Design, development process and current status of the National Access Point of Greece

ASECAP DAYS

COSTA NAVARINO 2019

47TH ASECAP STUDY & INFORMATION DAYS

Tomorrow's Mobility…Is Here Today!

Costa Navarino, Messinia, Greece
29-31 May 2019

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Dr. Georgia Aifantopoulou
Research Director – Deputy Director CERTH/HIT

Organized by ASECAP
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CENTRE FOR RESEARCH AND TECHNOLOGY HELLAS - CERTH

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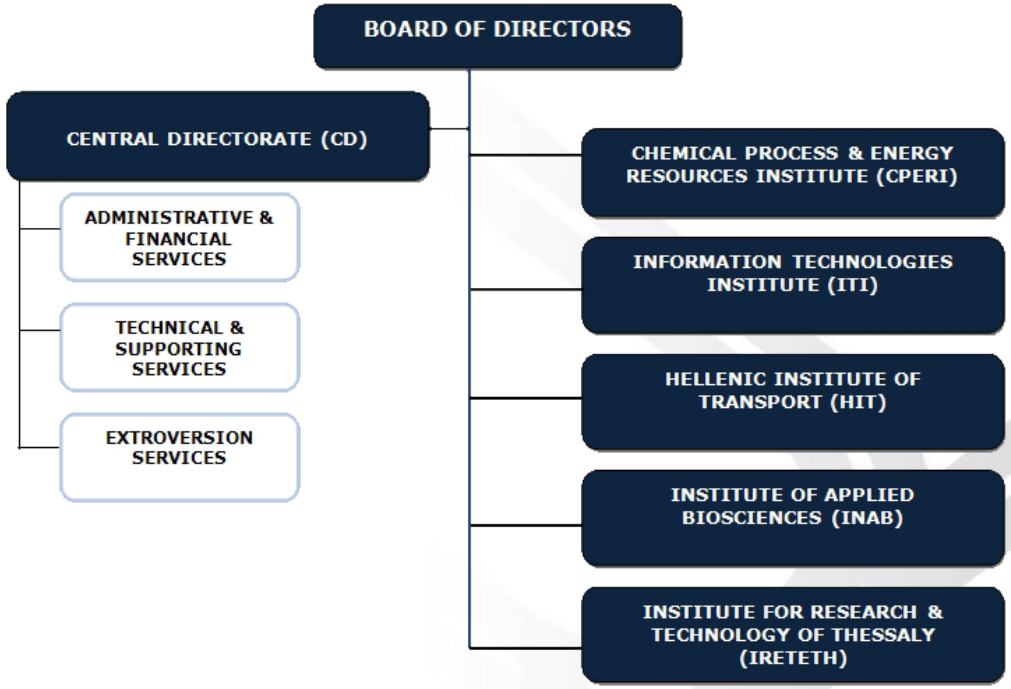
At a glance

The **Centre for Research and Technology-Hellas (CERTH),** founded in 2000, is one of the leading research centres in Greece and listed among the TOP-20 E.U. institutions with the highest participation in competitive research grants.



Legal Form

It is a legal entity governed by private law with non-profit status, supervised by the General Secretariat for Research and Technology (GSRT) of the Greek Ministry of Education, Research and Religious Affairs.

Research Areas

CERTH has important scientific and technological achievements in many areas including: **Energy, Environment, Industry, Mechatronics, Information & Communication, Transportation & Sustainable Mobility, Health, Agro-biotechnology, Smart farming, Safety & Security,** as well as several cross-disciplinary scientific areas.

The Hellenic Institute of Transport - HIT:

Organisation and research fields

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www.imet.gr

Research Sector A
Vehicle & Driver - Vehicle Safety - Accessibility
Head: M. Panou

- **Laboratory A1:** Road Safety and Security — Head: E. Gaitanidou
- **Laboratory A2:** Clean Vehicle Technologies — Head: M. Gemou
- **Laboratory A3:** Intelligent Materials and Manufacturing in Transport — Head: M. Gemou
- **Laboratory A4:** Personalized and Accessible Systems and Services — Head: M. Panou

Research Sector B
Intelligent Sustainable Mobility - Infrastructure & Networks - Freight Transport & Logisticcs
Head: G. Ayfadopoulou

- **Laboratory B1:** Demand and Mobility Management - Development of Sustainable Mobility Systems — Head: M. Morfoulaki
- **Laboratory B2:** Data Collection and Processing and Use of Specialized Transport Software Packages — Head: J. Salanova
- **Laboratory B3:** Infrastructure and Traffic Management in Land Transport — Head: E. Mitsakis
- **Laboratory B4:** Intelligent International Freight Transport and Logistics — Head: G. Ayfadopoulou
- **Laboratory B5:** Rail Transport Systems and Services — Head: A. Kortsari

Research Sector C
Non-land Transport - Economic & Environmental Issues
Head: M. Boile

- **Laboratory C1:** Maritime Transport Systems and Services — Head: M. Boile
- **Laboratory C2:** Air Transport Systems and Services — Head: E. Sdoukopoulos
- **Laboratory C3:** Environmental and Energy Impacts of Transport Systems — Head: A. Tromaras
- **Laboratory C4:** Economic and Social Impacts of Transport Systems — Head: A. Anagnostopoulou

Research Sector D
Horizontal Activities
Head: E. Bekiaris

- **Laboratory D1:** International Relations and Representation of HIT - Transportation Policies — Head: M. Panou
- **Laboratory D2:** Software Engineering - Maintenance of IT Infrastructure — Head: K. Kalogirou
- **Laboratory D3:** Education-Knowledge Management - Information and Public Awareness, Publicity and Promotional Campaigns — Head: M. Morfoulaki
- **Laboratory D4:** Institute Data Analysis, Impact Factors and Success Indicators Assessment — Head: D. Margaritis
- **Laboratory D5:** Commercial Exploitation of Research Results and IPRs - Patents — Head: S. Nikolaou

CERTH-HIT domains of activities

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- **Passenger transport:** Provision of info mobility and trip planning services for road transport at urban, interurban and national scale, SUMPs
- **Freight transport:** Provision of freight services visibility platforms and added value services based on information exchange and cargo monitoring at urban and interurban scale.
- **ITS & C-ITS:** Deployment of ITS and C-ITS infrastructure and development of ITS and C-ITS services for road transport.
- **Big Data analytics, AI & Traffic Management**
- **ADAS systems for road transport and Autonomous transport**
- **Other**
  - Modeling: Modeling of multimodal transport networks at all levels.
  - Impacts of climate change on road transport and vice versa.
  - Transport economics, electromobility, sustainable tourism

Research infrastructures and equipment

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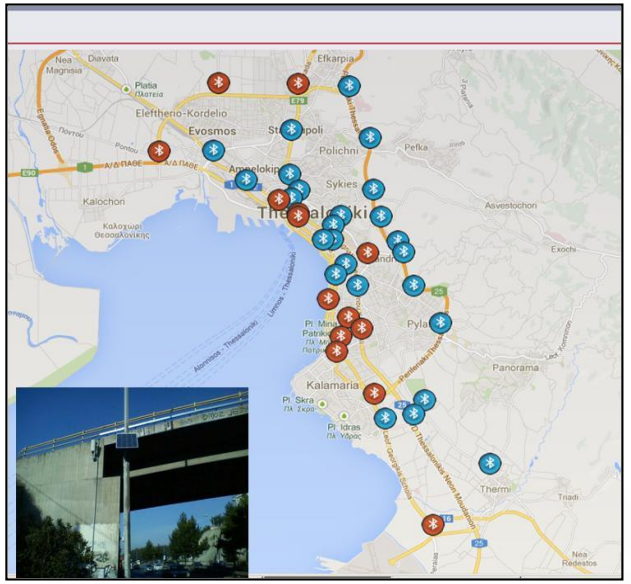
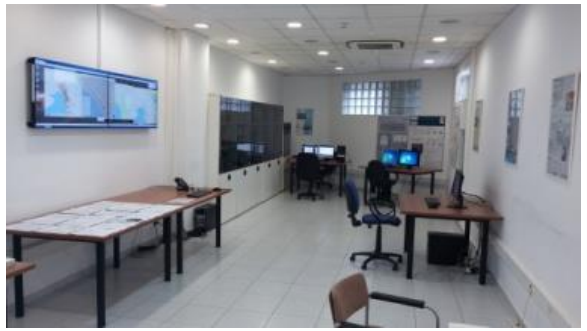
HIT PORTAL

- Transport Observatory
- Network Simulation & Transportation Planning
- Infomobility
- Innovation Incubation & Test Platform

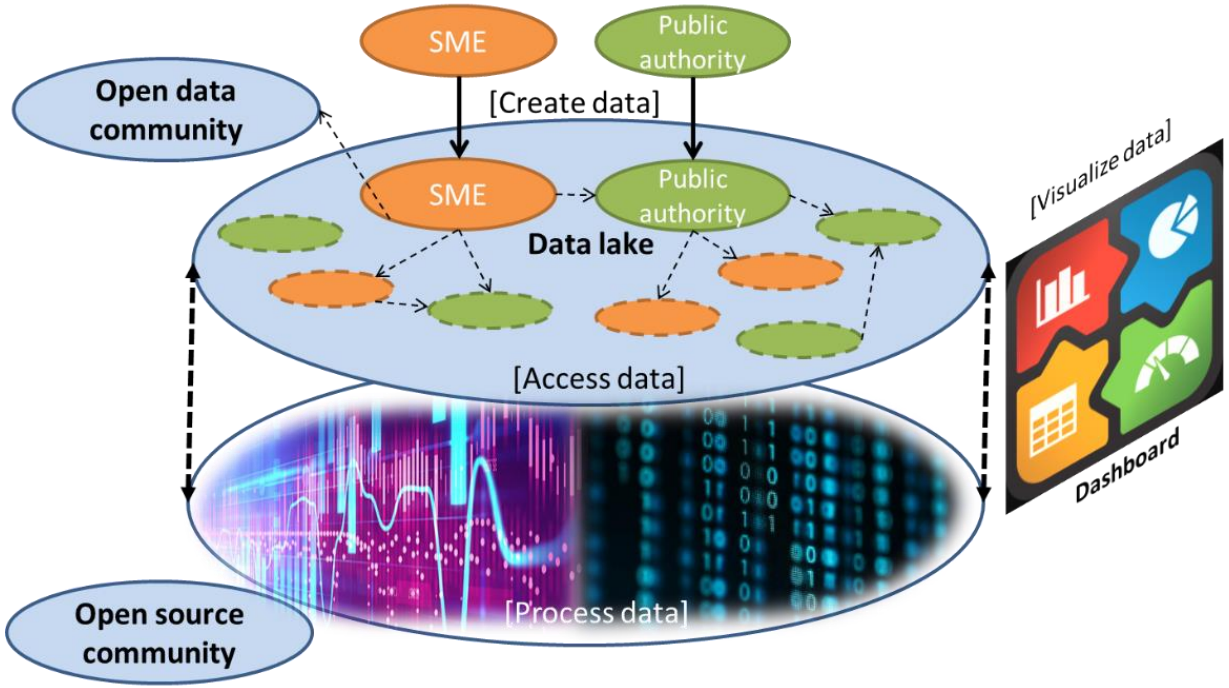
http://www.komvos-imet.gr

SMART Mobility Living Lab



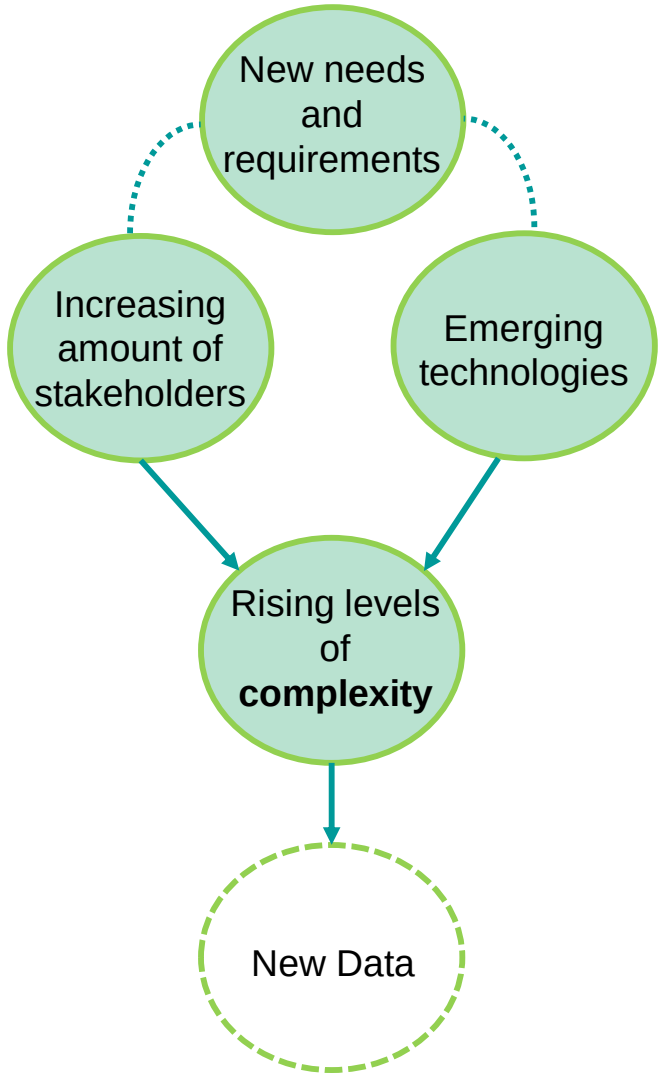


Thessaloniki Smart Mobility Living Lab



- Region of Central Macedonia (RCM)
- 11 Municipalities of the city of Thessaloniki
- Thessaloniki's Integrated Transport Authority (ThITA)
- Hellenic Institute of Transport– HIT
- Egnatia Odos S.A.
- Attiko Metro S.A.
- Transport operators (OASTH, Trainose, taxi companies, logistics companies, ThessBike etc.)
- Traffic Police
- Student transportation operators / schools
- Other organizations/associations
- Citizens

The underutilization of data



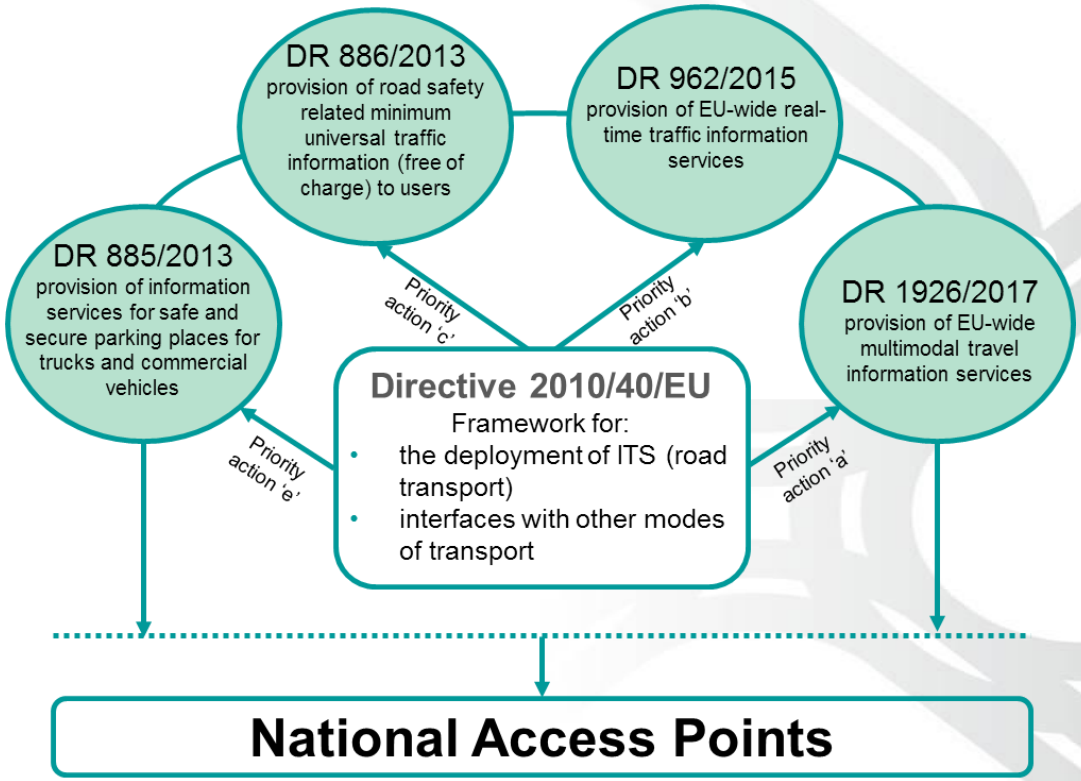
Reasons for data underutilization

- Data sequestered in silos
- Heterogeneous nature of data
- Ineffective integration and aggregation

Possible Solution:

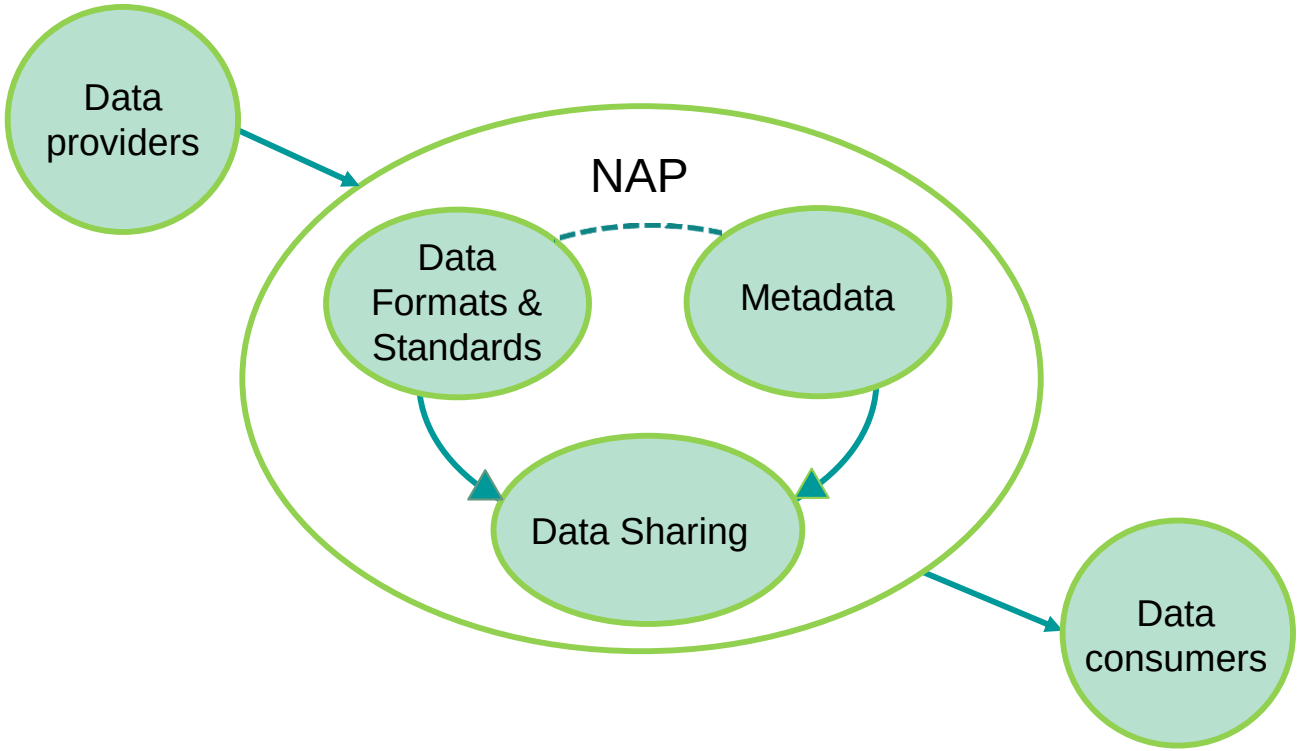
The establishment of a single, efficient, consistent, and secure interface for providers and consumers of data

This issue has been recognised by the European Commission



A conceptual definition of a National Access Point

- A NAP comprises a digital point of access, where data are collected, properly formatted, and together with the corresponding metadata, are made available for exchange and reuse.



- A NAP can range from a **simple open data portal**, all the way to a complex and thorough **digital data marketplace**.
- In its simplest form, a NAP serves as a **raw-data exchange platform**.
- A further step would be for a NAP to serve the role of a **data normalizer and/or aggregator**.
- Ideally it would also serve as a **data quality assurer**, by carrying out consistency and quality checks and rejecting invalid data.
- This role may also require the NAP or its **data providers to be accountable** for the correctness of its data.
- In any case a NAP should **promote machine-to-machine data exchange**

National Access Points in Europe

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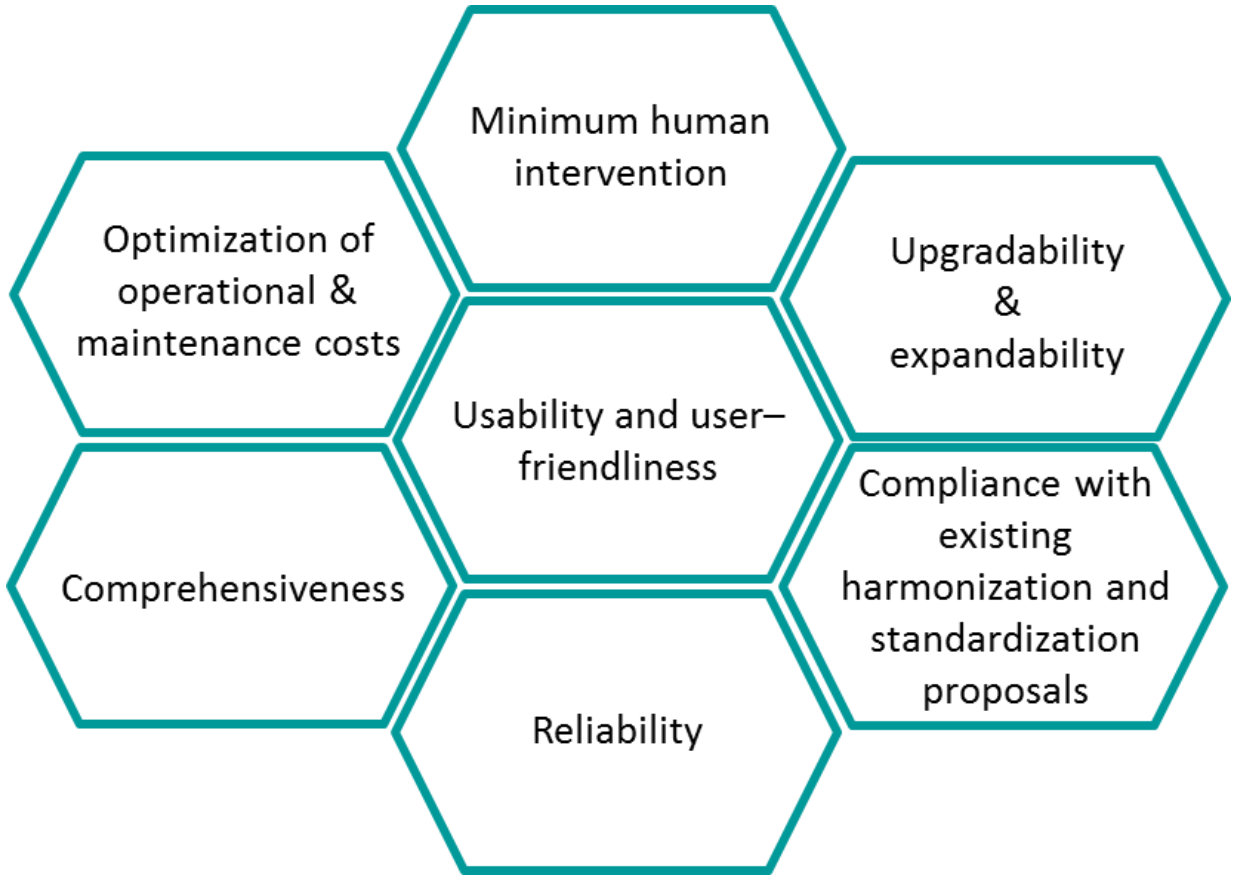
	DR1926/2017 *multimodal*	DR962/2015 *real-time traffic*	DR886/2013 *safety*	DR885/2013 *truck parking*
Austria	•	•	•	•
Belgium	◎	◎	◎	•
Croatia	◎	◎	◎	
Cyprus		•	•	
Czech Republic		•	•	
Denmark	◎	•	•	•
Estonia	◎			
Finland	•	•	•	
France	◎	•	•	•
Germany	•	•	•	•
Hungary		◎	◎	
Ireland	•	•	•	
Italy		•	•	
Lithuania	•	•	•	
Luxemburg	◎	•	•	•
Malta		•	•	
Netherlands	•	•	•	•
Norway		•	•	
Poland	◎	◎	◎	•
Portugal	◎	◎	◎	
Slovenia	◎	•	•	•
Spain	•	•	•	•
Sweden	◎	•	•	•
United Kingdom	•	•	•	•
Greece	◎	◎	◎	

- The concept of a NAP varies from country to country
- NAPs integrated in existing platforms:
  - Smaller and more localised Data Providers
  - Lower levels of DATEX II adoption
- NAPs designed as such:
  - Fewer Data Providers that aggregate a larger number of datasets
  - Higher levels of DATEX II adoption
- Several countries have chosen to go beyond the Priority Actions that focus on road and to include more transport modes
- Most countries seem to have adopted data formats which support the real-time exchange of data and machine-to-machine communication

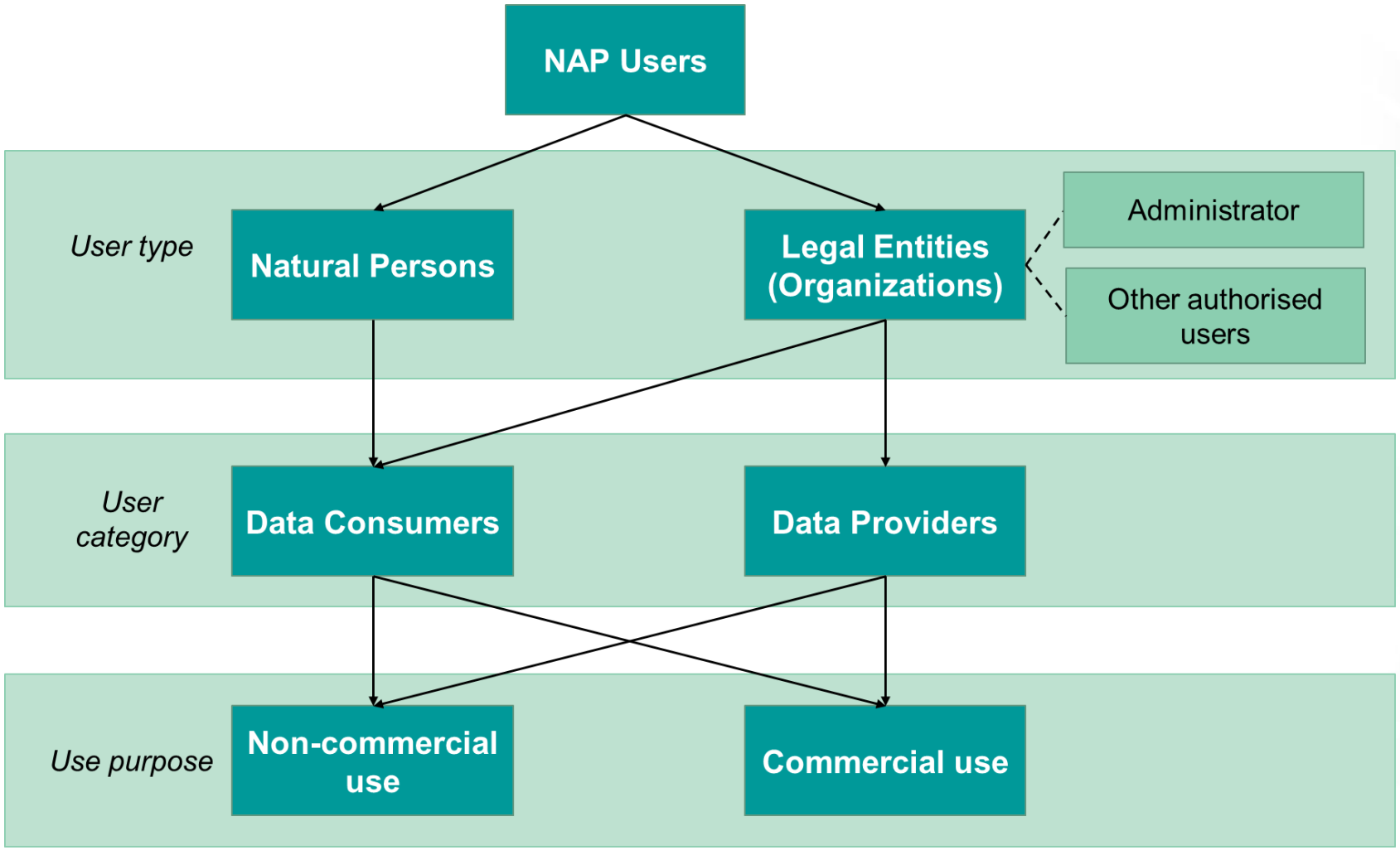
Greek National Access Point Design principles



After surveying the various EU NAPS, the development process aimed to:

- Avoid pitfalls
- Adopt Best Practices

Greek National Access Point roles



Greek National Access Point

CO-FINANCED BY:

HELLENIC REPUBLIC
Ministry of Infrastructure and Transport

CO-FINANCED BY:

Co-financed by the European Union
Connecting Europe Facility

DESIGNED AND DEVELOPED BY:

Ινστιτούτο Βιώσιμης Κινητικότητας και Δικτύων Μεταφορών
Hellenic Institute of Transport

PART OF:

crocodile HARMONISATION OF DATA EXCHANGE

Current Data Content

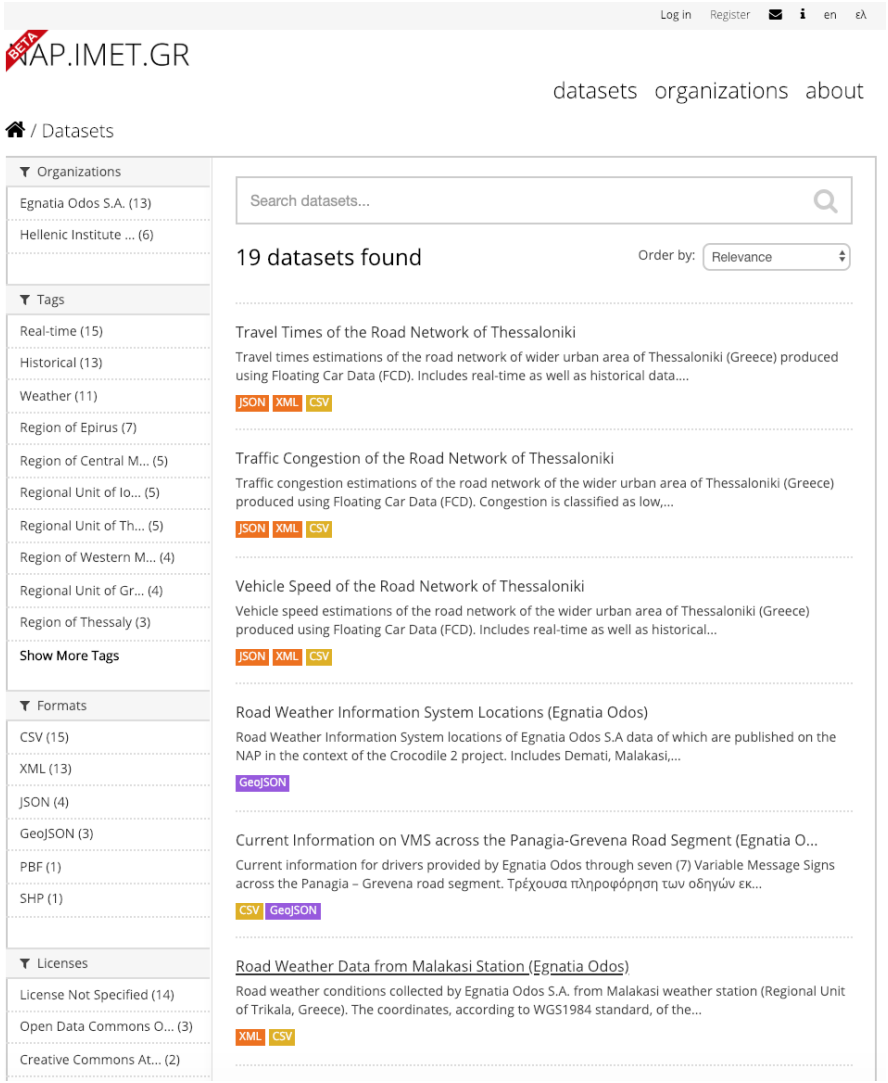
- Road Weather Data (real-time)
- Motorist stations
- Traffic conditions (real-time speed, congestion, etc.)
- Traffic counts (real-time)
- Variable Message Signs (real-time)
- Cooperative ITS messages (real-time)

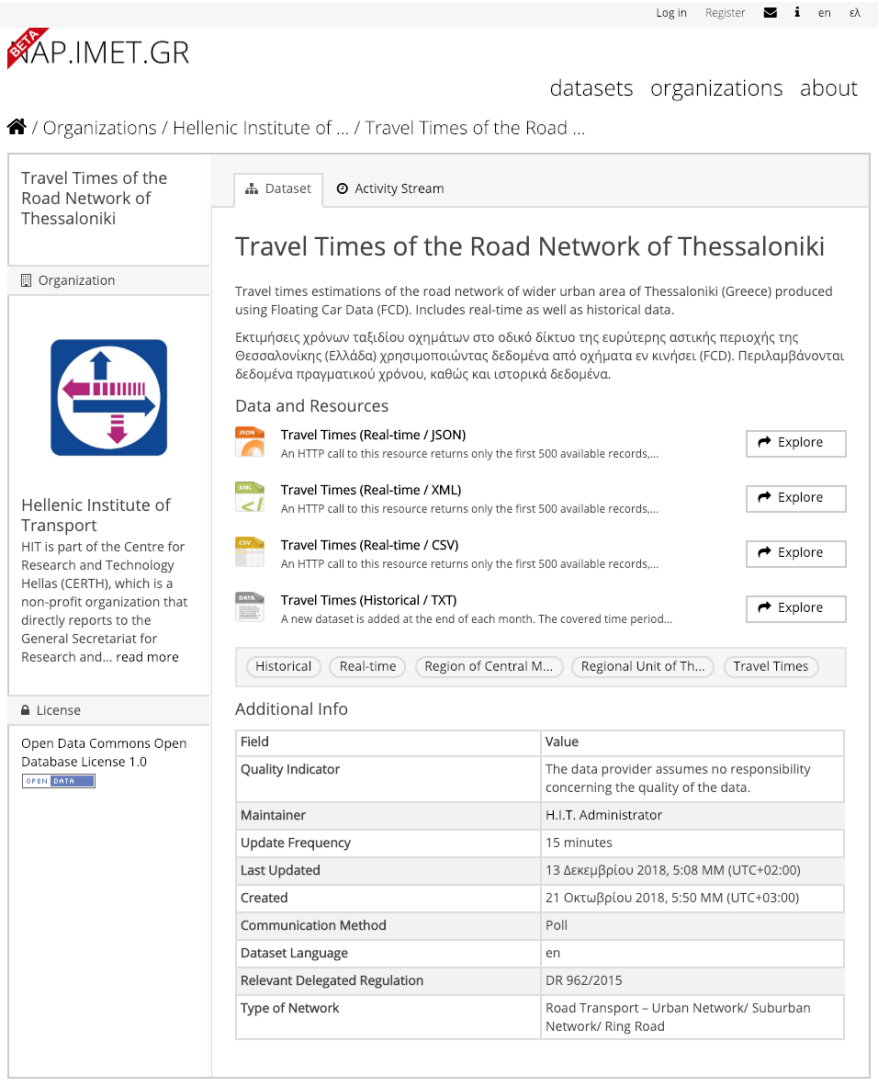
Current Geographical Coverage

Mainly:

- Egnatia Odos Motorway
- National Motorway network
- Urban Area of Thessaloniki

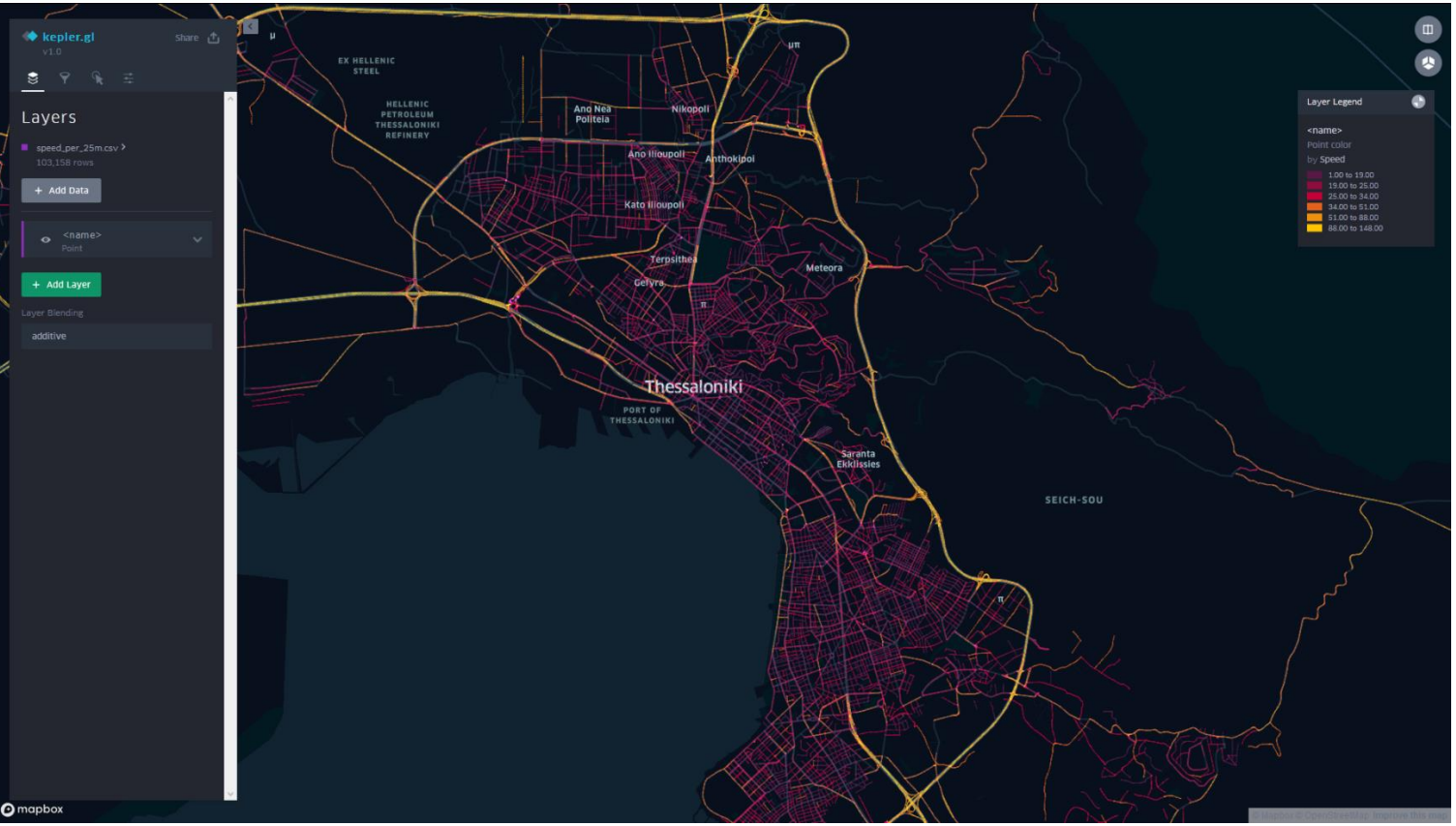
Content of the Greek National Access Point



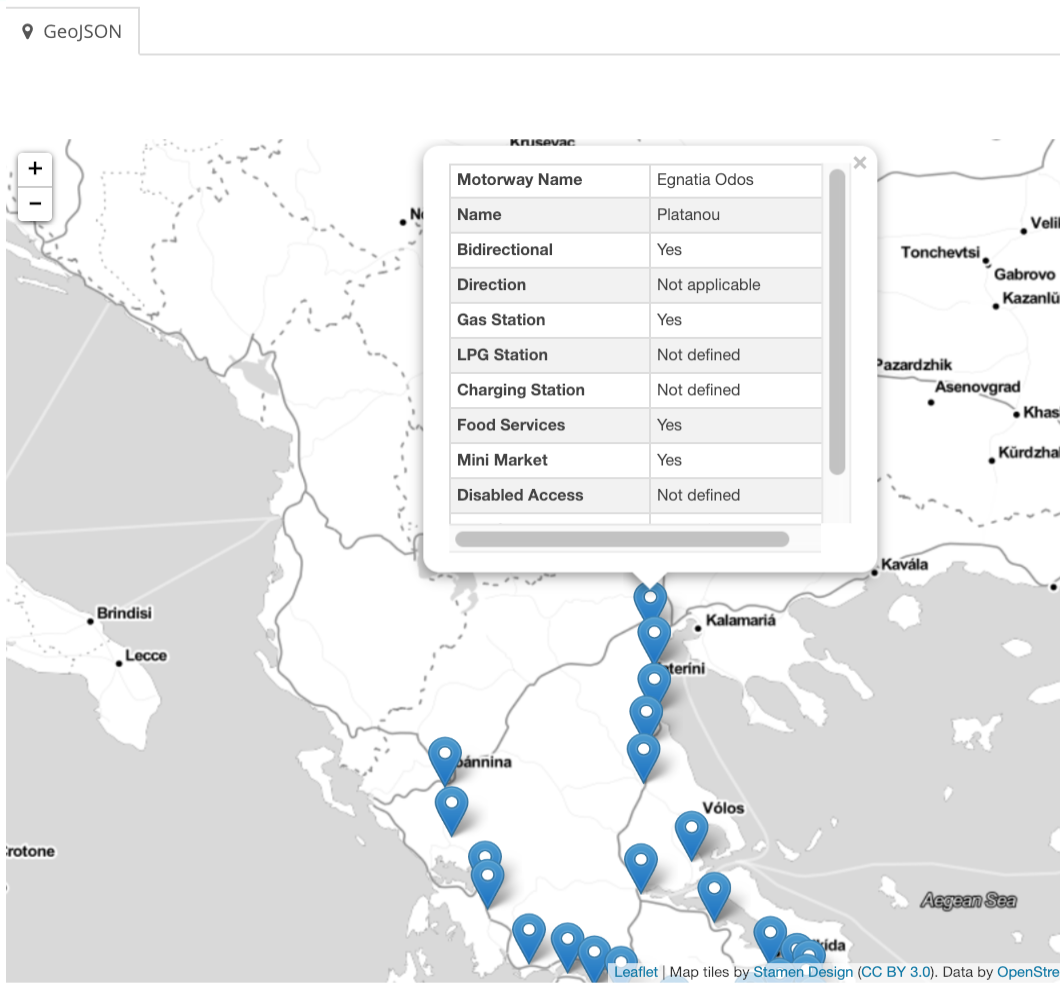


- The NAP's UI includes the appropriate filters in order to facilitate the locating of relevant data
- Datasets are accompanied by identifiable tags and the appropriate metadata
- Most data are real-time
- Historical records are also made available
- Most data are provided in multiple formats
- Data formats facilitate machine-to-machine communication

Greek National Access Point visualization examples



- The NAP's data are compatible with other visualization tools
- Here is an example of the visualization of the "Vehicle Speed of the Road Network of Thessaloniki"



- The NAP itself facilitates the preview and visualization of data

Benefits for data providers and data consumers

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Benefits for data providers

- Increased reputation of both provider and data
- Increased confidence in both provider & data
- Cultivation of relationship with key players of the transport sector
- Datasets are accessible to a wider audience and attract additional data consumers
- Increase in data value due to connectability
- Data may be used for the creation of more critical services
- Potential for increased revenue and new revenue streams

Benefits for data consumers

- Use real-time and historic data to create new added-value services
- Potential enrichment of existing services
- Provide seamless services to end users
- Provide services of greater quality
- Increased reputation amongst end users
- Potential for increased revenues

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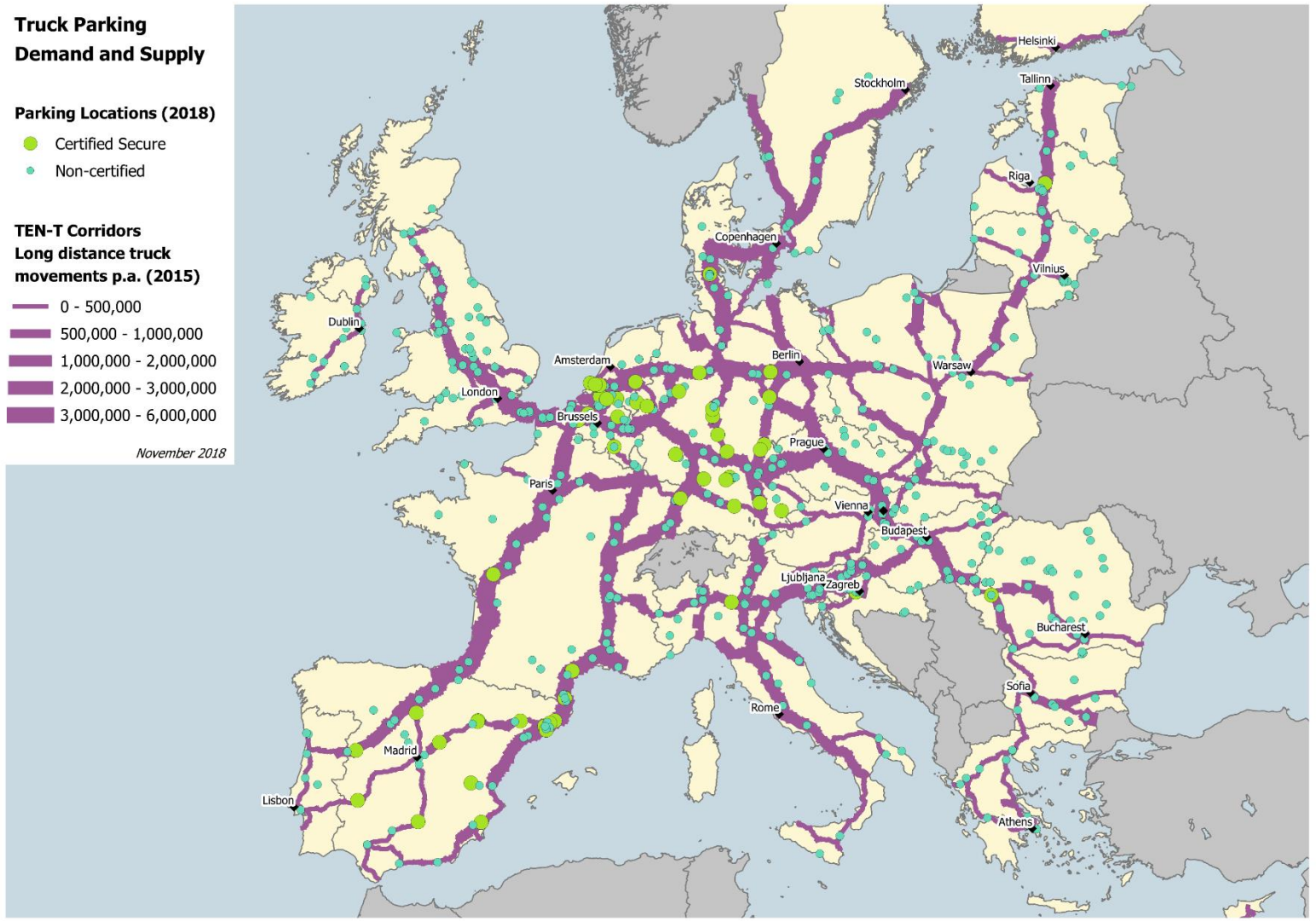
VIRTUAL TRAFFIC MANAGEMENT
C-ITS
EMERGENCY USE CASES

Where is safe & secure truck parking needed?



This study is funded by European Union . The sole responsibility of this publication lies with the author. The European Union is not responsible for any use that may be made of the information contained therein.

A proposed standard for Safe & Secure Truck Parking Areas

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	BRONZE LEVEL	SILVER ADDITIONAL TO BRONZE	GOLD ADDITIONAL TO SILVER	PLATINUM ADDITIONAL TO GOLD
PERIMETER	• Visual deterrent to recognize the secure parking area • Lighting at 15 Lux • Vegetation trimmed, good visibility	• Physical deterrent to prevent unauthorised access (e.g. ditch, rocks, fence) or continuous video monitoring and recording by trained staff • Lighting at 20 Lux	• > 1.8 m physical barrier (height) • Lighting at 25 Lux • CCTV covering perimeter • Measures to prevent unintentional damage to barriers • Clear zone of 1 meter between barrier and parking area	• Add-on for physical barrier: Deterrents to climb over
PARKING AREA	• Only freight vehicles and authorized vehicles allowed as indicated by signage • Physical or remote surveillance checks / inspection at minimum once in 24 h • Lanes must be lit at 15 Lux • Vegetation trimmed, good visibility	• Physical or remote surveillance checks/ inspection at minimum twice in 24 h (one at daytime, one at night) • If pedestrian lanes exist, they must be lit at 15 Lux	• Onsite or remote staff contact can be contacted 24/7 • Marked vehicle and pedestrian lanes	• Site manned or video-controlled 24/7
ENTRY / EXIT	• Lighting at 25 Lux • CCTV (good image quality)	• Barriers • CCTV (records of entering vehicles)	• Barrier with under-climbing and over- climbing protection • Intrusion prevention/ detection, e.g. turnstile for pedestrians • License plate recognition	• Gates must be installed • License plate must match ticket • Real time monitoring of entry/exit, including pedestrian entry/exit • If there is a gatehouse, it must be able to withstand an external attack (door closed)
STAFF PROCEDURES	• Fix unauthorized vehicles so that they cannot drive away or • Removal of unauthorized vehicles if legally permitted • Risk Assessment Plan in place	• Staff trained by an accredited training provider is available 24/7 onsite or in a control centre • Appointment of formally responsible person for staff procedures in case of incidents • Documented staff training once a year in view of incident prevention • Incident and crime reporting to staff and police must be enabled	• All security staff must be certified guards under national/European legislation • The formally responsible person for staff procedures will schedule compliance checks, communication, recertification • A technical user manual must be used • Alarm response procedures • The parking area management system should be prepared for DATEX II data transfer • Business Continuity Plan in place	• Any remote staff also trained/certified • Staff has personal communication system • Security training of site manager • Measures against power failure • Local risk assessment once a year • Pre-booking available. If the pre-booking is offered via an app or similar systems, data transmission must be real time.

PLATINUM SECURITY LEVEL
GOLD SECURITY LEVEL
SILVER SECURITY LEVEL
BRONZE SECURITY LEVEL

Basic service level
(mandatory for all security levels)

LOW LEVEL THREAT
(met by Bronze level security) - providing a safe and comfortable stay for drivers

MID-LEVEL THREAT
(met by Silver level security) - providing a safe and comfortable stay for drivers

HIGHER LEVEL THREAT
(met by Gold level security) - preventing theft and intrusion

HIGH LEVEL THREAT
(met by Platinum level security) - preventing theft and intrusion

STUDY ON SAFE AND SECURE PARKING PLACES FOR TRUCKS
MOVE/C1/2017-500

This study is funded by European Union . The sole responsibility of this publication lies with the author. The European Union is not responsible for any use that may be made of the information contained therein.

Thank you for your attention

Georgia Aifantopoulou
Dr. Civil and Transportation Engineer
Research Director - Deputy Director
Hellenic Institute of Transport (HIT)
Centre for Research and Technology Hellas (CERTH)
[e] gea@certh.gr