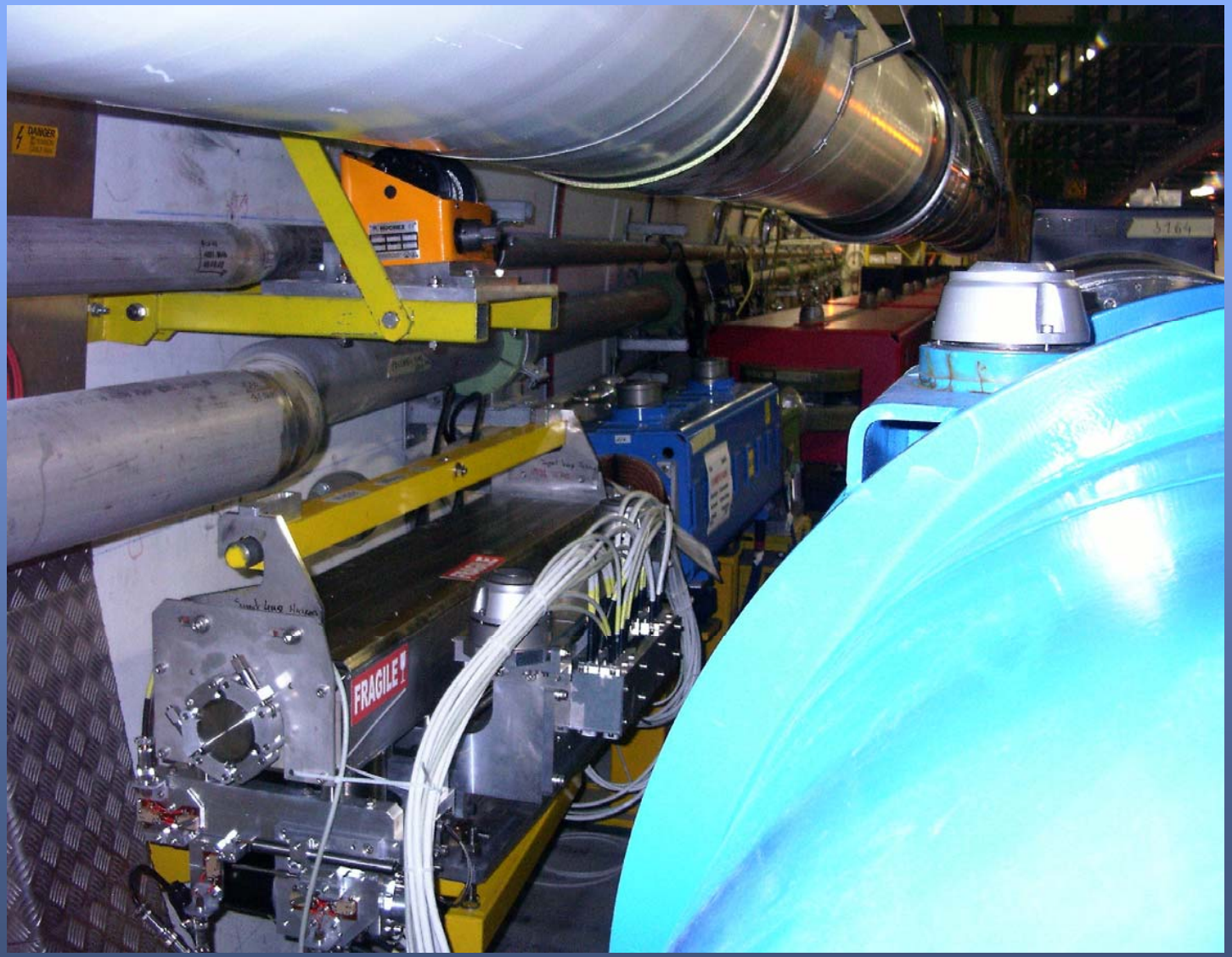
Status of the LHC Project

Lyndon Evans

HEPAP - 13 October 2006

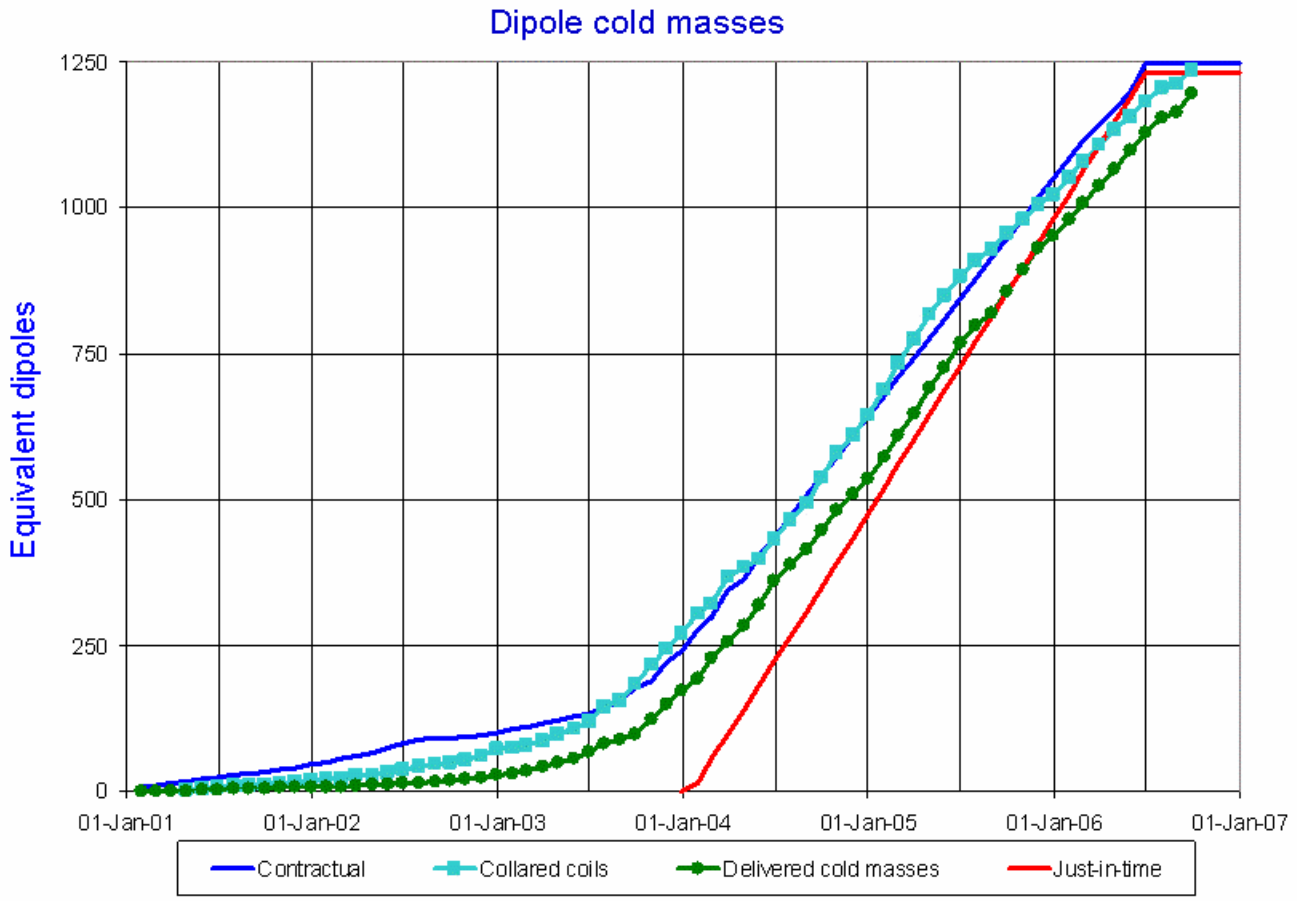
Injection Line TI8



Dipole Cold Masses

LHC Progress Dashboard

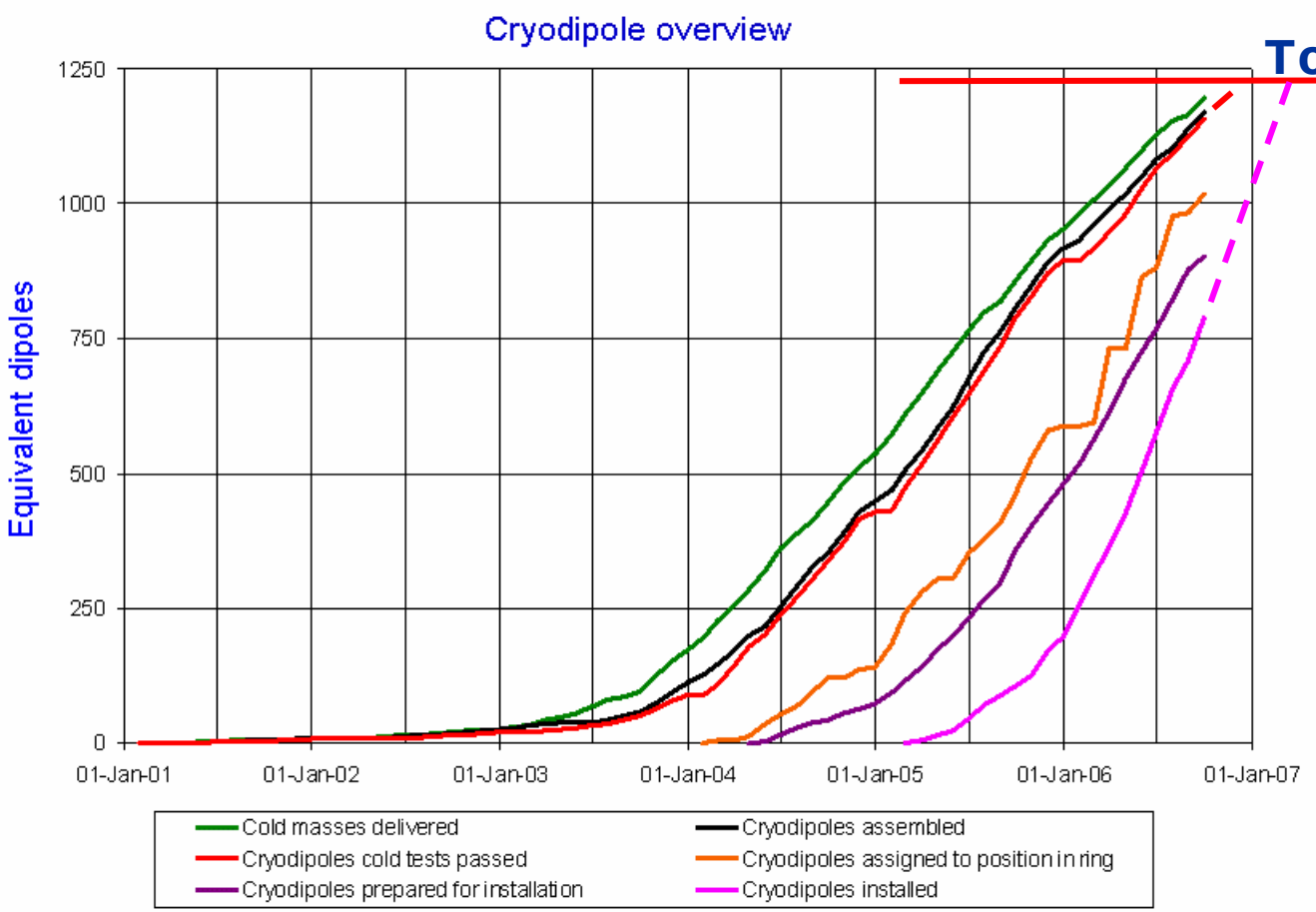
Accelerator Technology Department



Updated 30 Sep 2006 Data provided by F. Savary AT-MAS

LHC Progress Dashboard

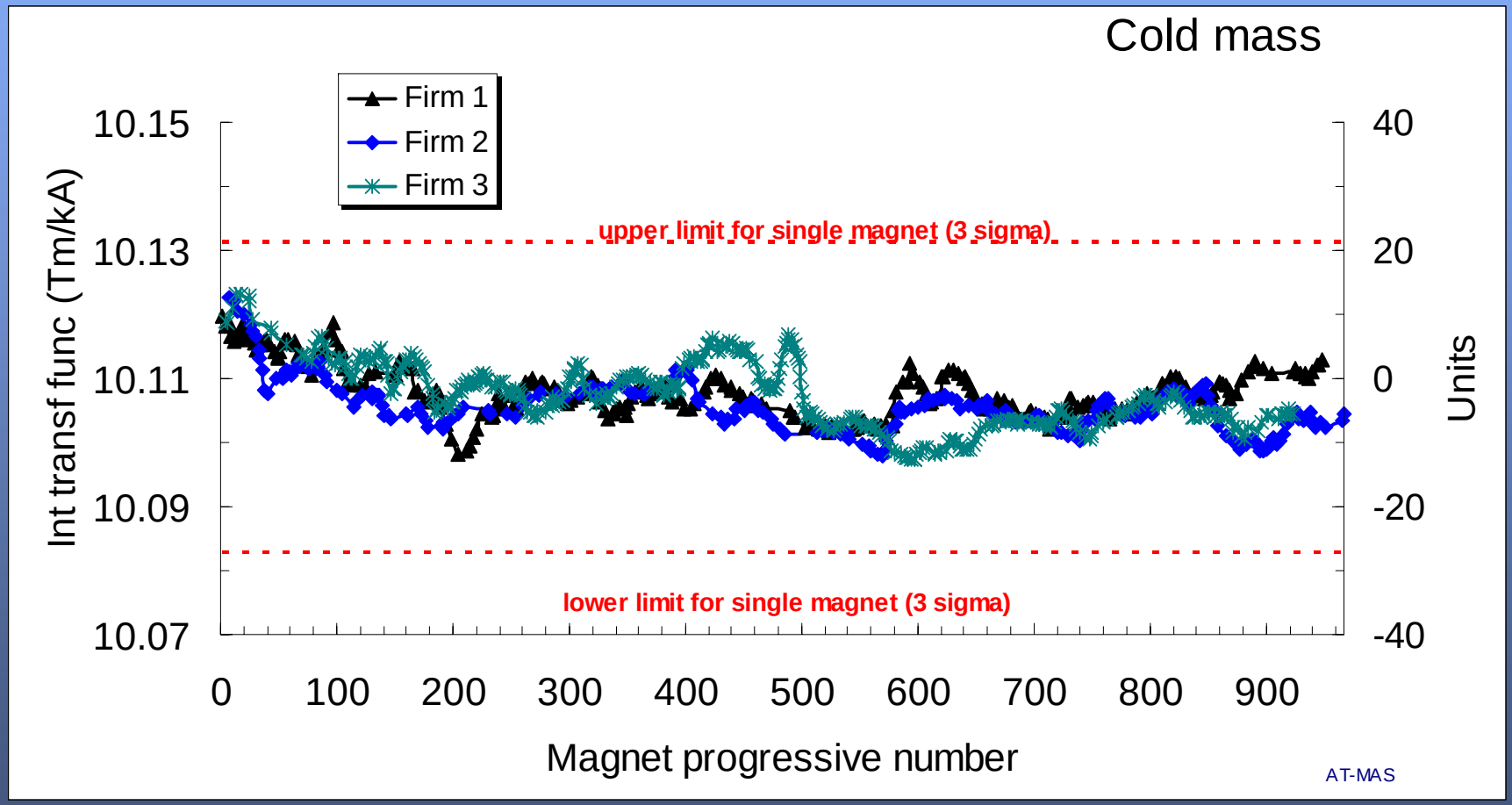
Accelerator Technology Department



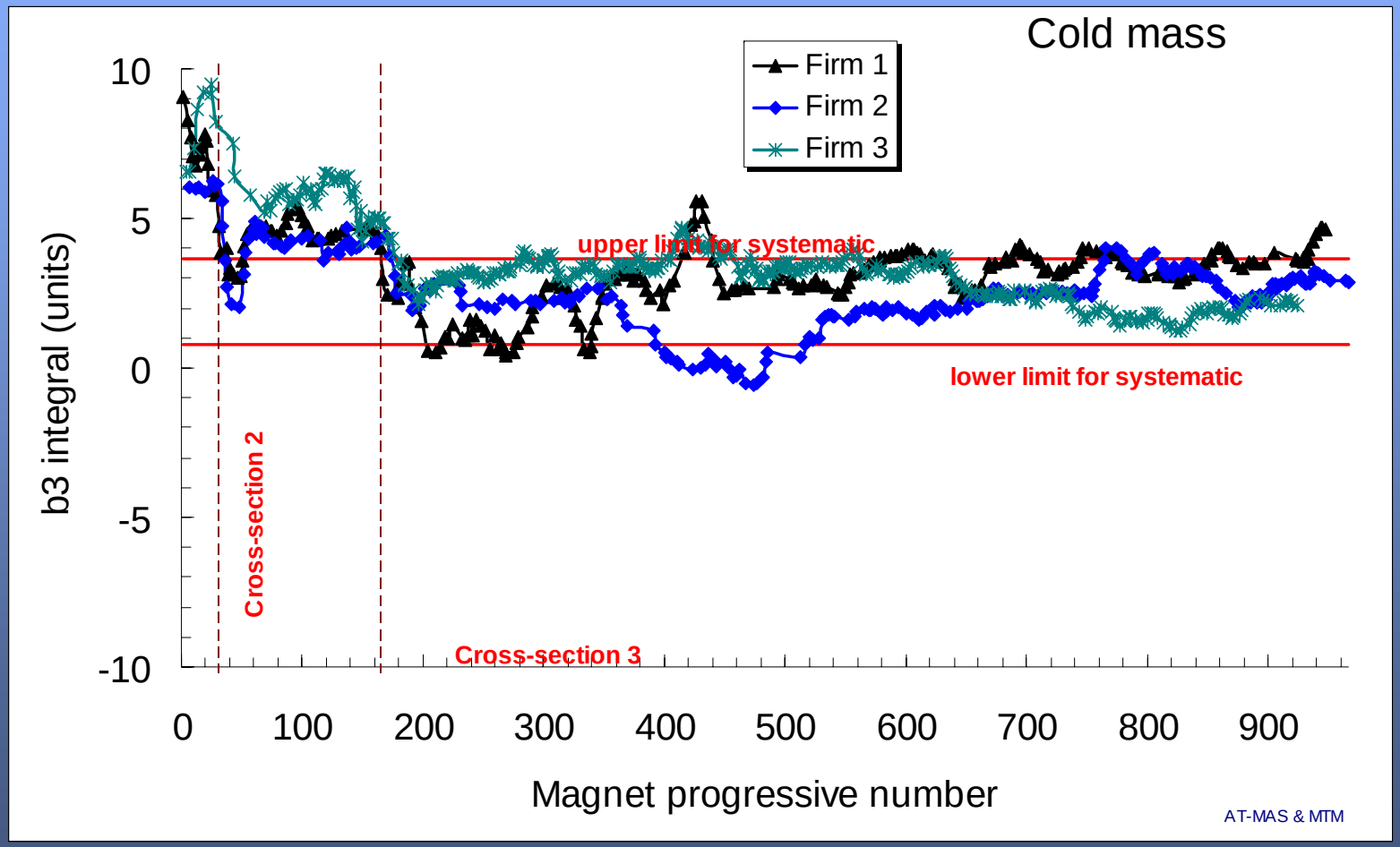
Updated 30 Sep 2006

Data provided by D. Tommasini AT-MAS, L. Bottura AT-MTM

Dipole: integral field



Dipole: b3 integral field



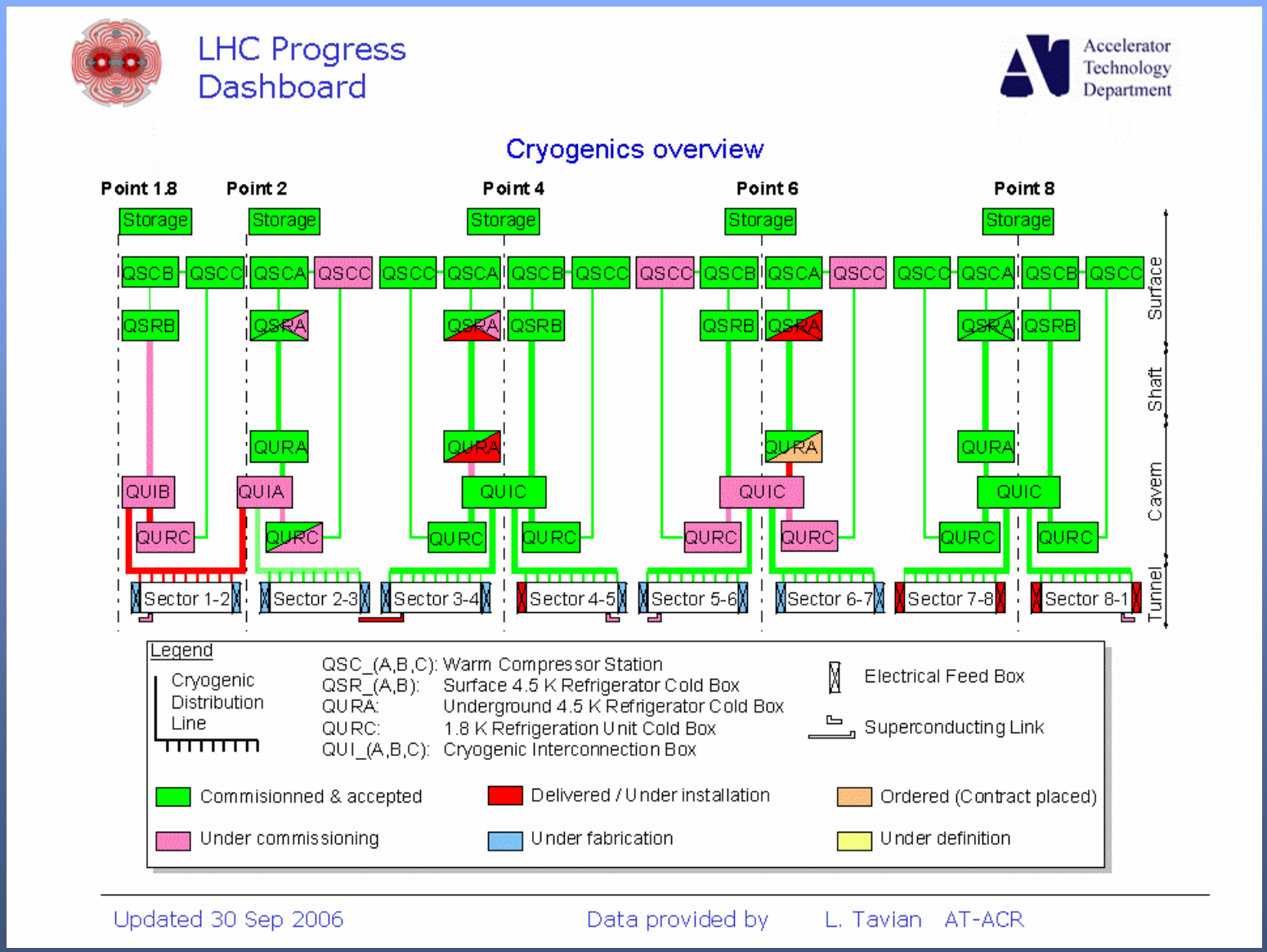
Reporting - Installed magnets in LHC

	R					L					Total				
	Cryo-magnets			DFB + others	Total	Cryo-magnets			DFB + others	Total	Cryo-magnets			DFB + others	Total
	Dipoles	SSS (arc)	LSS			Dipoles	SSS (arc)	LSS			Dipoles	SSS (arc)	LSS		
Secteur 1-2					**0**					**0**					**0**
Secteur 2-3					**0**	23	2		1	**26**	23	2		1	**26**
Secteur 3-4	77	23		1	**101**	77	26	2	3	**108**	154	49	2	4	**209**
Secteur 4-5	77	27	4	2	**110**	77	26	4	3	**110**	154	53	8	5	**220**
Secteur 5-6	77	24	3	3	**107**	76	20			**96**	153	44	3	3	**203**
Secteur 6-7	33	12			**45**		10			**10**	33	22			**55**
Secteur 7-8	77	28	1	3	**109**	77	27	8	7	**119**	154	55	9	10	**228**
Secteur 8-1	77	28	8	5	**118**	77	27	7	4	**115**	154	55	15	9	**233**

LHC	825	280	37	32	**1174**
Cryo-magnets			**1142**		

Prepared by Pascal Ponsot TS-IC 11/10/2006 09:17

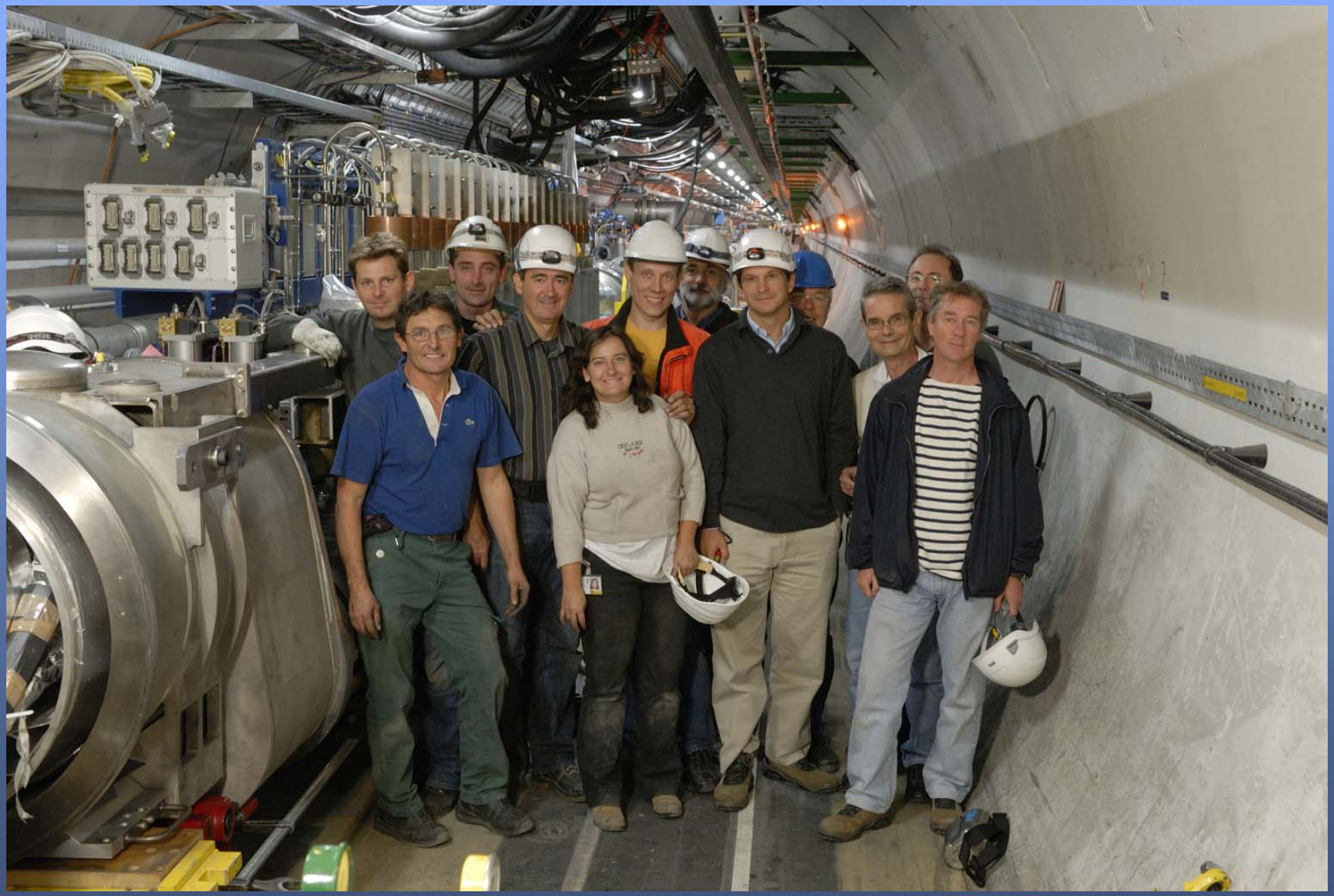
Cryogenics overview



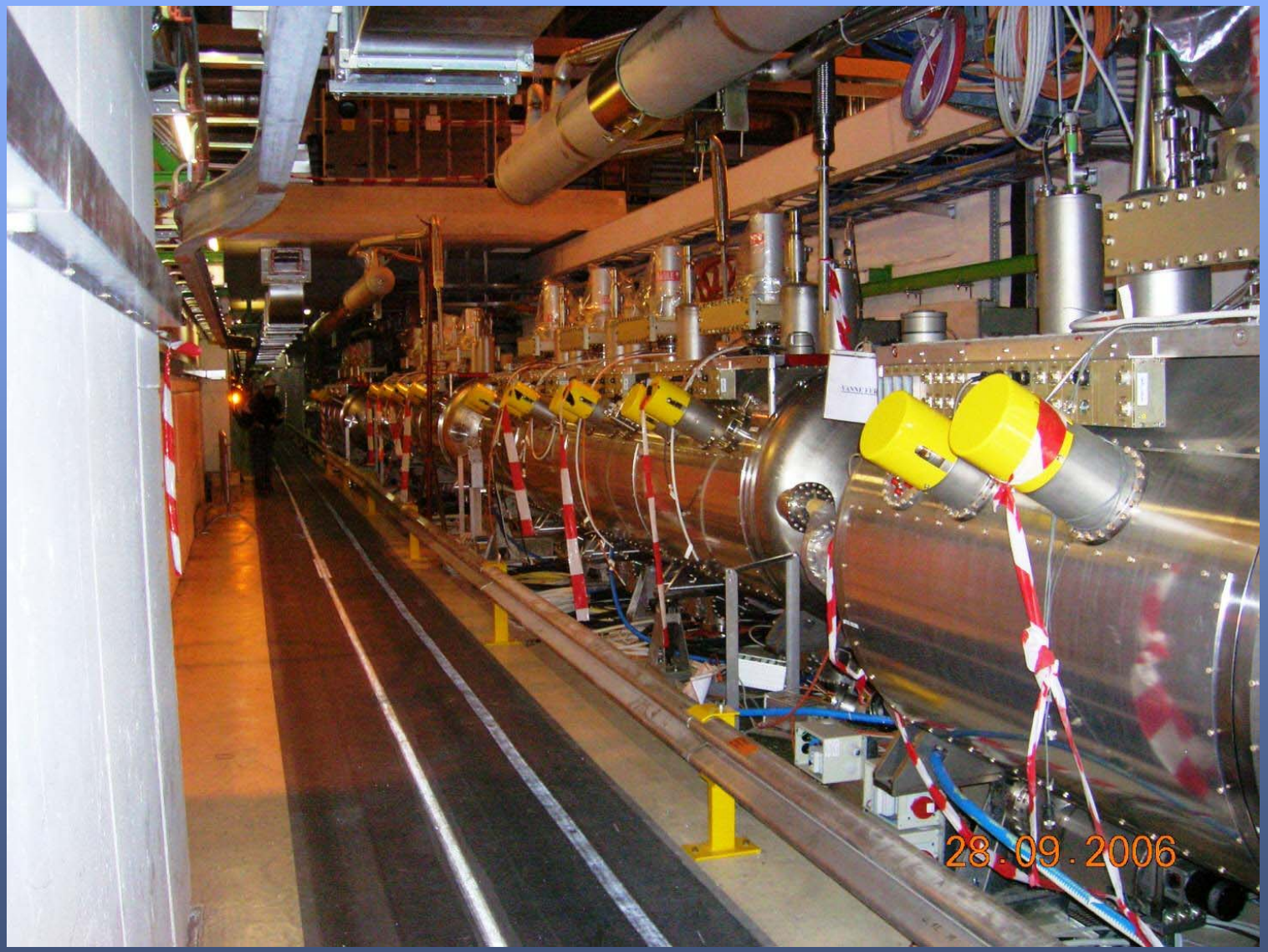
UJ22: TI2 to main tunnel junction

First DFB with Arc Termination Module

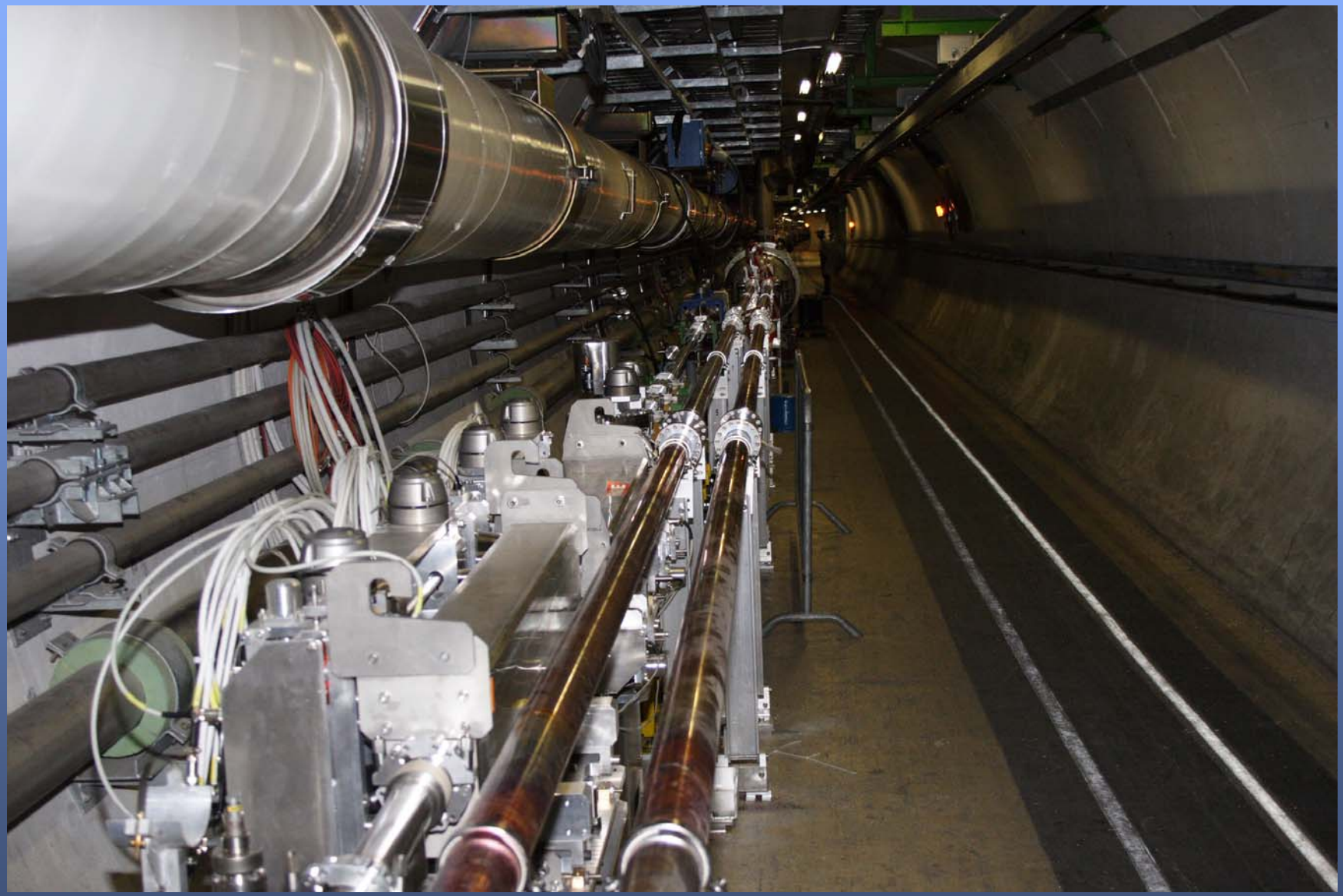
First DFB in the tunnel



RF modules



Collimator and transfer line



Collimator installation

Important Milestones

Last magnet delivered	October 2006
Last magnet tested	December 2006
Last magnet installed	March 2007
Machine closed	August 2007
First collisions	November 2007

Machine Commissioning

- Sectors 7-8 and 8-1 will be fully commissioned up to 7 TeV in 2006-2007
- The other sectors will be commissioned up to the field needed for de-Gaussing (1.2 TeV)
- Initial operation will be at 900 GeV (CM) with a static machine (no ramp, no squeeze) to debug machine and detectors.
- Full commissioning up to 7 TeV will be done in the winter 2008 shutdown ready for a high energy run in 2008.

Conclusions

- The QRL and DFB problems are now resolved. There is some delay in collimator production but sufficient collimators are available for 2007. The rest will be installed in 2008.
- Seven octants of the machine have been liberated for magnet installation and interconnect work is proceeding in 4 octants in parallel. Magnet installation is now steady at 25/wk . Installation will finish end March 2007. The machine will be closed in August 2007.
- Every effort is being made to establish colliding beams before the end of 2007 at reduced energy. The full commissioning up to 7 TeV will be done during the 2008 winter shutdown ready for a Physics run at full energy in 2008.