WIZCON 5 – More Power for the MDLC Gateway

By Jack Chadowitz, Branch Manager, PC Soft International

Wizcon 5 Software

A joint effort between the Motorola Communications group and PC Soft International has created a powerful MDLC Gateway driver for the Wizcon 5 SCADA package. This software package is a powerful PC based solution for control centers, which addresses the needs of large as well as small organizations. A single communications server is required for small to medium systems while Wizcon 5's modular architecture allows communications servers to be added to provide solutions for even the largest of projects, such as for utilities. Although it is PC based, its advanced event-driven client/server architecture provides multiple station control centers with the capacity and data integrity of more expensive minicomputer based systems.

Motorola engineers subjected Wizcon to a number of rigorous performance tests and found that in a networked three-station configuration, with 32,000 tags and alarms, Wizcon 5 demonstrated reliability, speed and complete data integrity in a wide range of demanding situations. Wizcon then developed a driver for Motorola's MDLC Gateway that would eliminate the well known communication bottleneck between the control center and the SCADA system.

New Wizcon 5 Driver for the Gateway

The Wizcon 5 driver has the following unique features:

- Unsolicited mode of operation – Enables the Gateway to automatically send messages to Wizcon without polling. This increases the already high communication speed of the Ethernet and makes the SCADA system totally event driven. However, each tag, either in groups or individually, can be configured for periodic polling initiated by the SCADA control center

- Time stamping by the MOSCAD field RTUs – Messages received by Wizcon can be configured to include the time and date of the event, down to a resolution of one millisecond. Information is displayed according to the actual time of the event.. This is especially important for power utilities, which require an accurate record of the sequence of events.

- Wizcon 5's and the Gateway's "Hot Backup" capability ensure full redundancy even if there is a key system component failure. Only one Wizcon station receives messages to ensure that the information is unique and not duplicated.

- RTU failure detection – Information from a failed RTU is marked to ensure operator confidence in the integrity of displayed information, even when individual components of the system may have failed.

The schematic shows an optimal Wizcon 5 configuration for a control center. The primary Wizcon station talks to the Motorola MDLC Gateway and serves as the system's communications server. The secondary Wizcon station is a backup communications server. When it detects a failure of the primary station, it becomes the primary communications server. Communications server redundancy is accomplished without adding additional equipment. Both Wizcon stations also serve as fully functional operator stations. They and additional work stations are connected to the Ethernet. Information is sent to all the stations by the primary Wizcon station on an event driven client/server basis. The Wizcon stations communicate with the Gateway and with each other using TCP/IP. This enables communications between control centers via WAN/LAN and suitable routers.

Both Wizcon 5 and MOSCAD RTUs support advanced object-oriented configuration methods which save much time in configuring and maintaining SCADA systems, especially in large systems. Information in MOSCAD RTUs is stored in tables. The table data types and structures are user configurable. For example, a pump cluster can be configured to automatically create a pump linked to a particular row in a MOSCAD RTU table, when a new instance of the pump is "dragged and dropped" to a display.

Wizcon 5 is a multi-thread 32-bit application designed for application portability between 32-bit multi-threaded pre-emptive operating systems. It runs under OS/2 WARP and will run under Windows 95 and as a multistation platform. It will support network communications between stations running under different operating systems. Wizcon 5 is designed to grow and to migrate to fully support systems of the future.

WIZCON 5 and MDLC gateway – one solution for SCADA in power utilities.