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**A Multimodal, Smart and Safe European Transport System: The Key Role of Motorways**

*Epic Sana Hotel  
27-29 May 2015*

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*Concrete and feasible actions for the development  
and wide deployment of C-ITS*

## Deployment of ITS applications in Greece

HELLenic ASSociation of Toll ROad Network  
(HELLASTRON)

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# Deployment of ITS applications in Greece

## HELLENic ASsociation of Toll ROad Network (HELLASTRON)

Creation in November 2014

- 1 public company – EGNATIA ODOS
- 7 private companies – concessionaires

⊙ATTIKI ODOS S.A.  
⊙GEFYRA S.A.  
⊙NEA ODOS S.A.  
⊙MOREAS S.A.  
⊙AEGEAN MOTORWAY S.A.  
⊙OLYMPIA ODOS S.A.  
⊙KENTRIKI ODOS S.A.



# Deployment of ITS applications in Greece

**First phase  
achievement : Eight  
tollway projects in  
Greece**

- Korinthos – Sparti (Moreas)
- Elefsina -Tsakona (Olympia odos)
- Nea & Ionia odos
- Kentriki odos (E65)
- Maliakos – Klidi (Aegean highway )
- Attiki odos
- Egnatia odos and vertical axes
- Rio – Antirio bridge



**Second phase  
achievement :  
Common operation  
for users benefit**





**Attiki odos**



**Rio – Antirio bridge**



**Egnatia odos**



**Nea odos**



Moreas



Aegean highway



Olympia odos



Kentriki odos

# Deployment of ITS applications in Greece

Over the last twenty years many ITS installations, applied in Greek tollways

## 1. Traffic Management Centers (TMC)

- ✦ Uninterrupted 24h operation
- ✦ Modern equipment
- ✦ On-line data regarding traffic conditions via fiber optic network and CCTV
- ✦ On-line messages to Variable Message Signs, patrols, and authorities



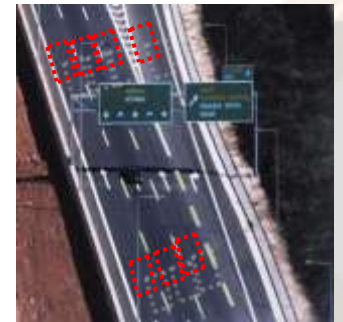


# Deployment of ITS applications in Greece

Over the last twenty years many ITS installations applied on Greek highways

## 2. Incident detection and response systems

- ★ Color CCTV cameras controlled by TMCs, for motorway coverage and toll plazas
- ★ Inductive loops (traffic volume, occupancy, speed) along open motorway and in bored and cut & cover tunnels
- ★ Algorithms for automatic detection of incidents, queues, travel time estimation

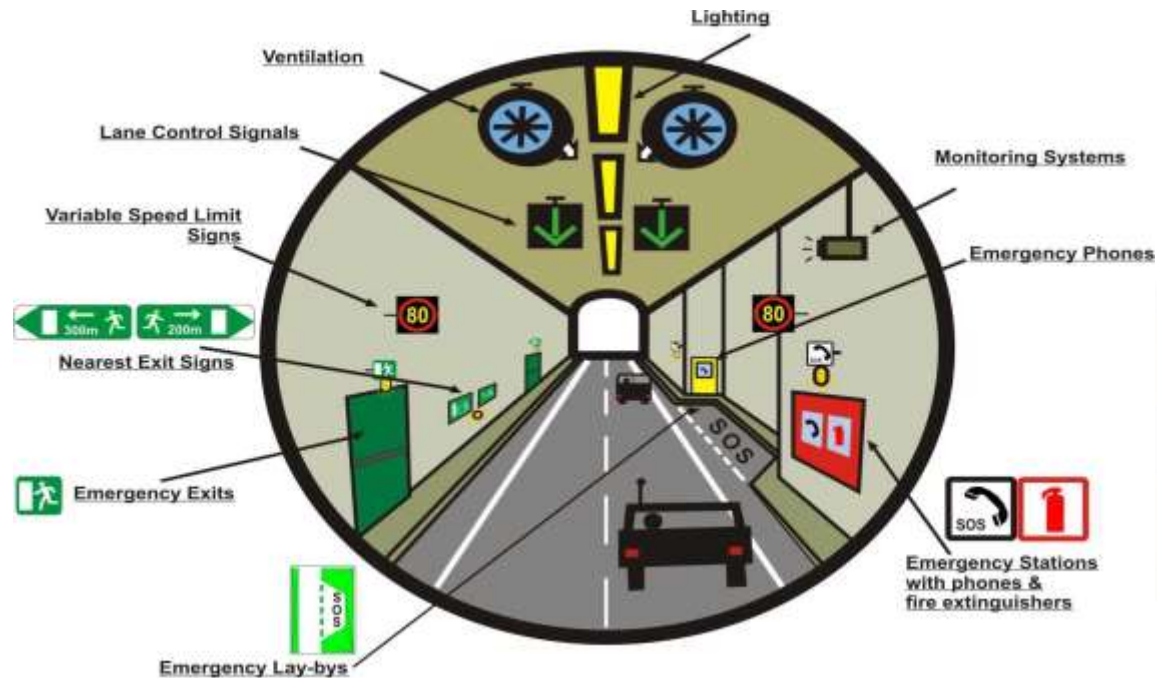




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Over the last twenty years many ITS installations applied on Greek highways

## 3. ITS systems in tunnels, according to European Directive 2004/54/EC



# Efficient operation in all tollways



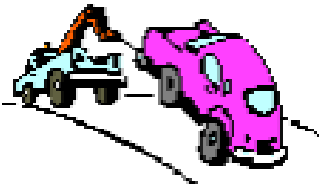
Weather



TMC



Emergency crews



Highway assistance



Police



Ambulance



Fire Dept.

# Deployment of ITS applications in Greece

Similar procedures for traffic management and toll operations along Greek tollways – different “tools”



One emergency number for all highways





# Deployment of ITS applications in Greece

## Similar procedures for traffic management and toll operations along Greek tollways – different “tools”

7 Tag Issuers - all CEN/TC278 A1 Compliant

1. Attiki Odos- e-Pass 2002
2. Gefyra e-Pass 2005
3. Egnatia – Pass 2015 (currently E-card)
4. Aegean Motorway– e-Way 2009
5. Olympia Odos – Olympia Pass 2009
6. Nea Odos – Fast Pass 2012
7. Kentriki odos – K pass 2015



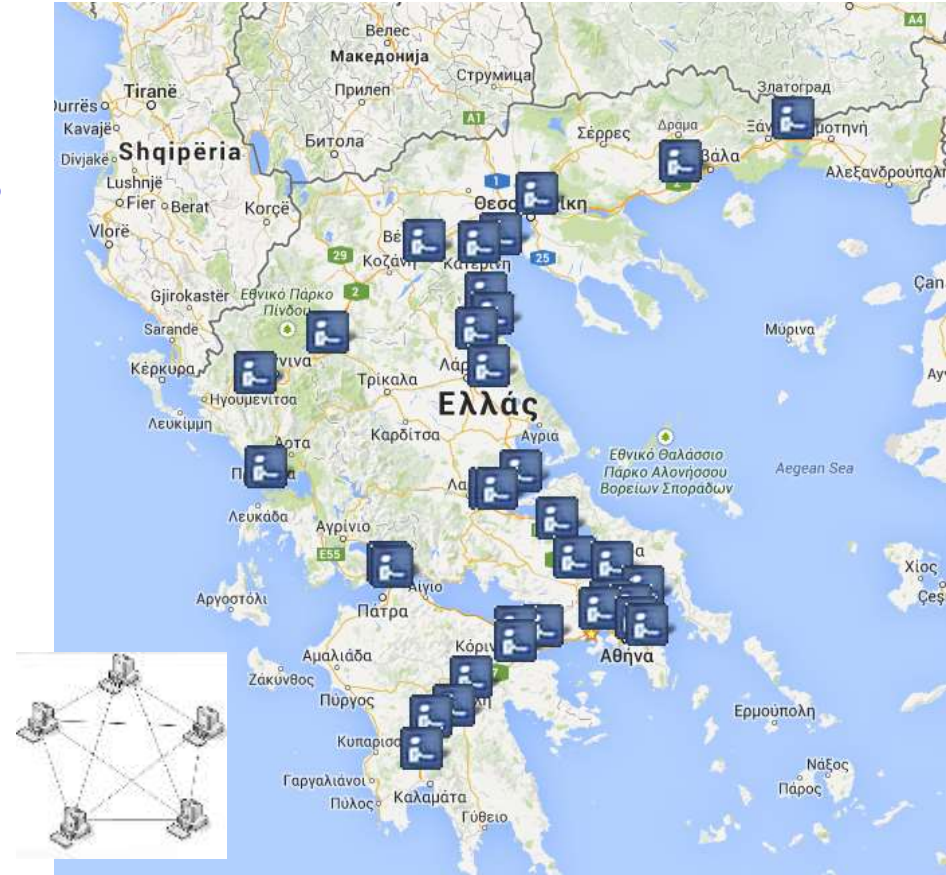
# Deployment of ITS applications in Greece

## Interoperability

“One contract - One Tag” principle

Currently peer to peer interoperability has achieved at a first level among five by Attiki Odos, Aegean Motorway, Gefyra, Moreas and Olympia Odos (5 Toll Chargers- 4 Tag Issuers 651.3 km network in operation today (Urban/Inter-urban Motorways and The Rion-Antirion Bridge). Over 500.000 tags combined customer base

Next phase is to reach National interoperability, among all highways, including Nea odos, Kentriki odos and Egnatia odos



# Deployment of ITS applications in Greece

## Greek involvement in European ITS programs

Greece has already set up the National strategic plan for ITS, for the next ten years. Thus fulfills the obligations from the 2010/40/EU ITS directive

1. *Easyway program, from the “deployment of systems” towards the “deployment of services” for European citizens (1995 – 2020).*
2. **Greek National Highway Fund (TEO SA), participated from the beginning, in Easyway and Easyway II programmms.**
3. **Egnatia odos SA participates in EIP, EIP+ and Crocodile since March 2014, under the supervision of the Ministry of Transport**
4. **Ministry of Transport will supervise-manage the european programs, starting in January 2016.**
5. **Future involvement of HELLASTRON possible**



# Deployment of ITS applications in Greece

## EIP and EIP +

Both EIP and EIP+ are a key players in supporting future European ITS deployment plans. combining resources from different EU actors (MS/Beneficiaries, public and private road operators) in **a joint effort** to ensure the creation of a proper environment for harmonizing existing and future ITS services according to EU policies and objectives, as well as building upon the achievements of the EasyWay I and II project phases.

# Deployment of ITS applications in Greece

## EIP + Activity for Cooperative ITS services

Cooperative Intelligent Transport System (C-ITS) are defined as a subset of the overall ITS that communicates and shares information between ITS Stations (ITS-Ss), to give advice or take actions for improving safety, sustainability, efficiency and comfort **beyond the scope of stand-alone ITS**. C-ITS thus represents a next logical step to improve the quality and reliability of core European ITS services.

# Deployment of ITS applications in Greece

## COOPERATIVE ITS SERVICES Vision

The broad admission of Cooperative ITS among **road operators** as core actors in an information and communication network of **vehicles, infrastructure** and **transport users**. This engagement is directed to improve operational processes to make the most out of the infrastructure, to create value for customers and market partners in order to **fulfil the mobility demand** of both people and goods in a safe, efficient, reliable and sustainable manner



# Deployment of ITS applications in Greece

## EIP + ACTIVITY 4.1 COOPERATIVE ITS SERVICES – task and deliverables

Task	Task Description (short)	Results / Deliverables
1	Potential LoS improvement for Core European ITS Services	EIP+ White paper on C-ITS including the state of the art of C-ITS deployment, effects, and ecosystems as well as conclusions for deployment
2	Deployment initiatives and lessons learned	
3	Cost assessment of communication media and applications	
4	Deployment scenarios for C-ITS related infrastructure and preparation of the implementation road map	C-ITS deployment road map for road authorities and operators including the mechanism for producing C-ITS deployment guidelines
5	Mechanism for setting-up deployment guidelines for road operator responsibilities within Cooperative ITS services	
6	Sub-Activity coordination	N.A.