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Update on Developments of the Toll Road Network in Greece

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HELLASTRON Network

Completed Projects:

- Attiki Odos (Attica Tollway)
- Gefyra (Rion Antirion Bridge)
- Egnatia Odos
- Moreas Motorway



Projects under Development (To be completed within 2017):

- Aegean Motorway
- Olympia Odos
- Nea Odos
- Kentriki Odos

Creating the Greek Motorway Network? What a Challenge!



Attiki Odos



Rio – Antirio bridge



Egnatia Odos



Nea Odos



Moreas



Aegean



Olympia Odos



Kentriki Odos

HELLASTRON's Key Priorities

Harmonized operational procedures, services offered and vehicle tolling classification. In the area of traffic safety offer similar road safety services, establish common emergency number, country wide radio frequencies –RDS&DAB, etc.)

Interoperability of the Electronic Toll Collection Systems operating in Greece

Legal and state issues regarding operation of the Greek Motorways (Arbitration, simplification of speeding fines procedure, responsibility for the approval and supervision of works during the operation, etc.)

ITS & Technology Issues (National access point – Portal for traffic information, incidents, works, weather & pollution conditions, unified violation systems, interoperable Traffic Management Centers, etc.)

Issues regarding the reorganization and staffing of highway police and fire brigade units



HELLASTRON

The Challenge to Integrate three P's, namely Policies, People, Procedures

Code	2016 Data	Egnatia Odos	Attiki Odos	Olympia Odos	Moreas	Aegean Motorway	Kentriki Odos	Nea Odos	Gefyra	TOTAL
INFO 1	Total Network Length (km)	885.3	70	202.3	205	256.2	231	377.6	3.5	2,230.9
INFO 2	Length in Construction (km)	31.2	0	120	0	25.6	174	157.3	0	508.1
INFO 3	Length in Operation (km)	854.1	70	202.3	205	230.6	57	220.3	3.5	1,842.8
STAFF 1	Total Permanent Staff	650	950	2,539	414	986	757	1,793	92	8,181
STAFF 2	Permanent Staff in Concession & Operation	650	950	455	311	469	119	321	92	3,367
STAFF 3	Permanent Staff in Construction and Monitoring	0	0	2,084	103	517	638	1,472	0	4,814
TOLL 11	Total Number of Toll Transactions (in millions)	29.09	77.04	34.29	16.42	21.26	7.17	24.18	3.46	212.910
TOLL 1	Total Number of Toll Stations	9	39	9	12	13	10	13	1	106
TOLL 4/7	Number of Toll Gates / ETC Capable	68 / 18	195 / 54	82 / 56	68 / 49	68 / 38	38 / 38	71 / 71	12 / 4	602 / 328
TOLL 8	Total Number of ETC Tags	0	568,883	36,646	0	30,735	1,187	50,769	9,314	697,534

Toll payment methods in Greece











- Design dating back to'90s, conventional tolling technology
- Open System
- System based on Mainline and Ramp Toll Stations with bars
- ETC was introduced for the first time in 2002
- Automatic Payment Machines introduced for the first time in 2010
- ETC Partial Interoperability introduced in 2013

ETC Interoperability in Greece (2016 data)

	ETC Penetration	Tag and Invoice Issuer							
		e-PASS	O-Pass	e-Way	E-PASS	Fast Pass	All down		
Project		Attiki Odos	Olympia Odos	Aegean	Gefyra	Nea Odos	Air tags		
		Annual Transactions	Annual Transactions	Annual Transactions	Annual Transactions	Annual Transactions	Annual Transactions		
Attiki Odos (GRITS)	50,3%	37.807.728	333.685	132.113	42.844	0	38.316.370		
Moreas (GRITS*)	27,0%	3.913.604	398.779	95.190	20.509	0	4.428.082		
Olympia Odos (GRITS)	27,7%	6.260.713	2.814.359	154.850	210.078	0	9.440.000		
Aegean Motorway (GRITS)	18,1%	804.053	123.223	2.816.068	22.649	0	3.765.993		
Gefyra (GRITS)	18,7%	144.569	26.028	7.931	457.052	0	635.580		
Nea Odos (NO/KO)	17,2%	0	0	0	0	4.176.792	4.176.792		
Kentriki Odos (NO/KO)	12,6%	0	0	0	0	915.732	915.732		
All 7 Projects	33,8%	48.930.667	3.696.074	3.206.152	753.132	5.092.524	61.678.549		
		Annual Transactions	Annual Transactions	Annual Transactions	Annual Transactions	Annual Transactions	Annual Transactions		
	In the Motorway operated by the same tag issuer	37.807.728	2.814.359	2.816.068	457.052	4.176.792	48.071.999		
	In other Motorways	11.122.939	881.715	390.084	296.080	915.732	13.606.550		
	Total ETC	48.930.667	3.696.074	3.206.152	753.132	5.092.524	61.678.549		

- (1) Five (5) out of eight (8) HELLASTRON members are interoperable on a pier to pier basis (GRITS).
- (2) Moreas, which is one of the 5 and part of GRITS, has chosen to use the tags of the other 4 GRITS members
- (3) Two (2) other members provide ETC services via one common tag.
- (4) The 8th member (Egnatia Odos) has installed an ETC system which is GRITS ready, but it has not started tag distribution and in the interim it uses contactless cards handed out to toll collectors.

HELLASTRON's Position on European Initiatives:

In line with ASECAP's strategy on:

- A) Tolling / EETS / REETS: Greek Interoperable Toll Systems (GRITS) in place, where 5 out of 8 HELLASTRON members are part of GRITS, while 2 other members (Nea Odos and Kentriki Odos) provide ETC services via one common tag (Fast Pass). The 8th member (Egnatia Odos) is installing a GRITS-ready ETC system and Moreas, which is part of GRITS, has chosen to use the tags of other 4 GRITS members.
- B) Road Safety (Safe infrastructure Management and Tunnel Safety): Recommendations for One Emergency Phone Number, One National Traffic Radio Frequency and Uniform Signage and Pictograph standards on all Tunnels.
- C) ITS schemes related to "EU digitalization", such as Co-operation of billing systems, Legislation on disseminating traffic cameras depicting real traffic conditions, Information on traffic conditions on the basis of cell phone probe, etc.
- D) European legal framework for Concessions, such as Corporate Social Responsibility measures, Key Performance Indicators and conditional variations, etc.



Evolution of Tolling in Greece



Courtesy of IBI Group, based on the Egnatia Odos contract of Attikes Diadromes with Subcontractor IBI

The Concept of "Hybrid" Tolling for Greek Toll Roads

A. The facts

- Toll is paid on mainline Stations and it is proportional to the distance between toll Stations
- Toll charge is "flat", and short distance trips have higher per kilometer charge than long distance trips
- Installation of a "fully closed" toll system is not economically feasible (high number of interchanges)

B. The Idea

- Install ETC gantries at selected entries and exits, based on actual traffic demand
- Integrate a "partially closed" toll system (for tag users only)
- Mainline Toll Stations remain in place and "Discount Points" are added, either at entrance/exit ramps of the highway, or on the main axis between consecutive I/Cs.
- "Discount Points" are gantries which are equipped with systems that allow reading and identification of the transponder, vehicle classification and recognition of vehicle registration plate number.
- The actual distance travelled by vehicles equipped with a transponder is identified via the "Discount Points".
- Vehicles are charged the full amount of the toll price when passing through a Mainline Toll Station. Then, depending on the "Discounts Points" that the vehicle has gone through, the corresponding discount is applied to the subscriber's account in the form of a discount or a rebate.

"Hybrid" Tolling - Scenario 1: Entrance and Exit Control



"Hybrid" Tolling - Scenario 2: Mainline Control



Life after "Hybrid". Expand to Full Access Control?

- Current mainline toll stations to be fully equipped with LPR systems for:
 - ✓ Vehicle identification
 - ✓ Vehicle classification
- Installation of ETC Gantries at ALL the ramps, equipped with LPR systems
- Match Origin Destination (OD)
- Set up account fee based on frequency i.e. based on number of transactions per month
- Rebate or Discounts given depending on:
 - ✓ Distance (OD pairs)
 - ✓ Frequency of travel
 - ✓ Day and time of journey (some days and times of days without discount)

Conversion in Steps - Phase 1: Separate ETC Traffic – Open the bar?



Conversion in Steps - Phase 2: Why not AET for tag holders?



Conversion in Steps - Phase 3. Open Road Tolling for all?



And the Question for Greek Toll Roads is: Stay Conventional, or follow the trend?



CONVENTIONAL

All Electronic Tolling (AET) for tag holders



Open Road Tolling (ORT) for all users



Thank you!

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