



Level



Pressure



Flow



Temperature



Liquid
Analysis



Registration



Systems
Components



Services



Solutions

Process automation engineering tools

...device configuration using FDT/DTM

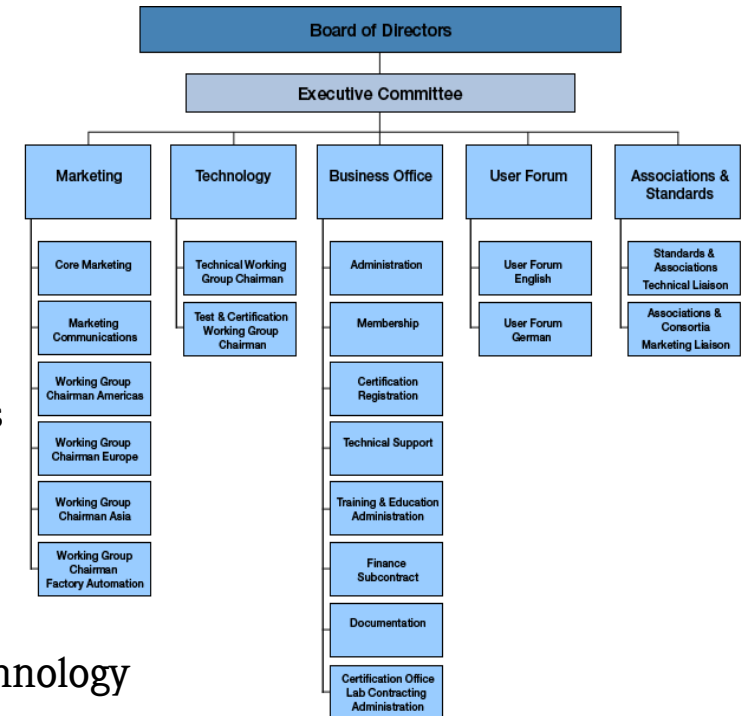
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User Conference 2010
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Endress+Hauser 
People for Process Automation

The FDT Group

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- The FDT Group formed in 2003
 - open
 - independent
 - non-profit
 - association of 61 international companies
- Owner of the **FDT Technology**
- Responsible for maintenance, further development, and promotion of FDT Technology
- Responsible for certification and compliance testing of FDT products
- Dedicated to establishing and maintaining FDT Technology as an **international standard** with broad acceptance within the automation industry
- **Open** to all companies that wish to participate



www.fdtgroup.org

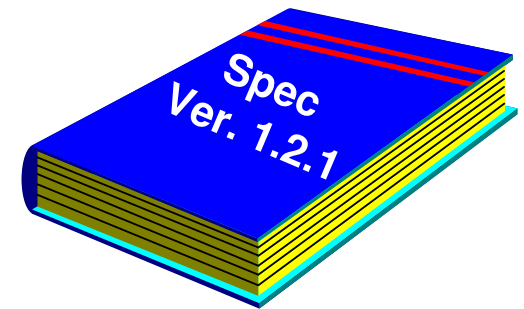


FDT Group members

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What is FDT/DTM?



- **FDT** = Field Device Tool (frame application)
 - Follows a published standard specification
- **DTM** = Device Type Manager (device driver)
 - Compatible with any FDT frame application

What is FDT/DTM?

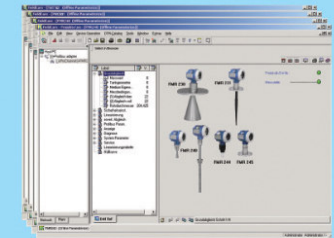
FDT/DTM

- Open standardised technology independent of device or system supplier
- Independent of device type sensor, actuator, remote I/O, drives, etc.
- Full support of installed base
- Full device functionality
- Independent of communication protocol Ethernet, HART, PROFIBUS, Foundation Fieldbus, etc.
- Vertical integration by nested communication

FDT Frame Application

- Network Configuration
- Navigation
- User Management
- DTM Management
- Data Management

DeviceDTM



CommDTM

E.g. Ethernet, HART®, PROFIBUS, FOUNDATION™ Fieldbus

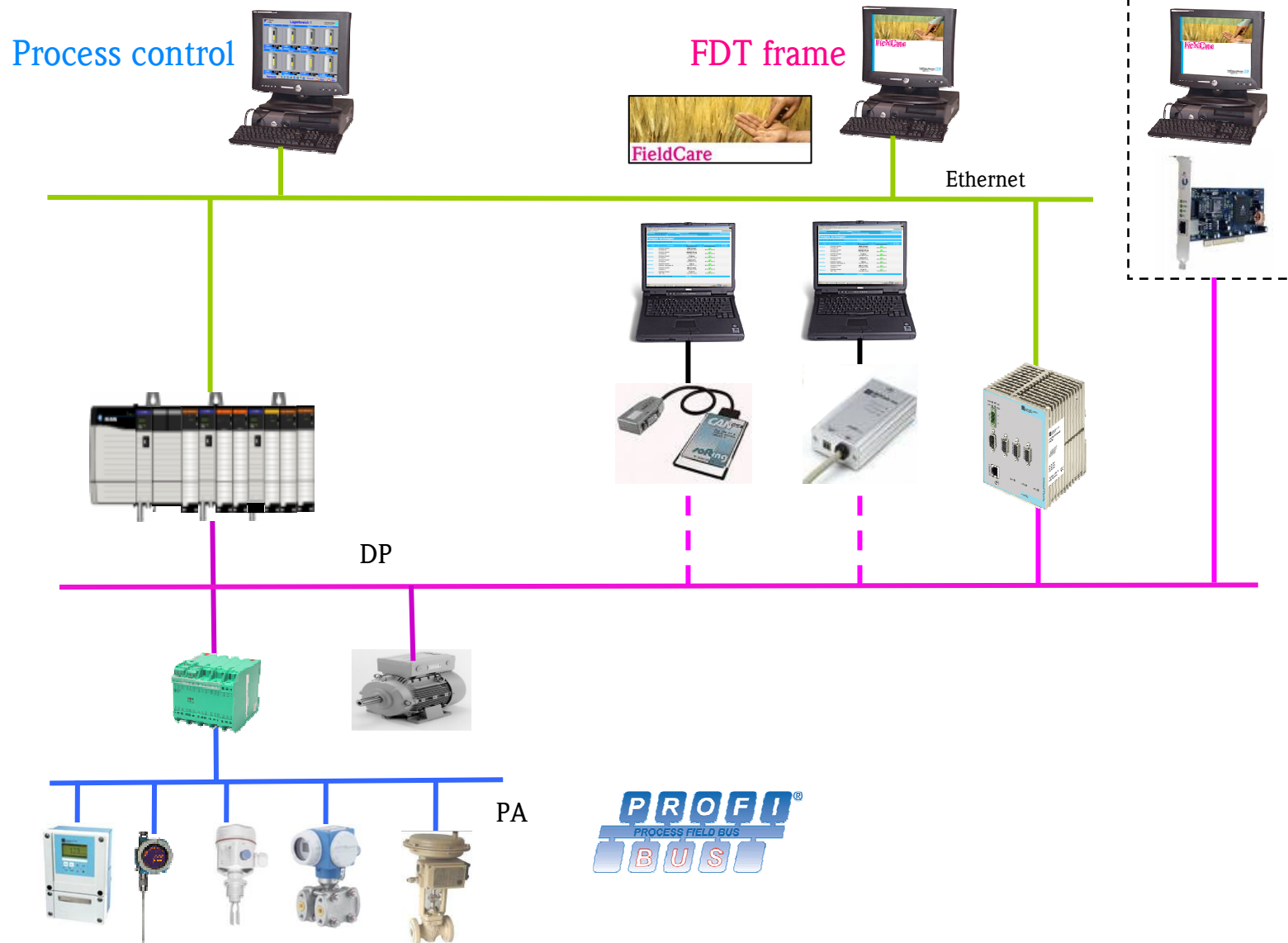


Plant Assets

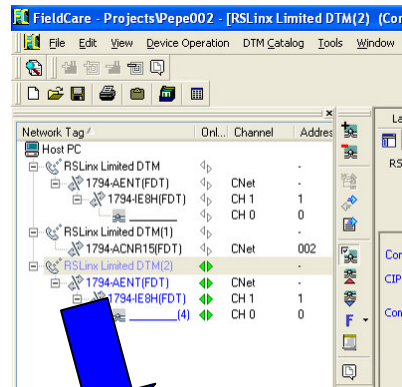
Sensors, Actuators, Drives, Voltage Switchgear, Gateways, Remote I/Os, Controllers, etc.

Connection options - Profibus

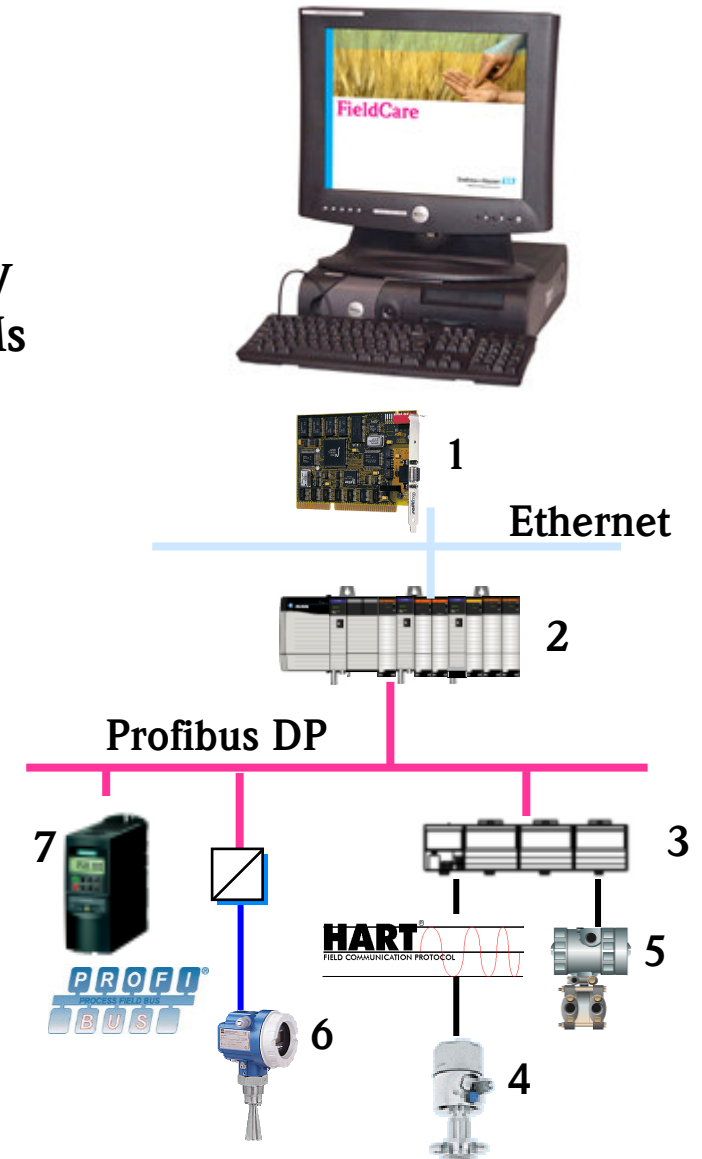
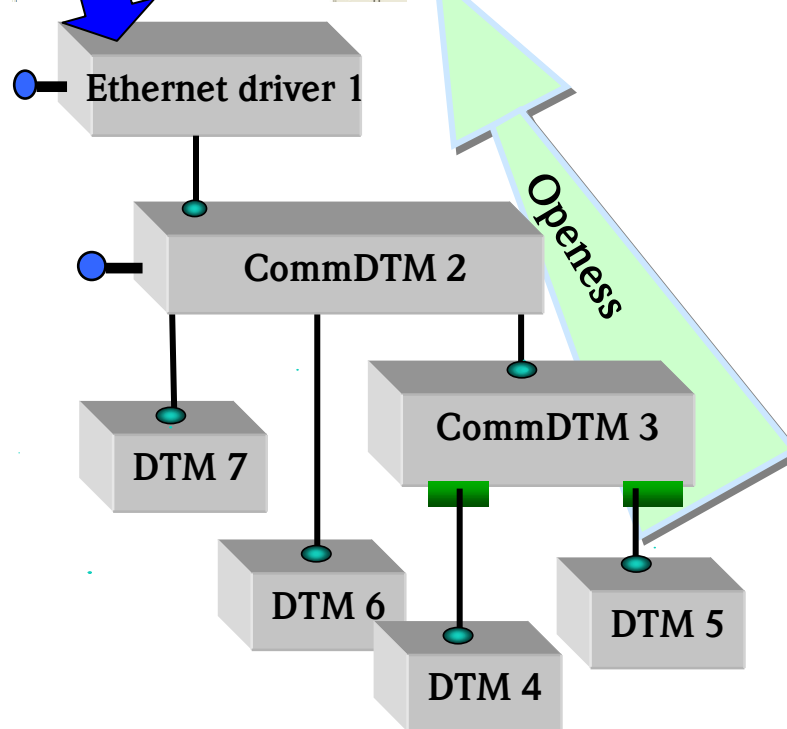
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How does FDT/DTM technology work?



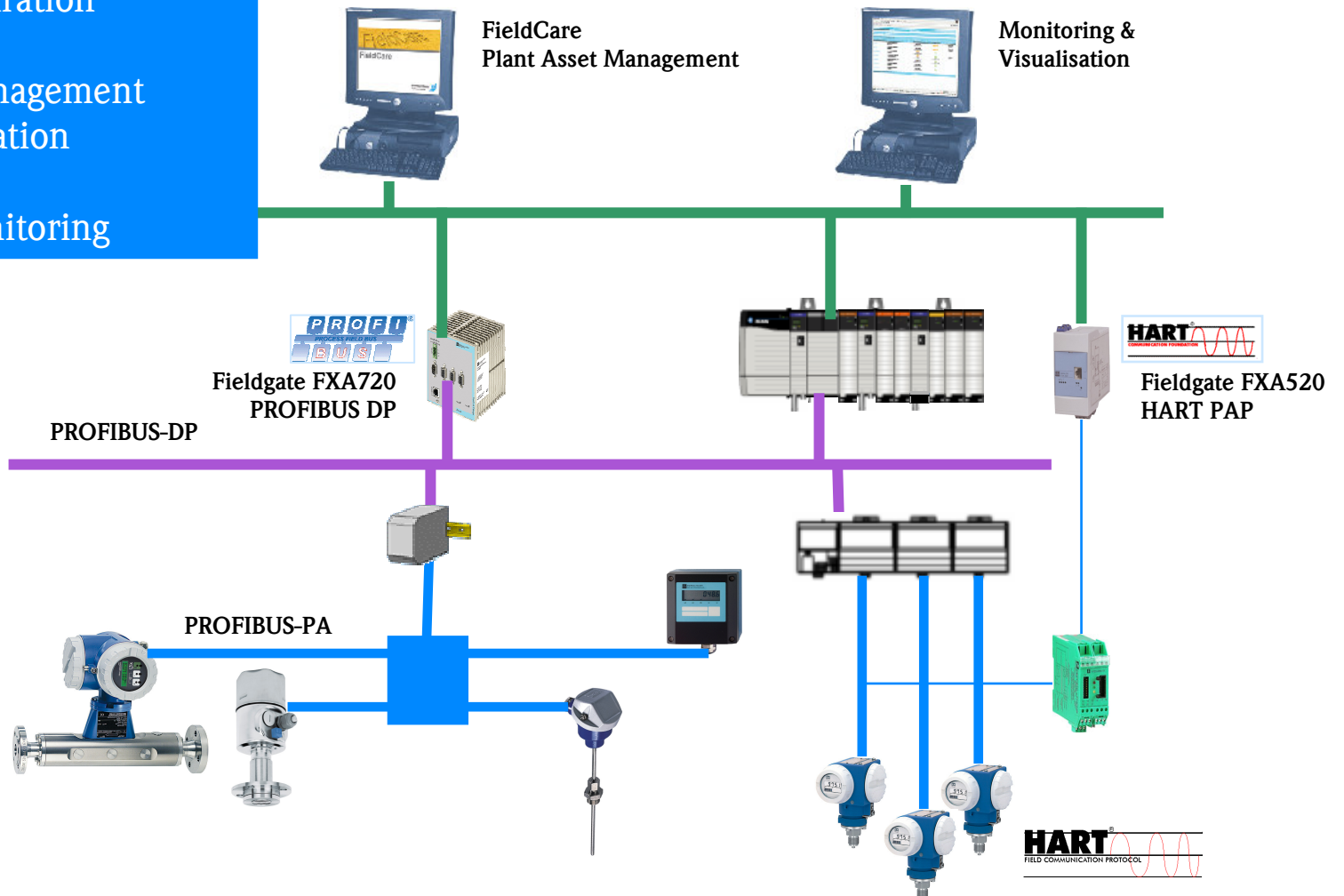
Network topology
built up with DTMs



How does FDT/DTM technology work?

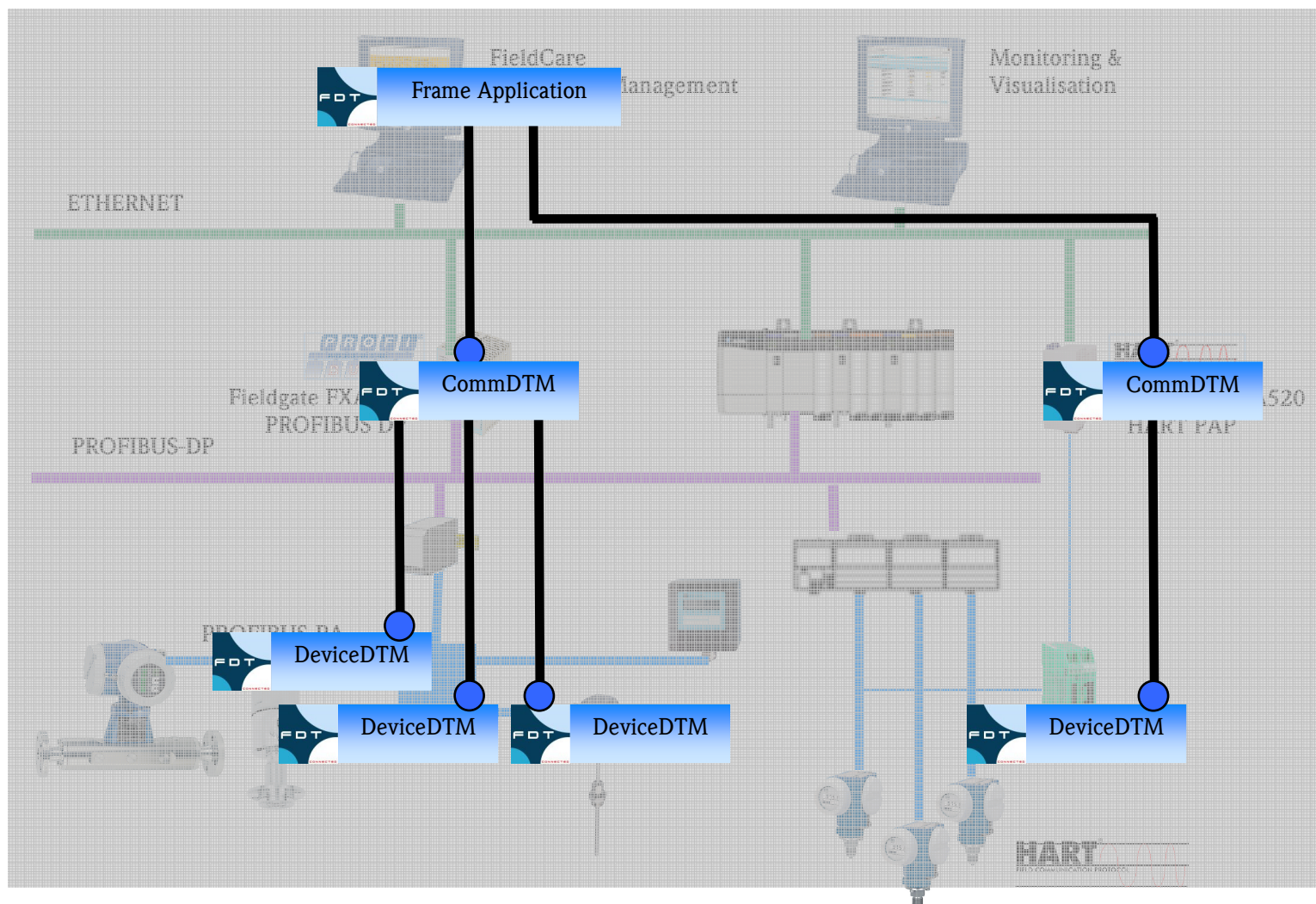
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Device configuration
Up/download
Document management
Document creation
W@M portal
Condition monitoring



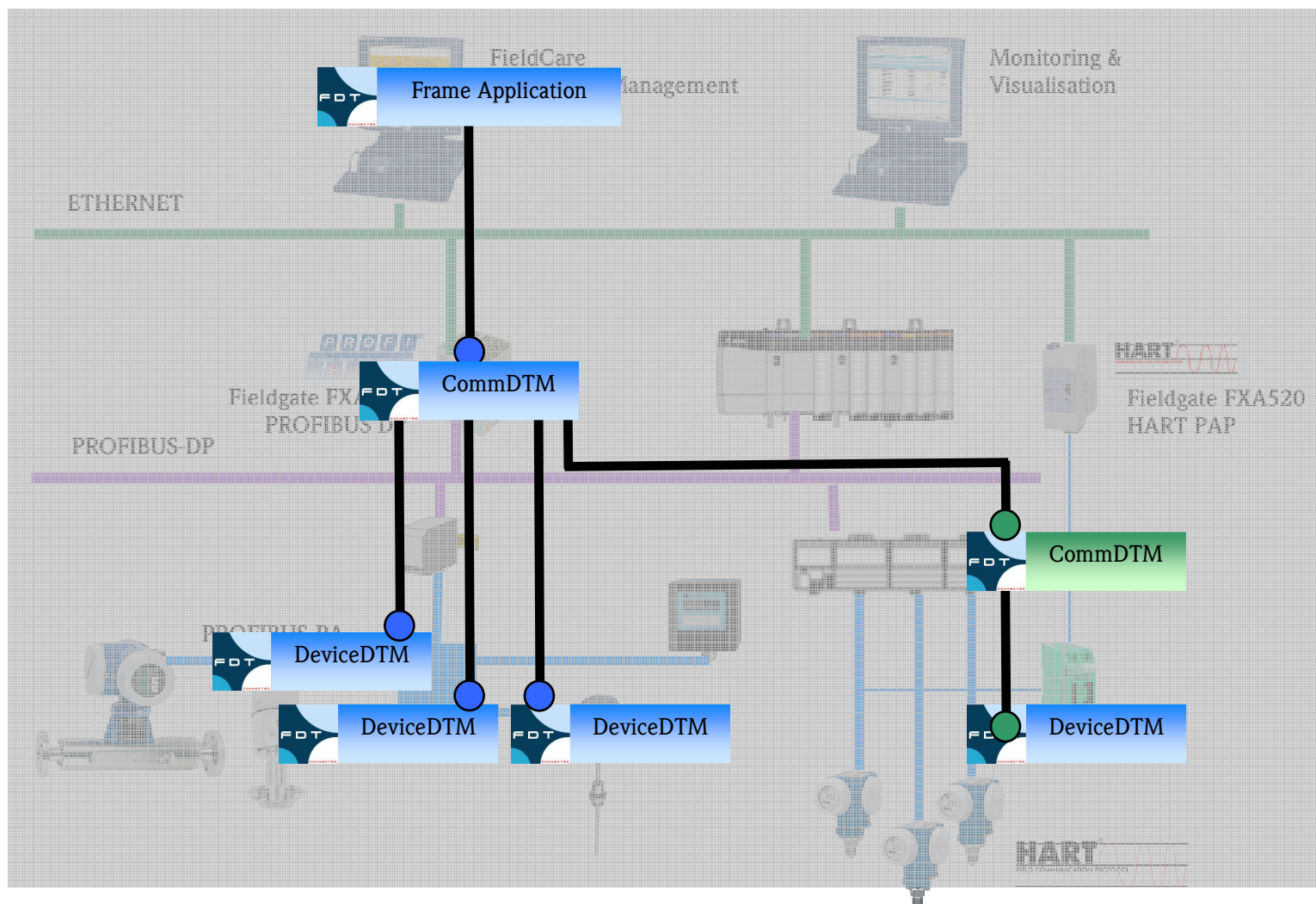
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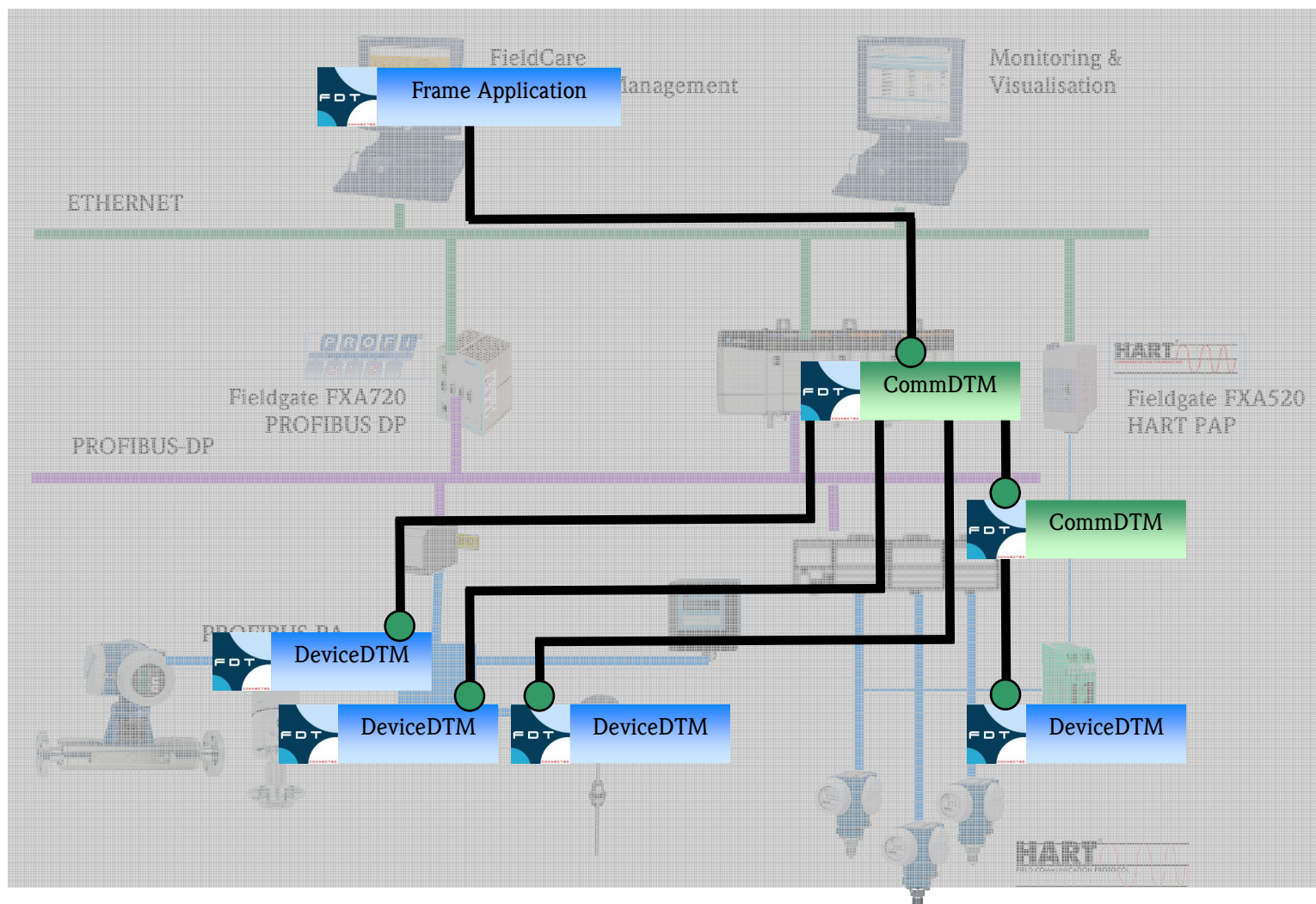
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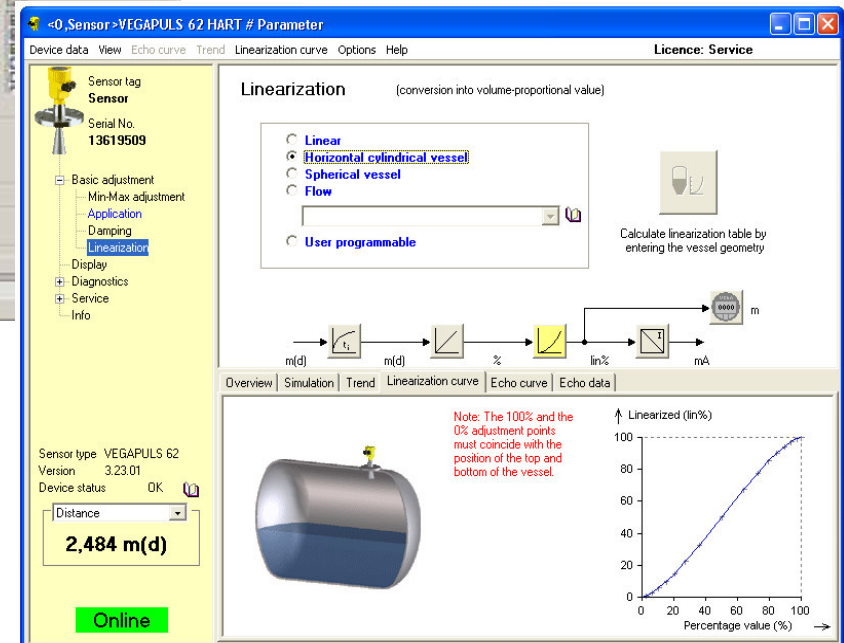
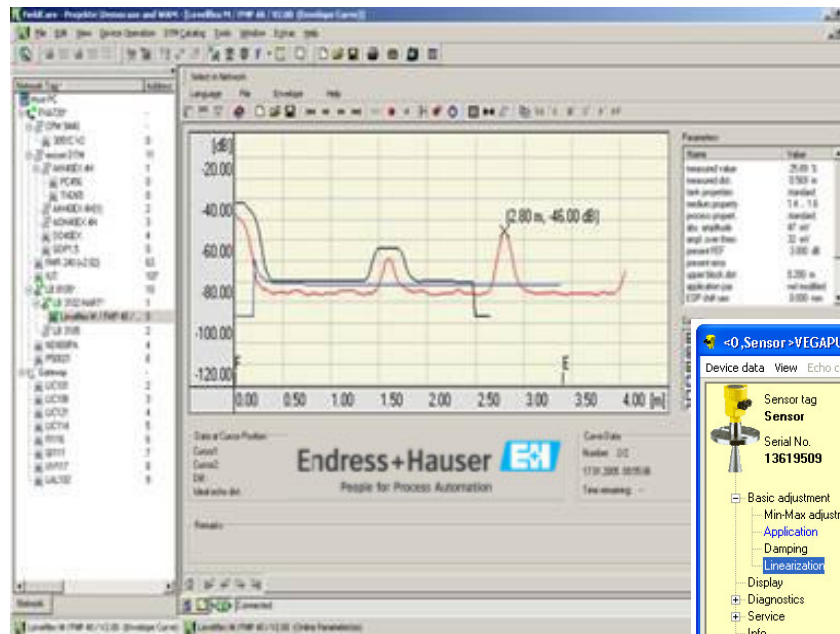
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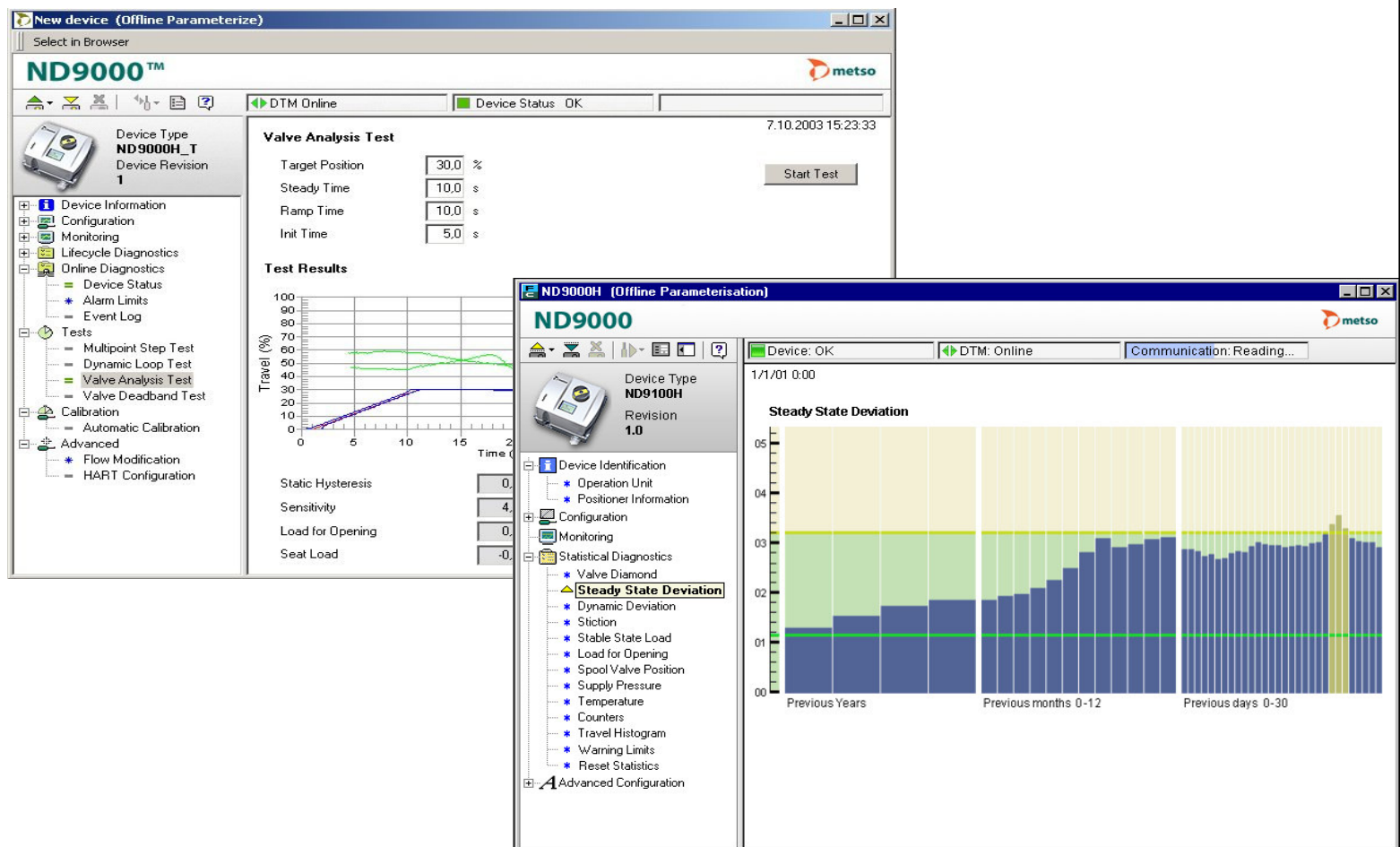
Example 1: Radar Level Transmitter

- DTM used for device configuration and advance instrument diagnostics
- DTM used for configuration of linearization



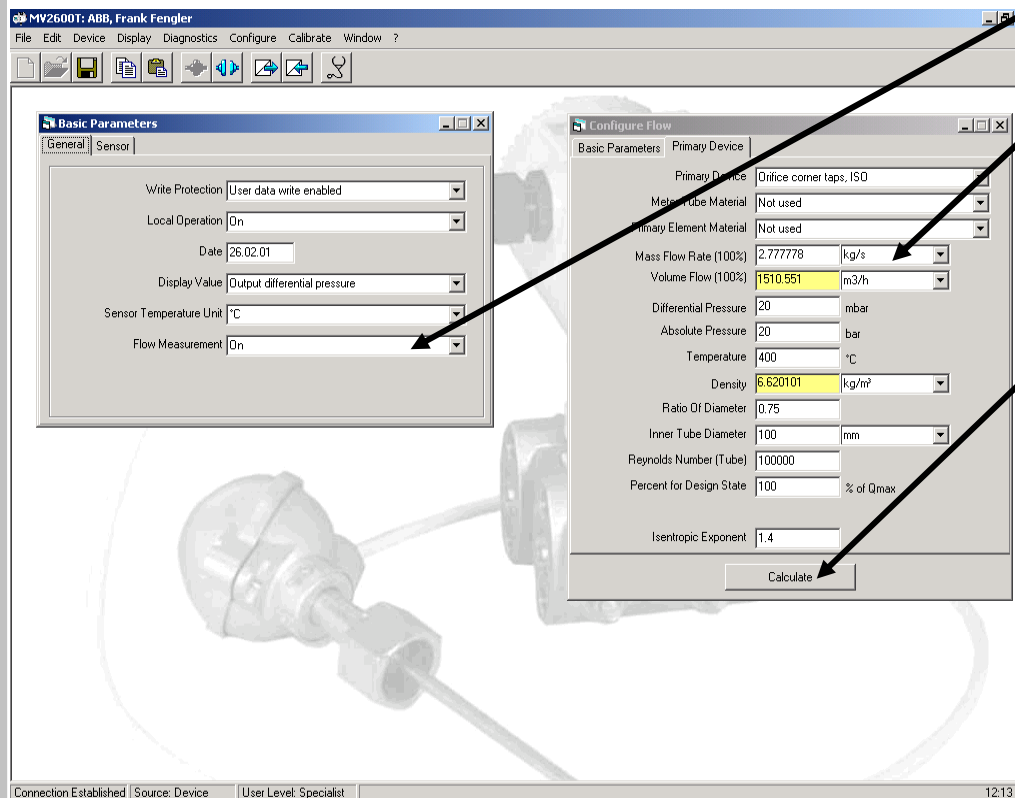
Example 2: Valve Positioner

- DTM enables advanced valve diagnostics
- Control valve diagnostics enables better decisions for shut down planning



Example 3: Multivariable Transmitter

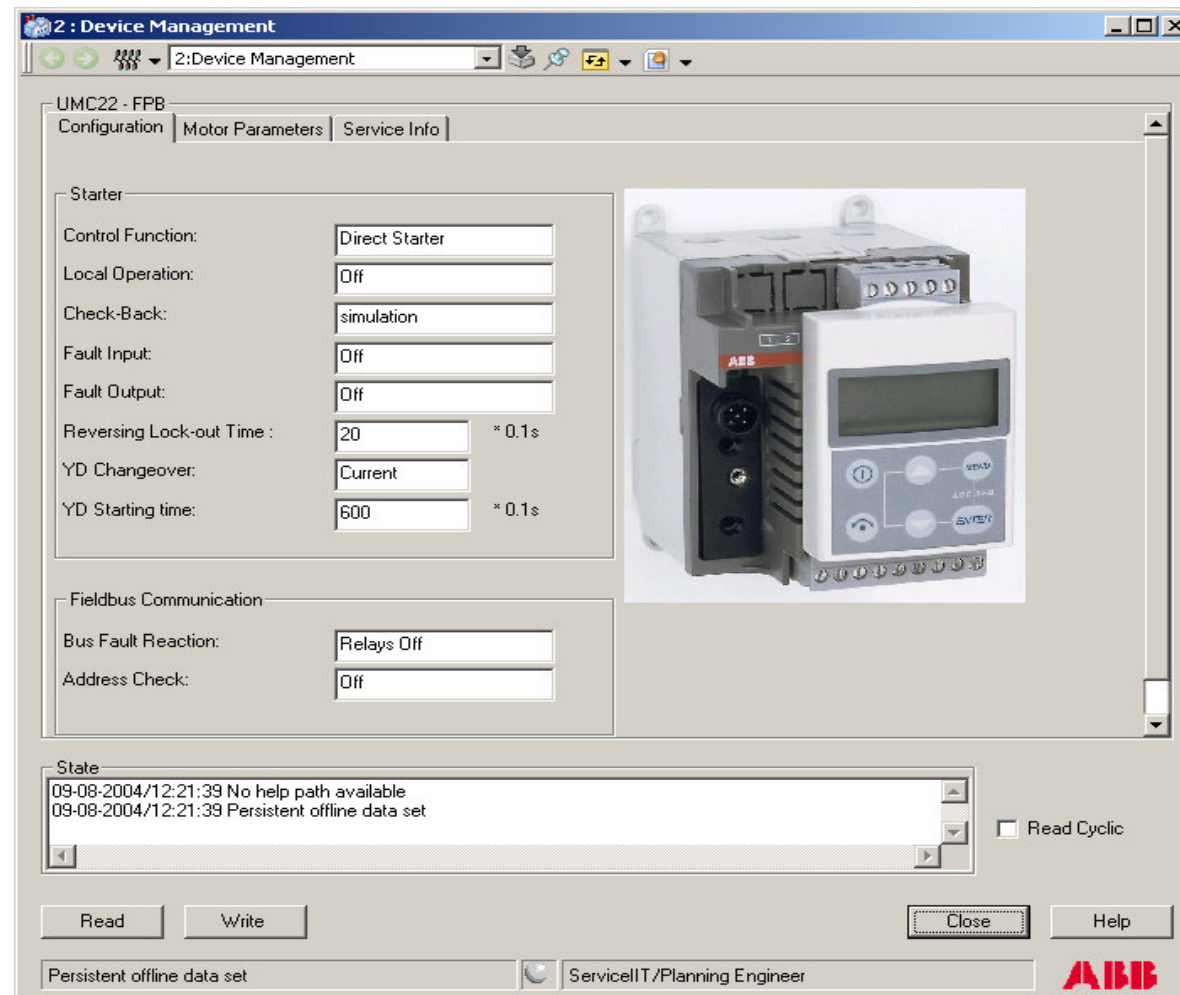
- DTM used to calculate coefficients for dp flow transmitter



- Switch Flow Measurement “On”
- The calculation values of the Primary Device entered here are the basis for the flow calculation
- Calculate and you get special parameters as result.
- Download parameters in device.

Example 4: Universal Motor Controller

- DTM used to configure motor controller and display diagnostic information



Example 5: Segment Coupler

<1.DMA001>HD2-DM-A # Online parameterization

FieldConnex

Device Name: HD2-DM-A UI Mode: 1 2 3 4 System: ☒

Tag: DMA001 Segment 1: ☒ Segment 3: ☒

Fieldbus Type: FOUNDATION Fieldbus Segment 2: ☒ Segment 4: ☒

Label: HD2-DM-A

Segment Tag: DMA001-1

Enable Segment: Enable

Communication: ☐

No. of Devices: 3

Enable Module Mismatch Alarm: ☒

Module Mismatch Alarm State: ☒

Power Supply Module Data

Label	Actual	Target	Failure
Module A	Isolated Module	- not set -	<input checked="" type="checkbox"/>
Module B	Isolated Module	- not set -	<input checked="" type="checkbox"/>

Physical Layer Data

Label	Low Out...	Low Main...	Actual	High Mai...	High Out...	Hyst.	Reset
Voltage [V]	9.0	9.0	29.7	29.0	32.0	1.0	<input type="button" value="Reset"/>
Current [mA]		0	45	500		30	<input type="button" value="Reset"/>
Unbalance [%]	-84	-84	0	84	84	20	<input type="button" value="Reset"/>
Min Signal Level [mV]	200	200	789			100	<input type="button" value="Reset"/>
Max Signal Level [mV]			940	1200	1200	100	<input type="button" value="Reset"/>
Noise [mV]			29	100	100	25	<input type="button" value="Reset"/>
Jitter [us]			1.0	3.2	3.2	0.8	<input type="button" value="Reset"/>

This window shows the actual segment data as well as the minimum and maximum values measured while this window is open. You can reset the min. and max. values using the Reset button. The min. and max. values are classified in the following way:

☒ Value is Excellent ☒ Value is Good ☐ Value is Out of Specification

Segment Tag DMA001-1

Segment Bus-Communication Status ☐

Power Hub Configuration

Label	Actual	Target	Status	Information
Motherboard ...	Standard non-IS 500mA	Standard non-IS 500mA	<input checked="" type="checkbox"/>	Excellent
Redundancy	Redundant	Redundant	<input checked="" type="checkbox"/>	Excellent
Module A	Galvanic isolated	Galvanic isolated	<input checked="" type="checkbox"/>	Excellent
Module B	Galvanic isolated	Galvanic isolated	<input checked="" type="checkbox"/>	Excellent

Segment Data Ignore Secondary Power Supply in Snapshot ☐

Label	Actual	Min	Max	Quality	Info
Voltage Ptt [V]	24.7	24.7	24.7	<input checked="" type="checkbox"/>	Excellent
Voltage Sec [V]	24.7	24.7	24.8	<input checked="" type="checkbox"/>	Excellent
Voltage [V]	23.8	23.8	23.8	<input checked="" type="checkbox"/>	Excellent
Current [mA]	15	15	16	<input checked="" type="checkbox"/>	Excellent
Unbalance [%]	-2	-2	-2	<input checked="" type="checkbox"/>	Excellent
Noise [mV]	20	10	20	<input checked="" type="checkbox"/>	Excellent
Jitter [us]	1.3	1.1	1.5	<input checked="" type="checkbox"/>	Excellent
Min Signal Level [mV]	807	790		<input checked="" type="checkbox"/>	Excellent
Max Signal Level [mV]	807		808	<input checked="" type="checkbox"/>	Excellent

Field Device Data Tags

Addr...	Tag	Level [mV]	Noise [mV]	Jitter [us]	Polarity
16	hallo1	807	20	1.3	OK

U = 100mV/div, t = 50us/div

Start

Recording Length 32.768

Amplitude +/- 0.625

Trigger Events

Trigger Address ☐ All

Pretrigger Time ☐ Automatic ms

Trigger Level ☐ Ignore V

Trigger Timeout ☐ Infinite s

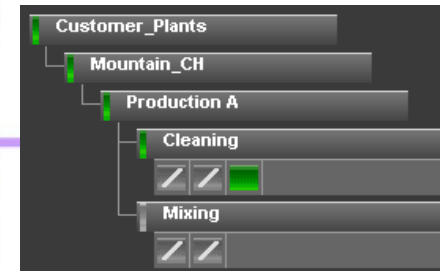
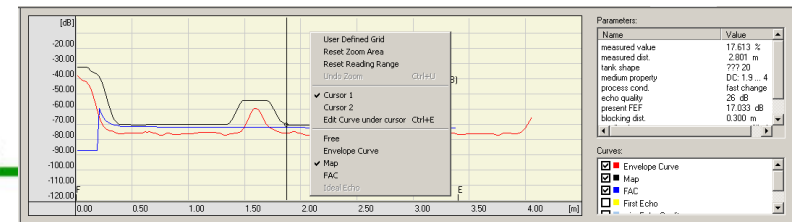
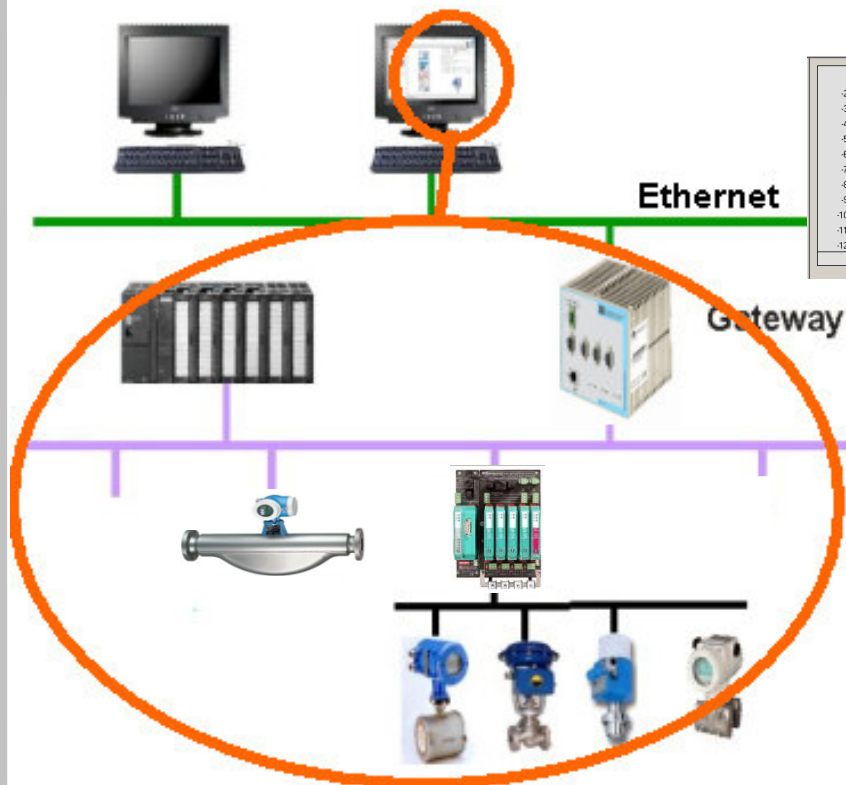
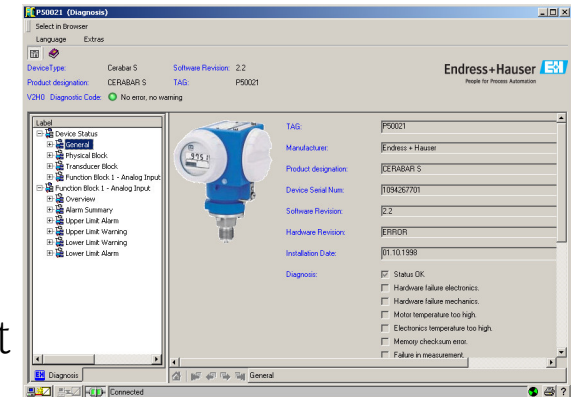
Segment Segment 1

No trigger event found

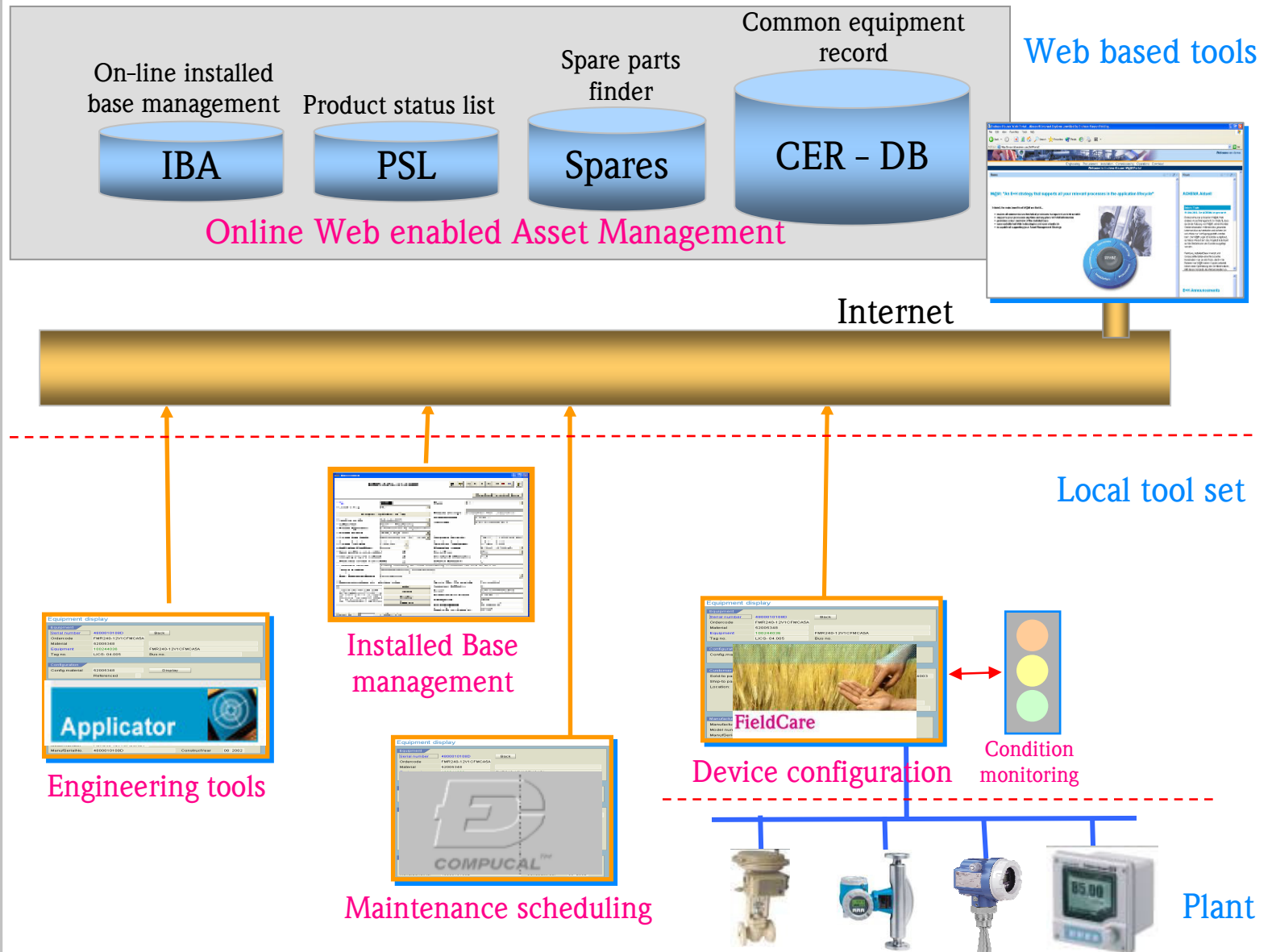
FDT frame -FieldCare

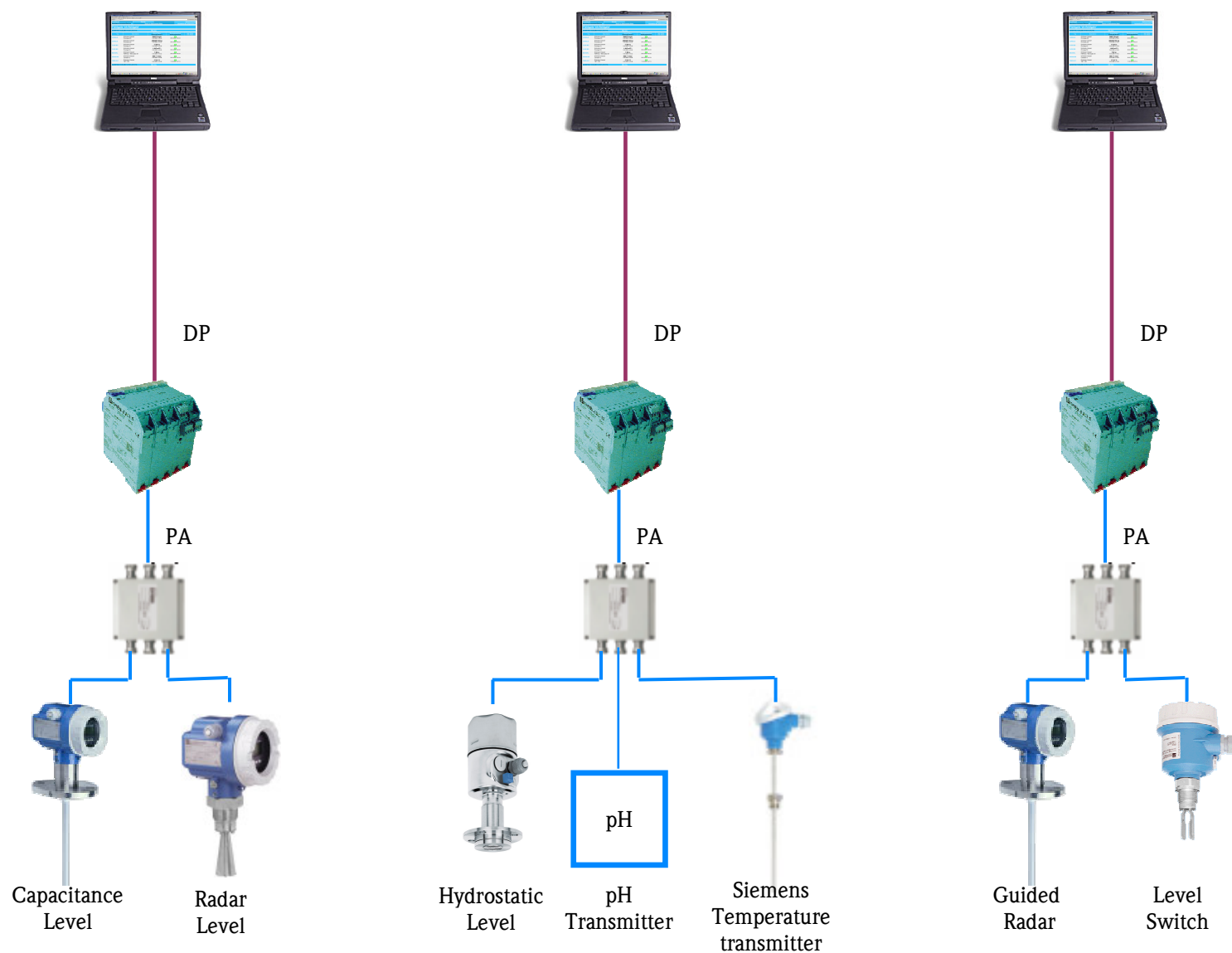
Plant asset management tool

- Multivendor device configuration
- iDTM for HART & FF (Profibus in 2010)
- Reports and document management
- Supplied with CommDTM's
- Links to Web enabled Asset Management



Life cycle management tools







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Solutions

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