## Development of interoperable digital solutions on TEN-T and Silk Road from the European R\&I perspective

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COMMON LEGAL AND TECHNICAL INTEROPERABILITY COOPERATION

CSIRT (Computer Security Incident Response Team) is a multi-layered model (Organisational, Operational, Technical Platform)
cyber-protection and cyber- defence tools \& practices; threats known in the IoT; ICT trusted for critical applications.

BLOCKCHAINS

## GNSS-based ERTMS Applications

 scenarios
## New Automatic Couplers (DAC)

FR8RALL Telematics and Electrification Condition Based Maintenance (CBM) Cargo Monitoring System (CMS). service transponder for freight, wagon On-Board Unit (wOBU)

## Improved methods for annual and short-term timetable planning

FR8RAILIII
Improved short term planning for freight traffic including improved interaction between yards and the network.

## Real-time network management

## Freight wagon design

LinX4Rail


A common Functional Rail System Architecture Shift2Rail Conceptual Data Model (CDM) the standard for interactions between legacy and new systems ensuring sustainable interoperability between systems.

# Operational procedures for Moving Block and Virtual Coupling signalling - identification operational differences from traditional signalling to provide recommendations for easier implementation of Moving Block. 

## Radio-based communication

MDVINGRAIL
Automated Vehicle communication for fast-tracking Virtual Coupling development.

Virtual Coupling including impacts on different railway market segments in terms of costs, performance and operator needs.


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