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Gammasphere Upgrade Project[1] PATRICK COPP, JOHN T. ANDERSON, MICHAEL OBERLING, MICHAEL P. CARPENTER, ED BORON, RUSSELL KNAACK, Argonne National Laboratory — Gammasphere continues to be heavily utilized for experimental investigations associated with both nuclear structure and nuclear astrophysics related research with a rich history of collecting data for nearly 30 years. Initially, the data acquisition (DAQ) system was based on custom made mixed analog/digital electronics packaged in a VXI system. Recently, a VME digital DAQ system was implemented based on digitizer and trigger hardware developed for GRETINA with new firmware designed at ANL specifically for use with detector systems at the ATLAS facility. The VXI capabilities were retained for detector control and monitoring, and thus most of the functionality is obsolete. In addition, Gammaspheres 110 Ge detectors are 25-30 years old, and their preamps are a customized design that is no longer supported by the vendor. As such, diagnosis and repair of these preamps has been a necessary and workforce intensive task. This problem is compounded by the age of the components some of which have become obsolete. We have developed replacements for both the control system and the preamps to address these maintenance/repair issues, better mesh with the digital DAQ system and improve the control/monitoring infrastructure. Results from our work and final design plans will be presented.

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