

Agenda Rail Data Forum 2025

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11 June 2025 - 11 June 2025

08:30 - 09:30

Registration & Welcome

09:30 - 12:00

Workshops

Please choose between 1 Workshop and/or a Masterclass.

Workshop 1

Practical Data Consumption

Take your SPARQL skills to the next level in this advanced workshop designed for practitioners who already grasp the basics and are ready to explore the full power of querying RDF data. This session will focus on complex query patterns, complex optimization techniques, reasoning, and real-world scenarios using data from ERA Knowledge Graph.

Participants will engage in hands-on exercises to practice advanced features like property paths, subqueries, aggregates, and federated queries using ERA Knowledge graph endpoint. You'll also explore strategies and tips for query performance tuning, working with named graphs, reference data from other sources (e.g., Publications office endpoint).

Pre-requisite: knowledgeable of RDF or semantics or have registered previously to the master class on 'SPARQL for Beginners'.

Resource & Material: [GitLab Link](#)

Speakers

- Ghislain Ateazing Project Officer ERA
- Jerónimo Padilla Senior IT Manager (RIS) and Deputy Team Leader RailNetEurope
- Luka Kalezić Data Scientist RailNetEurope

- Amine Chakir System Engineer SNCF Réseau – Route Compatibility Department

Workshop 2

Railway Data Modelling

This workshop will introduce participants to the principles and practices of data modelling and ontology engineering in the railway domain, supporting the development of interoperable, machine-readable data ecosystems aligned with EU digital rail initiatives. As the sector advances toward data-driven principles, semantic modelling becomes essential to represent complex railway infrastructures, positioning and location through the rail topology in a consistent manner. The railway infrastructure register will be an example to showcase how the micro-level was derived and integrated into the latest version of ERA ontology.

In this hands-on workshop, participants will explore the fundamentals of railway infrastructure data modelling using ontologies. This workshop will introduce how semantic technologies can be used to structure, integrate, and reason over complex railway infrastructure data.

By the end of this workshop, you'll be equipped to understand the key concepts and modelling choices of the ERA ontology, railway data in a way that is machine-readable, semantically rich, and ready for data-driven innovation in smart rail (infrastructure) systems.

No prior ontology experience required — just a curiosity for data, ontology and railway domain.

Resource & Material: [GitLab Link](#)

Speakers

- Dragos Patru Project Officer ERA
- Mathias Vanden Auweele Railway data freelancer MatData
- Gerben Schut Information Architect ProRail

09:30 - 10:30

Masterclasses

Please choose between Workshops and Masterclasses.

Masterclass A

Semantics for Beginners

Step into the world of meaning-driven data with this beginner-friendly master class on semantics. This session demystifies the key concepts behind semantic technologies and how they power the modern web, intelligent systems, and knowledge graphs. You'll learn how semantics help structure and interconnect data in ways that machines can understand — going beyond keywords to concepts. Through interactive examples and visual explanations, we'll introduce foundational ideas like ontologies, vocabularies, Resource Description Framework (RDF), and the Semantic Web stack, all without requiring a technical background.

Resource & Material: [Presentation](#)

Speakers

- Pierre-Antoine Champin Data Strategist W3C / Inria

Masterclass B

SPARQL for Beginners

Dive into the world of the Semantic Web with this hands-on masterclass designed for beginners eager to learn SPARQL, the query language of RDF data. This session will guide you through the foundations of Linked Data and how to extract meaningful insights using SPARQL.

Participants will explore real-world datasets, learn the basic structure of SPARQL queries, understand RDF triples, and get comfortable querying public knowledge graphs such as ERA Knowledge Graph, Reference data at Publications Office.

No prior experience with SPARQL or Semantic Web technologies is required — just a curiosity for data and a desire to learn!

Resource & Material: [Gitlab Link](#)

Speakers

- Vladimir Alexiev Chief Data Architect GraphWise

Masterclass C

Data Transformation (RDFisation)

This master class offers a deep dive into the construction of RDF knowledge graphs using declarative mapping languages such as RML (RDF Mapping Language), YARRRML, and other W3C-aligned technologies. The session will emphasize on scalable, reusable, and maintainable methods for transforming heterogeneous data sources into linked, machine-readable RDF graphs. Participants will explore the full lifecycle of knowledge graph creation — from understanding source data structures (CSV, JSON, XML, relational databases) to writing and executing mappings that produce semantically rich RDF output. Through guided hands-on exercises and real-world examples, you will gain practical experience in aligning data with vocabularies and ontologies, and publishing it as Linked Data.

Resource & Material: [GitLab Link](#)

Speakers

- Ben De Meester Postdoctoral researcher IDLab, imec - Ghent University

10:30 - 11:00

Coffee break

11:00 - 12:00

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12:00 - 13:15

Lunch break

13:15 - 14:00

Opening: Keynote Speeches

14:00 - 15:40

Session 1: Digitalisation in the Railway Domain

Towards a harmonised topology provision for RBC configuration with CCS TMS ERA ontology extension

Speakers

- Ralph Müller Program Manager Standardisation CCS DB InfraGO

Micro-Level modelling in ERA ontology

Speakers

- Ghislain Ateazing Project Officer ERA

Infrastructure Managers as data innovators

Speakers

- Rémi Collet Infrabel
- Linnea Olsen Project Leader Bane NOR
- Shahrom Sohi Digital Transport Specialist WU Vienna University of Economics and Business

Digitalisation as a game changer for the railways – Digital Capacity and Train Management

Speakers

- Harald Reisinger RNE CIO and CFO RailNetEurope (RNE)

Supporting vehicle data exchange

Speakers

- Gilles Peterhans Secretary General UIP – International Union of Wagon Keepers

15:40 - 16:10

Coffee break

16:10 - 17:50

Session 2: Advancing digital ticketing

EU policy on rail ticketing & mobility platforms

Speakers

- Yann Seimandi Policy Officer – Digitalisation & International European Commission (DG MOVE)

Towards interoperable ticketing in railway

Speakers

- Einar Bjørkevoll Lead Information Architect ENTUR

Towards Telematics Ontology

Speakers

- Ghislain Ateazing Project Officer ERA

Journey planning and Passengers with Reduced Mobility

Speakers

- Antonio d'Agostino Team leader ERA
- Einar Bjørkevoll Lead Information Architect ENTUR

- Daniel Casas Accessibility Policy Officer European Disability Forum (EDF)

17:50 - 18:00

Day 1 Closure - Concluding words

18:00 - 19:30

Cocktail reception

12 June 2025 - 12 June 2025

08:30 - 09:00

Welcome - Day 2 Opening

09:00 - 10:30

Session 3: Who needs Interoperable Data Anyway? Efficiency and practical implementation

Service Function Diagnostics & Data Sharing

Speakers

- Karl-Albrecht Klinge Europe's Rail

Asset management - Connecting systems

Speakers

- Matti Pesu Development Manager, Infrastructure Data Finnish Transport Infrastructure Agency

Rail Data from Ontology to Daily Use - Best practices derived from European and Worldwide projects

Speakers

- Vasco Paul Kolmorgen railML.org

Improved data sharing and AI-based Freight terminal efficiency

Speakers

- Roland Klüber CEO Consilis GmbH, representing UIRR s.c. UIRR

Digital Certificates at Notified Bodies

Speakers

- Emilio Cosciotti Vice-Chairman NBRail

Safety-related data collection and manipulation politics, methods and rules at Infrabel

Speakers

- Nicolas Gatez Key Data Scientist Signalling Infrabel

10:30 - 11:00

Coffee break

11:00 - 12:30

Session 4: The Future for Mobility Data in the European Union

European Mobility Dataspace

Speakers

- Fidel Santiago Policy officer European Commission (DG MOVE)
- Coen Janssen European Commission (DG CONNECT)

The Data Act & Interoperable Europe Act

Speakers

- Fidel Santiago Policy officer European Commission (DG MOVE)
- Marina Aguado Project Officer ERA

ERA Ontology and reference data in Publications Office

Speakers

- Anita Dutreuil Knowledge manager Publications Office of the European Union in Luxembourg

The Agency's Interoperable Data Program

Speakers

- Polymnia Vasilopoulou ERA

13:00 - 14:15

Lunch break

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Resource & Material: [GitLab Link](#)

Speakers

- Ben De Meester Postdoctoral researcher IDLab, imec - Ghent University

Masterclass D

Telematics for Beginners

This workshop offers a foundational overview of the European Union's Telematics Applications for Freight (TAF) and Telematics Applications for Passengers (TAP) Technical Specifications for Interoperability (TSI). The session will demystify how these specifications enhance data exchange and operational efficiency across European rail networks. The workshop will emphasize on how standardised data exchange improves interoperability between different rail stakeholders.

Duration 1h. Second part networking.

Resource & Material: [GitLab Link](#)

Speakers

- Stefan Jugelt Project Officer ERA
- Yann Seimandi Policy Officer – Digitalisation & International European Commission (DG MOVE)

16:00 - 16:30

Coffee break

16:30 - 18:15

Workshops

Please choose one Workshop

Workshop 3

The problem of positioning in railways - how can ontologies contribute to its solution

The workshop will mainly deal with the generic concept for locating railway infrastructure in micro, meso and macro level of detail and additionally, ontology as a tool for validating and verifying this concept (e.g. for Railway infrastructure ...).

This workshop is addressed to interested parties that want to bring railway infrastructure description into digitalised standardised format using topology models (e.g., ERA ontology) and markup languages (e.g., railML).

Speakers

- Dr Larissa Zhuchyi Ontology Researcher, railML.org, Dresden, Germany
railML.org
- Christian Rahmig railML.org

Workshop 4

Data Validation

As data quality becomes mission-critical in digital ecosystems, this workshop focuses on how semantic technologies can be used to validate data effectively and declaratively. Participants will explore how RDF data can be validated using technologies like SHACL (Shapes Constraint Language) and SPIN, enabling consistency, compliance, and interoperability in knowledge graphs and Linked Data applications.

Through hands-on examples, this workshop will teach participants how to define constraints on data models, detect errors or inconsistencies, and integrate validation into data pipelines — all using semantic web standards.

Resource & Material: [GitLab Link](#)

Speakers

- Veronika Heimsbakk Knowledge Graph Lead Capgemini
- José Emilio Labra Universidad de Oviedo

Workshop 5

Linked Data supporting Vehicle Authorisation

This hands-on workshop explores how Linked Data and Semantic Web technologies can streamline and enhance the railway vehicle authorization process across borders and systems. Aimed at professionals in rail transport, regulatory bodies, and data engineering, the session focuses on applying RDF, ontologies, and Linked Data principles to model, share, and validate vehicle data in

alignment with EU Rail interoperability regulatory frameworks.

Participants will learn how to represent key vehicle characteristics, compliance documentation, and authorization workflows using semantic models, improving data interoperability, traceability, and machine-readable compliance checks.

Resource & Material: [GitLab Link](#)

Speakers

- Maarten Duhoux Project Officer ERA
- Philipp Wachsmuth IT & AI Strategist Vehicle Authorization Siemens Mobility GmbH

Workshop 6

Digitalisation of Driver/Signaller communication

This workshop focuses on the digital transformation of Driver-Signaller communication in the railway sector, a critical area for enhancing safety, efficiency, and interoperability across rail networks. As part of broader efforts in railway digitalisation, the session explores how structured data, semantic technologies, and communication standards can modernise traditional voice-based exchanges.

Participants will examine how communication events can be digitised, modelled, and validated — enabling better traceability, automation, and integration with operational systems such as traffic management, safety reporting, and driver advisory platforms.

Speakers

- Antonio d’Agostino Team leader ERA
- Luca Vitiello SysCo

Workshop 7

Dynamic digital timetable for rail services in the Union

This workshop explores the vision, challenges, and technical enablers of implementing dynamic digital timetables for rail services across the European Union. As mobility becomes more data-driven and passenger expectations evolve, the rail sector must move to deliver a real-time, interoperable, and machine-readable timetables that support seamless journey planning, operational efficiency, and multimodal integration.

Participants will learn how semantic technologies, Linked Data, and European standards can support the creation, distribution, and querying of dynamic timetable information — enhancing transparency and enabling innovation across national systems.

Resource & Material: [GitLab Link](#)

Speakers

- Yann Seimandi Policy Officer – Digitalisation & International European Commission (DG MOVE)
- Einar Bjørkevoll Lead Information Architect ENTUR

- Patrick Konix RailNetEurope
- Patrick Heuguet UIC

18:30 - 22:30

Networking dinner

13 June 2025 - 13 June 2025

09:00 - 10:30

Workshop feedback

10:30 - 11:00

Coffee break

11:00 - 12:00

Concluding remarks and Conference Closure