



# CMS

**Highlight on the Computing Resources  
for CMS  
8 December 2008**

Compact Muon Solenoid

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December 8, 2008



# Agenda of the morning

- **Status update**
- **Tier-2 resource tracking**
  - Thomas Kress, RWTH
- **Feedback from a transfer operator and from FNAL/Tier-1**
  - Paul Rossman, FNAL
- **Documenting workflows and bandwidth requirements**
  - Matthias Kasemann, DESY
- **HEPIX benchmarks and new metrics**
  - Gabriele Benelli, CERN

December 8, 2008 CMS computing resources **Improvements and further developments**

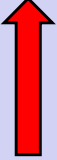





# Recent developments

- **Associating Physics Groups with Tier-2 centres offering a reasonable amount of resources**
- **MoA credits for Tier-2**
- **Process for accepting new Tier-2 and Tier-3**
- **Need to revise the computing model (ECoM)**
- **Preparing for data-taking in 2009**
  
- **All need a clear picture of the status of the resources at distributed sites**



# Tier 0, Tier-1 and Tier-2 at CERN

	<u>Installed resources</u>			<u>Pledged resources 2009</u>		
	CPU (kSI2K)	Discs (TB)	Tape (TB)	CPU	Discs	Tape
Tier-0	 6000 	678	 5300 	9800	200	7300
Tier-1 (CAF1): Time-critical facility in operations since 2008		1294		3900	2300	2000
Tier-2 (CAF2): All other public resources		228		1400		
<b>Total</b>	<b>7400</b>	<b>2200</b>	<b>5300</b>	<b>13700</b>	<b>2500</b>	<b>9300</b>

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# Tier-1 s

	CPU (kSI2k)	Discs (TB)	Tape (TB)	Comment
France	865	850	880	<b>Pledge reached</b>
Germany	1050	700	900 (+380)	<b>Pledge reached</b>
Italy	1050	525	530	<b>Pledge reached</b>
Spain	377	358	487	<b>Pledge reached</b>
Taiwan	1200	600	504	<b>Pledge not reached</b> (target: end of the year 2008)
UK	850	650	600	<b>Pledge reached</b>
USA	4500	2000	4700	<b>Pledge reached</b>
<b>Total</b>	<b>9992</b>	<b>5683</b>	<b>8981</b>	



# Tier-1s vs. 2009 pledges

				2009 Pledges		
	CPU (kSI2k)	Discs (TB)	Tape (TB)	CPU (kSI2k)	Discs (TB)	Tape (TB)
France	865	850	880	1824	1067	1650
Germany	1050	700	900 (+380)	1800	1060	2000
Italy	1050	525	530	1855	805	910
Spain	377	358	487	1058	630	974
Taiwan**	1200	600	504	2500	1500	1500
UK	850	650	600	1802	774	1887
USA	4500	2000	4700	5100	2600	7100
<b>Total</b>	<b>9992</b>	<b>5683</b>	<b>8981</b>	<b>15939</b>	<b>8436</b>	<b>16021</b>
Variation				+59%	+58%	+86%

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# Tier-2s

		CPU (kSI2k)	Discs (TB)	Comments	Note
AT		500	80		Pledged resources reached
BE	IIHE	450	200	CPU count up to 600 by November	Pledged resources reached
	UCL	600	150		Pledged resources reached
BR	UERJ	1440	90	No new data	n.a.
	SPRACE	370	9.2	Updated	n.a.
CN	Beijing	104	20	Extension to 400CPU/100TB soon; funding has arrived	Pledge resources not reached.
ES	Estonia	800	80	Upgraded CPU count July	Pledged resources reached
FI	HIP	564	106		Pledged resources reached
FR	IPHC	240	120		Pledged resources reached
	GRIF	800	180		Pledged resources reached
	IN2P3	295	175		Pledged resources reached

**n.a.: Not applicable, as the country has not signed the MoU**

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# Tier-2s

		CPU (kSI2k)	Discs (TB)	Comments	Notes
GE	DESY	600	140		Pledged resources reached
	RWTH	450	100	More opportunistic resources available	Pledged resources reached
HU	Budapest	335	30		Pledge resources reached for CPUS
IN	TIFR	430	480		Pledge resources reached
IT	Bari	332	60	Announces growth in the next 6 months	Pledge resources reached (federation)
	Legnaro	800	190	Installed October 10	
	Pisa	1000	100	Will install additional 80 TB by the end of the year	
	Roma	400	120	Installed this week	
KR	KNU	500	150	Checking	Pledge resources reached?
PL	Warsaw	404	30		Pledged resources reached (under check for the discs)
PT	LIP	300	110		Pledged resources reached

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# Tier-2s

		CPU (kSI2k )	Disc s (TB)	Comments	Note
<b>RU</b>	(ALL 6 sites)	815	153	No new data	<b>Pledged resources reached?</b>
<b>SP</b>	CIEMAT	550	128		<b>Pledged resources</b>
	IFCA	515	105		<b>Pledged resources</b>
<b>SW</b>	CSCS	240	60		<b>Pledged resources</b>
<b>TW</b>	TAIWAN	320	60		<b>Pledged resources</b>
<b>UK</b>	London	860	145		<b>Pledged resources</b>
	Southgrid	300	65		<b>Pledged resources</b>
<b>US</b>	(ALL 7 sites)	7000	1400		<b>Pledged resources (federation)</b>
<b>TOT</b>		22314	4816		



# Wrapping up

	CPU (kSI2k)	Discs (TB)	Tape (TB)	Comments	CPU (kSI2k)	Discs (TB)	Tape (TB)
CERN T0	6000	678	5800	Reached pledged resources	13700	2500	9300
CAF1		1294		Reached pledged resources			
CAF2		228		Reached pledged resources			
Tier-1s	9992	5683	8981	6 sites have reached 2008 pledged resources	15939	8436	16021
Tier-2s	22314	4816		Since June 08: CPU count and discs: increase around 10%, more accurate	27318	7883	
<b>D TOTAL</b>	<b>39706</b>	<b>12699</b>	<b>14781</b>				