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The DQM system for the SND

The SND detector has been operating at the VEPP-2000 collider (BINP, Russia) for several years unveiling amazing knowledge. Being a scientific facility it experiences constant improvements. One of the improvements worth mentioning is the DQM system for the SND detector.

First, information is collected automatically by DQM scripts and then could be corrected/confirmed by the detector operators and experts. It's available in the SND information system via web interface. The DQM system takes into account multiple parameters (numbers, histograms, user opinions) to form a data quality decision (good, bad, etc). It supports several parameters sets to be customized for different users: e.g. a general set of parameters for operators, specific detector subsystem parameters sets for experts, extended sets for further offline data processing, etc.

The input of the DQM system is hundreds of numeric parameters and histograms for each experiment run (lasts for about 30m.-2h.) produced by the SND software. The DQM system stores its data (configuration and cached scripts results) in an MySQL database. Scripts are executed when a user requests a run information and there is no cached results. A DQM script (a ROOT macro) could be written by detector subsystem expert. It takes run-related values and yields some decisions using simple C++ interface. A number or a histogram is accompanied by its reference value in the web interface for non-expert to make a reasonable decision.

The system put into production. It's consistent as an infrastructure however there are some scripts to implement and the previous experiment runs to leave opinions about. So the next move is physicists'.

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