

**ACCELERATOR CONTROL WITH THE LONWORKS FIELDBUS**

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The device access layer of the control system of the light source ANKA is almost completely based on LonWorks. We have developed and produced custom I/O boards that use the LonWorks micro-controller (the Neuron). The hardware comprises a high-precision 16-bit DAC/ADC/function generator board, a 40 channel digital I/O+counter board and a serial interface. The device logic has been programmed already at the Neuron level, such that for example power supplies that are controlled either through a DAC/ADC board or through a serial interface look the same on the fieldbus network. The features include state machine, remote command invocation and event driven communication with monitors and alarms. The nodes are automatically configured at start-up time from a PC-resident, version-controlled database for which an ftp-like protocol has been developed. Other tools, which allow for a generic control implementation, are a network node installation and configuration tool, a node inspection and management tool and a template compiler, which allows us to use the same database data on the PC and on the Neuron.