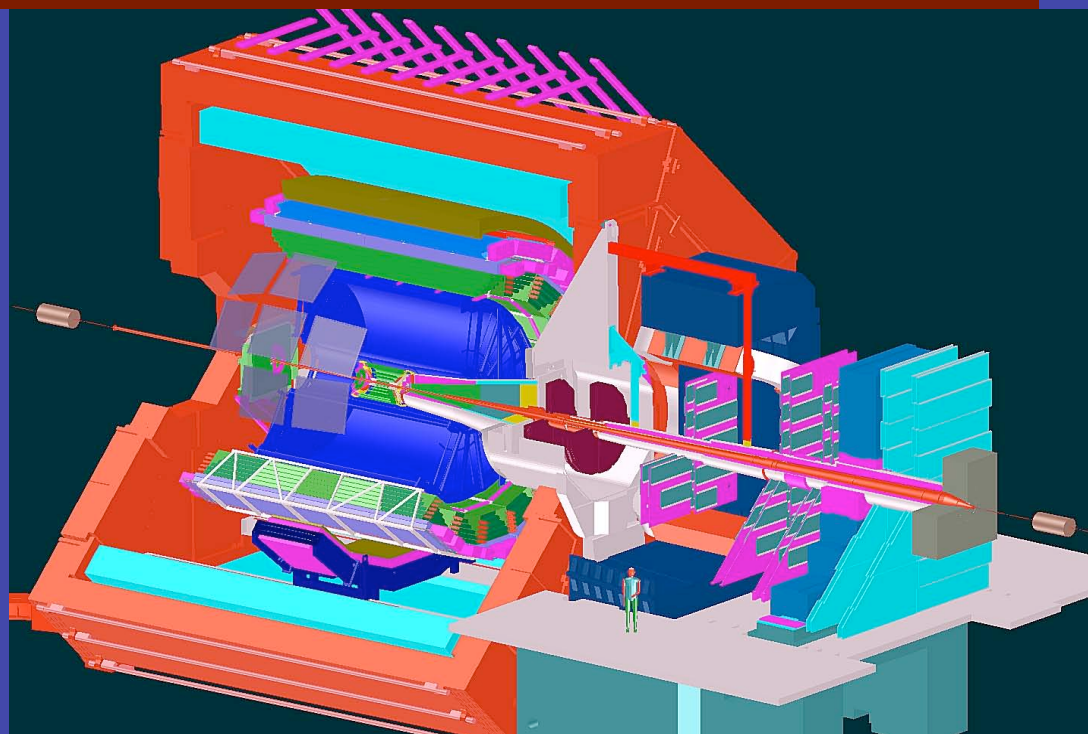


Terzo Convegno Nazionale sulla Fisica di Alice



Laboratori Nazionali di Frascati, 12 - 14 Novembre 2007

The Status of ALICE



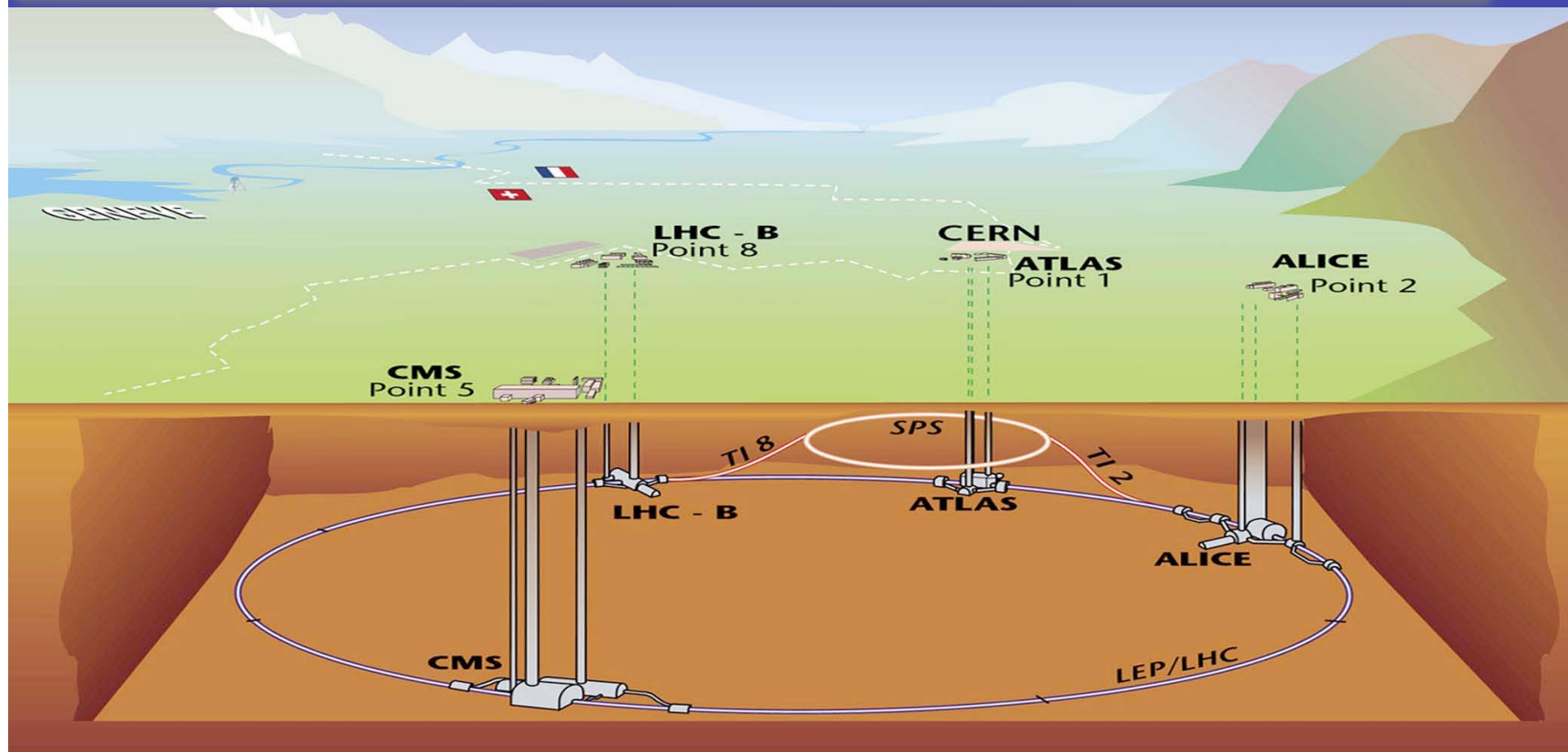
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LNF, 12-14 ottobre 2007



Large Hadron Collider (LHC)



Exploiting the LEP tunnel (27 km ring)

The largest cryogenic system in the world:

- 1232 superconducting dipoles (9 Tesla)
- 500 superconducting quadrupoles (250 Tesla/m)
- ~ 4100 superconducting corrector magnets

4×10^5 t at 1.9 K (superfluid helium)

COST: 5 GE + ~ 50% CtC



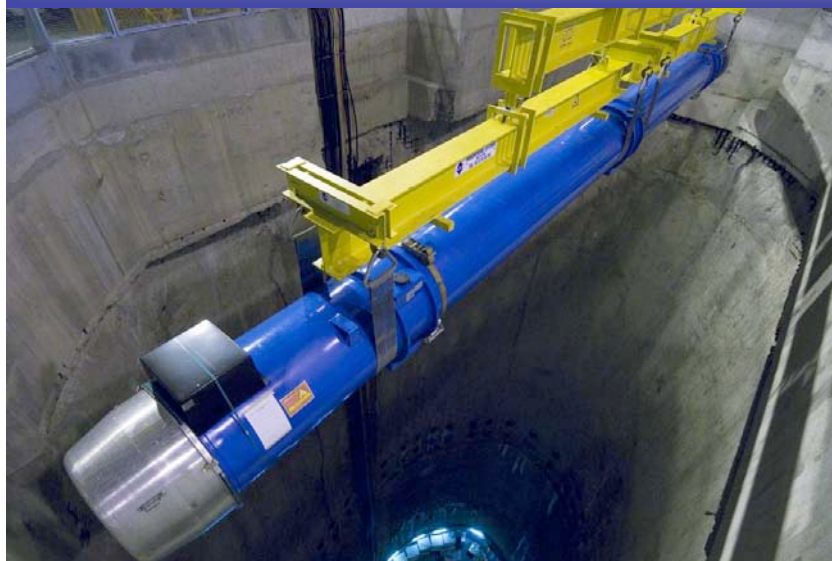
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LHC PROGRESS

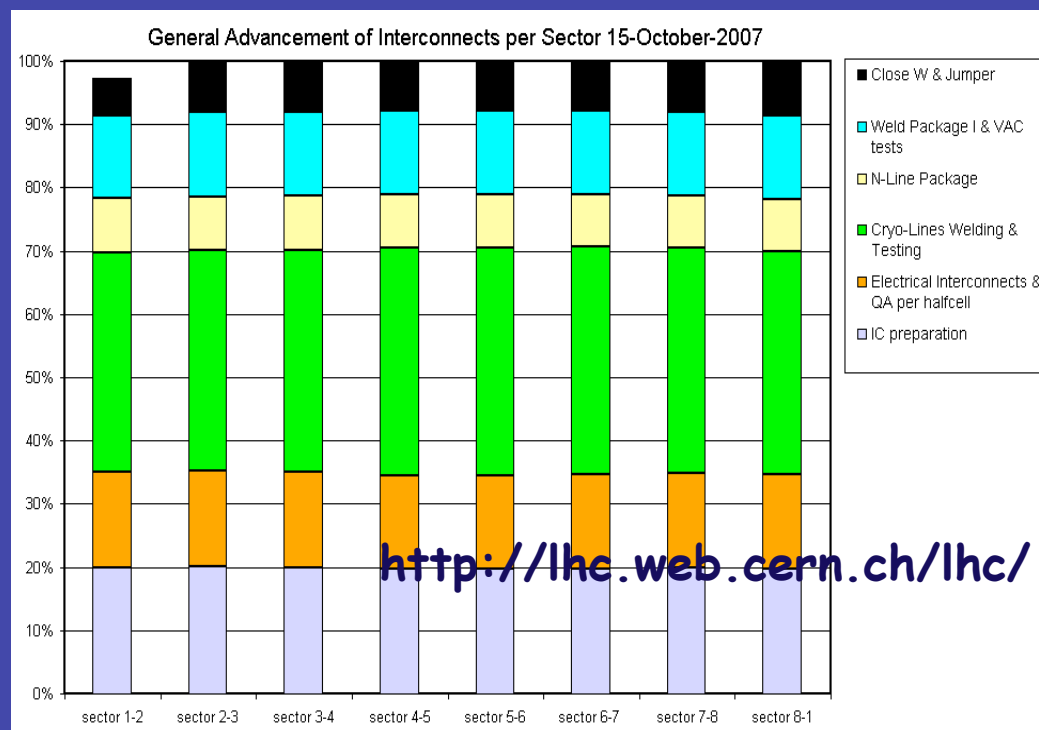


Descent of the last magnet, 26 April



Brazers work on the last sector 1-2

Lyn Evans: "It took nearly 10,000 truck journeys to transport the magnets from the various locations where they were stored in France and Switzerland – a total of some 40,000 km, all at 10 km/h..... Some 200 engineers and technicians, half from CERN and half from the contractor, are working in the LHC tunnel under rather difficult conditions. "



7 out of 8 Octants now interconnected



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LHC Control Room



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Inner triplets

March, 27 2007: one of the eighteen inner triplets built by Fermilab-KEK was damaged during the quality control

Review of engineering designs reveals that the longitudinal force from asymmetric loading was not included in the engineering design or identified as an issue in the four design reviews.



damaged bellows



Repair of inner triplets is now finished



Plug in Modules

At 1.9 K the total contraction over the sector is close to 10 m

September 2007: six out of 366 plug in modules collapsed during warm up of sector 7-8

- solution: efficient 'find & repair' after each warm up



Cold position



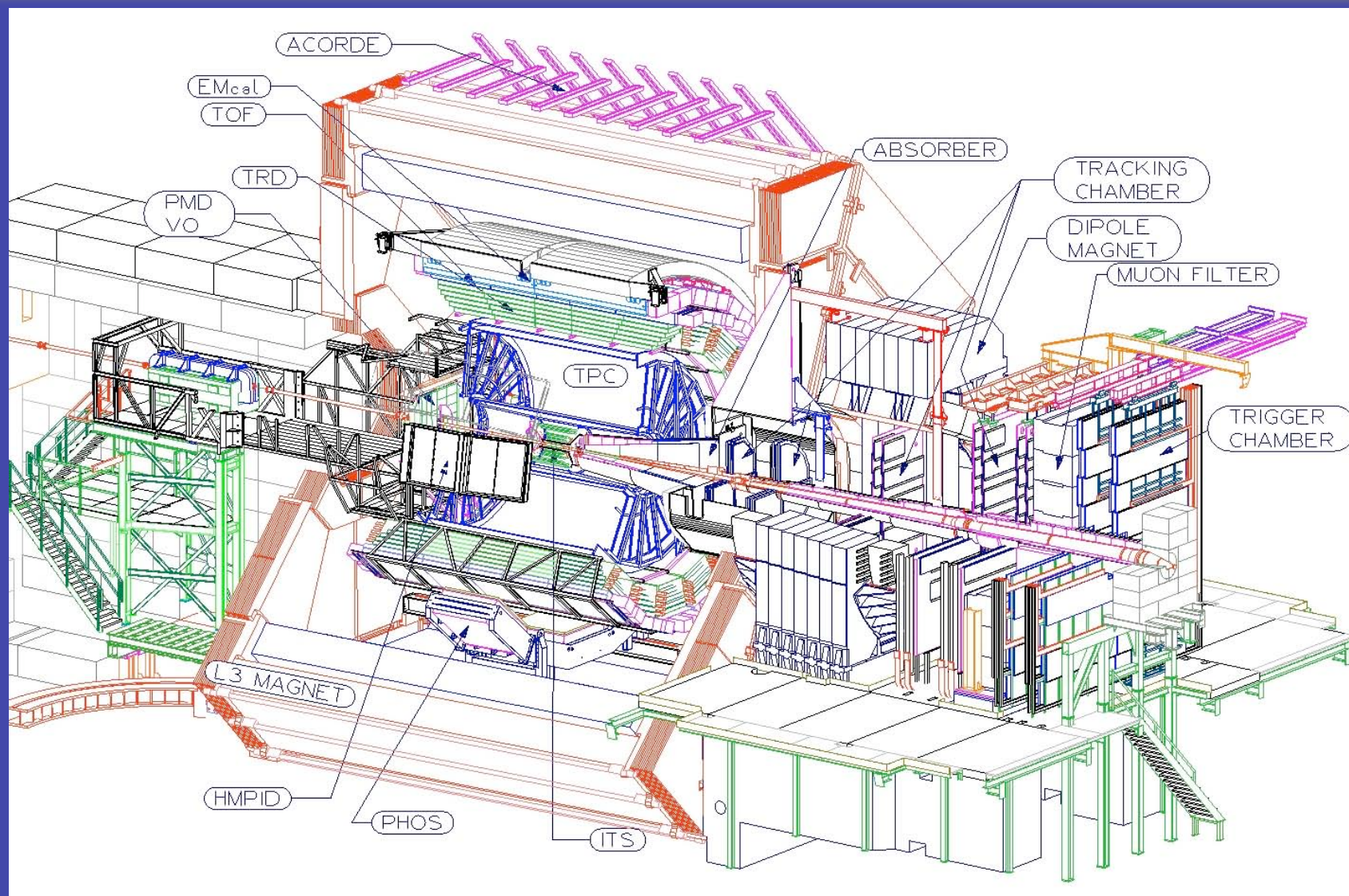
Warm position



Lyn Evans:
'LHC now in commissioning phase,
which is less deterministic'
=> problems are found and solved one by one...



ALICE



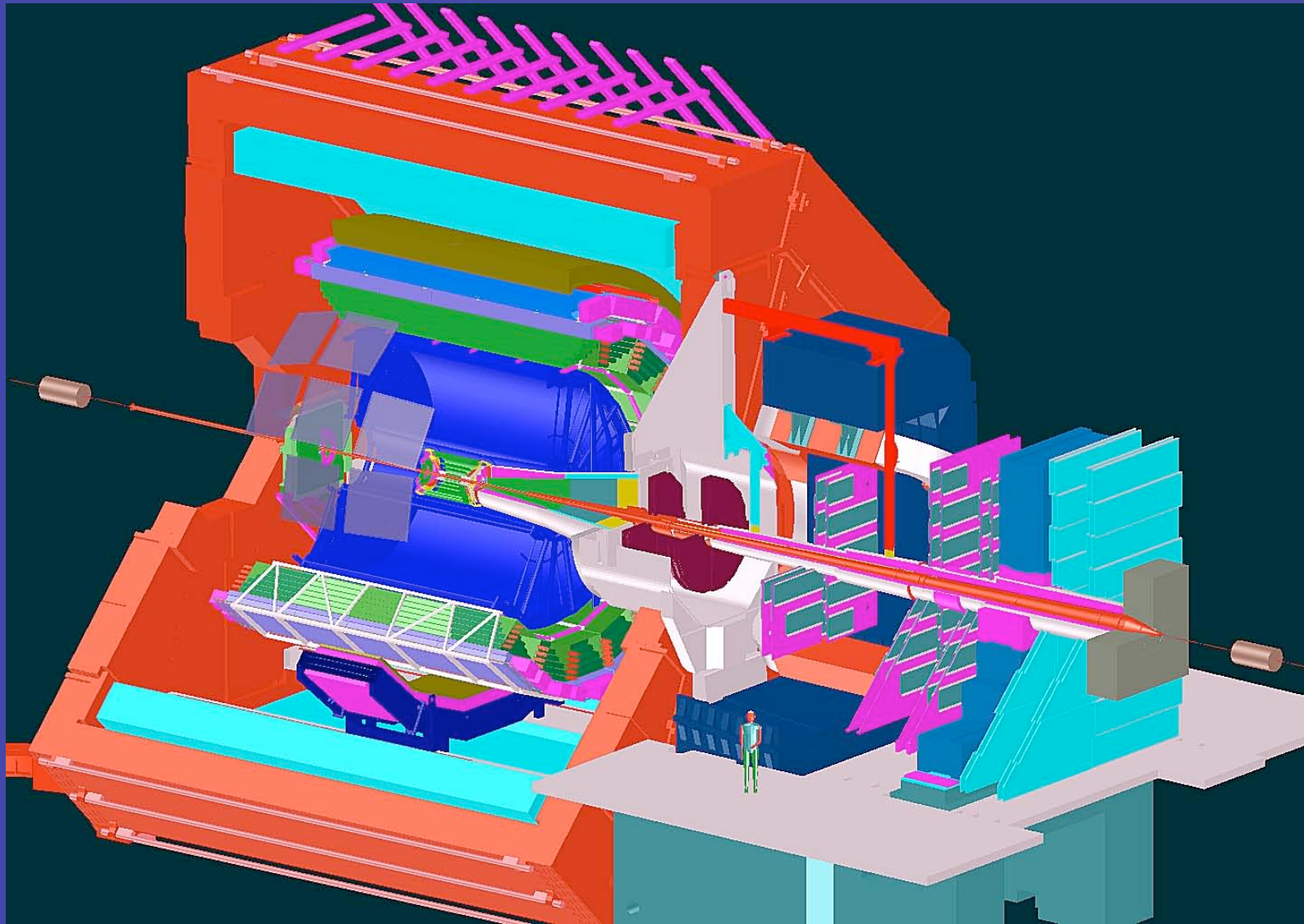
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ALICE layout: new "presentation" drawing(in progr.)



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ALICE impact on the Italian HEP Community

V Workshop italiano sulla fisica p-p ad LHC

Questo Workshop è il quinto della serie iniziata a Pisa nel 2003, con lo scopo di creare un proficuo scambio di idee tra le comunità sperimentali di ATLAS, CMS, e questa volta anche di LHCb e ALICE, operanti in modo particolare sulla fisica delle interazioni p-p ad LHC, dando largo spazio a contributi dei ricercatori più giovani. Con l'approssimarsi della partenza di LHC, particolare interesse assumono per questa edizione tutte le tematiche di analisi previste, con l'intervento per ognuna anche di giovani colleghi teorici per favorire una maggiore sinergia tra teorici e sperimentali sulla "fisica" di LHC.

Comitato Scientifico

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P. Campana	M. Curatolo
M. Diemoz	U. Dosselli
F. Ferroni	F. Gianotti
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Congress Hotel Gio **PERUGIA**
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Web:
www.pg.infn.it/pplhc08
E-mail:
pplhc08@pg.infn.it

CONTACTS:
Phone: +39 075 5852715
Fax: +39 075 44666



Poster: S. Cipriani

<http://www.pg.infn.it/pplhc08/index.html>

L'apparato sperimentale di ALICE:
caratteristiche e prestazioni
Chiara Zampolli

Produzione di heavy flavour
Andrea Dainese

Produzione di stati di quarkonio
Diego Stocco



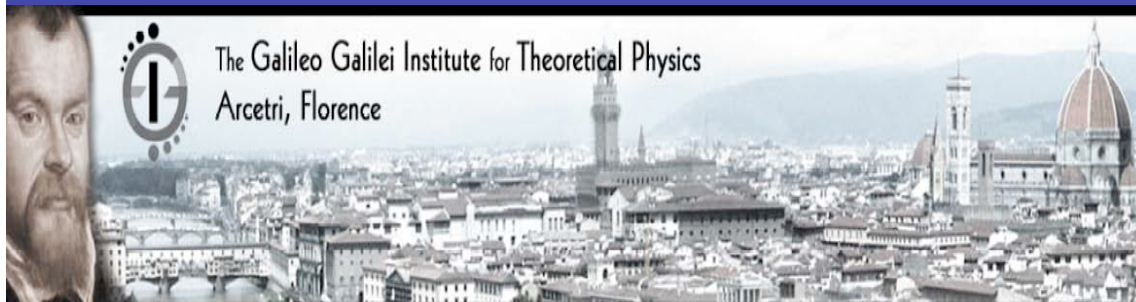
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III Convegno Nazionale Fisica ALICE

LNF, 12-14 ottobre 2007



ALICE impact on the Italian HEP Community



Workshop on "High density QCD"

J.P. Blaizot (ECT, Trento and CNRS),
L. Maiani (La Sapienza Rome Univ.) and
A. Mueller (Columbia Univ.)
15 gennaio - 9 marzo 2007

ECT workshop in Trento
8 - 12 gennaio 2007

Relazione a invito:
Eugenio Nappi
"Physics of heavy ion collisions
at ultrarelativistic energies"

**INCONTRI DI FISICA
DELLE ALTE ENERGIE**

**VI
IFAE
NAPOLI**

11 - 13 APRILE 2007
AULA MAGNA PARTENOPE
ATENEIO FEDERICO II

**ISTITUTO
NAZIONALE
DI FISICA
NUCLEARE**

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COMITATO LOCALE
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Leonardo Merola
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Giulia Ricciardi



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III Convegno Nazionale Fisica ALICE

LNF, 12-14 ottobre 2007



Visit of INFN Management to ALICE (July, 5 2007)



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LNF, 12-14 ottobre 2007



The Italian ALICE Collaboration 2008

Struttura	attività	#ricercatori	fte	#tecnologi	fte
Alessandria	MUON ARM, SDD, ZDC	6	4.9		
Bari	HMPID, SPD, GRID	32	26.6	5	3
Bologna	SDD, TOF, GRID	24	20.8	3	1.8
Cagliari	Muon Arm, ZDC, GRID	17	17	1	0.1
Catania	EMCAL, SPD, GRID	9	8.5	3	1.8
LNF	EMCAL	8	6.4	1	0.5
LNL	SPD, GRID	3	3		
Padova	SPD	11	8.4	2	1.5
Roma I	SDD	4	3.4		
Salerno	SPD, TOF	10	8.7	1	1
Torino	MUON ARM, SDD, ZDC, GRID	30	28.5	6	1.6
Trieste	SDD, SSD	15	11.5	2	0.8
Udine	SPD	1	0.5		
Totale ALICE		170	148.2	24	12.1

average fte fraction ~83%

2007: 165 physicists + 25 engineers
133.5 fte (average fte fraction >70%)

M&O A

	Scientists	M&O Cat A without energy	Energy	Energy billed to FA	Bill in kCHF
CERN	69	557.2	319.9		557.2
Czech Republic	11	88.8	51.0		88.8
Denmark	6	48.5	27.8		48.5
Finland	7	56.5	32.5		56.5
France CEA	8	64.6	37.1		64.6
France IN2P3	54	436.1	250.4		436.1
Germany BMBF	32	258.4	148.4		258.4
Germany GSI	18	145.4	83.5		145.4
Greece	6	48.5	27.8		48.5
Hungary	3	24.2	13.9		24.2
Italy	117	944.8	542.5		944.8
Netherlands	11	88.8	51.0		88.8
Norway	15	121.1	69.6		121.1
Poland	16	129.2	74.2		129.2
Slovak Republic	16	129.2	74.2		129.2
Spain/Cuba	6	48.5	27.8		48.5
Sweden	5	40.4	23.2		40.4
United Kingdom	7	56.5	32.5		56.5
Armenia	3	24.2	13.9	13.9	38.1
China	8	64.6	37.1	37.1	101.7
Croatia	2	16.2	9.3	9.3	25.4
India	27	218.0	125.2	119.4	337.4
Japan	5	40.4	23.2	22.3	62.6
JINR	5	40.4	23.2	23.2	63.6
Mexico	6	48.5	27.8	27.8	76.3
Republic of Korea	6	48.5	27.8	27.8	76.3
Romania	10	80.8	46.4	46.4	127.1
Russia	56	452.2	259.7	189.3	641.5
South Africa	3	24.2	13.9	13.9	38.1
Ukraine	3	24.2	13.9	13.9	38.1
USA DOE	15	121.1	69.6	67.5	188.7
USA NSF	3	24.2	13.9	13.5	37.7
Total	559	4,514.0	2,592.0	625.2	5,139.2



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III Convegno Nazionale Fisica ALICE

LNF, 12-14 ottobre 2007



Italian Leaderships

CB chairperson L. Riccati (reelected 1.1 2008 for 3 years)

Deputy spokespersons P. Giubellino, F. Antinori

ALICE Representative in the LCG GRID Board A. Masoni

Physics Working Group Conveners

F. Antinori, L. Ramello (2 out of 4)

Editorial Board L. Cifarelli, E. Vercellin (2 out of 6)

Italian Project Leaders:

TOF M. Basile (**CORE:100%**)

ITS L. Riccati (SPD PL: G. Stefanini -> V. Manzari)

ZDC M. Gallio (**CORE:100%**)

MUON SPECTROMETER E. Vercellin (deputy -> **PL in 2008**)

HMPID G. De Cataldo (deputy)

JET R&D N. Bianchi (deputy)



Integration: 2006



Muon arm dipole & trigger chambers

TOF-SM1: 2/10/06



TOF-SM2: 5/10/06



HMPID: 23/09/06



TOF TRD



Integration: January-June 2007



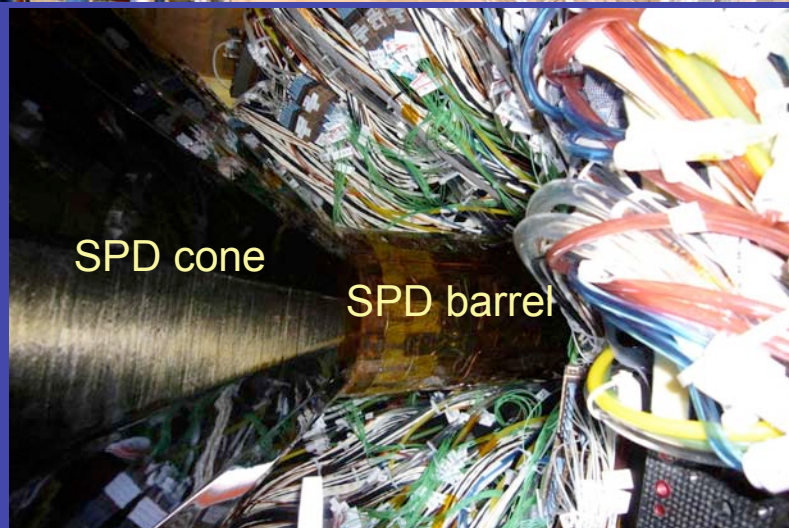
TPC: 15/01/07



SDD+
SSD:
15/3/07



SPD: 18.06.2007



SPD cone

SPD barrel

SPD+SDD
+SSD:
28/6/07



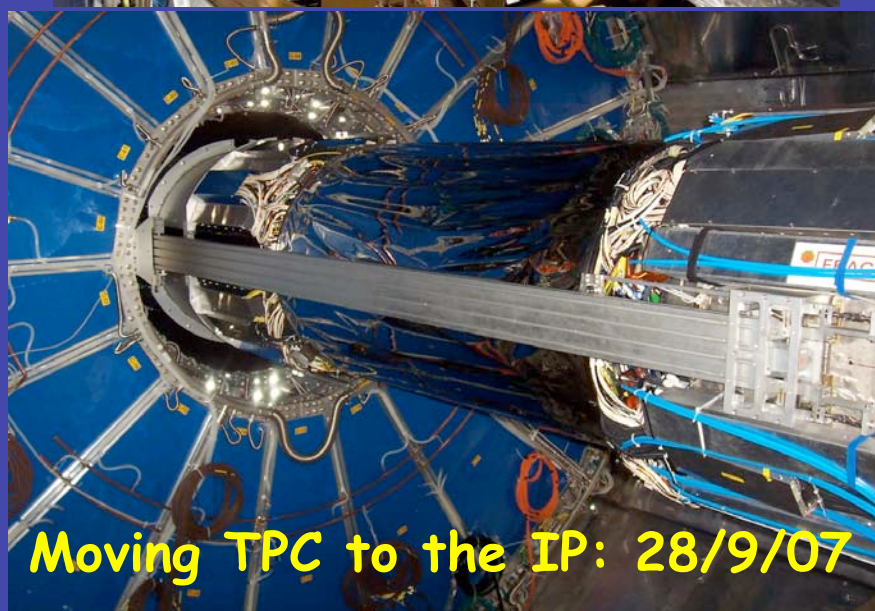
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Integration: July - November 2007



Integration: the next steps

Detector	Start	Finish
Muon detector installation /commissioning	Apr 2006	April 2008
EMCAL Frame/PHOS	12.11.2007	16.11.2007
Miniframe (services A side)	26.11.2007	30.11.2007
3 TOF/ 1 TRD	28.11.2007	06.12.2007
Magnet Test + Global Commissioning	10.12.2007	21.12.2007
V0-A/T0-A/TOF/TRD/PMD	January 2008	
Cosmic Run	February 2008	
TOF/TRD	March 2008	
Cosmic Run	April 2008	
Commissioning and Mobile Shielding Done	21.05.2007	start of beam



Trigger - DAQ - ECS - HLT - DCS

working room 1



control room

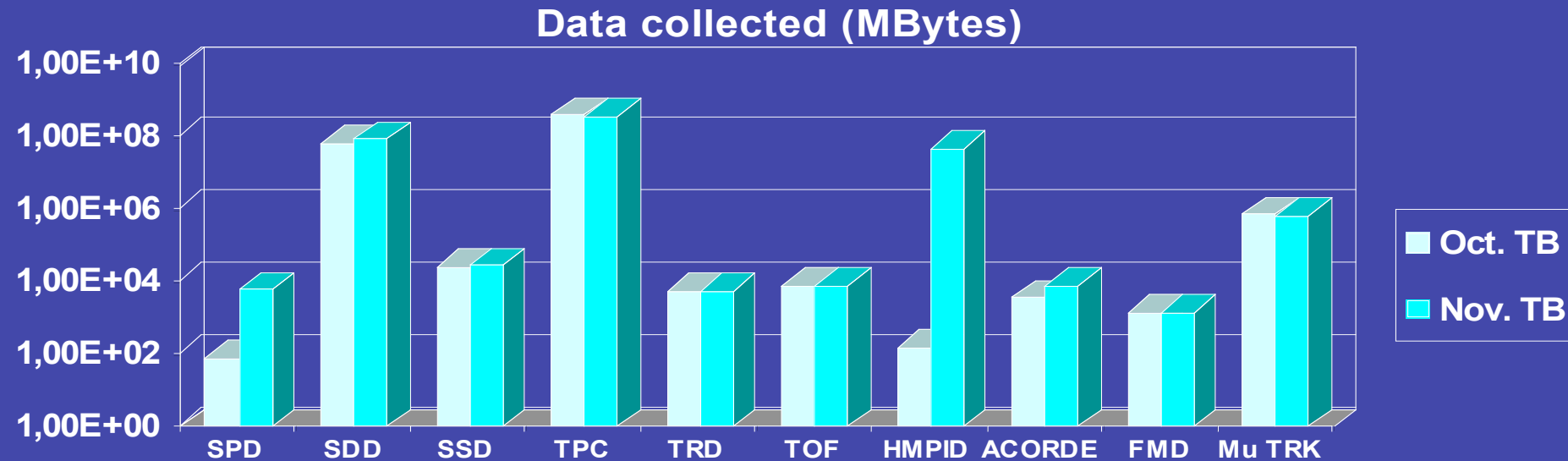
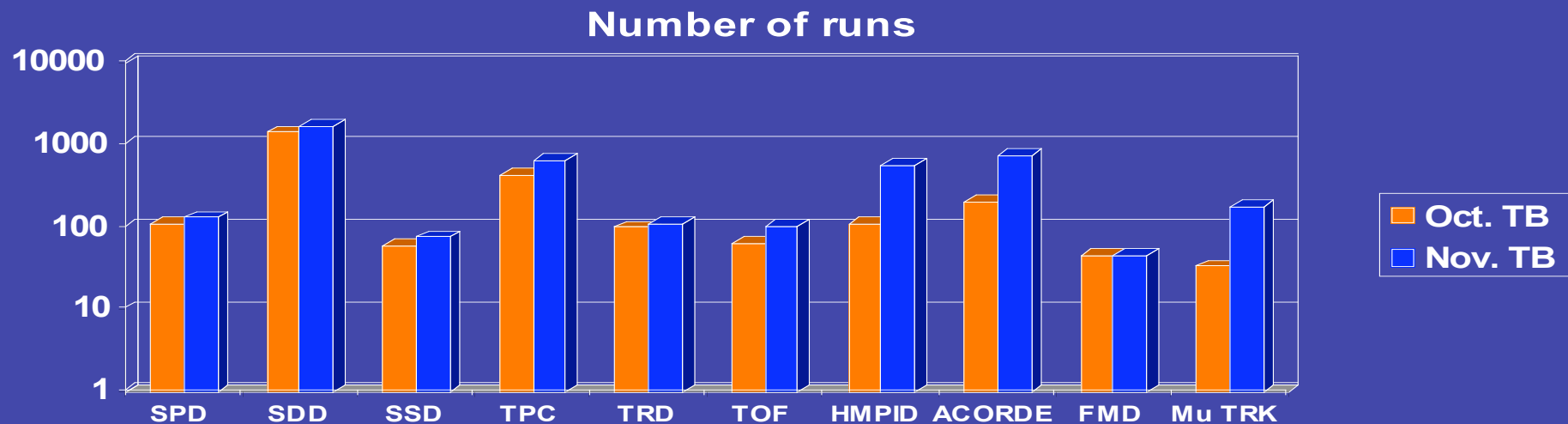


Installation and integration of all systems in 'initial configuration' essentially complete

⇒ 20-30% for DAQ/HLT, 100% for Trigger/DCS/ECS



STANDALONE RUNS



Envisaged ALICE Lay-out Configuration

- mid 2008

- ✧ **complete**: ITS, TPC, TOF, HMPID, muon arm, PMD, trigger dets (V0, T0, ZDC, Acorde),...

- ✧ **partially complete**: PHOS(3/5), TRD (5/18), DAQ/HLT (20-30%)

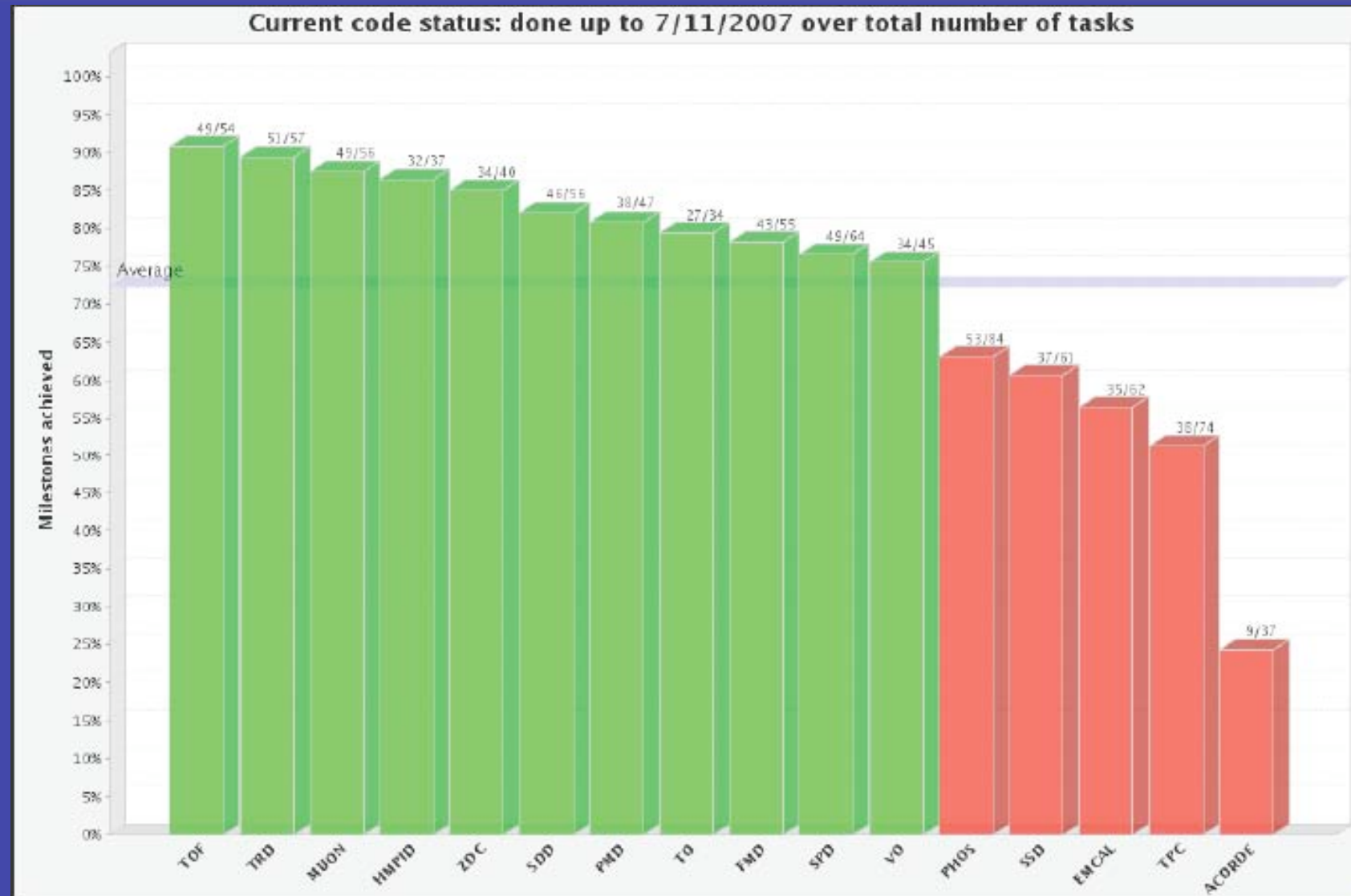
- Beyond 2008

- ⇒ complete DAQ/HLT capacity (shifted from 2008 to 2009) in line with expected LHC running

- ⇒ complete modular detectors: TRD (2009), PHOS (2010), EMCAL (2010/11)

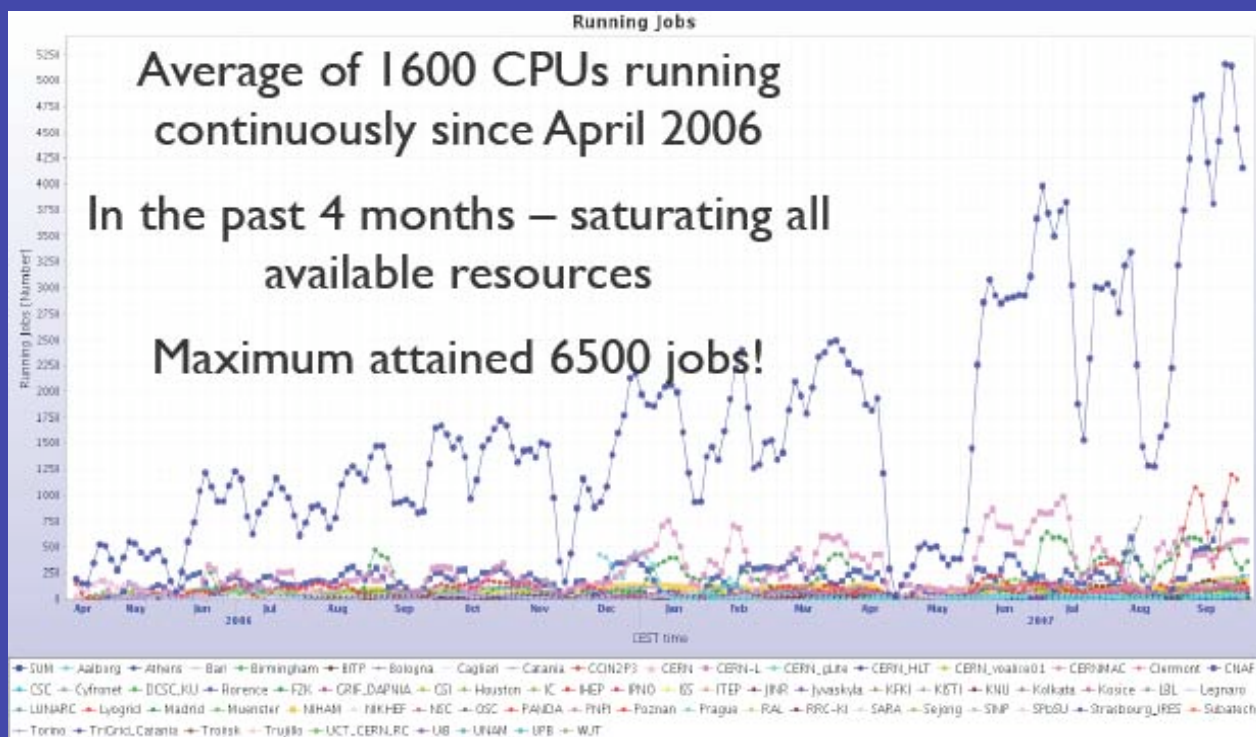


Computing: code status



Computing: GRID & PDC07

Pledged by external sites versus required (new LHC schedule) all													
		2007		2008		2009		2010		2011		2012	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
CPU	Requirement (MSI2K)	3.2	4.6	10.1	12.5	19.9	14.3	23.5	25.0	30.5	32.5	39.7	42.2
	Missing %	-45%	-5%	-31%	-37%	-47%	-20%	-39%	-40%	-53%	-54%	-64%	-65%
Disk	Requirement (PB)	1.3	0.7	4.0	1.7	6.8	4.0	12.0	4.3	16.6	5.6	22.4	7.3
	Missing %	-43%	4%	-32%	5%	-37%	-22%	-50%	-3%	-64%	-25%	-73%	-43%
MS	Requirement (PB)	1.4	-	5.8	-	12.4	-	19.7	-	27.0	-	33.7	-
	Missing %	-23%	-	-32%	-	-36%	-	-40%	-	-57%	-	-65%	-



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