

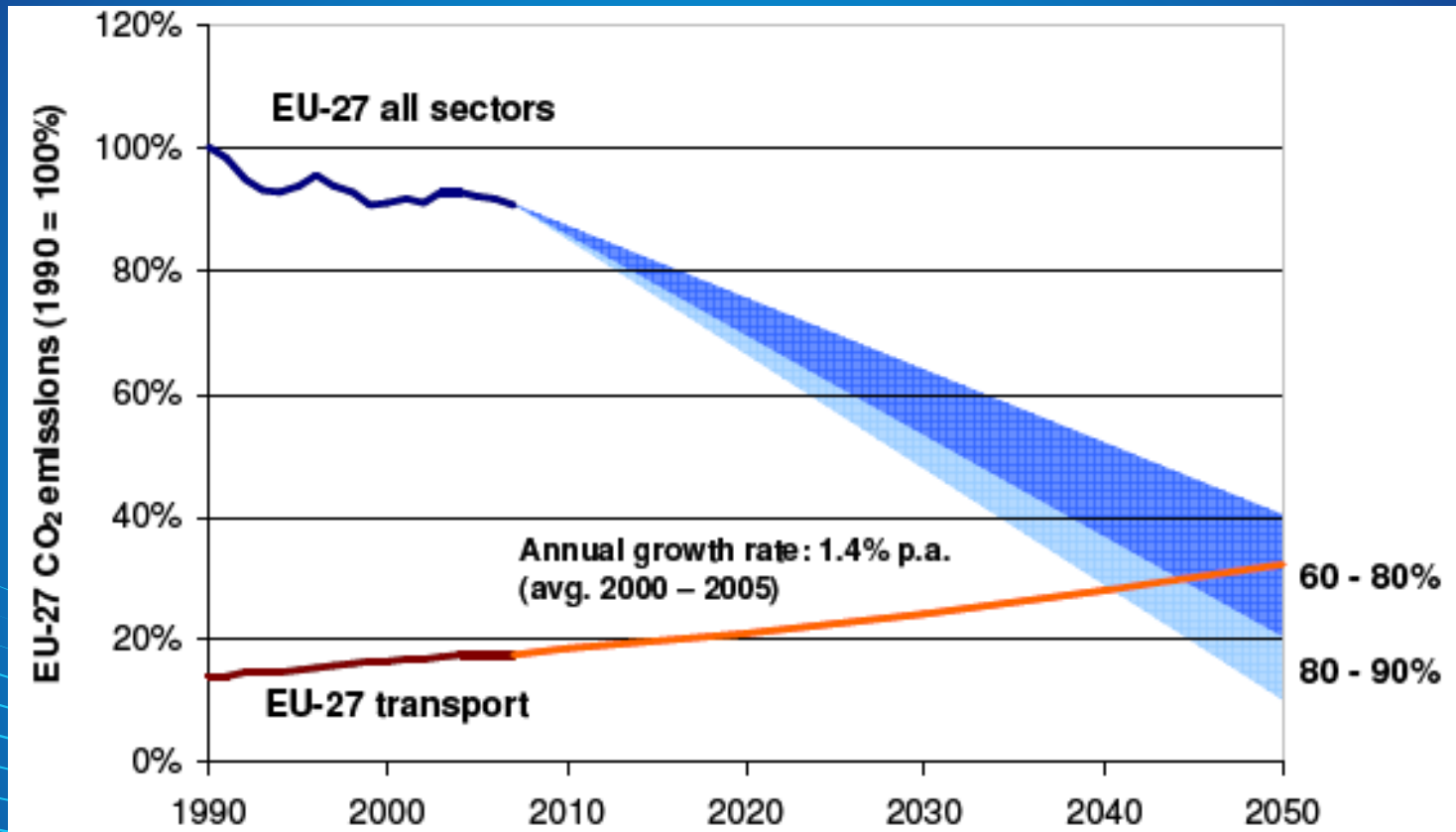


UIC Conference on future rail communication "From GSM-R to FRMCS"

Carlo De Grandis – Policy officer, DG MOVE.B.4

Paris, 17-18/05/2017

Rail as a key transport policy component (-70-80% GHG WTW)





Large role for rail by integration & digitalisation

Integrating Networks: Cross-border & Missing links (CEF Annex I)

Integrating Modes: Multimodal layer Platforms and nodes

Efficient Single EU Transport Area: Internal Market ↑ GHG ↓

**Integrating Operations: Homogeneous, Interoperable, ambitious standards
Seamless Information flow,
Administrative simplification**



Rail-ICT/digitalisation :

- **enhanced efficiency & capacity** (full use of infra, efficient resources allocation)
- **higher service quality for pax & freight** (safety, reliability, real-time data)
- **systems/modes integration**

ICT on rail: a multifaceted picture

**E-freight
Single Logistic
Window....**

Beyond
rail-
only

Syst.
Intgration
/"big
data"

"Open
data"

**Multi – mono modal
journey planner),
Through-ticketing...,
MMTracking and tracing**

**Maintenance /
Operational-
related data**

Critical
dedicated
systems

**Broadband
provisions, security
/ Data monitoring**

**Safety &
Interoperability
critical operations**



Rail digitalisation: on-going research

- **CEF: Big Data, / System Integration**



Horizon 2020
European Union Funding
for Research & Innovation

- **IP2: Advanced Traffic Management & Control Systems**
- **IP4: IT Solutions for Attractive Railway Services**



Interoperability and Safety: Some stakeholders...



**European Conference of Postal
and Telecommunications Administrations**

– 48 European countries cooperating to regulate posts,
radio spectrum and communications networks



...

RISC



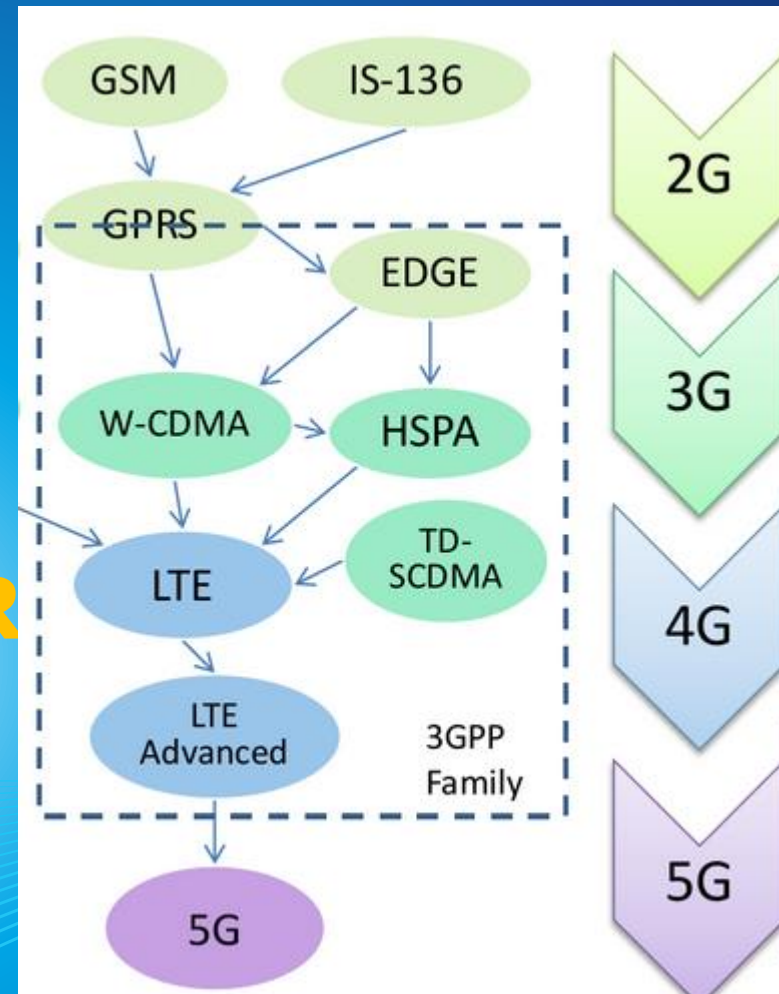
Radio Spectrum Committee (RSC)



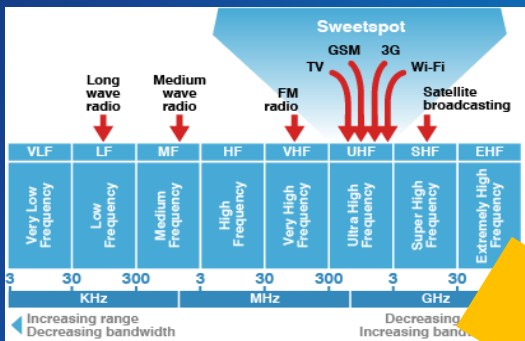
European
Commission

GSM-R evolution:

- No pre-defined Tech
- Needs-related (*safety & interoperability*)
- Time-related (GSM-R obsolescence: 2030)



GSM-R State of play



Band	Current	Future
873-876 MHz	reserve (national allocation to Rail pot.)	?
876-880 MHz	R-GSM	Rail
880-915 MHz	E-GSM (GSM / UMTS / LTE)	E-GSM (GSM / UMTS / LTE)
918-921 MHz	reserve (national allocation to Rail pot.)	?
921-925 MHz	R-GSM	Rail
925-960 MHz	E-GSM (GSM / UMTS / LTE)	E-GSM (GSM / UMTS / LTE)

Open questions and conditions

- **Not a single system! (general) Connectivity called for – beyond Rail**
- **Critical Interoperability & safety-related applications:**
 - Bandwidth needed for the transition to post-GSM system (2 x 5.4 MHz ÷ 7 MHz)?
 - Bandwidth needed after the transition (2030 →?)
 - Safety → Interference avoidance needs (adjacent bands effects?)
 - Interoperability → **EU-wide** spectrum allocation