



# TransformingTransport

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# Transport and Logistics Challenge & Barriers



- **One of the most-used industries in the world and in EU...**
  - **15% of GDP** (source: KLU), employment of **11.2 million persons** in EU-28 (source: DG MOVE)
  - **3,768 billion tonne-kilometres** and **6,391 billion person-kilometres** in EU-28
  - Key contributor to emissions: **4,824 megatonnes CO<sub>2</sub>** (source: DG MOVE)
- **Need for paradigm shift!**
  - A **10% efficiency improvement** = EU cost savings of **100 B€** (source: ALICE ETP)
  - Big Data expected to lead to **500 billion USD in value worldwide in the form of time and fuel savings**, and savings of **380 megatons CO<sub>2</sub>** in transport and logistics (source: OECD)
- **But: Current Situation**
  - **Only 19 % of EU transport and logistics companies employ Big Data / AI solutions** as part of value creation and business processes, and 70% do not plan to do so in the future (source: Price Waterhouse Coopers)
- **Current Barriers in the Transport Sector**
  - **Data awareness** to collect, store and analyse the data
  - **Data access** to exploit the real value of data - **great percentage of the transport infrastructure** were built years ago



# Transforming Transport



13 pilots in seven domains, covering all transport sectors



**Smart Highways**



**Smart Airport  
Turnaround**



**Ports as Intelligent  
Logistics Hubs**



**Proactive Rail  
Infrastructures**



**Sustainable Connected  
Vehicles**



**Integrated Urban  
Mobility**

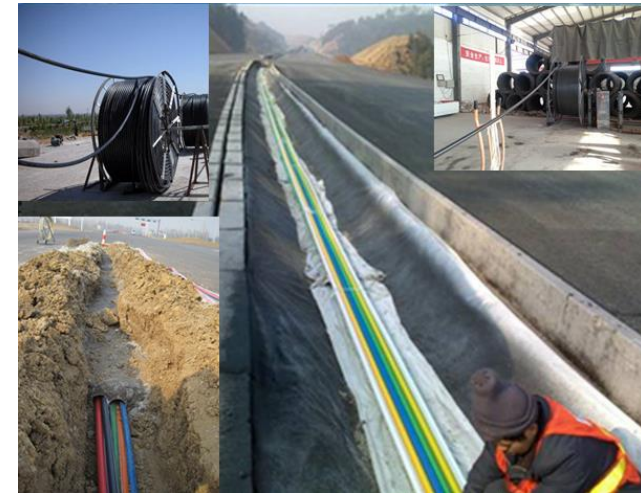


**Dynamic Supply  
Networks**

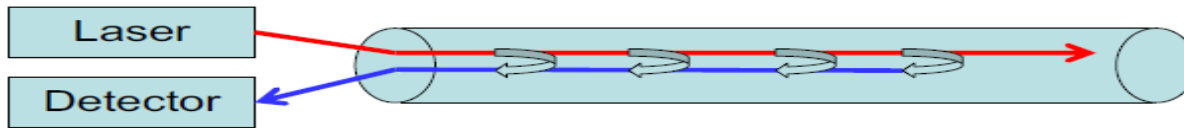
# Smart Highways Pilot



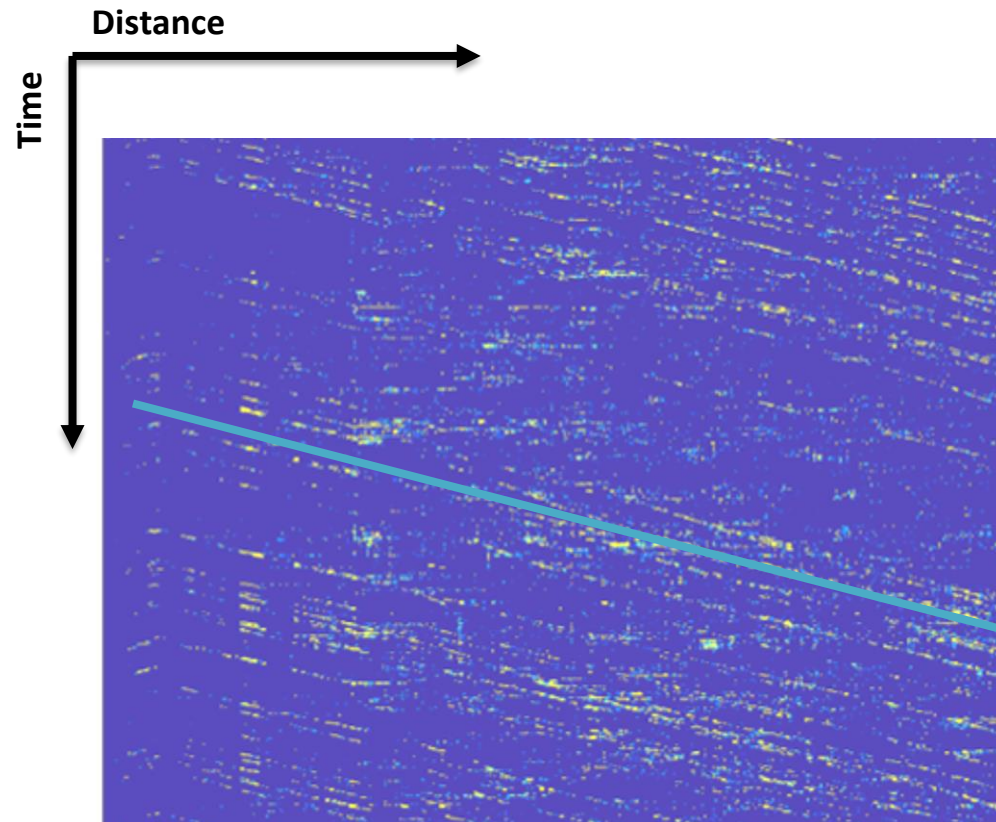
- **Smart Highways Domain:**
  - Norte Litoral Highway (Ferrovial – Cintra)
- **Pilot Objective:**
  - Understand the traffic conditions
- **Data Source:**
  - Optical fiber-based sensor
- **Challenge:**
  - Exploit the information from a buried **FO cable** (1.5-3 meters)
- **Big Data Analytics to**
  - Detect and Monitor Heavy vehicles
  - Detect Road condition
  - Detect Accidents (guardrail + traffic slowing)



# Smart Highways pilot



Sensor: Fiber Optical



Identify Heavy Vehicles

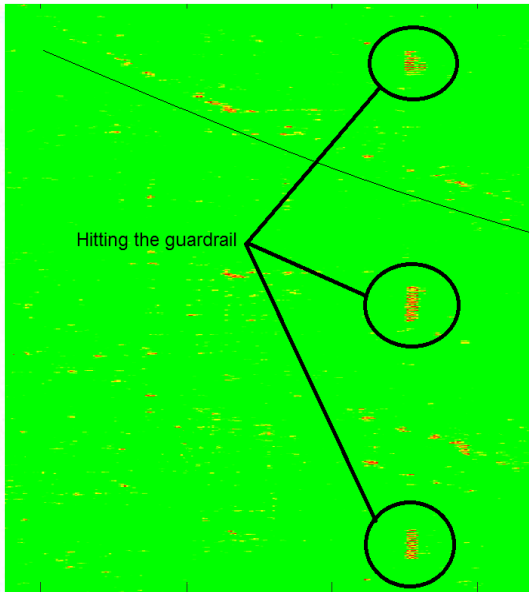




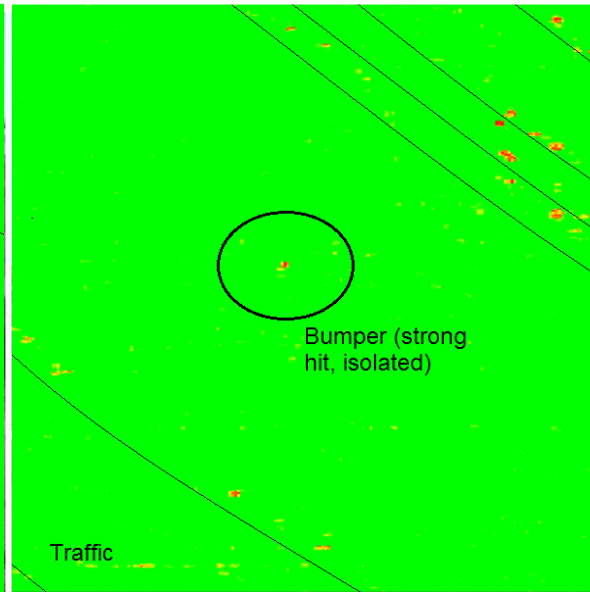
# Smart Highways Pilot

Big Data Analytics can:

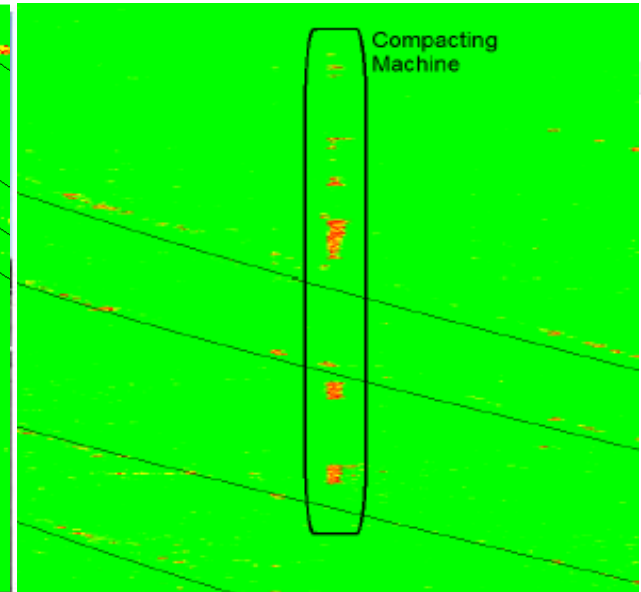
- Identify **type of vehicles**, detect vehicles **speed changes**
- **Hits in the railguard**



Railguard hits with  
nylon hammer



Drive over speed  
bump at moderate  
speeds (60 km/h)



Vibration generation  
with ground compactor

# Big Data Analytics Value

“Addressing real transport needs”



# Big Data Analytics Value

A background image showing a dense field of binary code (0s and 1s) in a blue, digital font, creating a sense of data flow and technology.

“Creating awareness of data economy”

A background image featuring a blue globe with white lines representing a global network or data connections, with glowing nodes at the intersections.

“Unlocking the potential of transport data”



# Big Data Analytics Value

The background image for this section shows a blue-toned scene with a line graph at the top and 3D bar charts at the bottom, suggesting data analysis and business performance.

“Creating New Business Models”

The background image for this section depicts a dark space filled with numerous bright, blue, streak-like light patterns, resembling data streams or fiber optic connections.

“Developing New Devices”

# Thanks!



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[www.transformingtransport.eu](http://www.transformingtransport.eu)





TRANSFORMING  
TRANSPORT



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