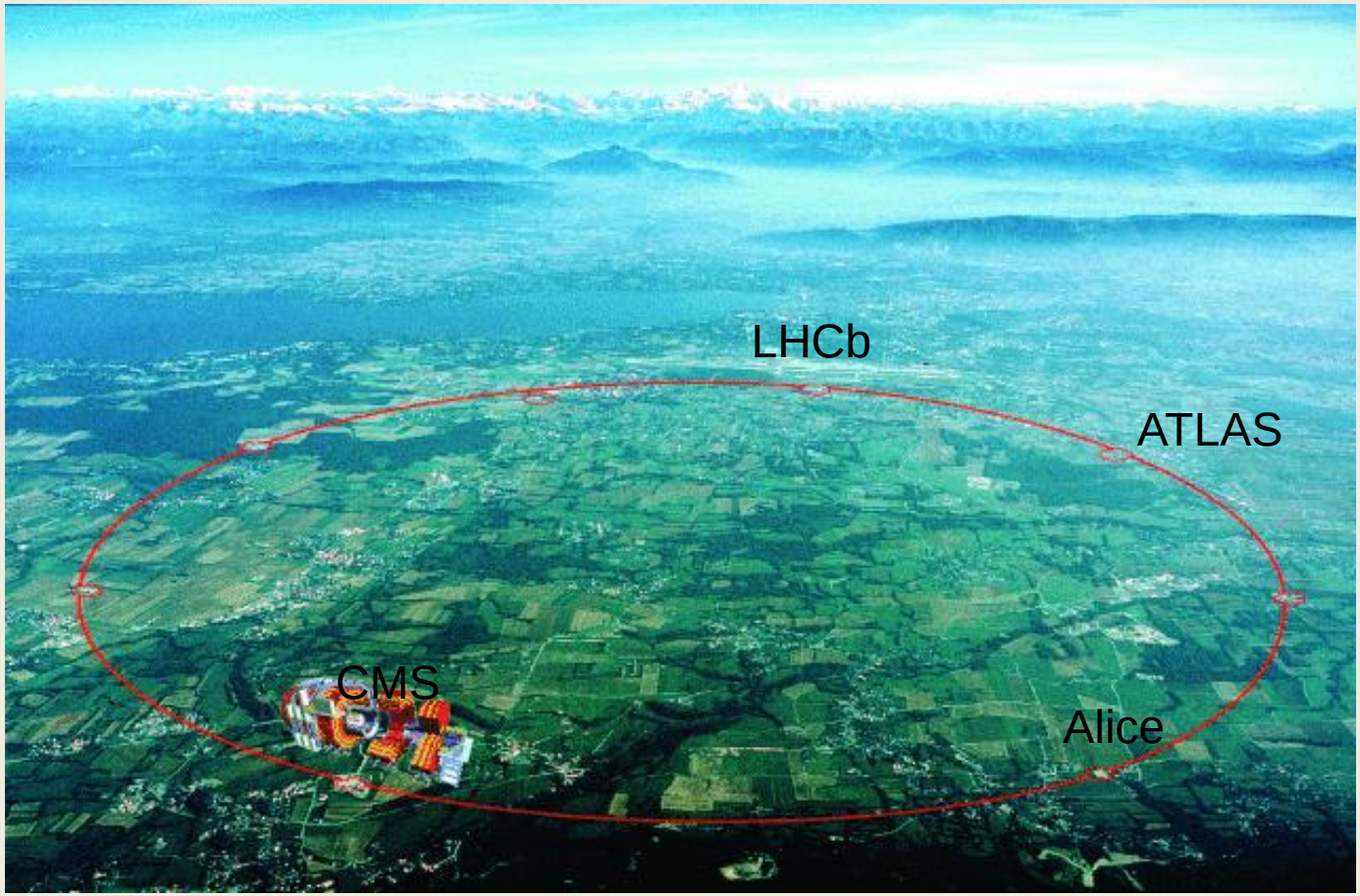
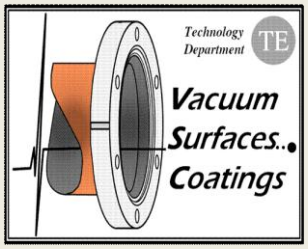
# TE-VSC work during 2011/2012 xmasbreak in LHC experimental areas



# OUTLINE




- INTRODUCTION
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- SAFETY
- PROCEDURE
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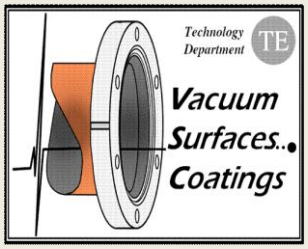
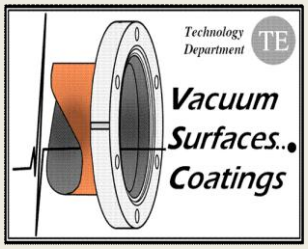
# INTRODUCTION



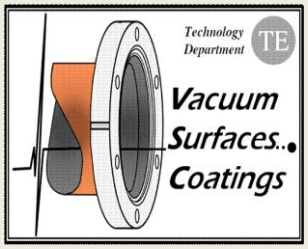

- Goal
  - Allow detectors opening/closing while keeping full integrity of experimental beam line
  - Recovery of operational alignment of experimental vacuum beam line
  - Active and realistic training for new comers
- How
  - 5 people from EIV section ,1 from LBV,1 from ICM and extra help from CMS experiment due to absence of S.Di Vincenzo
  - With close collaboration with experiments coordinators(weekly meeting) & Glimos
  - According to preliminary planning discussed between TE/VSC,Experiment coordinators and EN/MEF
  - With contribution of other Cern Groups PH/UCM,EN/HE
  - Procedures for detectors access and dedicated tooling
- When
  - Active interventions from 09/12/2011 (LHCb)till 23/02/2012(CMS)

# ACCESS CONDITION



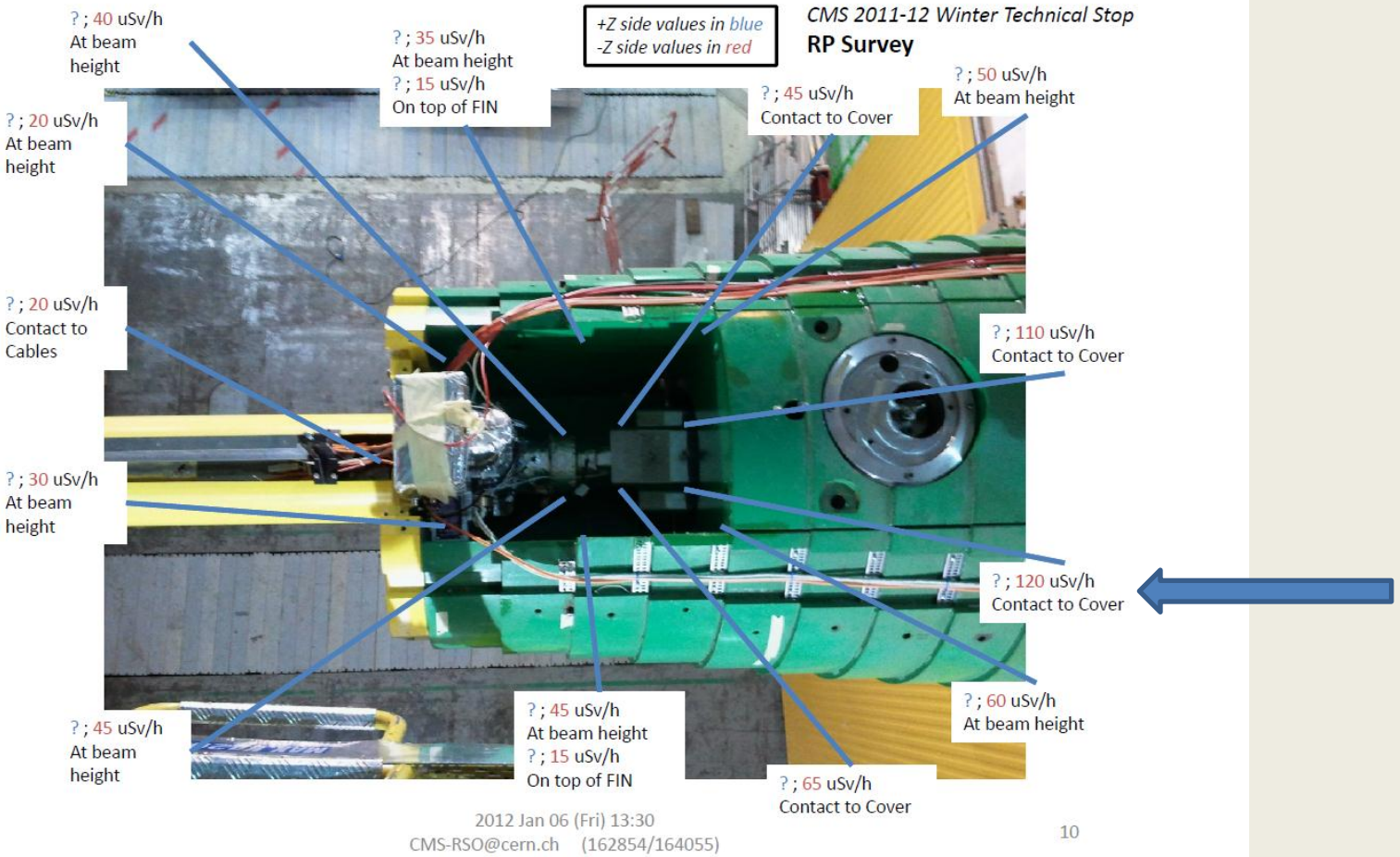

- Access allowed, or detector allowed to move near beam pipe only if beam line is at Neon atmospheric pressure ( work done by LBV sec.)
- Scaffolding or dedicated platform normally supplied by experimental technical team
- Specific request needs to be made before any kind of intervention by team leader; Impact WD for ATLAS & LHCb, ACT for CMS.

# SAFETY

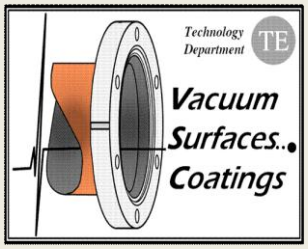



- Mandatory online training (one for each experiment, Level 4C for having access to experiment cavern)
- Work at heights training mandatory
- Mandatory training for use of Hydraulic platform + dedicated additional training for Atlas (use of special platform)
- Use of active dosimeter

# SAFETY


+Z side values in blue
-Z side values in red
CMS 2011-12 Winter Technical Stop
RP Survey
? ; 40 uSv/h
At beam height
? ; 35 uSv/h
At beam height
? ; 15 uSv/h
On top of FIN
? ; 45 uSv/h
Contact to Cover
? ; 50 uSv/h
At beam height
? ; 20 uSv/h
At beam height
? ; 20 uSv/h
Contact to Cables
? ; 110 uSv/h
Contact to Cover
? ; 30 uSv/h
At beam height
? ; 120 uSv/h
Contact to Cover
? ; 60 uSv/h
At beam height
? ; 45 uSv/h
At beam height
? ; 45 uSv/h
At beam height
? ; 15 uSv/h
On top of FIN
? ; 65 uSv/h
Contact to Cover
2012 Jan 06 (Fri) 13:30
CMS-RSO@cern.ch (162854/164055)
10

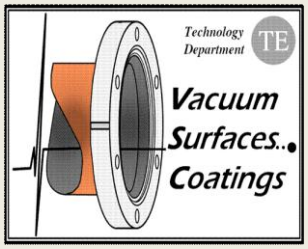
# PROCEDURE




- safety procedure: mechanical intervention on LHC experimental vacuum area

  (Edms 1135357)
- installation procedure:
  - Atlas Edms 973553 (needs to be updated)
  - CMS Edms 1075283 (needs to be updated)
  - LHCb Edms 993637l (needs to be updated)
  - Alice

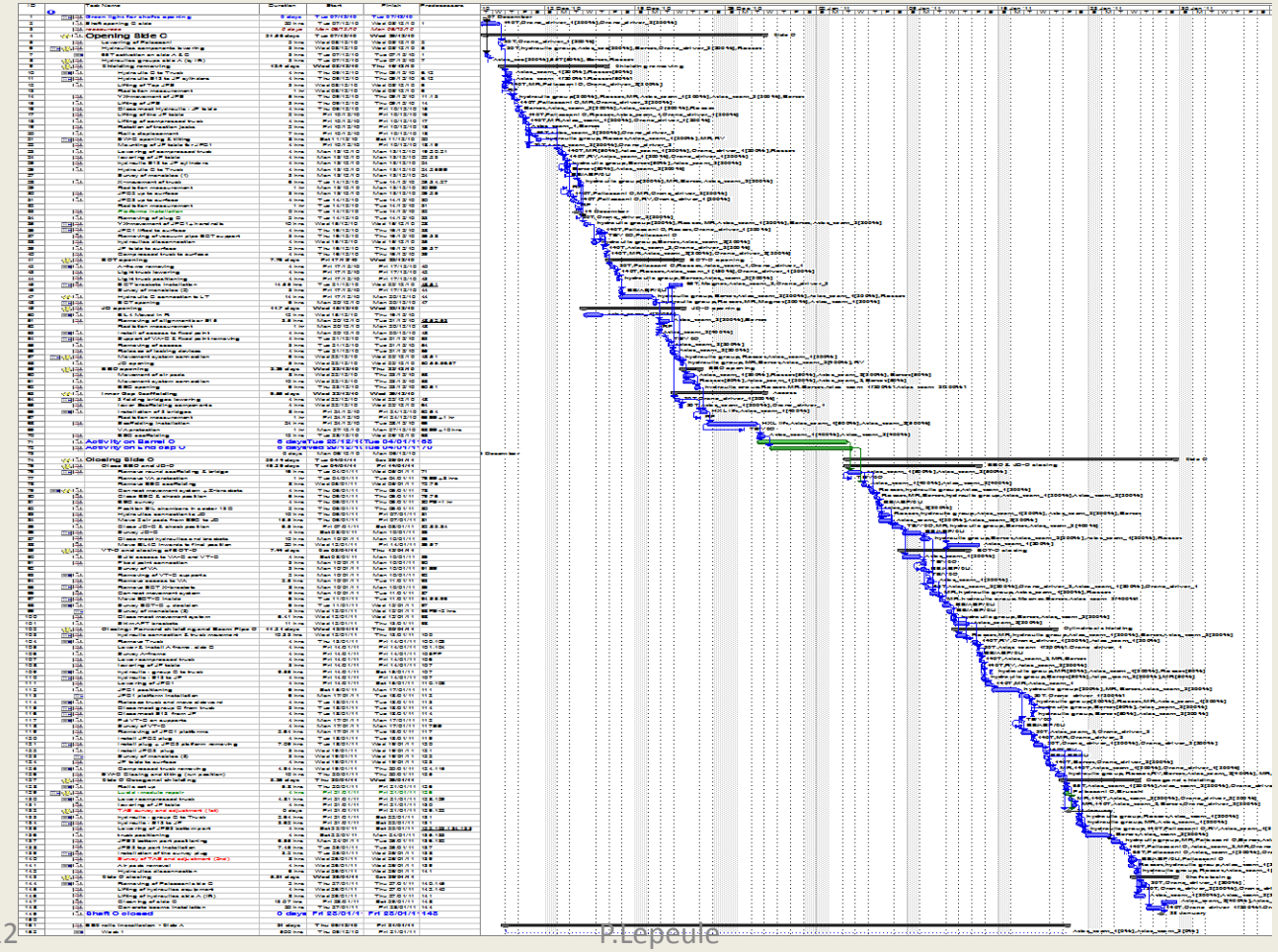
# 2011/2012 ACTIVITIES




- Main goal is to have detector ready/repaired for last run before LS1
- Make X-rays investigation of shielded modules
- Limited 10 weeks break was initially proposed but slightly extended by 1week (CMS module)
- planning for VSC staff organization was updated many times …with the goal to avoid more than 2 overlaps ( 2 teams maxi available)

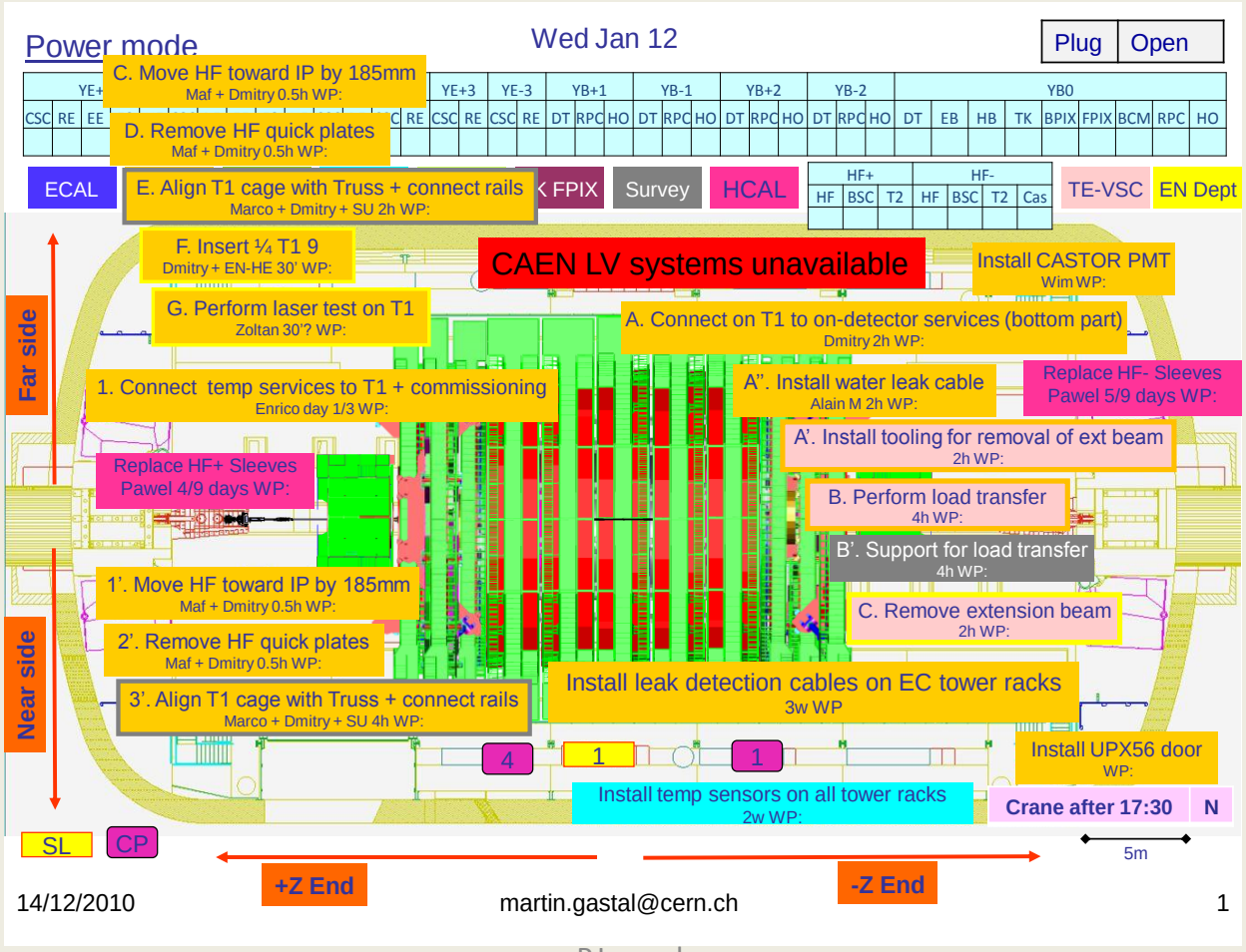
# 2011/2012 PLANNING

- ATLAS style

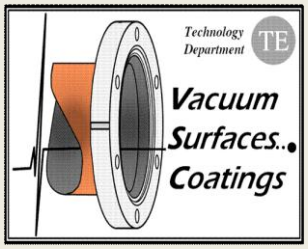


# 2010/2011 PLANNING

- CMS style



# 2010/2012 PLANNING

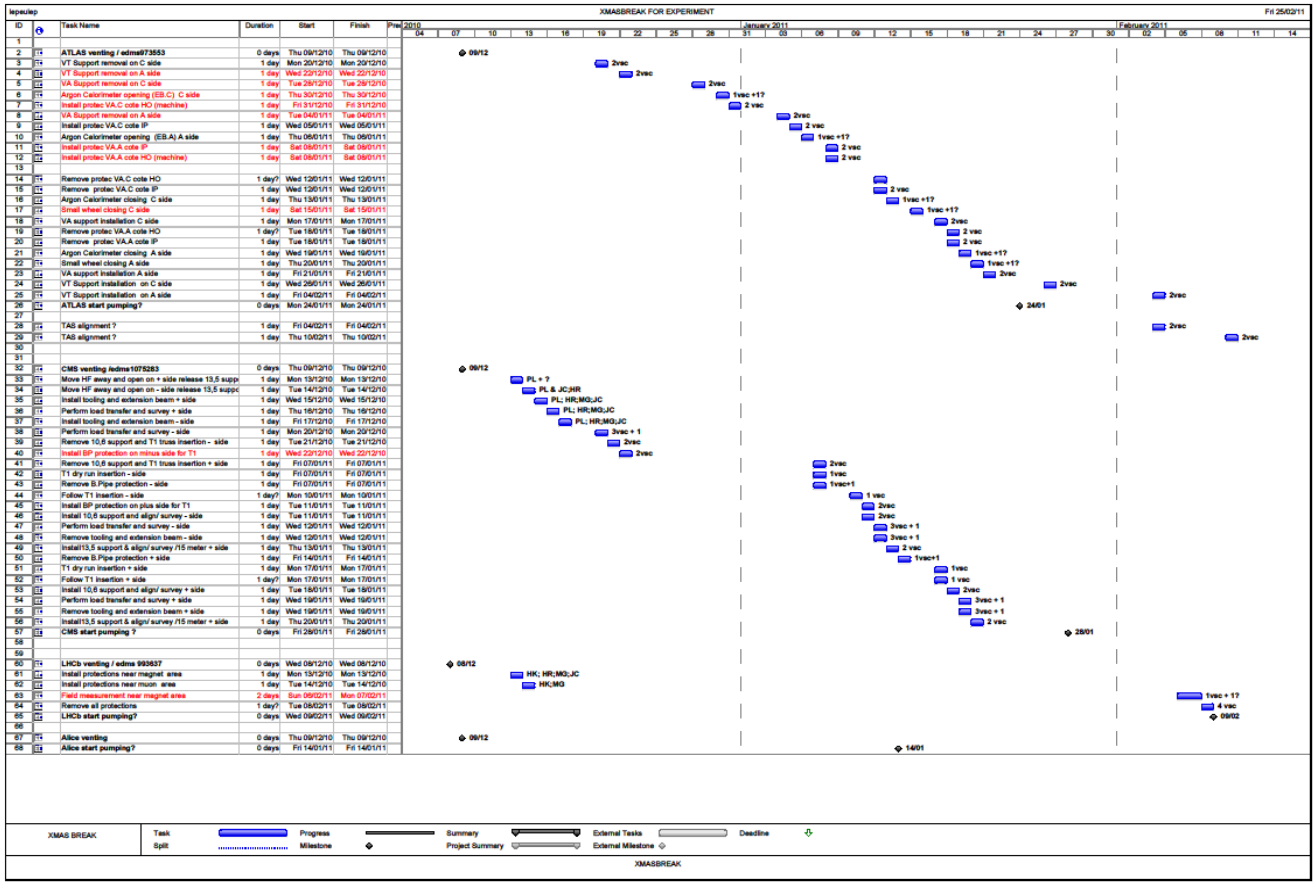



- LHCb style based on written report

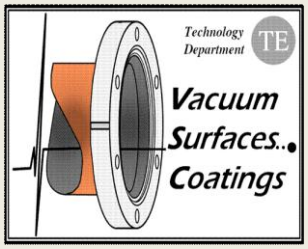
Ongoing activities, achievement, open issues.
==========
BLS: Cable pulling in progress.
VELO :Insulation of the C02 transfer lines to be completed by end of this week. The latest Al protections may be installed next monday but it should not prevent the cooling of the transfer lines.
The work on the Pile-Up electronic is delayed.
RICH1: Top HPD box in place. Gas tightness measurement have been performed and an attempt to fix a leak as been performed. Depending on the outcome, the installation of the bottom HPD box scheduled for this afternoon may be delayed. The dust from the insulation work should be cleaned.
Survey needs and schedule must be finilized with the survey group.
ST/IT The replacement of the svc box cooling pipes is completed. The plan is to close the detector by 03/02. There is no need for survey. The detector will be aligned with Magnet off data.
ST/TT Re-installation of modules and VCSEL test still scheduled for
31/01.2-3 days of work will be needed. The insulation of the C6F14 line has bee fixed.
OT: Proceed with irradiation tests, as soon as the intervention on the lighting at the ceiling is completed.
CALO: Work on ECAL A and C side. The nacelle on a side seems too short to access the uppermost part of the HCAL. A solution has to be found quickly. The ECAL will be closed tomorrow and the work on the HCAL will start next week.
The opening of the ECAL was not smooth and the mechanics of the motion system will be cleaned before the closure.
The maraton (2) of the SPD VFE has been exchanged and the ECAL/HCAL FEB and cables will be checked on the platform.
MUON:Nacelle will be removed as soon as the work on HCAL is completed.
M1 closure test wil be performed next week.
ONLINE. It is mandatory for many sub detectors to have a reduced rate full DAQ system available.
Radiation. All the SAM (Sample Activation Materials) in place (except
the one close to RICH1)
AOB

# 2011/2012 PLANNING

- VSC synthesis planning for resources analyses

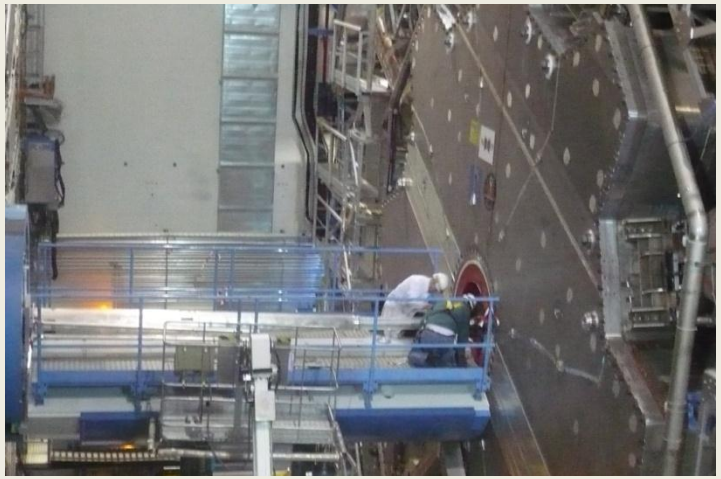


# ATLAS

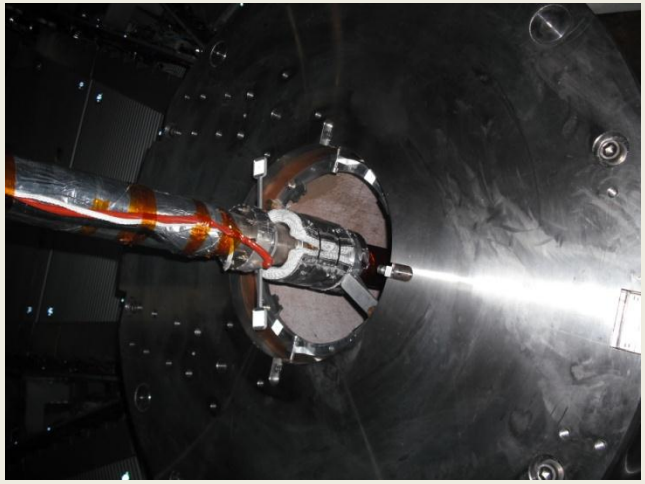



- The goal of the full opening of ATLAS experiment on both sides was to give access to the Liquid Argon Front End Crates and to the Tile Drawer, in order to install new HT power supplies
- On C side new muons chambers (EEL,EES types) was installed to complete forward spectrometer

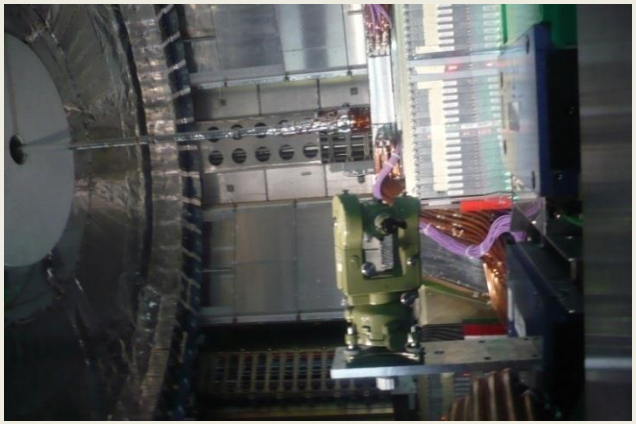
# ATLAS



VT fixed support

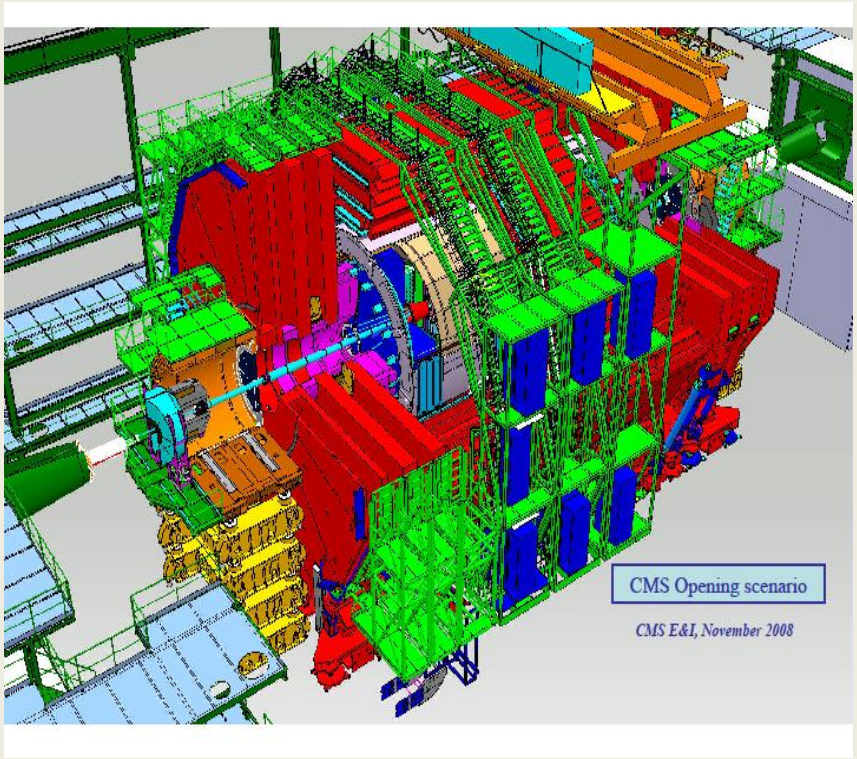


VA fixed support



Argon End Cap follow up

# CMS




The goal of partial opening of CMS on both sides was to:

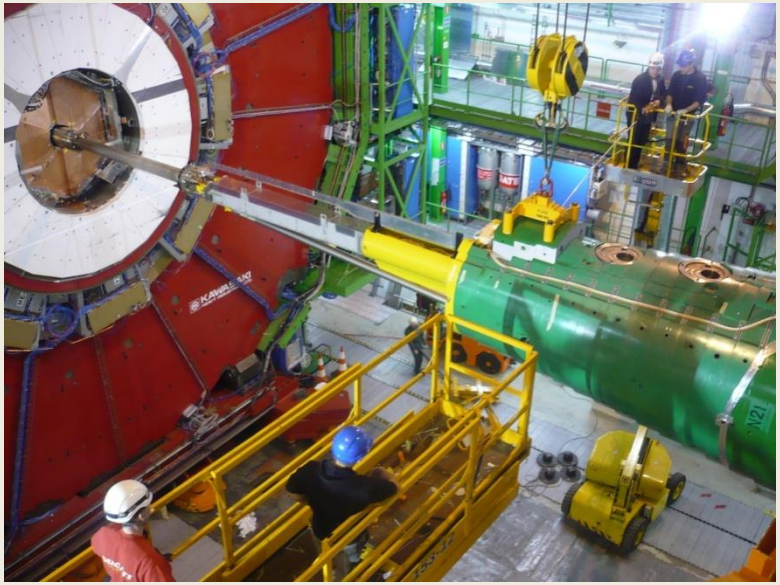
- test castor removal at beam line level
- do Xrays of shielded modules
- perform partial bake out of forward regions
- install new PLT on 54 side near CT2 pipe

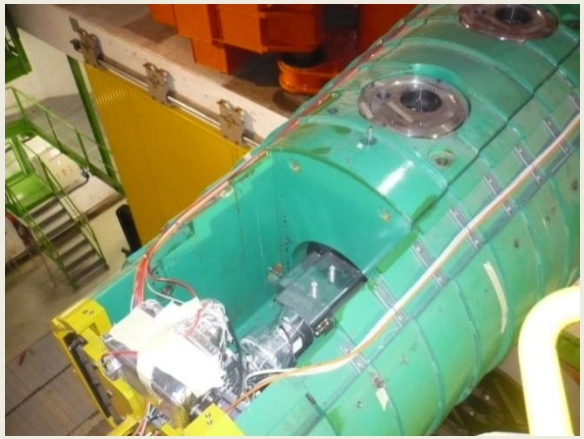
# CMS

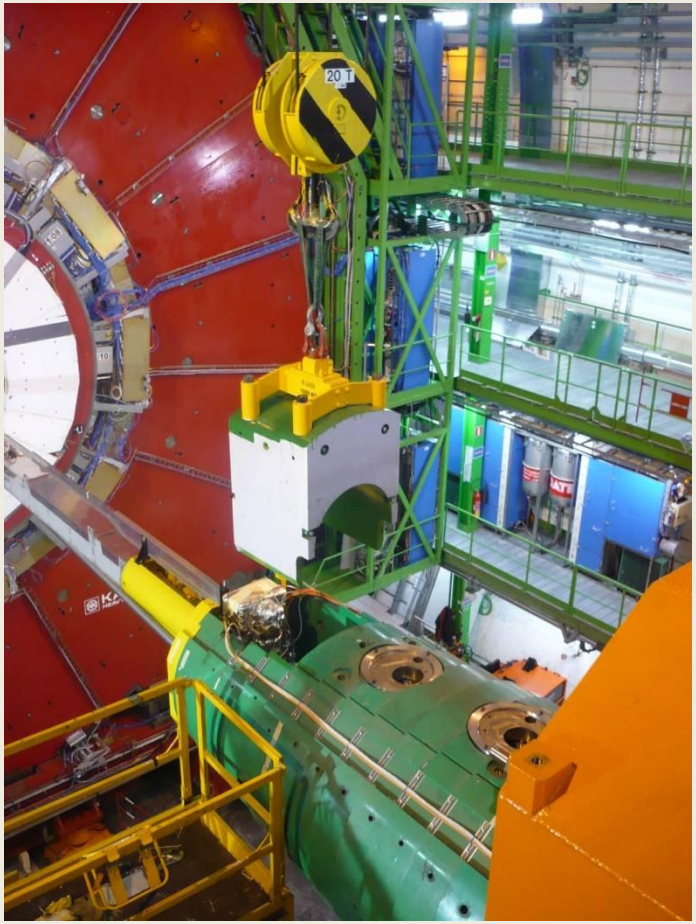
test castor removal at beam line level

NEW

# CMS





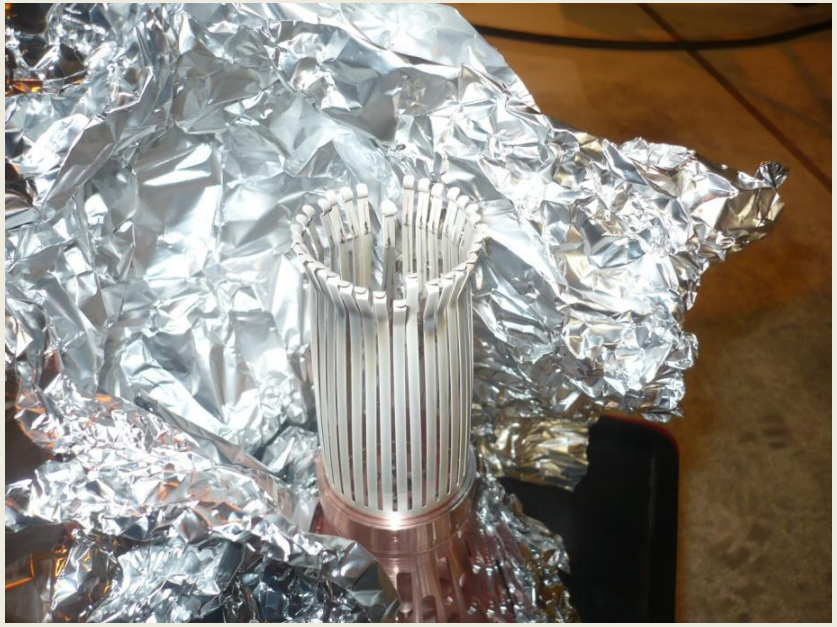



Xrays of shielded modules

NEW

NEW

# CMS

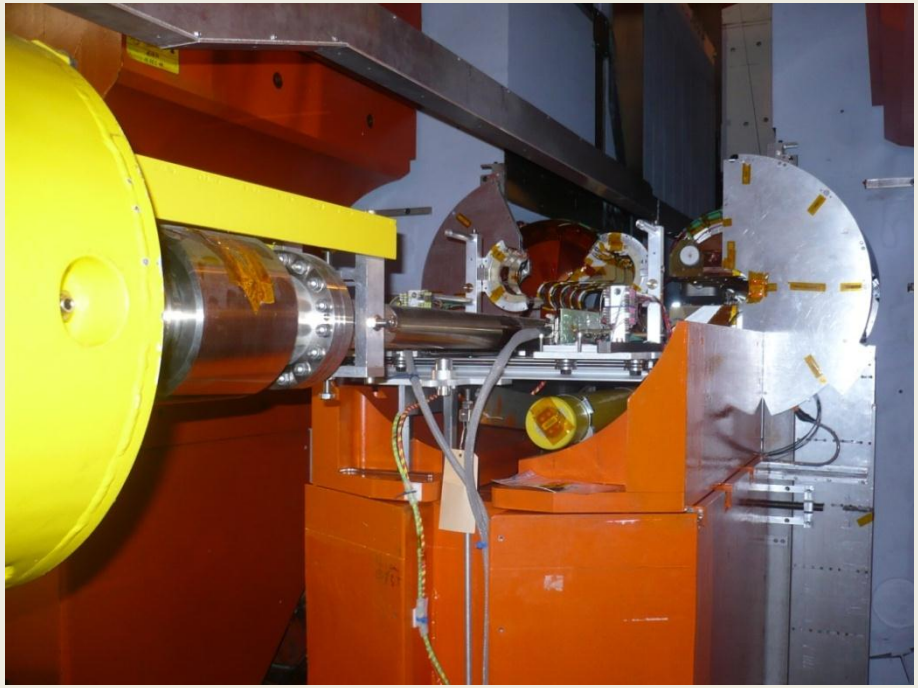


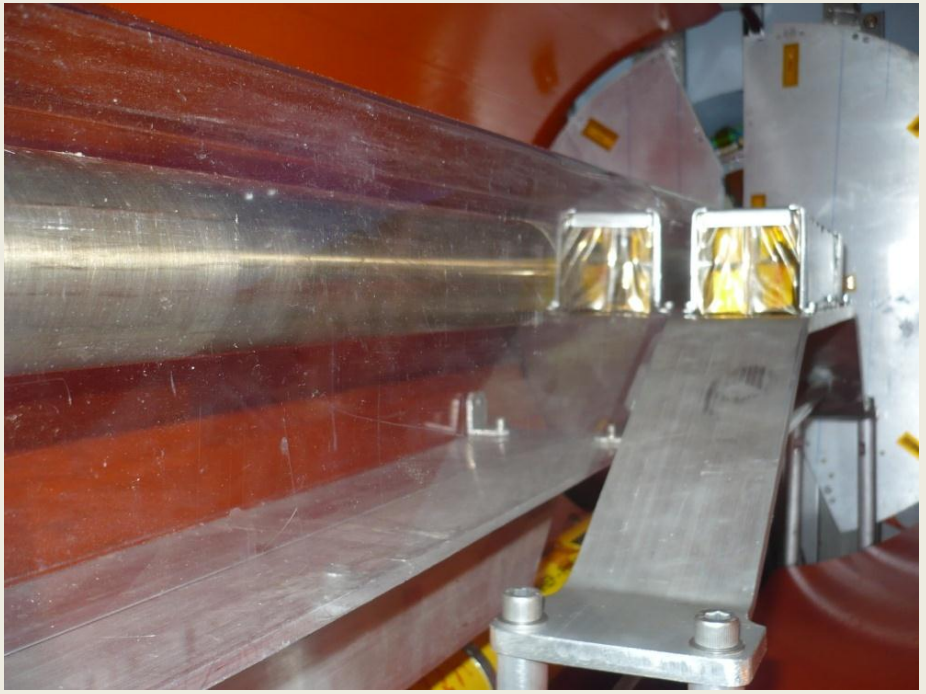
Decision was taken to modify and change 18-meter modules and to perform partial bake out of forward region

# CMS

Mechanical measurements were done in order to compare nominal Position of components with reality

# CMS





install new PLT detector
on 54 side for calibration

NEW

4 Lead-Tungstenate crystals
to study radiation damage
under "LHC" conditions

# LHCb

- Lhcb needed access to change front end electronics on detectors 'Inner Tracker - IT ', 'Outer Tracker - OT', 'Muon - M1' ECAL, Hadronique -HCAL et Preshower .

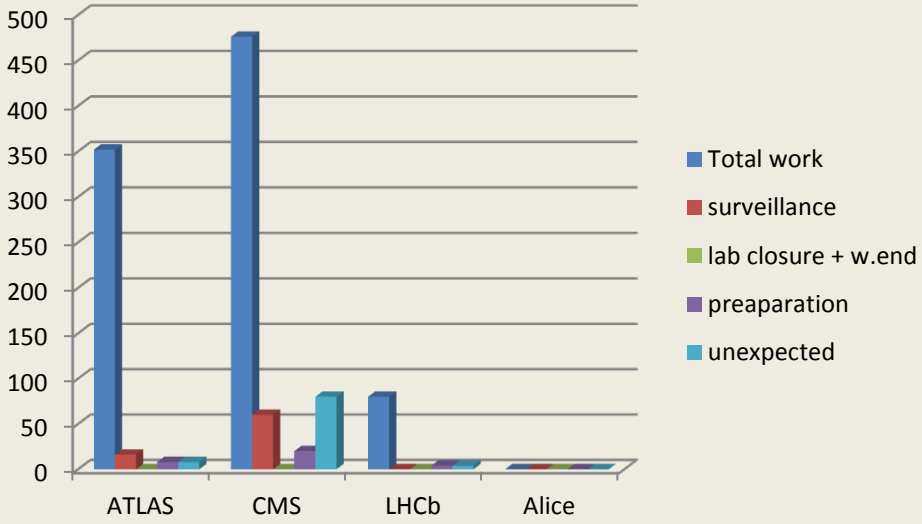
- TE-VSC has installed protections around beam pipe (HCAL,ECAL region) and new safety shims to avoid any unexpected closure (2011 incident)

# LHCb

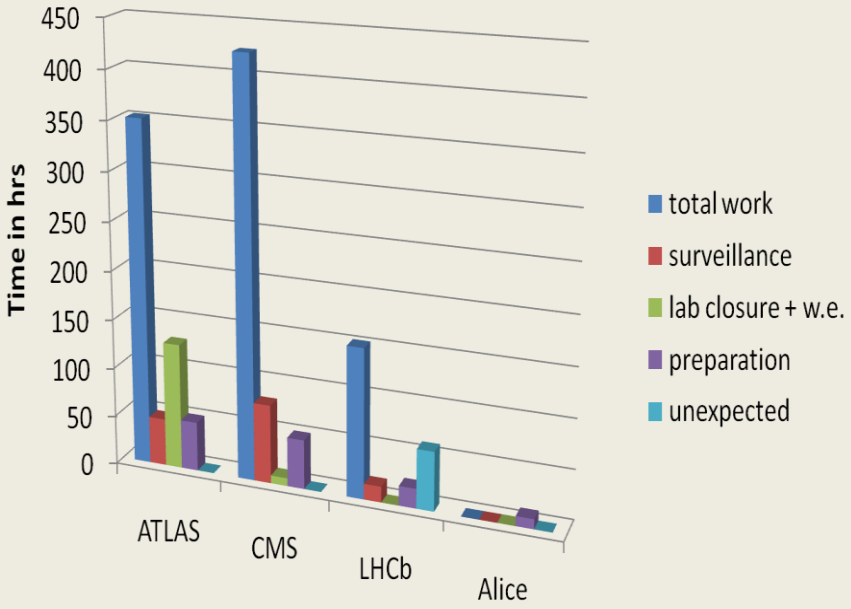
•TE-VSC has also installed partial protections around beam pipe at the entrance of magnet

•Some improvements for VSC staff access need to be discussed with LHCb technical coordination

# STATISTICS (EIV staff)

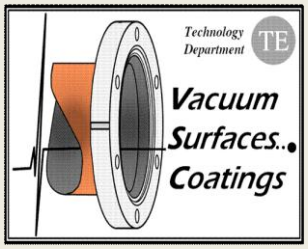



Xmas 2011/2012




Xmas2010/2011

# CONCLUSION




- Thanks to the flexibility and availability of all the TE-VSC teams we could follow small acceleration/changes of experimental activities during 2011/2012 xmasbreak.
- A weekly planning with resources allocations for the following week and close contact with technical coordination are always necessary .
- More fully trained people in ICM & LBV sections would improve TE-VSC efficiency ( working in heights and license for drawing mobile hydraulic platform)