The COMPASS Experiment

NA58

Gerhard Mallot

CERN EP-TA2-OR

JCOP Meeting

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The COMPASS Collaboration

Common Muon and Proton Apparatus for Structure and Spectroscopy

Belgium, Finland, France, Germany, India, Israel, Italy, Japan, Poland, Russia, Switzerland

Bielefeld, Bochum, Bonn, Brussels, CERN, Calcutta, Dubna, Erlangen, Freiburg, Heidelberg, Helsinki, Mainz, Miyazaki, Mons, Moscow, Munich, Nagoya, Protvino, Saclay, Tel Aviv, Torino, Trieste, Warsaw,

- 26 Institutes
- 180 Physicists

Physics of COMPASS

- Muon beam 100–190 GeV

  spin structure of the nucleon
  gluon polarisation and "Spin Puzzle"
  Lambda polarisation

- Hadron beams

  glue ball search in central production
  polarisibilities of π and K
  charmed baryons

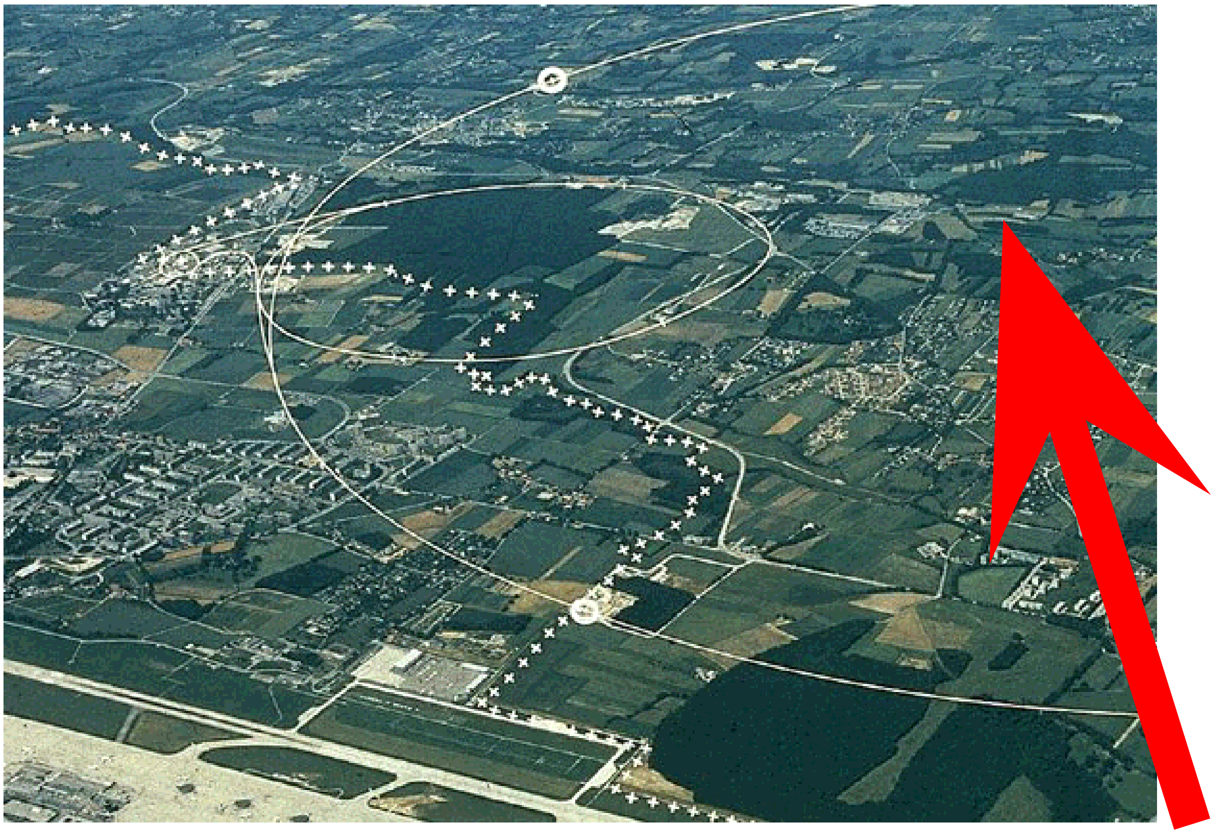
Location of COMPASS

- Fixed target experiment

  SPS M2 beam line

  EHN2 on Prevessin site

  formerly: EMC, NMC, SMC, BCDMS



The Spectrometer

- **small angle tracking**

  scintillating fibre stations

  silicon detectors

  micromegas

  GEMs

- **large angle tracking**

  drift chambers

  proportional chambers

  straw detectors

  Iarocci tubes

  drift tubes

- **particle identification**

  ECAL1, ECAL2

  HCAL1, HCAL2

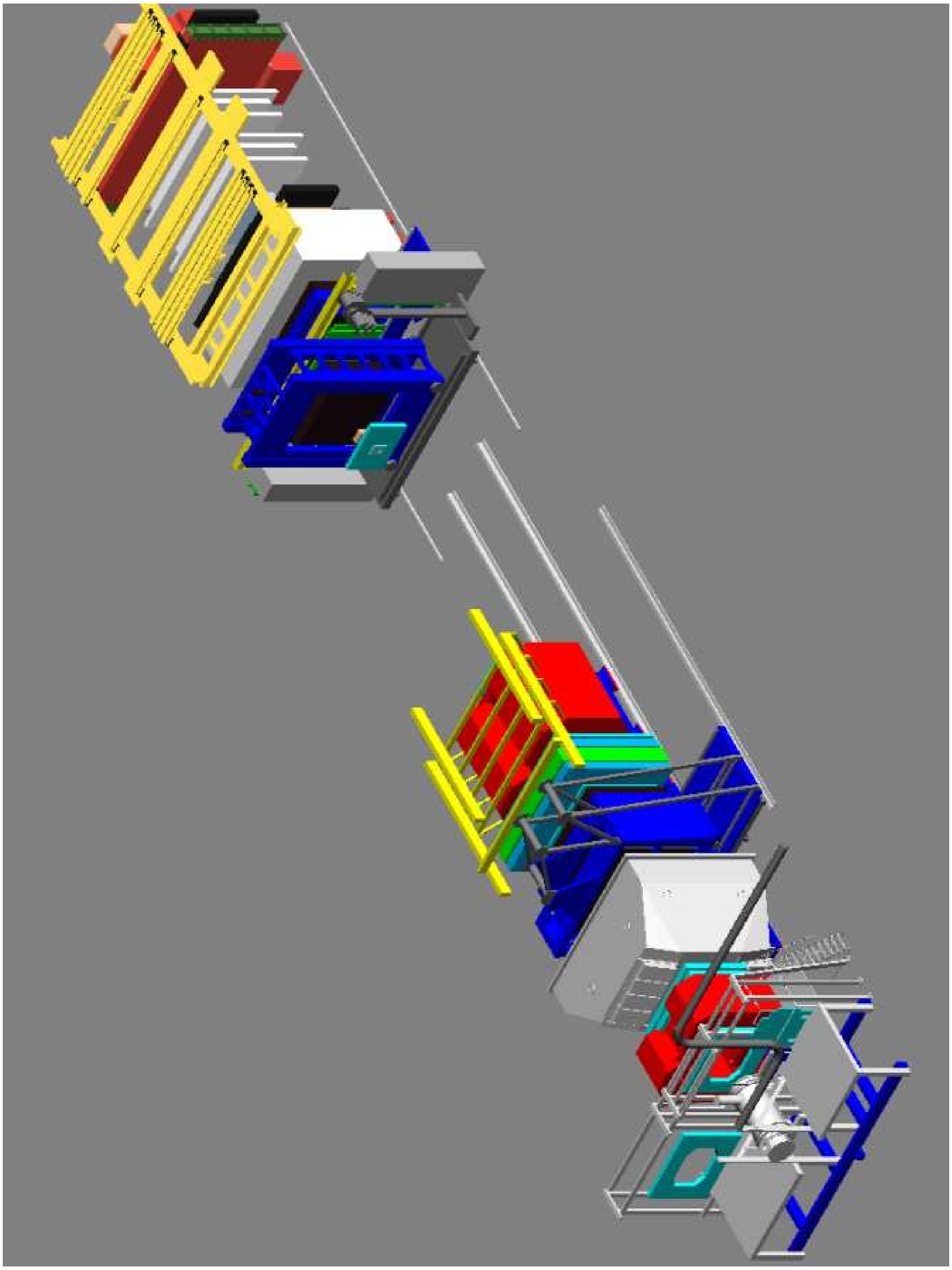
  RICH1, (RICH2)

- **other**

  trigger hodoscopes

  beam momentum hodoscopes

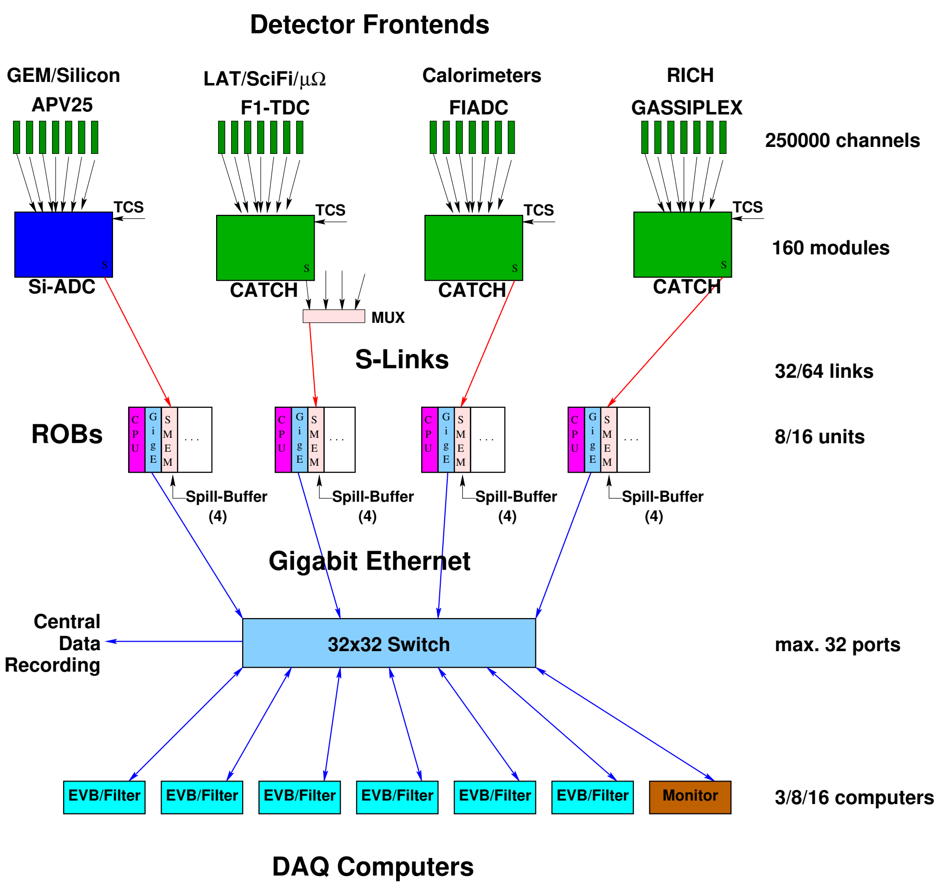
  spectrometer magnets SM1 & SM2



COMPASS DAQ

- Data Acquisition

  fully buffered in front ends
  read out: 1 GB / spill (14.4 s) later 6 GB/spill
  Central Data Recording (CDR) up to 300 TB/year
  Compass computing farm (Linux PCs)
  run control by Date



COMPASS DCS

- Detector Control System

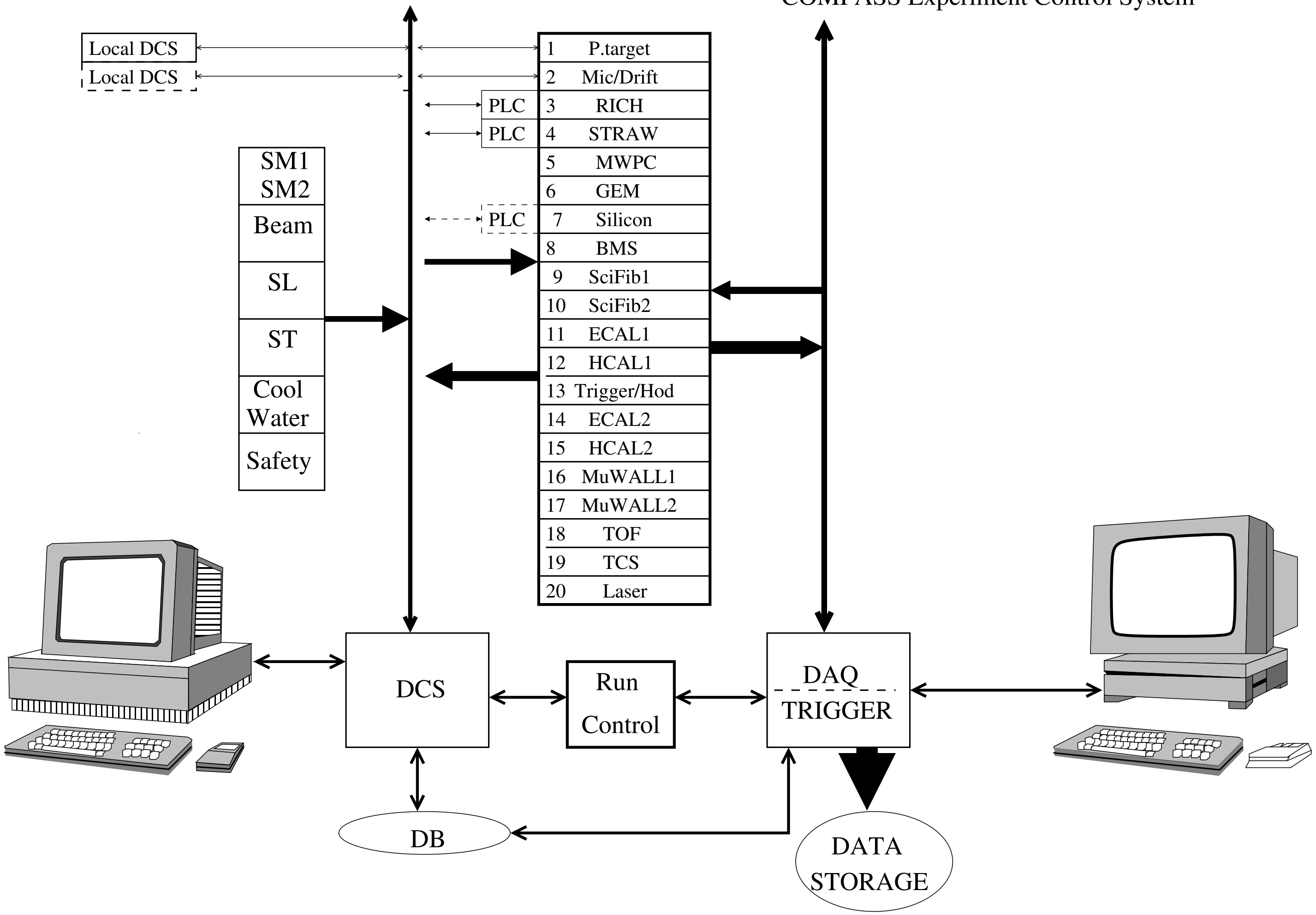
  in collaboration with IT/CO

  SCADA system chosen (PVSS-II)

  frame work developped

  First implementation used during technical run

COMPASS Experiment Control System



List of equipment of experiment COMPASS under Control and Monitoring by DCS

1. Crates for Readout Electronics: 47

VME 9U	24 pc (**12** - beam aria)	CAN bus i/f
VME6U	7 pc	CAN bus i/f
CAMAC	7 pc	no I/F
NIM	4 pc	no I/F
Homemade	5 pc	no I/F

2. HV Power supply app. 2200 ch

HV power supply crates app 30 pc

CAEN SY527	8 pc	CAENet
CAEN SY403	4 pc	CAENet
CAEN SY127	1 pc	CAENet
ISEC	12 pc	**CANbus**
LeCroy 1440	2 pc ?	multiplex, RS232
LeCroy 14032	8 pc ?	I/F to PC

HV for calorimetry appr. 8400 ch

Heinzinger crate	9 pc
Oltronics	20 pc

3. LV power supply appr **500** analog value (V,I,)

PL500F WIENER 9 pc **CAN bus I/F**

4. PLCs

PLC for RICH gas system	**1 pc**
PLC for STRAW, MWPC, GEM, PhD, MuW2	**1pc**
PLC for Silicon det	**1 pc**
PLC for uMegas, Drift chamb.	1 pc ?

5. Sensors appr. 1150 ch.

Temperatura (racks,exp.hall, detector)	app 250ch
Temperatura electronics boards (RICH det)	**800 ch**
Humidity ,Pressure atm.	20 ch
Position, Status (on/off)	80 ch
Magnetic field	**8 ch**

Status and Plans

- Technical Run ends next Saturday

  Big structures were installed during spring and summer

  Prototypes of all detectors tested

  DAQ tested

  Calibration data taken

  DCS first version tested

- Prepare for physics data taking in 2001