

# DT work at ISR

BMU Annual Review

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# Chamber Reception

- Chambers fully tested at sites
- 5 Chamber/Transport Frame
- Storage in horizontal stacks
- Acceptance tests:
  - Gas tightness
  - HV test





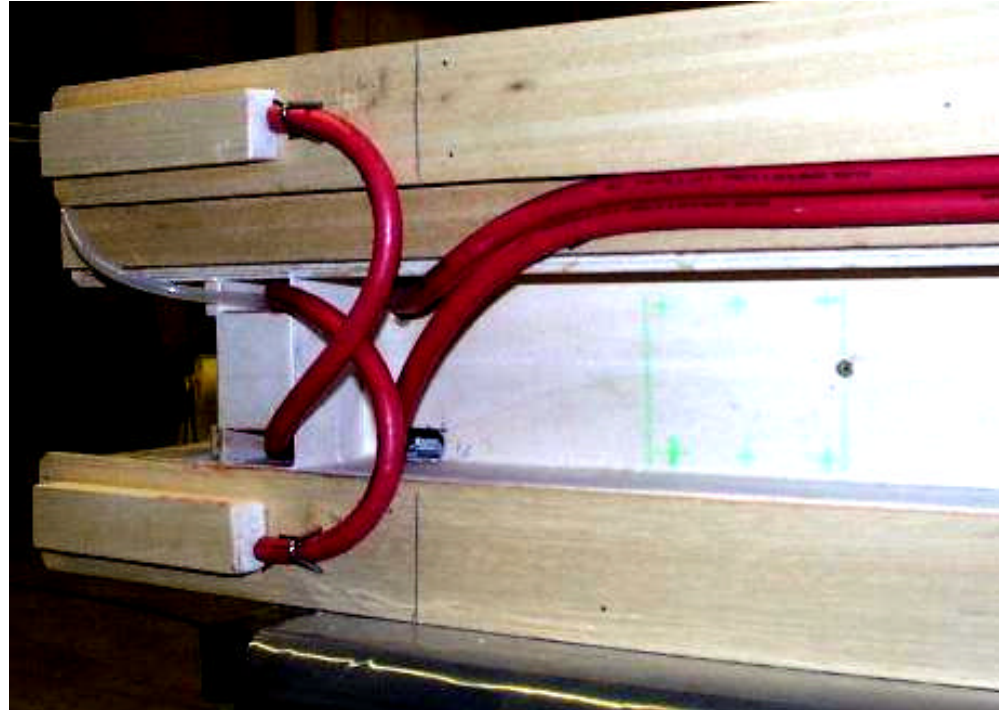
- F SL HV Cables
- Gas manifold
- FE Cooling connections
- LV Splitter Boards + Cables

- LED forks
- DCS cabling



~80 – 100 Chambers

## HV On Chamber Cabling



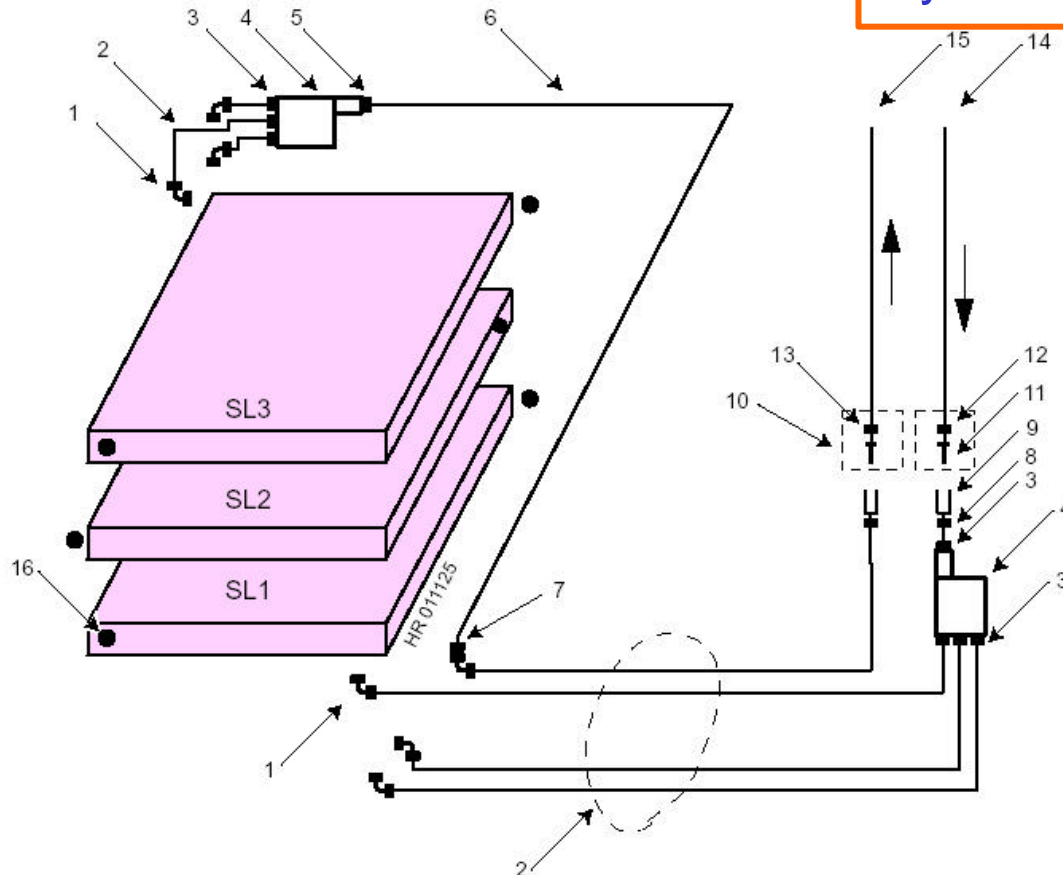
HV Cables manufactured by IHEP Beijing,  
one connector to be mounted on chamber  
for F SLs (4 connectors/chamber) .

➔ Dismount chamber un-cabling only one side

## Gas Connection of a DT Chamber

List of Components

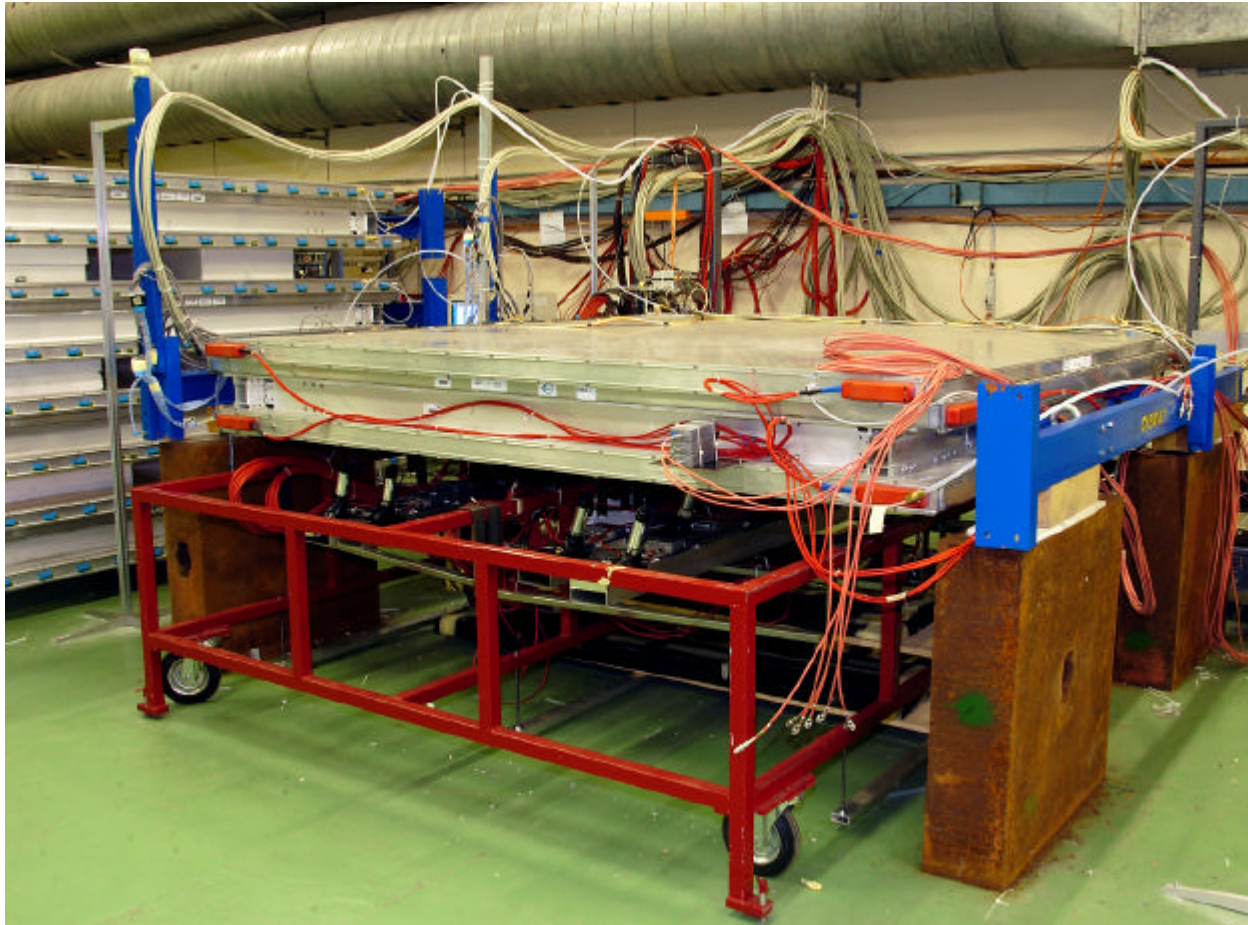
Connections to gas system on wheel



Gas manifolds with pressure sensors done in Aachen

## Tasks with Complete Chambers

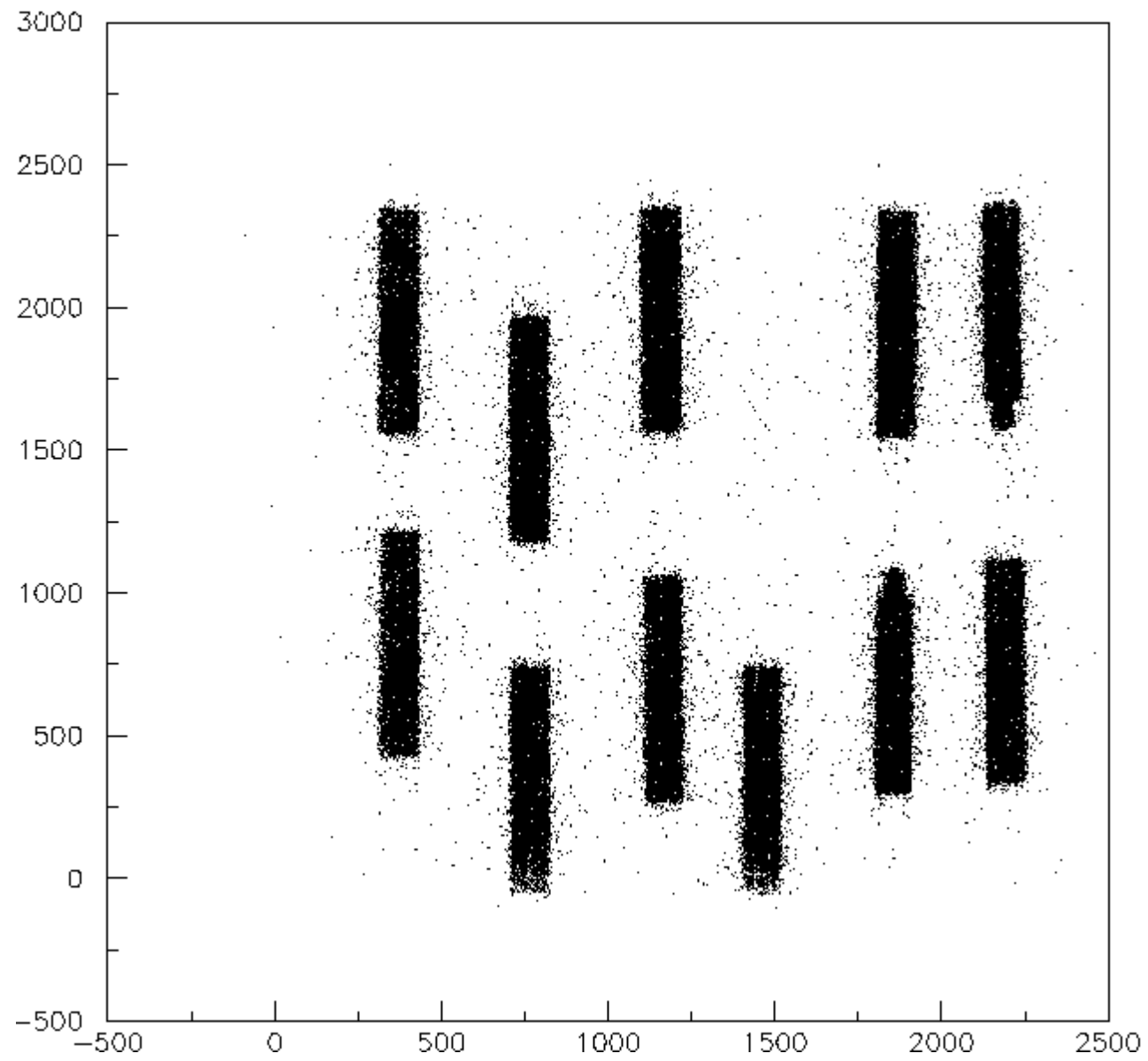
- Long term HV tests
- Functionality tests
- T Front-End Cabling (signal+pulser)
- Minicrate installation
- cabling to minicrate
- Cooling connection SL to minicrate
- Alignment calibration
- Coupling to RPC
- Cooling connection DT to RPC and leak test
- Installation in Transport frame to SX5



- Cosmic ray
- Noise rates
- FE Pulser



Test Chamber Functionality



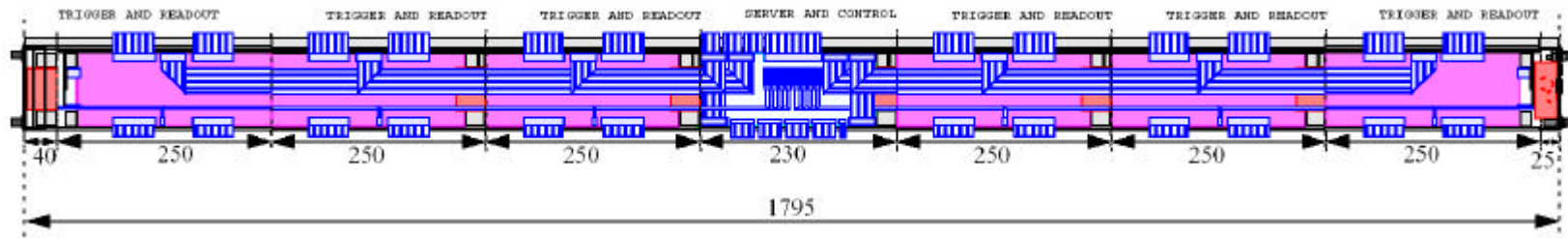
Reconstructed hits



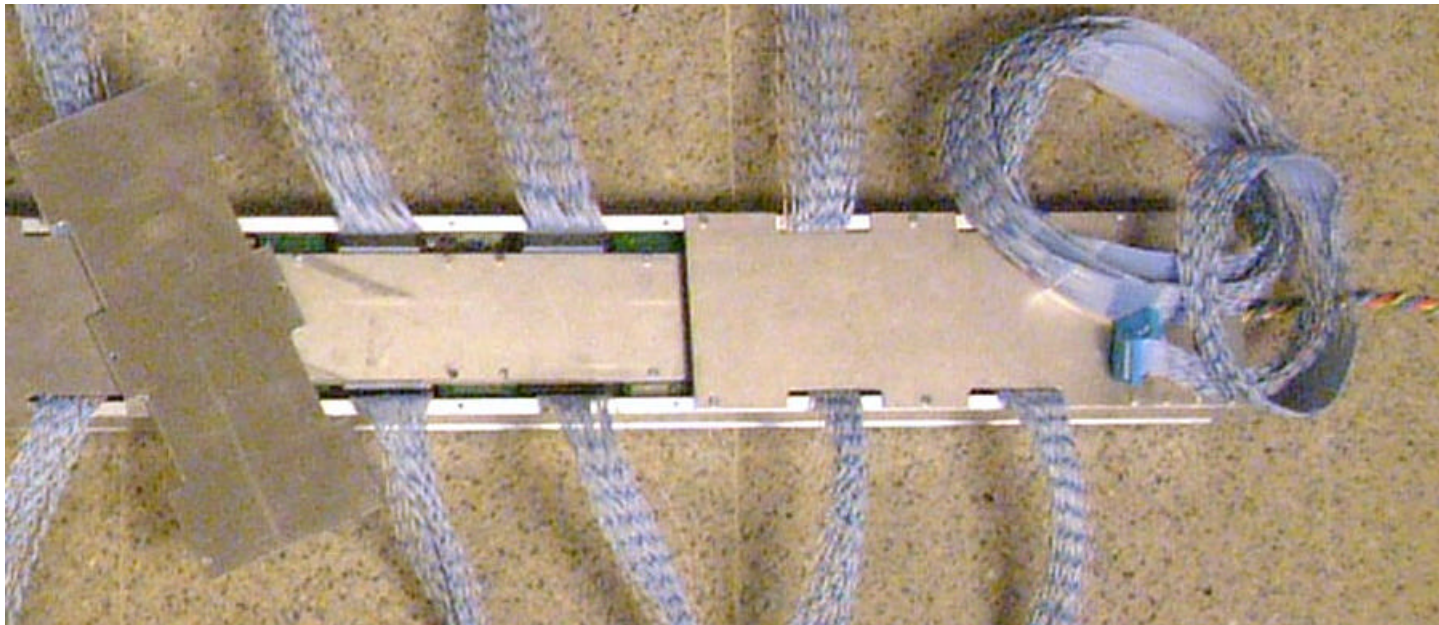


Occasionally some repair work by experts

## MB2 Minicrate



CIEMAT prototype



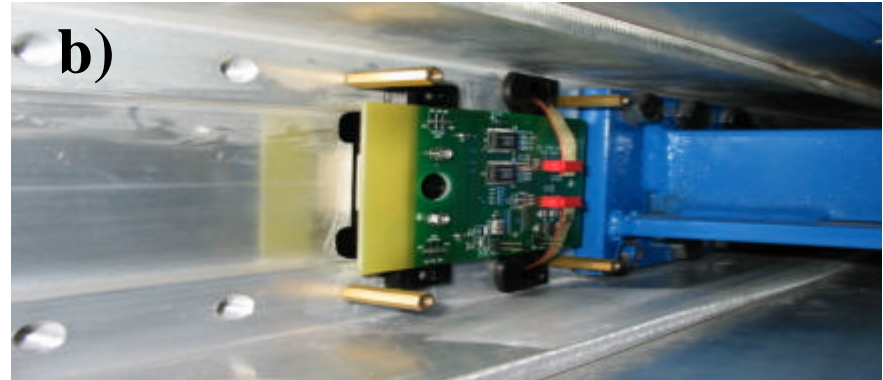
- TDC, Read-out, Control + Trigger Electronics
- 12 to 18 Front End Cables, ~ 10 Pulser cables, 1 DCS/SL

# LED Holders Installation

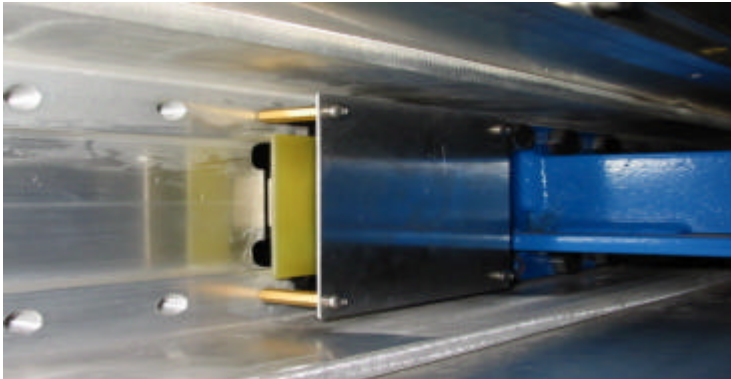
a)



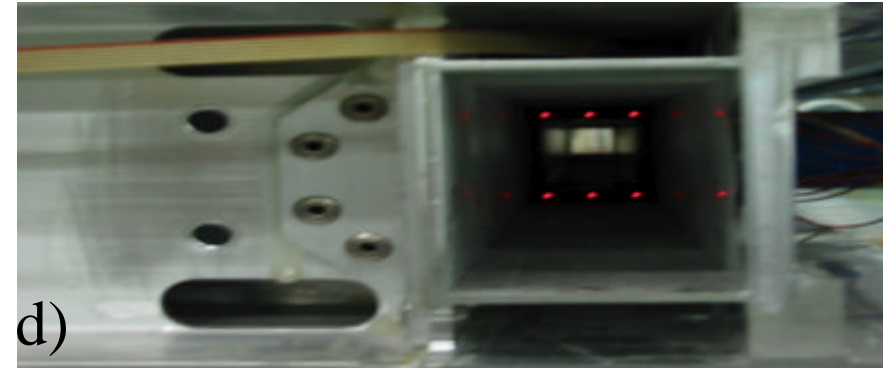
b)



c)



d)



- a) LED holder area
- b) Spacers + cables
- c) Full assembly
- d) LEDs at nominal current

LED forks arrive from Debrechen already calibrated.

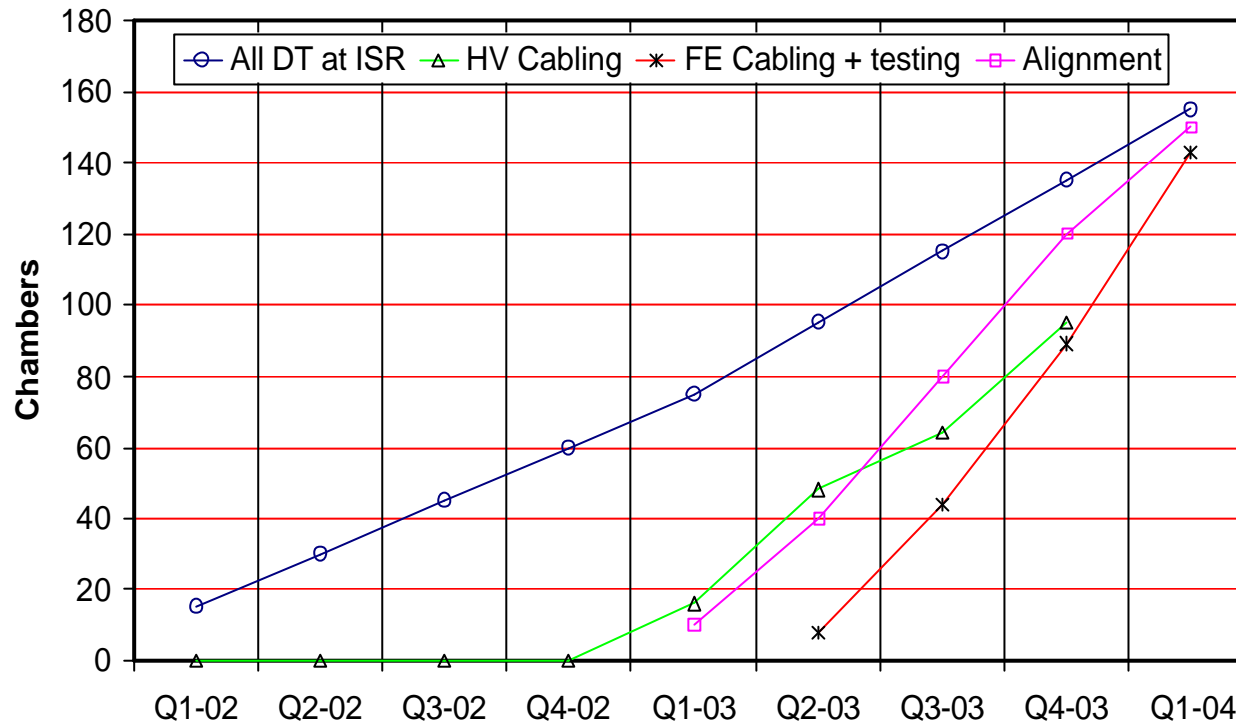
## Alignment Calibration Stand



Survey completed on 19/09  
Plate location measured  
with LTD < 40 $\mu$ m accuracy

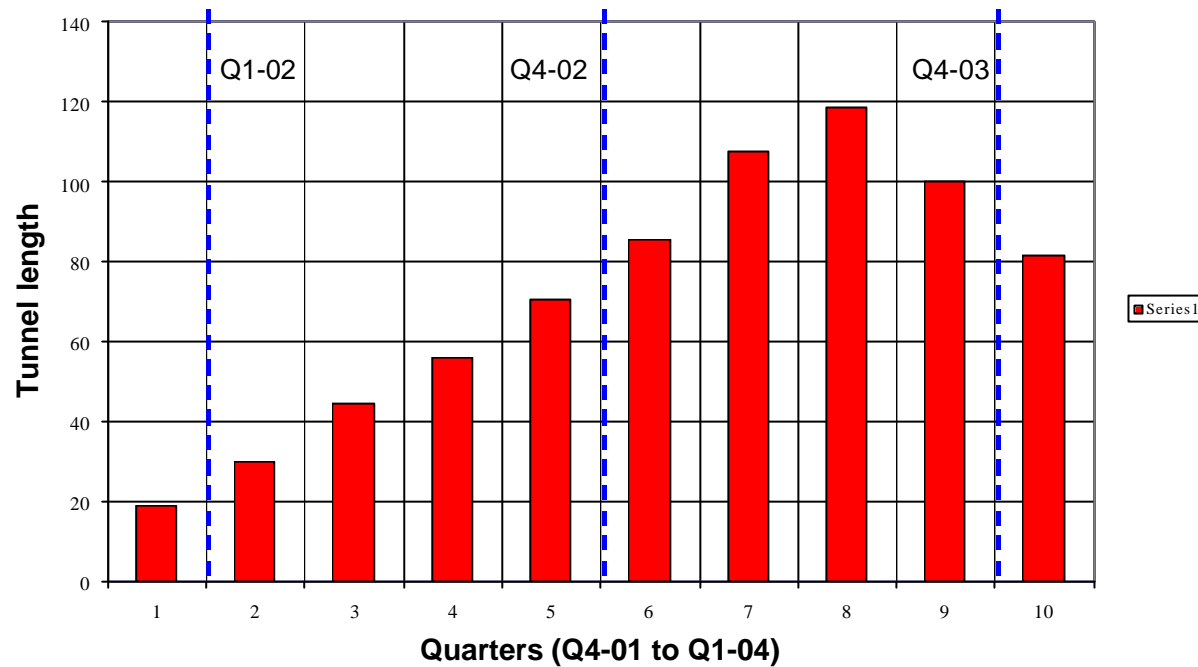
Forks measured wrt Plates  
Photogrammetry of Corner  
blocks on SL wrt Plates

→ LEDs wrt Corner blocks

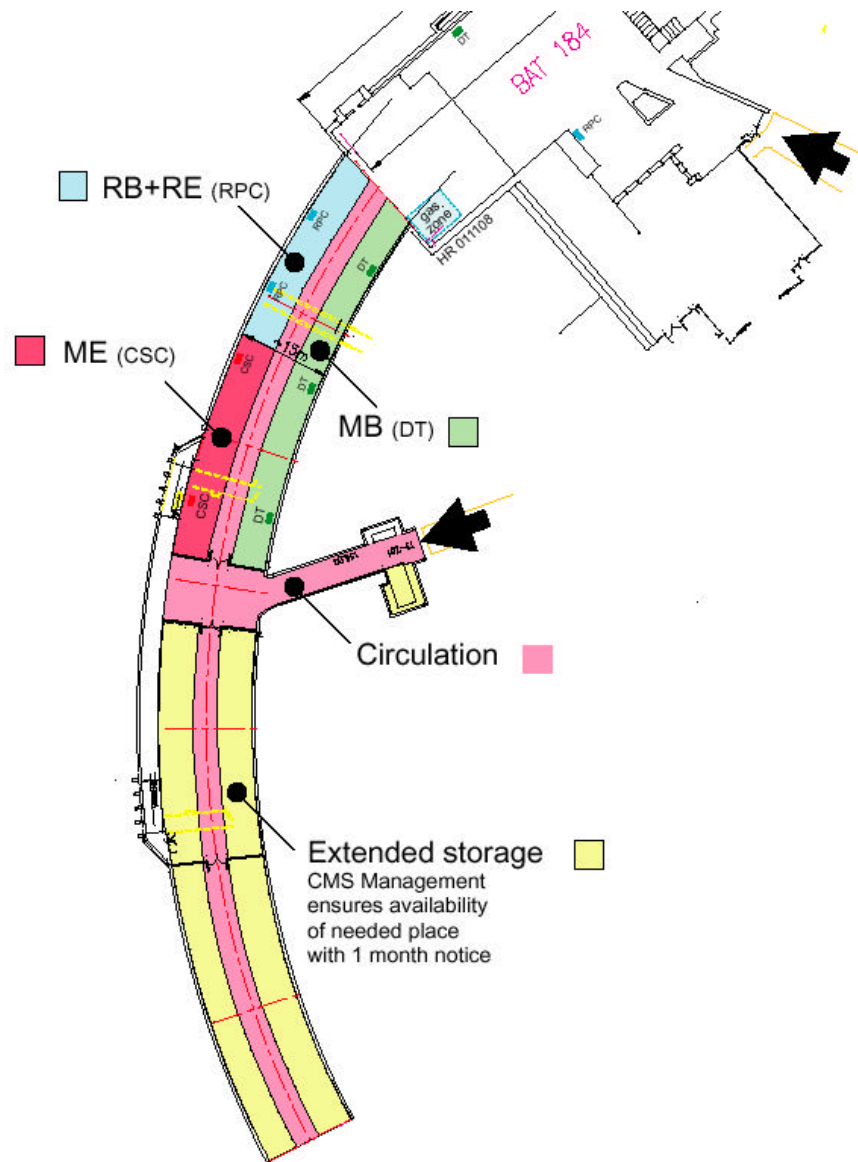


- HV cables for YB0 at Legnaro (train IHEP people)
- HV cabling 1DT/day 1 operator
- FE cabling 3 => 5 DT / Week (1-2 operators)
- Alignment Calibration 1 => 2 DT/day 2-operators

## Tunnel Length Required (meters)



- One tunnel section ~60m
- 2 Sections (T3+T4) needed in Q2-03
- Space in I4 Hall needed for finished chambers and unforeseen task/conflicts



## Summary

- 14 MB2 chambers are already under test at ISR
- By the end of the year 60 DTs will be ready
  - ➔ Space at ISR will be tight
- A lot of progress in ISR infrastructure, gas distribution, Ethernet link ready end of October, Clean room refurbished for CSCs, mechanic shop equipped, garbage is being removed
- A lot of work to make bare DTs ready to install, team of 4 technicians + physicists needed
- It is a long way to Beijing and back.....