

INSPIRE Data as base for the National Transport Planning

Workshop “Use of INSPIRE data: past experiences and scenarios for the future”

Warsaw, 27-28 November 2018

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A little bit of context

INSPIRE GRI-TN main milestones

HERMES project

Spanish National Transport & Infrastructure Innovation Plan 2018-2020

Use of GRI-TN dataset

Expected use

Additional tasks

Advantages of using GRI-TN dataset

Challenges

A little bit of context



INSPIRE GRI-TN (Spanish dataset): main milestones

HERMES Project

National Transport & Infrastructures Innovation Plan 2018-2020

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INSPIRE TN Data: main milestones (production)



2006

Cartociudad project starts

- Collaborative project lead by IGN
- Continuous road network with marker points
- Urban mapping and toponymy
- Post codes
- Census districts and tracts

A little bit of context



INSPIRE TN Data: main milestones (production)



National Map
1:25000



Cartociudad
1:1000-1:10.000

INSPIRE TN Data: main milestones (production)

Cartociudad - 1st version released

Published through open and free web services, compliant with the OGC standards, and implemented according to the ISO and INSPIRE frameworks

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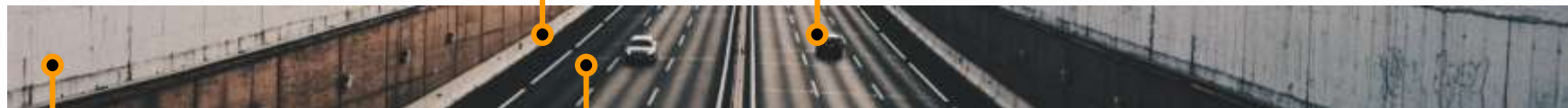
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GRI TN - 1 st version released

In compliance with the INSPIRE Directive regarding data model, metadata and web services..

March 2017



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- 3D transport network compliant with INSPIRE requirements
- 5 transport modes (rail, road, aerial, maritime and cable) and their connections.
- By integration of IGN data and data provided by the main national and regional transport authorities and stakeholders.

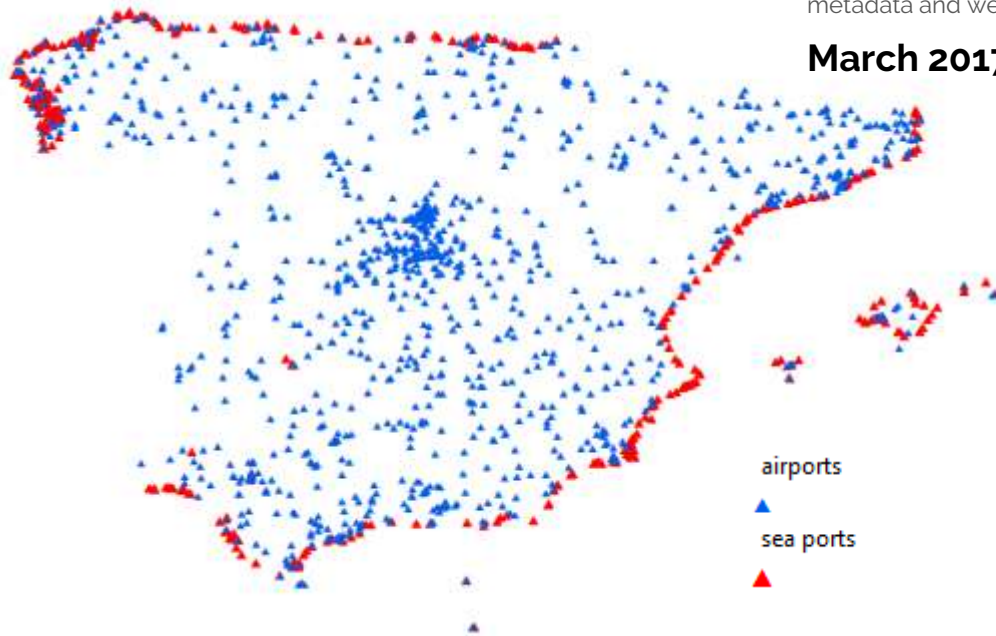
INSPIRE TN Data: main milestones (production)



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March 2017



1111 airports
469 maritime ports

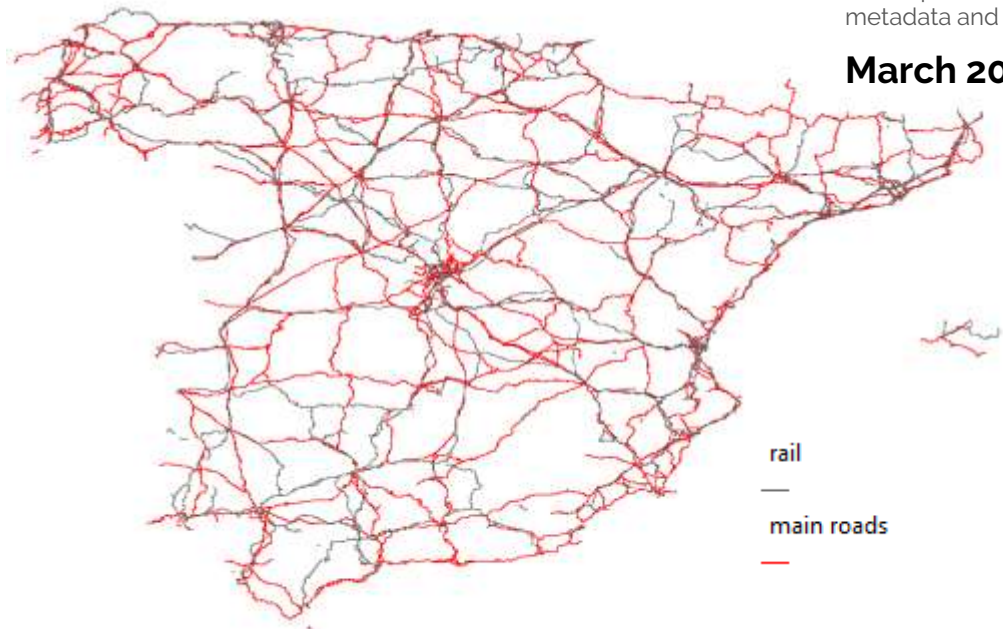
INSPIRE TN Data: main milestones (production)



GRI TN - 1 st version released

In compliance with the INSPIRE Directive regarding data model, metadata and web services..

March 2017



2801 rail stations
18944 railway kilometers
166871 road kilometers
17377 high capacity road kilometers

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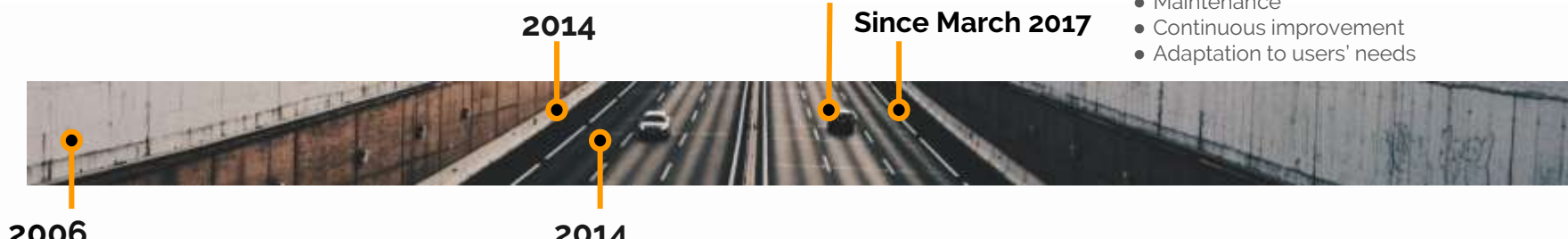
RGI TN - 1 st version released

In compliance with the INSPIRE Directive regarding data model, metadata and web services..

March 2017

Since March 2017

- Maintenance
- Continuous improvement
- Adaptation to users' needs



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INSPIRE TN Data: main milestones (**cases of use**)

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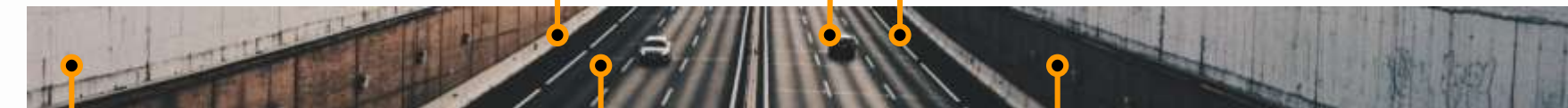
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End of 2017

HERMES project

Goal

Develop a **multimodal cross-wise information system** to improve the efficiency of the Ministry of Fomento in carrying out its **functions**:

- **develop policies** regarding national scope transport infrastructures, **monitor** their execution and to **evaluate** their results
- accomplish the **requirements** of the TransEuropean Network of Transport (**TEN-T**)
- accomplish the **requirements** of the **CEF** (Connecting Europe Facilities) funding,



Image from [TENtec Interactive Map Viewer](#)

INSPIRE TN Data: main milestones (**cases of use**)

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HERMES project

2018-2020

National Transport and Infrastructure Innovation Plan

What it is

A cross-cutting plan that aims to set the **joint roadmap** and a **framework** of common initiatives for the coming years, **integrating** and **coordinating** the activity of the **Ministry of Fomento** and the **main national transport stakeholders** with regard to **innovation**, fostering **collaboration** and **cooperation**, and encouraging the creation of **synergies**

Photo by [Matheus Bertelli](#) from [Pexels](#)



Major strategic areas

- **E1 - User Experience** (from both its physical and digital perspectives) as key need
- **E2 - Smart Platforms** (to gather and articulate the information from different services and infrastructures) as the foundation in which the other three axes should rest
- **E3 - Smart Routes**, supported by cross-cutting platforms and predictive systems
- **E4 - Energy Efficiency and Sustainability** of transport services and infrastructures



Image from [Transport and Infrastructure Innovation Plan 2018-2020](#)

Major strategic areas: lines in which GRI-TN data are involved

- **E1 - User Experience** (from both its physical and digital perspectives) as key need
- **E2 - Smart Platforms** (to gather and articulate the information from different services and infrastructures) as the foundation in which the other three axes should rest
- **E3 - Smart Routes**, supported by cross-cutting platforms and predictive systems
 - **E3L2: Modelling and Forecasting**
 - E3L2-2 - Pilot project on a predictive transport demand model
- **E4 - Energy Efficiency and Sustainability** of transport services and infrastructures



Image from [Transport and Infrastructure Innovation Plan 2018-2020](#)

Use of GRI-TN dataset



Expected use

Additional tasks to meet the project requirements

Benefits for the user / advantages of the dataset

Data sustainability and challenges

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Expected use: spatial data to **feed** the information systems

Geometries

- 3D data
- Positional accuracy > 5 m
- Network topology

Attributes

- Ownership of the infrastructures
- Status (in construction / in use / out of service)
- Elements linked to the codes used by each infrastructure owner



Geometries from GRI-TN dataset



Geometries from the Traffic Map web viewer of the General Directorate of Roads (Ministry of Fomento, <http://mapas.fomento.gob.es/mapatrafico/2017/>)

Additional tasks to meet the project requirements

- **Simplification** of roads geometries, for some purposes
- **Additional quality control** regarding some of the attributes
- Change from traditional segmentation to **linear referencing model**



Advantages of the dataset

- Total national **coverage**
- **Intermodality**
- **Homogeneity** (based on well-defined criteria during production and quality control processes)
- **Continuous update** from [official sources](#) (linked to stakeholders'/owners' data).
- Continuous data quality improvement and **quality control** information
- Thorough **knowledge of the data** model and to the nature of the transport related geospatial data -> capability **to adapt to the users' needs**

Photo by [Diego Santos](#) on [Unsplash](#)



Data sustainability and challenges

No dataset is sustainable if it has no cases of use

Things that aren't worth being used
are condemned to disappear

Therefore, the **main challenge** is to be able to provide **accurate updated** information useful for citizens and companies, and to **listen to current/potential users** to adapt our data as society requires



Photo by [Benjamin Behre](#) on [Unsplash](#)

Data sustainability and challenges



01 Improve update frequency

- Set procedures to allow **ongoing integration** of data updates provided by stakeholders and infrastructure owners and data users
- Improve the **efficiency** regarding the **internal processes** needed to deliver updated data to users



02 Improve quality

- Optimize quality checks (**meta-quality**)
- Develop **new methodologies** (ML, IA)
- **Focus** on the aspects of special interest / impact for stakeholders / owners / citizens .



03 Adapt our data as society demands

- Successfully answer/solve to the **citizens' requests** and **complaints**.
- Continuously **sound out** the existence / creation of **projects** where our data can be of use
- Develop new **services** that, using our dataset, can solve a certain need.
- Close **collaboration** with other official organisms (emergencies, traffic, etc)

Thank you.



Photo by [Diego Santos](#) on [Unsplash](#)