STRAW

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16.9.99 F.-H.Heinsius, H. Fischer

2. General

2.1: Detector: Straws-------13000ch 1 station; F-H. Heinsius(Frierburg);
Ulli Fuchs (Munich)   Raines Geyer   DCS responsible: tbd.
2.2: Time scales: 2001 - 1 station
2.3: No own control system.

3. Crate control

3.1.1: 1 VME Crate (COMPASS standard 9U)
3.1.2: CANbus remote control
3.1.3: 1 VME crate in the zone.
3.1.4: No legacy crates

3.2.1: All voltages, currents, temperatures and status monitored
3.2.2: about every minute to a precision of 1%.
3.2.3: Remote crate on/off and reset
3.2.4: automatic switch off in case of overheating (-> Fault alarm)
3.2.5: Fan alarm (-> Warning)

4. HV Control

4.1.1: between 50 and 200 HV channels
4.1.2: LeCroy 1458 mainframe power supply with Ethernet interface (CANbus possible)
4.1.3: No non-standard HV
4.1.4: Spare channels to be re-mapped in case of failures.
4.1.5: Read: voltages, currents, status on/off
Set common parameters: Ramp-up, ramp-down, Trip time
Set individual parameters; Voltage, Vmax, Imax
4.1.6: Read values continuously (each second) synchronized to bursts, with and without beam.
Set voltages synchronously when burst(beam) off.
4.1.7: Voltage settings automatically controlled as function of air pressure.
Automatic trip recovery (-> Warning alarm)
4.1.8: In case of failure of automatic trip recovery alarm (-> Fault alarm)

5. Low voltage control. NUMBER OF P.S. NOT YET FIXED. Power supply with remote is needed

5.1: Read voltages and currents to 1%, switch on/off.
+6V, -6V, 8-12 V
5.2: Measure every spill twice, during burst and off burst.
5.3: Monitoring of upper/lower voltage and current limits.
Switch off when out off range (-> Fault alarm)
5.4: maintain spare modules
5.5: Over temp. (-> Fault alarm)
Fan alarm (-> Warning alarm)

6. Analogue monitoring

Temperature: about 10 channels read every minute to 0.1 K
Pressure: air pressure every minute to 0.5 mbar
Gas flow meter for 3 types of gas (exists) read every minute
and about 18 flow meters of general gas flow
Gas purity: ?
- Gas system provided by M. Bostills, Cern -
Humidity: About 10 channels every minute to 1%
Magnetic field: State on/off
Position monitoring: every minute, precision 100 micro meter.

7. Boolean values control

Status of all straw channels (wire maps) about 13000. (20000 in phase 2).
And on/off states of all power supplies and crates.

8. Startup

8.1: After long shutdown configure with start-up predefined values,
except high voltage set by hand.
8.2: If DCS is off, start with latest running version
8.3: If hardware power supply is off, reload latest configuration after power is on again.

9. Special procedures

9.1:
A) Threshold calibration scan:
    set thresholds when burst is off.
    Take data for one burst
    set next threshold when burst is off, take data when burst is on.
    Continue over all threshold values.

    Analyse the data on monitoring workstation.
    Set the new values and resume normal data taking.

B) HV scan: Same procedure as for threshold calibration.

10. Alarms: See above, marked by '->'.

11. Trending

11.1: All data should be archived forever (as long as data is being analysed).
11.2: No subset.

12. Data saving and sending to DAQ

12.1: All DCS values must be saved for later data analysis.
      Additionally the TDC and CATCH configuration files should be
      stored into the slow control database (256 Bit/TDC for 1600 TDCs)
      DATA BASEES FOR ON-LINE DATA ANALYSES ARE NEED
12.2: DCS data may or may not be send to DAQ. The slow control data has to be

available in a database accessible for anline and offline analysis.

The TDC configuration files (including thresholds) need to be down loaded to the CATCHes via VME.

13. Sub-detector access limitation

Access levels are ok, details to be defined.

14. Other SD/SS requirements

Smoke detector in tent. Video monitoring might become necessary.

15. Proposals to central DCS

Monitoring of the readout system (CATCH), access via VME CPUs.
- data rates, failures etc. (to be defined).
- store module identifications, geographic addresses of connected modules, remapping of channels in data base.

16. General (Part 2)

16.1: Constraints: CATCH VME access through VME-CPUs running AIX or Linux.
16.2: Status of system before start of run to be defined.
16.3: DCS is used for loading of thresholds and TDC configuration (through CATCH).
16.4: Monitoring software, DCS control and Experts need write access to data base.
16.5: Atmospheric pressure measurements, see above.
16.6: Acceptable to stop DCS to change configuration.
16.7: CAMAC ADCs and CAMAC crates are available from Freiburg.
16.8: No resources.
16.9: No test beams. System ready by April 1st 2000.
16.10: -
16.11: No

GAS system: closed system, use PLC for control