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3rd World Conference on
Rail Transport Telecoms

**How IMS could
facilitate migration
towards FRMCS**

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Ensuring an interoperable transition



Topics

- Key challenges / drivers
- IMS – evolution towards FRMCS
- Benefits of IMS based evolution
- FRMCS applications evolution
- Conclusions

Key challenges / drivers

FRMCS

- Support for future operational needs of the railway (user req.)
- Improved safety, reliability and availability
- Machine to machine
- Reduced costs



IMS

- IP based communication
- 3GPP standardization
- Migration and legacy support
- Virtualization



IoT

- Multiprotocol support
- API adapters
- Modularity
- Intelligence on the end devices



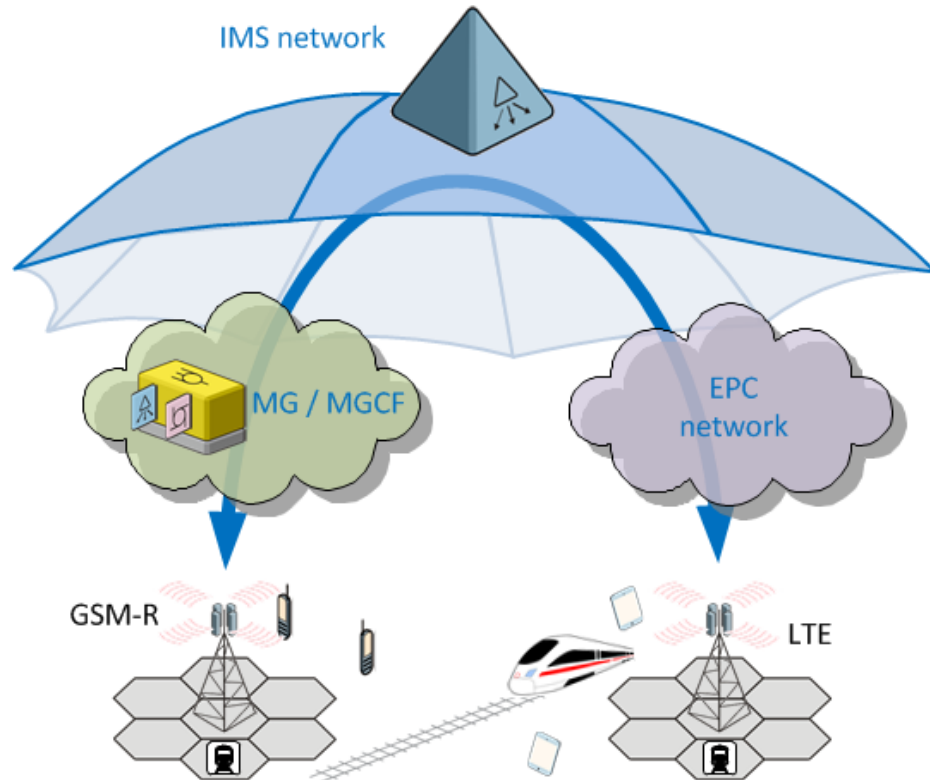
Evolution concept

Components:

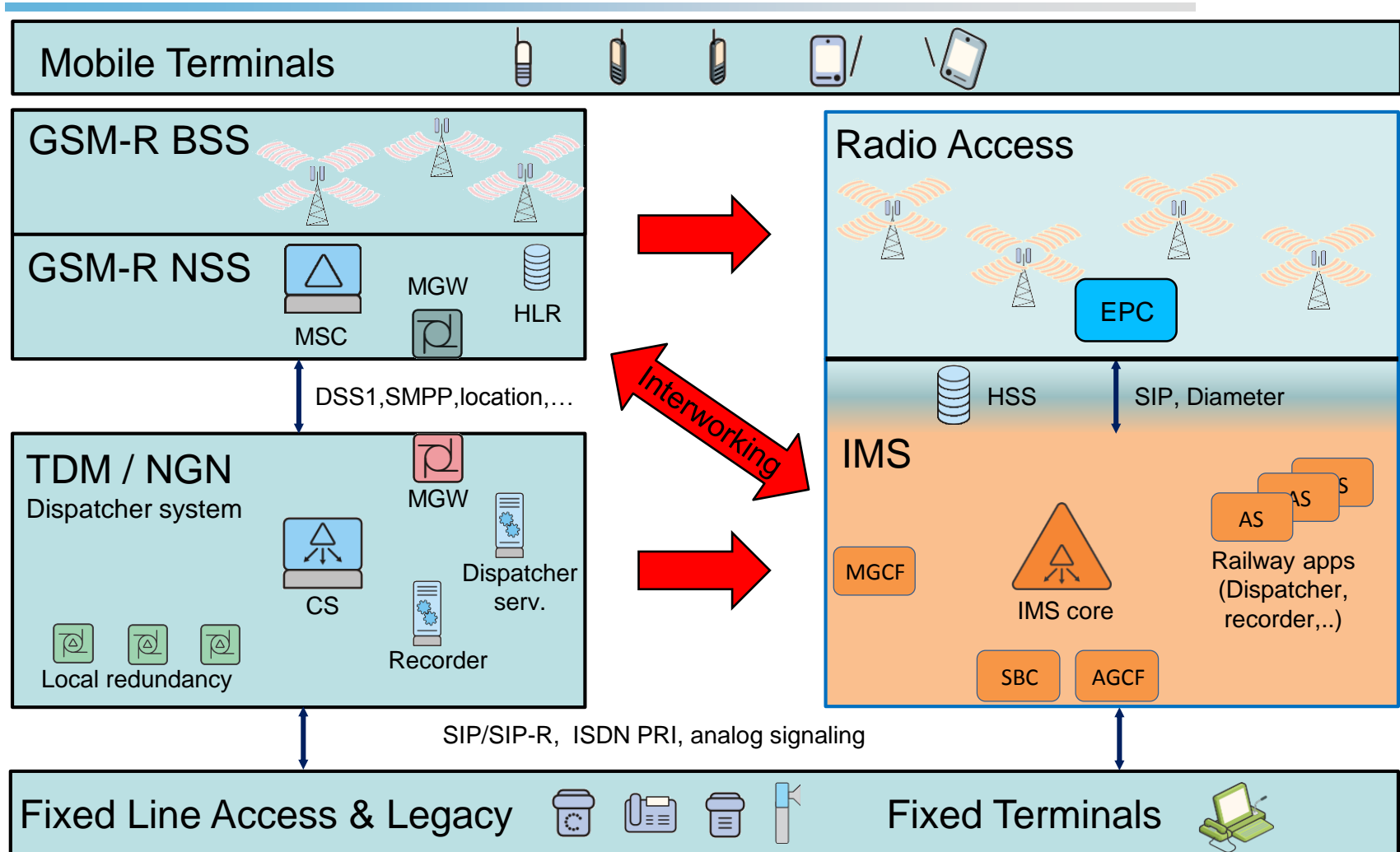
- **AS for Railway**
 - Supporting user requirements of FRMCS

- **AGCF / MGCF**
 - To enable the re-use of existing equipment
 - Assures service transition

- **Standard 3GPP based IMS / EPC core components**



IMS – evolution towards FRMCS



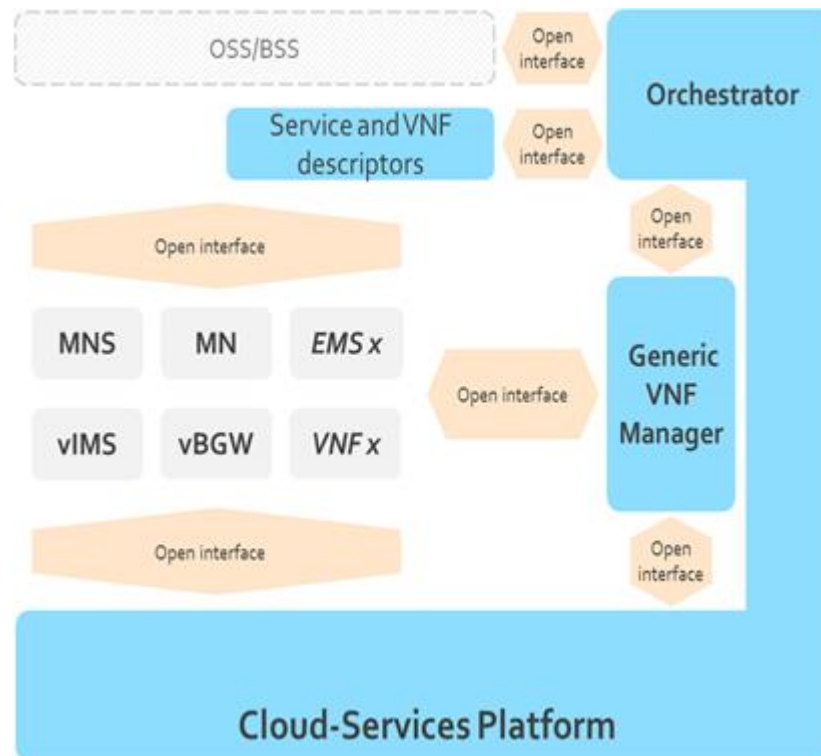
Virtualization / NFV architecture

Functionalities:

- **Orchestration**
- **High availability**
- **Geo-redundancy**

Enabler for:

- **HW independence (COTS)**
- **Flexibility**
- **New services**
- **Fast exploitation**



(ETSI NFV architecture)

Benefits of IMS based evolution

- IMS standardized communication platform
- Standardized interfaces (IP based)
- Support for legacy interfaces
- Hardware independent / Virtualization (COTS)
- Ready for new applications/services
- Evolution path towards FRMCS

FRMCS applications evolution

Covering railway-specific requirements

- Passengers communication & information applications



- IRM-R (Incident and Response Management)



- Operational processes supporting application



Conclusions

- FRMCS will bring scalable, all IP network, fulfilling railway requirements for a reliable and secure communication
- Smooth transition between existing and FRMCS network
- **Digitalization** of operational processes
- IMS solution
 - COTS based
 - Supported **virtualization**
 - Continued **support for legacy interfaces**

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Thank you!