Würzburg (visitable at short notice)

DIGITALIZED SUPPLY CHAIN INCLUDING AUTOMATED PRODUCTION

Proposition for manufacturing industry -
Digitalize objects and processes, implement platform

SUMMARY

The prototypes of the "Data for Services" research project (D4S) show how objects and processes in supply chain scenarios are digitalized, orchestrated using a central space and made usable. Processes can be configured, executed and monitored. The basis for these are digital twins in a modern IoT platform.

CURRENT SITUATION

Every second, huge volumes of data are generated in organizations, in very diverse systems, in structured and unstructured form. More business processes are being digitalized and more machines now have interfaces. But where do these huge amounts of data end up? Can they be extracted intelligently and interpreted meaningfully?

PROJECT DESCRIPTION

An architecture for a central data space for process and object data was created in the project "Data for Services - Scalable, flexible data spaces for information services in digitalized value-add processes". An end-to-end use case shows how an end-to-end process (customer order through to delivery) can be configured, executed and monitored via "Data for Services". In Logistics and Production, by way of example, a high-bay warehouse, an automated guided vehicle system and a production line were connected.
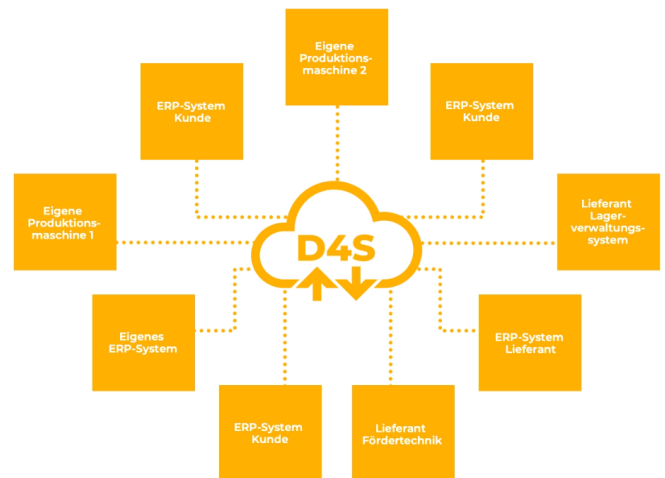
REFERENCES

https://www.youtube.com/watch?v=pa16znSj9tk
https://www.salt-solutions.de/loesungen/erp-plattform/data-for-services-d4s.html

PARTNERS

Fraunhofer IIS

[SALT SOLUTIONS]

SOLUTION

To solve the challenges described under Current Situation, a central data space was designed in the project; this takes all process-related master data and dynamic data from the systems involved and places it in an abstract data model. Data from the systems involved in the business process is pushed into the central data space, at the time of generation, retaining its semantics and assignment to the business process in question. This central data platform is the optimum place for large-scale data monitoring and, in the next step, for controlling operational processes.

CONTACT

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INDUSTRY 4.0 FEATURES

Based on the Reference Architecture Model for Industry 4.0 (RAMI 4.0) in DIN SPEC 91345 and on the concept of the administration shell at machine and factory level.

STANDARDIZATION APPROACHES

Generic data model for standardization of business objects across system boundaries.
Use of BPMN 2.0 for configuration of executable process models.
Evaluation of standard IoT gateways for asset connectivity.