

How to enhance resilience by monitoring the FoF

- CF#1 Webinar, April 28th 2021
- Mario Brauer, Cybersecurity Engineer
- Airbus CyberSecurity GmbH



Monitoring Current Situation



- Mostly invariant architecture
- Production processes stable
- Leveled Architecture
- Robots and Humans separated

Relatively easy to Monitor, at least in comparison to ...









Monitoring FoF Situation



Increasing number of endpoints / interconnections

- Intelligent Sensors/Actuators
- Wireless connections
- Connected Tools
- UC within CF#1: Airbus D&S - Gap Gun

Impacts on Monitoring

- Increase in complexity
- Significant rise of anomalies
- Anomaly handling within time constraints



Monitoring FoF Situation



Too much

tasks

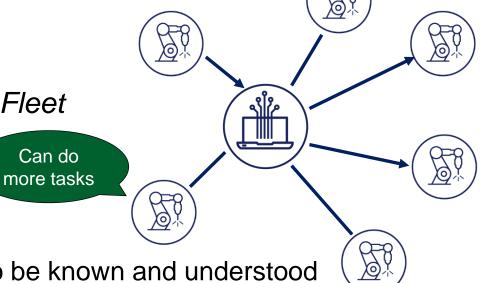
Dynamic Systems

- Systems adopting to changing environments
- Self-learning & improving
- UC within CF#1:

ASTI - Collaborative Robot Fleet

Impacts on Monitoring

- Baseline not static
- Adaptive modifications have to be known and understood



Monitoring FoF Situation



Cobotics

- Humans and workers working together within same area
- Increasing safety concerns
- UC within CF#1:S21Sec CPS-based manufactoring

Impacts on Monitoring

 Safety has to be taken further into account, e.g. camera/audio based sensoring on the shop-floor



Spotlights

Component Behaviour Watch



H/M behavior watch layers

PAL: Implementation of robot endpoint monitoring capabilities to detect anomalies, raise alarms, generate analytics and visualize in dashboards

Component

Component

S21Sec: Extraction/normalization of raw logs from devices.

Eneo/Innovalia: Data extraction and correlation within SIEM module, intrusion/threat detection and prediction.

Wired/WIFI/ Industrial Protocols Routed/IT Protocols Internet Protocols



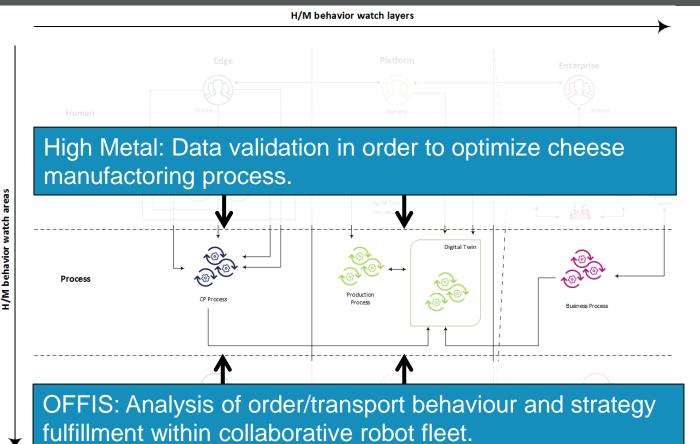
H/M behavior watch layers

VTT: Detection of changes in network traffic, visualization of network behaviour and changes in it. Eneo/Innovalia: Monitoring of telecommunications infrastructure for correct operation and performance. ADSC-DE: Network based security sensor solutions. Data onboarding, correlation and anomaly detection within SIEM solution. Network

Spotlights

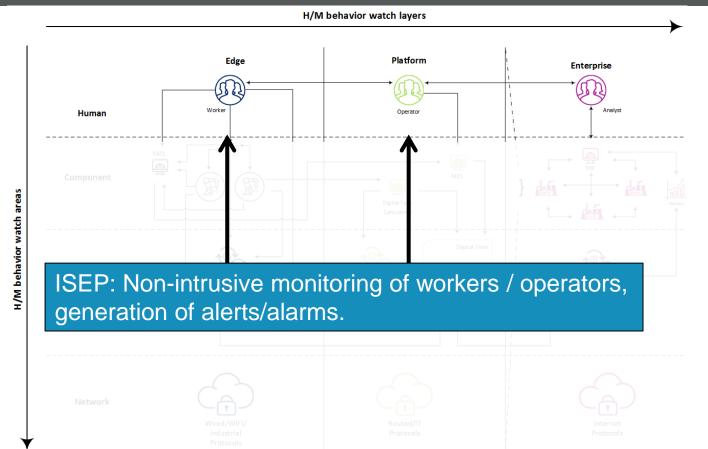
Process Behaviour Watch





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Thanks for your interest

For further information please contact:

- Mario Brauer, Cybersecurity Engineer
- T +49 (0) 89 31797517
- M +49 (0) 152 54546828
- E mario.m.brauer@airbus.com

