Modern Problems Require Modern Solutions: Hybrid Concepts for Industrial Intrusion Detection

Simon D. Duque Antón, Mathias Strufe, Hans Dieter Schotten

24. VDE/ITG Fachtagung Mobilkommunikation 2019

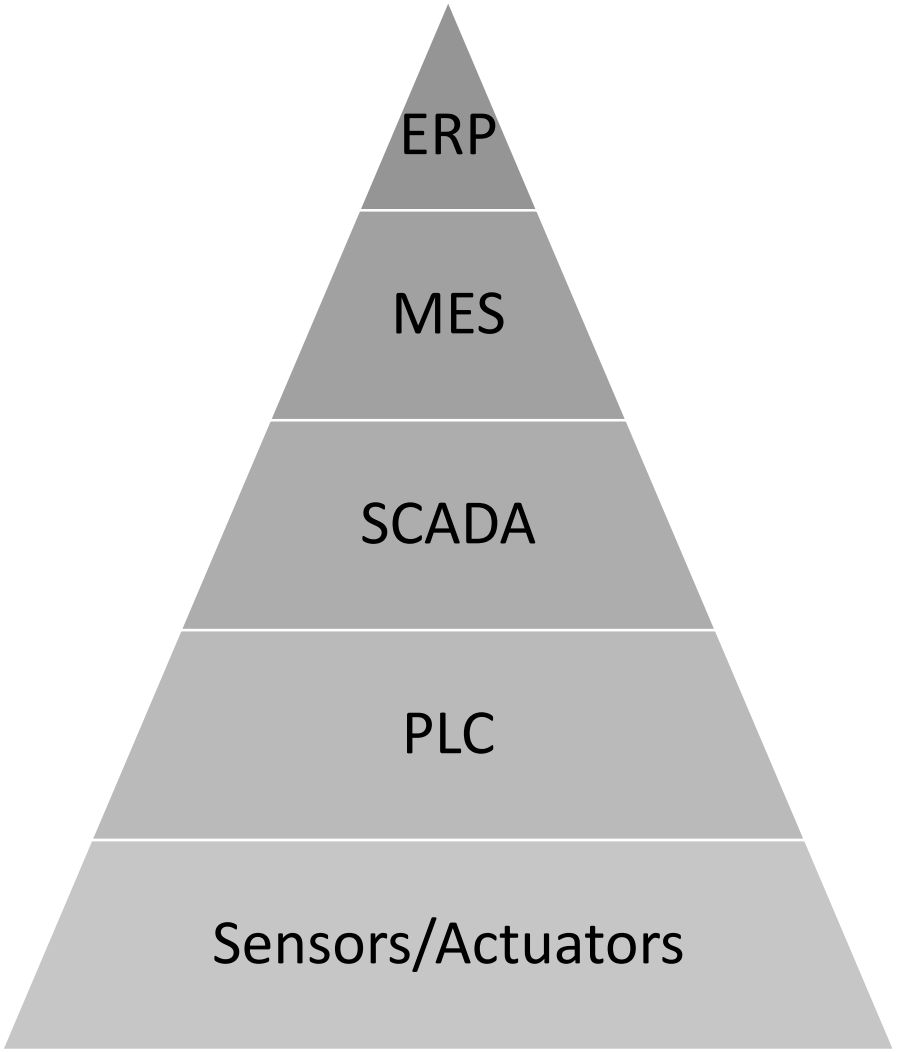
@ Osnabrück

Industry 4.0

Image source: https://www.kaercher.com/ch/inside-kaercher/newsroom/themenwelten/industrie-4-0.html

Communication in *Industry 4.0*

- IT networks
- IT networks
- Industrial Ethernet, e.g. OPC-UA, Profinet
- Fieldbus, e.g. Modbus, Profibus
- Direct connection, wired



Attacks on *Industry 4.0*

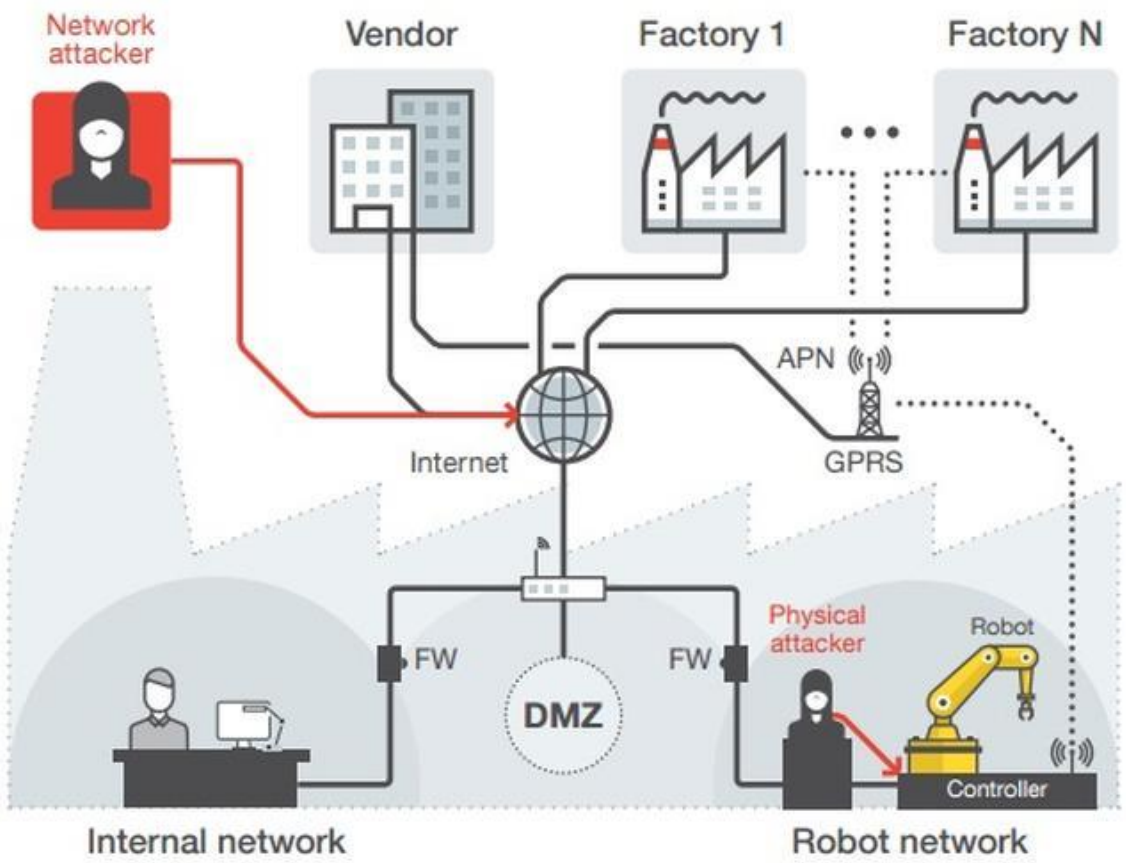


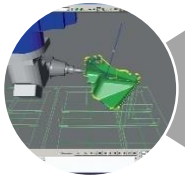
Image source: https://www.techrepublic.com/article/industrial-robots-are-more-vulnerable-to-cyberattacks-than-you-think/

Security Requirements for *Industry 4.0*

- No feedback on process
- Compatible to legacy systems
- Understand proprietary protocols
- Work in highly application specific environments

Recap: Projekt IUNO

Customized production
(Secure processes)



Marketplace for technology data
(Secure data)

Remote maintenance platform
(Secure services)

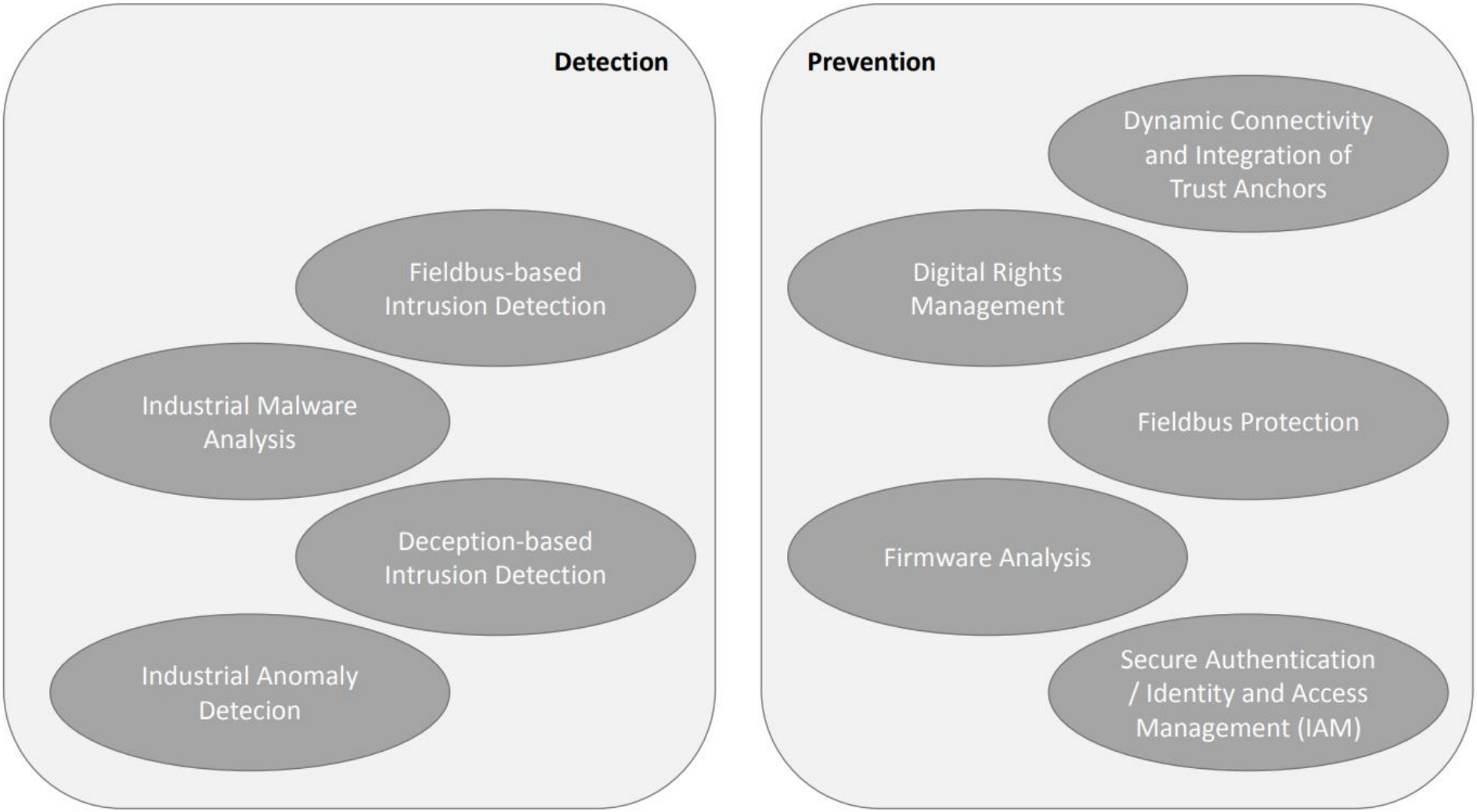
Visual IT security operation center
(Secure networks)

Transfer of knowledge to small and medium-sized enterprises!

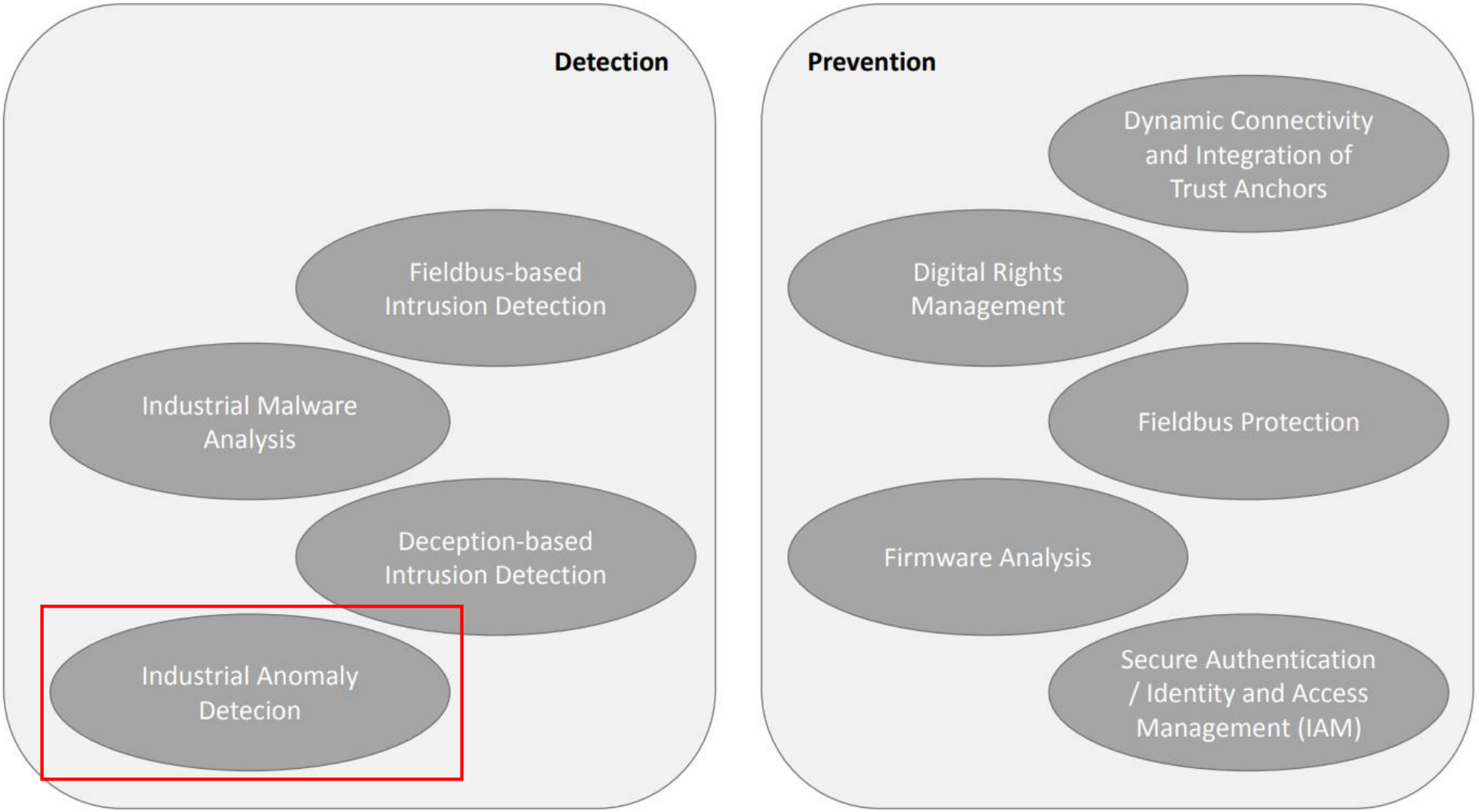
Enter IUNO Insec

- Continuation of project IUNO
- Further refinement of previously implemented solutions
- Adaption of solutions to industry needs
- Close cooperation with industrial partners intended

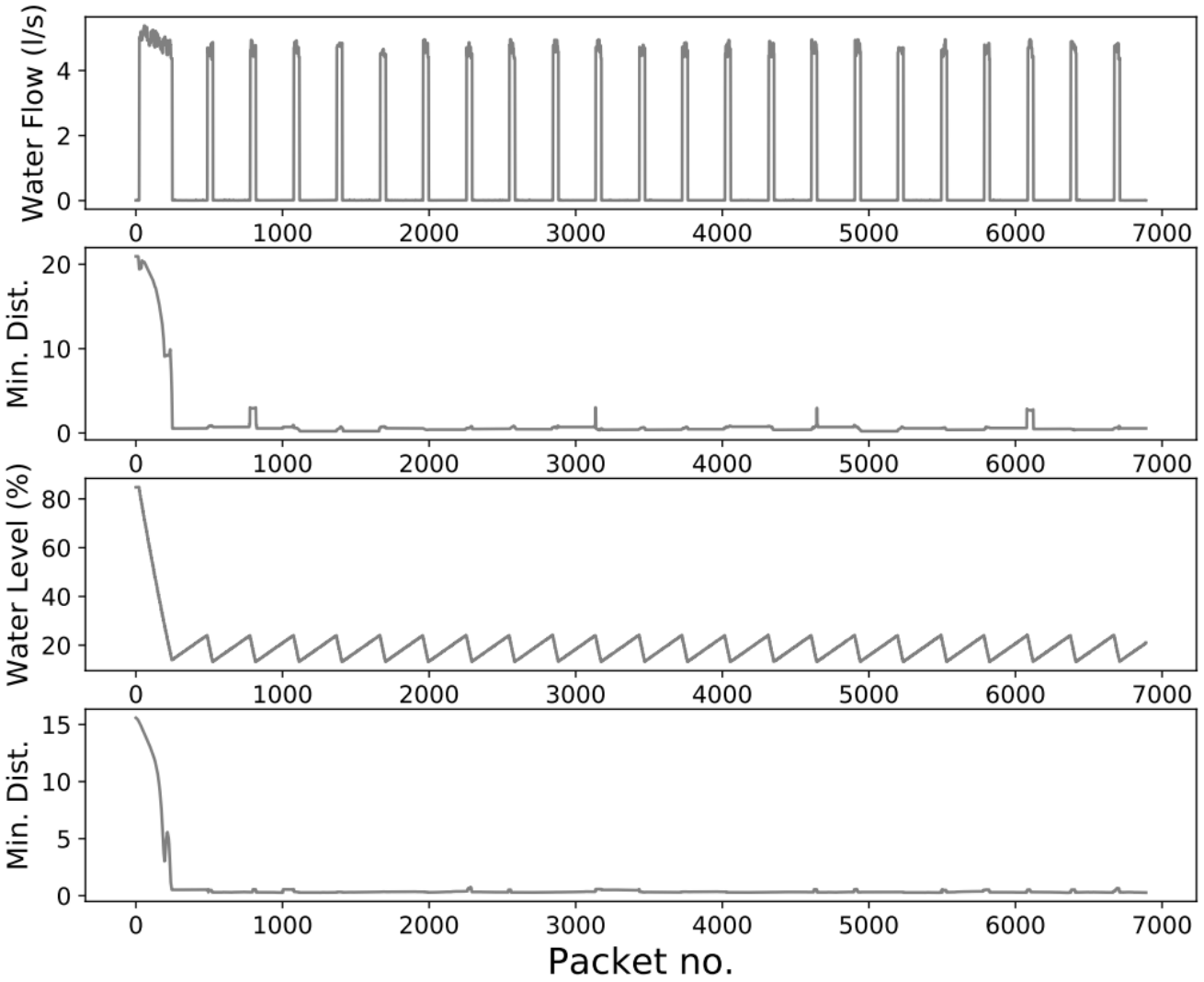
Topics Addressed



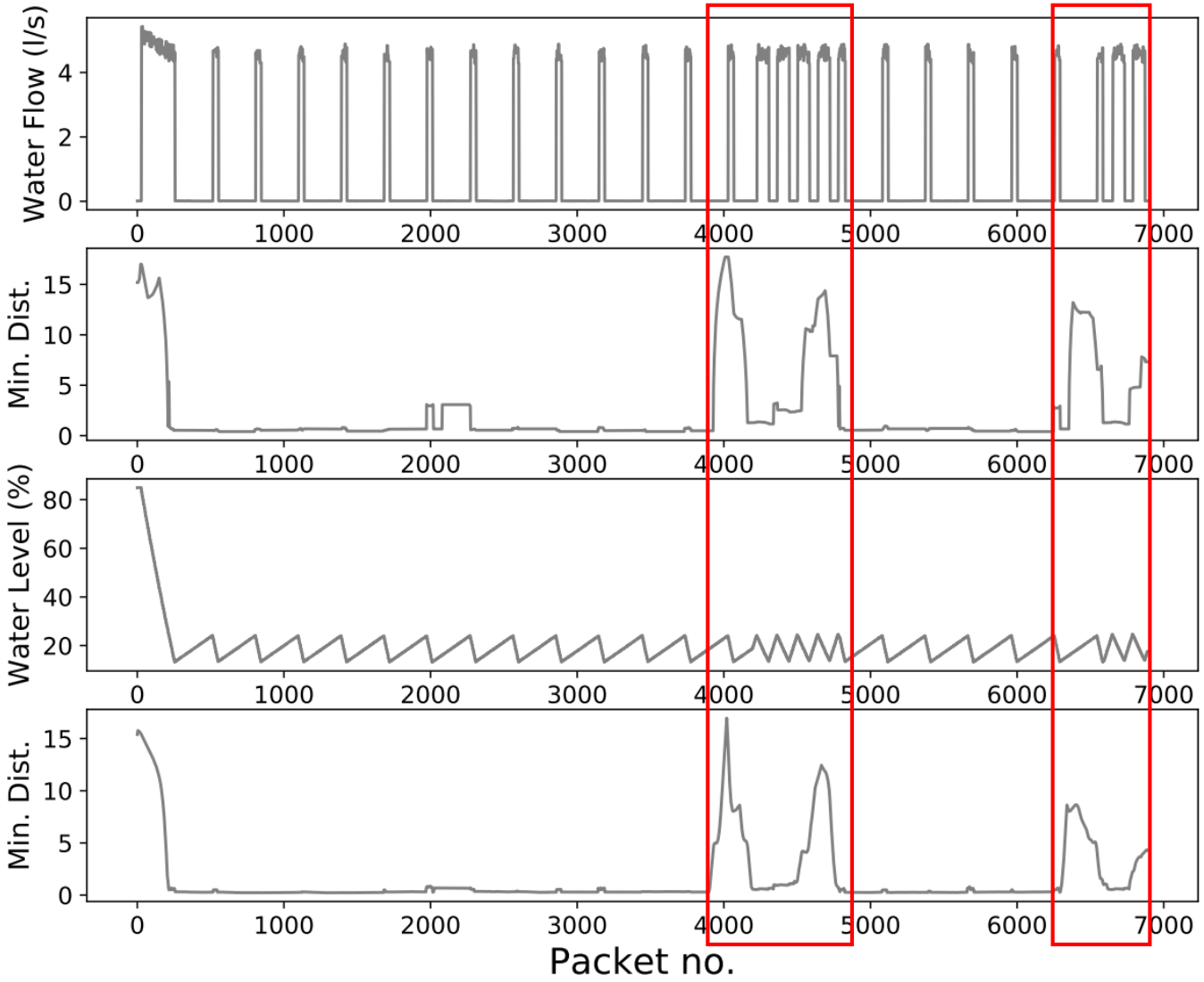
Topics Addressed



Industrial Intrusion Detection



Industrial Intrusion Detection



Conclusion and Outlook

- *Industry 4.0* requires novel intrusion detection approaches
- Solutions need to be adaptable to legacy systems
- Industrial environments are highly application- and domain-specific
- IUNO Insec aims at providing easy-to-use solutions for SMEs

Thank you!

Simon.Duque_Anton@dfki.de