

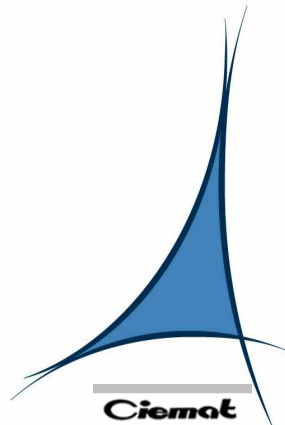
# **CMS Communications**

**J. Flix (PIC/CIEMAT)**

**[ for CMS Computing Operations ]**

**WLCG Collaboration Workshop 7-9 July 2010**

**CMS Experiment Jamboree**



## → CMS Computing Operations steered by 3 projects

### ▶ **Data Operations (coords: Gutsche / Klute)**

- ▶ Responsible for central data processing and transfers: RAW data repacking and prompt reconstruction at T0, RAW data and MC rereconstruction and skimming at T1's, MC production at T2's
- ▶ Ensure central data consistency and data distribution to T0/T1s including custodial storage of primary datasets

### ▶ **Facilities Operations (coords: Kreuzer / Flix)**

- ▶ Responsible of providing and maintain a working distributed computing fabric with a consistent working environment for Data Operations and Analysis users
- ▶ It involves coordination of facilities operation, resource management and liaison to external projects and organizations

### ▶ **Analysis Operations (coords: Wurthwein, Belforte)**

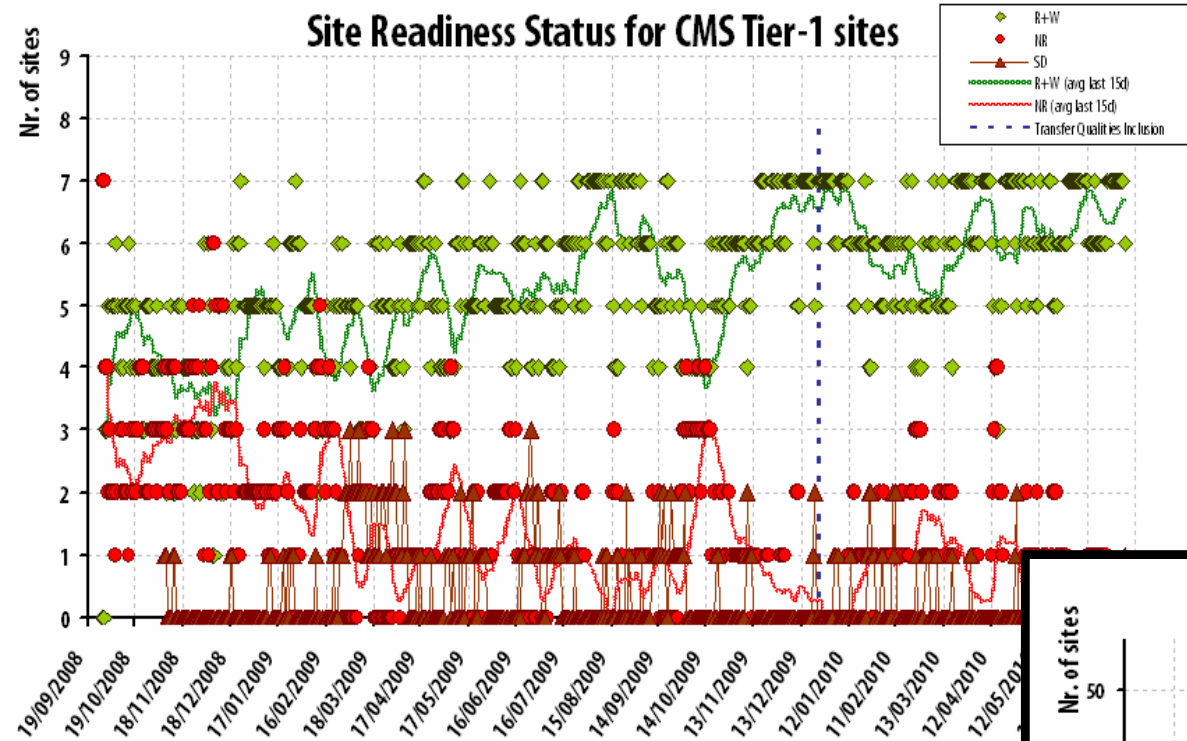
- ▶ Responsible for central data placement at T2s, CRAB server operations, validation, and support, and for metrics, monitoring and evaluation of the distributed analysis system

## → Strong central teams complemented by CMS contacts at Tiers, working in sync

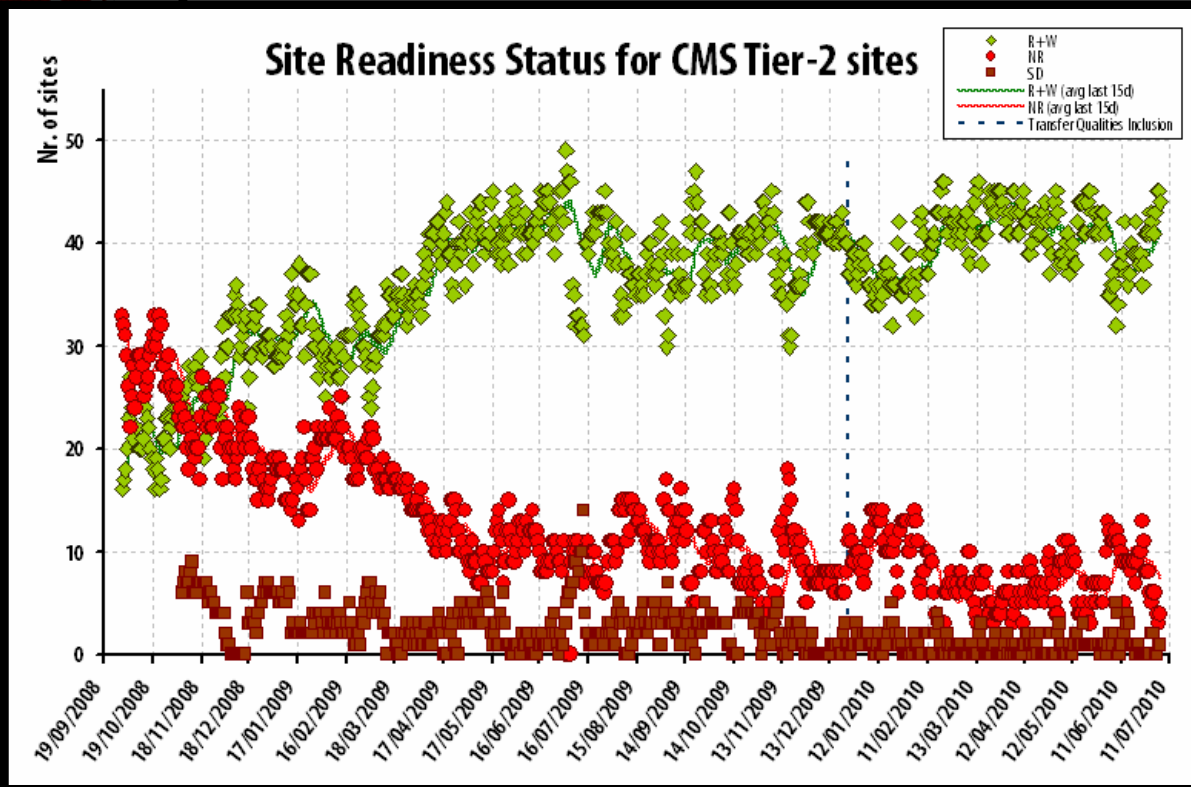
- ▶ On Monday's (16h-18h CERN) **combined Operations Meeting** (½FacOps-½DataOps):
  - ▶ Detailed T0/T1 revision of last week SAM and Site Readiness results:
    - ▶ Sites report: <https://twiki.cern.ch/twiki/bin/viewauth/CMS/FacilitiesOps-SiteReportBlackboard>
  - ▶ CMSSW deployment team provide status and issues encountered at the sites.
  - ▶ T2 coordinators report on relevant site issues.
  - ▶ Tier-0 Ops. Tier-1 Ops., MC Ops., Transfer Ops., Release and Workflow Certification
- ▶ **Biweekly meeting for European and Asian T2's** on Thursdays (10h CERN Time), for those sites with observed Operational troubles:
  - ▶ Sites report: <https://twiki.cern.ch/twiki/bin/view/CMS/FacilitiesOpsT2EuAsiaSupport/T2SupportBB>
- ▶ **Biweekly meeting for US T2's** (Tuesdays 22h CERN Time), all sites invited and report.
- ▶ Through **WLCG daily calls, T1 biweekly Operations Meetings, WLCG Workshops...**

- ▶ **Site Readiness** is a regular activity to:
  - ▶ Measure the reliability of Grid sites when running CMS activities.
  - ▶ Provide sites with the information they need to solve eventual problems.
  
- ▶ It runs as part of the CMS computing operations:
  - ▶ Detailed reports at FacOps meetings and biweekly T2 support meetings.
  - ▶ Look at by Computing Shifters.
  
- ▶ Takes into account several sources of information, for each CMS site:
  - ▶ **Site availability**, from CMS SAM tests.
  - ▶ **Job Robot** success rate.
  - ▶ Number of **commissioned** (certified) **transfer links** to/from other sites.
  - ▶ **Data Transfer Qualities** to/from other sites.

# Tiers readiness constantly monitored



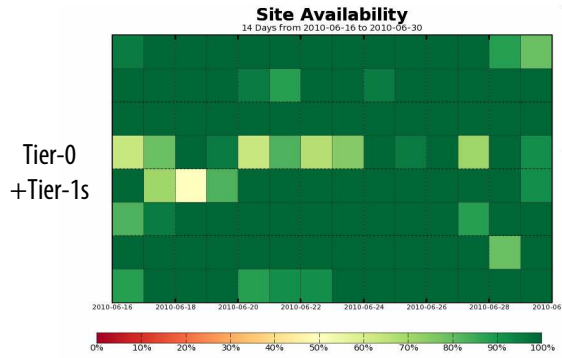
- ▶ Favorably evolution for T1s/T2s.
- ▶ Room for improvement.



- ▶ Other metrics are important to know sites which are ready...
- ▶ Although Site Readiness is a good first indicator things are ok at the site to run workflows.



# Tools for Operations



### SAM tests: Site Availability (T0/T1/T2/T3)

Latest Results | Historical View | Feedback | Help

Sites: Tier2s  
Service Types: VO critical  
Test Types: CMS Tests  
Test Exit Status: All Exit Status

Legend: NA OK MAINTENANCE ERROR WARNING INFO NOTE CRITICAL

Note: brightest colors: test is 0 - 6 hours old, ... lightest colors: test is more that 24 hours old

Link to the table

SiteName	Service Type	Service Name	mc	sft-job	swinst	squid	frontier	basic	analysis	prod	lcg-cp	get-pfn-from-tfc	user
T2_	CE	dc2-grid-65.brunel.ac.uk	ok	ok	ok	ok	ok	ok	ok	ok			
		dgc-grid-40.brunel.ac.uk	ok	error	ok	ok	ok	ok	ok	warn			
	dgc-grid-44.brunel.ac.uk	ok	ok	warn	ok	note	ok	note	ok				
	SRMv2	dc2-grid-64.brunel.ac.uk									error	ok	ok
		dgc-grid-50.brunel.ac.uk								ok	ok	error	

### SAM tests from Dashboard (T0/T1/T2/T3)

Site Status for the CMS sites

Index | Expanded Table | Gridmap | Alternative views | Admin

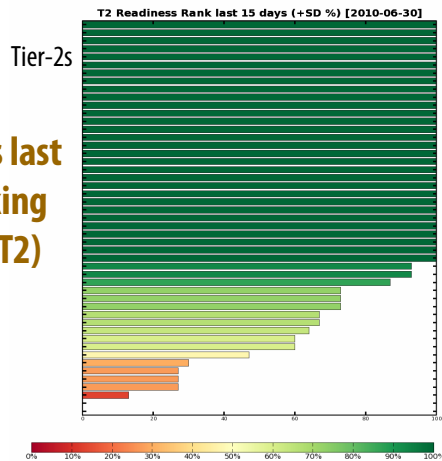
Click on any of the headers to show/hide those sites

T0-T1	T2
✓ T0-CH_CERN	✓ T2-AT_Varenna
✓ T1-CH_CERN	✓ T2-RR_SPRACE
✓ T1-DE_HIT	✓ T2-CN_Belino
✓ T1-ES-BC	● T2-EE_Estora
● T1-FR_CERNOPS	✓ T2-FI-HP
✓ T1-IT_CNAF	✓ T2-FR-ORF-LLR
✓ T1-TW-ASGC	✓ T2-IT-Lesbois
✓ T1-UK-RAL	⚠ T2-IT-Pisa
✓ T1-US-FNAL	✓ T2-PL-Warsaw
	✓ T2-RU-HEP
	✓ T2-RU-INR
	● T2-RU-RRC-IQ
	✓ T2-TW-Tokyo
	✓ T2-UK-London-EP
	✓ T2-US-Catech
	✓ T2-US-Hebrida
	✓ T2-US-Wisconsin

T2 waiting room: ✓ T2-FK-NCZ, ● T2-PL-Cracow, ✓ T2-RU-ZMP

### Site Status Board (T0/T1/T2/T3)

### Site Readiness 2-weeks results (T0/T1/T2)



### Site Readiness last 2-weeks ranking Plots (T0/T1/T2)

+ Open tickets, follow up at meetings

→ Savannah (more) + GGUS (less, but increasing)

+ Many others...



## GGUS

## Savannah

Item ID	Summary	Submitted On	Assigned To	Submitted By
#110213	Commissioning Muon T2-T2 links	2009-09-29 13:42	cmscompinfrasup-ddt	afanfani
#110216	WMS setup for cms Role=priorityuser and pool account limit	2009-09-29 16:25	cmscompinfrasup-glitewms	afanfani
#110274	October exercise: Fix required on Padova CE (deny /cms/Role=priorityuser) to avoid running on Padova instead of Legnaro	2009-10-02 09:43	cmscompinfrasup-t2itlegnaro	afanfani
#110291	wms202 and wms218 at CERN show problem in proxy delegation	2009-10-04 11:19	cmscompinfrasup-glitewms	afanfani
#110309	error with working dir, nomore priorityuser mapping, accessing a datasetat Purdue	2009-10-05 09:34	cmscompinfrasup-t2uspurdue	afanfani
#110386	Aborted jobs at Padova for users accessing dataset in Legnaro	2009-10-07 15:59	cmscompinfrasup-t2itlegnaro	afanfani
#110539	Grid Aborted at T2_FR_CCIN2P3	2009-10-13 09:47	cmscompinfrasup-t2frccin2p3	afanfani
#110555	failures accessing MC files (8001/8020) for instance ppMuX/Summer09-MC_31X_V3_SD_DoubleMu-v1/GEN-SIM-RECO	2009-10-13 15:13	cmscompinfrasup-t2uspurdue	afanfani
#110517	Some CMSSW version published but not present	2009-10-12 16:57	cmscompinfrasup-cmswdeploy	aholguin
#110518	SRMV2 for T3_CO_Uniandes	2009-10-12 17:00	cmscompinfrasup-sam	aholguin
#110550	Problem with CC-IN2P3 AF	2009-10-13 13:27	cmscompinfrasup-t2frccin2p3	andriusj

### GGUS

- ▶ Long tradition of the standard Global Grid User Support system
- ▶ Reaches the WLCG site-admins and the fabric-level experts

### Savannah

- ▶ Problem tracking, troubleshooting reference, statistics, ...
- ▶ Reaches 'squads' easy to define: CMS contacts at Tiers, tools/services experts, ...
- ▶ More: baseline tool for Offline Computing shifts, integrated with other CMS projects, ...

- ▶ CMS requested a Savannah-to-GGUS bridging:
  - ▶ Work finalized. Now ready to be used. Start soon to gain experience in Ops.
  - ▶ 'normal' GGUS tickets are opened with this re-direction:
    - ▶ Savannah ticket stays 'on hold'
    - ▶ Savannah ticket gets automatically closed when GGUS ticket is closed.
  
- ▶ CMS Computing Run Coordinators (CRC's) to open **TEAM** or **ALARM** tickets:
  - ▶ TEAM role assigned to all CRC's by default.
  - ▶ ALARM role already assigned to core computing experts in CMS (6).
    - ▶ Additionally, ALARM role to be provided to the CRC on duty.



- ▶ A **Computing Shift Person (CSP)** is active **24/7**:
  - ▶ Few Primary Centres in multiple time zones.
    - ▶ Connected via dedicated video links.
  - ▶ Many existing secondary CMS Centres worldwide.
    - ▶ permanent EVO room and possibility for the CSP to connect to the dedicated video links via Vidyo.
  - ▶ Now: ~70 shifters in 3 time-zones distributed in ~10 remote centers around the world participate to 24/7 coverage of CMS Computing infrastructure, facilities and workflow monitoring.
    - ▶ 3 shifters/day – enough Centres to have them on-duty in a locally convenient time.
- ▶ Complemented by a **Computing Run Coordinator (CRC)**.
  - ▶ Procedures for 24/7 coverage of Critical Services are being deployed, with proactive participation of the CRC.
  - ▶ CRC acting as WLCG liason for daily Operations calls and biweekly T1 Operations meeting.

## ▶ Basic setup information through:

- ▶ CIC Portal
- ▶ CMS twiki pages

## ▶ Hypernews: mailing lists.

- ▶ Around 15 categories
- ▶ Around 30 Computing Forums

### Category: Computing Development

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<a href="#">BOSS Development</a>	<a href="#">CRAB Development</a>	<a href="#">Computing Project Announcements</a>	<a href="#">Computing Technical Project Discussions</a>	<a href="#">Dataset Bookkeeping System</a>
<a href="#">PhEDEx Discussions</a>	<a href="#">Software Distribution Tools Discussions</a>	<a href="#">Tier-0 Development Discussions</a>	<a href="#">Workflow Management Development</a>	<a href="#">MC Production System Development</a>

### Category: Computing Integration/Operations

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<a href="#">Analysis Operations</a>	<a href="#">CERN Computing Announcements</a>	<a href="#">CRAB Feedback</a>	<a href="#">Computing Integration/Commissioning</a>	<a href="#">Data Operations Log</a>
<a href="#">Data Operations Requests</a>	<a href="#">Debugging Data Transfers Task Force</a>	<a href="#">Facilities Operations</a>	<a href="#">General Data Operations Discussions</a>	<a href="#">Grid Announcements</a>
<a href="#">MC Production Operations Reports</a>	<a href="#">MC Production System Operations</a>	<a href="#">OSG Tier3 Discussions</a>	<a href="#">PhEDEx Operations</a>	<a href="#">RelVal Samples and Release Testing</a>
<a href="#">Tier-0 Operations</a>	<a href="#">Tier-2 Activities</a>			

- ▶ Core services used by CMS at the Tier-1 sites:
  - ▶ FTS server; CMSSW server: NFS shared areas; Local Worker Nodes; Computing Elements; SRM services; CMS VOBOX → PhEDEX; Frontier Local Squid Cache Server(s)...
  
- ▶ CMS expects general support on core services at Tier-1s:
  - ▶ Upgrade core WLCG/glite components to latest releases.
  - ▶ Applying urgent security patches, announced by the EGEE Operational Security Coordination Team.
  - ▶ Announce downtimes (SCHEDULED or UNSCHEDULED) in GOCDB or OIM (T1\_US\_FNAL case).
  - ▶ Provide 24/7 support for all critical services.
  - ▶ ...

- ▶ The successful operation of the Tier-1 centers requires to have one CMS contact person acting as “liaison” with the CMS experiment.
- ▶ In general, for Tier-2s, high level involvement is as well welcome and desired.

- ▶ The **CMS contact person** is the connection between site administrators and CMS computing. Accordingly, he/she needs to:
  - ▶ Be familiar with CMS Computing Model and Operations.
  - ▶ Be familiar with site infrastructure setup; know about regular operational tasks done at the site.
  - ▶ Fluently communicate with the local service responsables, site executive, and to CMS computing using the proper channels/forums.
  - ▶ Follow/coordinate all open issues/tickets, attend the relevant weekly CMS meetings, process the T1/T2 coordinators requests, ...
- ▶ To facilitate these tasks, CMS Operations created a single entry page with all relevant CMS operational procedures and covering site contact duties:
  - ▶ <https://twiki.cern.ch/twiki/bin/view/CMS/CMST1SiteContactsResponsibilities>
  - ▶ <https://twiki.cern.ch/twiki/bin/view/CMS/CMST2SiteContactsResponsibilities> (soon available)



**CMS**

[CMS Homepage](#)  
[CMS Twiki](#)  
[Changes](#)  
[Index](#)

SSO logout

Create a LeftBar

Twiki > CMS Web > FacilitiesOps > CMST1SiteContactsResponsibilities (21-Apr-2010, AndreaSciaba)

[Edit](#) [Attach](#) [PDF](#)

# Tier-1 CMS site contacts responsibilities

Complete:

by: [DataOps](#) & [FacOps](#) \*

\* These contents could vary dynamically. These are the responsibilities and expectations of Tier-1 site contacts by December 2009. As soon as other items appear, the twiki will be updated

- [T1 Context](#)
- [T1 Infrastructure](#)
- [T1 Operations](#)
- [T1 Support](#)
- [T1 Contact Duties](#)
- [T1 Meetings](#)
- [T1 Experiences](#)
- [T1 relevant URLs](#)

## The CMS Tier-1 context

### Introduction

In the CMS Computing Model the Tier-1 regional centres have aspects of custodial data storage, re-reconstruction, data analysis and are also responsible for serving data to Tier-2s for analysis, MC storage and user support.

The specification needed for the Tier-1's are the processing for re-reconstruction of custodial Datasets, the storage of custodial Datasets, networking in from Tier-0, Tier-1 interconnectivity and Tier-1 to all Tier-2s, processing for Analysis and IO from active storage for analysis.

Each Tier-1 centre has the following roles in CMS:

- Securing, and making available to users, a second copy of a share of the RAW data and reconstructed [RECO](#) data (the FEVT).
- Receiving and making available a copy of the full CMS [AOD](#) data-set.
- Participating, with the Tier-0, to the timely calibration and feedback to the running experiment.
- Running large scale Physics Stream skims and selected reprocessing for analysis groups and individuals of CMS.
- Serving data-sets to the Tier-2 and other regional or institute computing facilities.
- Securing and distributing Monte Carlo simulated samples produced in the Tier-2 and other centres.
- Running production reprocessing passes of Primary Datasets and Monte Carlo Samples.



- ▶ The page offers useful information to site contact to proper configure all CMS services at the site.
- ▶ A view of CMS Operations at sites:
  - ▶ how to proper configure TFC, site-local-config.xml
  - ▶ how to properly handle data transfers at your site
    - ▶ Dataset transfer request approval issues; look into the PhEDEx overview daily.
  - ▶ how to run storage consistency checks
  - ▶ how to efficiently use CMS monitoring tools; know at any time what's occurring at the site
  - ▶ ...
- ▶ Relevant meetings to attend; relevant Hypernews to be subscribed.
- ▶ Collect all relevant URLs.

- ▶ CMS Computing Operations and sites provide a relatively good working distributed computing system according to CMS needs.
- ▶ CMS has effective communication channels with sites, although they are diverse.
- ▶ These \*new\* twiki pages cover all relevant issues CMS contacts need to address.
- ▶ The aim is to improve CMS contacts familiarity with CMS Operations, with an expected improvement on site's performance and reliability.