



The WLCG Service

That was the year that was

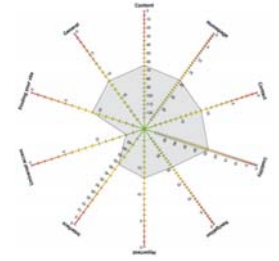
Jamie Shiers, CERN, Geneva, Switzerland



Worldwide LHC Computing Grid
Distributed Production Environment for Physics data Processing

SC4 Workshop Outline

(Strong overlap with POW!)



1. Get data rates at all Tier1s up to MoU Values

☺ Recent re-run shows the way! (More on next slides...)

2. Re-deploy Required Services at Sites to meet MoU Targets

- Lessons learnt from SC3 on Service Deployment (next)...
- **Must include extensive testing by experiments under realistic production conditions!**
- The job is not over when the release is cut --- that is when it starts!

3. Uncover remaining Use Cases, define milestones & test

- Mumbai ("Tier1") and CERN ("Tier2") workshops setup for this...



Need strong collaborative spirit to deliver required level of services

- And survive the inevitable 'crises'...

SC3 Services - Lessons (re-)Learnt

- It takes a **L O N G** time to put services into (full) production
- A lot of experience gained in *running* these services Grid-wide
- Merge of 'SC' and 'CERN' daily operations meeting has been good
- Still need to improve 'Grid operations' and 'Grid support'
- **A CERN 'Grid Operations Room' needs to be established**
- Need to be more rigorous about:
 - Announcing scheduled downtimes;
 - Reporting unscheduled ones;
 - Announcing experiment plans;
 - Reporting experiment results;
 - Attendance at 'V-meetings';
 - ...
- A daily OPS 'meeting' should be foreseen for LHC preparation / commissioning



Service Challenges

- Purpose

- Understand what it takes to operate a real grid service – run for weeks/months at a time (not just limited to experiment Data Challenges)
- Trigger and verify Tier1 & large Tier-2 planning and deployment –
 - tested with realistic usage patterns
- Get the essential grid services ramped up to target levels of reliability, availability, scalability, end-to-end performance

- Four progressive steps from October 2004 thru September 2006

- End 2004 - SC1 – data transfer to subset of Tier-1s
- Spring 2005 – SC2 – include mass storage, all Tier-1s, some Tier-2s
- 2nd half 2005 – SC3 – Tier-1s, >20 Tier-2s –first set of baseline services
- **Jun-Sep 2006 – SC4 – pilot service**

→ Autumn 2006 – LHC service in continuous operation
– ready for data taking in 2007



SC4 - the Pilot LHC Service from June 2006

A stable service on which experiments can make a full demonstration of experiment offline chain

- DAQ → Tier-0 → Tier-1
data recording, calibration, reconstruction
- Offline analysis - Tier-1 ↔ Tier-2 data exchange
simulation, batch and end-user analysis

And sites can test their operational readiness

- Service metrics → MoU service levels
- Grid services
- Mass storage services, including magnetic tape

Extension to most Tier-2 sites

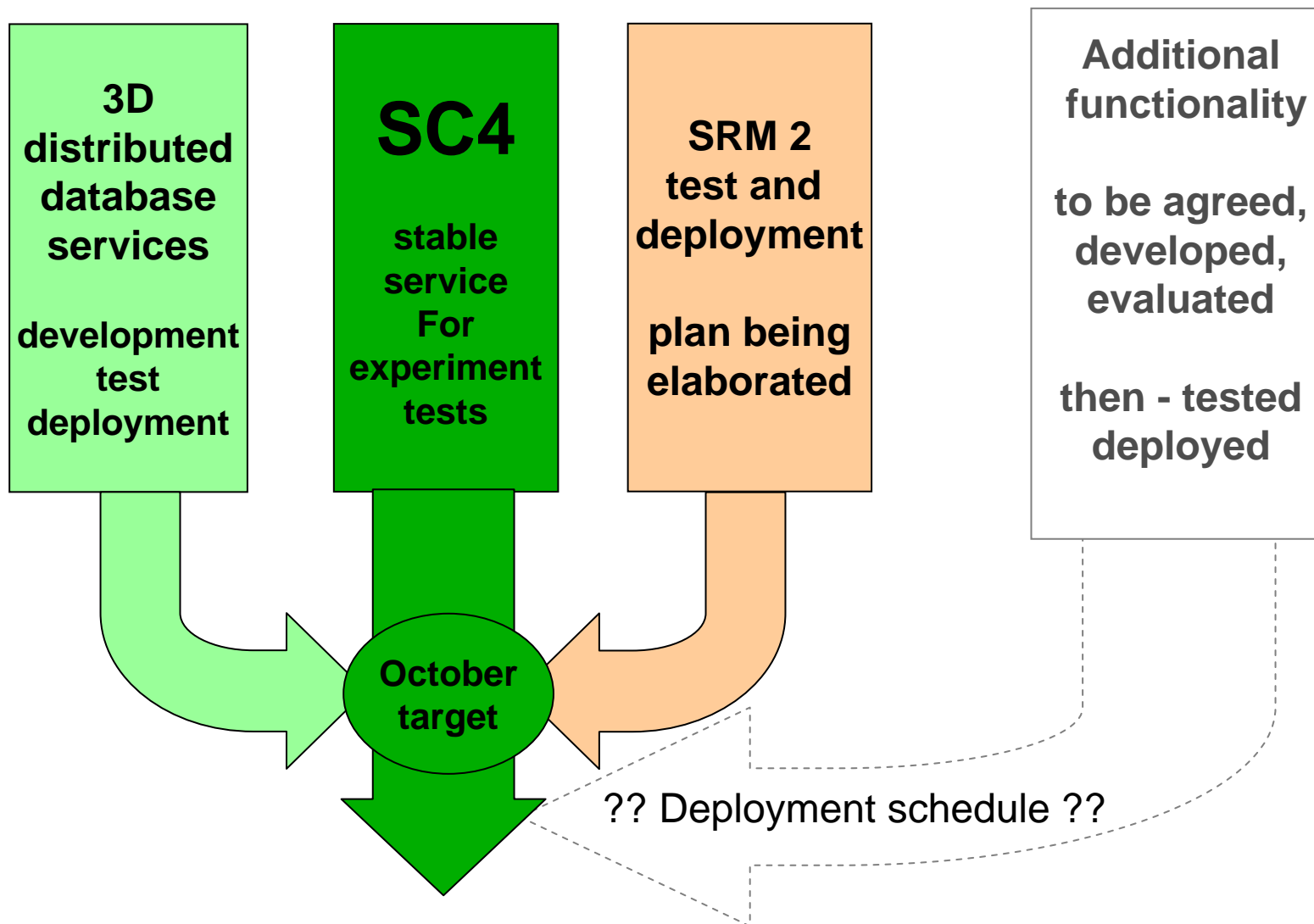
Evolution of SC3 rather than lots of new functionality

In parallel -

- Development and deployment of distributed database services (3D project)
- Testing and deployment of new mass storage services (SRM 2.1)

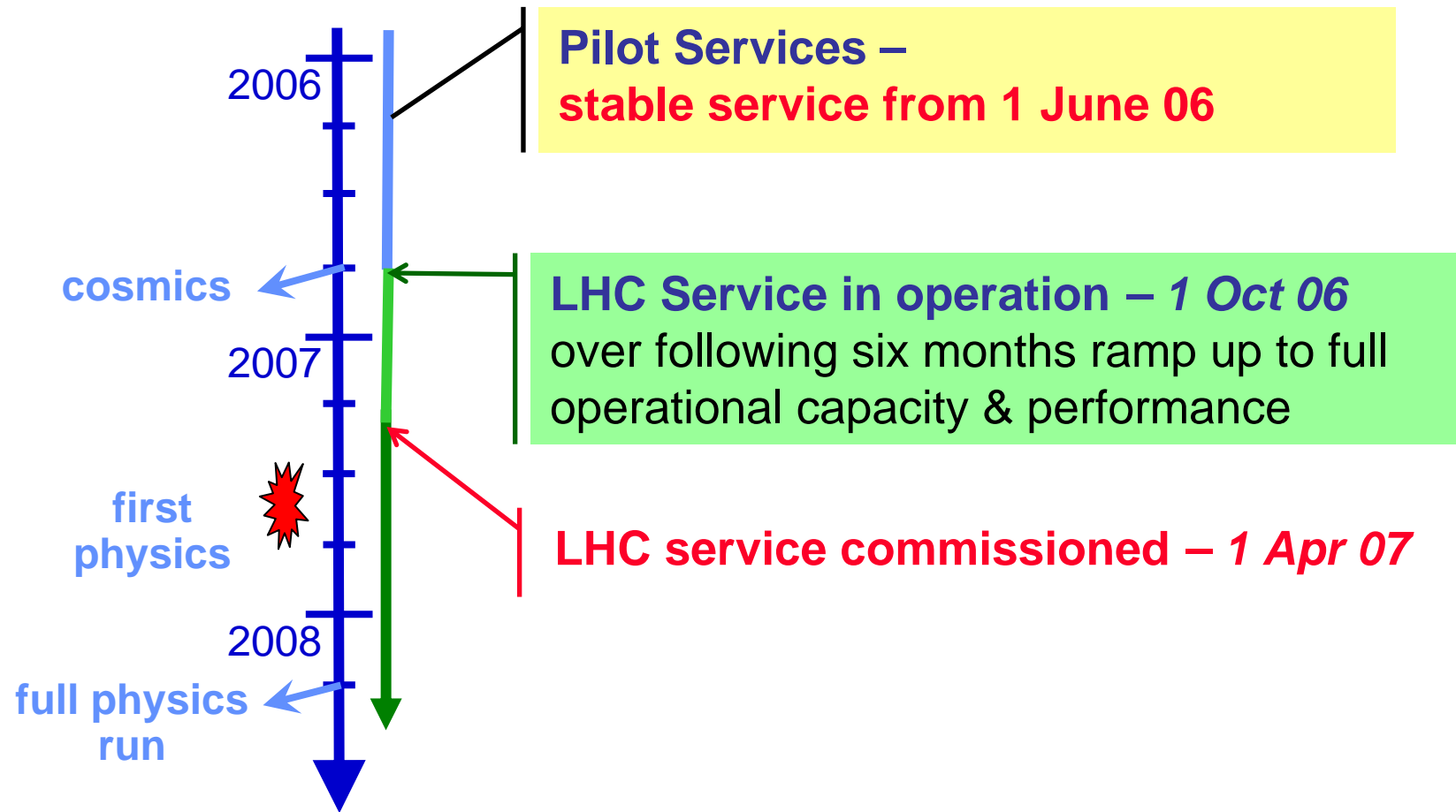


Medium Term Schedule





LCG Service Deadlines





- The Service Challenge programme this year must show that we can run **reliable services**
- Grid reliability is the **product of many components**
 - middleware, grid operations, computer centres,
- Target for September
 - 90% site availability
 - 90% user job success
- Requires a major effort by everyone to monitor, measure, debug

Too modest?
Too ambitious?

First data will arrive next year

NOT an option to get things going later

