

Siemens Research Cyber Security

Rainer Falk, Uwe Blöcher | November 26th, 2018

Cyber Security is the most important enabler for Digitalization



Design & Engineering

Automation & Operation

Maintenance & Utilization

Siemens Software



Siemens Digital Services



MindSphere

The cloud-based, open IoT operating system
Platform as a Service

Enabler: Infrastructure as a Service (storage, processing power, provider agnostic)

Digitally enhanced Electrification and Automation



Holistic IT security concept

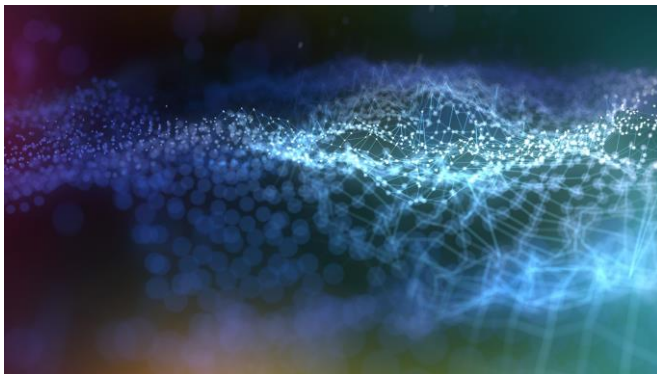
The challenges to Cyber Security require new approaches to technologies

Digitalization

Increasingly connected Industrial Control Systems offer new levels of efficiency and productivity

However:

Connected critical Infrastructures offer new possibilities to attack



Business Units

What Cyber Security technology to use for my future products/solutions?

Is there technology to secure my existing installations?

How can I securely use and connect to the cloud for digital services?

How do I scale my effort for CyberSecurity?

What is the technology to generate security business?

Standards and regulations

e.g. IEC 62443 Security Levels

SL1

Protection against casual or coincidental violation

SL2

Protection against intentional violation using simple means, low resources, generic skills, low motivation

SL3

Protection against intentional violation using sophisticated means, moderate resources, ICS specific skills, moderate motivation

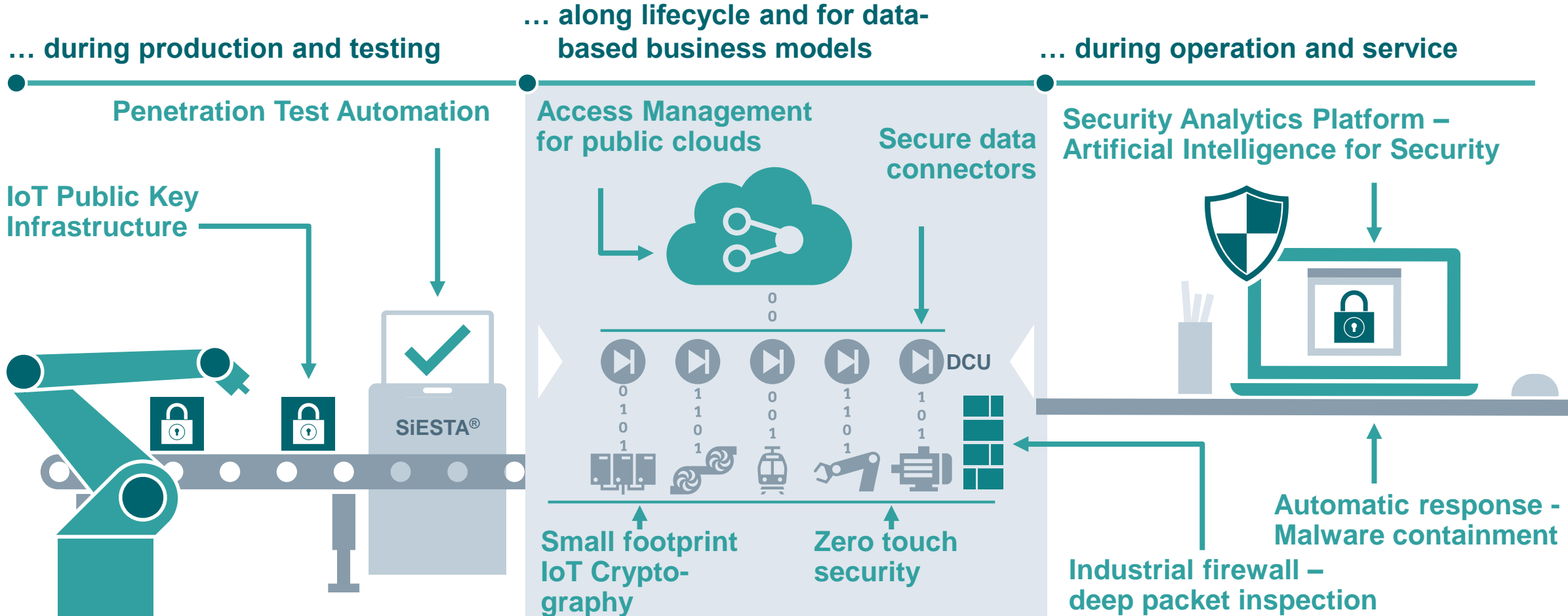
SL4

Protection against intentional violation using sophisticated means, extended resources, ICS specific skills, high motivation

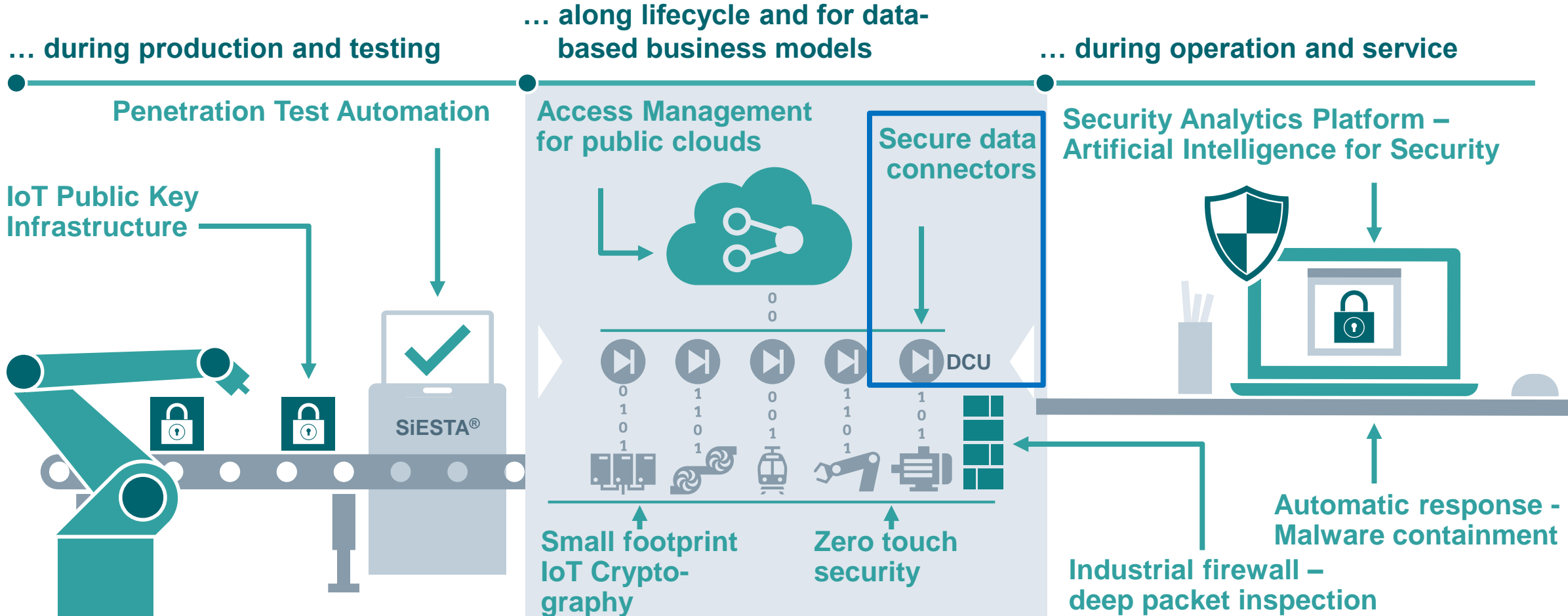
Need for Cyber Security Technologies

ICS: Industrial Control System | IEC: International Electrotechnical Commission

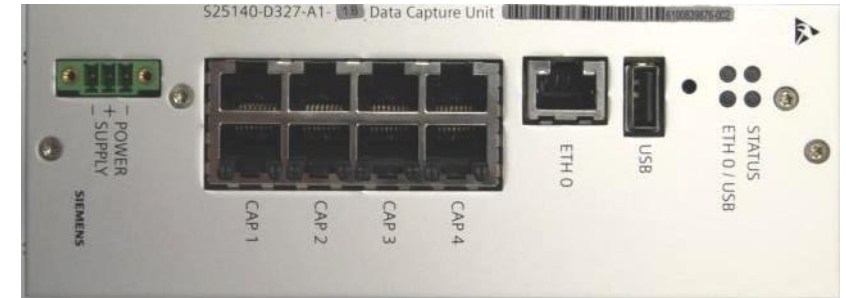
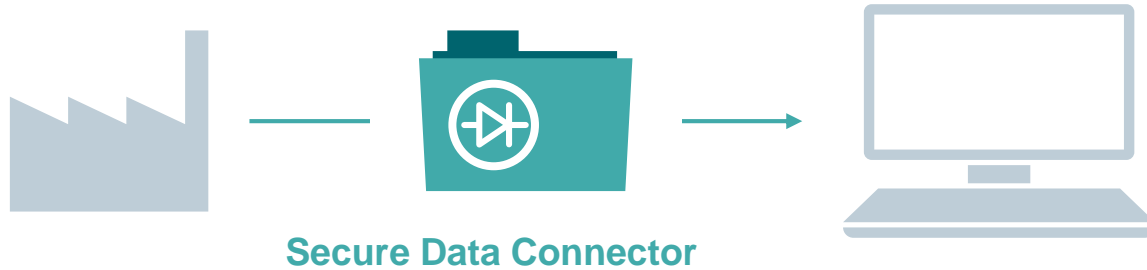
Cyber Security at Siemens builds on innovation...



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Secure Data Connector DCU – Protecting our installed base and enabling cloud connectivity



Challenge

- Legacy systems were designed and built as isolated from other networks (for security reasons)
- Digitalization will get everything connected, incl. legacy systems

Availability

- Released in 2018
- OPC-UA support, IEC 62443-4-2 SL3

Business Benefit/USPs

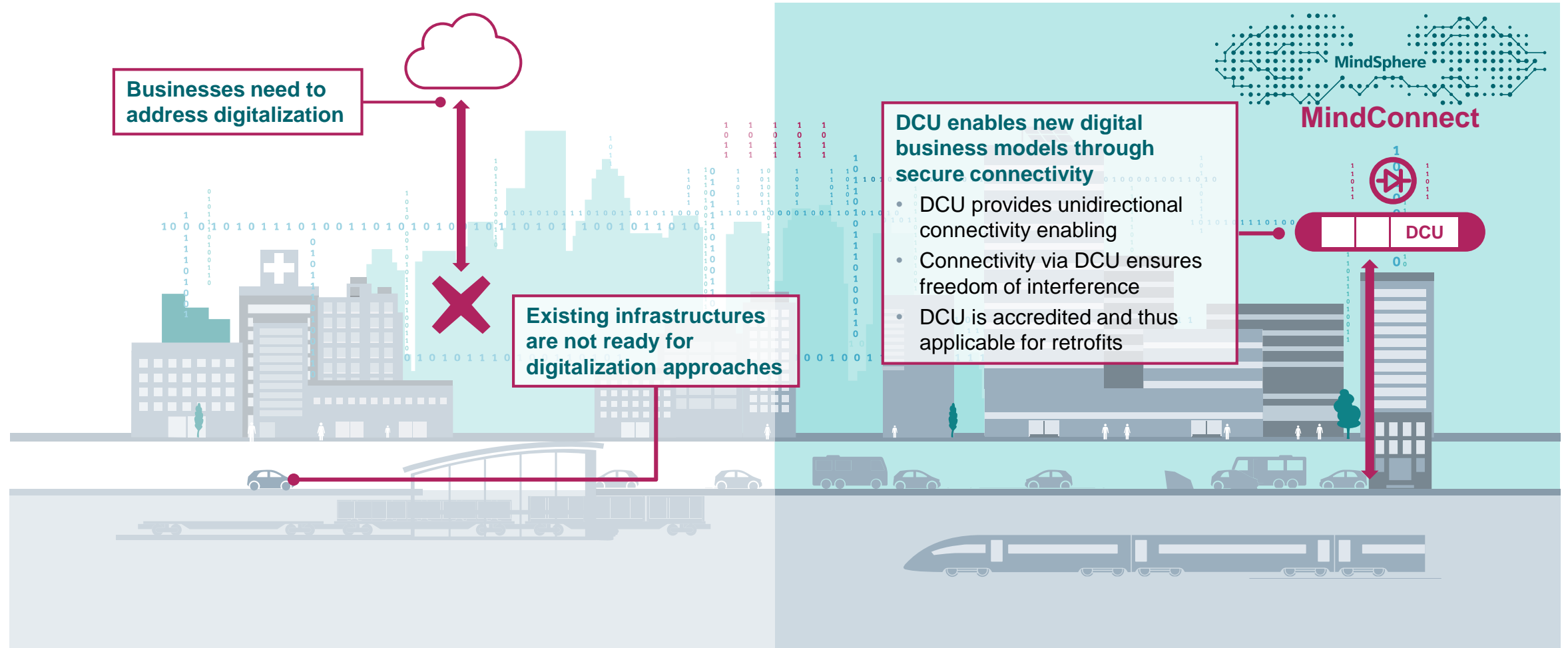
- Cost-effective (compared to competitor diode solutions)
- Safety certification: No inferences of critical safety networks
- Safe, secure and easy enabling cloud connect (MindSphere)

Technical Solution

- HW design to guarantee one-way data connection only
→ 100% resistant against a break into a protected network
- Maintains safety and integrity for all connectivity scenarios
- Edge computing enabled for 3rd party applications
- Joint development by Mobility and Corporate Technology

<https://www.siemens.com/dcu>

DCU enables business to address opportunities of digitalization with their existing infrastructures



CCT Cyber Security – Radar long term research topics

