Communication Technologies Support to Railway Operations

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Communication Technologies Support to Railway Operations

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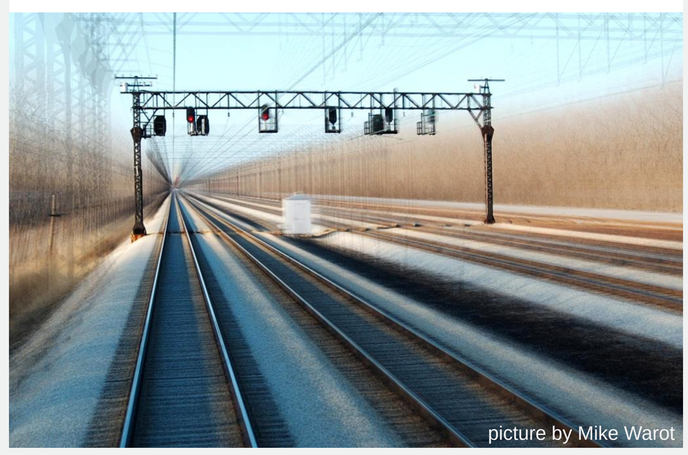
Signalling as fundamental contributor to a **robust railway system**.

European Railway Traffic Management System (ERTMS) enhances dynamic train control, interoperability and track utilization.

Shortcomings of GSM-R as a supporting communication technology:

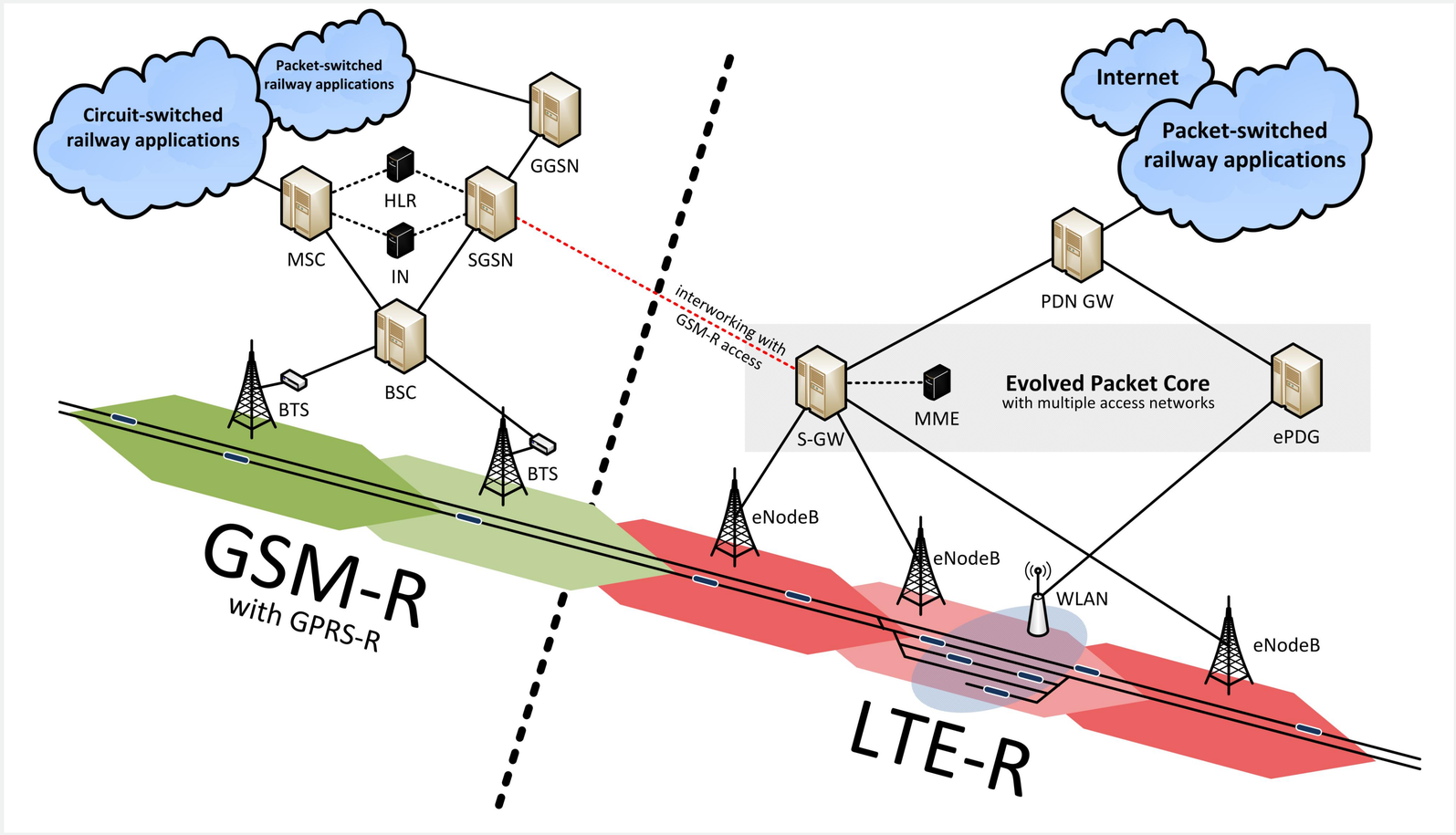
- outdated (90's)
  - capacity issues (low efficiency)
  - lack of modern data services



Demand for broadband access in trains is increasing, both from train operators as well as passengers.

<u>Goals of the project:</u>

- Alternatives to GSM-R (e.g. LTE). Focus on **flexibility** & **simplicity**, latency & scalability, packet-based transmission, radio spectrum efficiency
- **Resilience** & Protection mechanisms against failures and errors
- **Interoperability** possibilities (Public Safety & other networks)
- Passenger information & Quality of Experience



Architecture of a GSM-R network compared with architecture of a next generation packet-based railway network which is supported by multiple access technologies, such as LTE and WLAN.

Unified broadband access brings possibility of new applications:

- Train diagnostics and monitoring
- Cargo and object tracking
- Video surveillance
- Real-time passenger information
- Internet access for passengers

RobustRailS

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