Data and System Architecture and Its High Impact on Smart Manufacturing

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Agenda

1. Introduction by Chairperson
2. MTU Aero Engines AG
3. Data and System Architecture
4. Q & A
MTU Aero Engines AG
MTU Competency

1. Low-pressure compressor (HPC)

2. Low-pressure turbine (LPT)

3. Turbine center frame (TCF)

4. Manufacturing

5. Maintenance
3

Data and System Architecture
Smart Manufacturing of Jet Engines Parts
Enabling Smart Manufacturing

User Interface

Smart Manufacturing

Data and System Architecture

Human Dimension

Enabling Dimension

System Dimension

Smart Machine

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Metamorphosis

Machine Focus  ->  Software Focus
Reference Model

- Cost Reduction
- Inter-operability
- Standard

Role

- Novelt
- Inexistent
- Disappears
- Several
Proprietary Concept

Interoperability

Data Storage and Processing

Data & System Architecture

Data Quality

Human Factor
Data Storage and Processing - Implementation

Analytics for Data -> Value
Appropriate Data Formats
Design for Different Lifecycles

Data Storage

Data Processing
Smart Manufacturing - Free Flow of Information is a Precondition

Interoperability

System Integration
  Focus
  Automation

via

Semantic Integration
  Focus
  Free Flow of Information

via
Data Quality

Unique Identity

Data is a Product

Master Data Management

Intellectual Property

Trustworthiness
Human Factor

Enabling

Flexibility and Agility

Transparency

Acceptance

User Interface
Enhanced Value Creation

Traditional Value Creation

Machining

Additional Value Creation

Data -> Value

- Optimization
- Operational Excellence
- Risk Reduction
- Operational Insurance

Data-based Products
In a Nutshell

Data and System Architecture is a Key Success Factor for Smart Manufacturing
Made for Customer instead of Made to Sell

Customer integrated instead of Computer integrated

Open Data Platform instead of Closed Data Silo

Flexible Toolkit instead of Hard-coded System