FME AI FOR INDUSTRY JAAREVENT

Bouwen van een data infrastructuur voor toepassing AI

7 december 2023

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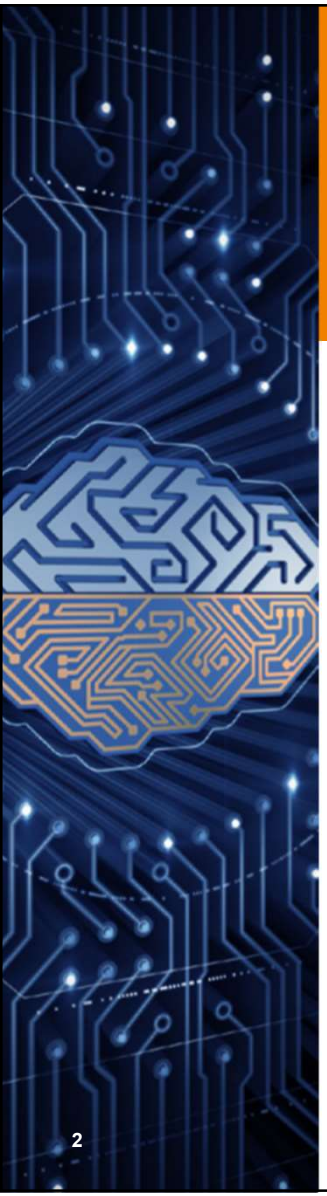

Agenda

- Demo: wat zien we nu?
- Siemens: ontsluiten OT Data dmv Edge Devices
- FourCo: AWS Datahub
- Discussie en vragen

Collaboration between OT and IT is key to overcome Challenges and create unique Benefits for your Company

OT and IT need to approach the pain points together in order to achieve benefits across the entire organization!

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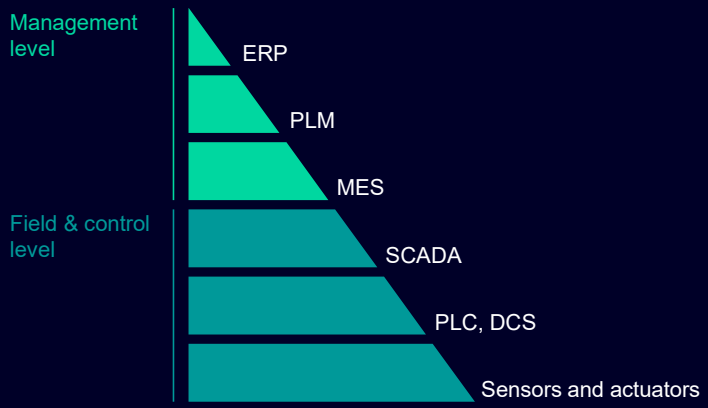
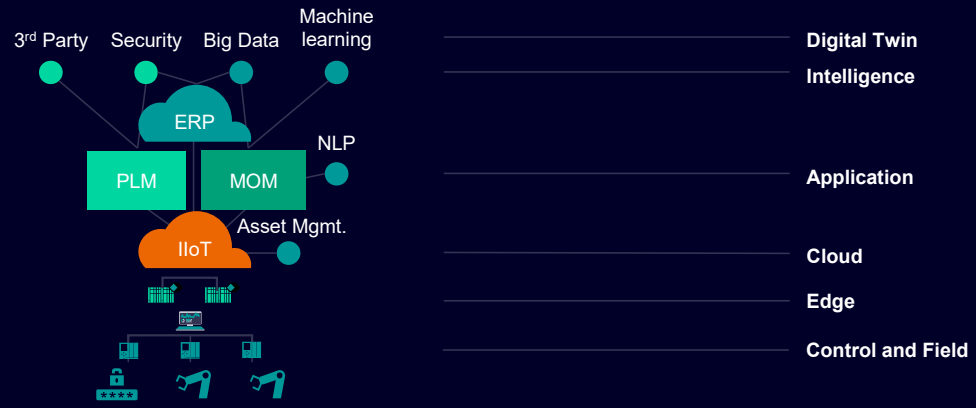
Shifting to a scalable networked data architecture

Yesterday and “often” today



Monolithic Pyramid

IIOT driven architecture



The two worlds of OT and IT are converging

IT/OT Integration means opportunities from infinite realtime data

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Requirements from OT and IT need to be considered for a rollout at scale and a company wide adoption

OT

Requirements

- Robust and stable solution
- Little dependence on “online” services
- Error-free operation by factory personnel
- Plug-and-play for existing, heterogenous production
- Long-term support

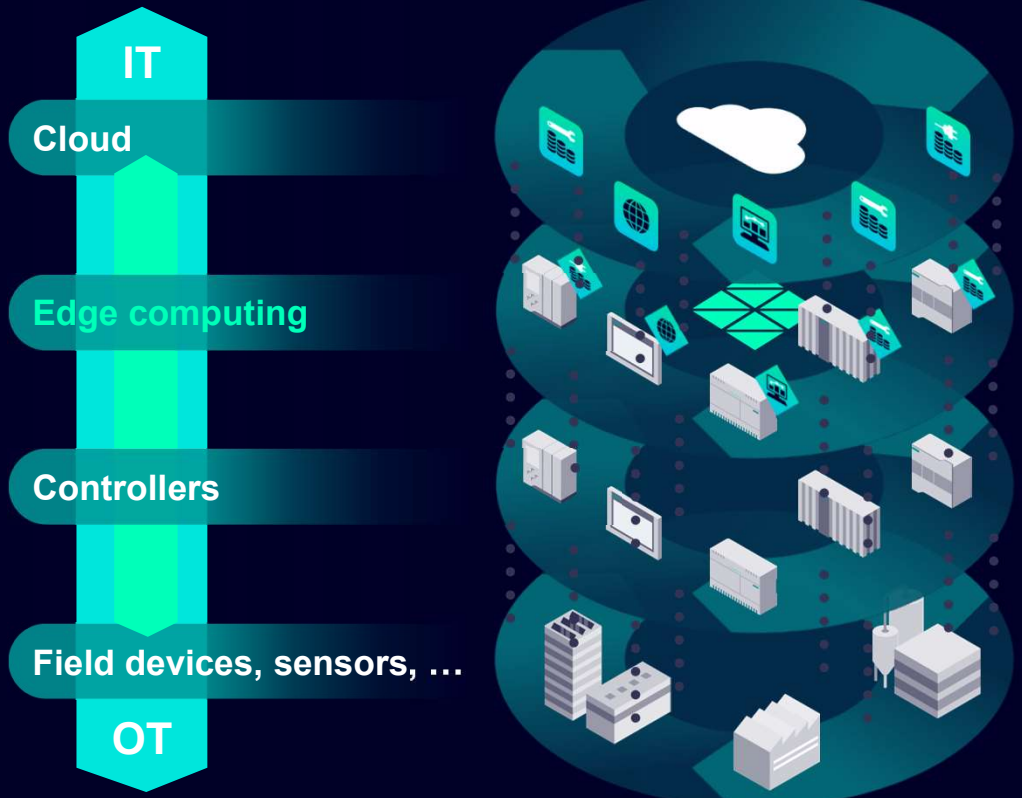
IT

Requirements

- Can be integrated into existing IT systems
- Up-to-date IT security
- Expandable through open interfaces
- Use of “state of the art” technology
- Available worldwide & can be operated flexibly e.g., factory level

Industrial Edge

Bring IT to the shopfloor – Simple, scalable and manageable



Decentral computing & storage with device runtime, apps and central management

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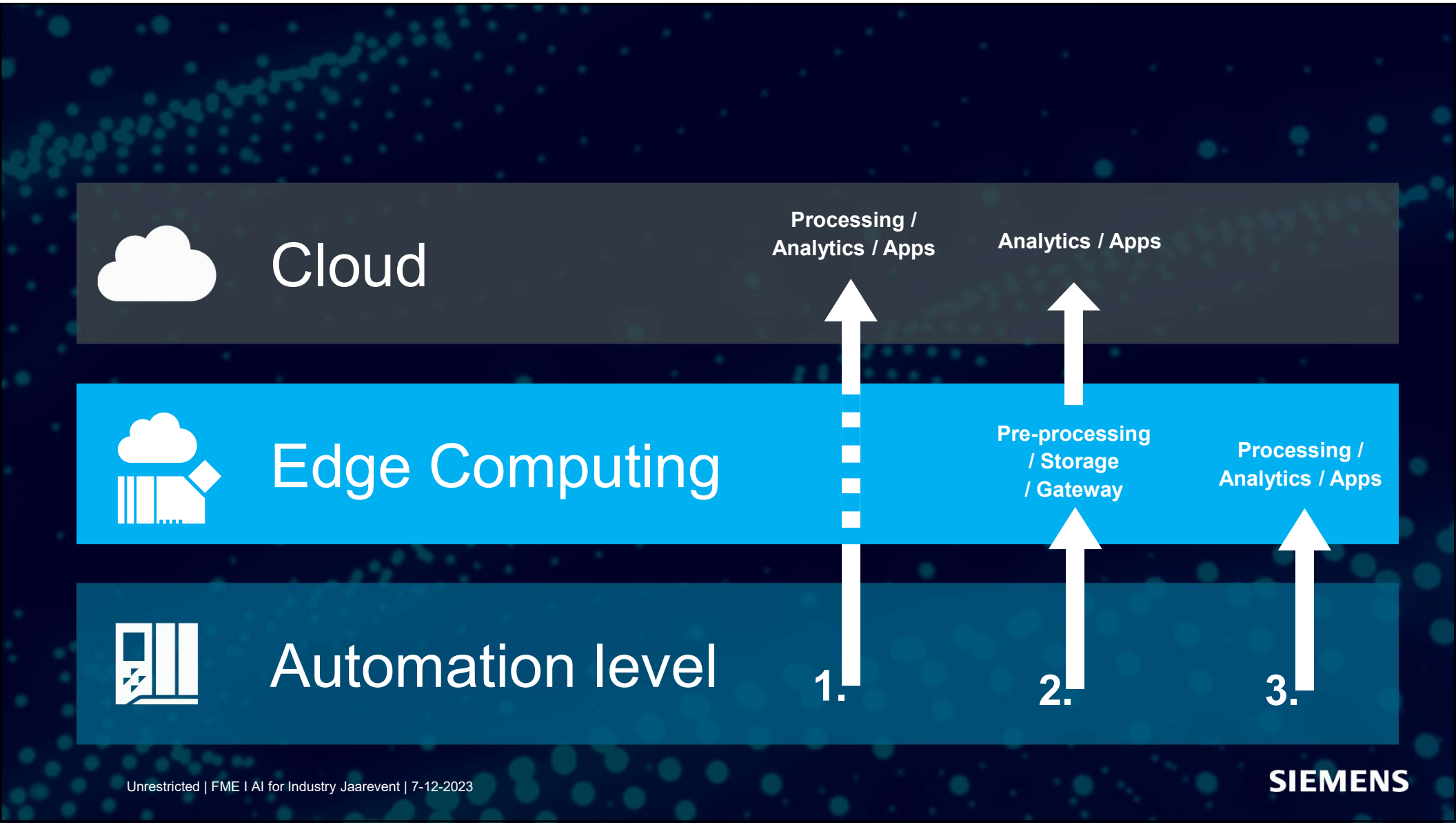
Cloud
Edge Computing
Automation level
Processing / Analytics / Apps
Analytics / Apps
Pre-processing / Storage / Gateway
Processing / Analytics / Apps
1.
2.
3.

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Introducing

Industrial Edge

An open platform to integrate IT mechanisms into the shopfloor in a way software- & data handling becomes scalable, reliable and easy to use.

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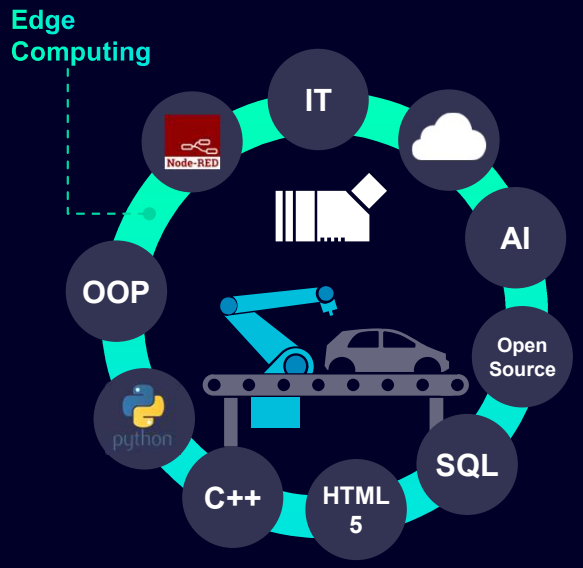
The next level of machine improvement is determined by data and the ability to utilize software more effective for its analysis

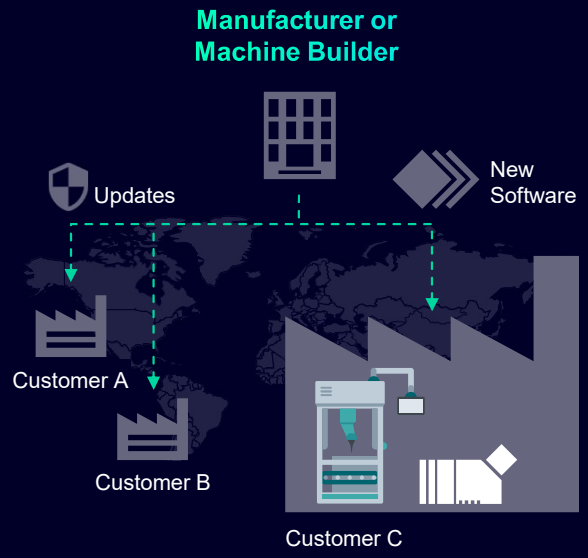
Extended machine functionality

With new advanced functionality for machine -related data collection, processing, storage & visualization for e.g. condition monitoring, quality monitoring, …



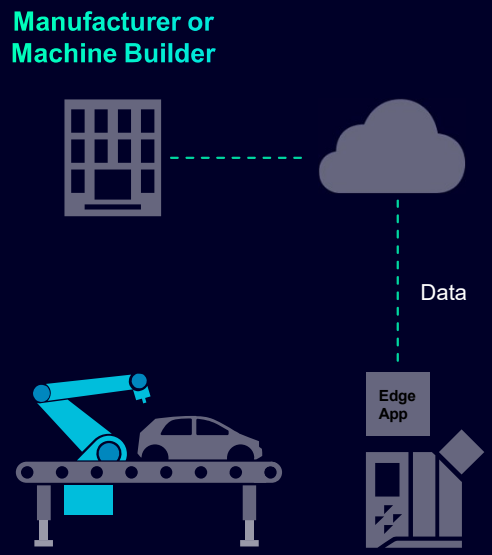
Central Management

Reduced time to market for machine software during operations with centralized device-, application- & security management.



Use of productive shopfloor data

Flexibility to integrate machine data into cloud and IT-systems of any kind for advanced analysis and optimization.



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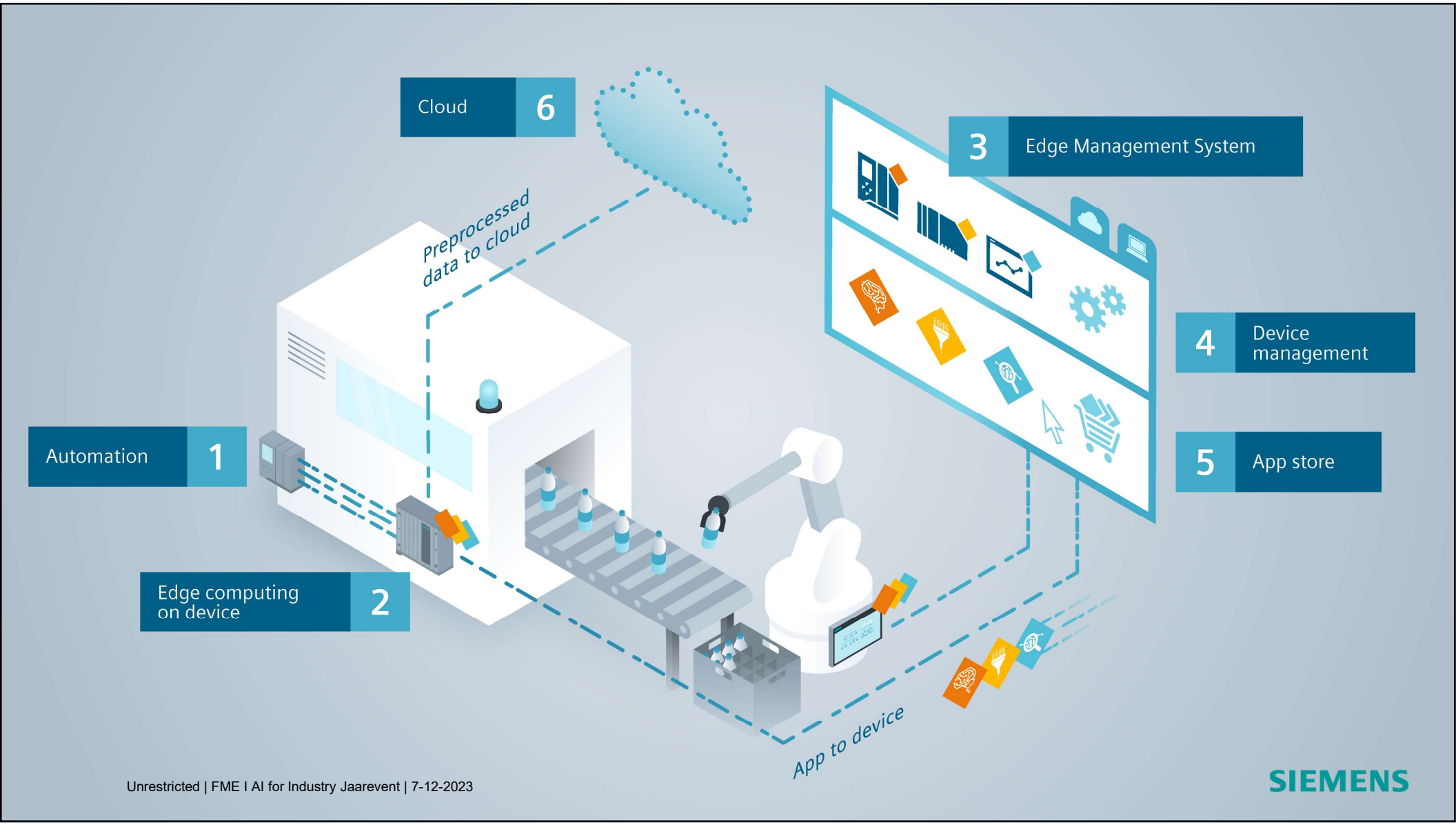
Cloud 6
3 Edge Management System
Preprocessed data to cloud
4 Device management
5 App store
Automation 1
Edge computing on device 2
App to device

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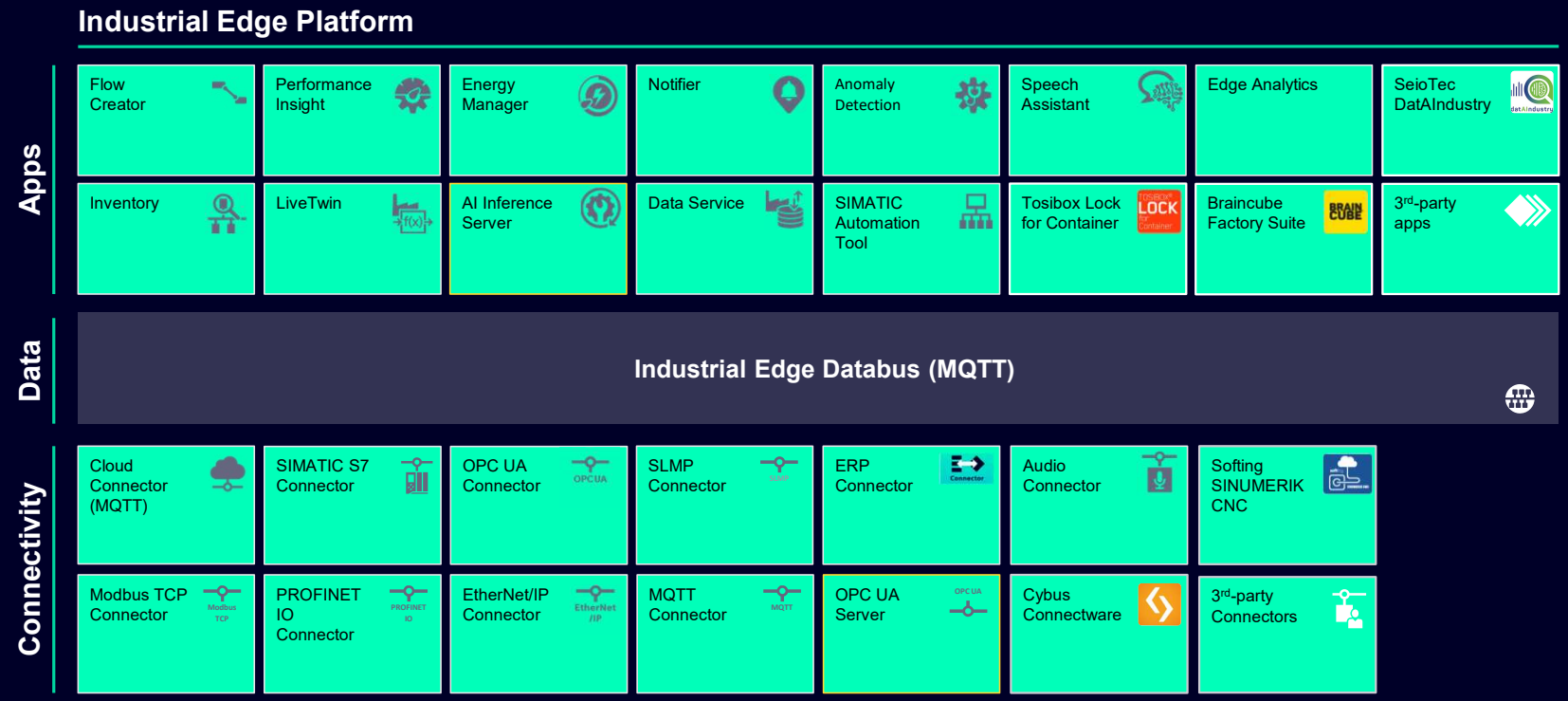
Engineering efforts for software can be reduced by relying on many available apps and existing connectivity for more than 90% of automation systems



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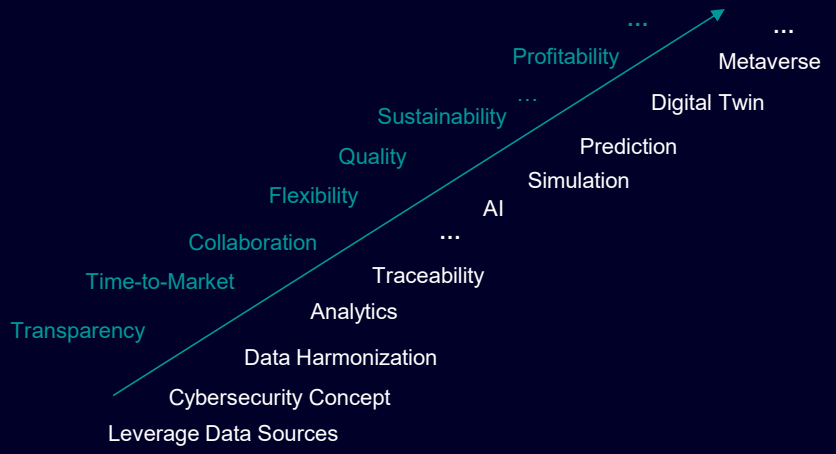
Digital Transformation requires solutions to scale and the Integration of technologies and domains across OT and IT

IT

IT/OT

OT

OT and IT convergence to delivery scalable benefits



Leverage solutions that build-up on each other …

… to drive an integrated value-oriented digital transformation through a scalable IT/OT Integration Journey

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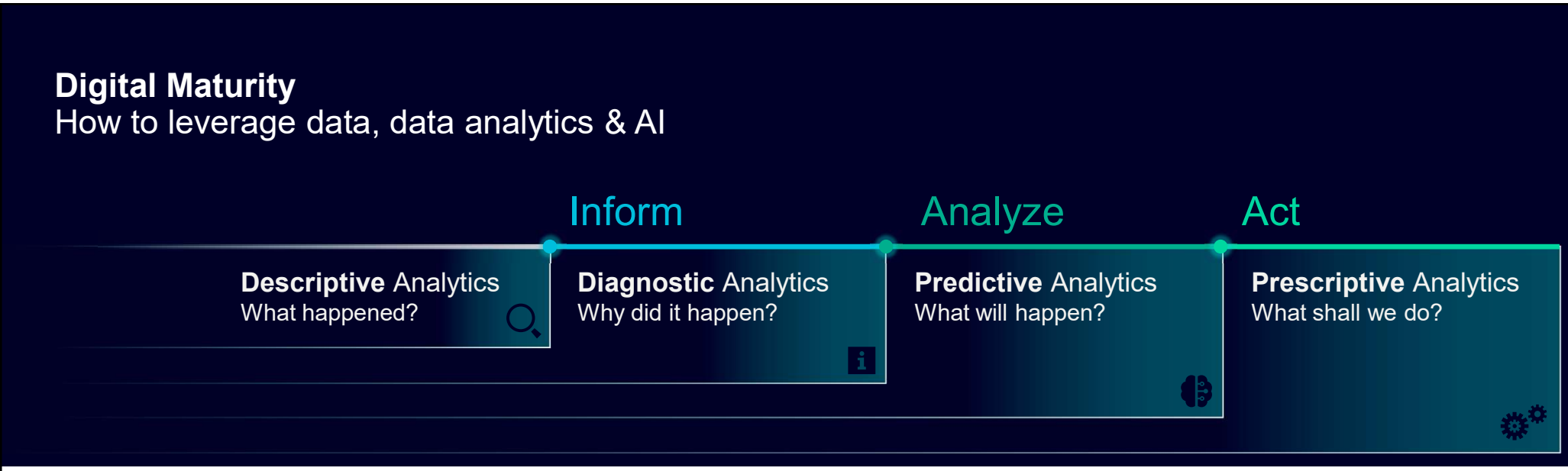
Digital Maturity
How to leverage data, data analytics & AI



Example Business Applications	• Operational statistics • Service reports	• Root cause identification • Fault analysis • Live & Statistical Twins	• Energy Price Forecasting • Predictive Maintenance • False Positive Reduction	• Control Optimization • Load balancing • Recommending agents

Machine Learning
Artificial Intelligence

Data Mining
Business Analytics

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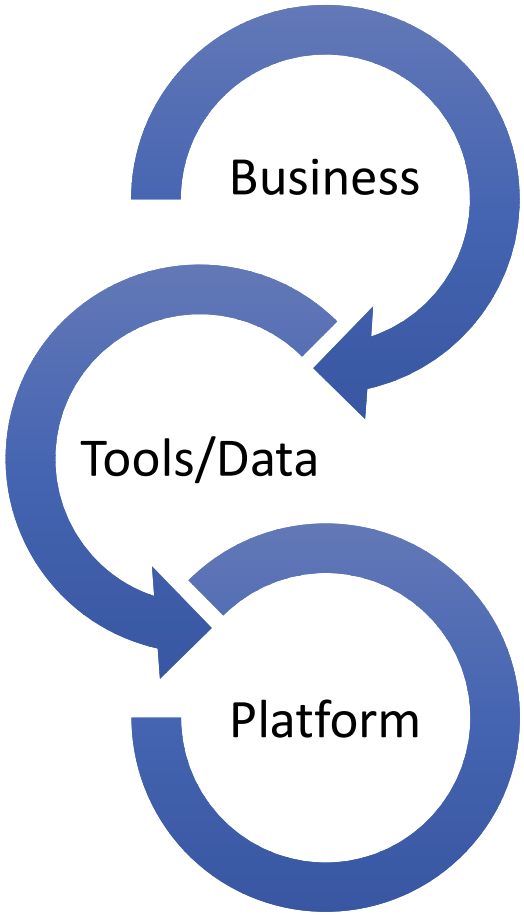
DATAHUB

Supporting AI successfully is a challenge for organisations

The new world of data can be very beneficial if implemented in the right way.

What is needed to make it successful??

Implementing AI requires new IT, new tooling and new ways of working



- New insights
- Real time
- Predictive
- New data, combinations

- Python, “R”, other
- Machine learing, deep learning, neural networks
- Real time,
- Events
- Datavolumes

- Agile/Scrum
- Innovation
- Flexibility
- PoC, PoV
- Production

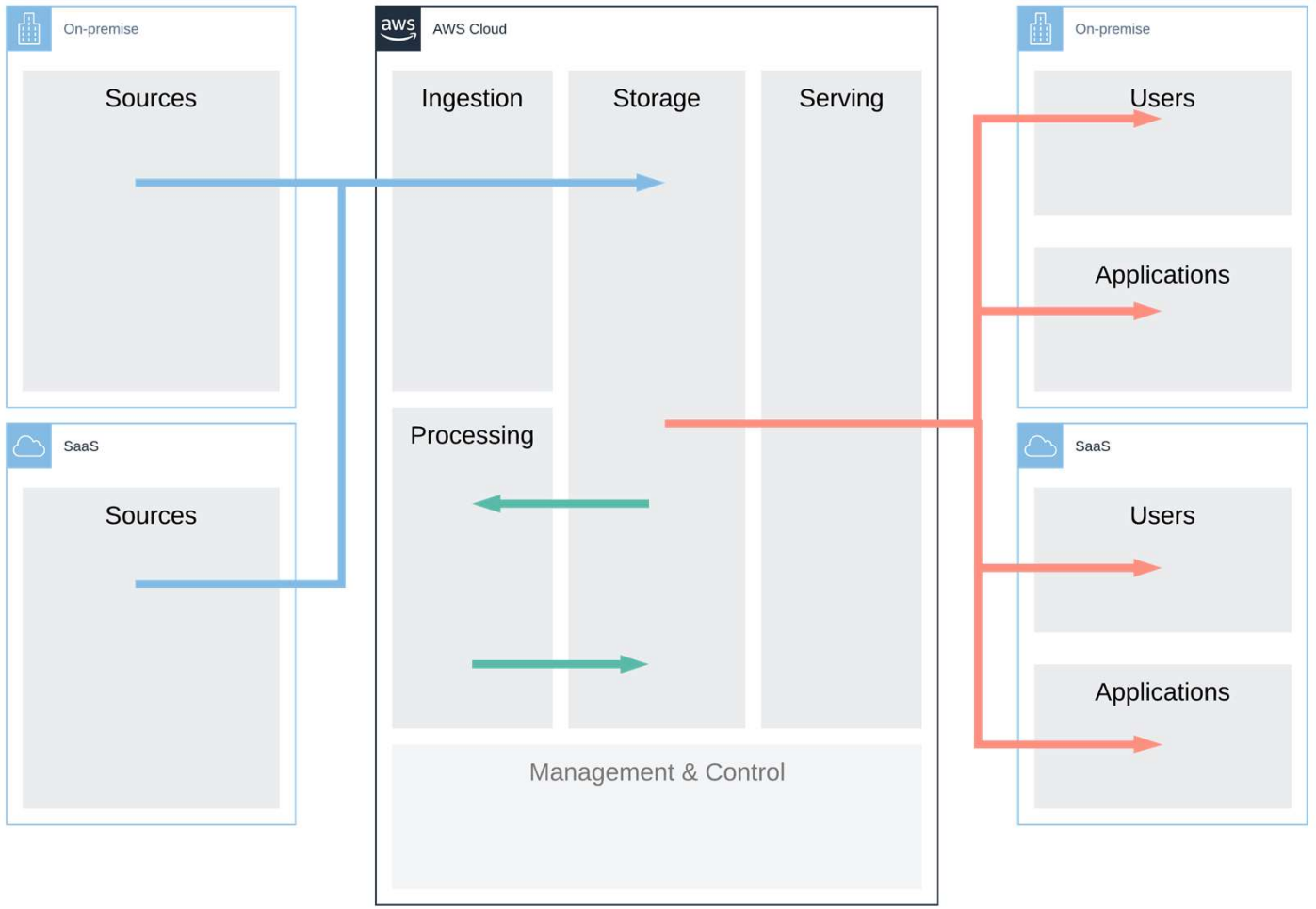
- Real time, streaming
- Data volumes
- Elasticity
- GPU
- Edge
- New tools

- Security and control
- Compliancy
- High Availability
- Monitoring
- Cost-Transparent

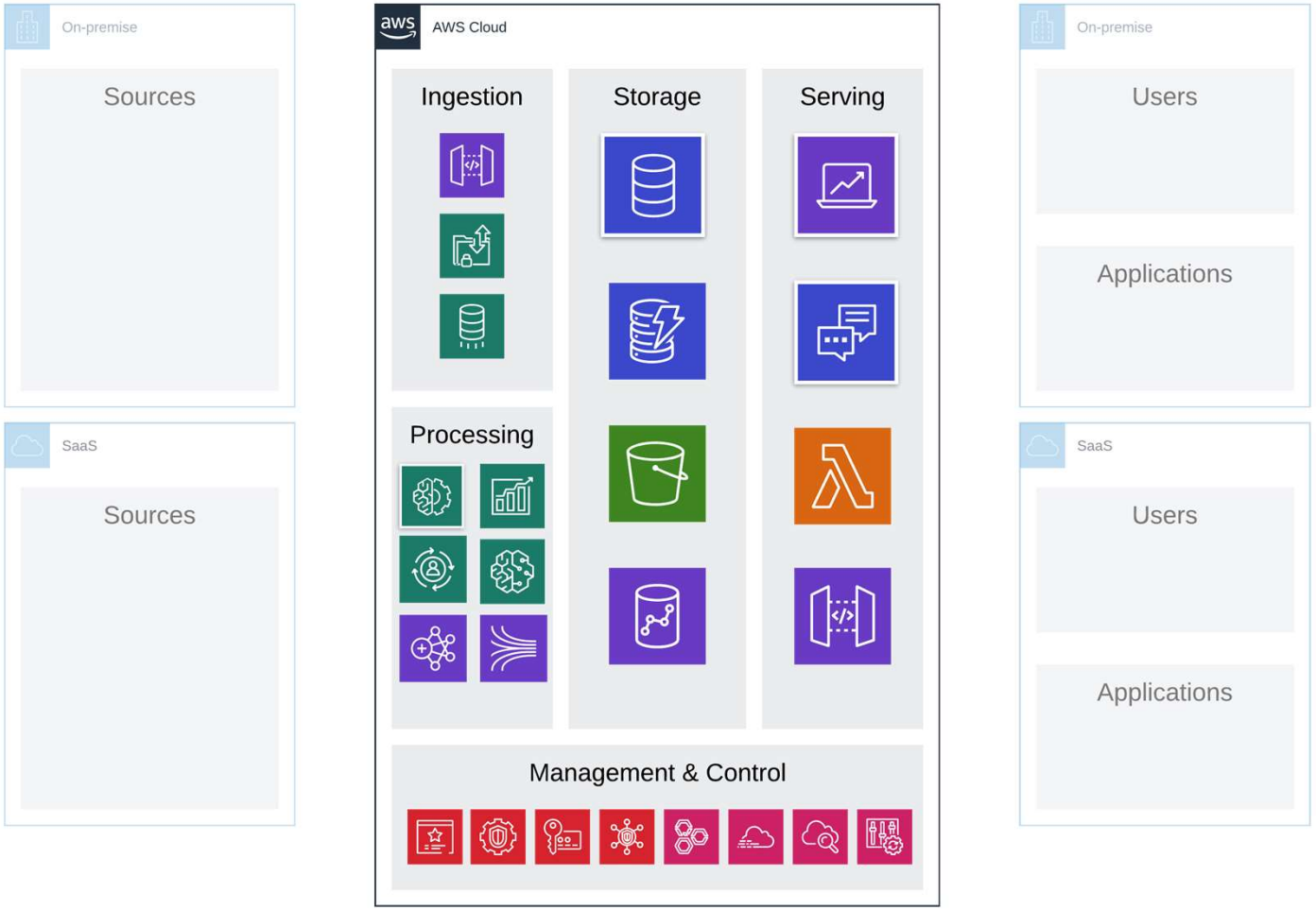
Design Principles Platform/Datahub

Operational Excellence	• Running and monitoring • Continuous improvement • CI/CD, Automation
Security	• Security by design, Zero Trust principles • User management • Encription • Network Isolation • Firewalls and Intrusion detection • Logging/Auditing
Reliability	• Availability – auto-healing • Backup and recovery
Performance Efficiency	• Optimize cloud resources for workloads/use cases. • Performance monitoring.
Cost Optimization	• Monitoring and adjusting cloud (cost) usage
Sustainability	• Minimizing environmental impact by maximizing utilization

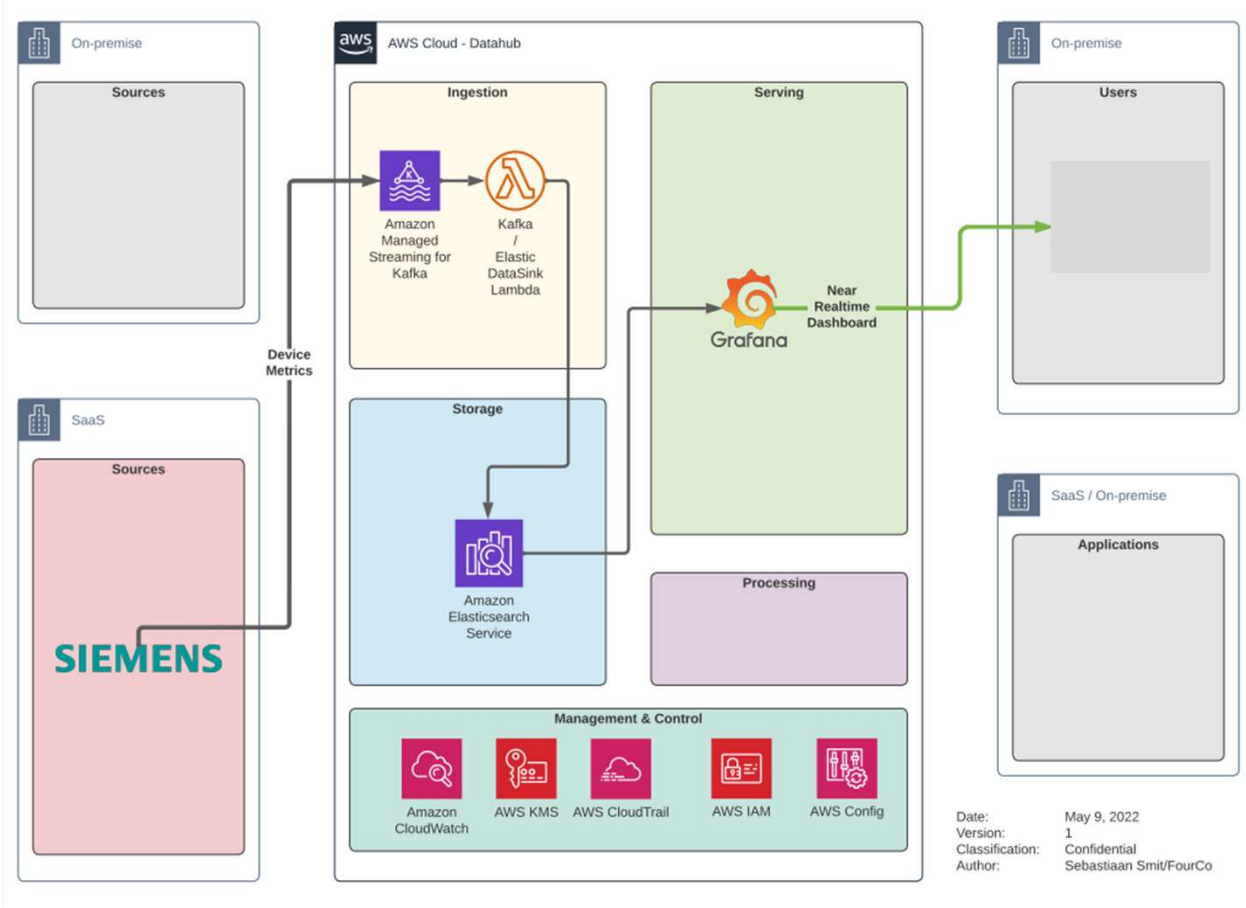
High Level Platform Architectuur



High Level Platform Architectuur



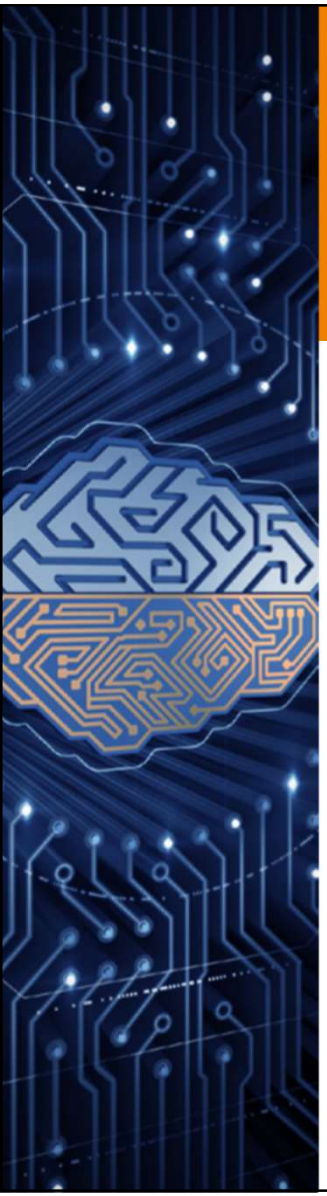
Setup for this demo



AI requires new cloud infrastructure, so how to start?

Promise: your own cloud based datahub up and running in 3 weeks:

- Proven setup
- Your ownership, you are in control
- 80% out of the box, 20% adjusted to your personal requirements
- Knowledge transfer
- Optional: managed and maintained by FourCo



Bedankt voor je aandacht!

Volg van het FME Platform AI for Industry ook een AI Deep Dive sessie 'Aan de slag met data en AI in jouw maakbedrijf':

Meer informatie:

- Siemens – Joost Willems: joost.willems@siemens.com
- FourCo – Arjen van Wijngaarden: arjen@fourco.nl

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