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The Interoperable Europe Act (IEA) : Unlocking Cross-Border Rail Data Interoperability

Marina Aguado (IEA coordinator @ERA)
12th May 2025



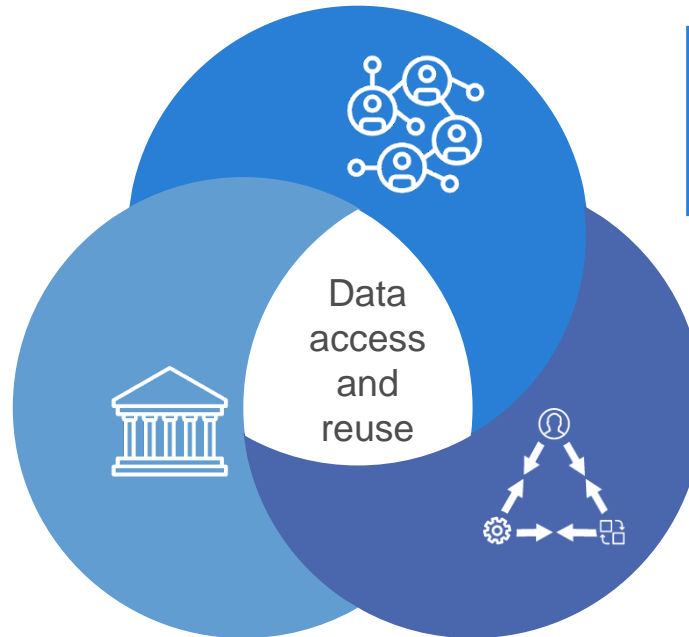
EUROPEAN
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European Data Strategy 2020 (5 years later)

Open Data Directive

More public data for innovation.
High Value Datasets for SMEs.



Data Governance Act

Increasing trust in **voluntary** data sharing, strengthening mechanisms to promote data availability.

Data Act

Unlocking a wealth of **industrial data** in Europe, creating a solid and fair data-driven economy.

Without prejudice to the GDPR

Policy goal - Creating a single European market for data

Open Data Directive

2019

EU Data Strategy

2020

Data Governance Act

2022

High Value Datasets

Feb 2023

Data Act

Jan 2024

Interoperable
Europe Act

Mar 2024

The Interoperable Europe Act



EU data policy places interoperability at the core of digital transformation.



5.5 billion € savings IEA impact assessment report
Public services lead this transformation as a large part of Europe's data ecosystem impacting key sectors



Rail data services interoperability is crucial.

The Interoperable Europe Act establishes principles and obligations directly impacting the railway sector.

A common approach to data interoperability

The Interoperable Europe Act

Digital
Ready
Policy
Making

Interoperable Europe Act in a nutshell

Helps EU and Member State administrations to deliver connected digital services to citizens and businesses across Europe

What? Digital public services and their systems

All services requiring cross-border data exchange in EU

Who? Union entities and public sector bodies

All entities that provide or manage digital public services

Why? Better public services

Assess interoperability before binding decisions

When? Entry into force in April 2024

Application after 3 months, except for Article 3 and 17 where application is after 9 months

Public Sector Bodies & Union Entities

who



A **public sector body** can be:

- State, regional, or local authorities
- Bodies governed by public law
- Associations formed by one or more of these authorities or bodies



Union Entities can be:

- Union institutions, bodies, offices, and agencies set up by or based on key European treaties

Type of Actor

National
infrastructure
managers (public)

Rail safety
authorities (NSAs)

Rail regulators

Ministries of
Transport

Publicly owned
operators (non-
commercial)

Covered?

✓ Yes

✓ Yes

✓ Yes

✓ Yes

✓ Likely

Trans European Digital Public Services

Need to meet **two requirements**:

1st

Must be provided by Union entities or public sector bodies

2nd

Need to involve cross-border interaction, either between Member States or between public sector bodies and Union entities

This means we're looking at **how data is shared**, where it comes from, and where it goes

A digital public service must be provided by a public sector body or Union entity, **not a private company**

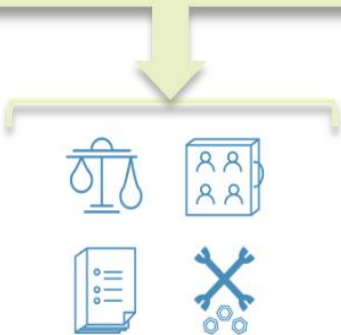


provided by Union entities or public sector bodies to one another or to natural or legal persons in the Union, and requiring interaction across Member State borders, among Union entities or between Union entities and public sector bodies, by means of their network and information systems;

Binding Requirements

BINDING REQUIREMENTS

Rules that Member States and organizations must follow to **ensure digital public services work smoothly** across borders



Origin of binding requirements



Laws



Regulations



Official Documents

A **cross-border train service** must be operated by a **railway undertaking** that holds a **valid safety certificate** in **all countries** it operates in.

Rule: Cross-border service safety certificate check
IF:

TrainService.isCrossBorder = true

AND

FOR EACH country IN

TrainService.countriesOfOperation:

NOT country IN Operator.validSafetyCertificates

THEN:

Result = "Non-compliant: operator lacks safety certificate in at least one country"

ELSE:

Result = "Compliant"

```
ex:CrossBorderServiceShape
a sh:NodeShape ;
sh:targetClass era:CrossBorderService ;
sh:property [
  sh:path era:operatedBy ;
  sh:node ex:CertifiedUndertakingShape
];
sh:message "Operator of a cross-border"
```

```
ex:CertifiedUndertakingShape
a sh:NodeShape ;
sh:property [
  sh:path era:hasSafetyCertificateIn ;
  sh:qualifiedValueShape [
    sh:path era:countryOfOperation ;
  ];
  sh:qualifiedMinCount 1 ;
```



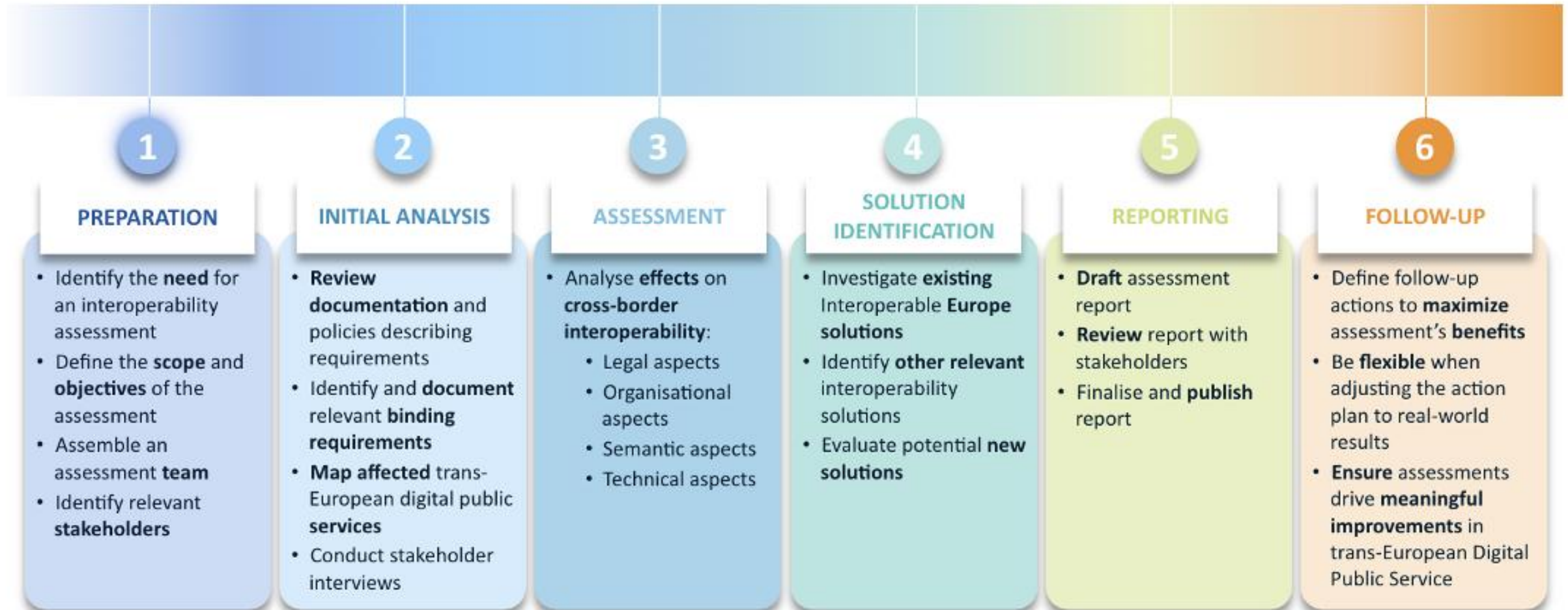
Interoperability Assessments

“Before taking a decision on new or substantially modified binding requirements, a Union entity or a public sector body shall carry out an interoperability assessment”
Art. 3 Interoperable Europe Act

‘binding requirement’ means

- an obligation, prohibition, condition, criterion or limit of a legal, organisational, semantic or technical nature,
- which is set by a Union entity or a public sector body
- concerning one or more trans-European digital public services and
- which has an effect on cross-border interoperability.

Interoperability Assessments



Interoperability Assessments

3 Assessment

Do these binding requirements help or hold back interoperability?



Legal

- Ensuring **consistency** with existing **laws and regulations**
- Evaluating **potential conflicts**, especially with EU policies and the General Data Protection Regulation (GDPR)



Organisational

- Evaluating how the **requirements help public organisations align processes** to provide seamless trans-European services



Semantic

- Ensuring **data exchanged** across borders remains **meaningful and understandable**



Technical

- Assessing if the requirements enable **secure and proper interconnection between parties** to provide digital services



Interoperability Assessments

4 Solution Identification

Why is it relevant to find reusable solutions?

- Frameworks
- Standards
- Technical components that have been vetted for cross-border interoperability

Research and explore the Interoperable Europe solutions



Explore the **Interoperable Europe Portal** to find more solutions

Evaluate and select relevant solutions:

- By identifying reusable solutions early, you save time and money while improving interoperability

The Interoperable Europe Portal

Interoperable Europe Portal



Guidelines for IOP Assessments



European Interoperability Framework (EIF)



EIF Toolbox



Better Regulation Guidelines



Interoperable Europe Academy



The Interoperable Europe Act

updated activities

Key developments since Feb 2025 at EC level

1. Launch of the **Interoperable Europe Community**

→ To facilitate the practical implementation of interoperability solutions

2. Interoperable **Europe Academy Seasonal School 2025**

3. Once Only Technical System **(OOTS) Catalogue of Reusable Services**
eDelivery, eID, eSignature

4. **Interoperability Regulatory Sandboxes**

→ they provide controlled environments for testing innovative interoperability solutions supporting the development of trans European digital public services.

5. Available **IT tool** for the Interoperable Assessment and [first assessment](#) available

The Interoperable Europe Act @ ERA

The **Interoperable Assessment** is triggered :

- at policy design stage
- in the procurement process – when procuring digital solutions that may affect interoperability with other MSs systems
- at TSI change request level
- at IT project development or modification of an existing one

Actors & processes involved :

1. Portfolio Management
2. Tigger Team
3. Procurement
4. IMCS rule

Portfolio under the radar :

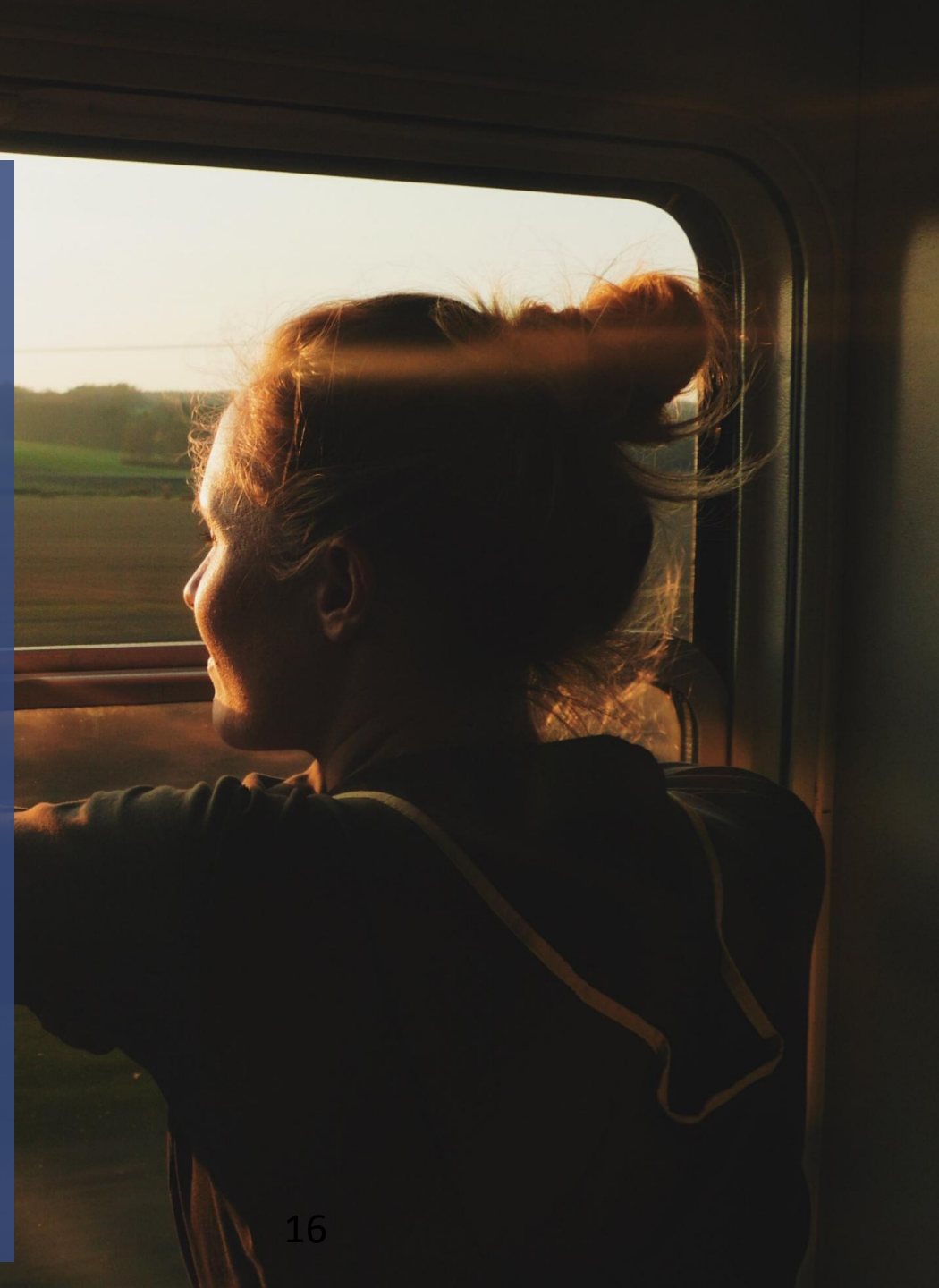
(CSM ASLP, capacity regulation, telematics revision, machine to machine interface with MSs for OSS, Registers..)

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The Interoperable Europe Portal



⚡ BROWSE BY MAIN TOPICS



Semantics

Discover how semantics facilitates the data reuse.



Open Source Software

Discover the power of open source software in the development of European digital public services.



Observatories

Explore the reports on the state of play of digital public administration and interoperability activities.



Digital-ready policymaking

Digital-ready policymaking considers digital aspects from start to finish to create policies that are future-proof and interoperable.



Tools

Discover the tools and specifications to help achieve interoperability in the EU digital public services.



Reusable Software Components

Discover reusable software, services and specifications to facilitate interoperability in digital public services.



Smart cities

Discover how "Smart Cities" contribute to the well-being of their citizens and businesses.



Digital innovation

Discover how innovation (AI, Blockchain, GovTech) plays an important role in serving citizens better.

Open Source Tools ex.

Last update: 24/04/2024

EU Digital Identity Wallet

The European Digital Identity Framework harmonizes authentication to digital services and enables sharin...

Semantics

Open Source Software

+2 topics

3 Solution

Last update: 13/02/2024

Once-Only Technical System (OOTS)

The Once-Only Technical System (OOTS) streamlines data retrieval for cross-border procedures, enhancing trust,...

Collaboration

2 Solution

Last update: 13/02/2024

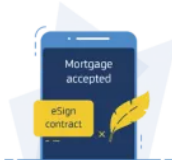
eID

The eID Building Block enhances cross-border digital services in the EU by enabling secure electronic...

Reusable Software Comp...

eIdentity and eSignature


1 Solution



Last update: 13/02/2024

eSignature


The DIGITAL eSignature Building Block enables electronic signatures in compliance with the eIDAS...



Last update: 20/02/2024

eDelivery

Secure, interoperable data/document exchange across EU borders using AS4 Access Points, promoting...



Last update: 13/02/2024

eInvoicing

The eInvoicing Building Block boosts EU eInvoicing, adhering to EU standards for economic benefits. It aids...