DEVICE INTEGRATION STRATEGIES

Simplifying device-level networking with FDT

2015 - 3 Issue

Brought to you by FDT Group

Motor Monitoring and Diagnostics at Techno-Agrar's Coal Wash Plant

Electronic motor management modules can be parameterized and diagnosed via FDT to allow conveyor belts to operate smoothly and efficiently.

Conveyor belts bring bulk goods, which have been contaminated during transport, to various process stations. Here, they are decontaminated by mixing them with other substances.

Article continues on page 4

Figure 1: Large quantities of coal and iron ore are transported and filtered using the vacuum belt filter.

In This Issue

Chairman's Corner

FDT2 Emerges While FDT is Tapped in Consortium's RAMI 4.0

It's last call for FDT's beer making display, but watch for myriad of new marketing presentations.

I am pleased to announce that the European Industrie 4.0 initiative has included the FDT Standard in its recent publication, The Reference Architectural Model Industrie 4.0 (RAMI 4.0).

This document is the result of collaboration between three Platform Industrie 4.0 trade organizations ZVEI, VDMA, and BITKOM that analyzed relevant industry standards for inclusion in RAMI 4.0. The RAMI 4.0

Get Social with FDT

Stay connected with the latest news and trends with FDT Technology.

Microsite | LinkedIn | Newsletter | YouTube

Contributors

Endress+Hauser · metso · M&M · PHOENIX CONTACT · Rockwell Automation · Schneider Electric · softing · utthunga · YOKOGAWA

Chairman's corner *continued*

document centers around a new three dimensional layer model that facilitates further analysis and classification of relevant technologies. You may learn more about the RAMI 4.0 document in this **ZVEI publication**. Two major milestones have been reached within the FDT development community. As you will recall, the development of the FDT2 standard was focused on ease of device and network integration using DTMS and FDI Device Packages while offering significant speed and performance enhancements in a more secure environment. Part of the "ease" of integration is interoperability. So, Common Components were developed to aid product developers by providing a complete tool kit of all of the essential interfaces and core functionality that make up the FDT2 standard. By incorporating the Common Components inside either their Frame Application or DTMs, companies are able to save significant time in product development and deliver a product with greater compliance to the FDT2 standard. With these benefits of FDT2 in mind, I am pleased to report:

1. **The PACTware association announced the release of its first FDT2 enabled Frame Application, PACTware version 5.0.** The **PACTware consortium** consists of 22 member companies in the device and automation solution industry that commonly develop an open source FDT-based Frame Application that will be distributed by the consortia members. This version of PACTware (5.0) is built upon the FDT2 Common Components to help ensure interoperability and compliance to the standard. Since the new PACTware version is based on FDT2, it offers full backwards compatibility to previous DTM versions. The PACTware consortium represents a large constituency of Frame vendors in the industry - thus the introduction of PACTware on FDT2 represents a major step forward for full adoption of the FDT2 standard in the market. My personal thanks to the PACTware consortium for their leadership in making this technological advancement.

2. In a related FDT development, an article in this newsletter announces another major application that is based on FDT2, the **Yokogawa PRM tool which is embedded in their automation system**. While many configuration management tools are based on the FDT2 standard, this represents an early implementation in a Plant Asset Management (PAM) application that's grounded in FDT2 Technology.

On the FDT marketing front, I have received word that our European marketing team will be retiring its much publicized integrated brewing display that made appearances at more than 30 venues over the last three years. Its final showing will likely be the SPS/IPC/Drives show later this year. The team is already working on a new display that promises an even more exciting demonstration of the FDT Standard in an integrated process and factory automation environment. I look forward to its debut at Hannover Fair in 2016. Meanwhile, please do stop by our booth at SPS/IPC/Drives (Hall 2, booth 550) to see the integrated brewery demonstration and enjoy a cold, Belgian beer at the end of the long show day. It is a great way to meet many FDT experts and end users in a relaxed environment.

Our Asia Pacific marketing committee teamed up with our China marketing committee at the recent SICE 2015 event in Hangzhou, China. FDT

FDT Tech Tip: Let the Future Come

The new PACTware 5.0 application is built upon FDT2 – taking full advantage if its many new capabilities.

Customize Your FDT2 Developer Training

It's time to engage with the enriched offerings available with FDT2. Along with FDT2's enhanced features, Common Components are available to help expedite the development of Frames and DTMs that can be used for internal development. Training sessions for developer engineers are available to increase users' knowledge bases for effective FDT2 product development, ranging from introductory concepts to advanced product development.

CodeWrights

Chairman's corner *continued*

representatives made four presentations during the course of the conference, helping raise the technical awareness of the full capabilities of the FDT Standard. The FDT China Board welcomed FDT leaders from the various geographies during the course of their co-located Board meeting. In my recollection, this is the first cross-region collaborative effort. Based on the success of this event, I envision more to come.

In the Americas, FDT has been the guest speaker with in the ISA community including sections in Beaumont, TX; Bakersfield, CA; Edmonton, AB; and San Diego, CA. Upcoming events include the FDT Developer Forum in Foxboro, MA, on Sept. 15th, and multiple FDT guest speaking appearances with ISA sections in Sarnia, ON, on Sept 28th and ISA Baltimore, MD on Oct. 6. FDT will also be exhibiting at the Rockwell Automation PSUG event on November 16-17 in Chicago, IL. In addition to events, the FDT Group is updating the ISA103 standard to include the latest FDT2 Standard. FDT2 Standardization is projected to be complete in the first quarter of 2016, which will benefit the ISA/ANSI community.

Lee Lane
Chairman of the FDT Board of Directors

You're "FDT connected" But Would Like to Know More?

No Problem! At Endress+Hauser we know field communication like nobody else. Whether you need to design, install or maintain your plant, we have a training course suited for you! Check us out!

Endress+Hauser

FDT Video

Motor Monitoring and Diagnostics at Techno-Agrar's Coal Wash Plant *continued*

Electronic motor management modules that can be parameterized and diagnosed via FDT ensure the belts operate smoothly.

Before coal can be burned in power stations, it must be free of iron ore residue and other substances. A German company, Techno-Agrar Rohstoffhandel GmbH from Rheinberg-Orsoy, has developed a solution for this. First of all, the mixture is suspended in water to separate coarse-size coal from ore. Finer pieces of sediment measuring less than 0.5 mm are separated using hydrocyclones and spiral separators. The effect of the rotation and the resulting centrifugal forces make it easy to separate the heavier elements (Figure 1).

As coal moves from one station to another, the conveyor belts transporting the materials must be monitored continuously. This is the only way to detect faults or overloads in a timely manner. Smooth production operations also require the visualization of all relevant process parameters as well as comprehensive diagnostic options in the control room. Furthermore, it must also be possible to manually adjust the system parameters from there. The operator should also be able to react quickly to process changes. If the conveyor belts come to a halt, restarting while under a load is not possible. The materials that are being moved clump together and harden, which makes restarting the motors and gears difficult.

Central data access

Such errors can be prevented through the use of intelligent EMM (Electronic Motor Management) modules, which can be parameterized and diagnosed using FDT. When operators in control rooms can access the device parameters and diagnostic data of each motor control application, error states can be detected and remedied promptly. In Techno-Agrar's separation system, a higher-level controller uses PROFINET to communicate with distributed small-scale controllers and their remote I/O stations, which are connected via INTERBUS and PROFINET. The terminals mounted in the system enable on-site operation, while safety modules are responsible for the emergency stop as well as other safety functions. Lastly, the EMM modules control the load on the pumps, conveyor belts, and other motors.

Techno-Agrar uses a DTM to monitor the motor managers effectively by acquiring apparent, active, and reactive power. To this end, the curves are illustrated for current consumption, voltages, phase angles, switching cycles, operating hours, energy consumption, and phase failure, as well as other values. Using such data, employees can determine whether a fan belt is rotating and whether bearings are damaged or pumps have run dry. If threshold

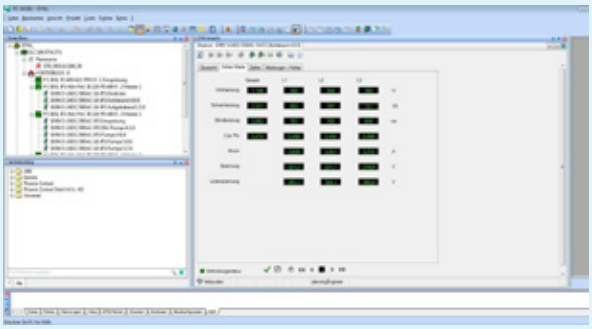
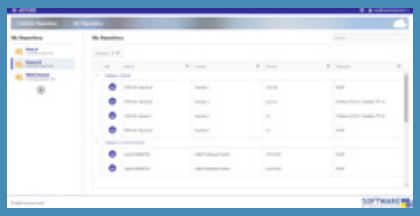


Figure 2: The EMM-DTM provides comprehensive information on the current motor states.

Manage Your DTMs in the Cloud

Visit M&M Software diSTORE



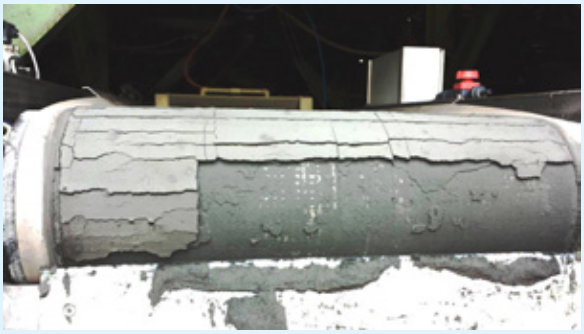
M&M Software developed a new cloud-based product called diSTORE. This new cloud-service enables plant operators and device vendors to manage and share their DTMs in private and public repositories using the diSTORE web portal. Device vendors will be able store their DTMs in customized areas where clients can access them for easy installation.

Please visit mm-software.com for more information on diSTORE.

M&M Software

Motor Monitoring and Diagnostics at Techno-Agrar's Coal Wash Plant *continued*

values are exceeded, the EMM outputs can be set or a targeted switch-off can be executed. Limit values and switching thresholds can be directly parameterized in the corresponding DTM so no changes are required in user programs (Figure 2).



Always the same user interface

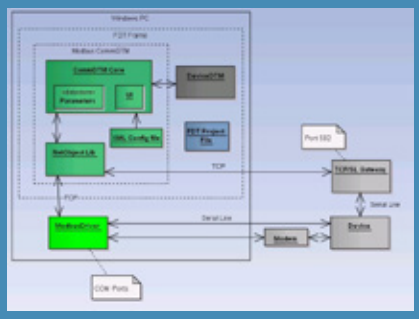
If an employee needs to adjust the EMM during startup, the corresponding DTM can be embedded in the PC Worx engineering system used for controller programming and network configuration. If Techno-Agrar wishes to monitor and parameterize the warning and shutdown thresholds during operation, the DTM can be integrated into other FDT framework applications by leveraging the standardization of the FDT interface. This means that the user interfaces remain the same, regardless of the tool environment where the DTM is used.

Andreas Reilard, Operations Manager at Techno-Agrar, reports, "Thanks to the use of the FDT Technology, combined with the EMM modules, we can monitor the pumps and conveyor belts and, if necessary, adjust the parameters accordingly. Potential failures are therefore detected and prevented in a timely manner, so that the effort required, both in terms of time and expense, is significantly reduced.

***Author** Dipl. Ing. Friedrich Wegener, Marketing Software employee in the Control Systems business area at Phoenix Contact Electronics GmbH, Bad Pyrmont, Germany*

Making Strides in Cyber Security

Modbus communication DTM beefs up protection against many types of cyber security threats



Cyber Security has become an important matter in the automation business. Schneider Electric has responded to this trend by reworking its Modbus Communication DTM for serial line and TCP. The development process followed the Microsoft security development lifecycle. This process recommends several measures from the requirements to the release phase. Examples of such measures are:

- *Security and privacy risk assessment*
- *Attack surface analysis*
- *Threat modelling*
- *Deprecate unsafe functions*
- *Specific cyber security tests*

The figure shows an overview of the DTM architecture. Potential points for intrusion are the interfaces between the components. These interfaces were analysed when assessing the possible threats which were classified using STRIDE (Spoofing, Tampering, Repudiation, Information disclosure, Denial of service, Elevation of privilege).This helped to define the necessary work to mitigate the threats.

Schneider Electric

Changing Plant Operations and Maintenance Cultures Improves Plant Reliability

Significant benefits come when operations and maintenance efforts focus on preventing shutdowns and improving plant reliability.

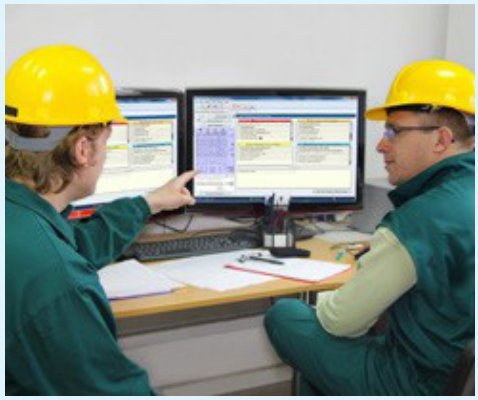
Introduction

As a plant life cycle moves from the **planning, engineering and start-up phases (Part 1)** to the operation and maintenance phases, the focus turns to keeping the plant operational at optimal performance and lowest possible costs. Automation decisions have defined the available resources, assets and capabilities. Now it's up to operations and maintenance to produce product and achieve plant objectives.

Operations and maintenance now have the opportunity to formulate a strategy moving into the next phases of the life cycle — continue to work as they have in the past — hoping for better results, or, change the culture and work processes based on information enabling a more forward-looking strategy. Let's explore the operations and maintenance life-cycle phases to see what changes can improve plant reliability and achieve plant objectives.

Business Drivers

Today's business drivers include the need to reduce downtime, improve plant reliability, lower operating costs and to comply with regulations in areas such as safety and environmental monitoring. In order to address these business drivers, plant managers need to consider a culture change to maximize the benefits of information available in intelligent measurement and control devices. In today's information-oriented business culture, operations and maintenance organizations are being driven to make product faster, smarter and cheaper with little additional resources.



If we expect different results from our operations, we need to change the way we think about our work and how it is performed. With a few work process changes and a focus on information from intelligent measurement devices, companies can transition from doing daily preventive scheduled maintenance to conducting a daily predictive routine dramatically improving plant operations and reducing maintenance costs. The benefits of using FDT Technology-enabled systems and devices permit the use of intelligent device diagnostics, allowing improved plant reliability and maintenance cost reductions, delivering a positive impact to the bottom line.

Chemical Manufacturers Gain Operational Efficiency and Maintenance Predictability

Softing's broad portfolio includes diagnostics that reduce network failures.

Softing's comprehensive and reliable portfolio of products for plant asset management and integrated PROFIBUS diagnostics let customers operate and maintain their industrial networks more efficiently while reducing the risk of network failures. Companies like the German Wacker Chemie, Sasol Germany and Rheinchemie and the Swiss SI Group rely on FDT and Softing's TH LINK PROFIBUS facility asset management tool to centrally manage their field devices. SI Group and Sasol also benefit from fast analysis of bus problems and reduction of failure risk for the plant by using TH Scope for network diagnosis.

Softing

Changing Plant Operations and Maintenance Cultures Improves Plant Reliability *continued*

Operations

The goal of plant operations is to keep the plant running so that product can be delivered on time and on budget. Traditionally, companies want to operate and turn to maintenance to fix things that prevent the plant from operating. Even though devices are expected to operate without failure for 20+ years – and many of them do - breakdowns and failures occur because equipment is exposed to mechanical, thermal, chemical and industrial hazards. Once a device reaches a wear limit, it will fail! In this case, you either shut down to do the repair or continue to operate without the measurement information - which is like running blind!

There are many **case studies** that document dramatic results when operations and maintenance are armed with the right information at the right time, to do the right things, to prevent an unscheduled shutdown or unnecessary maintenance. Using FDT Technology-enabled solutions provides device diagnostic information that enables early detection and warning of pending problems, putting operations in control of the situation. Millions of dollars are saved every year when plants avoid unscheduled shutdowns or when plants reduce the duration of a shutdown. These savings are achieved with minimal investments of money and time.

Management must strongly support a change from a reactive to predictive plant operation by enacting a maintenance culture that includes work processes that facilitate the change. This change is more than just a maintenance matter, **really it is not a matter of if you change, but when**! Let's face it, if we keep doing the same things the same way, we will never change the results. In this way, FDT Technology benefits operations and maintenance by enabling changes that change the game.

Maintenance

Most maintenance programs begin as reactive: run equipment until it fails and then hope to quickly fix it. This simple approach isn't optimal, but countless companies use it as many assets can run till failure without serious consequences. However, when applied across an entire facility, this approach causes unscheduled shut-downs and production interruptions.

Scheduled maintenance is a slightly higher level of sophistication. This is generally an improvement over a purely reactive strategy, but it is still expensive because work is scheduled where it might not be needed. **Some studies suggest that 12%** of maintenance costs are wasted because maintenance may not be required but is performed simply by following a decade-old schedule.

If reactive and scheduled approaches are the basis for your maintenance program, you will have a difficult time reaching any form of operational excellence and achieving assigned objectives. There is another way: predictive maintenance based on actual condition monitoring. When you know something is going to happen in advance, you can take action before failure based on your schedule – saving time and money.

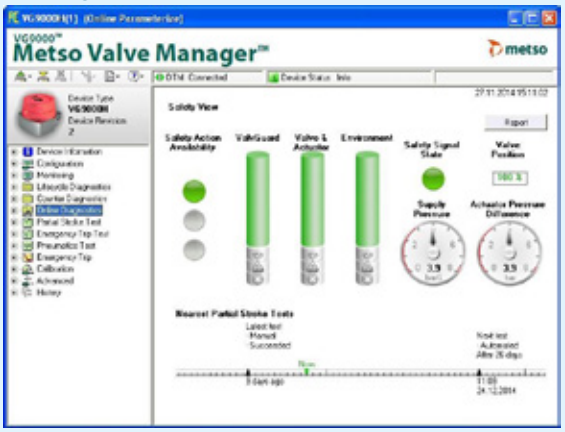
An effective maintenance program based on condition or predictive monitoring requires three elements:

1. Field devices must be smart, meaning they have diagnostic functions and can communicate the information, typically via 4-20mA +HART or any of the other process or factory communication networks (See graphic on right). Make sure a device **DTM** is available for your device. There are 8,000+ devices supported by certified DTMs provided by major device suppliers. **Check out the DTM Product Catalog here**.

Changing Plant Operations and Maintenance Cultures Improves Plant Reliability *continued*

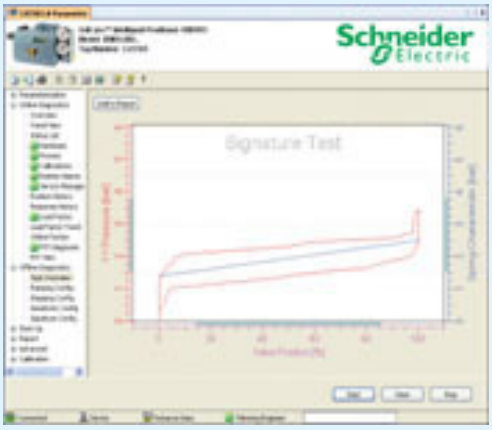
2. The main process control system must be able to convey the information from the devices to a central point via the appropriate field wiring or wireless access – field communication enabled.

3. Integrated device and asset management software must be installed and used to gather and interpret diagnostic information either manually or automatically. This requires a FDT-enabled device management application known as a **Frame Application.** In all likelihood, you already have the first two elements in place, at least in terms of most of the field devices and the control platform. The majority of your measurement and control devices are smart (or intelligent) as this has been a standard capability in many devices for 10+ years. Similarly, process automation control systems typically provide the field communication interface to these devices.



Example of graphics-based information from intelligent valve positioner via a DTM

The third element required to implement a predictive maintenance program is an integrated device and asset management software application. It will provide access to valuable device diagnostic information sitting in your intelligent devices such as the valve diagnostics information shown on the DTM on the left. Many plants have such systems in place but aren't utilizing them to their fullest extent. If you do not have such an application, there are more than 40 cost-effective options that provide device information access and system integration of this information that are easy to deploy and use. Check with your automation system supplier to see whether your system is FDT capable.



Automated functions such as Partial Stroke Tests can reduce safety valve shut down frequency.

When all three elements of a condition monitoring program are in place, frequent routine device checks in the field are no longer necessary. **User's report 63% of maintenance checks result in "no action taken"**. Most of the things a technician can do with a hand-held device while standing at the device can now be handled from the control room or maintenance shop (see image of a valve positioner device DTM above). Some asset management systems can perform checks automatically by simply selecting the desired check interval. Checking a device that appears to be malfunctioning can also be done without a visit to the field. If there is a malfunction, the application has probably reported the failure, and may even have done so in advance. The result is that a high percentage of field trips your technicians make may be eliminated, and you can predict failures before they occur - reducing cost and improving employee safety.

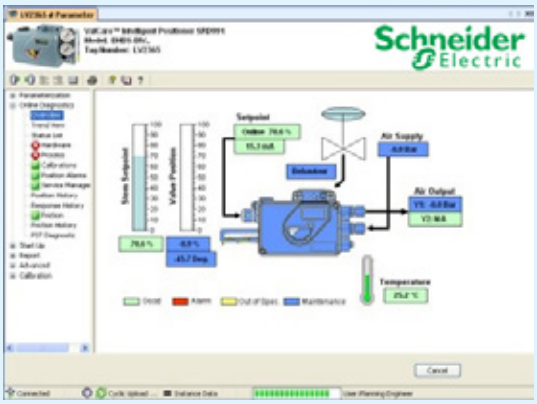


Image of a device DTM shows device diagnostics and condition monitoring

These elements combine to optimize your predictive maintenance strategy with a process that provides maximum availability and reliability. Interruptions are minimized, as are overall maintenance costs. A NAMUR study stated that using (device) diagnostics can enhance quality and reduce cost significantly. An optimized predictive

Changing Plant Operations and Maintenance Cultures Improves Plant Reliability *continued*

maintenance strategy begins with the device diagnostic information available in intelligent measurement devices that communicate and use FDT Technology.

Culture Change Improves Operations and Maintenance

Moving into the operations and maintenance phases of the plant life cycle, the strategy choices are either business as usual or transition to a strategy based on valuable information sitting in your installed assets. With a few work process and culture changes, including a **management commitment** to use the information from your intelligent measurement devices, the operations and maintenance phases of the plant life cycle can be dramatically and quickly improved. By **specifying and using FDT Technology**, expected improvements include a predictive maintenance strategy, improved plant reliability and lower maintenance costs.

How do you get started? Initiate the discussion between operations and maintenance and you may be surprised to find how a few small changes can produce such big results. And, ask your automation providers for their FDT solutions.

For more information, visit **www.fdtgroup.org**.

References:

Overcoming Automation Challenges, ARC Advisory Group, January 2015

Smart instruments and device diagnostics: How well is your plant using information? by Amit Ajmeri, Plant Services, March 2015 **http://www.plantservices.com/articles/2015/smart-instruments-and-device-diagnostics/?start=0**

Standardized Software Interfaces Enable Open and Flexible Automation Systems

What's behind the letters FDT, and what requirements in Factory Automation does FDT address? Lets begin with an introduction of the basic concepts.

In order to be open and flexible, a system must seamlessly integrate a wide range of automation components—including third-party components that round out the in-house product portfolio. From the end user's standpoint, it is important for engineering, commissioning, and maintenance to remain controllable and efficient. For the manufacturer, development costs for hardware and software play a key role. Development of the necessary software tools is a cost factor that must not be underestimated. Cost drivers here include support for various fieldbus and device specifications within the tools and their integration into other manufacturers' systems.

With FDT, software components can be grouped together into tools for various jobs. For instance, components for a fieldbus master and components for sensors and actuators can be integrated into a PLC programming system. Once the components are developed they can be used in various tools. This reuse ultimately saves development costs, even if the initial costs may be higher, since the components must be developed with various applications in mind.

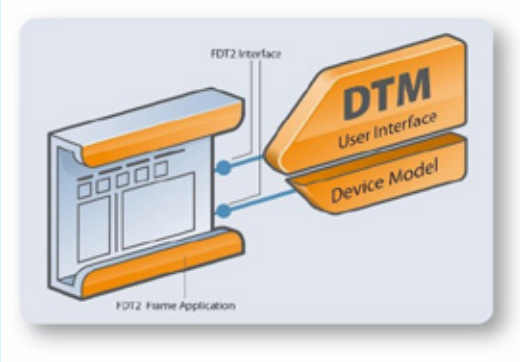


Figure 2: FDT basic concept

How does FDT work?

FDT standardizes interfaces between tools so-called Frame Applications and Device Type Managers (DTMs). DTMs are virtual representatives of physical automation components, which are plugged into the tools as needed (Figure 2).

A DTM is a component that represents fieldbus and device specifics in software and provides corresponding software and user interfaces. The first version of the FDT standard was defined in 2000 and was at the time based on Microsoft COM/ActiveX technology. Ten years of practical experience with the standard have gone into the current version, FDT2™. The standard is now based on the Microsoft .NET framework and is recognized as an international standard under IEC62453 and ISA103. FDT is also registered as an official standard in China under the designation GB/T 29618.

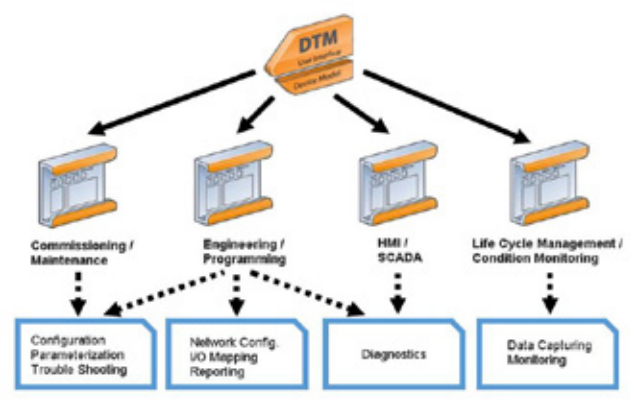


Figure 3: Use of a DTM in various tools

The basic idea of a DTM is that it is developed one time by the manufacturer of an automation component and then used in a wide range of tools for various tasks (Figure 3).

Example: DTM for a drive

Drive manufacturers are often suppliers of entire systems and individual components at the same time. In the first case, the drives must be represented in a PLC programming system, for instance, and in the second case, a simpler tool is needed for commissioning and maintenance.

Standardized Software Interfaces Enable Open and Flexible Automation Systems *continued*

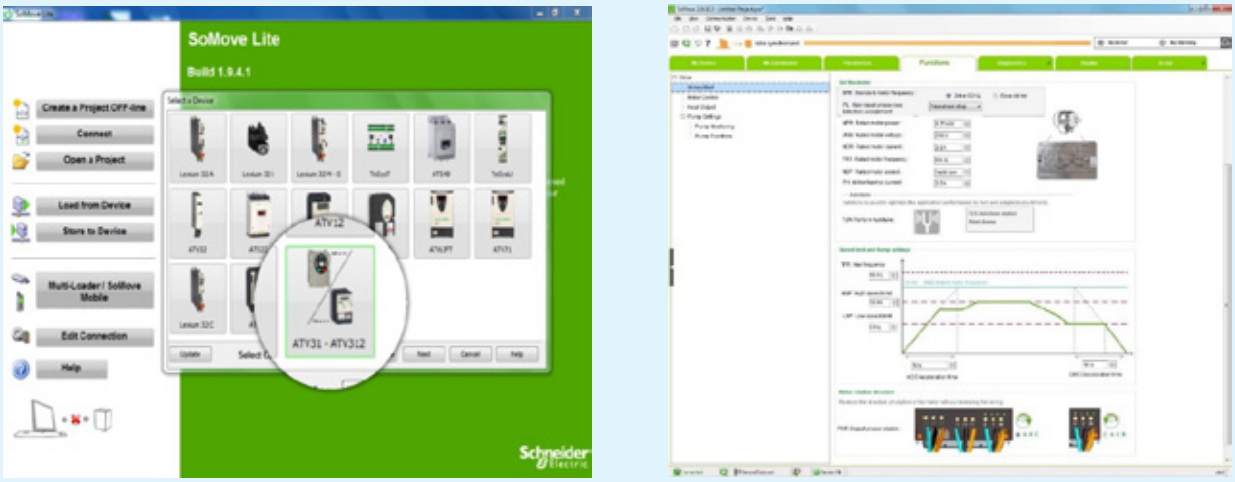


Figure 4: Schneider Electric SoMove with Altivar DTM

The DTM for a drive typically provides a user interface for configuration. Figure 4 shows the use of a Schneider Electric Altivar drive in SoMove. SoMove is a simple commissioning and maintenance tool. The user selects the desired drive on the home screen. Subsequently, the drive-specific configuration interface provided by the Schneider Electric Altivar DTM appears.

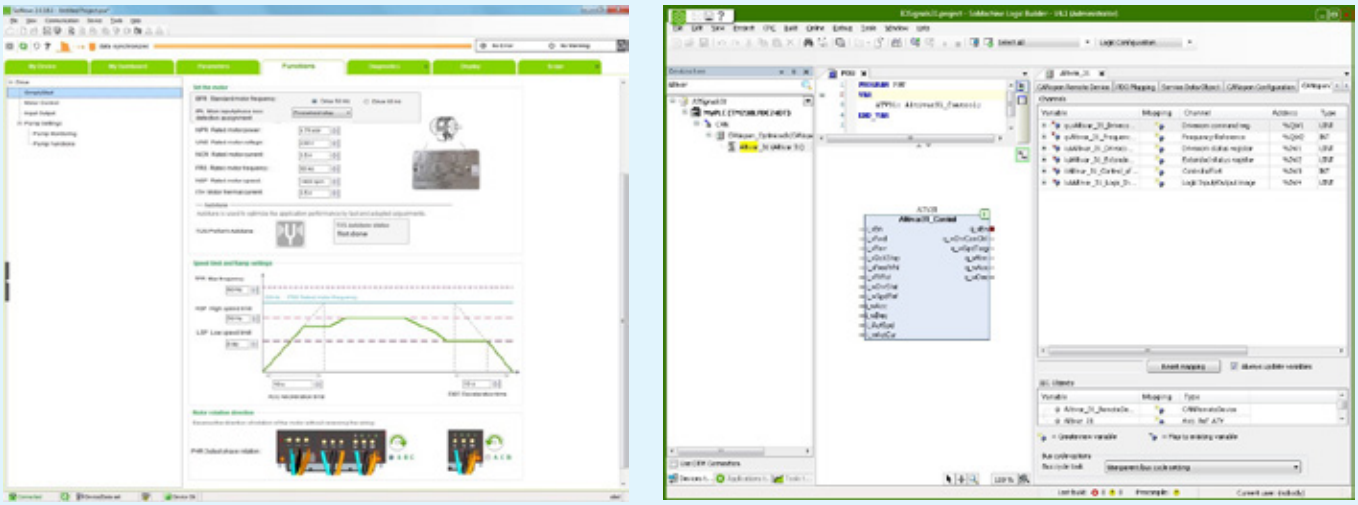


Figure 5: Schneider Electric SoMachine with Altivar DTM

If the Altivar DTM is used in the Schneider Electric SoMachine PLC programming software (Figure 5), the same DTM configuration interface is used. However, the programming software also uses the interfaces provided by the Altivar DTM to integrate the drive IO into the control program.

Integrating third-party components

The two previous examples show how a drive is integrated into different software tools made by the same manufacturer. In addition, FDT is also designed in particular to integrate components from different manufacturers into a single system. For this reason, the same mechanism as used before for the Altivar can be used to integrate additional sensor/actuator systems into SoMachine—an open system. All the manufacturer needs to do is provide the appropriate DTMs.

Standardized Software Interfaces Enable Open and Flexible Automation Systems *continued*

But not every manufacturer needs DTMs. For simple sensors and actuators, the usual description files (GSD, EDS, etc.) suffice. There are interpreter DTMs, or generic DTMs, as this type of DTM is sometimes called. They make it possible to integrate these types of components into an FDT system. The user interfaces here are simple and generic, but thoroughly adequate for many applications.

Summary

FDT is a tried-and-tested software interface for integrating automation components into software tools. The use of FDT creates open, flexible automation systems. Fieldbus and device specifications are represented by DTMs, which can be integrated into a wide range of tools. The user interfaces are thus identical in all tools. In the overall context, development costs are saved through reuse.

FDT Group

The FDT Group is an open, independent, non-profit association of international companies that have joined forces to further develop and establish the international FDT standard in the marketplace.

For more information, please visit: **www.fdtgroup.org**

Authors

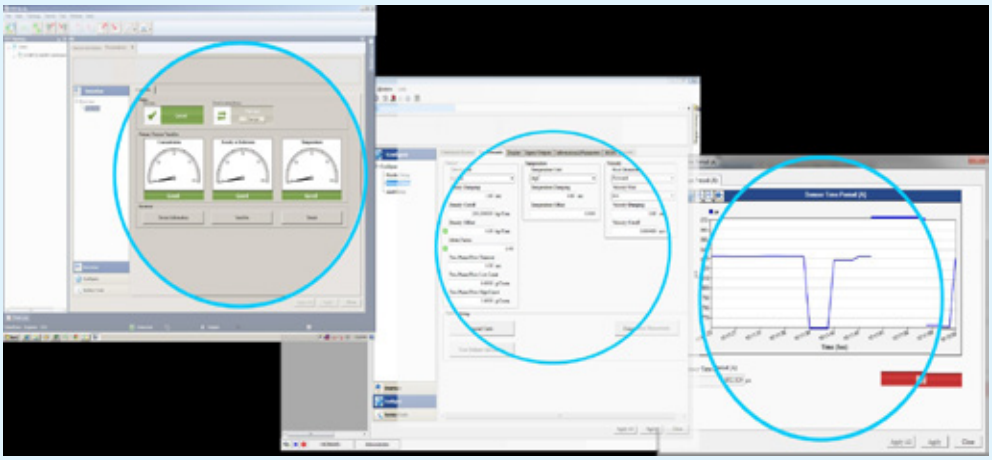
Author: Manfred Brill,
Software Governance Senior Manager
Schneider Electric Automation GmbH & Member of the FDT Group's Executive Committee

Author: Frank Schmid
Head of Consulting
M&M Software GmbH & Member of the FDT Group's Executive Committee

Please click here for the On-Demand video on FDT in Factory Automation

Quick Delivery for Complex, Customized DTMs

Development framework shortens development cycle without sacrificing flexibility or functionality.



A leading U.S. based process instrument manufacturer wanted to build custom device DTMs that provide customized & complex functionalities, multi-protocol support and a rich and intuitive user interface for their entire range of flow and density devices. Utthunga built, tested, certified and delivered a set of nine complex device DTMs in a short span of 25 weeks using Utthunga's DTM development framework.

Here's how Utthunga's DTM framework enables quick DTM development:

- Imported DD source code to generate device parameter, command definition, UI components, method & custom business logic implementation reducing 60% of the effort
- Leveraged DTM framework's robust protocol and communication stack
- Leveraged DTM framework's variable manger stack for protocol-agnostic DTM implementation, ensuring a seamless user experience and reducing the multi-protocol support in DTM by 60%
- FDT style guide module of the framework was vital in ensuring standards conformance of client's custom & rich user interface (screens shown below) components at only 10% effort
- Built-in unit test module of the DTM development framework reduced the testing effort by 50%

Result

Utthunga's DTM development framework let us complete all nine certified FDT-DTMs in 25 weeks while reducing the total development, testing & certification cost by 56%. Utthunga's DTM framework is architected in a modular format for seamless flexibility. The various components include the UI, protocols, generic controls, standards libraries, custom controls, FDT DTM interfaces for FDT 1.2/ 1.2.1 and 2.0 (powered by FDT 2.0 common components). This will help with development of future DTMs and aid in maintenance and enhancements.

"We are excited to work with Utthunga, their DTM development framework can add new protocol support at just 40% of total cost, a DTM for a device with firmware revisions can be done in less than 10%, and a DTM for a new device variant in just 50% of total cost" says the Director of Software Engineering for a leading US process instrument manufacturing company.

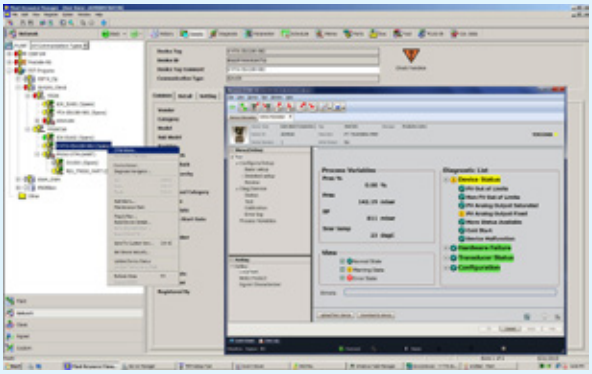
Utthunga brings additional benefits to reduce time-to-market & cost by leveraging a hybrid automated DTM testing framework. All critical features of DTMs such as installation, uninstall, update, repair, modify, UI style guide, localization, operating modes, compatibility tests will be tested through the automated DTM testing framework to bring down the testing cost across the DTM lifecycle.

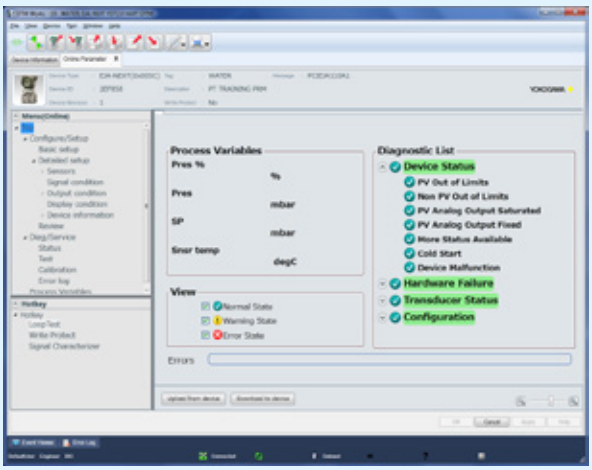
Utthunga's two-pronged approach of framework-based custom DTM development and automated DTM testing ensures guaranteed cost savings and faster time-to-market without compromising quality, performance & reliability.

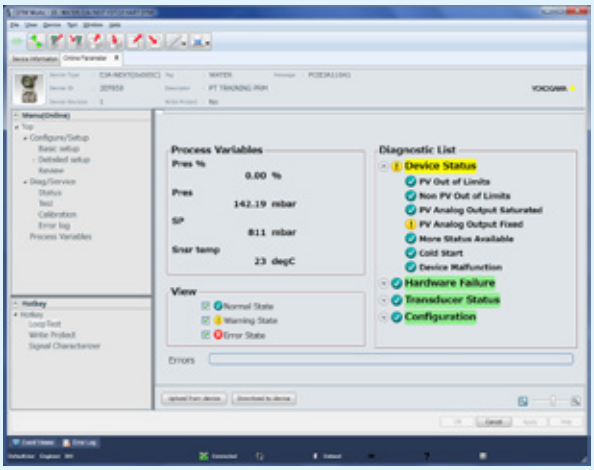
For more information, please visit: **http://www.utthunga.com/content/udtm-dtm-accelerator**

New PRM® R3.20 Plant Resource Manager Leverages FDT2's Enhancements

Yokogawa's tools give operators many views of plant equipment and enable remote access.







Yokogawa's Plant Asset Management solution PRM® (Plant Resource Manager) centrally manages large amounts of status and maintenance information from plant monitoring and control devices and equipment.

PRM supports both EDDL and FDT device integration concepts and features integrated communication paths for Process Automation protocols such as HART, FOUNDATION™ fieldbus, PROFIBUS and ISA100.11a wireless. With PRM and intelligent field devices, operators and maintenance personnel can remotely monitor the condition of plant assets and visualize early signs of performance deterioration such as valve sticking and impulse line blocking of d/p-based flowmeters.

PRM features functions such as a device master function for maintaining an asset database and multiple views to visualize asset hierarchies according to IEC 61512 through Plant, Network or Class Views. The Device Patrol function uses a scheduler to periodically acquire device status information and features a status decision engine to display color coded information, including NAMUR NE107 functionality, on all hierarchy levels. In case of a diagnostic message the device DTM is launched to obtain detailed information and/or access device parameters.

PRM includes Yokogawa's FDT2-based Frame Application, DTM Works, proven in many FieldMate™ Device Management Tool installations since 2014. DTM Works is compliant with both FDT2 and FDT 1.2.x DTMs. FDT2 provides improved security, interoperability, speed and performance along with backward compatibility. PRM R3.20 comes with the latest DTM's for Yokogawa's field devices including a suit of FDT2 DTM's for the latest version of these devices.

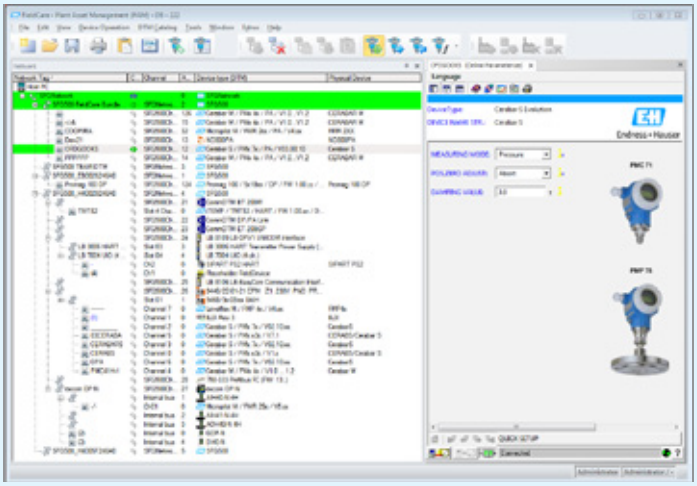
Further, PRM features a Partial Stroke Test (PST) Scheduler, which was developed in close cooperation with leading valve suppliers. It collectively manages and performs partial stroke testing to determine whether ESD valves are in good working order and can respond properly when needed. The PST scheduler enables manual, automatic or semi-automatic implementation of a PST. Furthermore, the PST Schedule and implementation status are shown in a simple Gantt chart that can be viewed from any PC running the PRM package. Further analyses can be easily performed by opening the corresponding DTM.

PRM Plant Resource Manager synchronizes seamlessly with Yokogawa's FieldMate Device Management Tool providing a clear path to Asset Excellence.

For more details go to: **http://www.yokogawa.com/fbs/fbs-maintenance-en.htm?nid=left**

FieldCare 2.10 Simplifies Setup

One touch networking and enhanced HMI improve efficiency.



With the latest version of FieldCare, all Endress+Hauser and third party field devices can easily be configured and commissioned. FieldCare will be available as a standard offering, equipped with Condition Monitoring and W@M.

The new design of FieldCare 2.10 is features eye-catchers: larger buttons, updated colors and the possibility to re-size windows so FieldCare can be used on small form factor devices like tablets. Additionally, Windows 8.1 and WinServer 2008 R2 are now supported and Russian has been added as a new language.

FieldCare scanning options were significantly improved and extended. With FDT 1.2.1 functionality, users can now scan below remote IOs. Field devices with ModBus, EtherNet/IP and WirelessHART protocol are now supported using FDT 1.2.1. The scan is further enhanced with “One Touch Network” functionality, which allows for a complete network scan with just one click. Scanning speed for networks is up to five times faster using the PROFIBUS fieldgate SFG500 and its new SFG Speed Scan functionality.

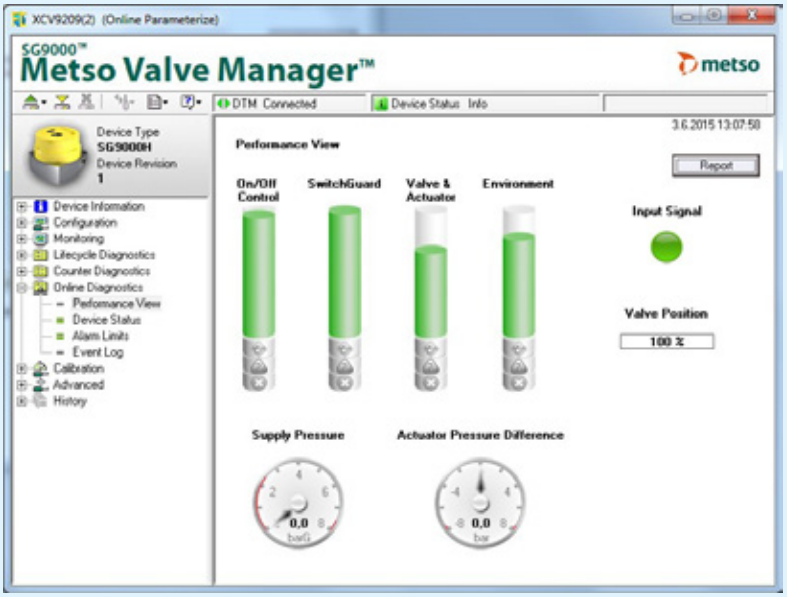
FieldCare 2.10 supports HART 7 schemas and includes a Generic HART DTM which enables the configuration of devices without DTM. Even more convenient is the inclusion of the enhanced iDTM for HART and FF, which provides enables configuration using interpreter DTMs.

For more information, please visit: **www.endress.com/fieldcare**

Endress+Hauser
People for Process Automation

Performance View for Neles SwitchGuardTM introduced in Metso Valve ManagerTM (DTM)

The DTM release 1.17 brings On/Off valve diagnostics to a new level. The ability to present the current valve assembly condition and to predict its future is better than ever before.



The Metso Valve Manager collects information of valve assembly's diagnostics history and current measurements and combines it with the wide field experience. Users see more focused information in a way that helps them to make correct interpretations.

The Performance View, which has been available for ND9000 intelligent valve controller, is now available for SwitchGuardTM SG9000. Performance View graphically displays indices of the On/Off valve. When none of the statuses according to Namur NE107 are indicated, the calculated index is displayed as a green bar.

The "Report" button gives users a report on the valve assembly status with explanations of the status of each component and guidelines for actions.

The DTM package can be downloaded at **www.metso.com/switchguard** and follow link to valve related software.

metso

ControlLogix HART I/O Modules Maximize System Performance

Analog modules simplify commissioning and operations.

Highway Addressable Remote Transducer (HART) input and output modules provide your process automation system with the benefits of the HART protocol in an I/O module that can be used locally or remotely. The ControlLogix® modules offer 8 or 16 analog input or output channels with accompanying HART digital information. If you have a process application that contains HART field devices, the HART modules enable you to leverage your existing instrumentation investment by allowing you to:

- Connect directly to HART devices without external HART multiplexers or extra wiring
- Provide access to more field device data, such as HART Primary Value, Secondary Value, Third Value, Fourth Value with diagnostic and device status information
- Manage HART devices individually that are connected directly to the modules
- Document the device wired to each channel

The ControlLogix HART modules maximize your system performance by combining real-time analog data and HART data at a fraction of the cost. Simplify commissioning, operation and maintenance with increased insight to device status. You can use the digital data as the foundation of your asset management system.

For more information on 1756 ControlLogix I/O modules,
visit: **http://ab.rockwellautomation.com/IO/Chassis-Based/1756-ControlLogix-IO#overview**

Rockwell Automation

Free DTMs Broaden Plant Management Solutions

New DTM Library at Softing completes comprehensive product range for plant asset management applications.

Softing announces version 5 of its DTM Library, which supports the Windows Server 2012 operating system. It is offered license free to users of Endress+Hauser's Frame Application, FieldCare. The DTM Library provides central access to PROFIBUS DP, PROFIBUS PA and HART field devices for plant asset management applications. It includes Communication Device Type Managers (CommDTMs) for the Siemens components DP/PA Link, ET 200M and ET 200iSP. Combined with Softing's TH LINK PROFIBUS, the solution can be used for PROFIBUS network diagnostics.

The launch of the DTM Library completes the full integration of Trebing + Himstedt's industrial communication product and service portfolio, acquired by Softing in 2014. Softing also replaced Trebing + Himstedt as member of the PACTware Consortium. The company now offers a comprehensive range of FDT/DTM based plant asset management solutions. In addition to the DTM Library and the TH Link PROFIBUS Gateway, the offerings include the FG-110 FF Gateway for integration of Foundation™ fieldbus technology, the PROFIusb Interface and the FDT Frame Application, PACTware for centralized access to field devices in process industry plants. With these products, users can efficiently manage, monitor and maintain PROFIBUS, HART and Foundation fieldbus field devices.

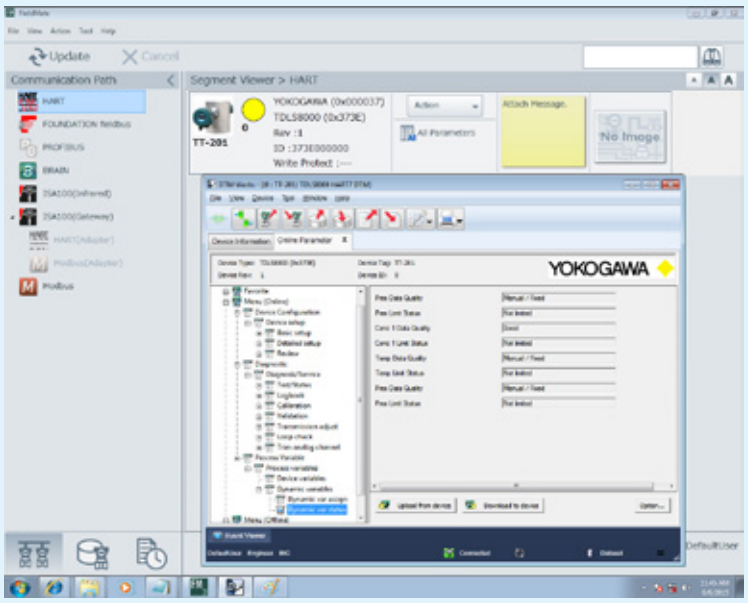
More information can be found at:
http://industrial.softing.com/en/products/plant-asset-management.html?wmc=FDT_201508_NL

FieldMate DTM Efficiently Manages Tunable Diode Laser Spectrometer

Yokogawa spectrometer makes quick gas measurements.

Using a unique method that measures gas concentration by calculating the area of the detected absorption peak of the related components, Yokogawa's new Tunable Diode Laser Spectrometer can quickly make in-situ measurements of gas concentrations. It's designed for use in various processes in oil & gas, petrochemical, electric power and other industries.

The TDLS8000 in-situ gas analyzer features a stable, highly reliable measurement and user- friendly operation for both the operator and maintenance engineer, reducing the total cost of ownership. The analyzer optimizes the air-fuel ratio in the combustion process to help users optimize processes, saving energy, reducing CO2 and NOx emissions and improving overall safety. This can be accomplished by continuously measuring the concentration of O2 and CO in the radiant section of fired heaters.



Configuration and management of the TDLS8000 can be executed either by using an optional brilliant touch screen or powerful DTM using the HART protocol. With a user interface designed for tablet computers, the FieldMate Device Management Tool is the ideal tool for device monitoring and maintenance tasks. FieldMate automatically scans the bus and reports the devices found including status of the device(s) and basic device parameters. From there, the user can intuitively navigate to device details such as: diagnostics, configuration parameters, maintenance information, etc.

For more FieldMate™ details: **http://www.yokogawa.com/fld/fieldmate/fld-fieldmate-01en.htm**

For more TDLS details: **http://www.yokogawa.com/an/laser-gas/an-tdls8000-001en.htm**

YOKOGAWA

Contributors

FDT Events

>> Sept. 15th FDT Developer Forum USA
Boston, MA

>> Sept. 16th MEORGA MSR Messe
Ludwigshafen, Germany

>> Sept. 28th FDT Guest Speaker at ISA Section Meeting
Sarnia, ON Canada

>> Sept. 29th FDT Group Japan User Seminar
Kyurian,
Ooimachi, Tokyo

>> Sept. 30th FDT Group Japan Developer Seminar
NSD, Ochanomizu, Tokyo

>> Oct. 6th FDT Guest Speaker at ISA Section Meeting
Frederick, MD

>> Oct. 6th – 7th Industrial Automation Forum
Stuttgart, Germany

>> Nov. 16th – 17th FDT Exhibits at Rockwell PSUG Event
Chicago, IL

>> Nov. 24th – 26th SPS/IPC/ Drives
Forum USA
Nürnberg, Germany

>> Dec. 2nd JEMIMA Measurement & Control Show 2015/ System Control Fair
Tokyo, Japan

FDT Resource Links

- » Contact Us
- » Certified Product Catalog
- » Frequently Asked Questions
- » Membership
- » News and Events
- » Newsletter Registration
- » Newsletter Archive
- » Press Releases
- » Technical Brochure

Solid Technology, Strong Membership

For further information please visit www.fdtgroup.org or contact the FDT Group Business Office:
FDT Group AISBL - BP 20 - 1370 Jodoigne - Belgium
Phone: +32 (0)10 22 22 51 - Fax: +32 (0)10 77 90 81 - Email: businessoffice@fdtgroup.org
® 2015 FDT Group AISBL - All product brands or product names may be trademarks of their respective owners