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 CO2** (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$_2$ 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

BIG DATA VALUE
PUBLIC-PRIVATE PARTNERSHIP

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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
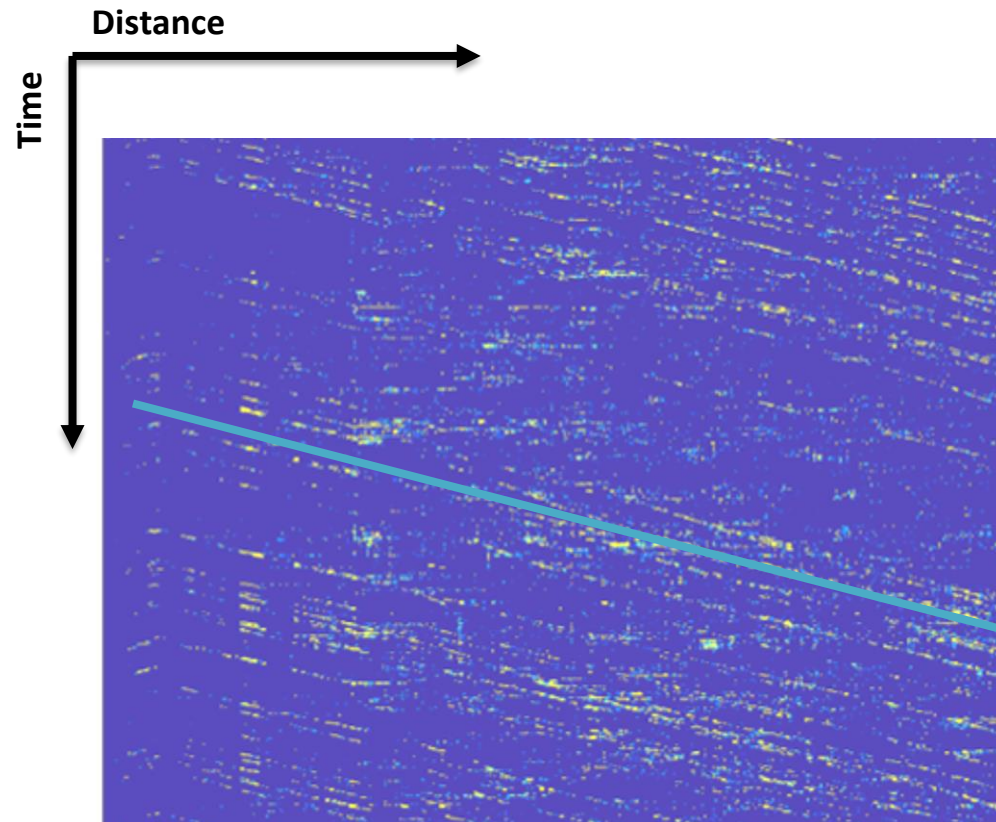
Smart Highways Pilot

- **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)
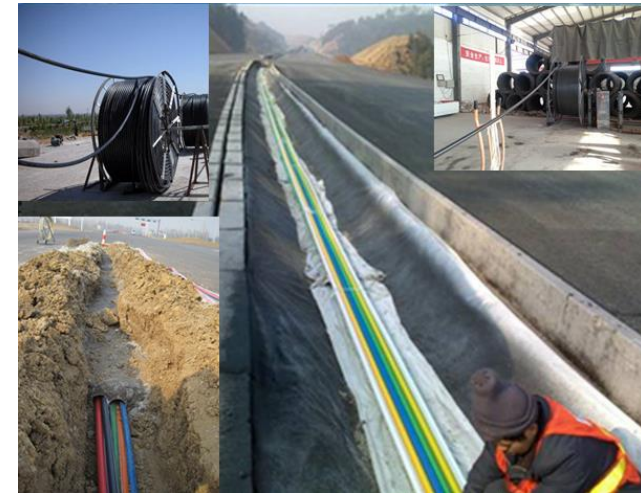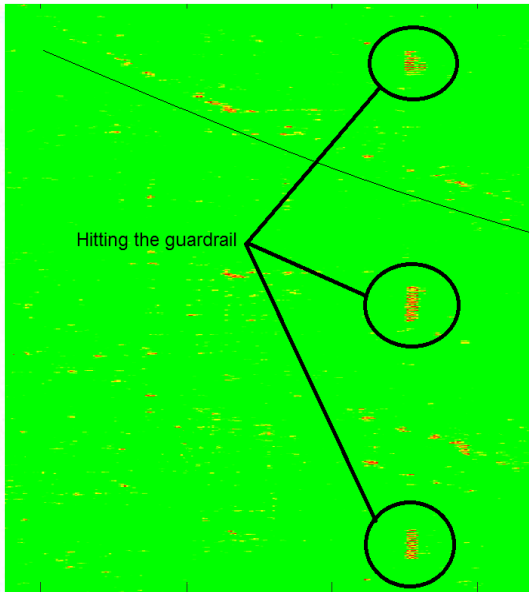
Smart Highways pilot
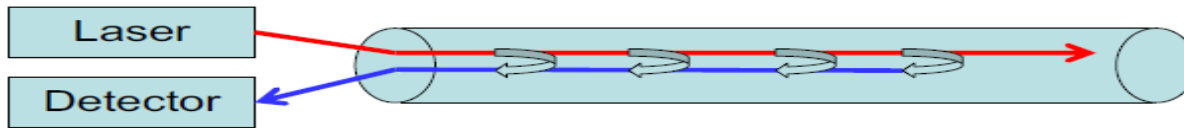
Sensor: Fiber Optical

Distance

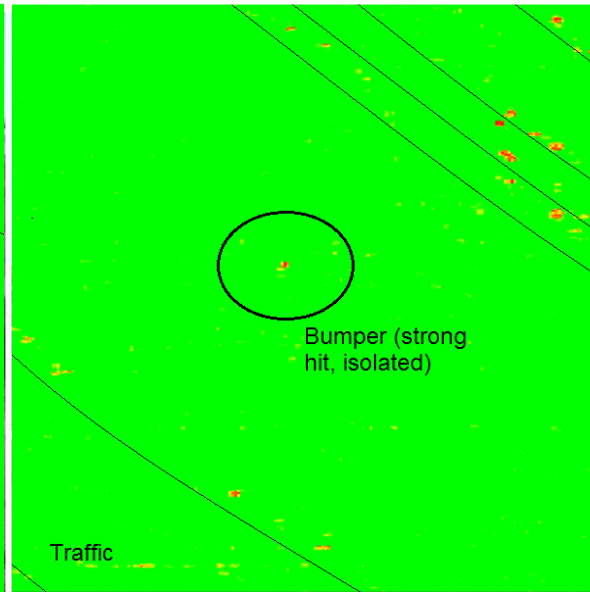**Time**

Identify Heavy Vehicles
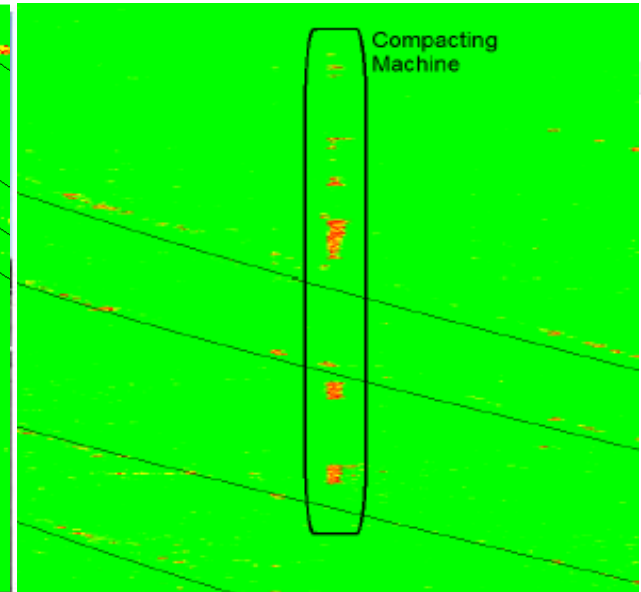
Smart Highways Pilot

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

"Creating awareness of data economy"

"Unlocking the potential of transport data"

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Big Data Analytics Value

"Creating New Business Models"

"Developing New Devices"

Thanks!

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