



CERN Tier0 / CAF	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	131880	233400	Offered	46800	67000	96600	23000	233400
			Required	46800	67000	96600	23000	233400
			% of Req.	100%	100%	100%	100%	100%
Disk (Tbytes)	10065	14790	Offered	5500	3900	4100	1290	14790
			Required	5500	3900	4100	1290	14790
			% of Req.	100%	100%	100%	100%	100%
Tape (Tbytes)	25083	31600	Offered	6300	8900	14600	1800	31600
			Required	6300	8900	14600	1800	31600
			% of Req.	100%	100%	100%	100%	100%
Nominal WAN (Mbits/sec)	140000	160000						

Canada Tier1 (note 1)	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	5680	10800	Offered		10800			10800
			% of Total		6%			6%
Disk (Tbytes)	990	1095	Offered		1095			1095
			% of Total		5%			5%
Tape (Tbytes)	750	710	Offered		710			710
			% of Total		5%			5%
Nominal WAN (Mbits/sec)	10000	10000						

FZK-GridKa	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	41420	58730	Offered	19600	21600	10050	7480	58730
			% of Total	34%	11%	10%	17%	15%
Disk (Tbytes)	5142	6924	Offered	2700	2190	1474	560	6924
			% of Total	25%	10%	11%	17%	14%
Tape (Tbytes)	7190	8932	Offered	4075	1420	3029	408	8932
			% of Total	25%	10%	13%	17%	16%
Nominal WAN (Mbits/sec)	30000	30000						

IN2P3 Lyon (Note 2)	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	31992	44186	Offered	3779	21600	9065	9742	44186
			% of Total	7%	11%	9%	22%	11%
Disk (Tbytes)	4600	5109	Offered	708	2464	1209	728	5109
			% of Total	7%	11%	9%	22%	10%
Tape (Tbytes)	5175	5300	Offered	1069	1598	2102	531	5300
			% of Total	7%	11%	9%	22%	9%
Nominal WAN (Mbits/sec)	10000	10000						

INFN CNAF (Note 3)	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	21200	44000	Offered	10000	16000	12500	5500	44000
			% of Total	17%	8%	12%	13%	11%
Disk (Tbytes)	2300	5300	Offered	1200	1800	1850	450	5300
			% of Total	11%	8%	14%	14%	11%
Tape (Tbytes)	2600	5450	Offered	1400	1400	2200	450	5450
			% of Total	9%	10%	9%	19%	10%
Nominal WAN (Mbits/sec)	30000	40000						

Netherlands LHC/Tier1	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	30176	47296	Offered	4808	33496		8992	47296
			% of Total	8%	17%		20%	16%
Disk (Tbytes)	3753	4186	Offered	478	3001		707	4186
			% of Total	4%	14%		21%	12%
Tape (Tbytes)	3548	3629	Offered	495	2122		1012	3629
			% of Total	3%	15%		42%	11%
Nominal WAN (Mbits/sec)	10000	10000						

NDGF Tier1 (note 4)	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	12120	13710	Offered	6220	7490			13710
			% of Total	11%	4%			5%
Disk (Tbytes)	1580	1720	Offered	820	900			1720
			% of Total	8%	4%			5%
Tape (Tbytes)	1660	1770	Offered	1120	650			1770
			% of Total	7%	5%			6%
Nominal WAN (Mbits/sec)	10000	10000						



Spain PIC (Note 5)	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	10364	17238	Offered		9145	5461	2632	17238
			% of Total		5%	5%	6%	5%
Disk (Tbytes)	1702	1968	Offered		1043	728	197	1968
			% of Total		5%	5%	6%	5%
Tape (Tbytes)	1844	2136	Offered		681	1266	189	2136
			% of Total		5%	5%	8%	5%
Nominal WAN (Mbits/sec)	10000	10000						

Taipei ASGC	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	20000	28000	Offered		14000	14000		28000
			% of Total		7%	14%		10%
Disk (Tbytes)	3000	3500	Offered		1750	1750		3500
			% of Total		8%	13%		10%
Tape (Tbytes)	3000	3500	Offered		1750	1750		3500
			% of Total		12%	8%		9%
Nominal WAN (Mbits/sec)	10000	10000						

UK Tier1	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	23100	44376	Offered	1152	27000	8040	8184	44376
			% of Total	2%	14%	8%	19%	11%
Disk (Tbytes)	3401	4638	Offered	216	2738	1072	612	4638
			% of Total	2%	13%	8%	19%	9%
Tape (Tbytes)	4045	4877	Offered	326	1775	2330	446	4877
			% of Total	2%	13%	10%	19%	9%
Nominal WAN (Mbits/sec)	10000	10000						

US-ATLAS Tier1 (Note 6)	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	29348	49680	Offered		49680			49680
			% of Total		26%			26%
Disk (Tbytes)	5822	5037	Offered		5037			5037
			% of Total		23%			23%
Tape (Tbytes)	3277	3266	Offered		3266			3266
			% of Total		23%			23%
Nominal WAN (Mbits/sec)	29856	29856						

US-CMS Tier1	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	20400	44400	Offered			44400		44400
			% of Total			44%		44%
Disk (Tbytes)	2600	4100	Offered			4100		4100
			% of Total			31%		31%
Tape (Tbytes)	7100	11000	Offered			11000		11000
			% of Total			47%		47%
Nominal WAN (Mbits/sec)								

Summary Ext. Tier1s	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	245800	402416	Offered	45559	210811	103516	42530	402416
			Required	57600	192000	100500	44000	394100
			Balance	-21%	10%	3%	-3%	2%
Disk (Tbytes)	34890	43577	Offered	6122	22018	12183	3254	43577
			Required	10800	21900	13400	3290	49390
			Balance	-43%	1%	-9%	-1%	-12%
Tape (Tbytes)	40189	50570	Offered	8485	15372	23677	3036	50570
			Required	16300	14200	23300	2400	56200
			Balance	-48%	8%	2%	27%	-10%

**TIER 1 Notes**

**Note 1:** 2009 pledges based on providing 5% of resources in ATLAS computing model

**Note 2:** 2009 and 2010 pledges revised in the light of the September 2009 requirements and agreed with experiment representatives. 2009 pledges revised to: CPU = 27066 HS06; Disk = 3070; Tape = 3550.

**Note 3:** Following the LHC incident INFN announced reduced procurement and installation of 2009 resources

**Note 4:** Preliminary 2010 pledge numbers presented at the Autumn 2009 RRB were modified on 19th February 2010.

**Note 5:** 2010 CPU pledge numbers modified to correspond to ATLAS update.

**Note 6:** While all of the pledged 2009 CPU capacity is installed and usable by ATLAS, the pledged disk and tape capacity was adjusted to the capacity requested by ATLAS.

Ext. Tier1 Requ. 2010	ALICE	ATLAS	CMS	LHCb	SUM
CPU (HEP-SPEC06)	57600	192000	100500	44000	394100
Disk (Tbytes)	10800	21900	13400	3290	49390
Tape (Tbytes)	16300	14200	23300	2400	56200

NB. A change in the ATLAS Tier1 2010 CPU requirement was signaled on 05/10/09 (from 216,000 to 192,000 HEP-SPEC06)



Austria, Austrian Tier-2 Federation	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	4240	8850	Offered		1850	7000		8850
			% of Total		1%	4%		2%
Disk (Tbytes)	295	594	Offered		94	500		594
			% of Total		0%	5%		2%
Nominal WAN (Mbits/sec)	1000	1000						
<b>Australia, University of Melbourne</b>								
2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010	
CPU (HEP-SPEC06)	800	2500	Offered		2500			2500
			% of Total		1%			1%
Disk (Tbytes)	110	250	Offered		250			250
			% of Total		1%			1%
Nominal WAN (Mbits/sec)								
<b>Belgium, Belgian Tier-2 Fed. FNRS (note 1)</b>								
2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010	
CPU (HEP-SPEC06)	3740	6000	Offered			6000		6000
			% of Total			3%		3%
Disk (Tbytes)	265	450	Offered			450		450
			% of Total			5%		5%
Nominal WAN (Mbits/sec)	1500	2000						
<b>Belgium, Belgian Tier-2 Fed. FWO (note 1)</b>								
2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010	
CPU (HEP-SPEC06)	1860	3000	Offered			3000		3000
			% of Total			2%		2%
Disk (Tbytes)	135	220	Offered			220		220
			% of Total			2%		2%
Nominal WAN (Mbits/sec)	1500	2000						
<b>Brazil, SPRACE, Sao Paulo (Note 2)</b>								
2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010	
CPU (HEP-SPEC06)	3200	3200	Offered			3200		3200
			% of Total			2%		2%
Disk (Tbytes)	100	120	Offered			120		120
			% of Total			1%		1%
Nominal WAN (Mbits/sec)	10000	10000						
<b>Canada, Canada-East Federation</b>								
2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010	
CPU (HEP-SPEC06)	3240	5760	Offered		5760			5760
			% of Total		2%			2%
Disk (Tbytes)	360	595	Offered		595			595
			% of Total		3%			3%
Nominal WAN (Mbits/sec)								
<b>Canada, Canada-West Federation</b>								
2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010	
CPU (HEP-SPEC06)	1940	5760	Offered		5760			5760
			% of Total		2%			2%
Disk (Tbytes)	270	595	Offered		595			595
			% of Total		3%			3%
Nominal WAN (Mbits/sec)								
<b>China, IHEP, Beijing</b>								
2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010	
CPU (HEP-SPEC06)	5600	8000	Offered		4000	4000		8000
			% of Total		2%	2%		2%
Disk (Tbytes)	400	600	Offered		300	300		600
			% of Total		1%	3%		2%
Nominal WAN (Mbits/sec)	1000	1000						
<b>Czech Rep., FZU, Prague</b>								
2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010	
CPU (HEP-SPEC06)	1504	5900	Offered	4117	1783			5900
			% of Total	5%	1%			2%
Disk (Tbytes)	72	201	Offered	51	150			201
			% of Total	0%	1%			1%
Nominal WAN (Mbits/sec)	10000	10000						
<b>Estonia, NICPB, Tallinn</b>								
2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010	
CPU (HEP-SPEC06)	3200	3200	Offered			3200		3200
			% of Total			2%		2%
Disk (Tbytes)	80	120	Offered			120		120
			% of Total			1%		1%
Nominal WAN (Mbits/sec)	2000	2000						



Finland, NDGF/HIP Tier-2 (note 5)	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	2680	2680	Offered			2680		2680
			% of Total			1%		1%
Disk (Tbytes)	210	210	Offered			210		210
			% of Total			2%		2%
Nominal WAN (Mbits/sec)								

France, CC-IN2P3, Lyon (Note 3)	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	16360	15654	Offered	1469	4807	4704	4674	15654
			% of Total	2%	2%	2%	12%	3%
Disk (Tbytes)	544	1001	Offered	207	418	296	80	1001
			% of Total	2%	2%	3%	400%	2%
Nominal WAN (Mbits/sec)	10000	10000						

France, GRIF, Paris	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	11172	25808	Offered	2344	8640	7256	7568	25808
			% of Total	3%	4%	4%	20%	5%
Disk (Tbytes)	938	1570	Offered	330	893	342	5	1570
			% of Total	3%	4%	4%	25%	4%
Nominal WAN (Mbits/sec)	5000	5000						

France, IPHC, Strasbourg	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	5120	8000	Offered	1300		6700		8000
			% of Total	1%		3%		3%
Disk (Tbytes)	240	420	Offered	120		300		420
			% of Total	1%		3%		2%
Nominal WAN (Mbits/sec)	1000	10000						

France, LAPP, Annecy	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	4000	4400	Offered		3200		1200	4400
			% of Total		1%		3%	2%
Disk (Tbytes)	140	272	Offered		270		2	272
			% of Total		1%		10%	1%
Nominal WAN (Mbits/sec)	1000	1000						

France, LPC, Clermont	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	5360	7080	Offered	2124	3540		1416	7080
			% of Total	2%	1%		4%	2%
Disk (Tbytes)	210	610	Offered	300	308		2	610
			% of Total	2%	1%		10%	2%
Nominal WAN (Mbits/sec)	1000	1000						

France, Subatech, Nantes	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	1720	2400	Offered	2400				2400
			% of Total	3%				3%
Disk (Tbytes)	140	200	Offered	200				200
			% of Total	2%				2%
Nominal WAN (Mbits/sec)	1000	1000						

Germany, ATLAS Federation, DESY	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	2400	4800	Offered		4800			4800
			% of Total		2%			2%
Disk (Tbytes)	290	740	Offered		740			740
			% of Total		4%			4%
Nominal WAN (Mbits/sec)	10000	10000						

Germany, ATLAS Federation, U. Goettingen	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	1200	2280	Offered		2280			2280
			% of Total		1%			1%
Disk (Tbytes)	150	250	Offered		250			250
			% of Total		1%			1%
Nominal WAN (Mbits/sec)	10000	10000						

Germany, CMS Federation DESY	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	4400	8000	Offered			8000		8000
			% of Total			4%		4%
Disk (Tbytes)	230	400	Offered			400		400
			% of Total			4%		4%
Nominal WAN (Mbits/sec)	10000	10000						



Germany, CMS Federation RWTH Aachen	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	2200	5000	Offered			5000		5000
			% of Total			3%		3%
Disk (Tbytes)	115	250	Offered			250		250
			% of Total			3%		3%
Nominal WAN (Mbits/sec)	10000	10000						

Germany, DESY-LHCb	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	3200	3200	Offered				3200	3200
			% of Total				8%	8%
Disk (Tbytes)	2	2	Offered				2	2
			% of Total				10%	10%
Nominal WAN (Mbits/sec)								

Germany, GSI, Darmstadt	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	3440	4400	Offered	4400				4400
			% of Total	5%				5%
Disk (Tbytes)	260	340	Offered	340				340
			% of Total	3%				3%
Nominal WAN (Mbits/sec)	1000	1000						

Germany, ATLAS Fed. Munich MPI/RZG (no	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	2116	3440	Offered		3440			3440
			% of Total		1%			1%
Disk (Tbytes)	265	370	Offered		370			370
			% of Total		2%			2%
Nominal WAN (Mbits/sec)	1000	1000						

Germany, ATLAS Fed. Munich LMU/LRZ (no	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	1800	3440	Offered		3440			3440
			% of Total		1%			1%
Disk (Tbytes)	220	370	Offered		370			370
			% of Total		2%			2%
Nominal WAN (Mbits/sec)	1000	1000						

Germany, ATLAS Fed. FR/W Wuppertal	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	1800	3436	Offered		3436			3436
			% of Total		1%			1%
Disk (Tbytes)	219	369	Offered		369			369
			% of Total		2%			2%
Nominal WAN (Mbits/sec)	1000	1000						

Germany, ATLAS Fed. FR/W Freiburg	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	1800	3436	Offered		3436			3436
			% of Total		1%			1%
Disk (Tbytes)	219	369	Offered		369			369
			% of Total		2%			2%
Nominal WAN (Mbits/sec)	1000	1000						

Hungary, HGCC Federation	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	1200	2500	Offered	625		1875		2500
			% of Total	1%		1%		1%
Disk (Tbytes)	100	140	Offered	35		105		140
			% of Total	0%		1%		1%
Nominal WAN (Mbits/sec)	1000	1000						

India, VECC/SINP, Kolkata	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	1400	1800	Offered	1800				1800
			% of Total	2%				2%
Disk (Tbytes)	120	150	Offered	150				150
			% of Total	1%				1%
Nominal WAN (Mbits/sec)	180	180						

India, TIFR, Mumbai	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	2400	3200	Offered			3200		3200
			% of Total			2%		2%
Disk (Tbytes)	450	600	Offered			600		600
			% of Total			7%		7%
Nominal WAN (Mbits/sec)	1000	1000						



Israel, IL-HEP Tier-2 Federation	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	1440	3200	Offered		3200			3200
			% of Total		1%			1%
Disk (Tbytes)	200	375	Offered		375			375
			% of Total		2%			2%
Nominal WAN (Mbits/sec)								

Italy, INFN ALICE Federation	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	5800	8000	Offered	8000				8000
			% of Total	9%				9%
Disk (Tbytes)	550	500	Offered	500				500
			% of Total	4%				4%
Nominal WAN (Mbits/sec)	1000	1000						

Italy, INFN ATLAS Federation	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	5920	12000	Offered		12000			12000
			% of Total		5%			5%
Disk (Tbytes)	700	1000	Offered		1000			1000
			% of Total		5%			5%
Nominal WAN (Mbits/sec)	1000	1000						

Italy, INFN CMS Federation	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	13200	24000	Offered			24000		24000
			% of Total			12%		12%
Disk (Tbytes)	640	1300	Offered			1300		1300
			% of Total			14%		14%
Nominal WAN (Mbits/sec)	1000	1000						

Italy, INFN LHCb Federation	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	2400	4750	Offered				4750	4750
			% of Total				13%	13%
Disk (Tbytes)	0	0	Offered					
			% of Total					
Nominal WAN (Mbits/sec)	1000	1000						

Japan, ICEPP, Tokyo	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	4000	12000	Offered		12000			12000
			% of Total		5%			5%
Disk (Tbytes)	400	1000	Offered		1000			1000
			% of Total		5%			5%
Nominal WAN (Mbits/sec)	2000	2000						

Republic of Korea, KISTI, Daejeon	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	600	600	Offered	600				600
			% of Total	1%				1%
Disk (Tbytes)	50	50	Offered	50				50
			% of Total	0%				0%
Nominal WAN (Mbits/sec)	10000	10000						

Republic of Korea, CHEP of KNU, Daegu	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	2560	2840	Offered			2840		2840
			% of Total			1%		1%
Disk (Tbytes)	175	205	Offered			205		205
			% of Total			2%		2%
Nominal WAN (Mbits/sec)	20000	20000						

Norway, UNINETT SIGMA Tier2 (note 5)	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	1280	1280	Offered		1280			1280
			% of Total		1%			1%
Disk (Tbytes)	90	90	Offered		90			90
			% of Total		0%			0%
Nominal WAN (Mbits/sec)	10000	10000						

Pakistan, Pakistan Tier-2 Federation	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	3280	3480	Offered			3480		3480
			% of Total			2%		2%
Disk (Tbytes)	200	200	Offered			200		200
			% of Total			2%		2%
Nominal WAN (Mbits/sec)	42	42						



Poland, Polish Tier-2 Federation	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	7120	10540	Offered	2620	3180	2740	2000	10540
			% of Total	3%	1%	1%	5%	2%
Disk (Tbytes)	340	599	Offered	165	285	149		599
			% of Total	1%	1%	2%		1%
Nominal WAN (Mbits/sec)	2000	2000						

Portugal, LIP Tier-2 Federation (note 6)	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	6400	6400	Offered		3200	3200		6400
			% of Total		1%	2%		1%
Disk (Tbytes)	400	400	Offered		200	200		400
			% of Total		1%	2%		1%
Nominal WAN (Mbits/sec)	1000	1000						

Romania, Romanian Tier-2 Federation	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	9284	12092	Offered	7256	3264		1572	12092
			% of Total	8%	1%		4%	3%
Disk (Tbytes)	576	816	Offered	570	240		6	816
			% of Total	5%	1%		30%	2%
Nominal WAN (Mbits/sec)	10000	10000						

Russian Federation, RDIG (note 8)	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	24640	30000	Offered	8464	9964	9964	1608	30000
			% of Total	9%	4%	5%	4%	5%
Disk (Tbytes)	1813	2800	Offered	790	930	930	150	2800
			% of Total	6%	4%	10%	750%	7%
Nominal WAN (Mbits/sec)	2500	5000						
Tape (Tbytes)								

Slovenia, SiNET, Jozef Stefan Inst.	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	1800	5200	Offered		5200			5200
			% of Total		2%			2%
Disk (Tbytes)	200	350	Offered		350			350
			% of Total		2%			2%
Nominal WAN (Mbits/sec)	10000	10000						

Spain, ATLAS Federation	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	5396	10308	Offered		10308			10308
			% of Total		4%			4%
Disk (Tbytes)	656	1107	Offered		1107			1107
			% of Total		5%			5%
Nominal WAN (Mbits/sec)	10000	10000						

Spain, CMS Federation	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	5120	9040	Offered			9040		9040
			% of Total			5%		5%
Disk (Tbytes)	420	670	Offered			670		670
			% of Total			7%		7%
Nominal WAN (Mbits/sec)								

Spain, LHCb Federation (note 7)	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	2960	3420	Offered				3420	3420
			% of Total				9%	9%
Disk (Tbytes)	1	1	Offered				1	1
			% of Total				5%	5%
Nominal WAN (Mbits/sec)								

Sweden, SNIC Tier2 (note 5)	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	6000	7870	Offered	2820	5050			7870
			% of Total	3%	2%			2%
Disk (Tbytes)	430	920	Offered	400	520			920
			% of Total	3%	2%			3%
Nominal WAN (Mbits/sec)	10000	10000						

Switzerland, CHIPP, Manno	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	5760	10560	Offered		3063	3907	3590	10560
			% of Total		1%	2%	9%	2%
Disk (Tbytes)	490	910	Offered		364	364	182	910
			% of Total		2%	4%	910%	3%
Nominal WAN (Mbits/sec)	10000	10000						



Taipei, Taiwan Analysis Facility Federation	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	2320	3200	Offered		1600	1600		3200
			% of Total		1%	1%		1%
Disk (Tbytes)	250	350	Offered		175	175		350
			% of Total		1%	2%		1%
Nominal WAN (Mbits/sec)	10000	10000						

Turkey, Turkish Tier-2 Federation	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	5400	9800	Offered		5100	4700		9800
			% of Total		2%	2%		2%
Disk (Tbytes)	550	900	Offered		550	350		900
			% of Total		3%	4%		3%
Nominal WAN (Mbits/sec)	1000	1000						

UK, London	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	6336	10551	Offered		2039	7097	1415	10551
			% of Total		1%	4%	4%	2%
Disk (Tbytes)	428	781	Offered		219	561	1	781
			% of Total		1%	6%	5%	3%
Nominal WAN (Mbits/sec)	1000	1000						

UK, NorthGrid	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	4556	8309	Offered		7875		434	8309
			% of Total		3%		1%	3%
Disk (Tbytes)	501	845	Offered		845			845
			% of Total		4%			4%
Nominal WAN (Mbits/sec)	1000	1000						

UK, ScotGrid	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	6340	9025	Offered		5629		3396	9025
			% of Total		2%		9%	3%
Disk (Tbytes)	360	606	Offered		604		2	606
			% of Total		3%		10%	3%
Nominal WAN (Mbits/sec)	1000	1000						

UK, SouthGrid	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	6036	9258	Offered	1061	3152	3230	1815	9258
			% of Total	1%	1%	2%	5%	2%
Disk (Tbytes)	394	669	Offered	75	338	255	1	669
			% of Total	1%	2%	3%	5%	2%
Nominal WAN (Mbits/sec)	1000	1000						

Ukraine, Ukrainian Tier-2 Federation	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	1208	1440	Offered	1152		288		1440
			% of Total	1%		0%		1%
Disk (Tbytes)	78	108	Offered	43		65		108
			% of Total	0%		1%		0%
Nominal WAN (Mbits/sec)	1000	1000						

USA, Northeast ATLAS T2 (note 9)	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	4196	11040	Offered		11040			11040
			% of Total		5%			5%
Disk (Tbytes)	445	1141	Offered		1141			1141
			% of Total		5%			5%
Nominal WAN (Mbits/sec)								

USA, Southwest ATLAS T2 (note 9)	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	6936	11040	Offered		11040			11040
			% of Total		5%			5%
Disk (Tbytes)	328	1141	Offered		1141			1141
			% of Total		5%			5%
Nominal WAN (Mbits/sec)								

USA, Midwest ATLAS T2 (note 9)	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	3912	11040	Offered		11040			11040
			% of Total		5%			5%
Disk (Tbytes)	358	1141	Offered		1141			1141
			% of Total		5%			5%
Nominal WAN (Mbits/sec)								



USA, Great Lakes ATLAS T2 (note 9)	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	5624	11040	Offered		11040			11040
			% of Total		5%			5%
Disk (Tbytes)	542	1141	Offered		1141			1141
			% of Total		5%			5%
Nominal WAN (Mbits/sec)								

USA, SLAC ATLAS T2 (note 9)	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	4808	11040	Offered		11040			11040
			% of Total		5%			5%
Disk (Tbytes)	413	1141	Offered		1141			1141
			% of Total		5%			5%
Nominal WAN (Mbits/sec)								

USA, Caltech CMS T2	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	4400	7760	Offered			7760		7760
			% of Total			4%		4%
Disk (Tbytes)	360	570	Offered			570		570
			% of Total			6%		6%
Nominal WAN (Mbits/sec)	10000	10000						

USA, Florida CMS T2	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	4400	7760	Offered			7760		7760
			% of Total			4%		4%
Disk (Tbytes)	360	570	Offered			570		570
			% of Total			6%		6%
Nominal WAN (Mbits/sec)	10000	10000						

USA, MIT CMS T2	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	4400	7760	Offered			7760		7760
			% of Total			4%		4%
Disk (Tbytes)	360	570	Offered			570		570
			% of Total			6%		6%
Nominal WAN (Mbits/sec)	10000	10000						

USA, Nebraska CMS T2	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	4400	7760	Offered			7760		7760
			% of Total			4%		4%
Disk (Tbytes)	360	570	Offered			570		570
			% of Total			6%		6%
Nominal WAN (Mbits/sec)	10000	10000						

USA, Purdue CMS T2	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	4400	7760	Offered			7760		7760
			% of Total			4%		4%
Disk (Tbytes)	360	570	Offered			570		570
			% of Total			6%		6%
Nominal WAN (Mbits/sec)	10000	10000						

USA, UC San Diego CMS T2	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	4400	7760	Offered			7760		7760
			% of Total			4%		4%
Disk (Tbytes)	360	570	Offered			570		570
			% of Total			6%		6%
Nominal WAN (Mbits/sec)	10000	10000						

USA, U. Wisconsin CMS T2	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	4400	7760	Offered			7760		7760
			% of Total			4%		4%
Disk (Tbytes)	360	570	Offered			570		570
			% of Total			6%		6%
Nominal WAN (Mbits/sec)	10000	10000						



Summary Tier2s with Split in 2010	2009	2010	Split 2010	ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU (HEP-SPEC06)	308524	505807	Offered	52552	214976	196221	42058	505807
			Required	89600	240000	195000	38000	562600
			Balance	-41%	-10%	1%	11%	-10%
Disk (Tbytes)	22647	39625	Offered	4326	21238	13627	434	39625
			Required	12600	20900	9200	20	42720
			Balance	-66%	2%	48%	2070%	-7%
Tape (Tbytes)								

Requirements 2010	ALICE	ATLAS	CMS	LHCb	SUM
CPU (HEP-SPEC06)	89600	240000	195000	38000	562600
Disk (Tbytes)	12600	20900	9200	20	42720
Number of T2s	17	39	34	15	

**TIER 2 Notes**

**Note 1:** 2009 CPU pledge not reached due to LHC delay. 2010 pledge must be considered as indicative and will evolve with the first CMS data-handling experience.

**Note 2:** Could not start CPU or Disk installations due to bureaucratic and import delays. Pledges have dropped back by one year.

**Note 3:** 2009 and 2010 pledges revised in the light of the September 2009 requirements and agreed with experiment representatives. 2009 pledges revised to: CPU = 13511; Disk = 843.

**Note 4:** The availability of Munich ATLAS Tier2 2010 resources will follow the time profile for ATLAS installation.

**Note 5:** Preliminary 2010 pledge numbers presented at the Autumn 2009 RRB were confirmed on 19th February 2010.

**Note 6:** 2009-2010 data originally published was never confirmed - data was indicative for RRB reasons but never intended to be taken as confirmed pledges. This data is confirmed.

**Note 7:** 2010 CPU may increase following confirmation of requirements of LHCb by the Scrutiny Group .

**Note 8:** Experiment split was confirmed on 5th February 2010.

**Note 9:** 2010 pledges were adjusted to meet ATLAS needs.