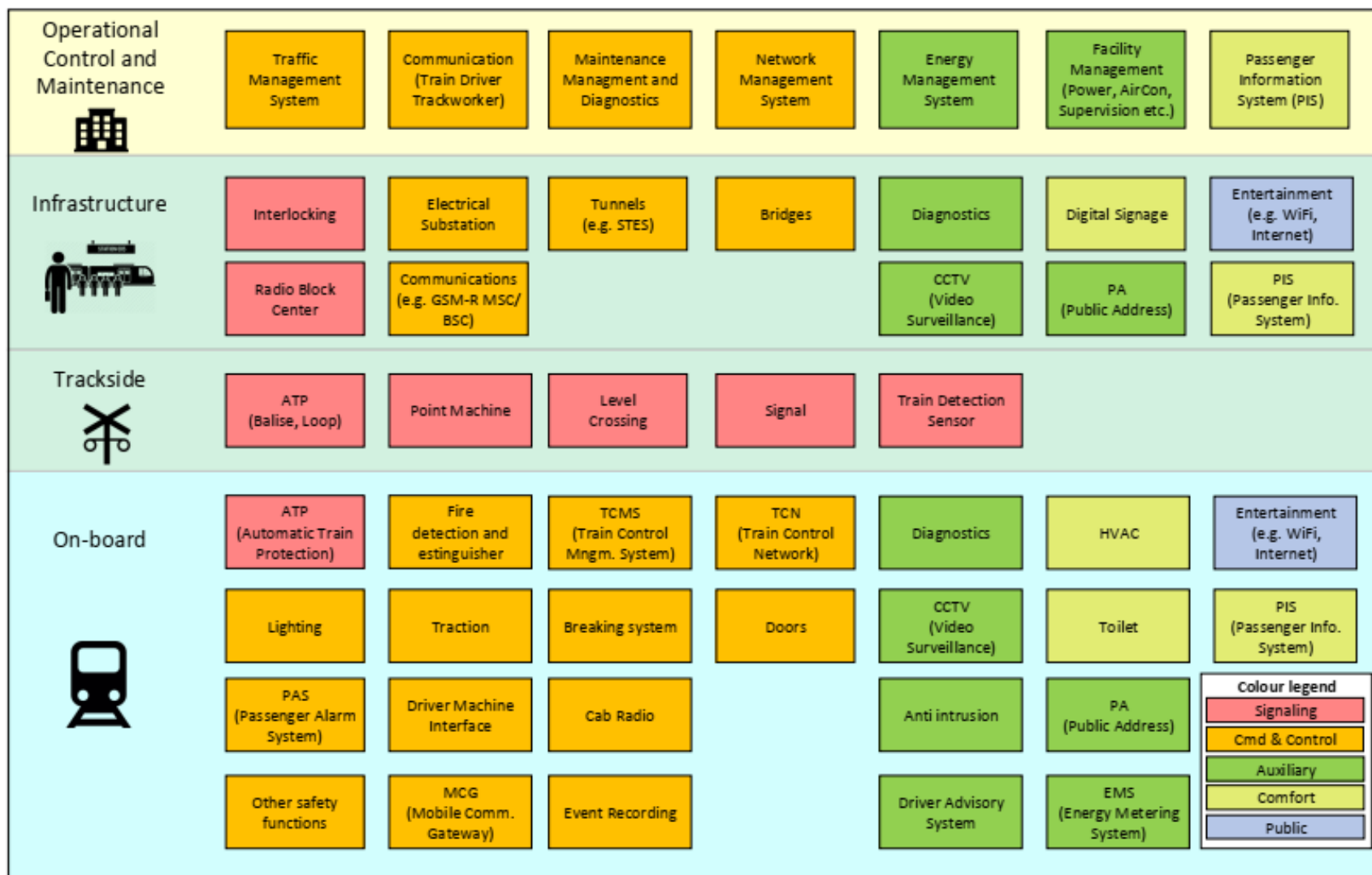


Cybersecurity

Session 3 - ERTMS regulatory and funding framework







- TC9X - Working Group 26

- Draft Technical spec.: *“Railway Applications – Cybersecurity”*
 - Consistent approach to introduce requirements and recommendations for cybersecurity within the railway sector



- Technical Committee CYBER

- Technical Report: *“Implementation of the NIS Directive”*
 - Guidance on considerations for incident notification; best practices in cyber security risk management



- IP2 - Technical Demonstrator 2.11

- Definition of a security by design system, dedicated to railways (e.g. Protection Profiles Specification)
 - Application of the methodology to railways (demonstrator)

Activities related to cybersecurity in the railway context



- **Cyber Security Solutions Platform**
 - Practical solutions for cybersecurity, from a telecom angle, focusing on critical elements of the railway system
- **ER-ISAC (European Rail – Information Sharing and Analysis Centre)**
 - Sharing platform of circa. 50 members under the lead of IMs/RUs (FR/DE/BE/NL)
 - Share best practices, discuss common vulnerabilities, influence regulation and standardisation

- Need to improve ERTMS robustness against cyber threats
 - ETCS
 - More robust algorithm to replace 3-DES
 - E2E authentication mechanisms for EVC-RBC communication
 - Operational measures (e.g. online key management)
 - GSM-R
 - Systematic encryption of the air interface
 - Monitoring tools to spot abnormal operation
 - FRMCS
 - Security by design requirements to be inserted in FRMCS specifications
- Need to take into consideration Operational harmonisation



Regulation considerations

- Monitor relevant activities related to **cybersecurity in the railway context**
- Cover safety requirements of the rail system, e.g. the assessment of **safety consequences originated by security threats**
- Reflect the above in **Technical Specifications for Interoperability** and **Common Safety Methods**

Cooperation building

- Close relationship with **ENISA** and **European Commission** in support of railway stakeholders
- Cross-fertilisation with **EASA** and **EMSA** to develop a transport cybersecurity policy
- Review potential gaps with **National Cybersecurity Agencies** (e.g. ANSSI, BSI)
- Support **ER-ISAC**



Making the railway system work better for society.

Follow us on  [ERA_railways](#)

Discover our job opportunities on era.europa.eu

