ERA ENISA Conference Cybersecurity in Railways
Lille 01.12.2022

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Comparison of responsibilities
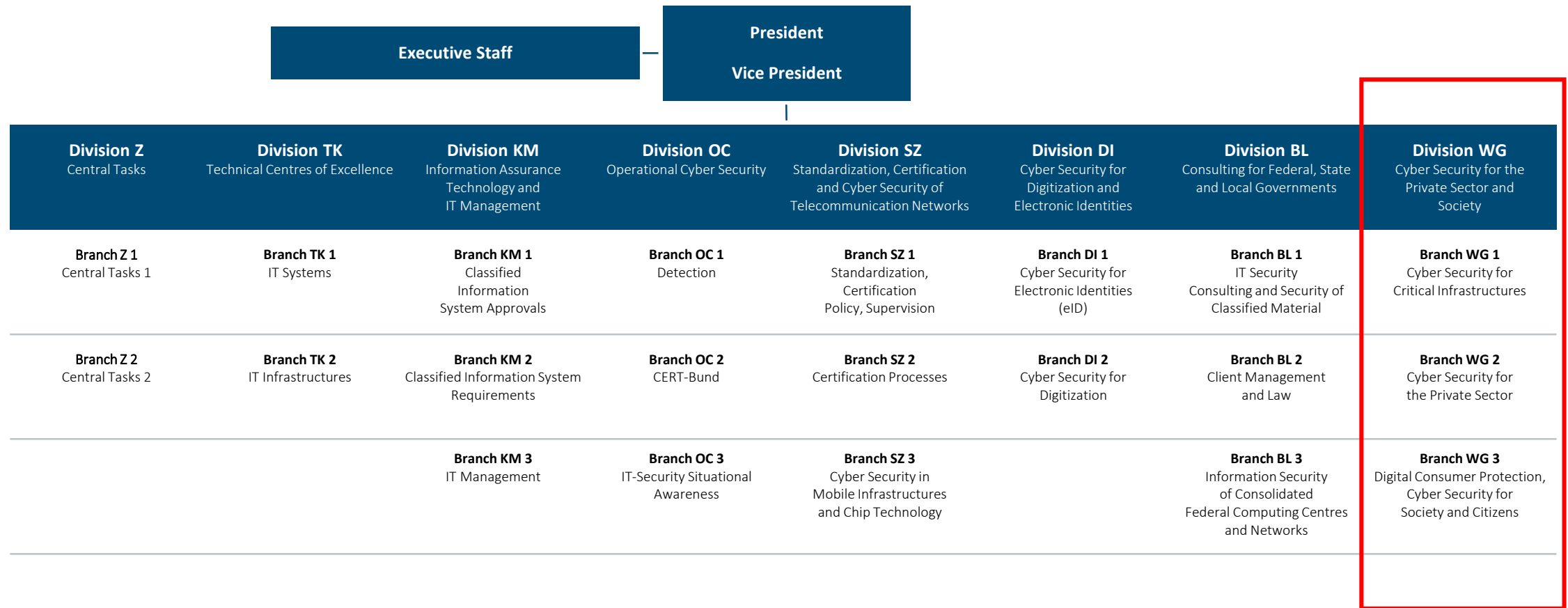
Federal Railway Authority

- According to **German General Railway Act (AEG)** and related laws

- Supervisory, licensing and safety authority for **railways and railway undertakings**

- "… avert danger resulting from railway operation or being emanated by operational facilities …"
  → **Safety (also involving IT Security)**

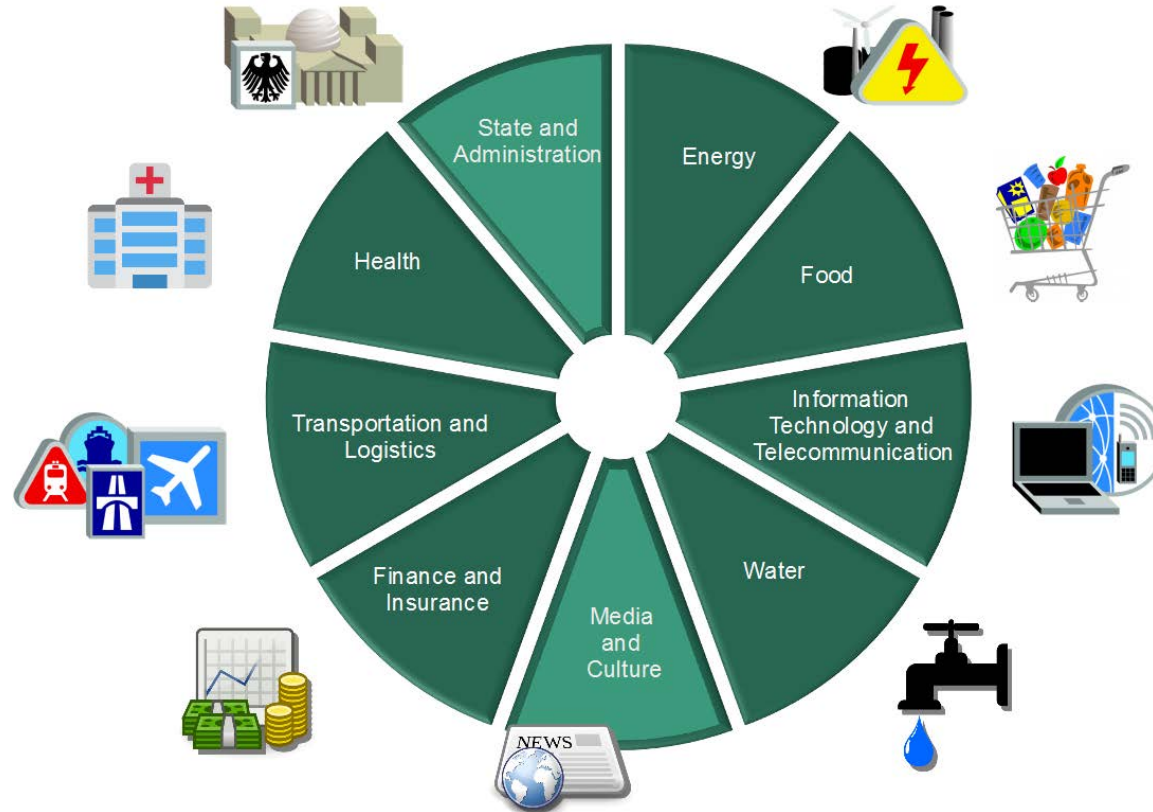## Federal Office for Information Security

- According to **German IT-Security Act (IT SiG) and BSI Act (BSIG)**

- Shapes **information security** in digitalization through prevention, detection and response for government, business and society.

- **IT Security** - Cyber Security for Railway Infrastructure

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The BSI as an organisation

As of: 15 December 2021

Executive Staff — **President** / **Vice President**

Division Z — Central Tasks	Division TK — Technical Centres of Excellence	Division KM — Information Assurance Technology and IT Management	Division OC — Operational Cyber Security	Division SZ — Standardization, Certification and Cyber Security of Telecommunication Networks	Division DI — Cyber Security for Digitization and Electronic Identities	Division BL — Consulting for Federal, State and Local Governments	Division WG — Cyber Security for the Private Sector and Society
Branch Z 1 Central Tasks 1	Branch TK 1 IT Systems	Branch KM 1 Classified Information System Approvals	Branch OC 1 Detection	Branch SZ 1 Standardization, Certification Policy, Supervision	Branch DI 1 Cyber Security for Electronic Identities (eID)	Branch BL 1 IT Security Consulting and Security of Classified Material	Branch WG 1 Cyber Security for Critical Infrastructures
Branch Z 2 Central Tasks 2	Branch TK 2 IT Infrastructures	Branch KM 2 Classified Information System Requirements	Branch OC 2 CERT-Bund	Branch SZ 2 Certification Processes	Branch DI 2 Cyber Security for Digitization	Branch BL 2 Client Management and Law	Branch WG 2 Cyber Security for the Private Sector
		Branch KM 3 IT Management	Branch OC 3 IT-Security Situational Awareness	Branch SZ 3 Cyber Security in Mobile Infrastructures and Chip Technology		Branch BL 3 Information Security of Consolidated Federal Computing Centres and Networks	Branch WG 3 Digital Consumer Protection, Cyber Security for Society and Citizens

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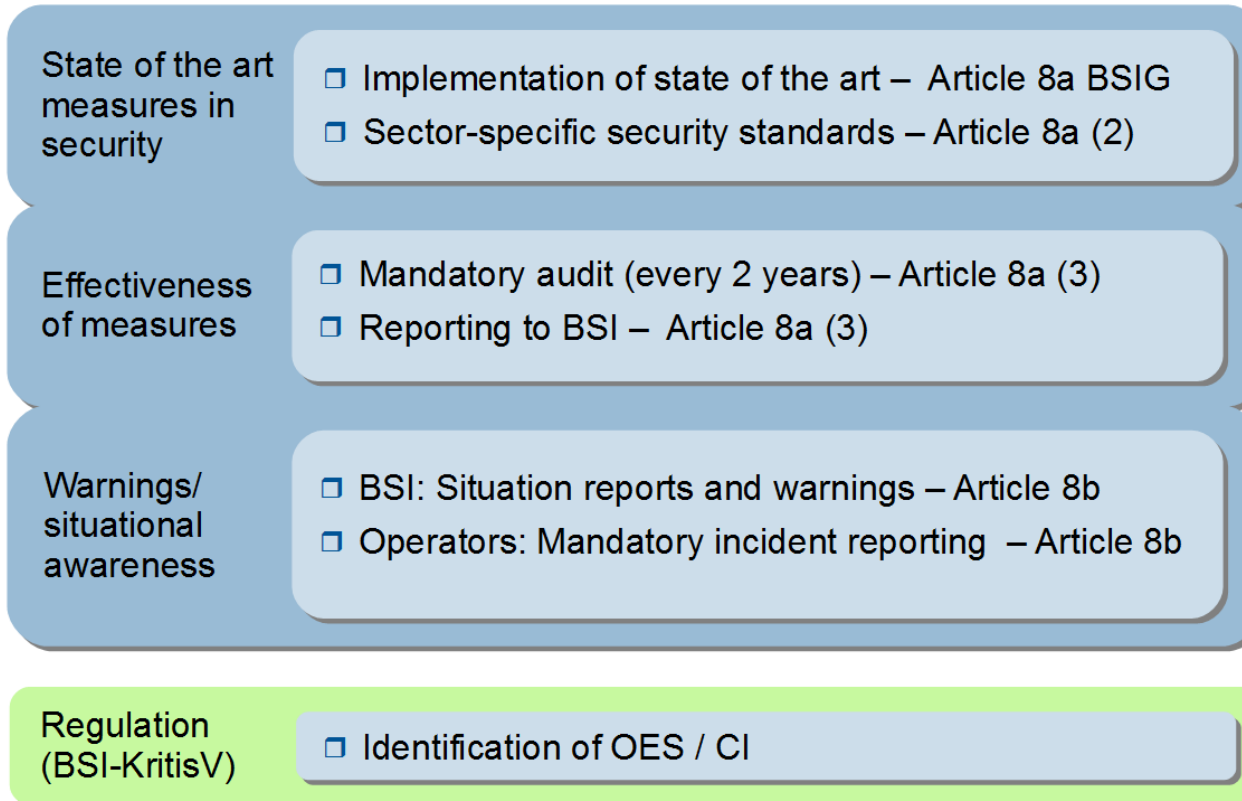# Critical Infrastructure Sectors

What aspects of Railway Transport are Critical Infrastructure?

Sector	Transport & Traffic

Service	Passenger & Freight Transport

Section	Railway Transport

System category	Criteria	Threshold
Passenger station	Categorization of stations	Highest category
Freight station	Number of outgoing trains per year	23.000
Rail yard	Number of trains formed per year	23.000
Railway network and Interlocking system	Rail network according to TEN-V	Core Network

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Service	Passenger & Freight Transport

Section	Railway Transport

System category	Criteria	Threshold
Traffic management and Control system	Control system of the rail network according to TEN-V	Core Network
Railway control centre	Scheduled transport performance (passenger transport) in train kilometers per network/subnetwork	8.200.000
	Scheduled transport performance (freight transport) in tonnes/kilometers per network/subnetwork	730.000.000

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Overview of new legal obligations according to BSI Act

State of the art measures in security	❑ Implementation of state of the art – Article 8a BSIG ❑ Sector-specific security standards – Article 8a (2)
Effectiveness of measures	❑ Mandatory audit (every 2 years) – Article 8a (3) ❑ Reporting to BSI – Article 8a (3)
Warnings/ situational awareness	❑ BSI: Situation reports and warnings – Article 8b ❑ Operators: Mandatory incident reporting – Article 8b
Regulation (BSI-KritisV)	❑ Identification of OES / CI

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Where IT Security joins Railway Safety

- **ETCS (European Train Control System)**

- **ATO (Automatic Train Operation)**

- **FRMCS (Future Railway Mobile Communication System)**

- **Infrastructure Digitisation (involving IP transport of traffic control data)**

- **That's it? …**

Some Questions

- Is IT Security only relevant for „Critical Infrastructure" parts of railways?

- Does the increased application of IT/OT introduce new safety-related aspects?

- Can a ransomware attack at rolling stock manufacturer be safety-relevant?

- …

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EBA perspective on railway IT / Cyber security

- **EBA gathers information from railway infrastructure and traffic operations**

  - Regulatory reporting

  - Requests For Information / Supervisory tasks

- **In 2018 EBA established railway IT / Cyber Security Task Force**

  - Authorisation of IT-based railway systems and components

  - Railway operator permission approval / renewal

  - Licensing of IT security assessors

  - Legal and standardisation work

  - IT security incident and vulnerability monitoring (e.g. based on BSI information)

  - …

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Again – as a summary: Comparison of responsibilities

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Thank you for your attention!

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