



Europe's Rail Joint Undertaking

Conference on Rail Resilience to Climate Change

Panel II – Innovation for Rail Resilience

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Europe's Rail Joint Undertaking



Why rail needs resilience now ?

- **Climate change** is already testing **the limits** of rail infrastructure.
- Rail faced also **increasing digital threats, aging assets and funding gaps**.
- **Adaptation needed** to improve the resilience of railway assets by developing the knowledge of the railway domain.
- **Resilience is no longer an option!**



Innovation vs Rail Resilience

- Innovation is **one of the key drivers** for Rail Resilience! Not only technological innovation but also the evolution of the technical framework (e.g. Regulation, standardisation).
- Europe's Rail Joint Undertaking → Collaborative work to **deliver solutions**:
 - New materials and designs for climate stress
 - Real-time monitoring and improved asset management through satellite and IoT technologies
 - Automation and digitalisation of the rail system
 - Integrated resilience strategies to build-up the future rail system
- Innovations to be **tested and deployed** across Europe!
- Resilience must be embedded by design into every part of the rail system to get a **smarter and faster adaptation of the rail system!**



One integrated R&I programme

Private Members contribution, at least **€615 million**

EU contribution, up to **€615 million**

Flagship Areas :

- Traffic Management
 - Automation and digitalization
 - Integrated assets management
 - Sustainable technologies
 - Competitive freight
 - Cost-effective regional services
 - Innovation on guided transport
- + Launching **Exploratory calls**

- Ensure the functional system architecture
- Input to standards and regulations
- migration considerations



Bridge research and innovation
to future coordinated deployment

Europe's Rail Members





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**How can innovation ensure a more resilient rail system
– smarter, faster and more adaptive?**

Slido

Is the rail sector innovating fast enough to improve rail resilience and keep up with climate risks?



Thank you

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