

# RADMON (RADIation MONitoring)

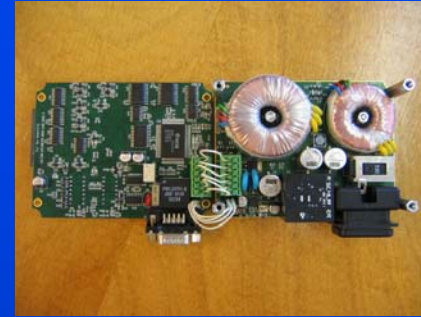
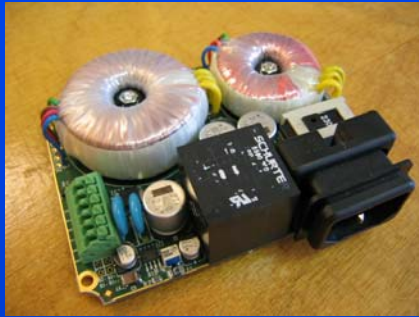
## TS-LEA-RAD

- C. Pignard
  - Hardware design / development / testing
- T. Wijnands
  - Software development
  - Physics
  - Project management
- D. Mcfarlane (TS-LEA-DES)
  - Onsite supervision / installation
- K. Cwalina
  - Software development

# Key points design

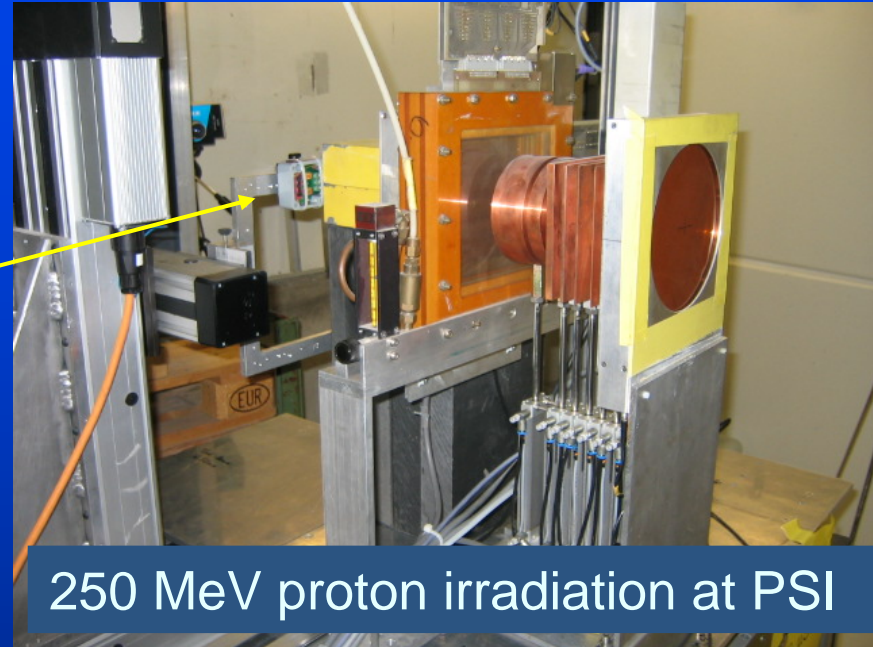
- Radiation tolerant readout
  - 200 Gy
  - $2 \times 10^{12}$  1 MeV eq. neutrons
- Thermo compensated readout
- Calibrated
- Remote readout at 100 Hz

# Monitor parts & assembly



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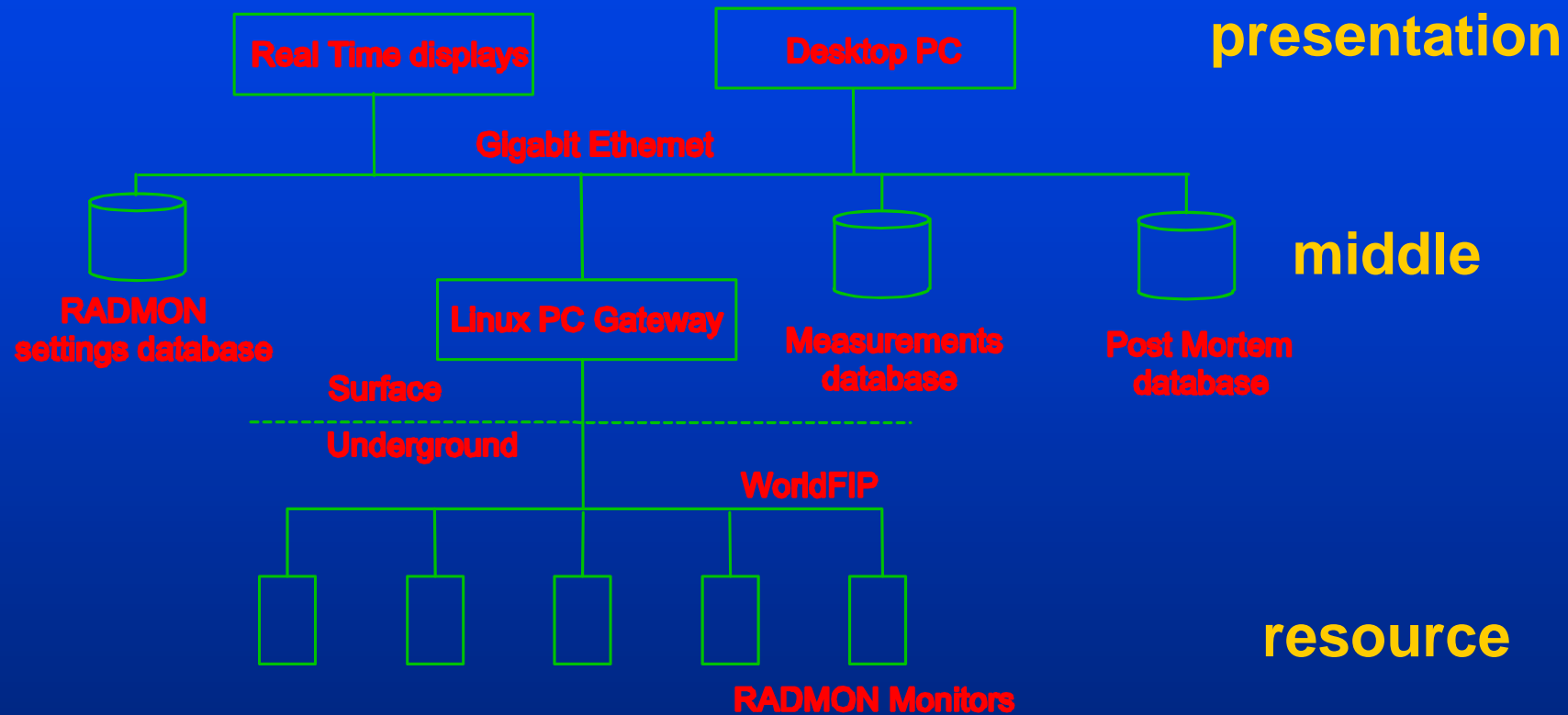
# Remote sensors



250 MeV proton irradiation at PSI

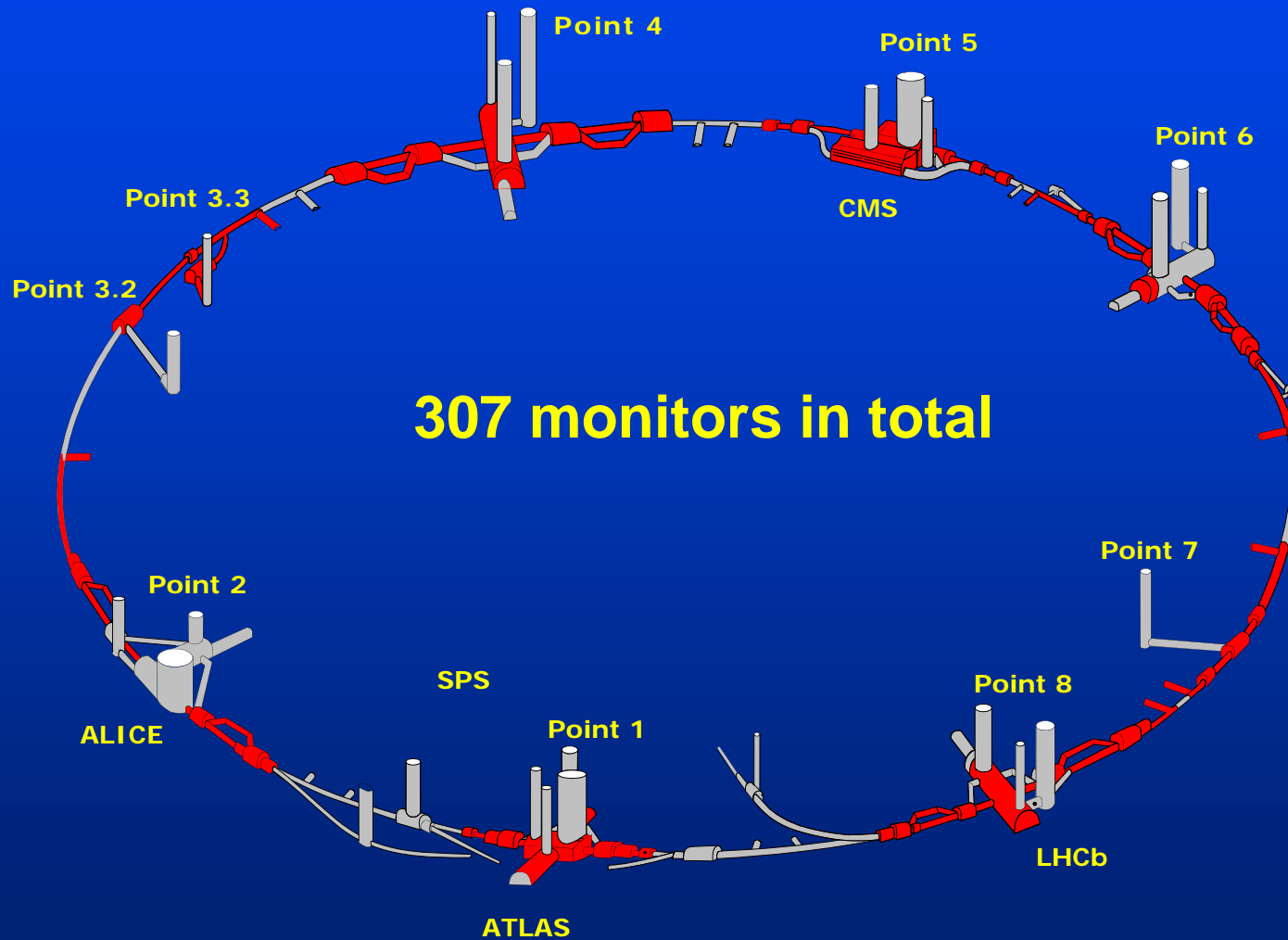
For areas with high radiation

# RADMON – 3 layered architecture



**20 gateways in total**

# LHC radiation monitors – areas covered



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# RADMON COVERAGE

20 Gateways

307 Monitors

- Machine tunnel
  - FP- 420
  - ZDC (Zero Degree Colorimeter)
  - TOTEM
  - TAN areas
- CMS
- LHCb
- ATLAS

# Installation and commissioning - machine



Point 7 - UJ76



Point 8 R – Q1

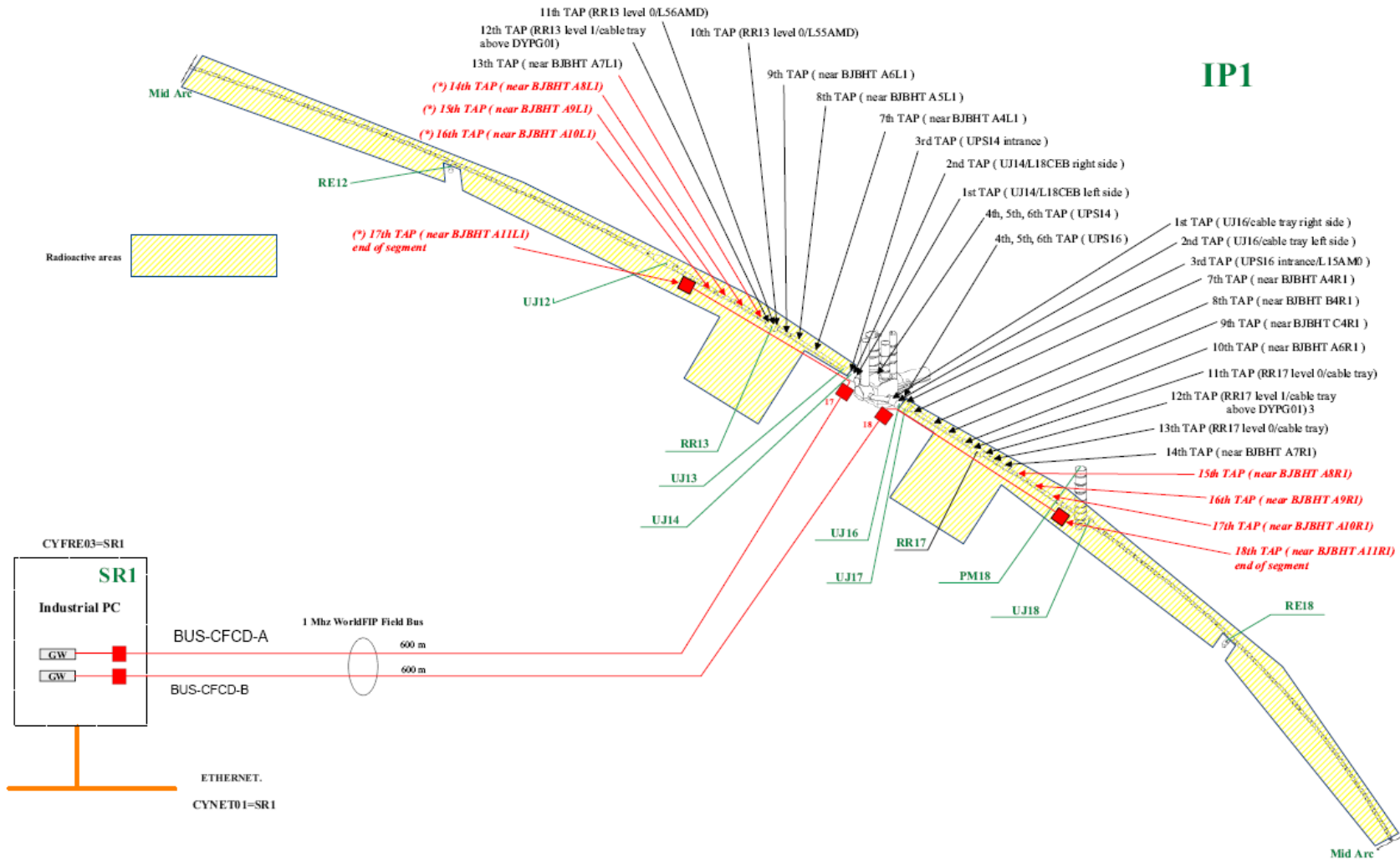


UJ88 – end of T18



# Point 1 (including FP-420)

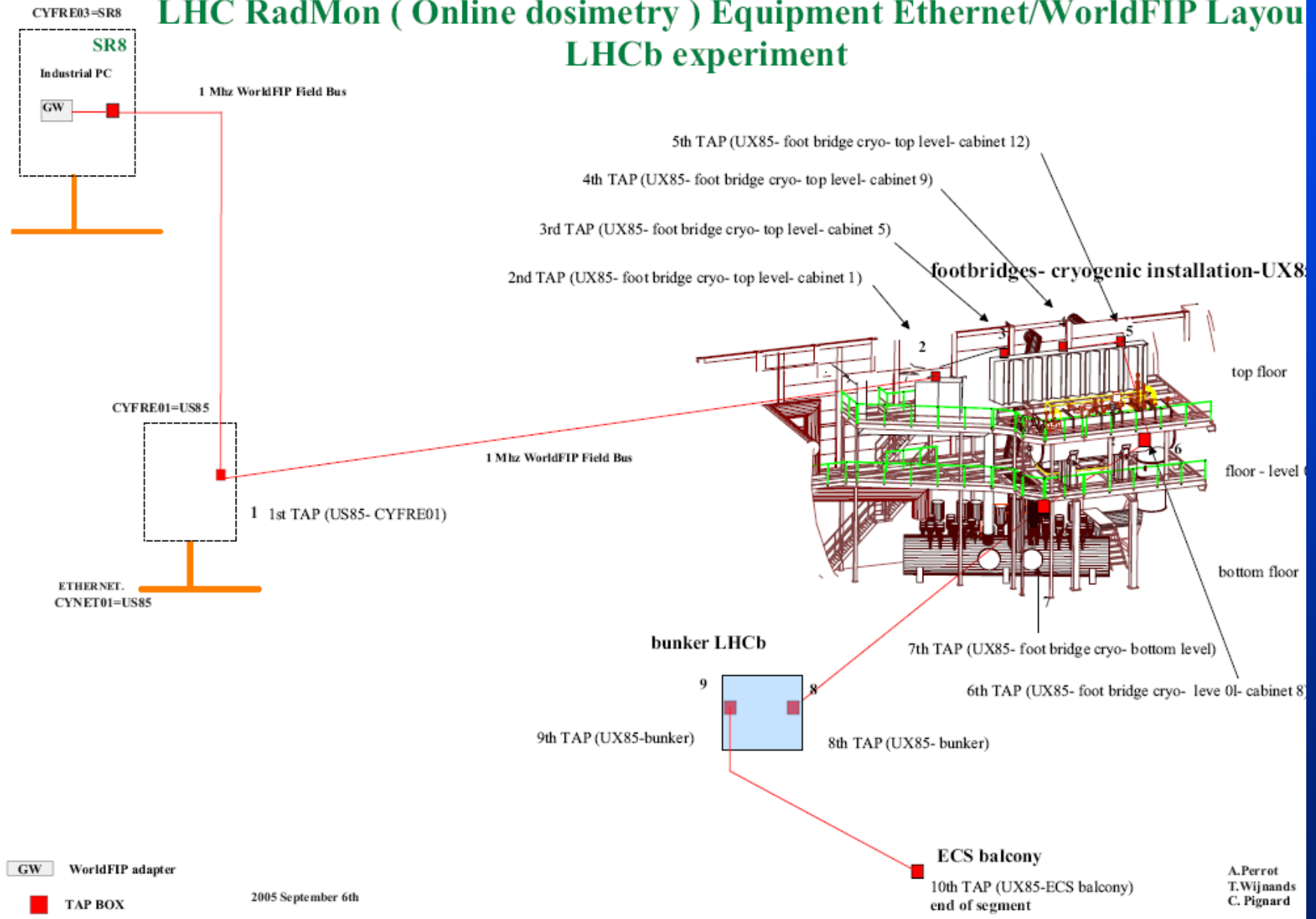
## LHC RadMon ( Online dosimetry ) Equipment Ethernet/WorldFIP Layout



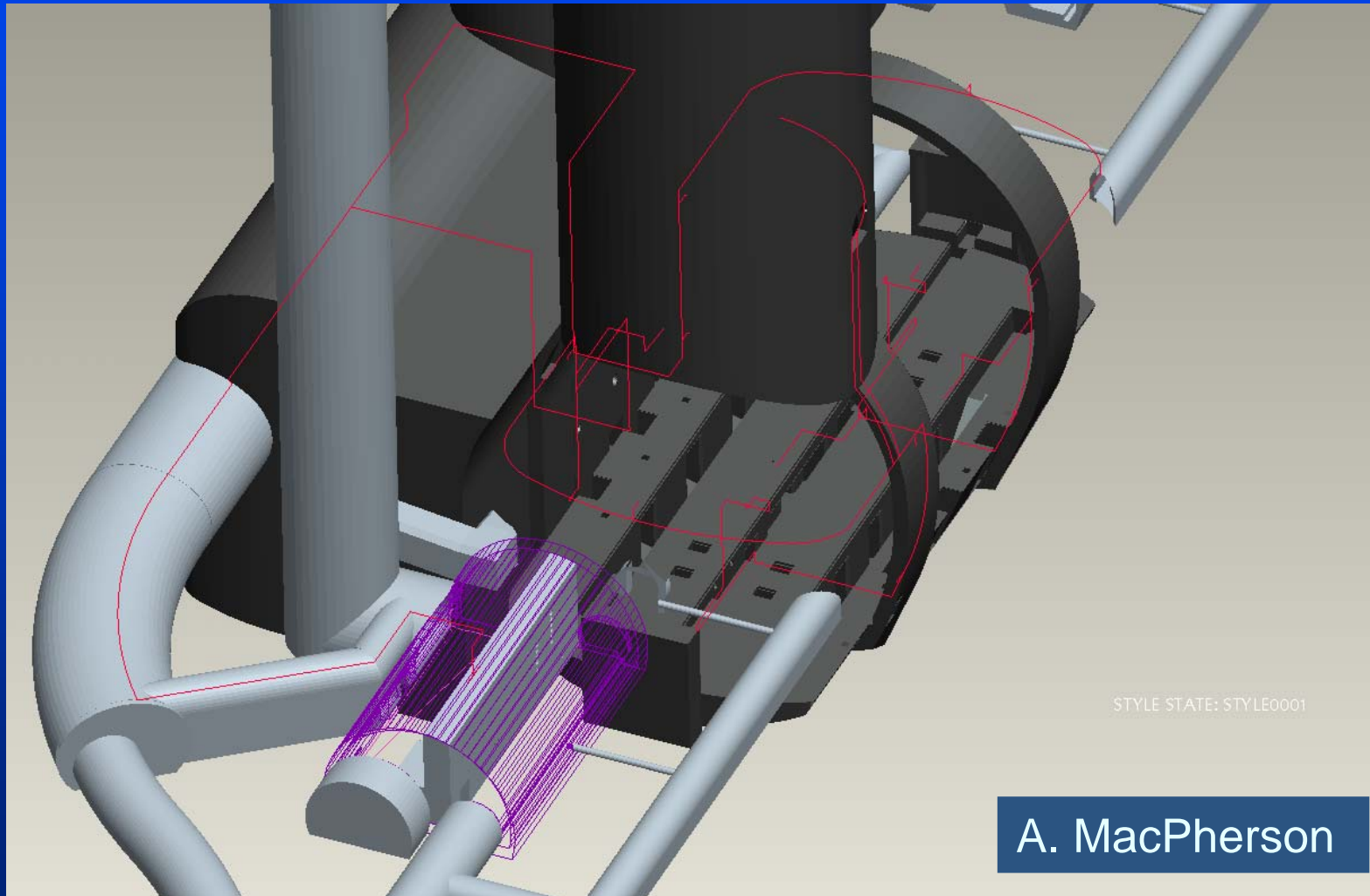
*(\*) extension for FP420 experiment*

# LHCb

## LHC RadMon ( Online dosimetry ) Equipment Ethernet/WorldFIP Layout LHCb experiment



# Installation and commissioning - CMS



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# Areas Completed

- LHCb
- Sector 7 Right
- Sector 8 Left
- Sector 8 Right
- Sector 1 Left (not including FP-420)

# 2007 Schedule

- 4 Right / 5 left
  - Feb 2007
- CMS
  - End of March (To Be Confirmed)
- 3 Right / 4 Left
  - April 2007
- 5 Right / 6 Left
  - May 2007
- 6 right / 7 left
  - June 2007
- 2 Right / 3 Left
  - July 2007
- 1 Right / 2 Left
  - Aug 2007
- ATLAS
  - Aug 2007

# Contribution / Collaboration

- **AB/CO**
  - Gateway
    - Timing card
    - Remote reset
    - UPS to gateway
    - WFIP interface card
  - WFIP
    - Repeaters
    - Reception tests of the line
    - maintenance
- **TS/EL**
  - UPS to monitor
  - WFIP trunk cable
  - WFIP junction boxes (TAP)
- **TS/LEA/DES**
  - WFIP drop cables
  - 220V power cable drop from UPS
- **TS/DEM**
  - RADMON hardware