we met interim milestones for the summer? Up-coming milestones for production deployment in two phases:
  - i. Early adopters post-CSA07 (Oct 15<sup>th</sup> on);
  - ii. Remaining WLCG sites v. early 2008.
2. Tutorial / training on site setup and configuration according to LHC experiments' requirements. Experience from early adopters / beta-testers from SRM v2.2 and related deployment.
- If it's too early for this, my proposal would be to cover **'reliable services by design'** (see later) and **NOT** new features

# DB BOF

- Tier 0 and Tier 1 database requirement update  
- summary for ATLAS, CMS and LHCb (30')
- Results from the ATLAS and LHCb scalability tests against Tier 1 database replicas (30')
- Status of LFC back-end database installations at LHCb Tier 1 sites (15')
- CMS Frontier Deployment - Status update (15')

# Operations BOF

- Some suggestions raised at the WLCG Management Board are listed below:
- *H.Marten suggested that ... the sites should have the top 5 issues for each service.*
- *I.Fisk also suggested a session for feedback from the sites to the developers, in order to improve the services and the software developed.*
- *R.Tafirout suggested that sites should share solutions; sometimes the information is known by others but not easily accessible.*
- *I.Fisk asked for the correlation between “availability as seen via SAM” vs. the “real jobs success rates of the Experiments (via Crab, Ganga, etc)”.*
- **See also discussion on reliable services below...**



# Other BOFs

- User Support;
- Monitoring.
- Detail TBD...

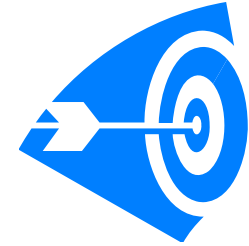
# Experiment Day

- Morning: experiment plenary presentations
- Afternoon: experiment parallel sessions
- There is also a workshop summary talk at the 'beginning of the end' at CHEP...
- Preview key highlights at end of workshop...

# Quality of Services

- More than one ‘thread’ in this area:
  - Monitoring working groups (monitoring BOF);
  - “Reliability by design” (see Stockholm workshop, operations BOF and CHEP talk);
  - CMS Critical Services review.
- “Resilience to glitches” is possible & (highly) desirable
- (Re-)reviewing CERN services to understand current status & steps required to reach goals
- **I believe that this is also possible (at cost) for storage services – to be addressed as a second step (in the post-SRM v2.2 world?)**
- *“pro-active: (of a policy or person or action) controlling a situation by causing something to happen rather than waiting to respond to it after it happens”*

# Targetted Interventions



- Common interventions include:
    - Adding additional resources to an existing service;
    - Replacing hardware used by an existing service;
    - Operating system / middleware upgrade / patch;
    - Similar operations on DB backend (where applicable).
  - Pathological cases include:
    - Massive machine room reconfigurations, as was performed at CERN (and elsewhere) to prepare for LHC;
    - Wide-spread power or cooling problems;
    - Major network problems, such as DNS / router / switch problems.
- **Pathological cases clearly need to be addressed too!**

# More Transparent Interventions

- *I am preparing to restart our SRM server here at IN2P3-CC so I have closed the IN2P3 channel on prod-fts-ws in order to drain current transfer queues.*
- *I will open them in 1 hour or 2.*
- Is this a transparent intervention or an unscheduled one?
- A: technically unscheduled, since it's SRM downtime.
- ☺ An EGEE broadcast was made, but this is just an example...
- But if the channel was first paused – which would mean that no files will fail – it becomes instead **transparent** – at least to the FTS – which is explicitly listed as a separate service in the WLCG MoU, both for T0 & T1!
- i.e. if we can trivially limit the impact of an intervention, we **should** (c.f. **WLCG MoU services at Tier0/Tier1s/Tier2s**)

# Service Review

- For each service need current status of:
  - Power supply (redundant including power feed? Critical? Why?)
  - Servers (single or multiple? DNS load-balanced? HA Linux? RAC? Other?)
  - Network (are servers connected to separate network switches?)
  - Middleware? (can middleware transparently handle loss of one of more servers?)
  - Impact (what is the impact on other services and / or users of a loss / degradation of service?)
  - Quiesce / recovery (can the service be cleanly paused? Is there built-in recovery? (e.g. buffers) What length of interruption?)
  - Tested (have interventions been made transparently using the above features?)
  - Documented (operations procedures, service information)

# Up-coming Schedule Outline

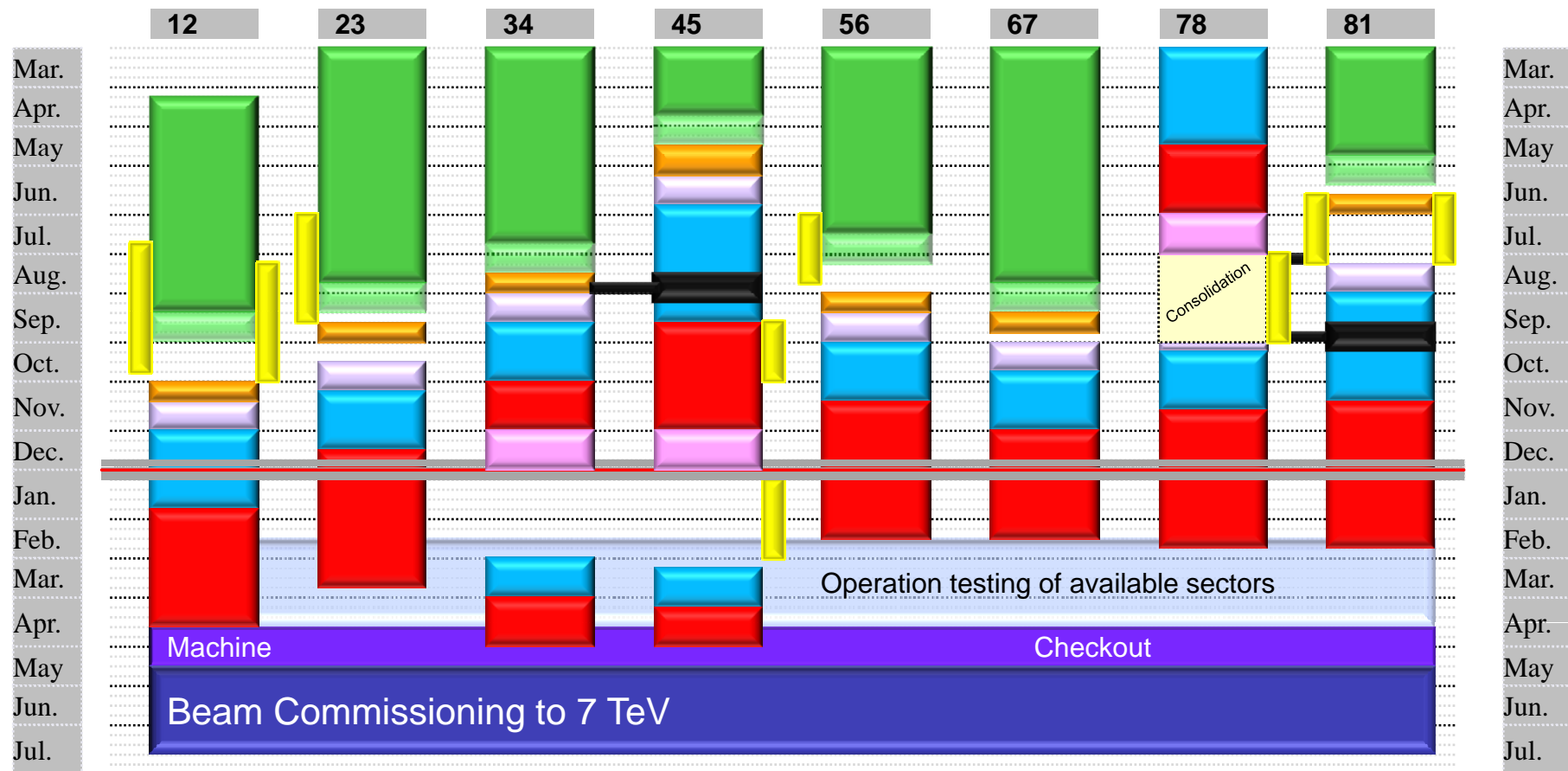
## 2007

- July: FTS 2.0 bug fixes
- August: FTS 2.0 deployment, CHEP preparation, **vacation...**
- September: CHEP, CSA07 starts
- October: CSA07 completes, **SRM 2.2 production at a few key sites (*names?*)**
- November: data taking with cosmics (rate? volume?)
- December: continues...

## 2008

- January: **SRM 2.2 production at remaining sites**
- February: shake-down
- March: cosmics run again
- April: accelerator(s) start starting up
- May: continue...
- June: continue continuing...
- July: collisions at 7+7 TeV?

# LHC Schedule





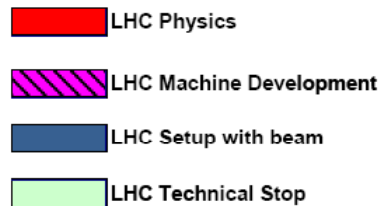
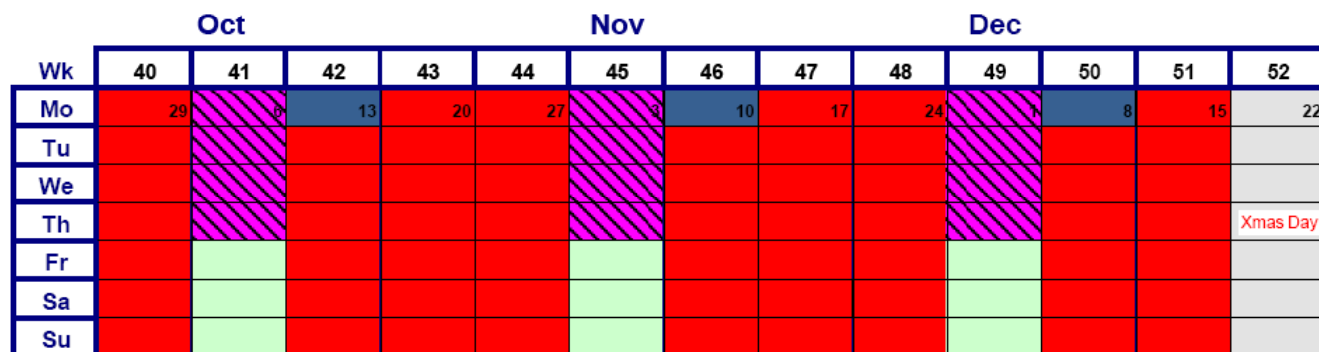
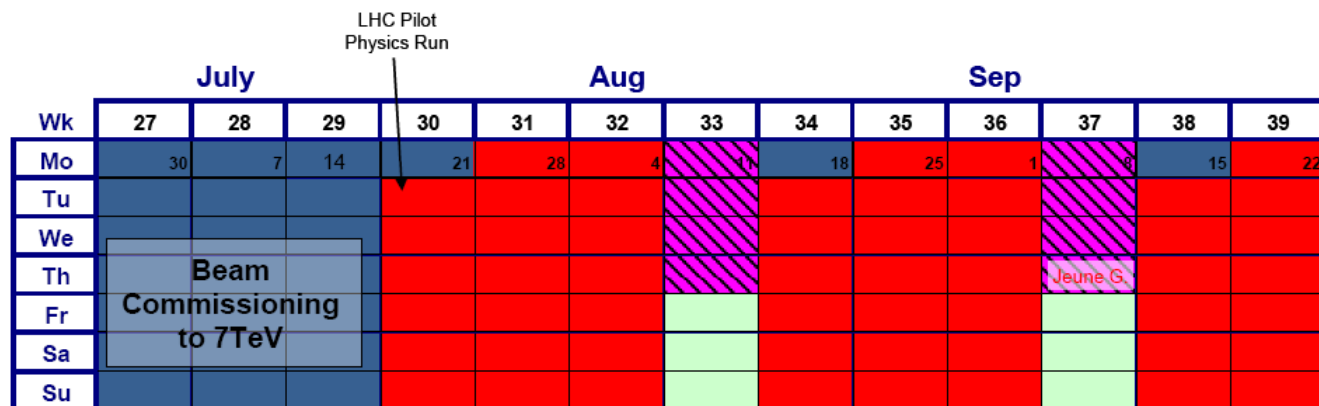
# 2008 LHC Accelerator schedule

	Jan				Feb				Mar				
Wk	1	2	3	4	5	6	7	8	9	10	11	12	13
Mo		7	14	21	28	4	11	18	25	3	10	17	Easter 24
Tu	1												
We			<b>Injector Complex shutdown</b>										
Th													
Fr													
Sa													
Su													
										<b>Operation Testing of Available Sectors</b>			

	Apr				May					June			
Wk	14	15	16	17	18	19	20	21	22	23	24	25	26
Mo	31	7	14	21	28	5	Whit. 12	TI 19	26	2	9	16	23
Tu	Linac2 HW Tests		PSB Machine Checkout				SPS Machine Checkout	Setup with Beam					
We													
Th			PS Machine Checkout										
Fr					1 May/AS								
Sa	Operations Testing of Available Sectors			LHC Machine Checkout					<b>Beam Commissioning to 7TeV</b>				
Su													

CPS Closure (Apr 14), Linac2 Start with Beam (Apr 15), SPS Closure (Apr 16), PSB Start with Beam (Apr 17), PS Machine Checkout (Apr 17), LHC Closure (Apr 18), PS Start with Beam (Apr 18), SPS Machine Checkout (Apr 19), SPS Start with Beam (Apr 19), LHC Startup with Beam (Apr 21), Whit. (May 12), TI (May 19), Beam Commissioning to 7TeV (June 22-26)

# 2008 LHC Accelerator schedule

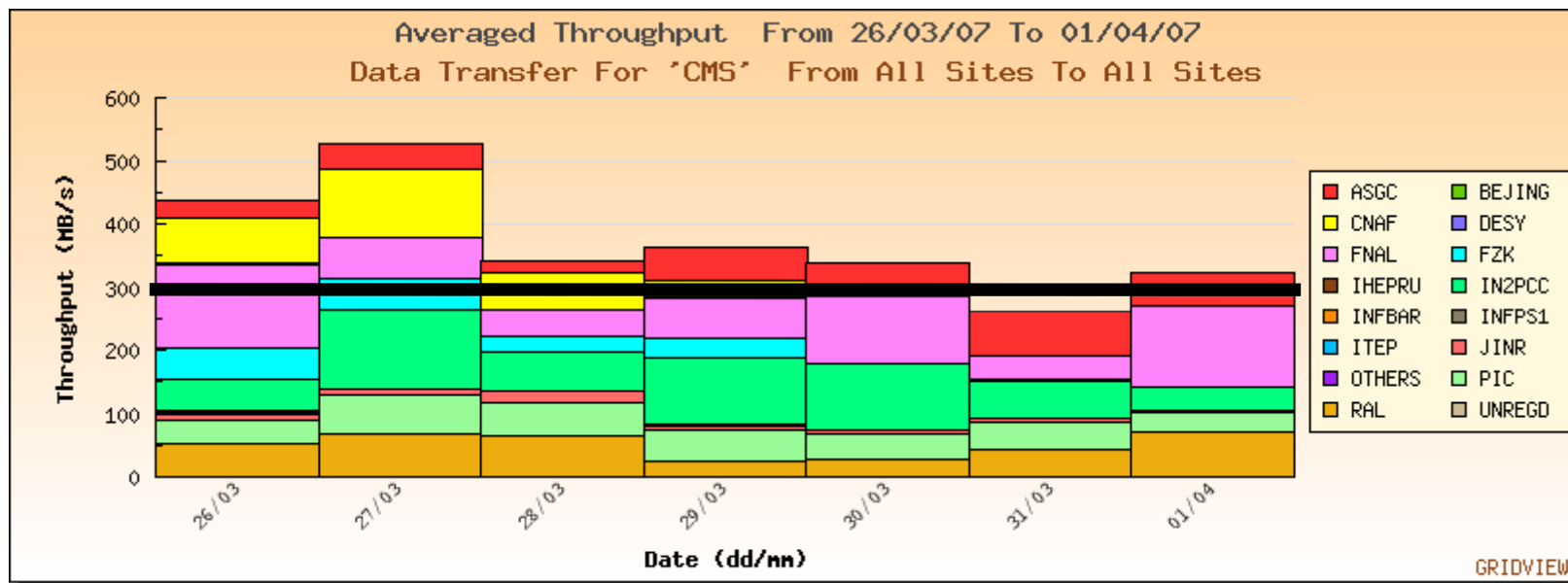






# Multi-VO Rates (March 26+)

VO	Mar 26	Mar 27	Mar 28	Mar 29	Mar 30	Mar 31	April 1	Av.
ALICE	-	20	60	50	80	130	100	60
CMS	400	500	>300	>300	>300	>300	>300	>300
ATLAS	<i>“Unable to participate due to known Tier0 problems”</i>							



# More WLCG Coordination Issues...

- As in the past, the continued roll-out of new releases requires careful coordination
  - e.g. FTS 2.0-compatible clients, then servers, ...
- In addition to more technical discussions, we will continue to ensure that the overall schedule, requirements and compatibility matrix(ces) are established and made available through the weekly operations meetings
- Past experience shows that it takes a **long** time for all sites and clients to update!
- I wrote this before the discussion this morning!
- **Follow-up at LCG ECMs → operations meetings**

07.07.07

