

Nustar DAQ

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The Nuclear physics collaboration in FAIR (Nuclear Structure, Astrophysics and Reactions) will be operating a rather diverse type of experiments ranging from experiments in storage rings, reactions at relativistic energies to mass measurements in Penning traps. All of those experiments are dependent on the high-intensity radioactive beams delivered by the new Super-Fragment Separator (Super-FRS). To perform successful experiments it will be required to correlate all the information of the Super-FRS with data from individual experiments. This motivates the development of the same data acquisition system for NUSTAR : NUSTAR DAQ (NDAQ). NDAQ will be an evolution based on the present MBS DAQ used in most of GSI to assure a smooth transition from legacy equipment to new development. It will present itself as several stations (NDAQ nodes) alongside the facility where the equipment will be connected. A NDAQ system will comprise of several nodes. Each node will provide basic services ranging from run control to timestamping and data flow handling. The goal is to have a system completely modular where it will be easy to add and remove nodes from running acquisitions without stopping it. It will allow to couple synchronous and asynchronous systems. One main difference compared to the current NUSTAR data acquisition is the development of control events, which will be included in the data stream, and store any change of configuration in the setup. We will present the status of the development and the results of the first test of this new data acquisition system. In the EURORIB spirit we are open to synergies with other facilities.

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