

A NEW TEMPLATE FOR Device Configuration Success





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The “connected plant,” with its promises of smart equipment sharing data and allowing manufacturers to make smarter business decisions, can only be a reality if equipment and its sensors are properly set up and connected successfully to the plant’s network.

Commissioning and configuring instruments and valves typically is one of the final, critical tasks before a plant can be formally started up. Completion of these tasks winds up being what stands between a new production facility and actual production of its first barrels of oil, batches of medicine, etc. Accurate and timely configuration and commissioning, then, is critical.

However, commissioning and configuring new devices has long been a hassle for industrial manufacturers. Manually entering device data and setting operational parameters is tedious and time-consuming:

Consider that a single transmitter can have dozens of parameters to configure.

And while low-complexity devices might require as little as 10 minutes to commission and configure, the process for a more-complex asset can easily stretch to an hour or more. Validating that these tasks have been done correctly adds even more time (and thus cost) to the process.

Multiply that time by the hundreds or thousands of devices to get a new facility or an expansion up and running, and the need for a more efficient alternative to manual, one-at-a-time configuration becomes apparent.

Moreover, the manual nature of traditional commissioning and configuration holds huge potential for user error. Adding even a few new devices to the network can create hundreds of points of possible entry error that can jeopardize operational

efficiency of both the device and any other asset it touches. A device that’s not set up according to spec also can pose safety risks.

Fortunately for plant personnel tasked with ensuring that connected devices get up and running and stay that way, new technologies allow for bulk device commissioning and configuration. Simply put, automated and in-bulk commissioning and configuration can get your critical devices – instruments and valves – up and running sooner and with less re-work.

Concerns with traditional configuration

Configuration historically has been done one device at a time by manually entering values for each parameter that needs to be defined in the device. There are a couple of notable risks to watch out for with this approach. First: It’s easy to make typing errors. Second: It’s not unheard of for a technician working out

in the field to miss a new device during the configuration process or to take a device out of service, reconfigure it and then forget to put it back into service. In the latter case, it may look to the control system like it's working properly, but it's actually not measuring the process.

Additionally, plants can run into trouble if the individuals doing the configurations don't have expertise in the device's actual operation. For example, it's common to set the transfer function in a differential pressure transmitter to square-root when the transmitter is used for flow applications, rather than setting the function to linear as it would be for pressure applications. An errant press of a button can make the output of the device totally inaccurate.

The reliability and accuracy of the control system is dependent on the field instruments and valves. "They are the basis for safe and reliable control, kind of like tires on a car," offers Scott Hokeness, manager of strategic product planning at Emerson Process Management, a process automation technologies provider. "If the tires are low on air or out of balance they will not perform efficiently and safely."

A new approach

The key to simplifying the process? Templates – created by a plant's engineering team, configurable to the specific operating parameters of a given smart device, and mappable to multiple device tags.

Template-based approaches not only can save enormous amounts of time and reduce the risk of user entry error, but also can help guarantee that devices are set up properly and offer clear documentation of the configuration process. This allows for traceability and accountability of work, helping plant managers to better pinpoint any areas of concern with respect to commissioning and configuration tasks.

One streamlined approach is offered by Emerson's AMS Device Manager, which supports device templates and bulk commissioning. The potential savings are on the scale of thousands of personnel hours and hundreds of thousands of dollars.

With this new process, a company's engineering team can define user configurations for devices via templates based either on live devices or on device placeholders. These templates then can be shared among multiple AMS Device



Manager systems to help organizations scale the configuration process up and extend it across facilities in a uniform fashion.

Hokeness notes that Emerson developed its bulk commissioning method in direct response to requests from major customers, including Shell. "(Shell) had this huge project, and they came to us and said, 'There's no way using traditional methods that we can meet our schedule – what can we do about it?' "

The outcome: “We came up with some innovative ideas on how we could streamline their work processes ... to make it much more efficient to configure thousands of devices.”

Spreadsheets are used to map templates to device tags. Once the mapping is transferred into the system, it will configure the devices automatically in accordance

with the template as they are connected. If configuration changes are deemed necessary after devices are commissioned, then the templates can be modified and reapplied to all devices en masse.

Verification of the configuration process is automated, and users can create verification reports that show only devices

that were not configured according to their specifications. Emerson estimates that in a 10,000-tag system, the hours to verify device configuration could be reduced by an order of magnitude – from 2,500 hours to fewer than 250 hours.

“We expect to reduce commissioning time and loop testing for Foundation fieldbus devices by 10,000 to 20,000 man-hours for mid-size to large projects with this new functionality,” said Rong Gul, Shell’s corporate subject matter expert on smart instrumentation and instrument asset management.

In a globally competitive marketplace in which manufacturers face ever-increasing demands to speed products off the line and maximize their operating efficiency, it’s a business imperative to implement solutions that save time while increasing the accuracy of critical processes like commissioning and configuration.

“There’s tremendous savings in bulk configuration and commissioning,” Hokeness adds. “And the peace of mind for plant managers in knowing with certainty that smart devices are set up properly to support production when they go live – that’s invaluable.”



ADDITIONAL RESOURCES



Want to know more about bulk transfer?

Watch this **short video** for an overview of the process and an explanation of how streamlined commissioning will help you achieve a quick return on your investment.

[CLICK HERE](#)

Use the **commissioning savings calculator** to put in your own information and quickly estimate how much time you can save using device templates and bulk transfer.

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True asset management is much more than simply getting your devices up and running.

Learn how **AMS Device Manager** can help your maintenance team use the predictive diagnostics in field devices to keep your plant running reliably and safely.

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