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Control, Data Acquisition and Analysis Systems on the PEGASUS ST[1] S.P. BURKE, M.L. REINKE, M.W. BONGARD, R.J. FONCK, University of Wisconsin-Madison — Recent facility upgrades on the PEGASUS ST required the development of flexible control and data systems. Diagnostic and event flow control is set by a master system, while most direct interfaces to hardware are enacted by an array of semi-autonomous slave systems. One subsystem locally controls the high-energy capacitor bank charging and safety functions, while another provides reference waveforms for control of the pulse-width modulators for the new multi-channel switching power supplies. Several satellite systems perform functions such as CAMAC data acquisition and local diagnostic control. Most communications use a simple TCP protocol and a few LabVIEW-based libraries. In addition, independent high-speed acquisition systems allow detection of very fast ($\sim$ 10 ns) transients in the power supplies. Other satellite systems have been implemented for discrete data analysis tasks. For magnetic equilibrium calculations, a Grad-Shafranov solver with a Levenberg-Marquardt fitting algorithm offers ready expansion to include arbitrary diagnostic information.

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☐ Prefer Oral Session
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Special instructions: Please place as number 4 out of 7 Pegasus posters, before Lewicki et al. and after Battaglia et al.

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the development of flexible control and data systems.
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while most direct interfaces to hardware are enacted by an
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