

# Device Management Systems Versus Distribution Management Systems (DMS)

## Managing intelligent electronic devices *is different* from managing distribution operations.

A distribution-management system (DMS) is focused on distribution operations. Such systems do not completely manage the intelligent electronic devices (IEDs) to which they are connected, such as protective relays and electronic controls. Separate from DMS, there are simple device-management systems available to manage increasingly sophisticated IEDs.

## DMS manages only a subset of IED features and settings.

A DMS application typically operates in conjunction with a Supervisory Control and Data Acquisition (SCADA) system. A DMS uses a lowest common denominator set of “points” such as volts, amps, and device status (e.g., switch open/closed). These common points are polled using SCADA across a fleet of diverse IED device types, vintages, and suppliers to provide operational visibility and control for operators.

A DMS does **not** manage every one of the thousands of points, features, and settings in every IED. In fact, a DMS typically views devices only as a set of points used to assess the whole system.

A DMS is not able to manage all the required points for each specific IED. Even with evolving standards, there will always be IED-specific settings and data to manage. Field devices will increasingly have unique protection features, e.g., PulseClosing® Technology, sensors, peer-to-peer communication parameters, logging, firmware, and security to manage.

## SCADA/DMS and data historians may be incomplete without event, oscillography, and device data.

SCADA/DMS systems are focused on the existing operational state of the distribution system and future planned control actions. These systems are not normally used for analysis of historic data for events and operations (e.g., sequence-of-events and waveform analysis). Typically, the SCADA and DMS time-series data is recorded in a data historian. This separate data historian system allows analysis of historic data without affecting the real-time production system, similar to a data warehouse. However, data historians only have the operational data being acquired by SCADA/DMS. Accordingly, these data historians might not have oscillographs, logs, and other relevant time-series data available in IEDs.

## Device-management systems are simple and have evolved to meet the challenges of feeder protection applications.

Distribution-system protection management has evolved. Protection engineers started with an “erector set” with protection settings based on fixed fuse ratings, electromagnetic relays, and recloser spring coils. With the advent of electronic controls, engineers used front-panels to configure variable protection settings. Later, IED suppliers provided device-management software for engineers to use a virtual front-panel, retrieve logs, and apply complex protection settings.



The latest evolution in device management involves server-based device-management solutions. These solutions allow for improved customer reliability and productivity by automating manual tasks that previously required interrogating one device at a time.

In addition, users can focus these server-based device-management systems on a network-constrained data-acquisition approach versus a typical SCADA polling approach. This is particularly important in feeder device-management applications where communications are limited and must be managed carefully to avoid interfering with operations-based communications.

Lastly, because they do not manage switching or operations, device-management systems do not change operational practices and can be installed quickly and easily. It is not unusual for SCADA/DMS projects to take several years to be implemented versus weeks for device-management systems.

## Conclusion: Device management is not an "either/or" decision with DMS

In conclusion, device-management software manages increasingly sophisticated IEDs. It is not an "either/or" decision with DMS or device-management software. Device-management software enables customers to simplify device management, improve reliability, and reduce operating expenses. A table is provided below to help you compare device-management systems to DMS.

To meet the need for device management, S&C Electric Company offers the IntelliTeam® FMS Feeder Management System. This system is designed to manage small to large fleets of intelligent S&C devices with features such as settings management and device file retrieval. More information can be found at [www.sandc.com/FMS](http://www.sandc.com/FMS).

*Device Management versus SCADA/DMS*

	<i>SCADA</i>	<i>SCADA DMS</i>	<i>Data Historians</i>	<i>IED Device Management</i>
Operations, Switching, Tagging, Visibility	■			
GIS + Asset Management Integration		■		
Distribution Automation + Fault Location		◆		
Customer Information Integration		◆		
Meter Data Management Integration		◆		
Outage Management System		◆		
Workforce Management Integration		◆		
Distributed Energy Resource Management		◆		
Historic Analog/Digital Data			■	■
Network Constrained Data Acquisition	◆			■
Device & Protection Settings				■
Device Event Files + Oscillography				■

■ = Meets the need or function.

◆ = Partially meets the need or function. For example, SCADA systems do data acquisition but don't pull all data points.

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