

EDDL or FDT/DTM

Characteristics of EDDL and FDT/DTM

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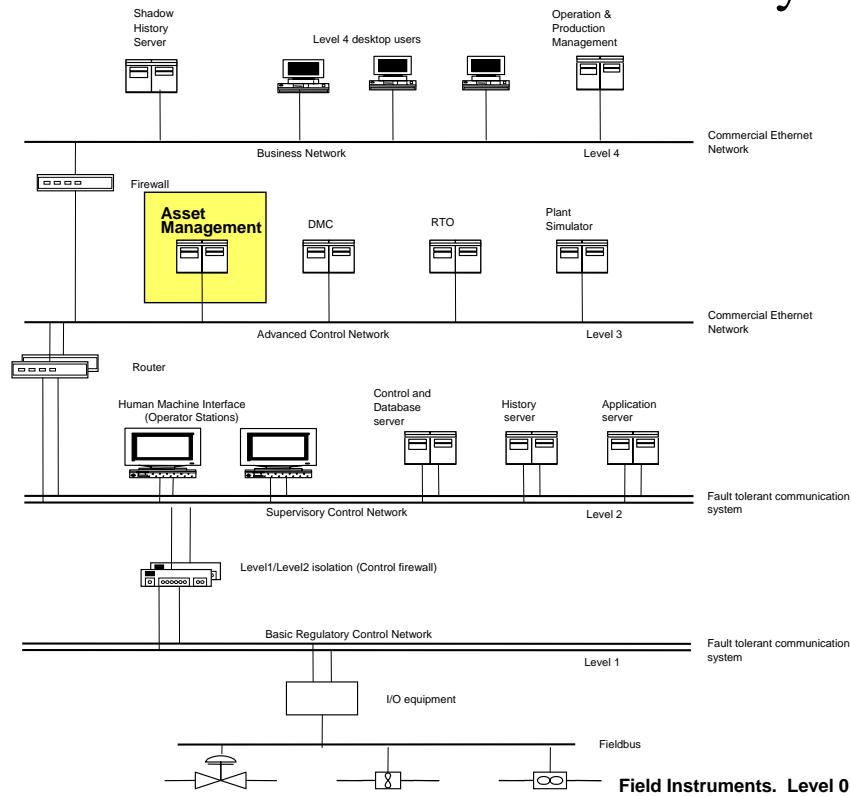
Agenda

- Architecture of a modern DCS System
- EDDL - Electronic Device Description Language
- FDT/DTM - Field Device Tool / Device Type Manager
- Differences between EDDL and FDT/DTM
- Coexistence EDDL and FDT/DTM
- Conclusion

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Architecture of a modern DCS system



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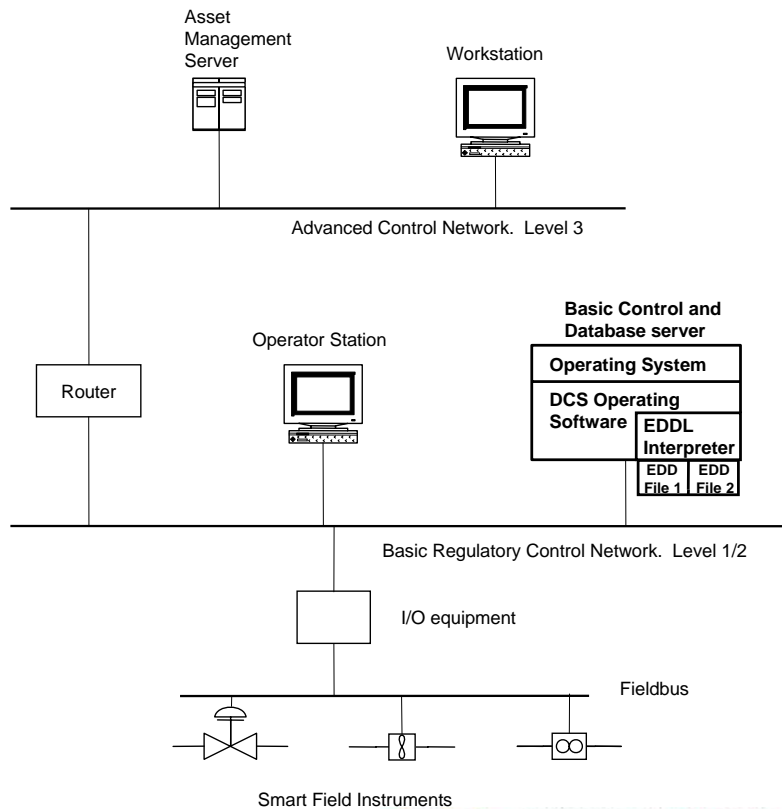
EDDL – Electronic Device Description Language

- First used in process control in 1992 with the HART Communication Protocol
- In 2004 the Electronic Device Descriptor Language (EDDL) becomes an approved international standard: IEC 61804-2
- The EDD is a text file and operating system independent
- However for each Fieldbus system a specific Device EDD is required
- Only functions as described in IEC 61804-2 are possible
- Requires a specific EDDL Interpreter for each DCS vendor
- In one DCS system all EDDL instruments have the same look and feel

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EDDL Architecture



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EDDL -Electronic Device Description Language

- **Standardization:** Recently IEC 61804-3 is released which gives Enhanced User Interfaced, Graphing System and Persistent Data Storage
- **Support of EDDL technology**
 - No single user organization
 - EDD testing is an independent multi part activity
- **Weak points of EDDL technology**
 - Functionality is restricted by standard IEC 61804-x. Additional device functionality requires proprietary plug-ins and snap-ons
 - Eventually device intelligence can reach the stage that devices cannot be adequately described via DD's
 - Testing of EDD file against Fieldbus protocols is well organized by the Fieldbus organizations. However EDD files are not independently tested against EDDL interpreters

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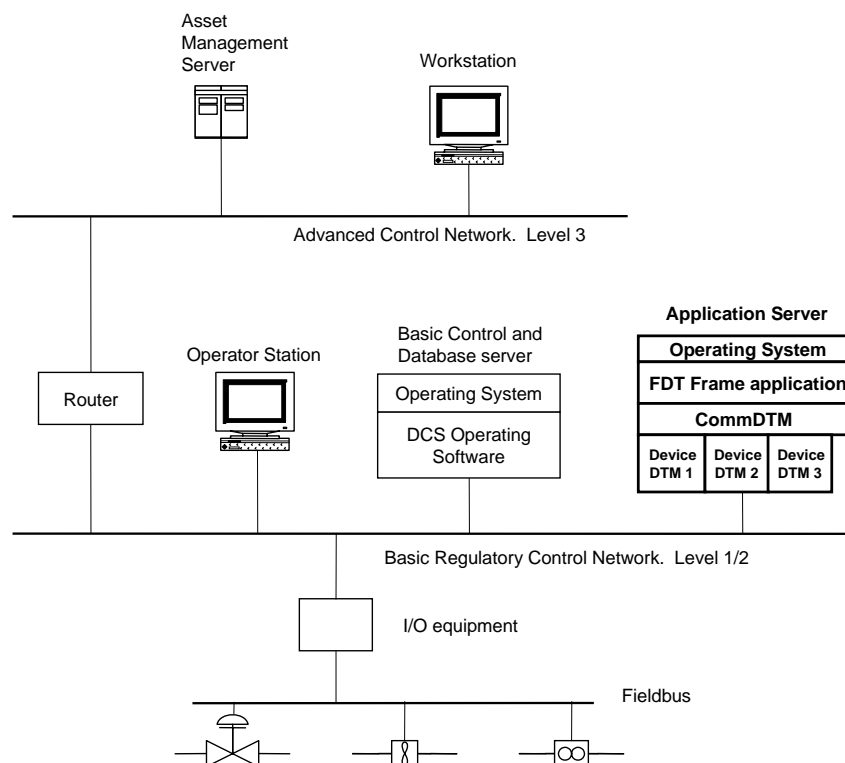
FDT/DTM - Field Device Tool / Device Type Manager

- Requires following parts:
 - FDT Frame Application (one per DCS system)
 - CommDTM (one per Fieldbus system)
 - Device DTM (one per field device type)
- DTM's are executable software (drivers)
- DCS vendors will require to run the FDT software in another server than the basic Control and Database server
- The Device DTM is independent of the DCS system or the Fieldbus system

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FDT/DTM Architecture



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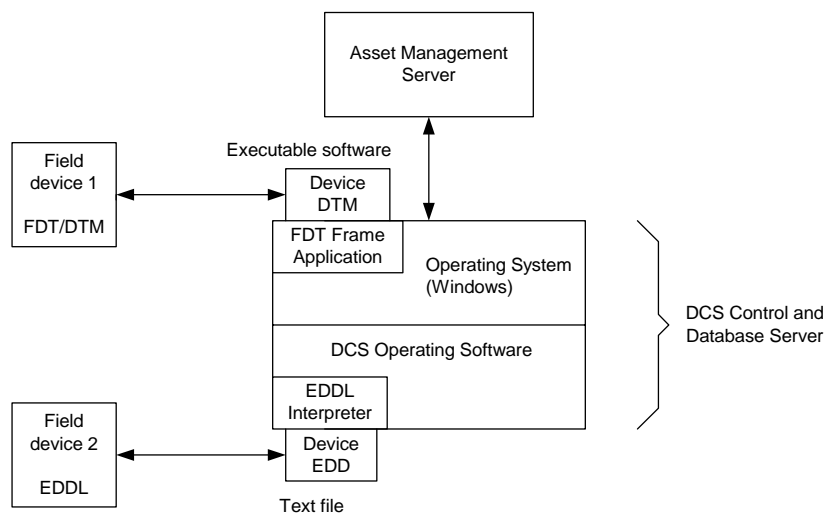
FDT/DTM - Field Device Tool / Device Type Manager

- Support of FDT technology: FDT Group, which has currently appr. 55 members (vendors and users)
- Consistent look and feel of different DTM's: Device manufacturers will follow the FDT Style Guide
- Certification of DTM's: By the FDT Group. Certified DTM are listed on the FDT Group's website
- Weak points of FDT technology:
 - Windows upgrades
 - Version control

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Architectural differences



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Differences of both technologies

Item	FDT/DTM	EDD/DD
Structure/type	Program	Text, data
Functionality of field device determined by	Field device and component manufacturers	Host system manufacturers
Flexibility for adding new functionality	High for device manufacturers, non for host system manufacturers	High for host system manufactures, low for device manufacturers
Presentation of device functionality	Is determined by DTM. Therefore full functionality for all device types	Dependant on host system. Must be supported by DCS vendor. Possibly restricted functionality for more complex device types
Installation procedures	Yes, installation of software. In general no restart is required. No registry changes	Yes, file copy

Differences of both technologies

Item	FDT/DTM	EDD/DD
Dependency on operating system	Yes, FDT frame and DTM must be verified against operating system	No, but host application (EDDL interpreter) may be dependent on host operating system
User interface	DTM style guide	Proprietary, determined by host system
Support of open systems	Strong	Weak
Supported protocols	All	HART, Foundation Fieldbus, Profibus
International Standard	By end of 2007	IEC 61804-3
Current interoperability experience	No problems	Often problems arise when loading non DCS vendor related DD's

Coexistence EDDL and FDT/DTM

- In a DCS system which has provisions for EDDL technology and FDT/DTM technology as well (a truly open system), both technologies can coexist.
- Then we can use EDDL instruments for regulatory control applications and FDT/DTM instruments for Asset Management applications (which require more process information and device information)

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Conclusion

- For the optimization of Life-Cycle-Costs, Asset Management Systems and smart field instruments are required
- To transport the instrument data to the Asset Management System, two technologies are available: EDDL and FDT/DTM
- These two technologies are not compatible
- Some instruments may be available only in EDDL technology, others only in FDT/DTM technology
- However, a truly open DCS system can handle both technologies simultaneously.
- **To avoid future problems when implementing Asset Management Systems, a DCS system shall be chosen which supports EDDL technology as well as FDT/DTM technology**

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