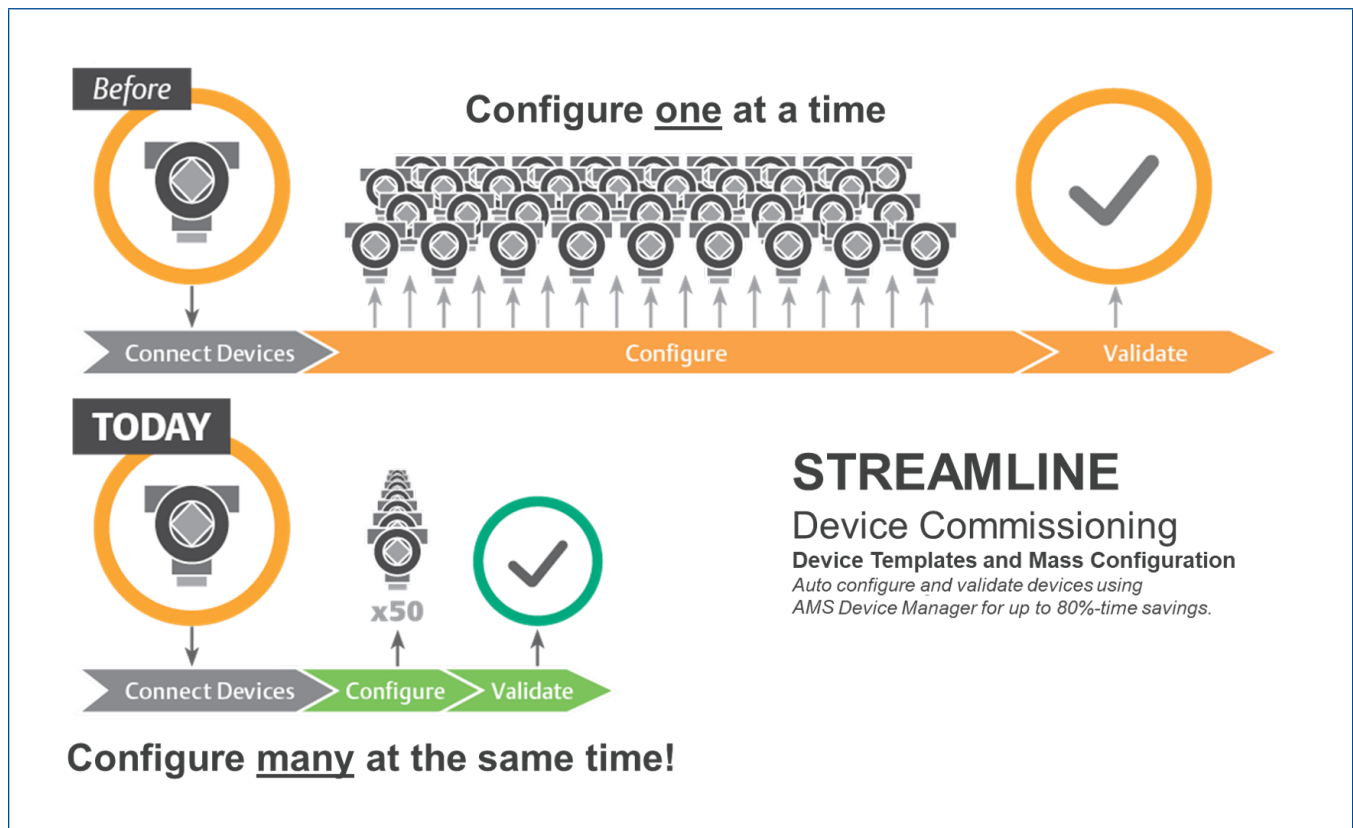# Streamline Device Commissioning

With AMS Device Manager Bulk Transfer

The phrase "define once, use many times" describes the efficient method of configuring and commissioning HART and FOUNDATION™ Fieldbus devices by using AMS Device Manager Bulk Transfer. Rather than undertaking the time-consuming and error-prone process characteristic of traditional configuration and commissioning, Emerson users can take a safe and proven path that also provides complete digital records. Bulk Transfer, streamlines device commissioning by significantly reducing the number of configuration and validating steps.

Traditional Configuration and Commissioning Difficulties

Configuration and commissioning activities are traditionally time consuming, tedious, manual, and prone to errors. In addition, after completing configuration and commissioning, technicians must spend time verifying that all activities were performed properly and that the system is up and safely operational.

Configuration and commissioning must be performed for each device — each with many configurable parameters. With thousands of devices to configure, technicians have mountains of data to enter and verify. For example, a single Rosemount 3051S Pressure Transmitter has about 100 parameters, a Micro Motion® Model 2700 Transmitter has about 290 and a Rosemount 5300 Series Superior Performance Guided Wave Radar Level and Interface Transmitter has 560 parameters to configure.
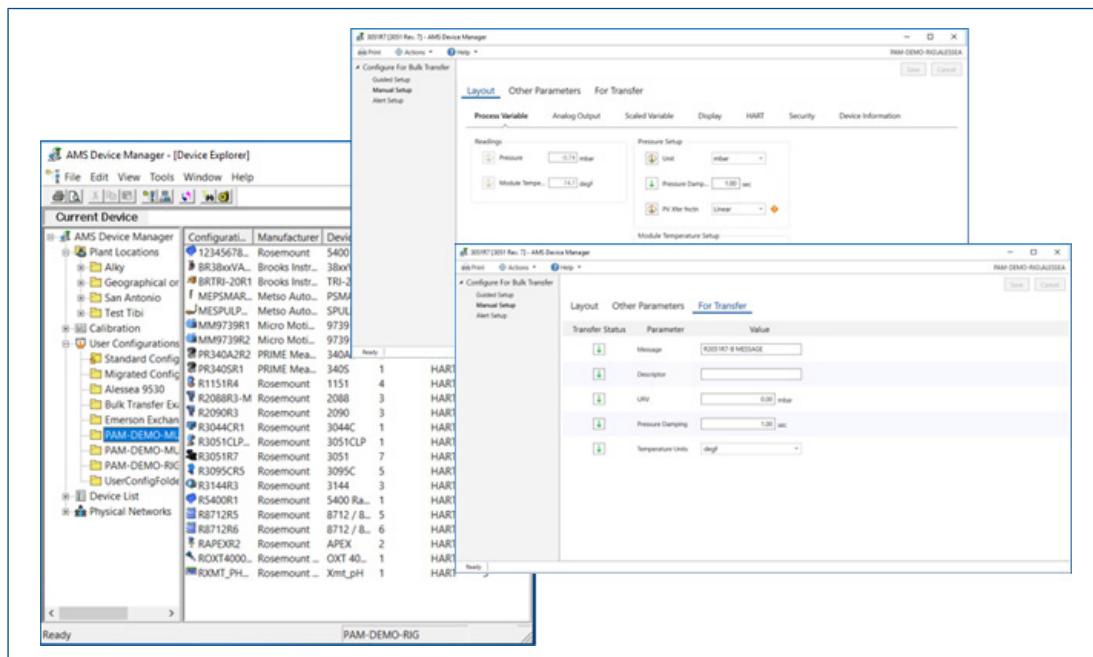
This traditional process is time consuming and costly. Configuring and commissioning assets one at a time can take 15 to 50 minutes depending on the complexity of the device, while validating the device configuration can take an additional 15 minutes per device.

Efficient Configuration and Commissioning Using Templates

The AMS Device Manager Bulk Configuration method improves the configuration and commissioning process by offering templates and bulk commissioning. Briefly, the process includes defining user configurations (templates), applying templates to devices, commissioning and validation using built-in reporting tools.

Before technicians commission devices, templates are created by which assets are configured. Not only can the parameter values be set for multiple devices, but the interface enables the user to define exactly which parameters are downloaded to the device.

Templates can be defined by corporate engineering to follow a set standard or corporate specification. A template can be created based on a live device and can be shared among multiple AMS Device Manager systems. An Excel file is used to map templates to multiple device tags. This process of mapping the devices to templates can be done in advance. Bulk Configure can then be done on all or new devices.

Device Configuration Templates are created based on asset type and not on each device.

Streamline Device Commissioning

Streamlined Reports to Verify Device Configuration

AMS Device Manager provides a device configuration reporting tool that streamlines the verification process. The system automatically provides verification that devices are configured per the defined template. This verification report can be set by the user to show only those devices that do not match the defined configuration. Thus, verification time is drastically reduced by the ability to quickly check the configurations of multiple devices versus reviewing each device individually.

By using templates, bulk commissioning and verification reports, users can complete these actions in a fraction of the time required by the traditional method. A single template can be created in 15 to 50 minutes depending on the complexity of the device **not on the number of devices**. Additional time savings are gained during device configuration verification. The traditional process takes an average of 15 minutes to verify each device versus the few seconds it takes to view a report of configuration discrepancies.

Configure\Manual Setup\ Classic View\ View All Parameters\ Sensor Transducer\ Standard Parameters\ Primary Value		Configure\Manual Setup\Classic View\View All Parameters\Sensor Transducer\ Standard Parameters\Primary Value Range					
Prim Val Type		**Decimal**		**Lower**		**Upper**	
Value	**Unit**	**Value**	**Unit**	**Value**	**Unit**	**Value**	**Unit**
Differential Pressure		2		-250.000000	inH2O (68 F)	250.000000	inH2O (68 F)
Differential Pressure		2		-250.000000	inH2O (68 F)	250.000000	inH2O (68 F)
Differential Pressure		2		-250.000000	inH2O (68 F)	250.000000	inH2O (68 F)
Gauge Pressure		1		0.000000	inH2O (68 F)	4159.375000	inH2O (68 F)

Streamlined Report Capabilities reduce the time required to verify device configuration.

Getting Business Results

Because thousands of devices are easily managed with a few actions, the new methodology reduces the time required to commission smart devices by 75 to 80%!

Cost Savings – Configuration and Verification Example

Using **Bulk Transfer Calculator** the user estimates the following for their 10,000 tag system:

- 8000 devices are classified as simple devices (i.e. pressure transmitters)

- 2000 devices classified as complex devices (i.e. radar level transmitters)

- 80 templates are required to configure 8000 simple devices

- 20 templates are required to configure 2000 complex devices

- 15 minutes to configure each simple asset type

- 50 minutes to configure each complex asset type

- 15 minutes per device to verify configurations per traditional methods

Configure Device or Templates	Traditional	New
Hours to Configure Devices/Templates	3,667	37
Hours to Map & Apply Templates	NA	833

Savings to Configure Devices in Hours		2797
Savings to Configure Devices in Dollars		$195,767

Verify Configurations	Traditional	New
Hours to Verify Device Configuration	2,500	167

Savings to Verify Devices in Hours		2333
Savings to Verify Devices in Dollars		$163,333
Total Savings		**$359,100**
% Savings		**76%**

The total estimated direct savings in this example is $359K equating to 76% decrease in hours spent in configuring devices. That means AMS Device Manager return on payback is only 10 months!! Additional production profit can be gained due to early start-up.

Cost Savings – Potential Increased Production due to early start-up Example

Using **Bulk Transfer Calculator** the user estimates the following production costs for their 10,000 tag system using the hours saved above from Bulk Transfer:

- 6 people are assigned to commission devices

- Each person works 12 hours/day

- Production profit is $160,000 per day

- 2,797 hours saved on Device Configuration from Bulk Transfer

- 2,333 hours saved on Device Verification from Bulk Transfer

- Assumes commissioning is the critical path & savings directly relate to production

Additional Profit due to early start-up	
# of People On Commissioning	6
Shift Length in Hours/Day	12
Days saved from Commissioning	71
Hours saved on Device Configuration	2797
Hours saved on Device Verification	2,333
$ Profit/Day of Production	$160,000
Additional Production Profit	**$11,400,000**

In this example an additional $11.4M of production profit can be gained by starting-up production earlier due to hours saved using Bulk Transfer. In addition to the direct savings achieved from utilizing AMS Device Manager Bulk Transfer, indirect benefits include reduced configuration errors due to less human intervention, reduced troubleshooting time, smoother commissioning and ultimately more available time for other start-up tasks. The combination of all these elements clearly provides time savings and additional profit relating to a high return on investment of AMS Device Manager.

Customer Testimonial

The following is a copy of an email from a Global Oil Company describing the benefits they realized from utilizing the new AMS Device Manager Bulk Transfer feature.

> *Hi,*
>
> *Just wanted to inform you that we started commissioning of Fieldbus and HART devices last week using the new device configuration process and templates.*
>
> *The FF improvements on which we worked on DeltaV and AMS v12.5 exceeded our expectations! On an average of 5 minutes per device we downloaded the User Configurations in DeltaV and AMS Device Manager, performed physical location check, data sheet, parameter and network verification.*
>
> *This is outstanding also looking at the fact that teams are not really "warmed up" at this stage.*
>
> *In a matter of fact the engineering teams really like working on the FF loops as they are much easier and far less time consuming compared to the Hart loops.*
>
> *Overall I think we can be proud of the achievement and I wanted to express my thanks to the Emerson guys who translated our input into very good system improvements.*
>
> *Thanks!*

AMS Device Manager Bulk Configuration
Unsolicited e-mail from a Global Key Customer

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