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Cyber Security im Schienenverkehr

ALFRED VEIDER, THALES AUSTRIA GMBH

DIGITALE TRANSFORMATION DES SCHIENENVERKEHRS
15. November 2016

www.thalesgroup.com

Cybersecurity - Safety & Cybersecurity

- Safety: « The state of being free of risk or danger and the means/actions to obtain this state ».
- Cybersecurity: « The protection of information systems from theft or damage, as well as from disruption or misdirection of the services they provide ».
- The « digital transformation » of Rail Systems requires increased attention on cybersecurity, to avoid operational disruption, access to user confidential data, and ensure safety is not impaired.

Cybersecurity - Industrial Control Systems

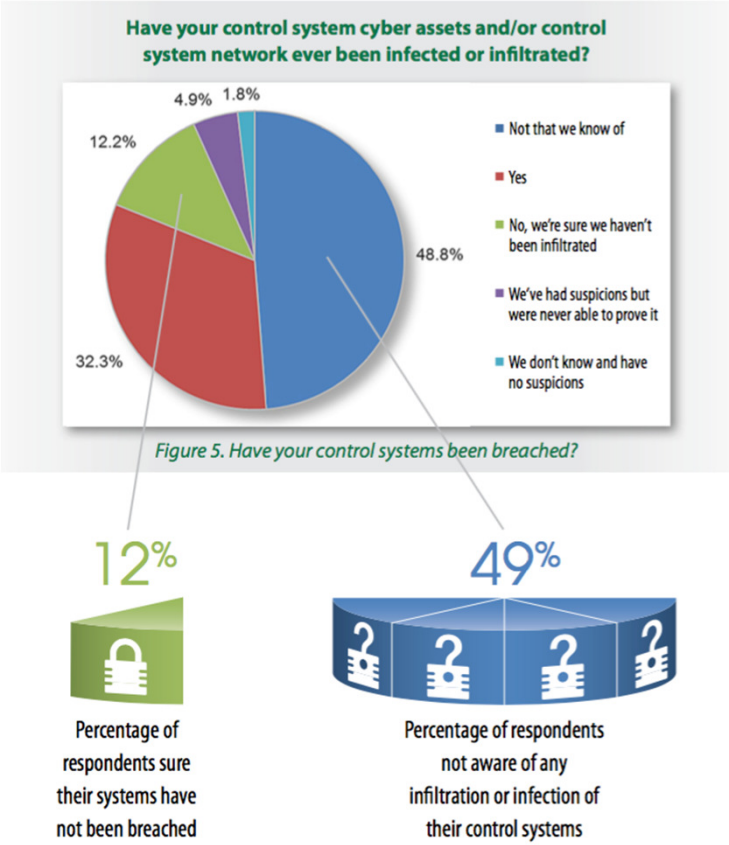

Table 1. International Representation

Country or Region	Representation
United States	77.7%
Europe	31.2%
Asia Pacific (APAC)	26.8%
Canada	22.9%
Middle East	19.1%
South America	17.2%
Australia/New Zealand	15.3%
Africa	15.0%
Latin America	14.3%
Antarctica region	3.8%
Other	3.5%

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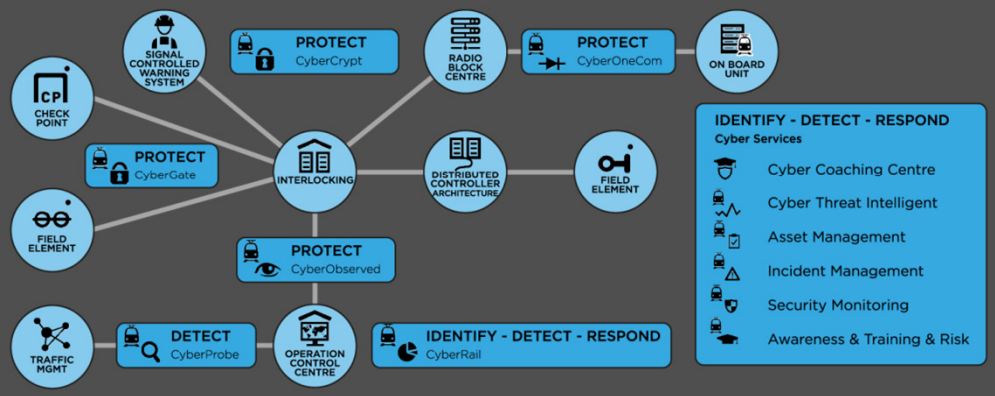
Digital Wall – InnoTrans 2016 – Cyber 2020

CYBERSECURITY FOR RAILWAYS

Safeguard rail infrastructure against cyber attacks

IDENTIFY – PROTECT – DETECT – RESPOND - RECOVER
Identify assets, configurations and vulnerabilities to understand the risk of threats, Protect the safety infrastructure and enhance the security resilience of safety products, Detect anomalies, monitor and aggregate safety and security information , Respond in a crisis situation and provide impact analysis to take actions against cyber attacks and Recover capabilities and services that were impaired due to a Cybersecurity event and optimize existing safety plans.

- Range of tailored Cybersecurity Products and Services to comply with Railway safety specific needs
- Develop and enhance Rail systems resilient against threats
- Ensure compliance with standards – NIST, IEC, ISO, CENELEC, APTA



Meet our specialists at the Cyber Security 2020 demonstration!

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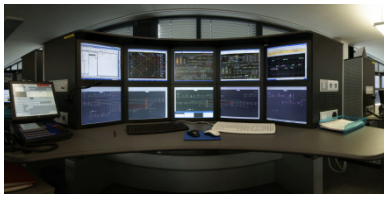
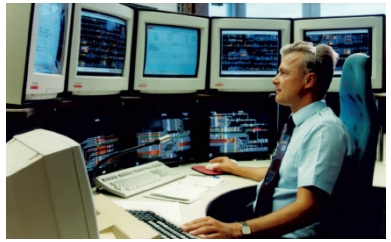
Digitalisierung der Betriebsführung in Österreich

Vollintegrierte Betriebsführung
BFZ 2.0

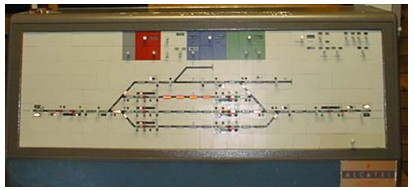


Zentralisierte Fernsteuerung
ELEKTRA BOS

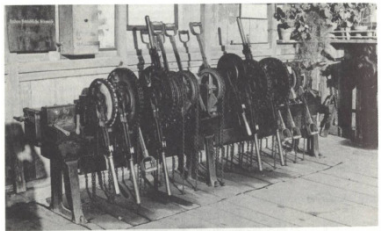


Landesweite Leittechnik
ARAMIS

Elektronische Stellwerke
ELEKTRA



Relaisstellwerke
Lorenzspur



Mechanische Stellwerke
5007

OPEN

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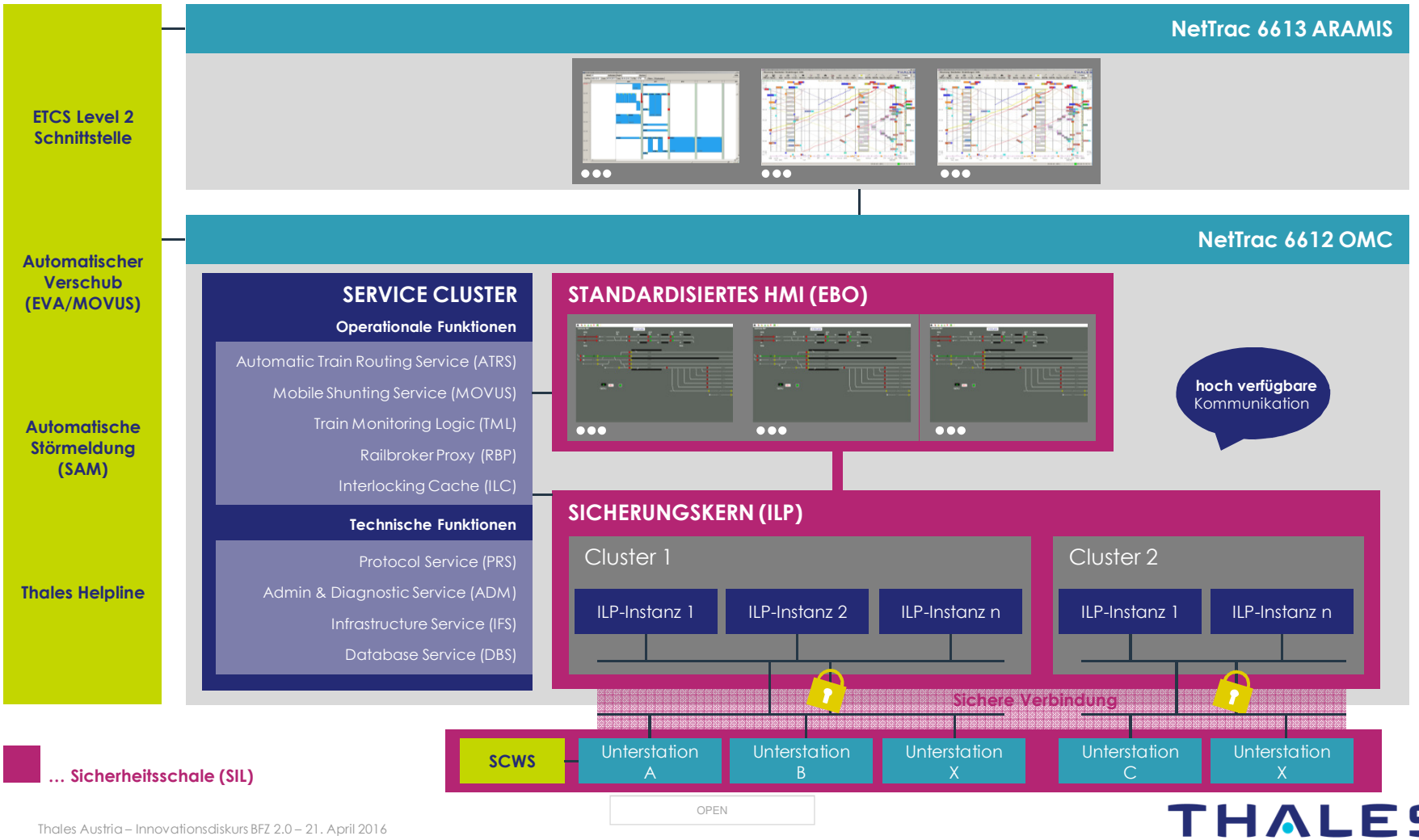
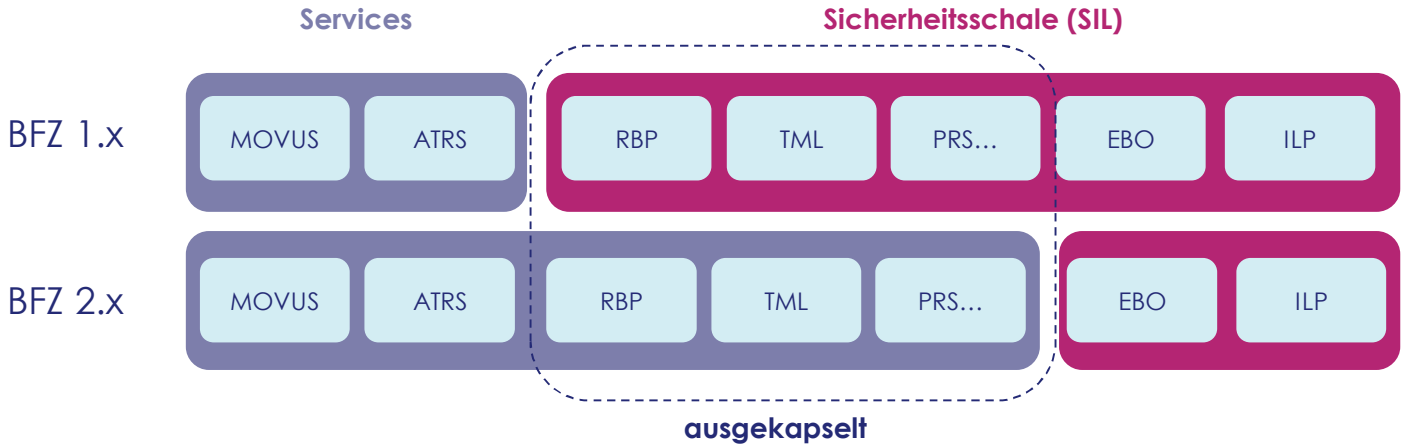

ETCS Level 2 Schnittstelle
Automatischer Verschub (EVA/MOVUS)
Automatische Störmeldung (SAM)
Thales Helpline
NetTrac 6613 ARAMIS
NetTrac 6612 OMC
SERVICE CLUSTER
Operationale Funktionen
Automatic Train Routing Service (ATRS)
Mobile Shunting Service (MOVUS)
Train Monitoring Logic (TML)
Railbroker Proxy (RBP)
Interlocking Cache (ILC)
Technische Funktionen
Protocol Service (PRS)
Admin & Diagnostic Service (ADM)
Infrastructure Service (IFS)
Database Service (DBS)
STANDARDISIERTES HMI (EBO)
hoch verfügbare Kommunikation
SICHERUNGSKERN (ILP)
Cluster 1
ILP-Instanz 1
ILP-Instanz 2
ILP-Instanz n
Cluster 2
ILP-Instanz 1
ILP-Instanz n
Sichere Verbindung
SCWS
Unterstation A
Unterstation B
Unterstation X
Unterstation C
Unterstation X
OPEN
... Sicherheitsschale (SIL)

Digitalisierung der Betriebsführung in Österreich



Geringerer Anteil an Modulen im SIL Teil

Für ausgekapselte Module

- Kürzerer Zulassungsprozess
- Zeitersparnis: ca. 50-65%
- Höhere Funktionalitätsdynamik

MOVUS: Mobiler Funkverschub (EVA)
ATRS: Automatikbetrieb
RBP: RZÜ-Service
TML: Zugnummernservice
PRS: Protokollierungsservice
EBO: Methodensichere Bedienung
ILP: Sicherungskern konzentriert alle sicherheitsrelevanten Funktionen

OPEN

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Digitalisierung der Betriebsführung in Österreich

Unabhängigkeit

Funktionen unabhängig von der Hardware

Investitionsschutz

Skalierbar und erweiterbar durch Nutzung des Stands der Technik

Betriebliche Verfügbarkeit

24/7
Redundanzoptionen

Kritische Infrastruktur

Betriebsführung „Secured by Thales“

Product Portfolio CYSECTRAC Overview

Products
6831 CyberRail
6832 CyberCrypt
6833 Observer
6834 CyberGate
6836 CyberCoachingCenter
6837 CyberProbe
6838 CyberOneComm
6839 Cyber Threat Intelligence

Services
6835-AM CyberService - Asset Management
6835-AT CyberService - Awareness & Training
6835-AS CyberService - Cybersecurity Assessment
6835-IM CyberService - Incident Management
6835-PT CyberService - Security Monitoring
6835-RA CyberService - Risk/Threat Assessment

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