NOA – NAMUR Open Architecture

7TH DEC, 2018 – FIELDCOMM GROUP DAY
PAN PACIFIC HOTEL, SINGAPORE
LUKAS KLAUSMANN
ENDRESS+HAUSER PROCESS SOLUTIONS AG
Apps based on the idea of NAMUR Open Architecture

• Health

• Analytics

....and applicable to already existing plants
Idea of NAMUR Open Architecture

Usage of IT technologies for maintenance and optimization (M+O)
Benefits of NAMUR Open Architecture

- Additive to existing structures
- Based on existing standards

- Open for new and customized approaches within IIoT or Industry 4.0
- Simple & secure integration of fast changing IT components from field to ERP level
- Availability and safety of installed base ensured
- Open but secure data flow
- Easy integration of additional sensor for M+O

Enhancement of proven / existing installations for efficient & flexible utilization of IIoT/ I4.0
Gathering data today in existing installations / SFG250

- Engineering console
- Operator console
- Maintenance Console
- Mobile device FieldXpert SMT70

Controller

SFG250

4/20 (HART)

Up to 40 HART-lines with just one head module

Edge Device
empowerthefield - Connectivity is key

Brownfield

Wireless Adapter (W-HART)
Connectivity for all instruments in a 4...20 mA / HART infrastructure

Endress+Hauser

ERP

MES

40 mA

Basic process control
Applications

NAMUR OPEN ARCHITECTURE: EXAMPLES FOR TYPICAL USE CASES
Additional measurements for process optimization

Fouling predication of a heat exchanger

Benefit

- Reduction of production losses due to increasing transparency of plant assets
- Optimization and planning of maintenance and production schedules

Production plants are normally not instrumented for optimization purposes, due to the cost factor of additional instrumentation

- Low requirements on availability (not mission-critical)
- No direct integration into the control system required

**NOA enables an easy and flexible integration of required sensor data into monitoring and optimization systems**
Predictive maintenance

Detect anomalies and deviations...

Corrosion/Abrasion  Coating  Air Bubbles  Cavitation
Mobile workers

FieldXpert SMT70  AMS Trex  Agile X  ecom Tab-Ex 01

... also versions for usage in hazardous areas available
Improved connectivity

Service protocols like CDI, ISS, IPC, PCP

Open for future protocols...
Implementation of NAMUR Open Architecture

IMPLEMENTATION AND DEMONSTRATOR
Concept for NAMUR Open Architecture
Demonstrator NAMUR annual meeting 2017
Demonstrator NAMUR annual Meeting 2017
Security aspects covered through supplier, e.g. E+H

Endress+Hauser complete offering is certified to ensure maximum data security – from edge device to customer data in the cloud including payment

Use the most modern safety mechanisms:

- Encryption methods with long key codes (HTTPS / TLS with SHA-256)
- Co-operation with certified data centers (e.g. ISO 27001) according to European law
- Certification by independent certification authority, licensed by “EuroCloud” – with a 4 star rating best-in-class for process industries
4* Certification – highest industry certification

Certified from head to toe

Data Center Infrastructure and location

Contract and Compliance
Security and Data Privacy
Operational Processes

Encryption of passwords
Encrypting communication channels only
Gateway security

Customer data

OAuth

User Information
NAMUR

HTTPS://WWW.NAMUR.NET/EN/HOME.HTML
Basic facts

- NAMUR – International User Association of Automation Technology in Process Industries

- Members:
  - Companies operating process plants (e.g. BASF, Bayer, BP, Dow, Evonik, …)
  - Companies offering engineering services in process industries (e.g. Infraserv, …)
  - Organizations with a technical or scientific purpose (e.g. TH Ingolstadt, TU Dresden, Fraunhofer, TU Munich, …)

- Membership is not open for:
  - Suppliers and manufacturers of automation technology components and systems
  - Individuals
Mission and vision

Vision

NAMUR is a leading international association of automation technology users

Mission

NAMUR supports its member companies’ efforts to generate value added by pooling the skills and competences of automation technology users in the process industry to develop and operate

- efficient (costs, availability)
- sustainable
- and reliable processes.

NAMUR improves the use of automation technology and encourages and supports young talent
# Facts and figures

**Established**

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Participants in Annual General Meeting - 650

Working Groups - 40

NAMUR Recommendations & Worksheets - 110+

Cooperating associations - 10
Partners for implementation
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