

Case Study

| Field Device Management Software





Project

FDI Device Management



Technologies

FDI, FDT/DTM, EDD, OPC UA, .NET / C#, Fieldbus protocols (e.g., HART, Profibus, Profinet, Ethernet-APL)



Customer

Premier supplier of automation and control systems



Services

Software engineering, FDI/FDT integration, device administration, architectural consulting



Industry

Process automation / Mechanical and plant construction



Period

2014 - present



Wetcon plays a crucial role in the ongoing development of an FDI Device Management tool for a prominent provider of automation and control systems. This tool serves as a central platform for managing, distributing, and maintaining device integrations.

FDI, EDD, and ASI-based packages are consolidated into a single system, versioned, and integrated into interconnected systems through standardized interfaces, particularly OPC UA.

This offers plant operators a standardized, regulated environment where device descriptions and functions are reliably and interoperably accessible across various systems and locations.





Initial situation and challenges

Device integrations (FDI packages, DTMs, EDDs) needed to be handled independently for various control systems, asset management tools, and engineering environments.

Various version levels resulted in increased effort, sources of error, and a lack of clarity concerning which device integrations are utilized in different locations.

A central platform was required to manage, qualify, version, and oversee the deployment of integrations – preferably founded on open standards.

Simultaneously, the route should be established towards a more service-oriented, standardized environment (e.g. through OPC UA).



Our approach

Wetcon facilitates the design and execution of a centralized device integration platform that utilizes manufacturer and customer-specific FDI packages, EDDs, and ASi-DDs.

A migration process is available for legacy FDT/DTM components.

Information and functionalities from device integrations are accessible to external systems (such as IIoT or ERP systems) through standardized interfaces, including those that utilize OPC UA.



Architecture Platform

A multi-tier server application built on .NET, featuring a database backend for the management of device integrations, version control, device data, audit trail events, and usage records.



Programming Languages

.NET / C#
HTML/TypeScript/
React



Communication

Integration of control systems, asset management, and engineering tools through established interfaces.

Utilizing OPC UA as a standardized communication channel to present device information and functionalities to other systems (for instance, for advanced applications, dashboards, or IIOT integration platforms).



Interfaces / Protocols

Support and administration of FDI packages, EDD, and ASi-based device specifications within a unified system.

Mapping of various fieldbus technologies (e.g., HART, Profibus, Profinet, Ethernet_APL, ASi) through the corresponding device integration technology.

Provision of device data and services through OPC UA for interoperable, standards-compliant access, including relevant IIoT scenarios.



UX/UI Focus Areas

Web or client interface for searching, filtering, and managing device information based on manufacturer, device type, revision, status, and location.

Bulk operations for retrieving device data, executing firmware updates on the devices, and refreshing device drivers.

Dashboards for displaying status information

Dialogs for configuring the devices

Technical Execution





Outcomes & Benefits



Centralized oversight of all devices within a facility throughout their entire life cycle, as opposed to fragmented, inconsistent, and manufacturer-specific systems.



Future-proof architecture that considers various standardized integration technologies and facilitates integration scenarios defined through OPC UA.



Would you like to integrate FDI, legacy FDT, EDD, and OPC UA into one centralized platform?

Discuss with us the solutions for integration and device management.



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