

UIC D4R PROJECTS

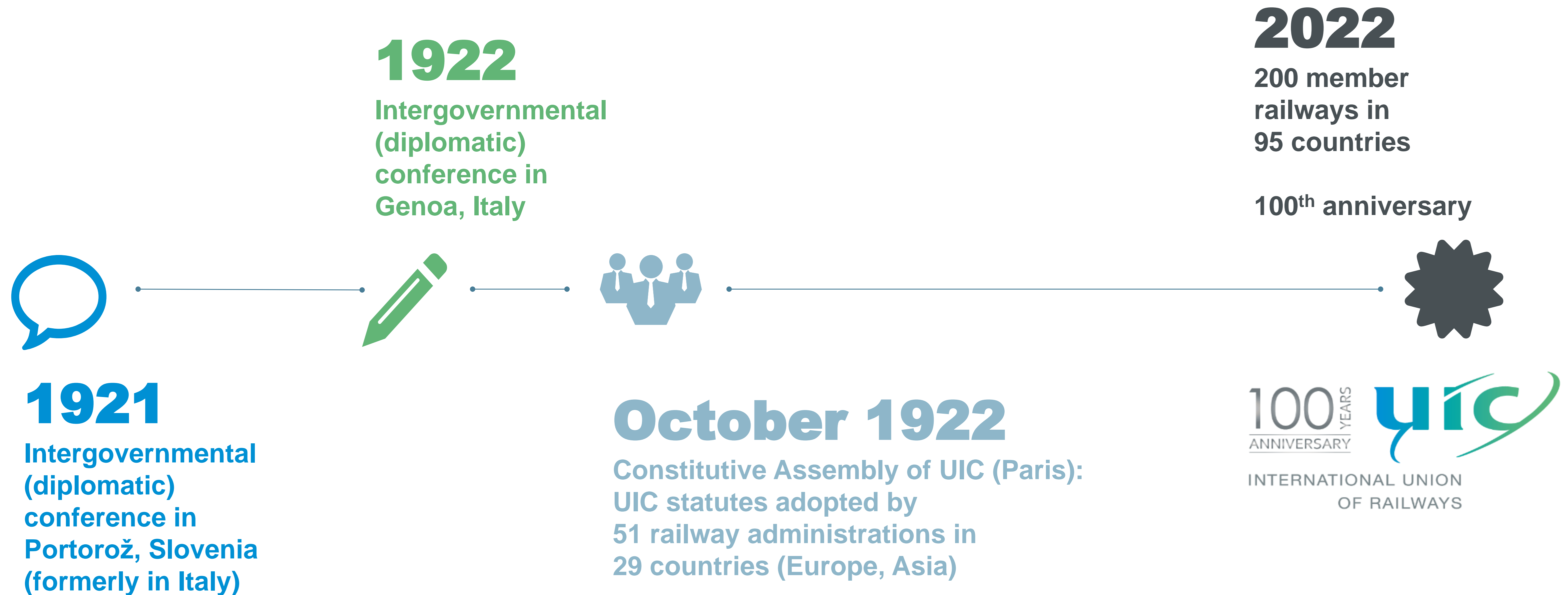
Intelligent Assets in the Railway Sector
for Predictive Maintenance

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Paris, 11 May 2022

UIC: a long history of serving member railways and facilitating international railway cooperation

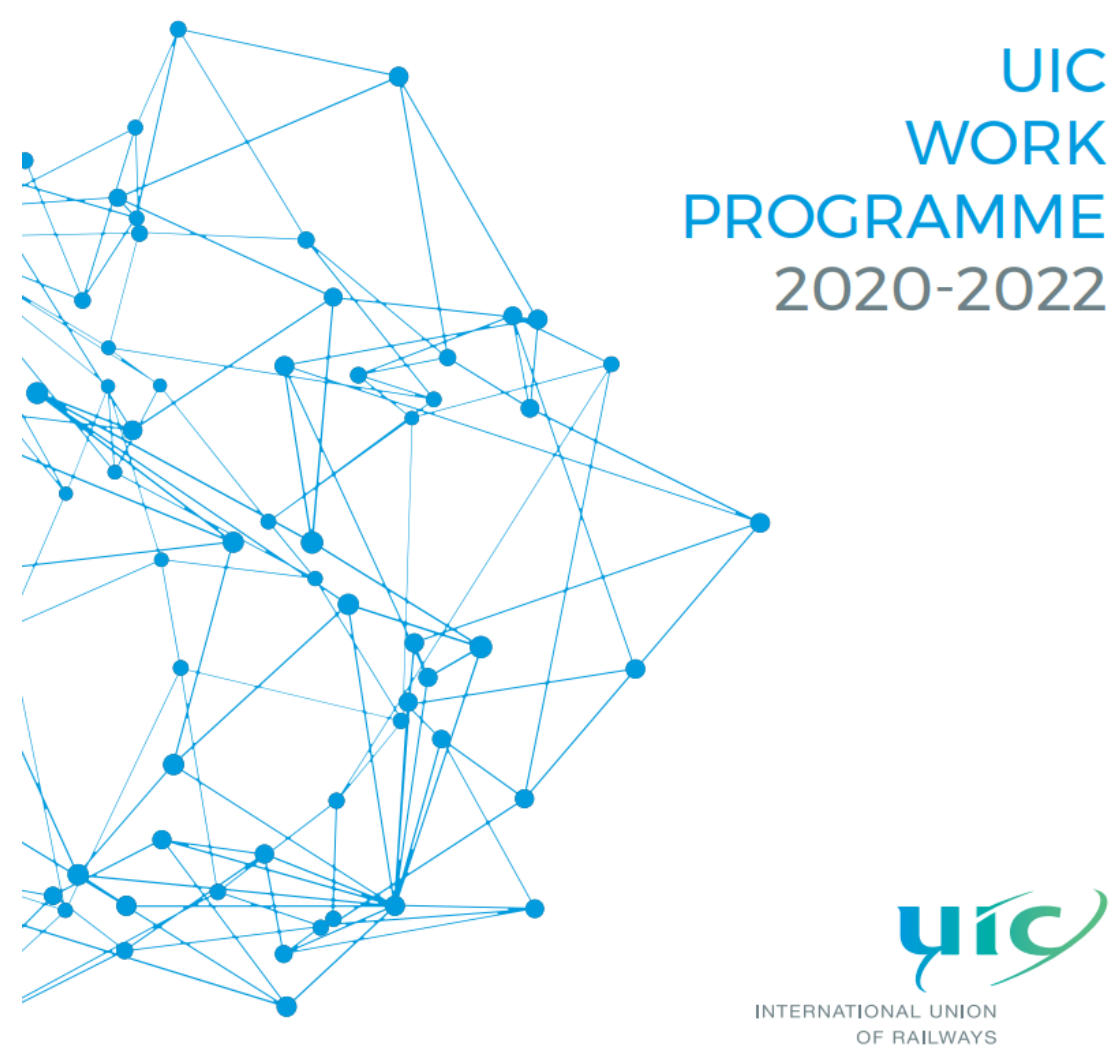


UIC Strategic Documents

UIC Strategic Documents

<https://uic.org/about/about-uic/#UIC-Technical-Solutions-for-the-operational-railway>

<https://uic.org/about/about-uic/#Design-a-better-future-Vision-of-Rail-2030>

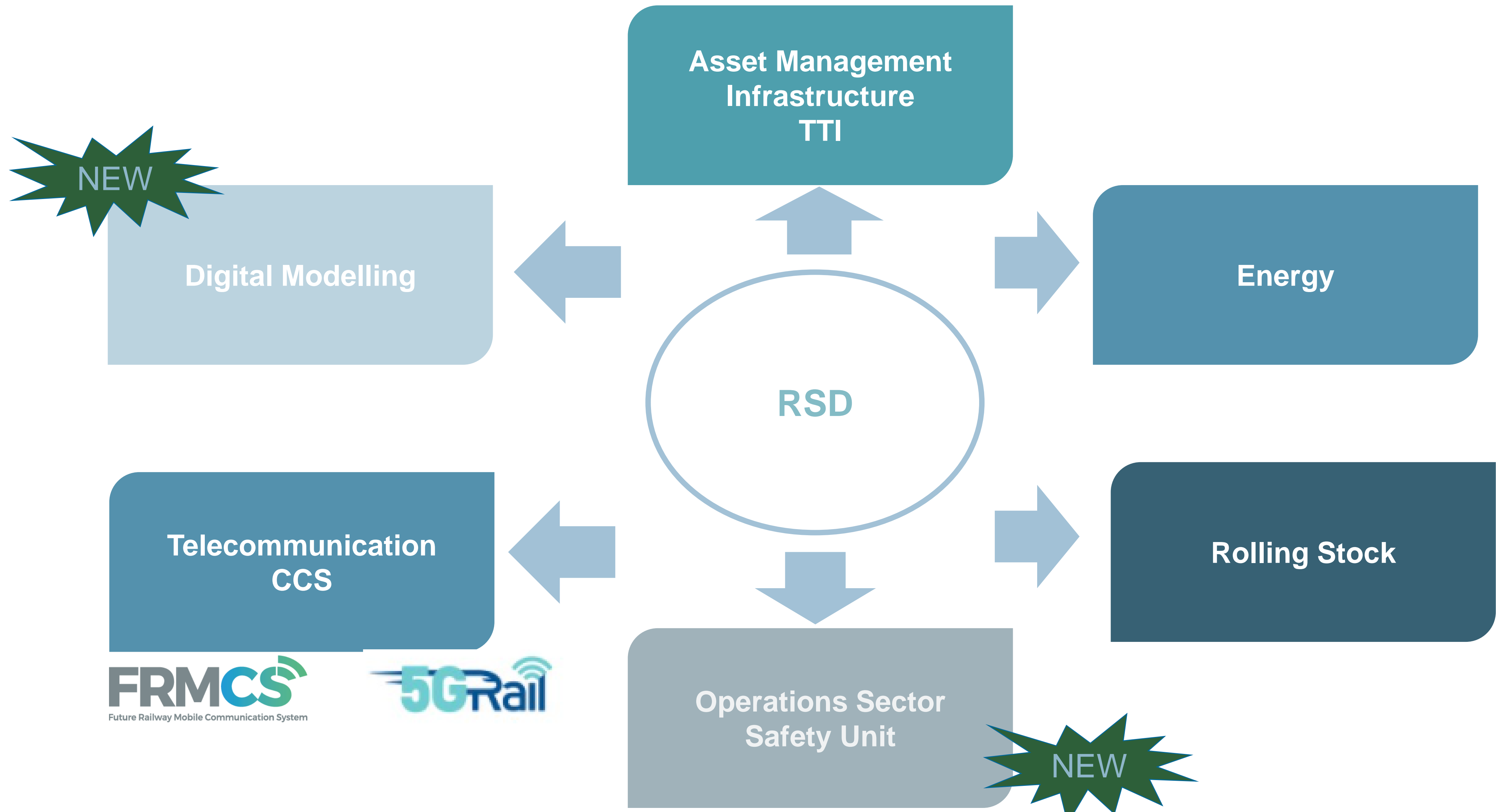


UIC Vision of Rail in 2030



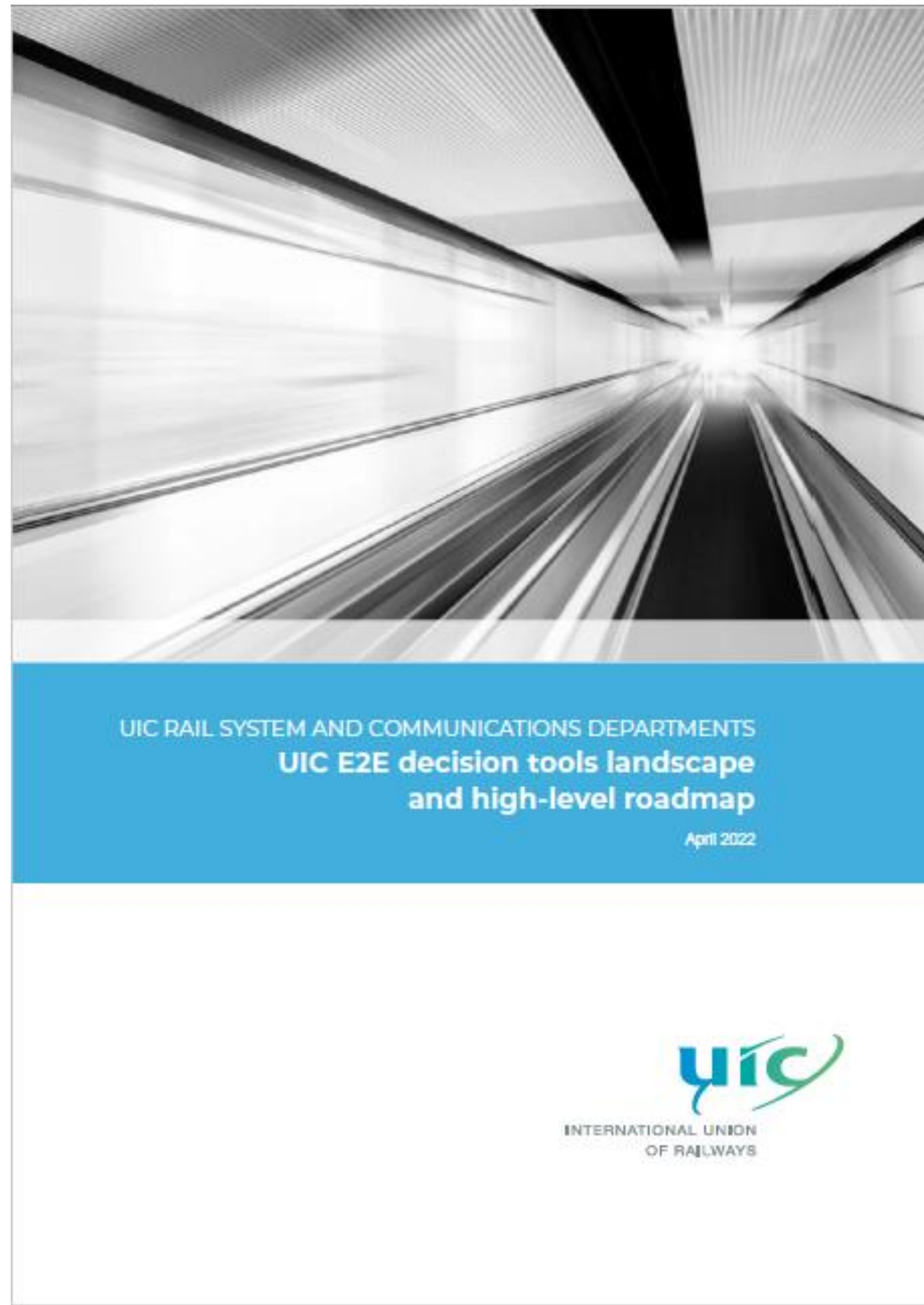
- Transport modal shift
- Increase of the railway capacity
- CCS & FRMCS
- **Automation**
- Lighter trains
- Railway Digital Modelling
- Frugal eco-design
- Reduction of railway noise
- Biodiversity
- Green energy, hydrogen and batteries
- Digitisation in rail freight
- Green logistics
- Resilience of railway infrastructures and rolling stock to climate change
- Operational resilience to climate change
- **Predictive maintenance**
- Multimodal e-tickets
- Inclusivity
- Accessibility
- **Acceleration of the cycle of innovation**

Rail System Department (RSD)



Asset Management

End to End Decision Support Tools (DST)
for Asset Management



Maximizing the benefits
from Big Data



WISDoM Whole System Decision Making

Infrastructure Subsystem Sector

ROB INSPECTION

- **Objective:** The aim of this work is to find an alternative solution for the manual inspection and to pave the way to an intelligent infrastructure like the "smart turnout"
- **Members:** ADIF, SBB, RFI, OBB, IP


RFID+AVRIS

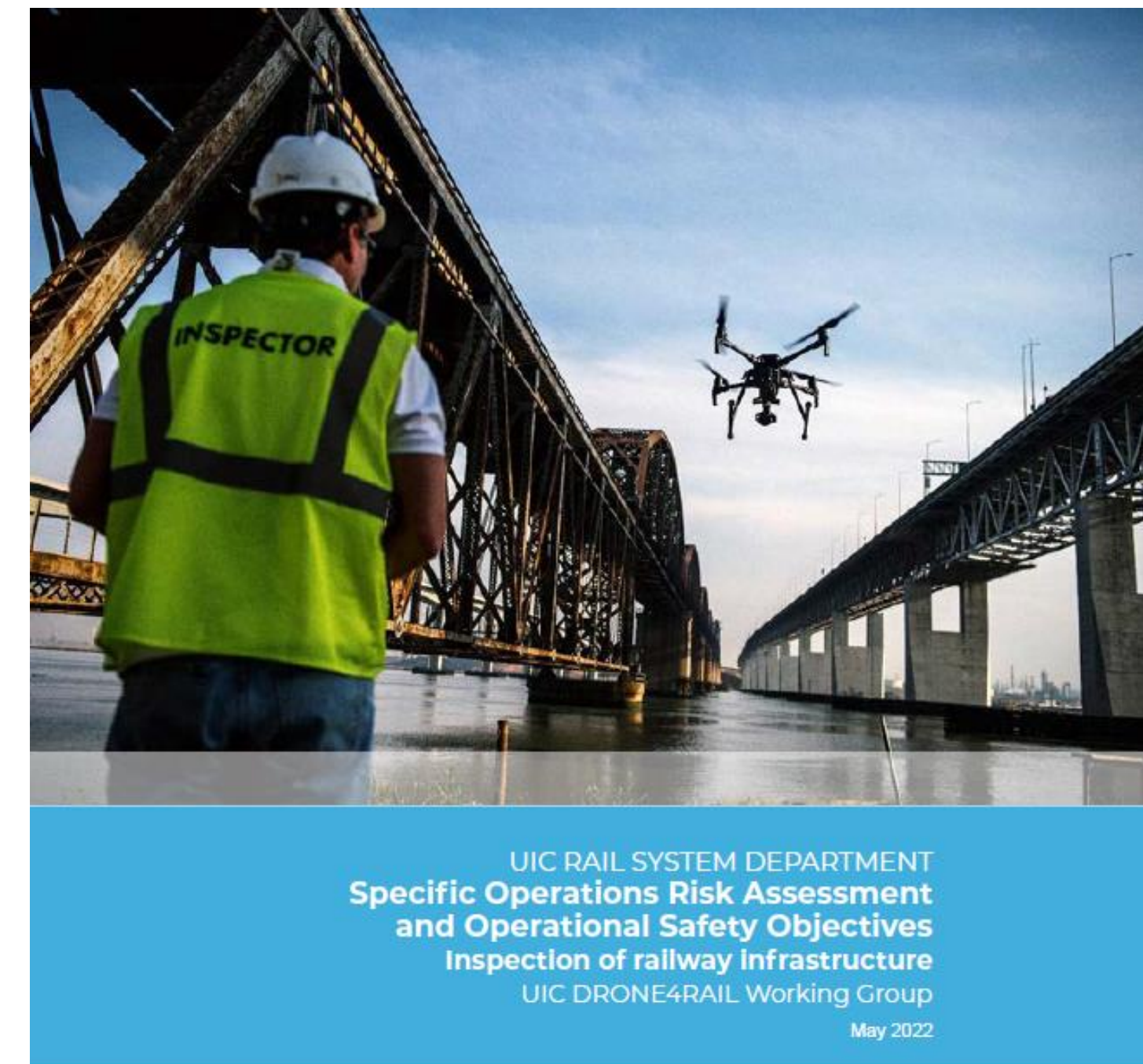
- **Objective:** to reinforce and facilitate the current inventory of track assets by progressing on the proper use of **RFID** tagging to identify and register infrastructure and track assets, thus becoming fully available and operational for the Railway Operating Community and providing guidelines of use for **Automated Video Railway Inventory Systems** which can be used to identify assets but also to assess condition complementarily to visual surface examination
- **Members:** ADIF, RFI, Infrabel, IP, BaneNor, NetworkRail, OBB



UIC Infrastructure PoSE D4R Bridges

D4R (Harmonized methodology for drone use for bridge inspections)

- **Objective:** Analyse hardware and software available and legal environment for bridges inspections through unmanned aerial vehicles (drones). Experimental studies in bridges. Procedures for the use of drones. Current trends of further development & other innovative technologies
- **Members:**

- **Deliverables:**
 - SORA and OSO published
 - Technical Document: Harmonized methodology for drone / UAV use for bridge inspections
 - Update of UIC leaflet “778-4 Defects in railway bridges and procedures for maintenance and strengthening” IRS 70778-4



UIC Infrastructure TEG D4R-PT

D4R/PT (Drone for Rail – Plain Track)

- **Objective:** Legal environment, update of software and hardware, use of UAV for plain track inspections and another singular assets

- **Members:**      

-     

- **Description:**
 - 2 years
 - European members
 - WPs
 - Stakeholders group



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Thank you for your attention.