

NOVEMBER 2021



Real-Time Data



Data Collaborative
Innovation

Reviving
Manufacturing

Transformation — Revive Manufacturing as Critical Infrastructure for the World

FDT IIoT Ecosystem is designed to harmonize and provide data collaborative innovation

Author: Lee Lane, Chairman of the FDT Board of Directors



Lee Lane
Chairman of the
FDT Board of Directors

It's hard to believe Fall is here, a season of transformation that resonates true for World health due to COVID and the manufacturing industry as we all pivot with uncertainty but challenge ourselves to optimism and a visionary outlook for 2022. We have all felt the unbalanced headwinds of the pandemic over the last 18 months, which has met us head-on with manufacturing and supply chain issues and workforce resource constraints. While these have been challenging times, opportunity lurks! We are all built to persevere and concur. As control system manufacturers, device manufacturers, OEM's, and end-users, we grow closer to key customers and prioritize resources to be proactive in planning and communication to drive new ways to process orders, manufacturer, and deliver — all simply by re-evaluating, communicating, and rebuilding to improve work efficiencies and operations. Yes, transformation is in the making — the much-needed shift to revive manufacturing as critical infrastructure for the World is happening.

Industrie 4.0 and related open automation manufacturing initiatives are enabling industrial companies to operate and perform more efficiently and effectively. It is an exciting and pivotal time in the manufacturing industry and it's terrific that the FDT technology standard is right in the middle of it all. The birth of the FDT 3.0 IIoT platform and ecosystem (Server, Device DTM, and Desktop), that launched in 2020, is key to a holistic approach empowering open automation transformation for brownfield and greenfield applications — uniting systems, device, data, networks, and industries in a single, data-centric architecture for collaborative innovation designed for smart manufacturing practices.

FDT 3.0 was developed based-off industry-driven collaborative feedback providing:

- **Open Interoperable IIoT Architectures** – Enabling a future-proof FDT Server-based distributed architecture that is operating system, network, device, and vendor independent
- **Secure, Flexible, and Adaptable Platforms** – Providing embedded end-to-end trusted interoperability supporting cloud, edge, on-premises, or enterprise-wide agile architectures
- **Comprehensive Control and Configuration** – Empowering a natively integrated OPC UA server for IT/OT data harmonization and IT/enterprise access along with a web server empowering OT/operation with mobility, and web-browser-based access supporting modern asset manufacturing practices

Under the leadership of Glenn Schulz, during a pandemic, FDT set out to innovate! The FDT 3.0 IIoT Ecosystem of Server, Device DTM, and Desktop software components is released and available to the developer community. It's here and a key development evolving the transformation of the industrial and process automation, for users, control systems, and device suppliers. This revolutionary offering took a great deal of work by many committees and teams to complete, and we are appreciative of their dedication to FDT and the industry. We are inspired by the new era of automation.

As many of you know, Glenn Schulz is retiring from this journey at the end of the year, and I want to take time to thank Glenn for his 13 years of leadership to the FDT organization and technology standard. His dedication and leadership have put FDT Group and its IIoT solution in the leading position, meeting the needs of the automation industry for the future. It's always bittersweet to say goodbyes, but we wish Glenn all the best in his new phase of life with his wife Beth as they enjoy retirement. It's time to transition to new leadership on this voyage and tap into new growth model opportunities for both the organization and technology based on the foundation building block developed under Glenn's leadership.



Glenn Schulz

As we pivot and continue to provide the latest and most innovative offering to harmonize the industry, we welcome Steve Biegacki. Steve will build on the foundation Glenn and teams built and springboard from the FDT 3.0 development evolving FDT to be the holistic, unifying force in the industrial and process automation industry moving forward.

We are thrilled to have Steve join FDT Group as its new Managing Director in transition. Steve joined the organization on November 1, 2021, as Vice President of Marketing, to work alongside existing leadership and teams for a seamless transition, assuming the managing director role on January 1, 2022. Steve is a seasoned global executive leader with industry knowledge and a passion for meeting challenges and goals. He has been successful working in markets around the globe and has experience in leading organizations and driving the adoption of new technologies.



Steve Biegacki

As a way of introduction, here is some information about Steve's background:

- is known for instilling visionary enthusiasm and values collaboration for driving change and market adoption, especially during times of transition
- has developed successful performance strategies to meet organizational objectives
- had a successful career at Rockwell in several roles including industrial networking business manager, VP of global marketing
- had success at Belden as the senior vice president of global sales and marketing
- most recently, is a director in management advisor for the global firm BDO

Steve resides in the United States in Naples, Florida with his wife Lee Ann. He and Lee Ann have two adult sons and two grandsons. Steve's experience in the industrial automation industry, his customer intimacy, leadership skills, and ability to create excitement and adoption along with his ability to collaborate make him a great fit to lead the FDT Group.

We welcome Steve to his new role with FDT Group and look forward to him settling in. Please freely communicate directly with Steve. His email address is steve.biegacki@fdtgroup.org. I know he is anxious to get oriented, meet and collaborate with our members and partners, and move forward with the marketing and leadership visionary goals of the FDT Group.



Open Standard for Sensor-to-Cloud Integration



Did you know that all networked devices can be FDT-enabled? It's true. There are millions of them in service around the world. FDT offers secure, seamless, standardized integration and information exchange for the intelligent enterprise.

Now, with FDT 3.0 all that device data is available in a universal, single FDT IIoT Server solution. Imagine an integrated web server mobilizing field device management and a natively integrated OPC UA Server for enterprise real-time device data access.

Empower Innovative Business Models: fdtgroup.org/innovation



Empowering the Intelligent Enterprise

Normalizing and Standardizing the Field Instrument Data to Unlock the Potential of Industry 4.0

Know more about Utthunga's Device Integration services and solutions

uDDx Suite by Utthunga

A typical process industry can have numerous field instruments deployed on the plant floor. These can be diverse measurement and control devices from heterogeneous manufacturers. In order to configure, diagnose, and calibrate these field instruments, process industries use IAMS applications, automation systems, and communication protocols like HART, FOUNDATION Fieldbus, and PROFIBUS PA and others.

The field device manufacturers adopt EDD/FDI and/or FDT/DTM standard. Due to a variety of underlying connectivity protocols, the acquired process data has inherent inconsistencies leading to the data becoming unusable for the IT layer applications. If a user with access to the plant network wishes to retrieve field instrument data, the inconsistent data pattern from the IAMS and DCS applications makes it challenging. If a process plant wishes to adopt newer technologies like NAMUR Open Architecture (NOA) and others to be Industry 4.0-ready, unlocking the field data to the IT applications is very important.

Challenges

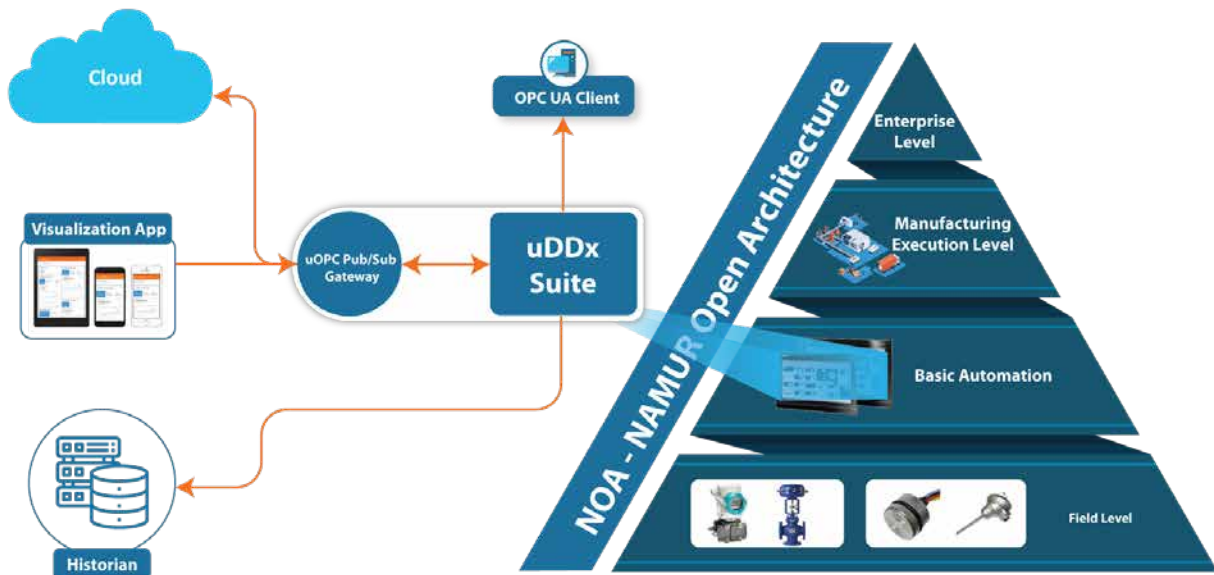
The lack of access to normalized data from the plant floor leads to several challenges:

- Lack of standardized data hinders analytical operations
- Remote monitoring and diagnostics become a huge challenge
- Configuring and maintaining the field devices require instrumentation experts
- Inconsistency in naming conventions lead to mapping of the parameters manually, which is time-consuming, expensive, and is possible only by the technical experts

Solution

Utthunga has come up with a robust solution to resolve this challenge with its uDDx Suite. uDDx Suite integrates with the field instrument and maps the field device classes to standardized device parameters as defined in PA-DIM (Process Automation Device Information Model).

It supports all the device integration standards like EDD, FDI package, and DTM. It integrates the IT and OT layers of the process plants by standardizing the instrument parameters as mentioned in PA-DIM. uDTM DxSuite is installed in the IAMS application and uses the DD library of the system and interprets them as DTMs.




uDDx Suite polls the network topology of automation systems and reads the Device Identification, Device Diagnostics, Process Values, and Device Core Parameters using uDDx Suite’s interpreter DTM component. The OPC UA component of uDDx Suite uses this data to construct OPC UA information model according to the PA-DIM standard.


This solution lets users access any instrument’s critical information in a standardized, protocol-agnostic, and manufacturer-agnostic manner.

Benefits

- The protocol-agnostic unified information model will allow software applications to access device information without additional mapping or protocol-specific knowledge
- Fulfills the requirements for an Asset Administration Shell (standardizes sub-models of the Administration Shell)
- No changes required in existing plant network infrastructure and DCS

- It is secure by design
 - End-to-End signed and encrypted data stream
 - Port configuration and forwarding rules on the firewall
 - Encrypted EDD/Signed FDI Device Package
- Tested with a variety of IAMS applications


 Know more about Utthunga’s Device Integration Services


 Know more about Utthunga’s Device Integration Solutions



Limitless process data access

Smart process devices

Connect your field devices with our modular HART gateway and benefit from up to 40 inputs with a separate HART modem for each input channel. Or be one step ahead: Use the IIoT server on our edge device controller with a secure OPC UA server. With the new PA DIM format you benefit from the seamless interaction of the OT and IT level and thus increase the productivity and availability of your production plants.

For additional information visit phoenixcontact.com/wired_HART



Open Automation Transformation with FDT 3.0



The FDT 3.0 distributed platform is accelerating the evolutionary journey into the Fourth Industrial Revolution with its newly released data-centric, server-based architecture empowering IT/OT harmonization and web services mobilizing the industrial workforce. FDT 3.0 is a completely platform-independent, single-server, cloud-based solution offering the freedom to use innovation to support new and existing manufacturing infrastructure through a smart, connected ecosystem of integrated machines and devices for the process, hybrid, and discrete industries.

From HART Device to Smart Device

THE FIELDPORT SWA50 BY ENDRESS+HAUSER CAN UPGRADE INSTRUMENTS TO WIRELESS COMMUNICATION MAKING THEM IIOT READY

The HART devices in your plant are no longer bound to transmit information only via cable. Endress+Hauser has introduced a small but powerful adapter for retrofitting HART instruments: the FieldPort SWA50 connects the field devices to wireless communication. It enables them to communicate via Bluetooth and /or WirelessHART. The user has more options to access the field device data — even a cloud connection is possible which unlocks the potential of IIoT.



The FieldPort SWA50 converts the HART signal of the connected HART field device to a reliable and encrypted Bluetooth® or WirelessHART signal. The Endress+Hauser SmartBlue app or the Endress+Hauser Field Xpert can be used to configure the FieldPort SWA50. Remote configuration via the DTM using WirelessHART network is also possible.



HART field devices can be connected to the Endress+Hauser IIoT ecosystem called Netilion. The edge devices FieldEdge SGC200 or FieldEdge SGC500 are needed for this scenario. An IIoT connection gives you digital access to the retrofitted field instruments. Using a smartphone, tablet or desktop PC, you can view measuring data, instrument diagnostics and life cycle data. It is even possible to transfer the data into your own systems or clouds by using an API.

The FieldPort SWA50 opens up to new possibilities of digitalization — a powerful adapter for retrofitting HART field devices.



Learn more about our FieldPort upgrade.

EcoStruxure™
Innovation At Every Level

Machine builders design

SMART

machines for efficiency and scalability.

EcoStruxure™ Machine connects and controls operations.

- Easily integrate into any environment.
- Enhance cybersecurity with embedded IIoT protocols and encryption.
- Improve efficiency with direct cloud connectivity and digital services.

Sign up for M262 starter pack and avail 50% discount.

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EcoStruxure
Machine Advisor

Modicon™ M262

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Life Is On

Schneider
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uDTM Suite: EDD/FDI Device Package to FDT/DTM for Zero-Effort Device Integration

Convert your existing EDD or FDI device packages to FDT 1.2/2.0 FDT compliant customizable DTMs with Utthunga's uDTM suite.

Online/Offline device configurations, localization support, upload/download, import/export, print functionality, and interoperable with most of the FDT hosts available in the industrial market.

Make your system future-proof by deploying uDTM Suite.

[LEARN MORE](#)

 **utthunga**
Engineering Transformation

TeSys island – Full Tool Integration into EcoStruxure Control Expert Supporting M580 Controller

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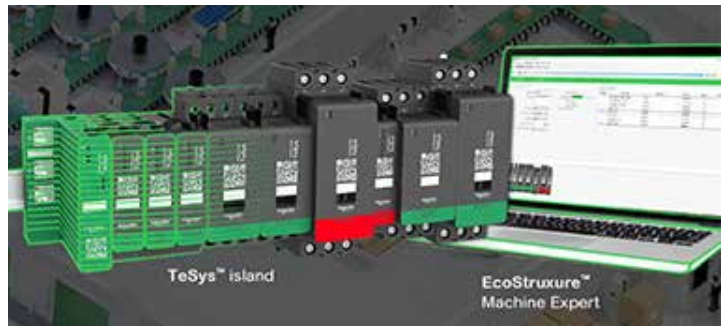
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FDT DTMS MAKES IT EASY TO ENGINEER, MANAGE AND MAINTAIN ALL YOUR LOADS, REDUCING DOWNTIME

The TeSys island load management solution has extended its FDT DTM based tool with more functionalities and optimized integration into the Control Expert engineering suite of Schneider Electric!

TeSys island is the fully digital load management solution for Direct Online Loads (DOL) like asynchronous motors or any other AC electrical load up to 80 Amps. With the object-orientated approach of TeSys island all loads are managed as a digital twin, called TeSys avatars. This makes it easy to engineer, manage and maintain all your loads. With the availability of all relevant load data like diagnostic data, warnings, maintenance messages, load current, energy and power data, it is now possible for OEMs and end-users to monitor, optimize and maintain its application while reducing downtime. TeSys island support several fieldbuses like EtherNet/IP, Modbus TCP, PROFINET and PROFIBUS.

TeSys island configuration tools are built upon FDT DTM technology including controller specific function block libraries. The DTM based tool gives full control to the TeSys island configuration and is seamlessly integrated into the EcoStruxure Control Expert. The function block libraries are dedicated to the different functionalities and data available within TeSys island. This means that you have structured



function blocks for tasks like avatar (load) control, load and system diagnostics, power and energy monitoring, communication management and asset management. With the availability of these libraries the programming effort to control and monitor AC loads are simplified, and engineering efforts are minimized.

All files are available for free download without the need of registration and licensing.



TeSys island — EcoStruxure Control Expert Classic Quick Start Guide



EcoStruxure Control Expert 2021 — TeSys™ island Library



EcoStruxure Control Expert — TeSys island Library Control User Guide



TeSys island DTM Library (Version 2.2.2)

LIMITLESS AUTOMATION

PLCnext as the Ideal Platform for IIoT Integration

Challenge

IIoT or IT/OT integration is quite popular these days, but how can these modern approaches and ideas be put into practice? This requires hardware that features the necessary openness and ability to meet the demanding requirements of the process industry, for example.

Solution

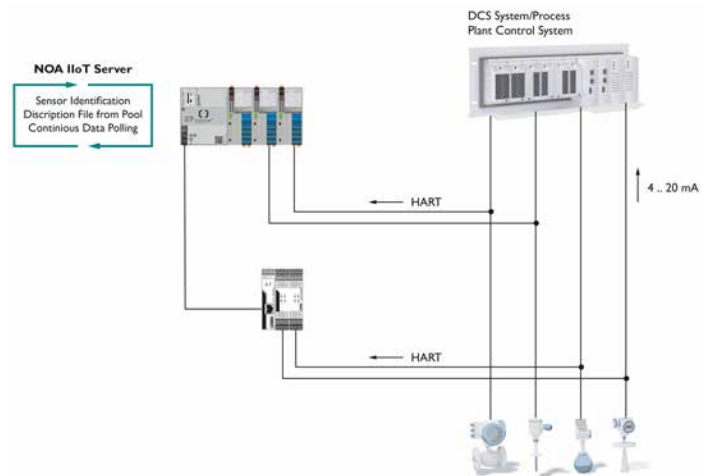
The controllers of Phoenix Contact's PLCnext product family feature an open Linux system and are entirely suitable for industrial use. They enable easy integration of existing high-level language applications like databases or IIoT servers. Transferring the code into a real-time system customary for process technology is not necessary anymore. This is a real advantage in the age of IT/OT integration where complex high-level language applications meet the OT real-time environment. The possibility to use existing code from the IT world on a field controller can save a considerable amount of time and money. In terms of IT security, the open Linux system has no disadvantages as the controllers feature firewalls as well as user and password protection.

Thanks to Docker Engine integration on the PLCnext controller, handling of these applications within Linux is simplified. By means of Docker, it is much easier to get Node Red or an IIoT server to the controller. Within so-called containers and with all the necessary software periphery, high-level language application programs are loaded to the controller. Loading, starting, and stopping those containers is quite simple and even possible without any Linux knowledge. For the installation of the different containers, the PLCnext Store is available, where you can

get the containers, load them directly on the controller, or save them on a laptop for later offline installation in the field. Installation of the "app" or containers is performed via the web interface of the PLCnext controller.

Result

The PLCnext Controller is the ideal IIoT platform for limitless automation, suitable for harsh industrial environments.



Learn more about our PLCnext Controller.



Field Xpert SMT50 Universal, high-performance tablet PC for device configuration



- Fast connection to devices with a single click thanks to automatic hardware detection.
- Online application software and DTM/Drivers update service offers new functionality and maximum security.
- Pre-installed device driver libraries for all of the important industrial protocols.

www.endress.com/smt50

Do you want to learn more?
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