Software developement for process monitoring and control

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Automation software for process monitoring and control is developed in this research. It consists of PROMONICON-Bridge and PROMONICON-Automation. PROMONICON-Bridge is to acquire the process data from automation devices such as PLC, Inverter, DCS, SCADA system through four different communication types of serial, OPC, UDP/IP and TCP/IP and temporarily store the process data into buffers. And, PROMONICON-Bridge provides the process data in the buffers to PROMONICON-Automation through UDP/IP communication when PROMONICON-Automation requests a process data. PROMONICON-Automation is to realize automation logics for the process monitoring, process control and process operation. It provides various modules for process variable definition, process data storage into used-defined file and backup file, drawing the process variables in real-time, process control using various control logics such as On-Off control, PID (Proportional-Integral-Derivative) control and MPC (Model Predictive Control) control, PID autotuning, model identification, script programming to implement complex user's logics and to simulate virtual processes, monitoring the process variables based on the process diagram.