

ANTARES AMS Data Acquisition System - Current Status and Future Upgrade

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ANTARES AMS Data Acquisition System (DAQ) is built up in the early time of 90's. The system includes detector, pre-Amplify, CAMAC electronics system, and VME frame with Motorola MVME CPU processor plus CEAN scaler board and ADC pulse process board. The system employs OS/9 operator system that were developed by Microware for MVME CPU processor. A Linux machine is connected to MVME CPU board via ethernet for the experimental data process and graphic display. A special C program package SOAP plays strong function for above data process and display. With such aged DAQ system, it is quite difficult for maintenance and development. There are also many system issues and hardware shortage that cannot be fixed easily. Upgrade of ANTARES AMS DAQ system is necessary.

Several options have been proposed. What we considered is to apply for latest data process technology instead of Motorola CPU board and VME signal process crate. One portable solution of new DAQ system can be applied for CAEN Digitizer desktop box DT5742, 16+1 Channel 12 bit 5 GS/s Switched Capacitor Digitizer. The CAEN Digitizer DT5742 has strong function combined scaler process and ADC process for the pulse. We can therefore not rely on the VME chases with MVME CPU boards, CEAN scaler board, and CEAN pulse process boards. Furthermore, Digitizer desktop box DT5742 carries built-in DRS4 chip mobile processor with a lot of strong functions. CEAN also provides software package CoMPASS for multiparametric DAQ software for Physics Applications and communication sockets that can be accessed by other user's applications. A Linux DAQ system contains local data analysis and visualised data processor that can connect CEAN software package and "Digitizer Desktop Box" through special socks and optical cable. A new "SOAP" package will be developed depend on QT GUI application and Digitizer desktop box DT5742.

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