The Rail Data Space within Europe's Rail Joint Undertaking

3rd Townhall meeting

July 2025

Call Recording

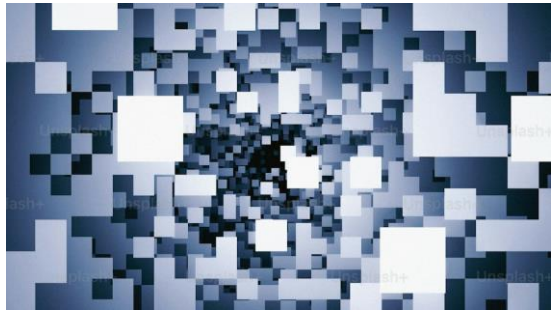
We capture the meeting for those unable to attend.
If you do not agree to the call being recorded,
please disconnect now.

Digital (data) challenges in the rail industry

Recap

Disruptions

- Disruptions in Rail operations
- Disconnected from other transport modes
- Supply Chain disruptions



Fragmentation of data

- Silos within and in companies
- Data storage and analysis based on individual use cases

Reluctance to share

- Security concerns
- Liability concerns
- Competitive concerns

Lack of interoperability

- Between data types
- Between standards
- Between data storages

Challenges result in underutilization of innovation potential

New approach needed!

Europe's Rail

FP1 MOTIONAL
European Rail Network and Mobility Management

A European Strategy for Data

Recap

The European data strategy aims to make the EU a leader in a data-driven society

LEGISLATION, THAT IS ALREADY IN PLACE

The **Digital Services Act** creates a safer digital space where the rights of all users of digital services are protected
Applicable since 16. Nov. 2022

The **Digital Markets Act** creates fair and contestable markets for innovation, growth, and competitiveness in the digital sector
Applicable since 17. Feb. 2024

The Data Governance Act creates a new way of managing data to increase trust in and facilitate data sharing
Applicable since 24. Sep. 2023

The **Data Act** regulates access to data in B2B, B2C, and B2G (business-to-government) relationships and while switching between cloud providers
Applicable since 22. Dec. 2023

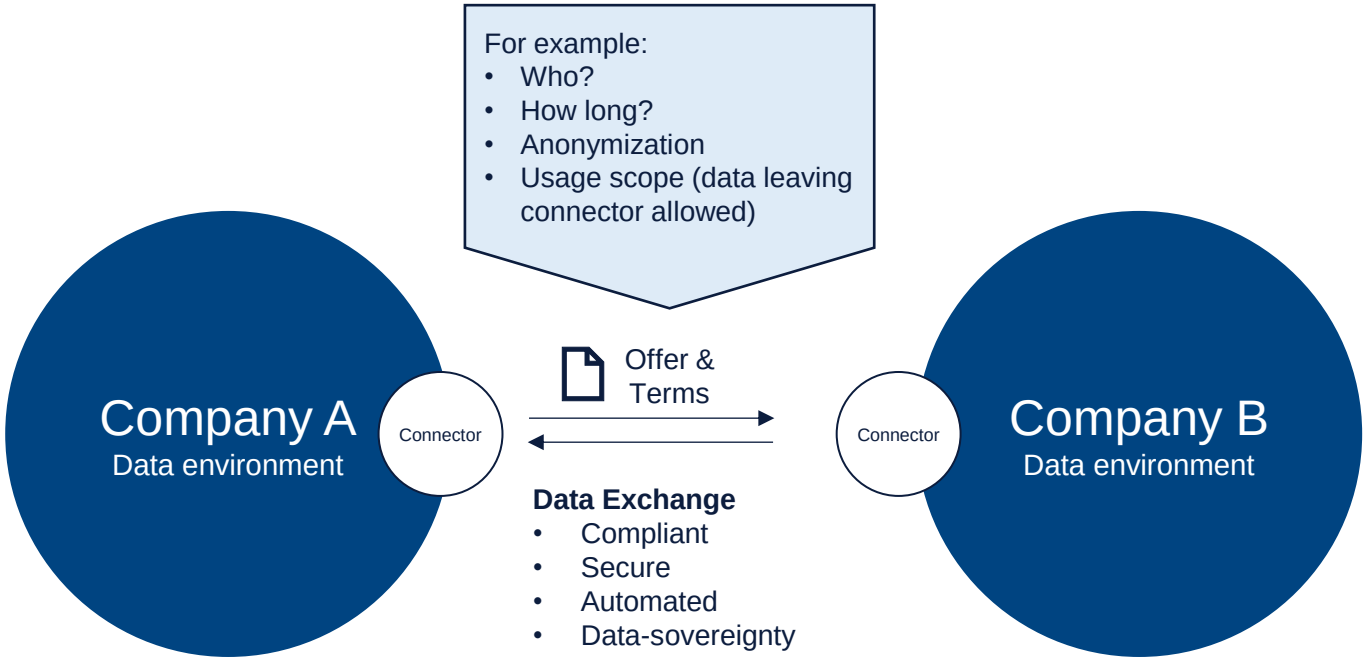
…. AND MORE TO COME!

*The **AI Act*** enacts stringent regulations of (high-risk) AI systems and prohibition of certain practices
Expected for 2026

Initiatives and €2 bn invest focusing on ecosystems and data sharing to create a single data market!

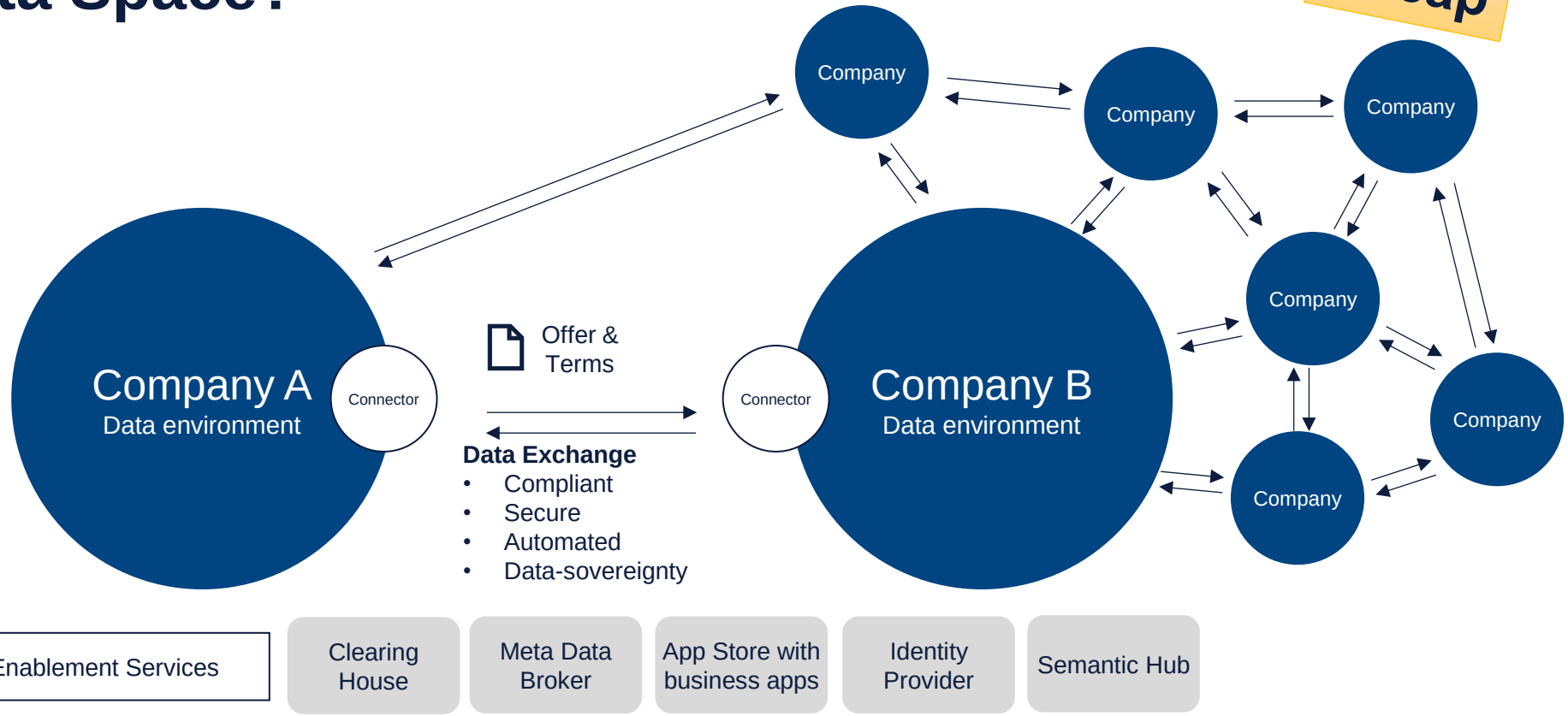
What is a Data Space?

Recap



What is a Data Space?

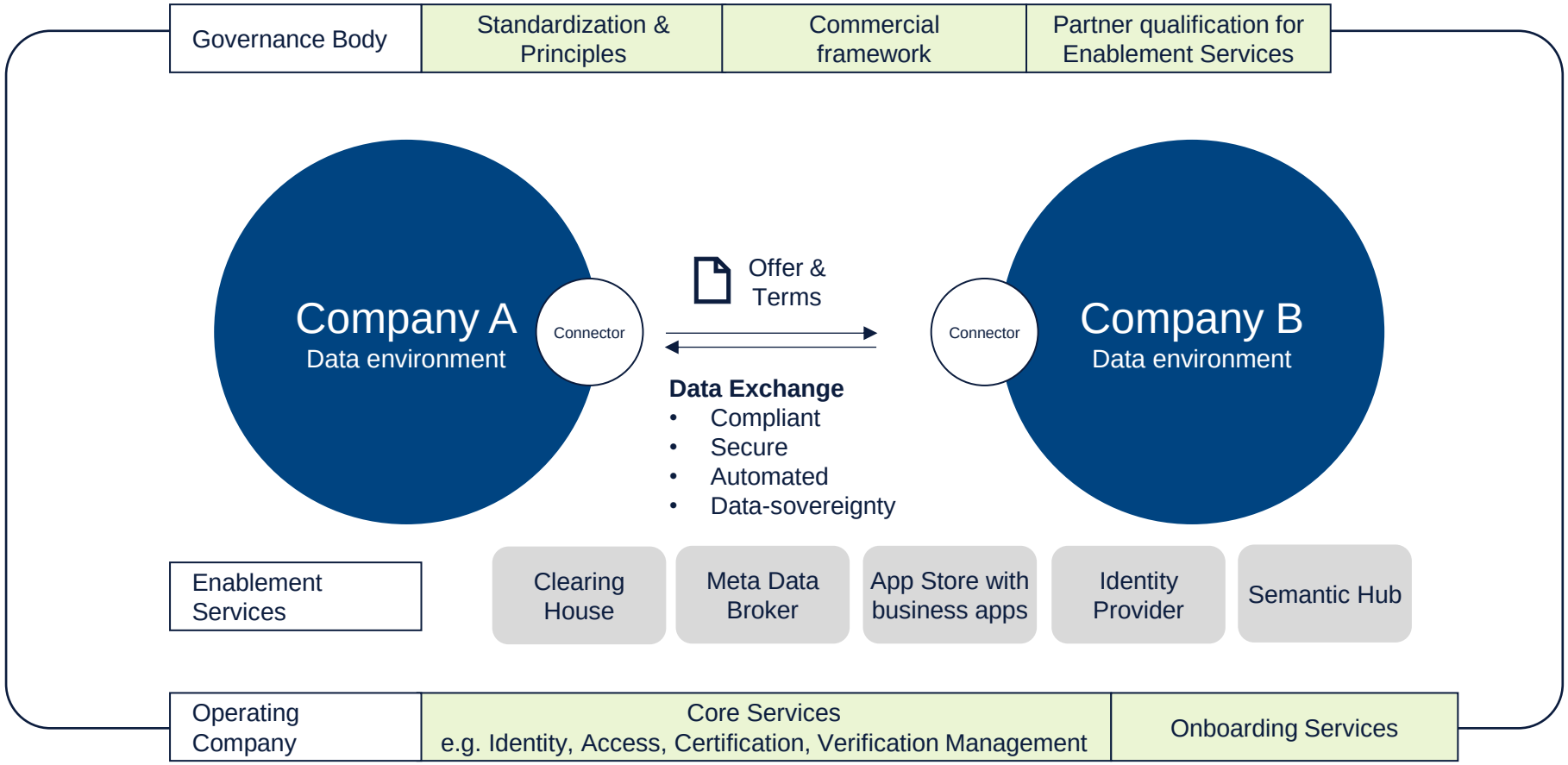
Recap



Enablement Services	Clearing House	Meta Data Broker	App Store with business apps	Identity Provider	Semantic Hub

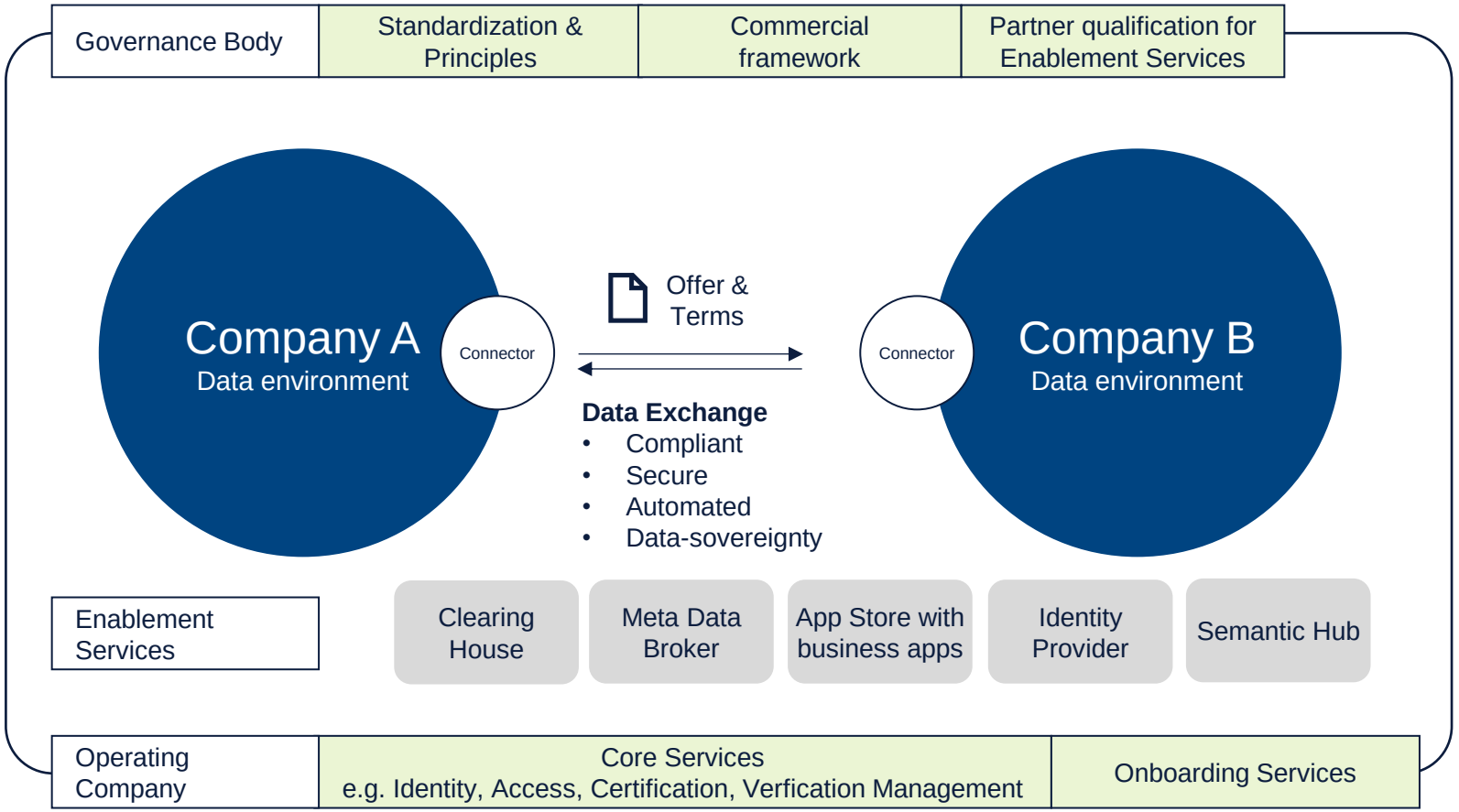
What is a Data Space?

Recap



Decentralized, open and secure Rail Data Space to drive Rail Innovations

Recap

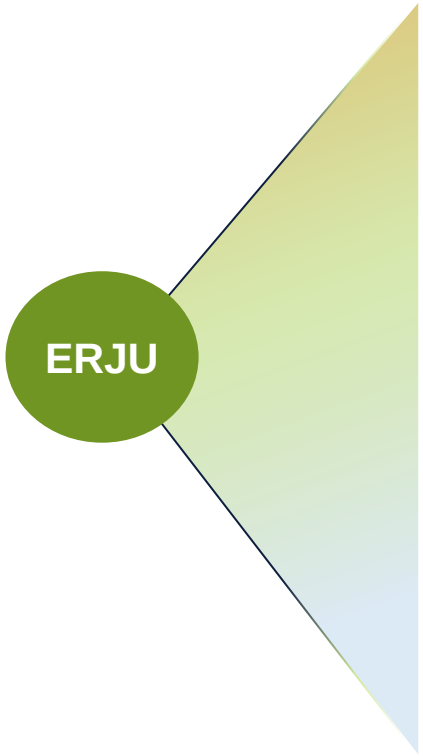


Benefits

- **Compliant with EU legislation** including EU Data Act
- **Maintain data ownership** by defining who can access data and under what terms
- **Full transparency and verification of data transactions**
- **Most efficient way to share data and create verified data chains** with multiple parties
- **Shared costs** of scalable data space infrastructure

Data Spaces unleashing the power of data

Status Quo



Technical Architecture design

Completed

- Define architectural design including ways of work, methodology, typology and framework
- Align core service and use case priorities within consortium to set up development environment

Use Case development

In progress

- Design format of use case development, conduct workshops on use cases, prioritize use cases for development
- Shape and align use case content within consortium

Governance Model design

Completed

- Design framework for operating and business model in alignment with all players to shape work after/ within second call
- Define respective roles within designed model and assign these

Rail Data Space ERJU FP1 Motional Consortium

ALSTOM, DB, DLR, Ferrovie dello Stato Italiane, Thales, Knorr-Bremse, mermec, Jernbane-direktoratet, renfe, SNCF, voestalpine, Wabtec Corporation

Demo

The first Use Cases are established to create the Rail Data Space

… with more Use Cases to follow.

Rail Infrastructure
Data Federation

Track and Positioning Regional
Lines & Data Yard Automation

Monitoring of Track Settlement and
Identification of Single-Faults in
Switches

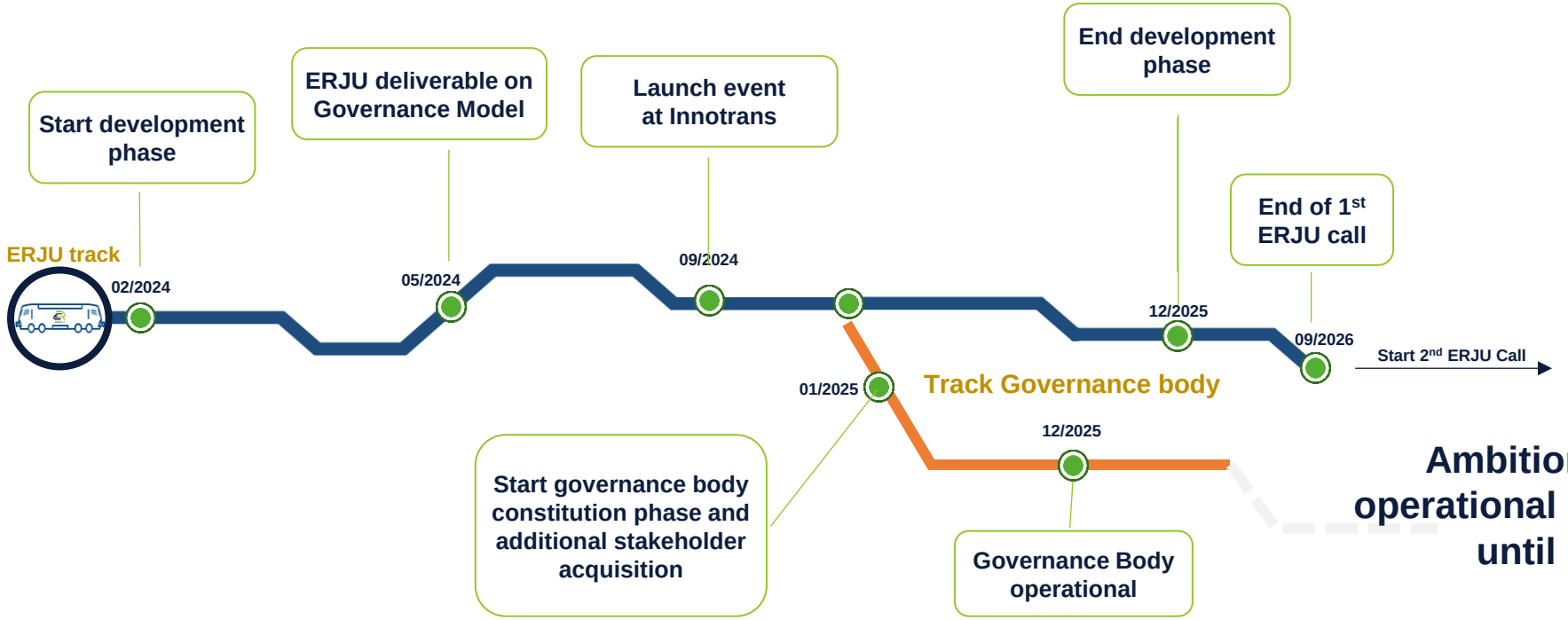
Use Case Backlog

Connection to App-Store

- Asset data completion / extraction
- Asset management
- Car-to-Cloud Data Ingest for System Supplier & Data Transmission of Actionable Information
- Carbon Footprint Monitoring
- Common Infrastructure and CCS Data for ESC checks in Laboratory
- Create more visibility on tracks to react in real time
- Cross-referencing of multisource weather data
- Data platform for structured documentation of objects and object information
- Data Sharing (Data Factory Context)
- Digital twin for braking/traction virtual acceptance
- Dynamic pricing algorithms
- Enhance infrastructure planning through empirical data
- Enhance slot management through empirical data
- Harmonized Digital Engineering Process and Data Exchange
- Include insights from operations into asset planning process
- Manage capacity dynamically
- ...

First use cases are being explored in the Living Lab sandbox with connector-to-connector data exchange and terms settings

Rail Data Space on track!



Ambition: Establish operational Rail Data Space until end 2026

<u>Important:</u> if you are interested to learn more about the governance body, please contact Meike van't Hoen (meike.vanthoen@knorr-bremse.com)

How to reach us

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