Distributed Data Acquisition System for the First Detector on the SPHERE Setup

S.N. Bazylev, N.A. Shutova, I.V. Slepnev, V.M. Slepnev

Joint Institute for Nuclear Research, 141980, Dubna, Russia

Abstract

The system is based on intelligent CAMAC crate controllers CCPC5 which reside in three crates with multilevel hardware and software synchronization by both event trigger and accelerator cycle. Controllers include embedded PC with Pentium CPU are run under Linux operating system and interconnected with Ethernet network. This allowed us to build flexible and scalable data acquisition and representation system. Every crate gets event data in realtime and stores it in RAM while spill run and then forwards it to event reconstructor using Ethernet. This system has been shown its full operating during SYNCHROPHASOTRON run and demonstrated intercrate synchronization time of 15ns and 2-byte word data readout time of 1.6ns.