EUROPEAN UNION AGENCY FOR RAILWAYS

webinars

European Data on Rails: the Linked Data Project

28 October 2021 16.00 [CET]

EUROPEAN UNION AGENCY FOR RAILWAYS

Speakers

Hans Schmidt

Compatibility Officer Rolling Stock at ProRail. Chairman EIM WG Rolling Stock

European Rail Infrastructure Managers EIM

David Dowey

Head of Data, Information and Knowledge Management Sector in DG-DIGIT

European Commission

Ivo Velitchkov

Linked Data Consultant and Trainer working with DG-DIGIT

European Commission

Henk Mulder

Head of Digital Cargo at IATA. Team lead for the Semantic Modelling in DTLF

IATA DIGITAL TRANSPORT & LOGISTICS FORUM

EUROPEAN UNION AGENCY FOR RAILWAYS

Speakers

Hugues Delsoir

Team Leader

Data and Information Governance

EUROPEAN UNION AGENCY FOR RAILWAYS

EUROPEAN UNION AGENCY FOR RAILWAYS

Have you ever thought about your next train experience as …

« Shall my trip be safely ensured within an interoperable European Railway network ? »

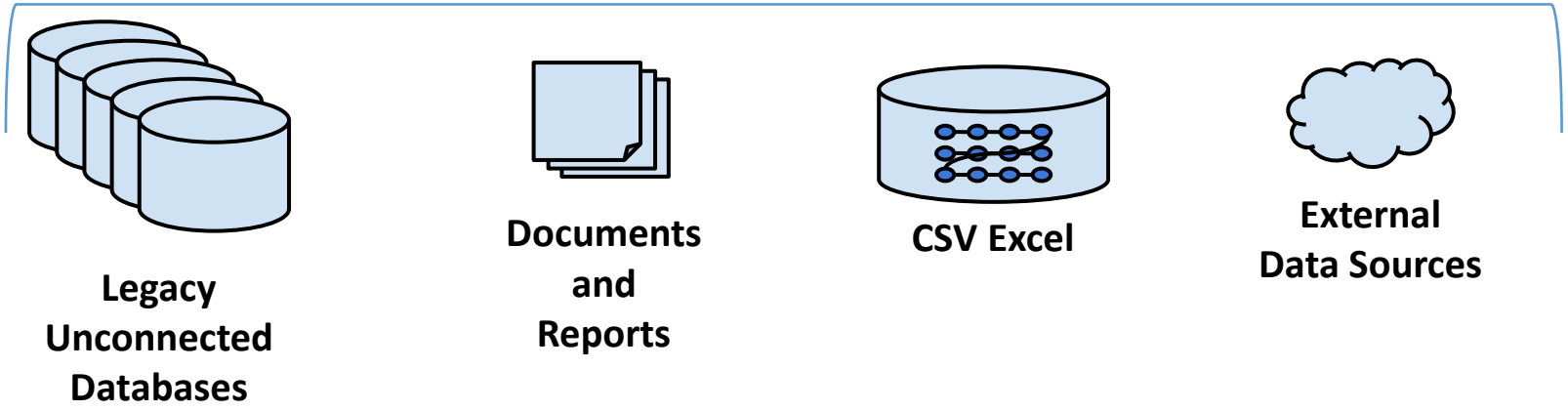
… or do you care being on time ?

ERA's Mission:

Make the railway system work better for society

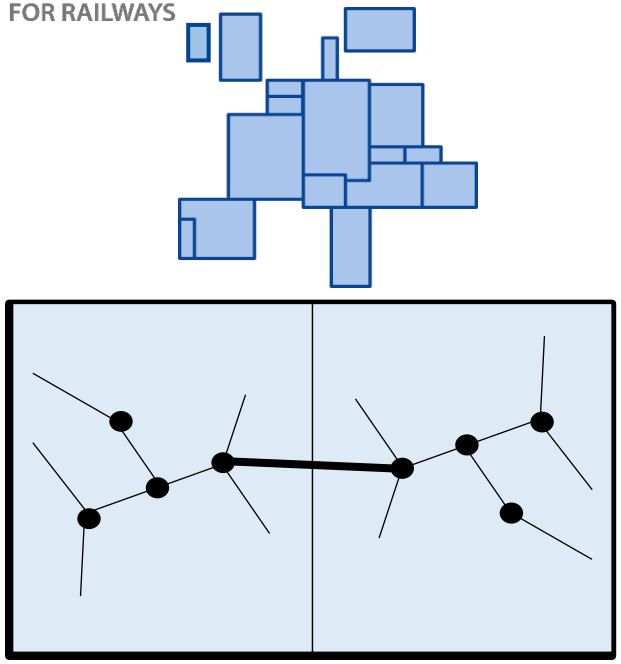
- Contribute to the effective functioning of a Single European Railway Area without frontiers
- Areas : safety and interoperability

Evergrowing DATA ecosysstem

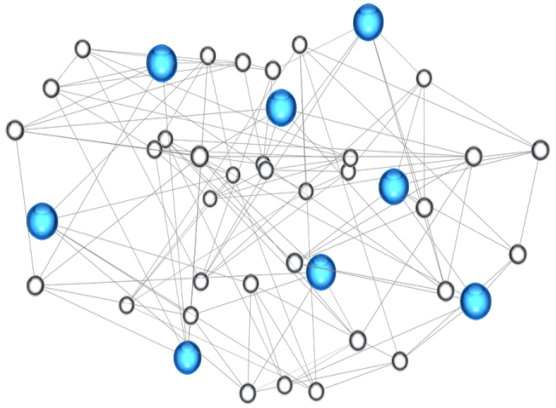


EUROPEAN UNION AGENCY FOR RAILWAYS

Data are key in optimizing Railway operations in SERA



Single Rail Area - harmonised specification
Operators work seamlessly across borders (in competition)



Connected Data

Go everywhere operators and rail vehicles - Single Safety Certification and EU wide Authorisation (4 RP)

True **harmonisation of operations** at EU level - **OPE TSI 2019 revision** and elimination of national rules

Increased interoperability and ERTMS game changers - TSI 2022 revision

*Make the railway system work better for a **digital society** - Agency as the authority for sectorial reference data*

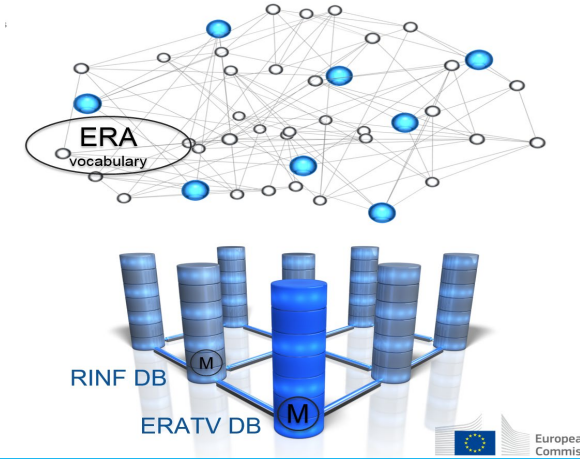
Agency´s digital vision : from siloed to connected data

Application Centric

Before2019

*ERA Hosting **siloed** Registers, Reports, Safety Performance indicators*

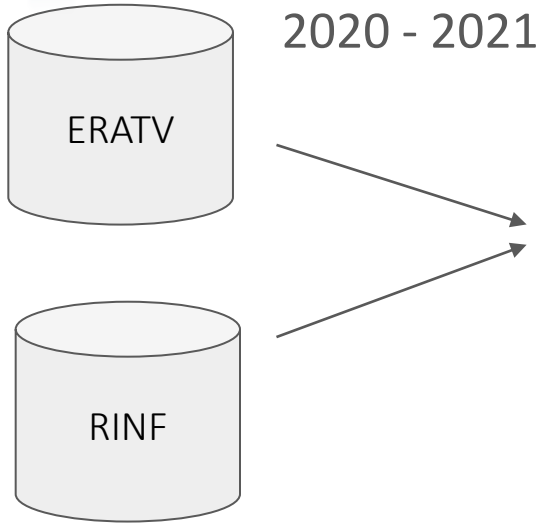
2020 - 2021

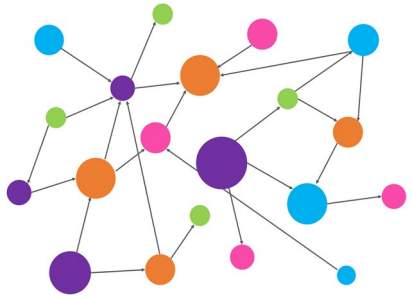


Data & User Centric

Data HUB
Governance of Reference Data
Facilitating Data Exchange of those key datasets
+
Monitoring Data Exchange

2020 - 2021 : 1st use case : Route Compatibility Check





Linked Data
Knowledge Graph

Question 1: Is this type of vehicle compatible with this route ?
Question 2: Which routes from A to B are compatible my vehicle ?

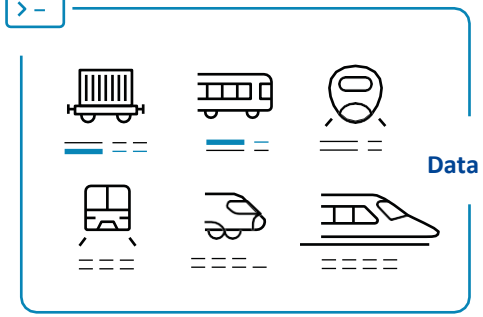
EUROPEAN UNION AGENCY FOR RAILWAYS

The Route Compatibility Check use case

European Register of Authorised Types of Vehicles (ERATV)

Types of railway vehicles authorised by ERA or the Member States

Application

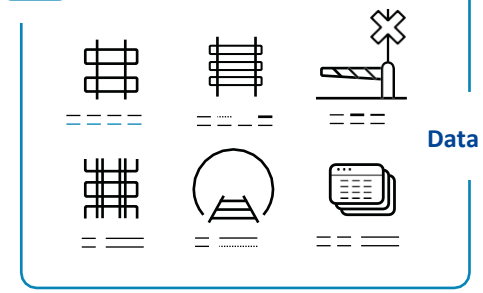


Data Base

Data models are hidden in the application layer

No connection

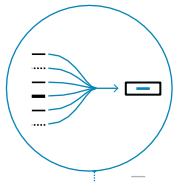
Application



Data Base

Register of Infrastructure (RINF)

Register of infrastructure, stating the values of the network parameters of each subsystem or part subsystem concerned

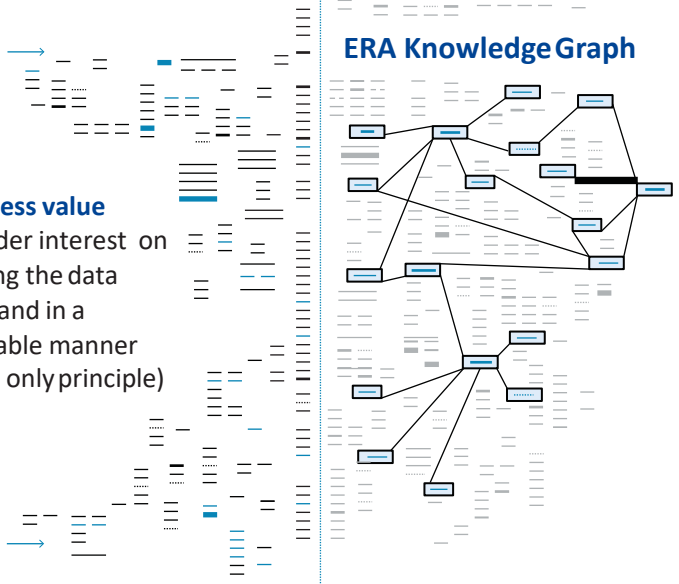


ERA Ontology

Semantic Vocabulary

Transformation in a common understanding language

ERA Knowledge Graph



Business value

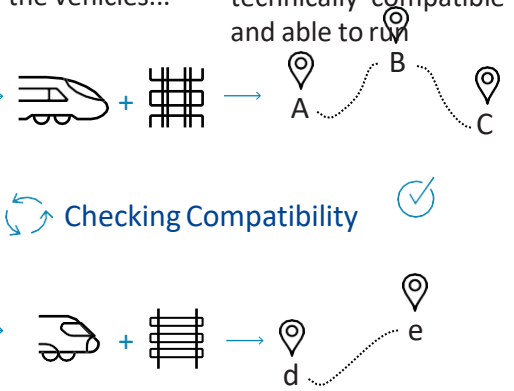
Provider interest on sharing the data once and in a re-usable manner (once only principle)

First step to extract "operational" value from ERA Registers

Route Compatibility Check

Find and analyse the information for the network topology and the vehicles...

...to automatically expose all the potential routes where a type of vehicle is technically compatible and able to run

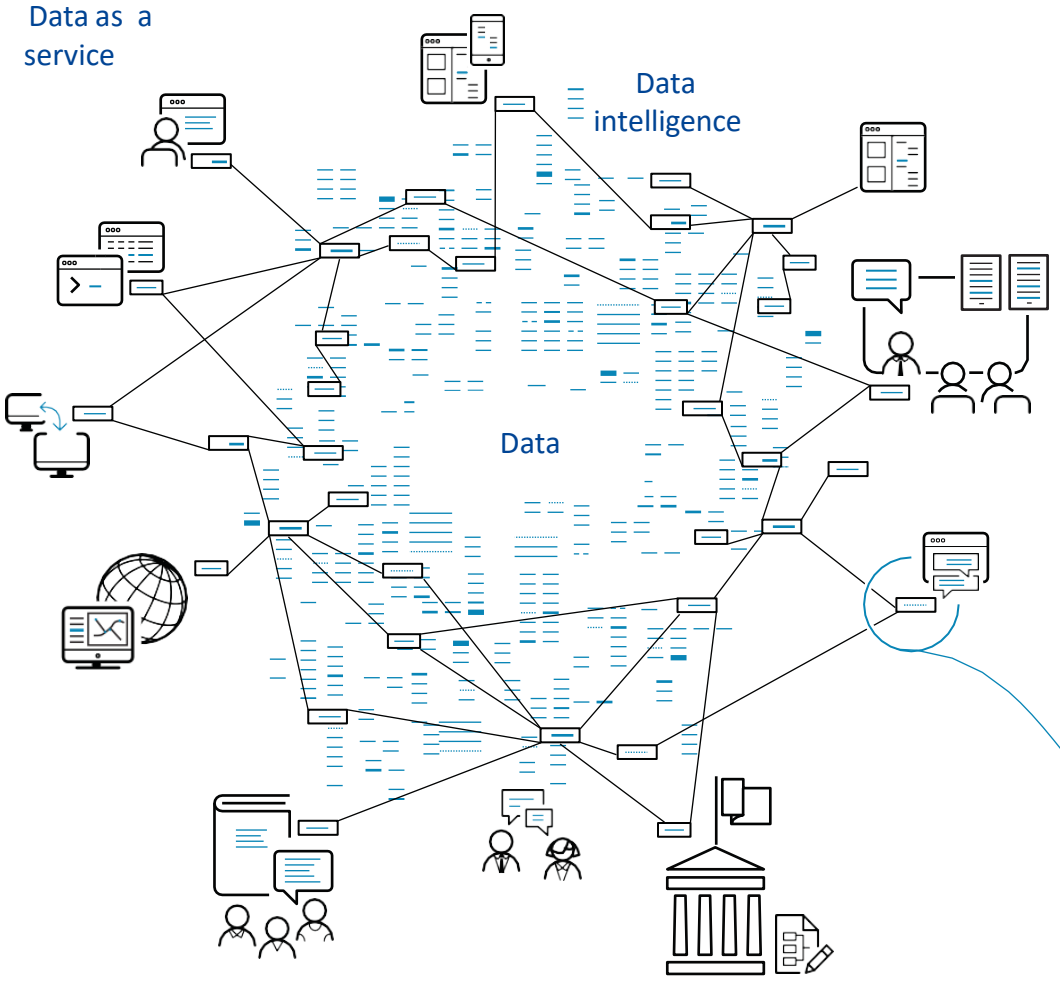


Users

The tool provides support for the planning activity within the operational railway cycle via a web app, a simple user interface consuming the data of a knowledge graph

ERA route towards a data driven and data centric organisation

Data Centric Organization



Ontology

22 classes

318 properties

Reference Data = Controlled vocabulary

54 SKOS managed taxonomies

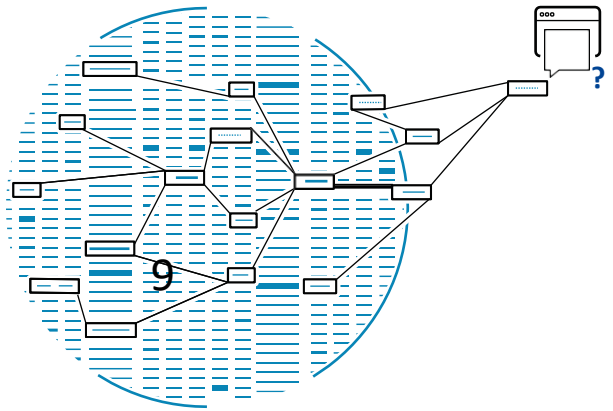
Knowledge Graph + query services

~26 millions triples

Route Compatibility Check app

To be released SOON

Web of data
not web of documents **URI granularity**



New queries are made possible (federated queries)

New use cases for the Agency

- Add new data sets (internal)

Link to external databases

- Add new data sets (external)

Sector to find new use cases

EUROPEAN UNION AGENCY FOR RAILWAYS

Speakers

Hans Schmidt

Compatibility Officer Rolling Stock at ProRail. Chairman EIM WG Rolling Stock

European Rail Infrastructure Managers EIM

David Dowey

Head of Data, Information and Knowledge Management Sector in DG-DIGIT

European Commission

Ivo Velitchkov

Linked Data Consultant and Trainer working with DG-DIGIT

European Commission

Henk Mulder

Head of Digital Cargo at IATA. Team lead for the Semantic Modelling in DTLF

IATA DIGITAL TRANSPORT & LOGISTICS FORUM

European Rail Infrastructure Managers EIM

RCC overview -IM perspective

ERA Webinar : European Data on Rails

Date: October 28th, 2021

Hans SCHMIDT - EIM WG Rolling Stock

The purpose of this presentation is to provide the sector with a big picture of the current RCC status from Infrastructure Managers' perspective.

EIM WG Rolling Stock:

Active participants IMs from:
Belgium, Finland, France, The Netherlands, Norway and Sweden

Focused on European developments:
Vehicle authorisation process, TSI Loc&Pas/WAG and RCC

RCC Process currently taking place

- In theory, the process is applied according to the regulations in force.
- In reality, each Member State is at a different stage concerning the RCC process.
- IMs, in general, do not have insight into how RUs apply the RCC procedure and how many real/complete route compatibility checks have been done in the parameters of their network.
- IMs are currently continuing their efforts to complete missing data in RINF.
- IMs are taking feedback from users in case irregularities are detected.

RCC Process – Changes introduced post 4th Railway Package

European Rail Infrastructure Managers EIM

Main changes and ambiguities:

- Roles: have been well defined.
- Tasks (attributed to each role): are still having clarifications being made/discussed.
- Tools: have been improved meanwhile ambiguities in interpretations of content/parameters, interfaces and juridical status exists.
- Processes: work has been done to better define them.
  But not defined/ambiguities in handling for when comparing registers is not sufficient and more thorough control is required.

Situation IM France differs from other IMs:

- Responsibility for RCC was at IM France before, so transition to RU needed.
- IM France therefore ahead in guiding information/training on RCC and RINF.

Challenge to perform RCC with a crossborder/international scope

- Multiple interpretations to multiple items have been found.
  This is a challenge since it takes time and resources to find a common understanding.
- Up until recently there was no specific group to talk about the technical aspect of RCC.
- The groups to approach RCC process technical issues are more oriented in data science (IT mindset) concerning RCC.
- Arbitration is needed to provide the correct answer on a difference of opinions.
- Accountability concerning the quality of the data in ERATV and RINF is an issue.

IMs continue their efforts to accomplish a harmonized interpretation or common understanding of the definitions of the items/processes established for RCC.

Opportunities/Challenges from an IM perspective.

Opportunities:

- Accessible data facilitates benchmarking.
- Having the data accessible allows to have a direct view of how other IMs are working.

Challenges:

- Data quality/accountability.
- Arbitration when there is a difference of opinions.
- Objective cross examination/verification if data provided complies with data defined.

An opportunity for the future is to make an effort to extend the current working group to treat business cases for RCC, ERATV and RINF to more concerning the technical operations perspective of RCC.

European Rail Infrastructure Managers EIM

Any Questions?

Javier.moreno@eimrail.org

Hans.schmidt@prorail.nl

Karla.sanchez@reseau.sncf.fr

EUROPEAN UNION AGENCY FOR RAILWAYS

Speakers

Hans Schmidt

Compatibility Officer Rolling Stock at ProRail. Chairman EIM WG Rolling Stock

European Rail Infrastructure Managers EIM

David Dowey

Head of Data, Information and Knowledge Management Sector in DG-DIGIT

European Commission

Ivo Velitchkov

Linked Data Consultant and Trainer working with DG-DIGIT

European Commission

Henk Mulder

Head of Digital Cargo at IATA. Team lead for the Semantic Modelling in DTLF

IATA DIGITAL TRANSPORT & LOGISTICS FORUM

EUROPEAN UNION AGENCY FOR RAILWAYS

Speakers

Hugues Delsoir

Team Leader

Data and Information Governance

EUROPEAN UNION AGENCY FOR RAILWAYS

EUROPEAN UNION AGENCY FOR RAILWAYS

Speakers

Christopher Carr

Head of Executive and Communication Unit

EUROPEAN UNION AGENCY FOR RAILWAYS

EUROPEAN UNION AGENCY FOR RAILWAYS

Give us your feedback

EUROPEAN UNION AGENCY FOR RAILWAYS

Upcoming Free Webinar

25 November, 11-12h [CET]

Managing Cybersecurity Risks in Railways

EUROPEAN UNION AGENCY FOR RAILWAYS

enisa THE EU CYBERSECURITY AGENCY

Give us your feedback

EUROPEAN UNION AGENCY FOR RAILWAYS

EUROPEAN UNION AGENCY FOR RAILWAYS

Making the railway system work better for society.

Follow us on ERA_railways

Discover our job opportunities on **era.europa.eu**

ISO 9001:2015
BUREAU VERITAS
Certification