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Cold detectors-Monitoring environmental parameters for operational purposes and integration in the control scheme

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With the ever-increasing use of Si-based detectors, balanced standalone environmental monitoring that can be also part of the detector DCS/DSS systems becomes a key issue both at the experimental cavern and at integration/production centers. We are presenting our work on one way of approaching this, based on the rapid progress of sensor conditioning circuitry and microcontrollers. We shall present the status of the MTRS (Multi Temperature Readout System), built for RTD sensor implementation and the Capacitive Relative Humidity project, meant for relative humidity monitoring sensors. We will discuss the choice of sensors, the readout circuitry, irradiation tests, software and hardware implementation and current use. We will also refer to future plans and integration issues as well as maintenance and documentation.

The next generation of "cool" detectors have strong requirements on monitoring the dewpoint of the detector inert gas at different locations. To ensure a compact detector structure and combined and integrated services, this analysis can and should be combined with any other gas analysis already in a design phase for CMS. We present the current status of the project and its foreseen evolution for the next two years

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