

FDT Group

General Assembly Meeting | Virtual Event | 1 June 2022

Steve Biegacki

Managing Director



Agenda

- **Introduction**
- **FDT Business Office Update - Steve Biegacki, FDT MD**
 - Audit Results
 - Test Centers
 - Call for Elections
- **Keynote Speaker - Paul R. Maurath, Ph.D., Technical Director – Process Automation, The Procter & Gamble Company**
 - It's Not Enough to be Smart
- **Empowering Automation Users with FDT UE - Steve Biegacki, FDT MD**
- **Informational Proceedings - Officers to the Board**
 - Standards and Associations – Shannon Foos
 - Technology and Tool Release – Suriya Selvaraj
 - Marketing Activities – Steve Biegacki



Introduction

Experienced, hands on, results-oriented global technology, business, marketing, and sales leader.

- **Career:**

- BDO - Director, Management Advisory Services
- Kramer Electronics - CEO, US Business
- Belden - Senior Vice President, Global Sales and Marketing
- Rockwell Automation:
 - Vice President, Marketing
 - Business Manager, Industrial Networking
 - Program Manager, DeviceNet
 - Product Marketing
 - Channel Development Manager
 - Technical Instructor and Training Manager
 - Quality Assurance Technician

- **Education:**

- BSEET – ETI College – Cleveland, Ohio
- Completed EMBA Coursework at CWRU



Competencies:

- Obtaining win-win outcomes
- P and L Management
- Project Management
- Communications
- Creating Standards
- Global Teaming and Collaboration
- Leveraging Technology
- Requirements Gathering
- Hands On
- Industry Knowledge and Contacts
- Planful
- Inspirational/passionate



Operating in the Virtual Era (the last two years)

- **Accomplishments**

- Completion of the FDT 3.0 specification
- Completion of the FDT 3.0 Tools
- Identification of pilot projects
- Collaborations
 - OPC UA
 - FCG
 - ODVA
 - Device and System Manufacturers
 - others...
- Awareness campaigns created for FDT and FDT UE

- **Challenges**

- Inability to demonstrate the benefits of the latest release of the FDT specification
- Discuss possible enhancements - based on system, device, and user feedback
- Completing our pilot installations



Report on Attendance | Quorum

- The Bylaws require 30% of the corporate members to be present or represented by proxy to constitute a quorum
 - 34 corporate members
 - ?? represented in person
 - ?? represented by proxy
 - XX% is represented
- The required quorum is therefore present

Meeting and Voting Procedures

- **Motions by “Raise Hand” Feature**
 - Only Voting Members May Move Motions
- **Voting Members Use the Supplied Voting Link to Vote**
 - Results will be shown on screen during the informational presentations.
- **All members present are welcomed to ask questions and offer comments**
 - Direct question/comment to Staff via “Question” feature
- **Katie Jones will take the minutes of the meeting**
 - The entire meeting is being recorded



Approval of the Agenda

- Any changes or additions?
- Vote for approval of the agenda

2022 General Assembly Voting Poll Agenda

2. How do you vote to approve the 2022 General Assembly Agenda and the use of the electronic meeting format?

- ☐ Approve (Yea)
- ☐ Disapprove (Nay)
- ☐ Abstain (No Vote)

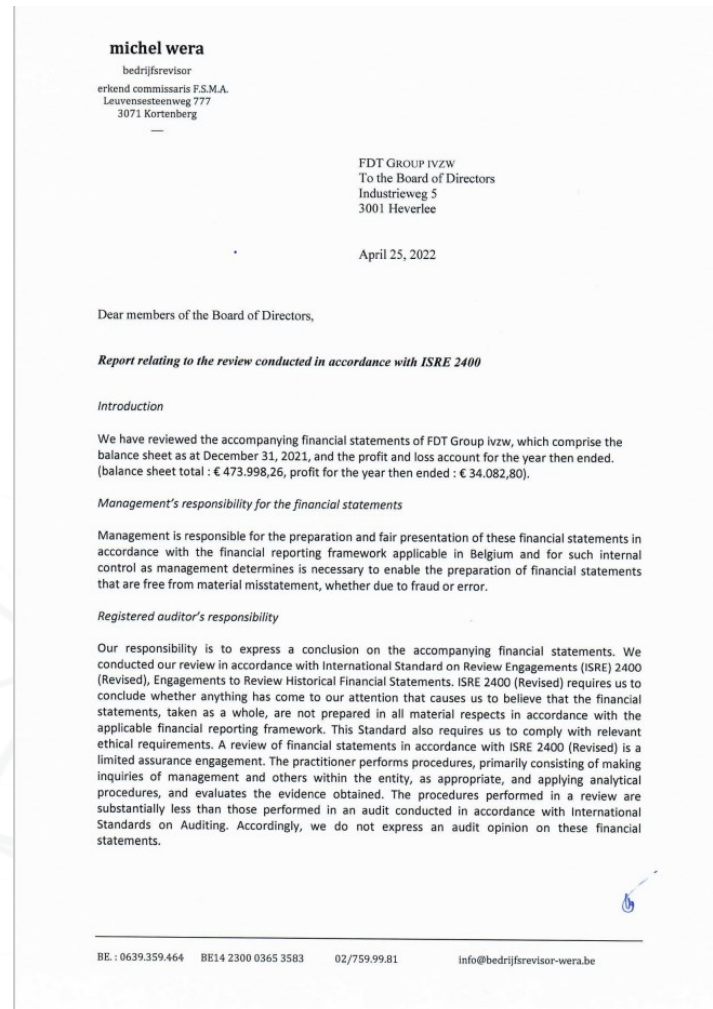
The 2021 Audited Financial Report

		2021
Income	€	717,237.00
Expenses	€	<u>761,292.00</u>
Profit (Loss)	€	(44,055.00)
Cash	€	419,200.00
Total Receivables	€	<u>151,994.00</u>
Total Liquid Assets	€	571,194.00

Travel	€	468.00
Business Office	€	354,611.00
Technology	€	26,196.00
S and A	€	-
Marketing	€	249,909.00
FITS	€	84,140.00
Common Components	€	21,260.00
ZNS	€	24,708.00
Prior Year AR Write -Off	€	<u>-</u>
	€	<u>761,292.00</u>

Business Office Update – Auditor's Letter

michel wera
bedrijfsrevisor
erkend commissaris F.S.M.A.
Leuvensesteenweg 777
3071 Kortenberg



Approve the 2021 Financial Report

- **Vote to approve the 2021 Financial Report**

2022 General Assembly Voting Poll Financial Report

4. How do you vote to approve the 2021 Financial Report?

- ☐ Approve (Yea)
- ☐ Disapprove (Nay)
- ☐ Abstain (No Vote)

Vote to Elect Board Members

- Seeking re-election/confirmation (highlighted)

FDT Group Board of Directors			
Company	Board Member	Expiration of Term	Date of Election/Appt
Rockwell Automation	TBD **	2022	2019
Yokogawa	Shinji Oda	2022	2019
E + H	Francois Ichterz	2023	2020
Flowserve	Ken Beatty*	2023	2020
PACTware	Michael Kessler	2024	2021
Schneider Electric	Andre Uhl	2024	2021

* Ken Beatty to be replaced by Ed Silva
** New candidate being appointed

2022 General Assembly Voting Poll Elect Board Members

6. How do you vote to elect Board Members?

- ☐ Approve (Yea)
- ☐ Disapprove (Nay)
- ☐ Abstain (No Vote)

- Nominations for other candidates
- Vote for election of the Board members

2022 Marketing Activities

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- **Messaging**

- FDT Core purpose
- Benefits of FDT for the automation industry
- System provider key messages
 - Desktop
 - Server
- Device provider key messages

- **Ecosystem partnerships and collaboration**

- FDT Universal Device Integration

- **Marketing Activities**

- Newsletter
- Whitepapers
- Case Studies
- Interviews
- Advertising
- Video
- Digital
- Events

- **Member company commercial enablement and tools**

- Brochures
- Developer Webinar



2022 Technology Activities

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- **WG A&S**

- Tech Discussions with OPC Foundation for areas of co-operation with FDT
- Support for Standards & Associations
- Discussion & Support for FDT UE Pilot Customer Projects
- FDT Specifications Development & Maintenance Support

- **WG T&C**

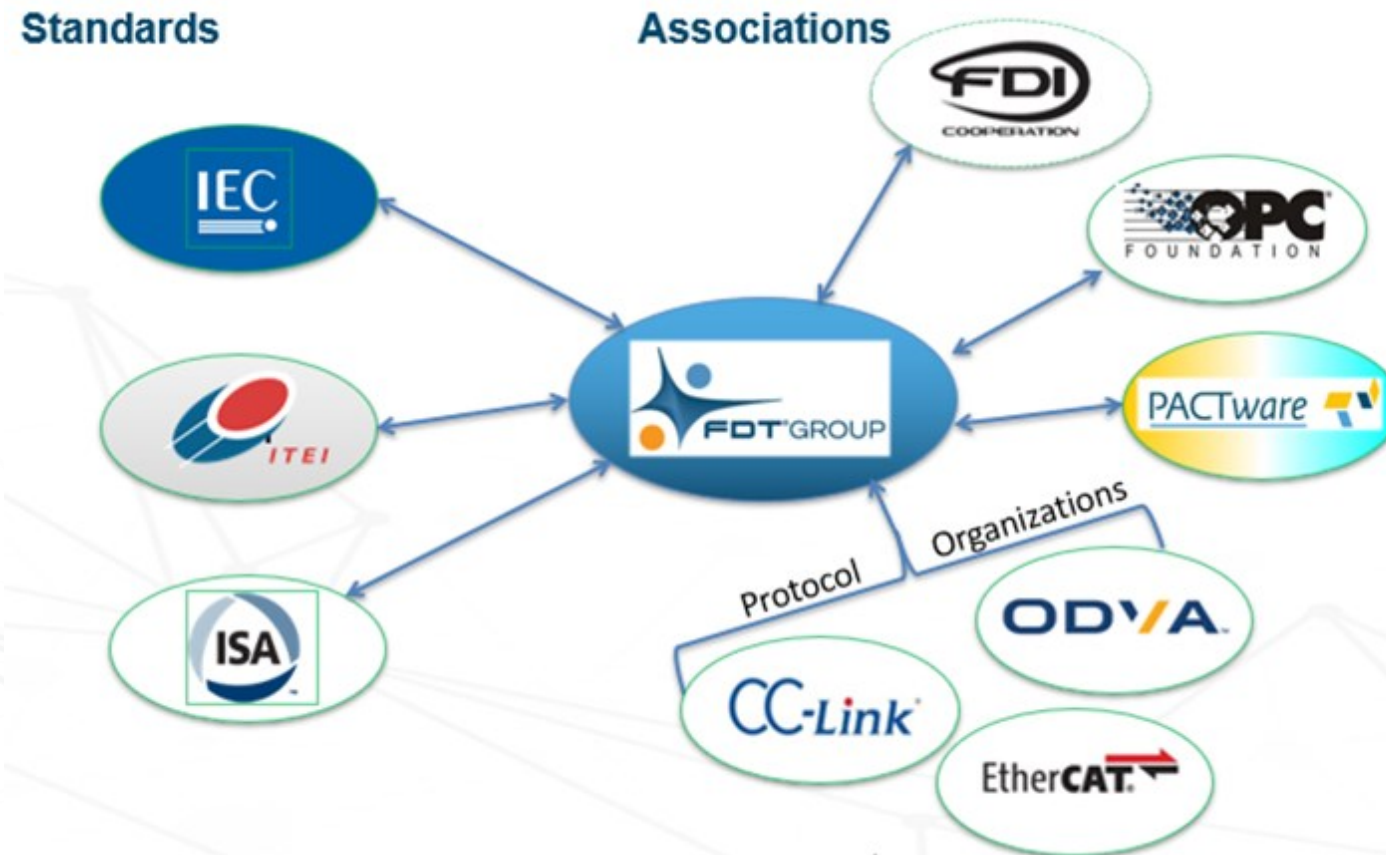
- *FDThub* Acceptance
- dtmINSPECTOR5 Release

- **WG CC**

- FDT 3.0 Release 2 Plan & Development for
 - Server-CC / Desktop-CC / DTM-CC
- Legacy system and device support (1.2 and 2.0)

2022 Standards and Associations

- Support assigned strategic initiatives
- Prepare for ISA/IEC/GBT maintenance cycles



2022 Proposed Budget

Operating Revenue

	2021	Budget	Proposed 2022 Budget
Member Dues	€ 636,000		€ 630,000
Certification Income	€ 50,000		€ 50,000
Misc Income	€ -		€ -
DTM CC License	€ 23,750		€ 23,750
DTM CC Maintenance	€ 24,500		€ 24,500
Server CC License	€ 30,000		€ 20,000
Server CC Maintenance			€ -
Inspector License	€ 3,000		€ 4,500
Inspector Maintenance	€ 2,500		€ 2,500
Desktop CC License	€ 30,000		€ 30,000
Total Revenue	€ 799,750		€ 785,250

Expenses

Administration - Fixed	€ 326,000		€ 315,000
Administration - Travel	€ 15,000		€ 20,000
Technology	€ 67,000		€ 60,000
Standards and Assoc.	€ 5,000		€ 10,000
Marketing	€ 210,000		€ 240,000
DTM CC Maintenance	€ 30,000		€ 20,000
Server CC Maintenance	€ 10,000		€ 10,000
Desktop CC Maintenance	€ -		€ -
Total Expenses	€ 663,000		€ 675,000

Net Operating Income

Net Operating Profit (Loss)	€ 136,750		€ 110,250
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Non-Operating Revenue

	2021 Budget	Proposed 2022 Budget
Newsletter	€ 30,000	€ 35,000
Miscellaneous	€ -	
Total Non-Operating Revenue	€ 30,000	€ 35,000

Non-Operating Expenses

Newsletter	€ 60,000	€ 30,000
Misc	€ -	€ 60,000
FITS	€ 80,000	€ 51,000
Total Non-Operating Expenses	€ 140,000	€ 141,000

Net Non-Operating Income

Net Non-Operating Profit (Loss)	€ (110,000)	€ (106,000)
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Net Consolidated Income

Net Consolidated Profit (Loss)	€ 26,750	€ 4,250
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Approval of 2022 Budget

- **Vote to approve the 2022 program and budget**

2022 General Assembly Voting Poll

Program and Budget

7. How do you vote to approve the 2022 Program and Budget?

- ☐ Approve (Yea)
- ☐ Disapprove (Nay)
- ☐ Abstain (No Vote)

Test Center Audits

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FDT Test Centers

- Endress + Hauser
- Thorsis Technologies
- Yokogawa Engineering Asia
- Utthunga
- KROHNE Solutions S.R.L

PROF. DR.
KARL-HEINZ NIEMANN
AUTOMATION TECHNOLOGY CONSULTING



Dear all,

please find below the status of the FDT Test Center Audits 2022. All audits have been conducted and all audit reports have been submitted to the FDT Group.

In two cases there are follow ups needed. In will take care of that and inform you about the resolution.

Best wishes

Karl-Heinz Niemann



It's Not Enough to be Smart

A User's Perspective on Smart Process Instrumentation and Networks

Paul R. Maurath

The Procter and Gamble Company



Empowering Automation Users with FDT UE

Steve Biegacki

Managing Director



Agenda

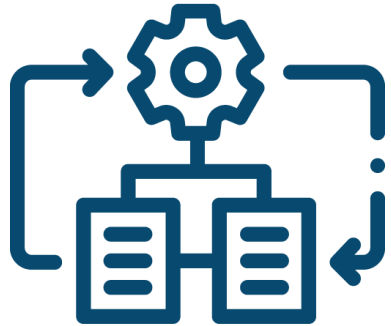
- Meeting User Needs
- Digital Transformation with FDT UE
- Development with FDT 3.0
- Endless Business Benefits



MEETING USER NEEDS



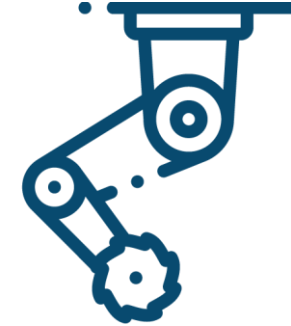
Designed for Diverse and Modern Industrial Markets



Process
Automation



Hybrid
Automation



Factory
Automation

- **Open Integration**
 - Standardized
 - Data centric
 - Mobile
 - Remote access

- **Flexible Architecture**
 - Scalable
 - Agile
 - Secure and robust
 - Compatible

FDT is the standard for enabling the integrated design, configuration, operation, and maintenance of control systems

Enhancement Driven by Use Case Scenarios

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- **FDT Mobility**
 - Secure mobile field device management
 - Improves workflow for plant workers
 - Enhances maintenance efficiency



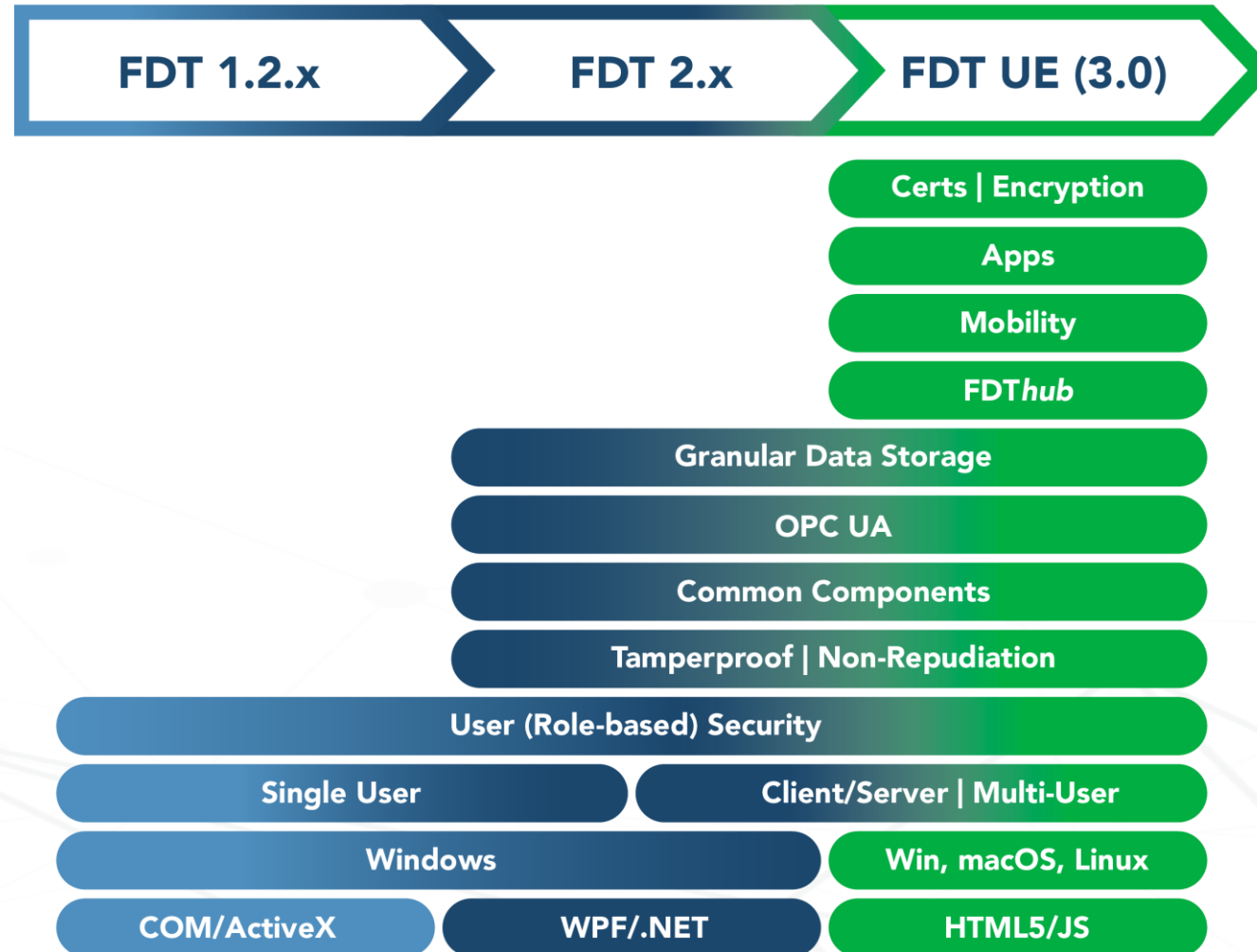
- **FDT Security**
 - Secure by design
 - Sensor-to-cloud
 - Air-gapped support



- **FDT*hub*TM**
 - Single DTM repository
 - All certified DTMs
 - Secure online or offline

Simply Timeless

FDT Technology Evolution



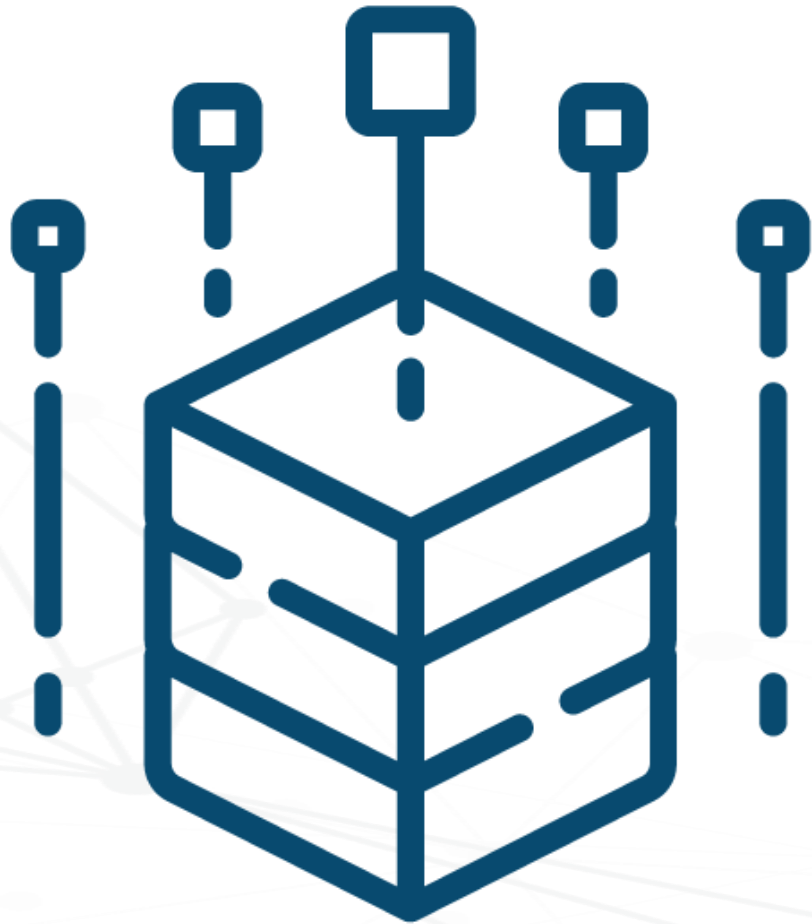
Support for All Industry Standards, Platforms and Protocols



FDT represents the leading global standard for universal device and network integration for both the process and factory automation markets. It is engineered for use with all major industrial communication protocols, legacy protocols and proprietary protocols with fully transparent tunneling through any mixed network topology.

FDT is Empowering Today's Intelligent Enterprise

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- Secure
- Standardized
- Web client based
- Information driven
- Service oriented

DIGITAL TRANSFORMATION WITH FDT UE



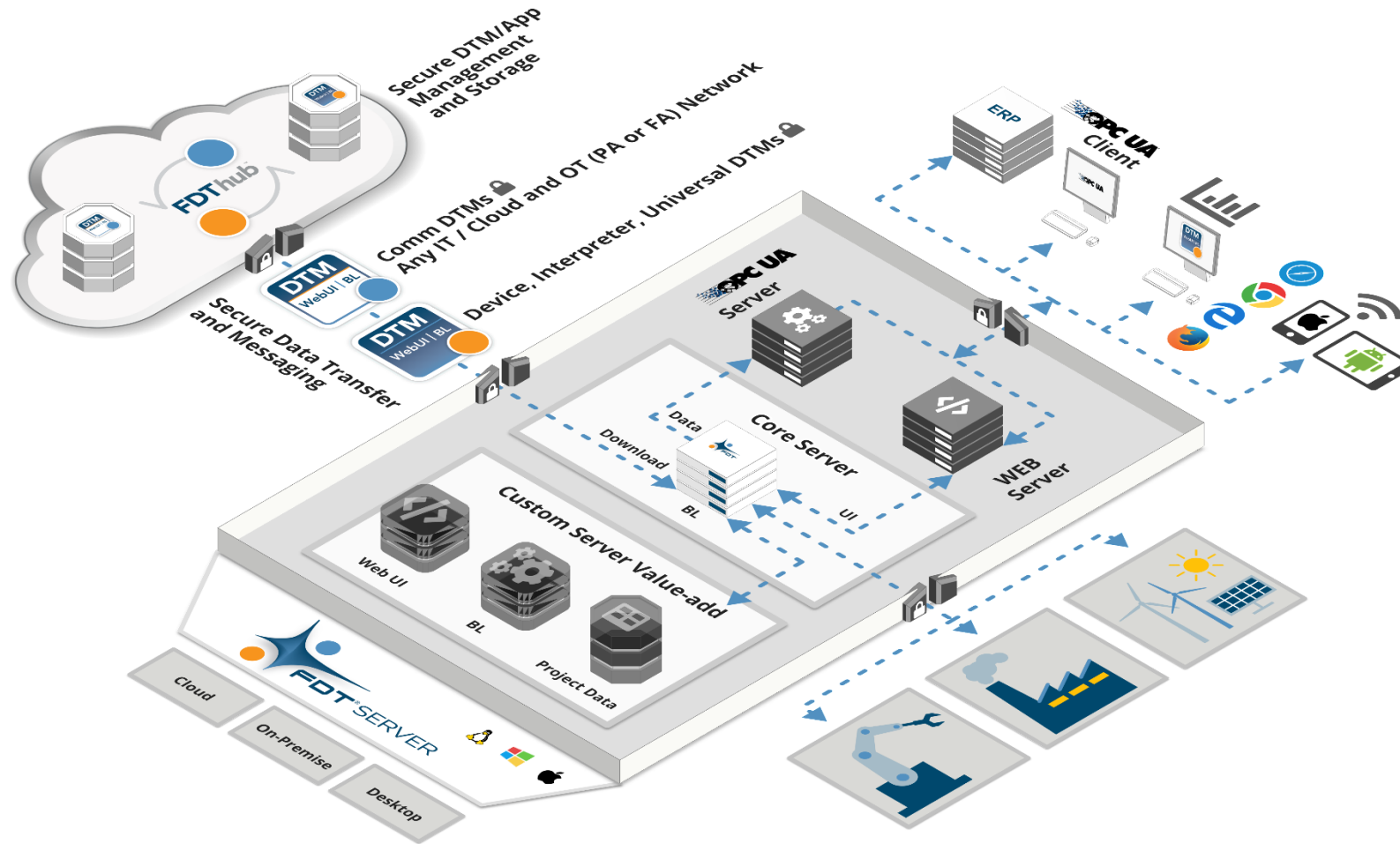
The Open Integration Advantage

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- **FDT UE Ecosystem**
 - FDT Server for distributed architectures for single and multiple facilities
 - FDT Desktop for single user architectures
 - FDT DTM for any device
- **Flexible Deployment Architecture**
 - Skid-to-cloud scalability
 - Cloud, on-premise, edge
 - Cross platform functionality
- **Sensor-to-Cloud Integration**
 - Direct maintenance and optimization data path
 - Support for all IT networks and OT protocols
- **Backwards Compatibility**
 - FDT Desktop environment
 - FDI DP integration



FDT UE Server Architecture & Features



- Single server environment
- Skid to cloud-based solutions
- Built-in security
- Platform independence
- Native OPC UA Server
- Embedded Web Server
- Universal device integration
- Common Component

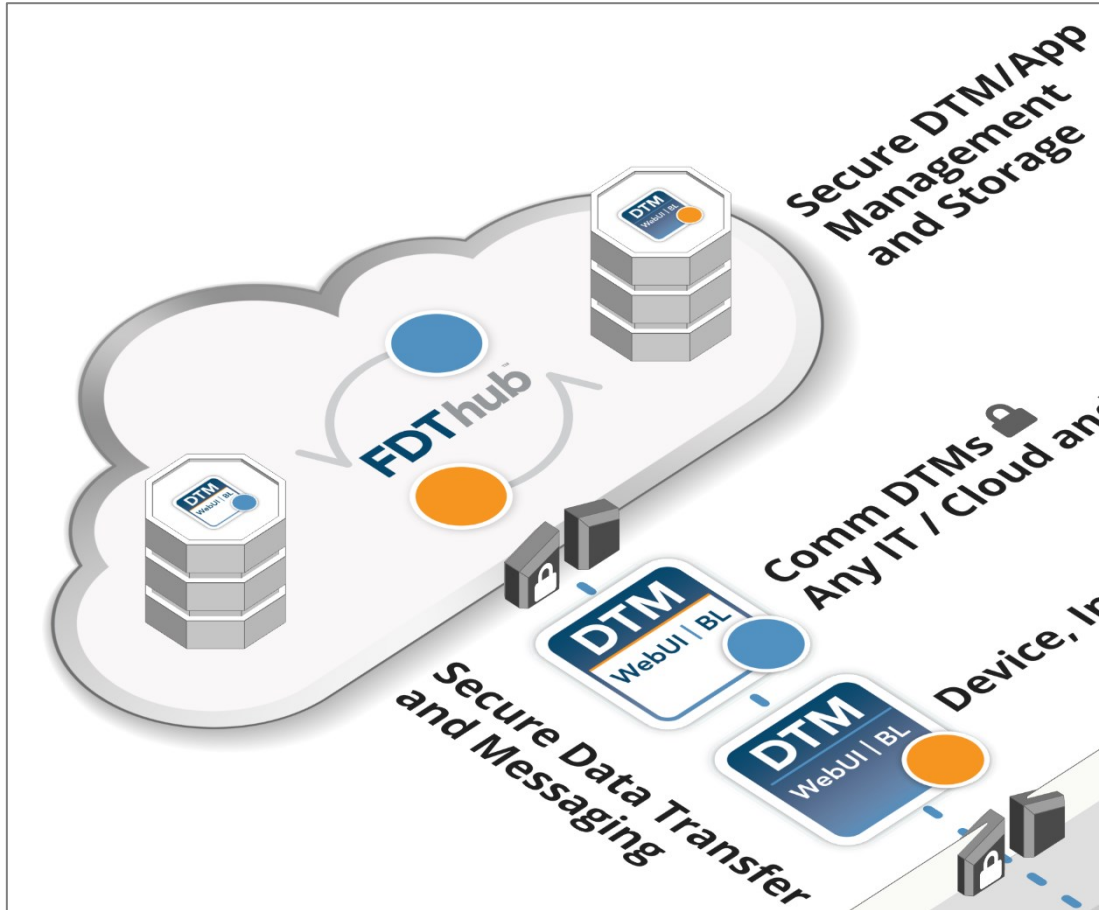
Key Features of FDT Server

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- **Integrated Web Server**
 - Leverages a browser-based environment
 - Modernizes field device management
 - Transforms OT access for remote asset management
- **Embedded OPC UA Server**
 - Leverages a standard OPC client-based environment
 - Enables IT/OT integration of real-time data
 - Supports ERP/MES for enterprise connectivity
 - Supports OPC UA PubSub
- **End-to-End Security**
 - TLS encrypted communications with 509v3 certificates for authentication
 - Role-based access control
 - On-the-wire security for enabled protocols



FDThub™ DTM Repository



- **FDThub™**
 - Driven by end user demand for simplicity
 - Cloud based or onsite
 - Certified FDT3 based FDT DTM storage and management
 - Server to server communications
 - No end user browsing necessary
 - Automatic device discovery support
 - Secure DTM transfer, messaging and updates

DEVELOPMENT WITH FDT 3.0



Empower Innovative Business Models

- **FDT Common Components**

- Create an Ecosystem of IIoT Ready Solutions
- Platform Independent Tool Sets
- Out-of-Box Ready
 - FDT Server - Common Components
 - FDT Desktop - Common Components
 - FDT DTM - Common Components
- OPC UA Integration Auto-enabled
- Modern Development Environment for Customization
 - WebUI (HTML5, Java Script)
 - Value-add for competitive differentiation
 - App support



ENDLESS BUSINESS BENEFITS



Empowering End Users



- Fully enables secure remote access of all functions
- Seamlessly integrates all industrial networks into one project view
- Scalable from skid to enterprise cloud level
- Securely access device data across the enterprise without PLC/DCS host intervention
- Supports all wireless mobile platforms for increased productivity and flexibility
- IT/OT integration
- Confidence from built-in, multi-layer security
- All certified DTMs automatically accessible from the *FDThub*

Enabling System and Device Suppliers

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- Empowers innovative business models through scalability and flexibility
- State of the art, secure, platform independent server architecture – skid to cloud
- Multi-layer security throughout helps to protect brand value
- Platform independent OPC UA server is pre-wired into the FDT Server Common Components
- Easily integrate into larger control/asset management solution or use for standalone deployment
- FDT Desktop backwards compatibility supports the installed base

Digital Transformation Starts Now with FDT 3.0

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- **End Users**

Request system and device vendors to design and built with the FDT 3.0 specification referenced

- **System and Device Manufacturers**

Sign the Collaboration Agreement and obtain the style guide and toolset for inhouse development or outsource development with FDT Service Provider

Informational Proceedings

Officers to the FDT Board

Standards & Associations – Shannon Foos

Technology Update – Suriya Selvaraj

Marketing Update – Steve Biegacki

Voting Results



Standards & Associations

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Shannon Foos

VP Standards & Associations



Background on Scope

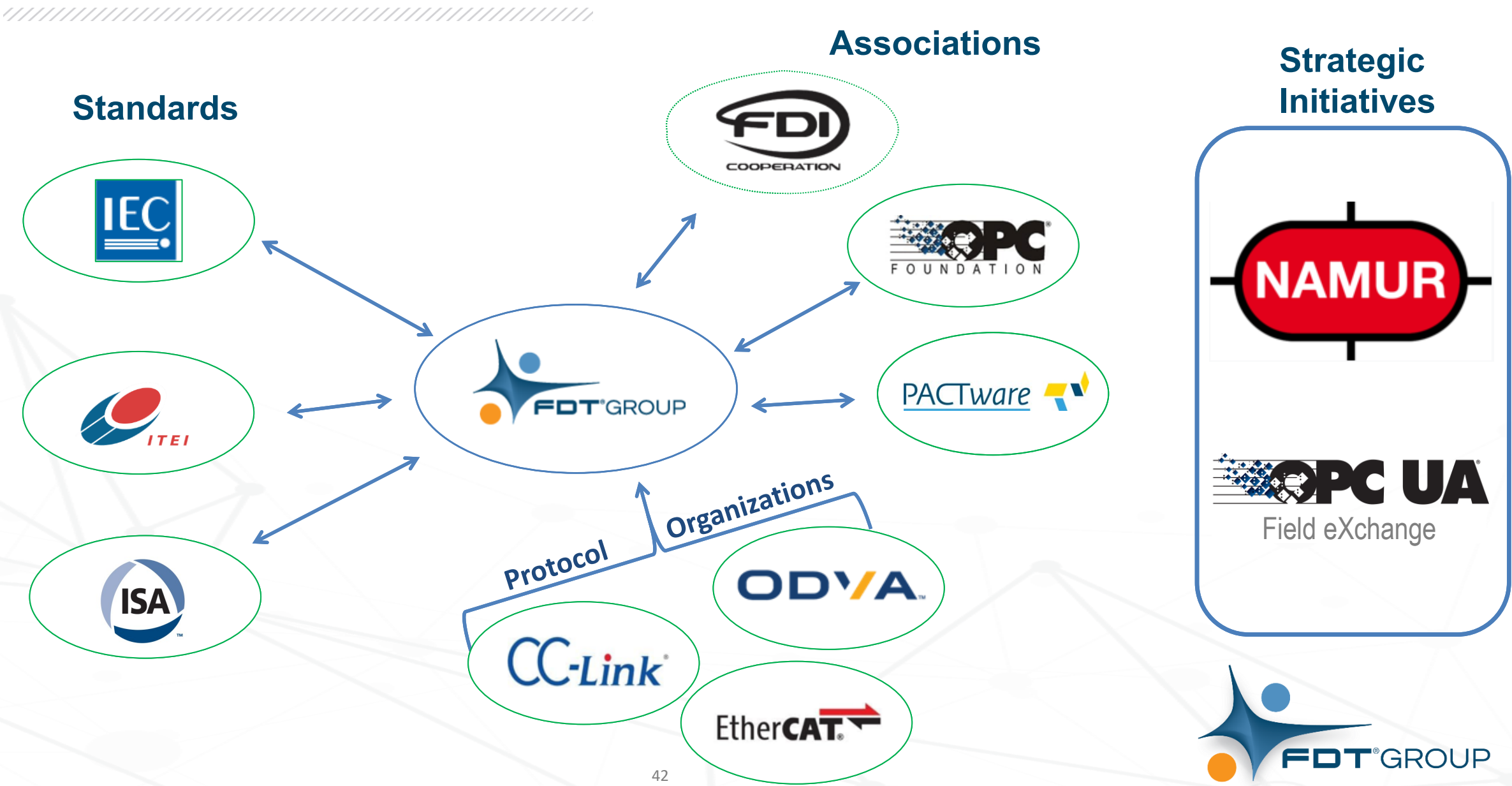
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- **Standards & Associations**
 - Standards: Managing our Standardization Activities
 - Activity Planning and Project Tracking
 - Relationships with IEC, ISA / ANSI, GBT / ITEI
 - Associations: Managing our relationships and activities with ‘other’ associations
 - Reinvigorated with Strategic Initiatives
 - Namur Open Architecture (NOA)
 - OPC-UA Field eXchange (OPC UA FX)



Shannon Foos
Standards & Associations VP

Current Collaborations



STATUS OF STANDARDS ACTIVITIES



IEC-62453 Activities

- FDT has been an IEC standard since 2008
- Updated with FDT 2.0 in 2016
- Activities to add FDT 3.0 since March 2021
- 34 Documents Total
- **SC65E WG4 Members**
 - CA – Ian Verhappen
 - DE – Christian Diedrich - Convener
 - DE – Thomas Hadlich - Editor
 - FR – Valerie Demassieux
 - JP – Tetsuo Takeuchi
 - **US – Search for a New Member**



Inventory of FDT IEC Documents (34)

	Documents Independent of FDT Version	FDT 1.2.x	FDT 2.x	FDT 3.0
Principles	IEC 62453-1:2016 ED2			
Core	IEC 62453-2:2016 ED2	IEC TR 62453-41:2016 ED2	IEC TR 62453-42:2016 ED1	IEC TR 62453-43
FF	IEC 62453-301:2009 ED1 IEC 62453-301:2009/AMD1:2016 ED1	IEC TR 62453-51-10:2017 ED1	IEC TR 62453-52-10	
CIP	IEC 62453-302:2016 ED2	IEC TR 62453-51-20:2017 ED1	Deferred →	<IEC TR 62453-53-20>
Profibus	IEC 62453-303-1:2009 ED1 IEC 62453-303-1:2009/AMD1:2016 ED1	IEC TR 62453-51-31:2017 ED1	IEC TR 62453-52-31:2017 ED1	IEC TR 62453-53-31
Profinet	IEC 62453-303-2:2009 ED1 IEC 62453-303-2:2009/AMD1:2016 ED1	IEC TR 62453-51-32:2017 ED1	IEC TR 62453-52-32:2017 ED1	
Interbus	IEC 62453-306:2009 ED1	IEC TR 62453-51-60:2017 ED1		
HART	IEC 62453-309:2016 ED2	IEC TR 62453-51-90:2017 ED1	IEC TR 62453-52-90:2017 ED1	IEC TR 62453-53-90
Modbus	IEC 62453-315:2009 ED1 IEC 62453-315:2009/AMD1:2016 ED1	IEC TR 62453-51-150:2017 ED1	IEC TR 62453-52-150:2017 ED1	
Style Guide		IEC TR 62453-61:2009 ED1	IEC TR 62453-62:2017 ED1	
OPC UA IM			IEC IS 62453-71	

Legend:

[Available Documents](#)

In-Progress Activities

<Not Started in IEC>



ISA-103 and GB-T Activities

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- **ISA 103**

- Jan 2019: FDT 2.0 approval as ANSI/ISA103
- FDT3 adoption is occurring in parallel to IEC activities
 - Result of Liaison “C” agreement with IEC SC65E WG4
- Ian Verhappen – Chairman



- **GB-T**

- IEC FDT 3.0 FDIS is required input to update the GBT standards
 - Required to provide cost estimate – Late 2022 availability
 - Budget consideration for 2023
- Alignment with China FDT Board Required
 - Standardization is important to drive local adoption



Thank You for Your Attention

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Technology Report

General Assembly Meeting | Virtual Meeting | 1 June 2022

Suriya Selvaraj

VP Technology



Our Specification Milestones

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- **FDT 3.0 - (Released in June 2020)**
 - FDT becomes platform-independent
- **FDT 2.X - (Released in 2012)**
 - Technological advancement for FDT 1.X to support Microsoft .NET with additional enhancements
 - Client / Server Support
 - Static Functions
 - Custom User Roles
 - Improved Security
- **FDT 1.X - (Released in 2001)**
 - Standardized technology with the focus on “One Tool for All” device integration
 - Technologies used Microsoft COM / ActiveX



FDT 3.0 – (Development & Release) - Report

Core Specification	Protocol Specifications	DTM Certification	FDT Style Guide	Common Components
Active	Development	In Progress	Mandatory	Available

- **Specification Development & Release**
 - FDT 3.0 MODBUS Annex Specification is Released
 - FDT 3.0 OPC UA Annex Specification is Released
- **Testing Tools & Certifications**
 - dtmINSPECTOR5 tool v5.0.21168.1 is Ready & Available (v5.0.22140.1 with DTMRootPath fix is pending submission to ExCom for approval)
 - Certification Policies & Procedures is Ready & Available
 - Re-Auditing of FDT Test Sites for FDT3 is Completed. All are Recommended for Renewal
- **Common Components**
 - DTM Common Components available
 - Desktop (Frame) Common Components available
 - Server Common Components available

FDT 2.X - (Active & Support) - Report

Core Specification	Protocol Specifications	DTM Certification	FDT Style Guide	Common Components
Active	Active	Active	Recommended	Available

- **Specification Enhancements & Updates**
 - FDT 2.1 IO Link Annex Work in Progress
 - FDT 2.1 FF-H1 Annex Work in Progress
- **Testing Tools & Certifications**
 - dtmINSPECTOR 4.0.2832.1 updates released (fix for log4net)
 - DTMs certified - 40 devices, 7 manufacturers
- **Common Components**
 - DTM-CC Updates released to support FDT 2.1
 - Frame-CC Updates released to support FDT 2.1

FDT 1.X - (Maintenance & Support) - Report

Core Specification	Protocol Specifications	DTM Certification	FDT Style Guide	Common Components
Maintenance	Maintenance	Active	Optional	Not Applicable

- **Specification Maintenance & Updates**

- Updated FDT 1.2.1 CIP Annex
- Updated FDT 1.2.1 Modbus Annex

- **Testing Tools & Certifications**

- dtmINSPECTOR 3.1.21320.1 is used for certification (fix for DEP feature)
- DTMs certified – 650+ devices, 20+ manufacturers

- **Common Components**

- Not Applicable

FDT Specifications | Annexes | Products Status Summary

Annex Specification	FDT 1.X	FDT 2.X	FDT 3.0	Comments / Remarks
Core Specification	Available	Available	Available	
HART	Available	Available	Available	
FF-H1	Available	Work in Progress	-	FDT3 spec will continue
PROFIBUS	Available	Available	Available	
PROFINET	Available	Available	-	
MODBUS	Available	Available	Available	
CIP	Available	Not Applicable	Work in Progress	
IOLINK	Available	Work in Progress	-	FDT3 spec will continue
OPCUA	Not Applicable	Available	Available	
STYLE GUIDE	Available	Available	Available	
DTM-CC	Not Applicable	Available	Available	
DESKTOP-CC	Not Applicable	Available	Available	
SERVER-CC	Not Applicable	Available	Available	
FDT <i>hub</i>	Not Applicable	Not Applicable	Work in Progress	
dtmINSPECTOR	Available	Available	Available	
IOLink eddDTM	Not Applicable	Not Applicable	Available	

Digital Transformation Starts Now with FDT 3.0

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- **Specification (downloadable) – *Now Available***
 - IEC, ANSI/ISA, GB/T
- **Platform Independent Developer Tools – *Now Available***
 - FDT Server CC's
 - FDT Desktop CC's
 - FDT DTM CC's
 - dtmINSPECTOR5
- **Style Guide with Responsive Design – *Now Available***
- **OPC for FDT Universal Information Model Companion Specification - *Now Available***
- **Communication Annexes**
 - HART Annex - *Now Available*
 - Profibus Annex – *Now Available*
 - CIP Annex - *in progress for release in mid-2022*
 - IO-Link Annex - *in progress for release in mid-2022*
- **IO-Link Interpreter DTM – *Now Available***



Thank You for Your Attention

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Marketing Update

General Assembly Meeting | Virtual Meeting | 1 June 2022

Steve Biegacki

Managing Director



Media Coverage



Platform for Innovation

Learn more about how modernizing industrial configuration and more era of automation.



Control



STEVE BIAGASKI
Managing Director,
FDT Group

FDT for the Industry 4.0 era

The FDT integration standard first came into being as a means to deal with all aspects of device configuration and diagnostic data generated by smart digital devices—and to help users better manage a diverse range of increasingly intelligent assets. And while FDT originally stood simply for "Field Device Tool," over the past 20 years it has evolved in both scope and functionality.

In its latest iteration, FDT 3.0, the Unified Environment, based on FDT version 2.0, it provides a platform-independent, web-enabled environment for managing and monitoring device configuration and all manner of industrial IoT devices across process, hybrid and discrete manufacturing environments. To better understand the ongoing evolution of FDT and its increased relevance in the age of Industry 4.0, Control Engineering spoke with Steve Biagaski, FDT Group managing director.

Q: FDT is viewed as the de facto industry standard for industrial device integration, configuration and monitoring with millions of OTMs, or Device Type Managers, delivering data access to FDT host environments as FDT 1.2 and 2.3 iterations of the standard. How can users be confident that the current FDT 3.0—the foundation for FDT Unified Environment—is the right standard for Industrial Internet of Things (IIoT) and Industry 4.0 applications?

A: One of the biggest reasons is that the Unified Environment—and FDT 3.0, which it's based—were developed centered on user input. It's a similar story to the OPC UA standard, which came from the user community. As a result, FDT UE represents an open, future-proof architecture for not just process instruments but for the IIoT. Current versions of the standard opened new lines in digital connectivity, providing a single user view and the ability to configure process instruments. But the new FDT UE is a server-based, distributed architecture that's operating systems, device and network connection

agnostic. It enables true integration of diverse products from multiple vendors across multiple networks using digital tools based on a variety of operating systems.

Compared to the FDT UE offering a server that effectively gives the IT and OT worlds together. On the "OT" side are devices that speak OPC UA to IT systems, as well as web services (such as REST) to monitor devices. And on the "IT" side are services that speak the full range of OT field network protocols needed to communicate with today's mix of instruments and IoT devices.

Another challenge we heard about was how many different device users had to go to find OTM data. Users want an experience that today more closely resembles connecting a PC to a new printer. So, FDT Unified provides a behind-the-scenes repository of all the necessary OTMs that contain all the device parameters. When a new device is connected, the necessary OTM driver and other parameters are automatically and transparently installed. It's just a much more contemporary way to approach things.

Q: How do end users go about bringing legacy systems forward to FDT UE, and what's the value proposition for doing so?

A: One of the great things about FDT's legacy is that there are lots of millions of OTMs installed out there, devices designed to communicate according to FDT 1.2 or 2.0. The good news is, as people are increasingly moving towards the Unified Environment, all those OTMs out there today will work in the new environment. You don't have to change out the devices to have them work. Then, it's up to the user to decide when they want to take advantage of mobility or the enhanced security that's part of the Unified Environment. So, nobody is forced to do anything. It's a migration path that makes new things possible—and can be pursued when the time is right.

Q: Integration, configuration and monitoring are some of the core strengths of FDT. How do these features differ, or how have they evolved with FDT UE?

A: One of the most noticeable changes is to the user interface. It's now browser-based, allowing a common, consistent look and feel no matter what type of device you're on. So, if you have a maintenance person out in the field with a tablet and someone back in the control room looking at the operator console, they're going to see the same information in real-time. The new FDT UE standardizes mobility.

I think the other big difference is that data coming from the devices themselves is now more readily available to the IT world. The FDT Server includes an embedded OPC UA server and OPC for FDT Universal Information Model that can publish and serve uniform data to higher-level systems used for asset management, manufacturing execution or other purposes. Live FDT data can also be served to other applications such as AI-enabled analytics.

Q: FDT's original market sector of focus is process automation, where integration, configuration and monitoring are central concerns. Are there other strengths of FDT that make it appealing to factory automation environments?

A: We do focus on three areas with specific relevance to factory automation in the 3.0 specification for end-users as well as device developers in this area. One is a focus on configuring intelligent devices used in factory automation, via intelligent photo-eyes or variable-frequency drives, for example. We can provide OTMs that describe how those devices work. We also provide OTM environments where process and factory automation systems work together. The third area is configuring devices that are independent of any network or data representation. The Unified Environment, at all those OTMs out there today will work in the new environment. You don't have to change out the devices to have them work. Then, it's up to the user to decide when they want to take advantage of mobility or the enhanced security that's part of the Unified Environment. So, nobody is forced to do anything. It's a migration path that makes new things possible—and can be pursued when the time is right.

Q: When specifying a universal device management solution as part of a project, how do users go about specifying FDT UE when requesting proposals?

A: It's actually pretty simple. As they do their design work,

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FDT TECHNOLOGY EVOLUTION
Since its advent 20 years ago, the FDT standard has evolved from a single-view "digital twin" based on device configuration and diagnostics to a server-based device management and IOT platform that is device, network and IIoT agnostic.

they should specify that they'll live their devices and/or their system to be FDT 3-compatible to get the benefits of the UE environment.

Q: Some of FDT Group's messaging is that FDT UE "empowers innovative business models for smart manufacturing." All buzz words aside, what does this really mean to system and device vendors? And what are the innovative outcomes for end users?

A: First, the FDT Unified Environment allows device vendors to provide more services and more value to their end-user customers. The vendors themselves can facilitate predictive analysis based on the health of their devices, and be more proactive about helping users manage plant uptime and utilization. From an end-user standpoint, they can now use OTMs to shorten the cycle time from system concept through design and operation. Plus, they can use a device's OTM to effectively model its performance before they buy a piece of hardware. Building a digital twin based on OTM data can help optimize system designs and bring them to reality more quickly.



FDT Unified Environment Enables Multi-Purpose Digital Twins

COVER STORY

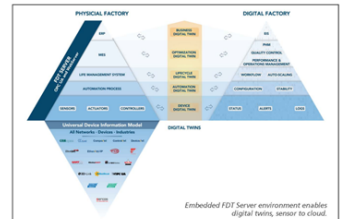
DIGITAL TWIN IMPROVES PLANT DESIGN AND OPERATIONAL PERFORMANCE

A digital twin is a virtual copy of something as straightforward as a device or as complex as an entire system. The data, created by sensors, gives users structural and operational views of what happens to the device or system in real-time. It allows them to monitor, model, and adjust the digital twin to see how virtual changes would affect the original device or system before committing to the change in the real world.

While the converging worlds of Information Technology (IT) and Operational Technology (OT) have different interests and requirements, it does open the door to innovative Industrial Internet of Things (IIoT) solutions—like digital twins. This technology is revolutionizing a manufacturer's ability to use integrated IIoT data to design and employ models that form the basis for increasing overall efficiency, quality, and agility.

Visualising your factory
Converging IIoT data in one platform supports visualisation of the factory as a whole. This is how OT and IT decision-makers will receive productivity status updates consistently and on time, which enables them to make more accurate business decisions.

Manufacturers looking for IIoT convergence benefit from a secure, scalable, and adaptable platform that provides embedded configurable end-to-end trusted interoperability supporting cloud, edge, on-premises, or enterprise-wide agile architectures. The strength of FDT technology in visualisation and data analytics enables seamless integration of automation system assets (current installed-based and new solutions), control applications and edge devices throughout the global industrial sector, as well as expanded access to critical operational data. This strength extends to emerging technologies—



like digital twin—supporting better decision making, improved data insight and visualisation, more modern and consistent workforce training and efficient standard operating procedures.

FDT's Unified Environment (FDT3) enables multi-purpose digital twins. Because a digital twin represents a real-world object, like a device, it can be used for planning, simulation, commissioning or instantly access to the object. Often a digital twin serves for real-time data exchange.

FDT's Unified Environment (FDT3) provides documents for device types as well as for specific device instances to extend support to other use cases. For instance, it is possible to provide an eClass description for a device type to support detailed engineering or link maintenance documents for a device instance to support lifecycle management. The DTM can serve as a hub to all device-related information.

FDT3 provides an accepted standard for deploying and integrating a digital representation of a device to many platforms. It makes it possible to integrate a DTM into a web server, which allows remote access to device

convergence of business information and plant operating technologies, FDT Group's new FDT Unified Environment, (also known as the FDT3 standard), with its FDT Server and built-in OPC UA Server solution, enables robust IIoT integration and provides a secure gateway to network device data and health information. The standard offers OPC UA Client/Server-authenticated access to plant application data, and its utilisation of a Publish-Subscribe environment allows for real-time data exchange.

FDT's Unified Environment (FDT3) provides documents for device types as well as for specific device instances to extend support to other use cases. For instance, it is possible to provide an eClass description for a device type to support detailed engineering or link maintenance documents for a device instance to support lifecycle management. The DTM can serve as a hub to all device-related information.

FDT3 provides an accepted standard for deploying and integrating a digital representation of a device to many platforms. It makes it possible to integrate a DTM into a web server, which allows remote access to device



FDT UE - Advertising



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 the FDT (3.0) Unified Environment (UE), all that device data is available in a single FDT Server solution. Imagine an integrated web server mobilizing field device management and a prewired OPC UA Server for enterprise real-time device data access.

fdtgroup.org/innovation



現場機器のクラウド統合を推進する オープンな標準



ご存じですか？
すべてのつながる現場機器がFDTに対応できることを。

そうなんです。
世界中でFDTに対応できる無数の現場機器が稼働しています。
FDTはセキュアでシームレスな標準化された統合環境と、
インテリジェントな産業エンタプライズ向けのデータ交換を提供します。

さあ、FDT (3.0) Unified Environment (UE)を活用しましょう。
FDT Serverは単体で多くの機能を幅広く盛り込んでおり、
すべての現場機器データを活用できます。
統合Webサーバで、モバイルを活用した現場機器管理が行えます。
OPC UAサーバが組み込まれており、
産業エンタプライズにおける現場機器データ活用が行えます。

ビジネスモデルの革新に向けて: fdtgroup.jp ・ fdtgroup.org/innovation

*FDT (3.0) Unified Environment (UE)に関する詳しい内容は、本誌「特集記事」をご覧ください。

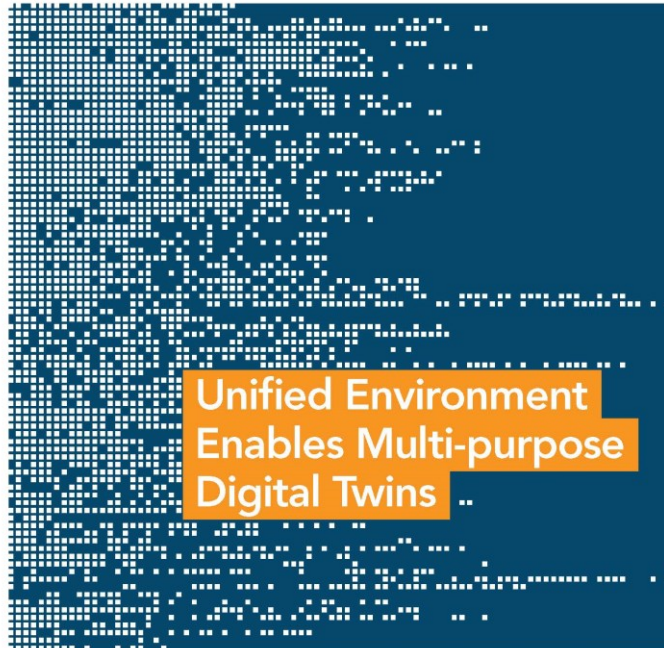


FDT Newsletters

FEBRUARY 2022



Real-Time Data



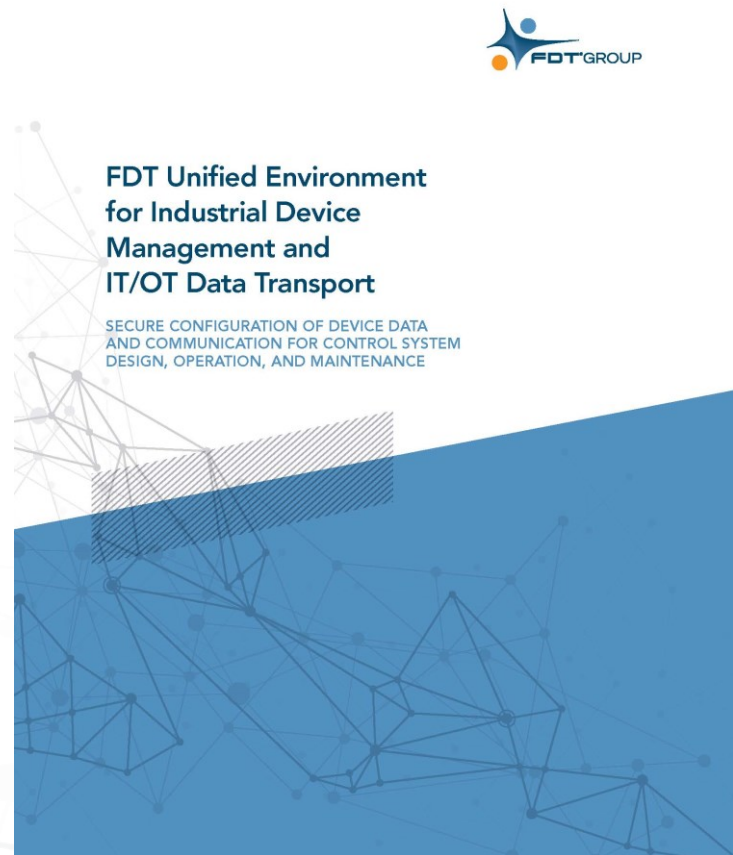
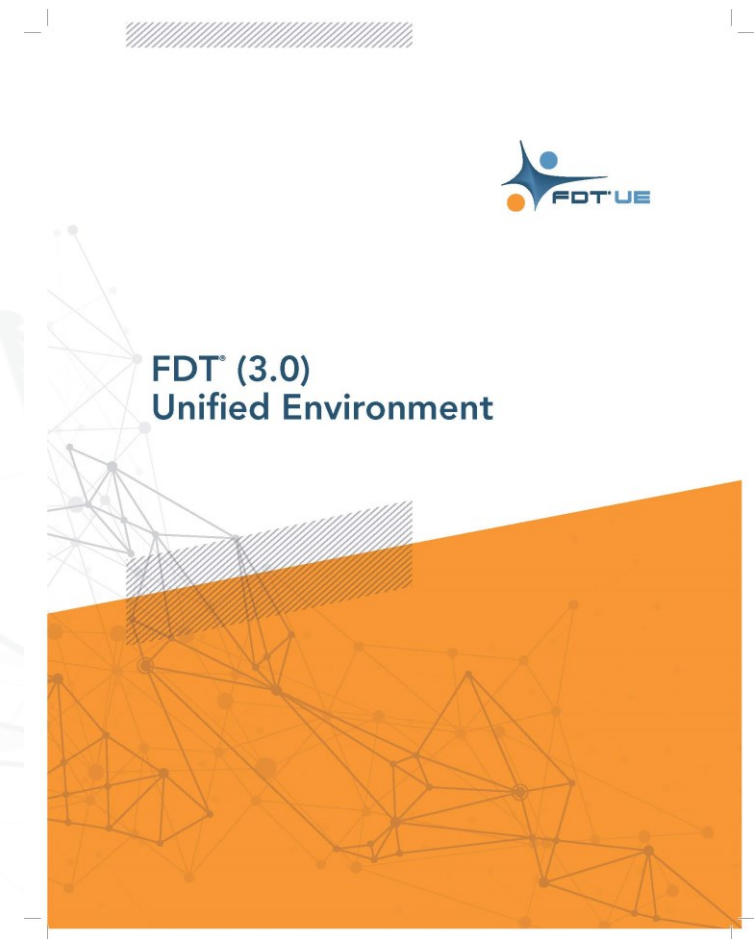
MAY 2022



Real-Time Data



FDT UE Brochure and FDT IT OT White Paper



First-in-Show FDT UE | Server Demo – Hall 8 Stand F07





Process Automation



Devices – Data-points
(Multiple Applications/Locations)

FDT Server
(OPC UA Publisher)

Subscriber to Real-time IT/OT Data
(Multiple Applications & Locations)



- Asset Health Monitoring App
- KPI Dashboard
- Valve Diagnostics





Factory Automation





QUESTIONS?

Vote to Adjourn

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2022 General Assembly Voting Poll Adjournment

8. How do you vote to adjourn the 2022 Virtual General Assembly?

- ☐ Approve (Yea)
- ☐ Disapprove (Nay)
- ☐ Abstain (No Vote)

Thank You for Your Attention

Contact Us:

inquiry@fdtgroup.org