

Integration of cranes via OPC UA

7.4.2022, Valteri Peltoranta



- VDMA = Verband Deutscher Maschinen- und Anlagenbau
- OPC UA = Open Platform Communications Unified Architecture
- ERP = Enterprise Resource Planning
- MES = Manufacturing Execution System

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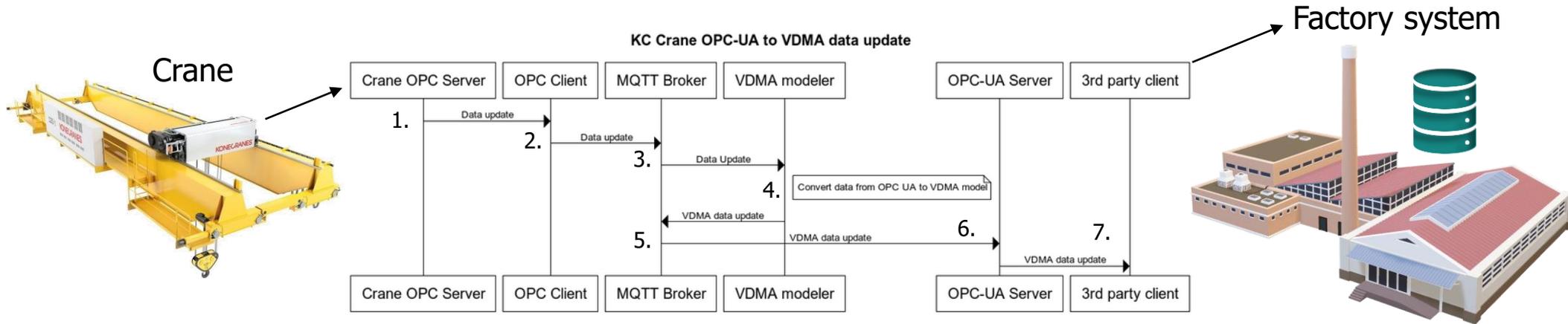
- In the past, integration of cranes to factory systems/machines has been done as customized solution for each project
- Lately, Konecranes has contributed to create *VDMA OPC UA Companion Specification for Cranes and Hoists*
 - Aims to define standard information model for cranes via OPC UA interface
 - Available crane information: location, speed, status, condition, asset configuration, limitations in operation
 - Provides "operative Digital Twin" data flow to factory process and asset management
 - Standardized crane OPC UA information model enables efficient:
 1. Crane to higher level factory system (e.g. ERP/MES) communication
 2. Crane to other machine (robot/grinding machine/etc.) communication



- PLC = Programmable Logic Controller
- MQTT = Message Queuing Telemetry Transport

Konecranes OPC UA solution

- Konecranes has developed OPC UA solution according VDMA companion specification for cranes
 - Konecranes OPC UA server + data mapping software: Converts PLC OPC UA data to VDMA Crane data model (and vice versa)
 - Solution enables:
 - Use of companion specification data model with crane legacy OPC UA server
 - Utilization of standard publish/subscribe based internal communication method
 - User/Access level control through OPC UA
 - Solution will be utilized in new PLC controlled smart cranes and process cranes
 - Crane together with Konecranes OPC UA can be offered to customers for efficient integration
 - Crane PLC/OPC server <-> Switch/WiFi router + Industrial PC with Konecranes OPC UA <-> Customer system





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THINGS, BUT ENTIRE
BUSINESSES**