Best Practices in Embedded Security
'Baas in eigen Board'

D&E event 2016

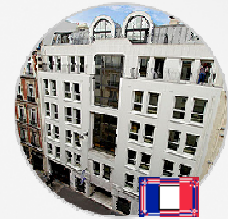FHI FEDERATIE VAN TECHNOLOGIEBRANCHES

WIBU SYSTEMS

Introduction Wibu-Systems

- Founded in 1989
- Headquarters in Karlsruhe, Germany
- Team of more than 100 professionals
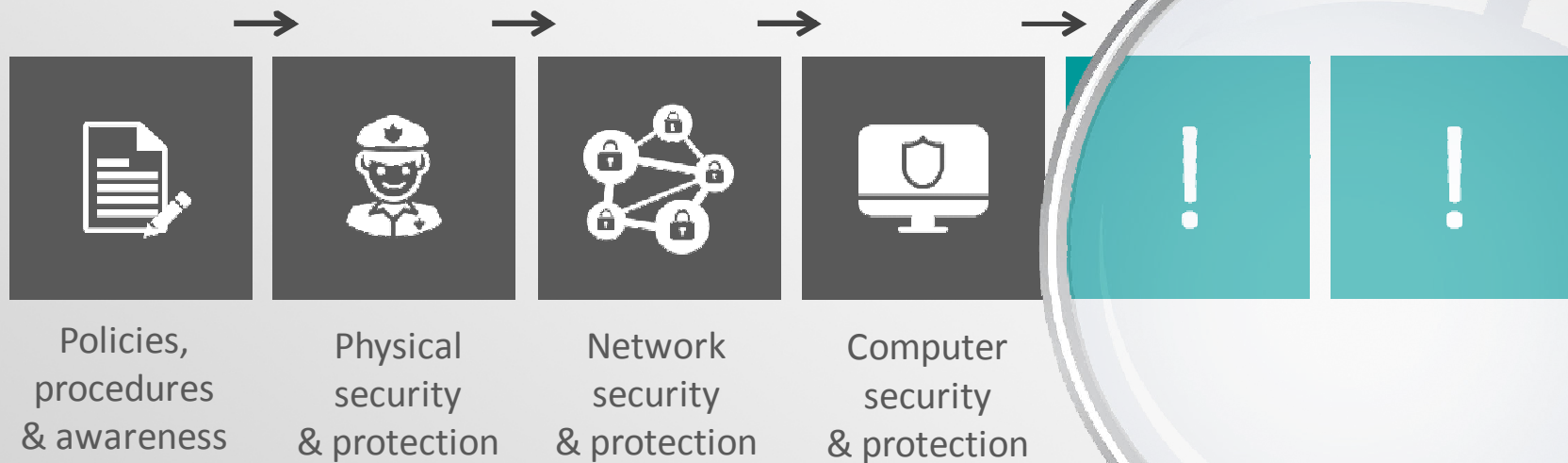- Strong international presence

J-W van de Blaak
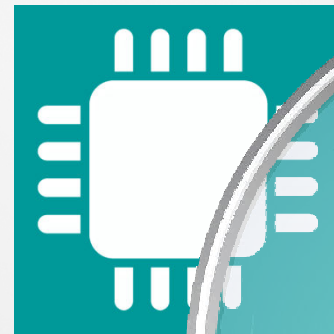Regional manager The Netherlands

Security measures

What happens if someone physically breaks in at your company tonight?

Policies, procedures & awareness

Physical security & protection

Network security & protection

Computer security & protection

! !

Application and device security

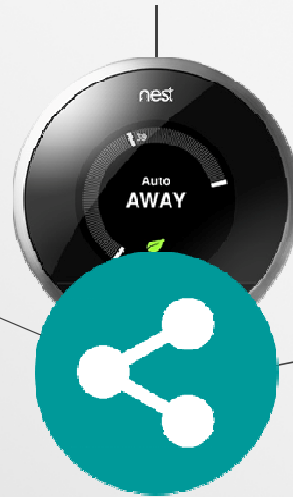**APPLICATION SECURITY & PROTECTION**

DEVICE SECURITY & PROTECTION

Wie past er al beveiliging toe op zijn hard- en/of software?
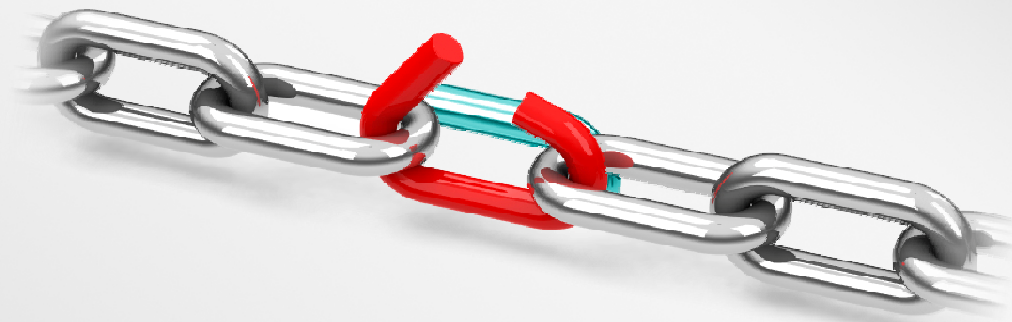
Software is everywhere

It's all connected!

Software is everywhere
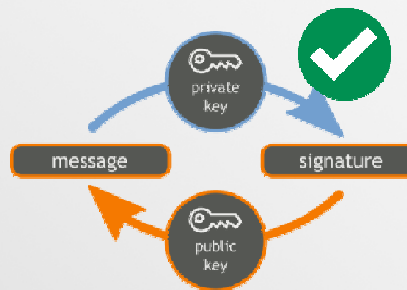

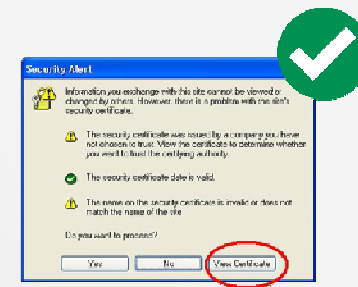Set temperature to 90°C

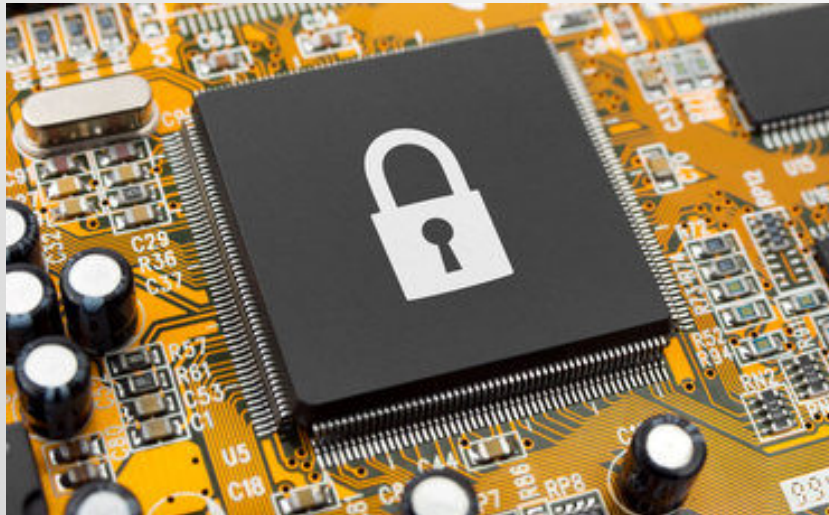# Chain of trust

Encryption   Signatures   Certificates

Device security

- Integrity checks from pre-bootloader to operating system

- Secure Elements with CC EAL5+ and FIPS 140-2 evaluated smart card chips designed for cryptography

- Remote firmware updates

Available technologies

- Encryption of C, C++, C#, Java & other applications
- Crypto libraries & API for standard and embedded platforms
- 128-bit AES, 224-bit ECC, 2048-bit RSA encryption algorithms
- Public and private key management
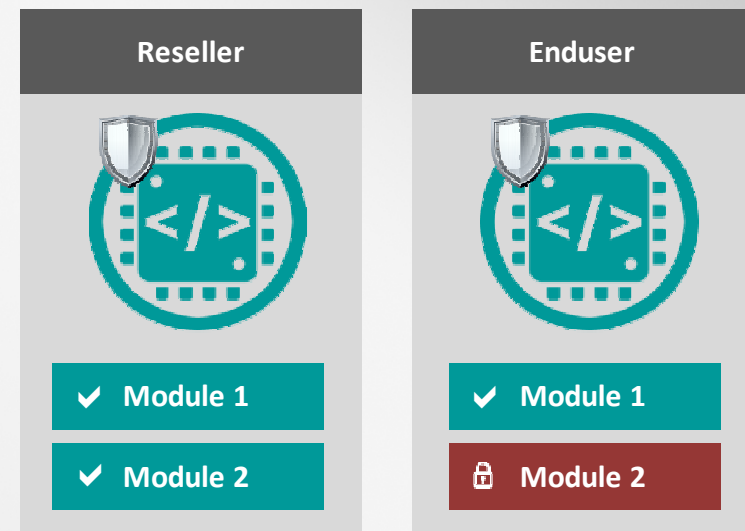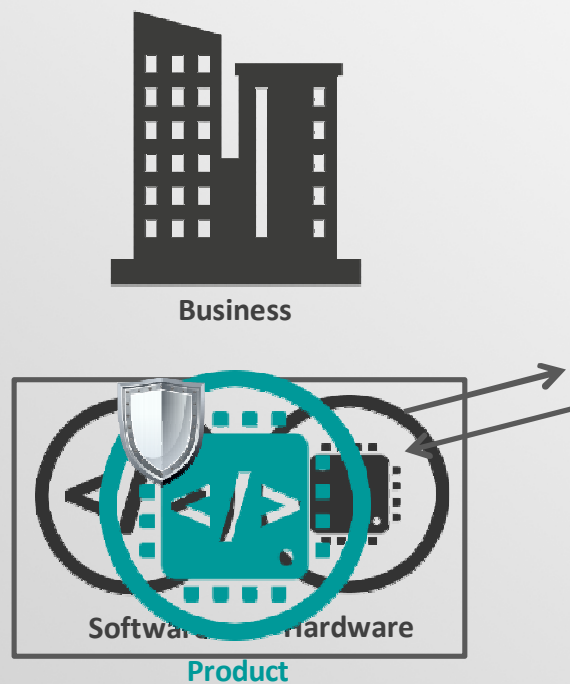
Software security Trends

Extracting

Always develop your product with
'Security by Design'

Re-producing

Protecting your Intellectual Property is a requirement!

How it works

Business

Software | Hardware

Product

Reseller

✔ Module 1

✔ Module 2

Enduser

✔ Module 1

🔒 Module 2

Wie levert er verschillende versies van zijn product?

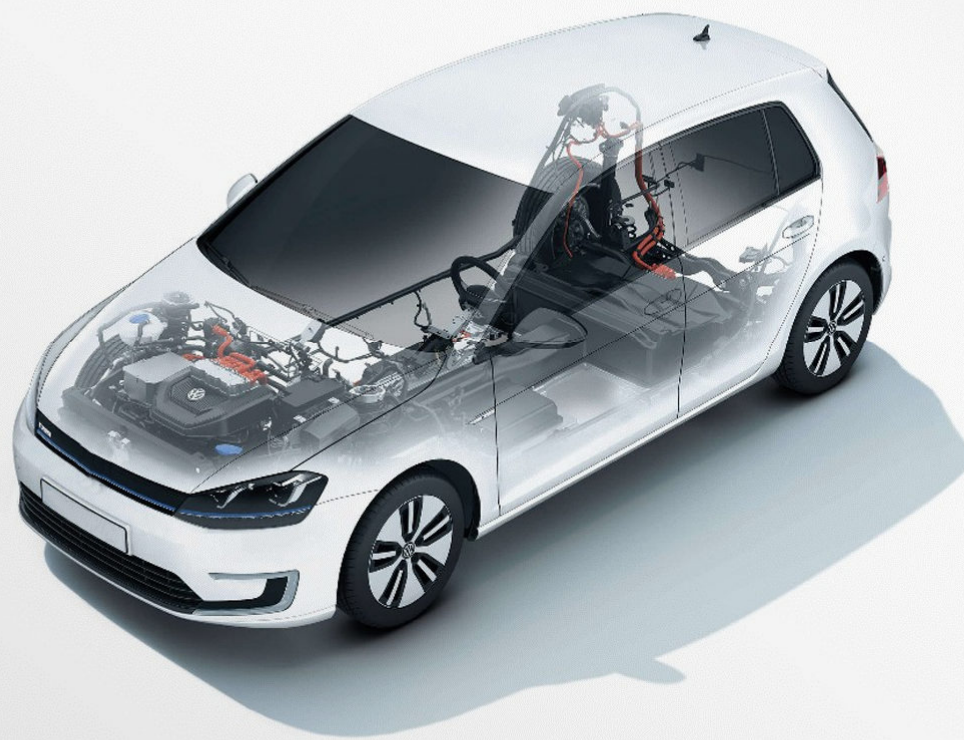**BASIC**

€399,-

60kWh
Airco

PERFORMANCE

€599,-

75kWh
Airco
Navigation
Fast Charging

ULTIMATE

€799,-

75kWh
Airco
Navigation
Adaptive lighting
Fast charging
Heated seats
Auto-Pilot
Selfparking

Additional modules:

☑ Airco
☑ More power (+15 kWh)
☐ Auto-pilot
☐ Selfparking
☑ Navigation
☐ Heated seats
☐ Adaptive lightning
☑ Fast charging

Total amount p/m:

€599,-

CONFIRM ▶

Example Maintenance period

- **Cold & hot-standby licenses**
- **Pay-per-use**
- **Named-user licenses**
- **Time-based licensing**
- **Network-based licensing & terminal Server**
- **Maintenance contracts**

& many more

v1.0   v1.5   v2.0

01-01-2017   30-06-2017   31-12-2017
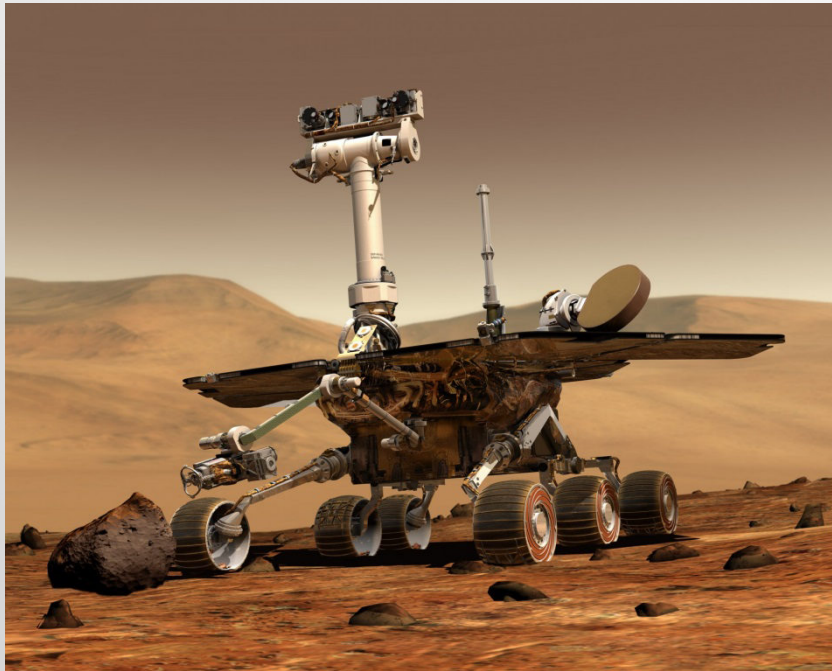
Customer A

v1.0   v1.5   v2.0

01-01-2017   30-06-2017

Customer B

Case Study: VxWorks

- CodeMeter encryption utilities integrated in Wind River Workbench

- CodeMeter embedded driver for VxWorks

WIND RIVER

Partnerships & Customers

Best practices

- Design your solutions with security in mind
- Protect your software by encryption
- License your products smart
- The technology is available

Thank you

Questions?

Jan-Willem van de Blaak