

KRAKEN Plant SCADA Systems

In today's competitive manufacturing environment, plant SCADA systems are being implemented to provide the manufacturer with many key benefits. They include better stability in process control, consistent manufacturing practices and longer continuous operation. All of these result in consistent, repeatable product quality and lower cost per volume. Kraken Automation Inc. has worked extensively on implementing a variety of plant SCADA system control topologies.

SCADA (Supervisory Control And Data Acquisition) systems are comprehensive structures comprised of a number of supervisory and control levels. These levels range from the lowest, being the front end, plant floor instruments and devices, to the highest, dealing with plant enterprise business systems. More specifically:

Level 1

Low Level Monitoring and Control:

These are the front-end interface devices either passive or intelligent providing status/variable information and command/setpoint control.

Typically, these include instruments, relays, process switches and control actuators.

Level 2

Intelligent Monitoring and Control

Sometimes referred to as PLCs (Programmable Logic Controllers) or RTUs (Remote Terminal Units), these devices utilize information provided by level 1 devices, act upon the information within a preset algorithm and provide command/setpoint signaling to level 1 actuators, delivering a locally automated control structure.



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Level 3

Local Control Stations (OI and HMI)

To provide users with access to monitor and facilitate control within a specific area level 2 systems, OI (Operator Interfaces) and HMI (Human Machine Interfaces), are utilized. OI are semi-intelligent devices, typically operating on proprietary hardware, providing localized interfaces to specific process subsystems or machine monitoring and control. HMIs are more developed applications, typically operating on industrial PC systems, and provide enhanced functionality for system monitoring and control, including real time or continuous data trending, distributed alarming, recipe management, database interfaces and basic SPC/quality control constructs

Level 4

Data Servers/Historians:

Industrial database engines provide specialized data compression routines operating within standard database operating environments (e.g. SQL Server, Oracle, etc.). These systems allow vast amounts of process and status data to be archived, as well as provide automated functionality with embedded scripts, or stored procedures to execute event driven actions. Moreover, multiple sources of data can be integrated within the server, making the system open to quality, SPC or maintenance services.

Level 5

Enterprise Systems:

The highest level of the SCADA structure, Enterprise Systems involve the integration of the financial and production business systems (e.g. Manufacturing Executions System (MES), Manufacturing Resource Planning, or Manufacturing Maintenance System) (MMS) with the SCADA architecture. This typically involves specialized routines and procedures to transact data between the SCADA data historians, local HMI stations and the business databases.

Level 5

Communication Backbone/(s):

Although not a specific level, this component provides the communication infrastructure, connecting devices within all levels of the SCADA structure. This may comprise of one, or several levels of communication cabling, hardware, protocols and management software to provide the required data connectivity.

[Contact Kraken Automation Inc. today and find out how we can help you with your plant SCADA Systems:](#)

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