

Data Acquisition and Control Systems

Carollo Engineers' data acquisition and control (DAC) systems store and manage data in a useful way to optimize pilot study data interpretation. Ease of pilot plant control and convenience of data storage and access are factors that determine the efficiency and usefulness of pilot studies. These DAC systems allow the maximum number of conditions to be tested within the time available for conducting the pilot study.

The DAC may be integrated into an existing pilot to allow stand-alone operation of that particular skid. This approach minimizes the amount of space required for the pilot study, while providing a convenient and meaningful way to control the pilots and collect data.

Carollo's data acquisition and control systems offer the following benefits:

- ▼ Provide the ability to collect data and control pilots remotely.
- ▼ Offer accessibility of pilot data via password-protected web pages for remote access by multiple stakeholders.
- ▼ Provide integration of data feeds from multiple pilot systems.

Alternatively, Carollo can provide the DAC system as a separate skid, which provides additional benefits. This skid offers a touch screen human-machine interface (HMI) to monitor and control pilot operations. It also offers additional connectivity, such as access to the World-Wide Web for data storage

and download from any remote location. A phone line connection is also available for data transfer and pilot control.

This skid also serves as the central power supply for other pilot skids. The other skids may be plugged into the DAC skid, therefore necessitating only a single source of power for the entire system. This power configuration simplifies pilot study mobilization and eliminates the need for installation of multiple electrical connections.

Data that are typically acquired during a pilot study include water quality data (e.g., pH and temperature), flow rates, pressures, and alarms. Process control functions include chemical feed system regulation, flow rate modifications, and automated valve actuation sequences.

Remote access capabilities allow the engineer in charge of the study to monitor performance daily and make real-time changes to testing conditions as necessary. Web-based access to data allows stakeholders such as equipment vendors to monitor the

performance of their system. Data for individual systems may be password-protected to maintain the integrity of the study, while sharing the results. In a competitive situation, this approach provides a non-controversial communication tool and gives equipment vendors the opportunity to quickly respond to challenges encountered during the study.

The DAC skid is supported by a rugged polymer-coated, metal frame for protection during transport. Carollo has used these systems in Arizona, Florida, Idaho, Missouri, South Carolina, Washington, and Wisconsin.



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