

**Road User Charging Conference**  
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**Update on Developments of the  
Toll Road Network in Greece**

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# HELLASTRON - MEMBERS



## 7 Private companies – Concessionaires

- Attiki Odos (Attica Tollway)
- Gefyra (Rion – Antirion Bridge)
- Nea Odos
- Moreas Motorway
- Aegean Motorway
- Olympia Odos
- Kentriki Odos

## 1 Public Company

- Egnatia Odos

# 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	<b>2,230.9</b>
INFO 2	Length in Construction (km)	31.2	0	120	0	25.6	174	157.3	0	<b>508.1</b>
INFO 3	Length in Operation (km)	854.1	70	202.3	205	230.6	57	220.3	3.5	<b>1,842.8</b>
STAFF 1	Total Permanent Staff	650	950	2,539	414	986	757	1,793	92	<b>8,181</b>
STAFF 2	Permanent Staff in Concession & Operation	650	950	455	311	469	119	321	92	<b>3,367</b>
STAFF 3	Permanent Staff in Construction and Monitoring	0	0	2,084	103	517	638	1,472	0	<b>4,814</b>
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	<b>212.910</b>
TOLL 1	Total Number of Toll Stations	9	39	9	12	13	10	13	1	<b>106</b>
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	<b>602 / 328</b>
TOLL 8	Total Number of ETC Tags	0	568,883	36,646	0	30,735	1,187	50,769	9,314	<b>697,534</b>

# 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)

Project	ETC Penetration	Tag and Invoice Issuer					
		e-PASS Attiki Odos	O-Pass Olympia Odos	e-Way Aegean	E-PASS Gefyra	Fast Pass Nea Odos	All 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.

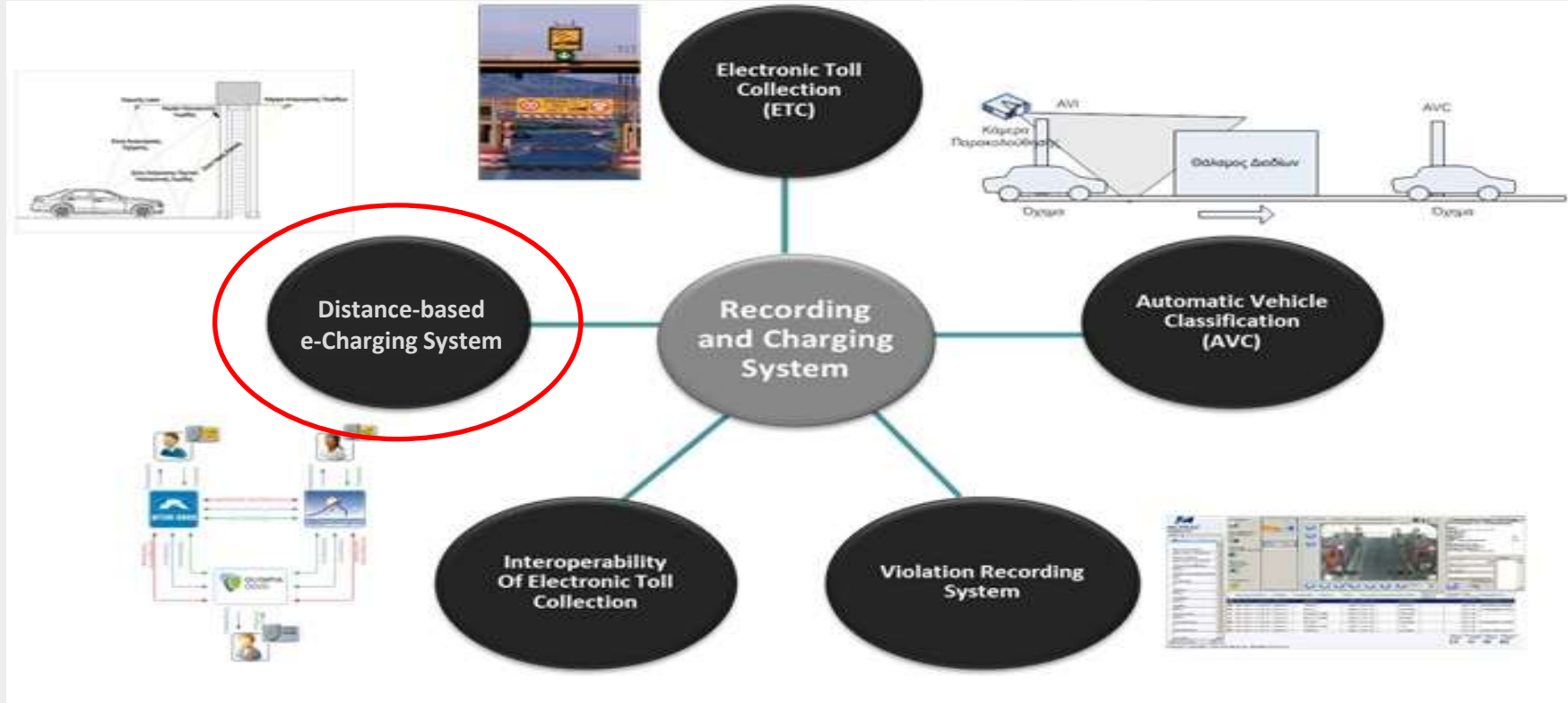


# HELLASTRON's Position on European Initiatives:

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



# The Concept of "Hybrid" Tolling for Greek Toll Roads

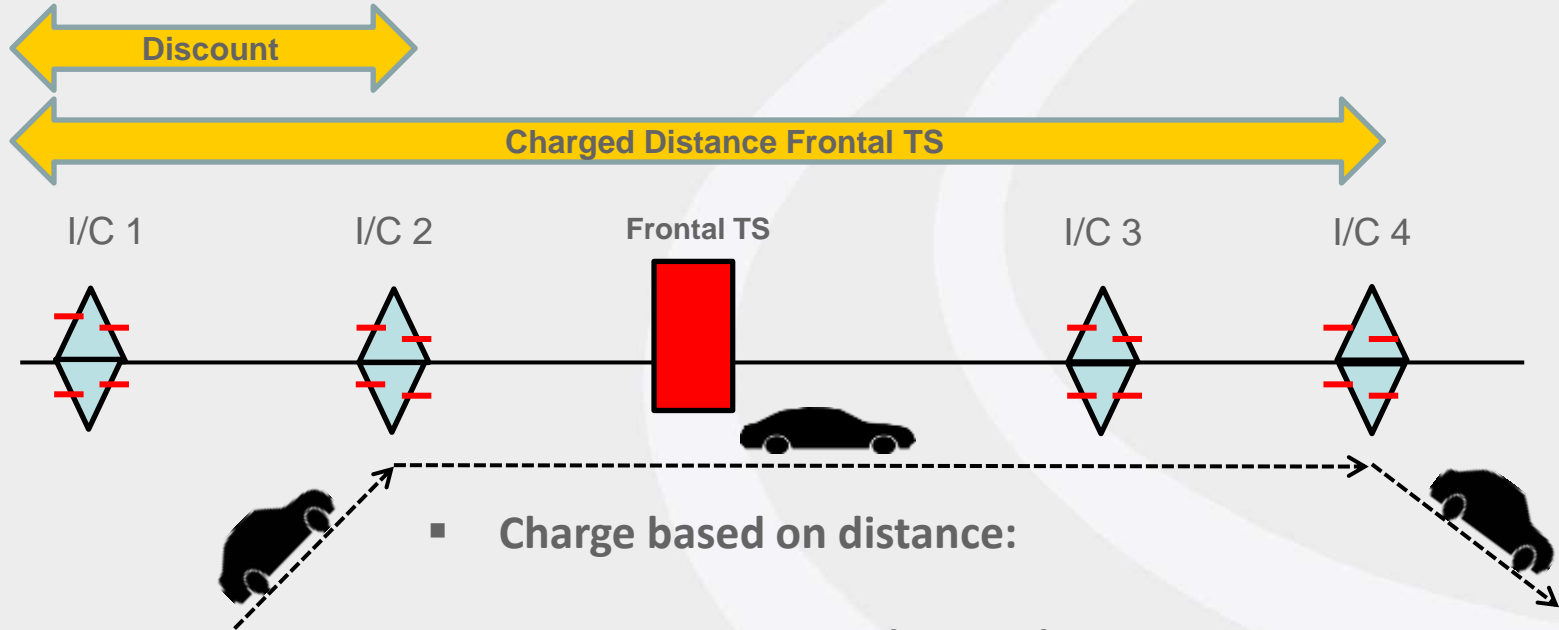
## A. The facts

- 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.

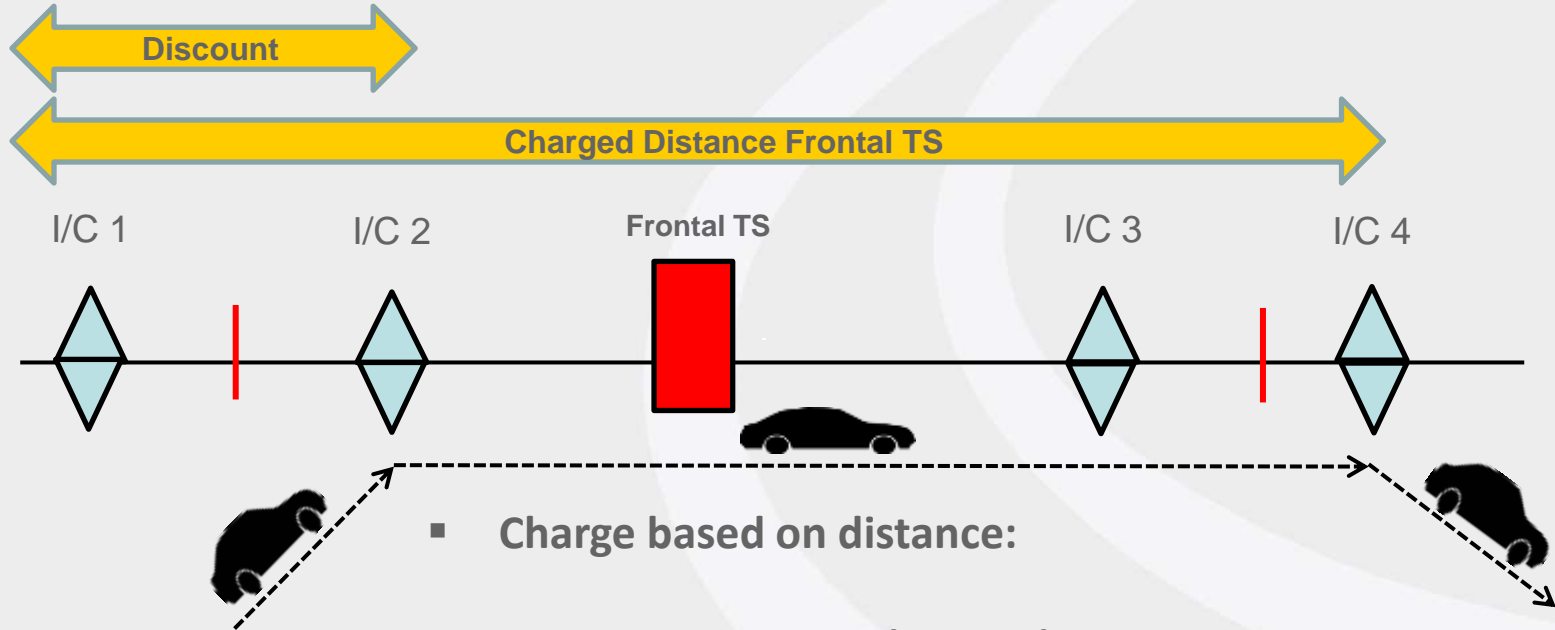
# "Hybrid" Tolling - Scenario 1: Entrance and Exit Control



| Discount Point

- Charge based on distance:
  - With discount (Rebate)
  - Only for electronic payment users

# "Hybrid" Tolling - Scenario 2: Mainline Control

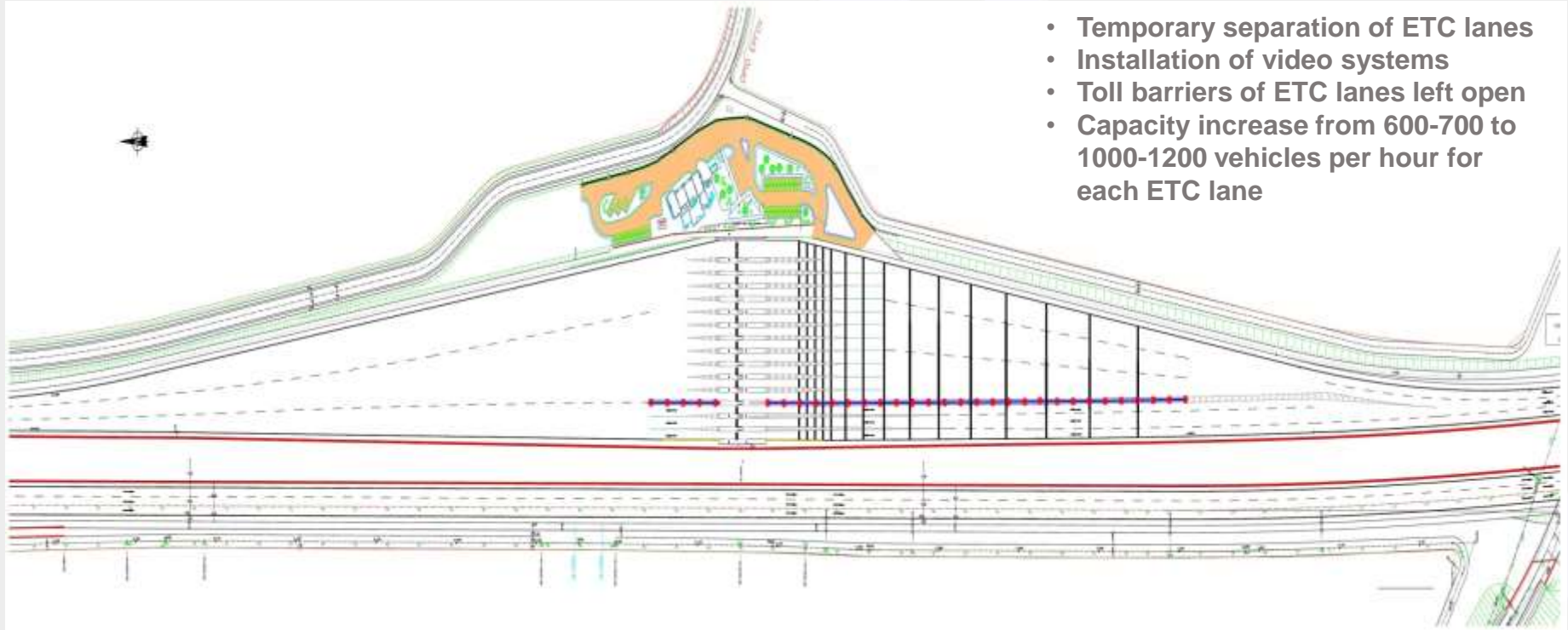


| Discount Point

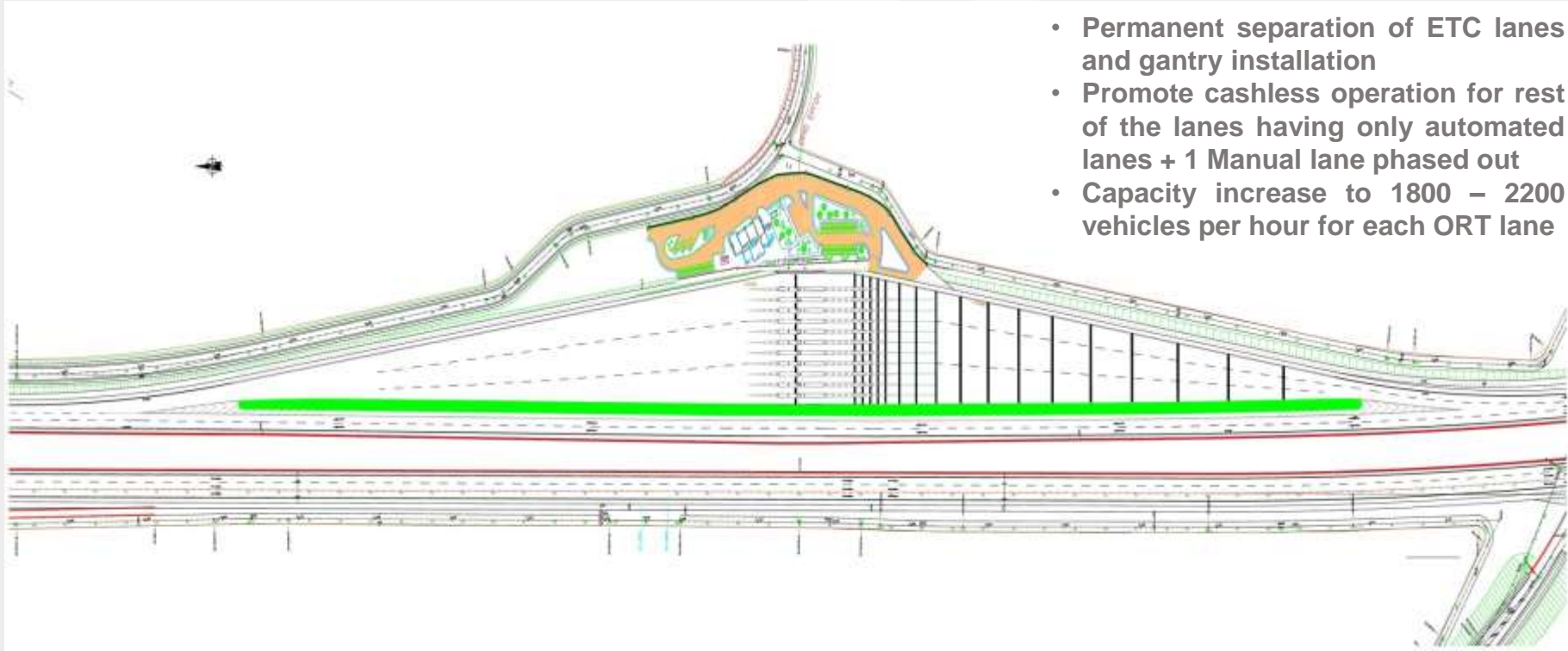
## Life after "Hybrid". Expand to Full Access Control?

- 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?



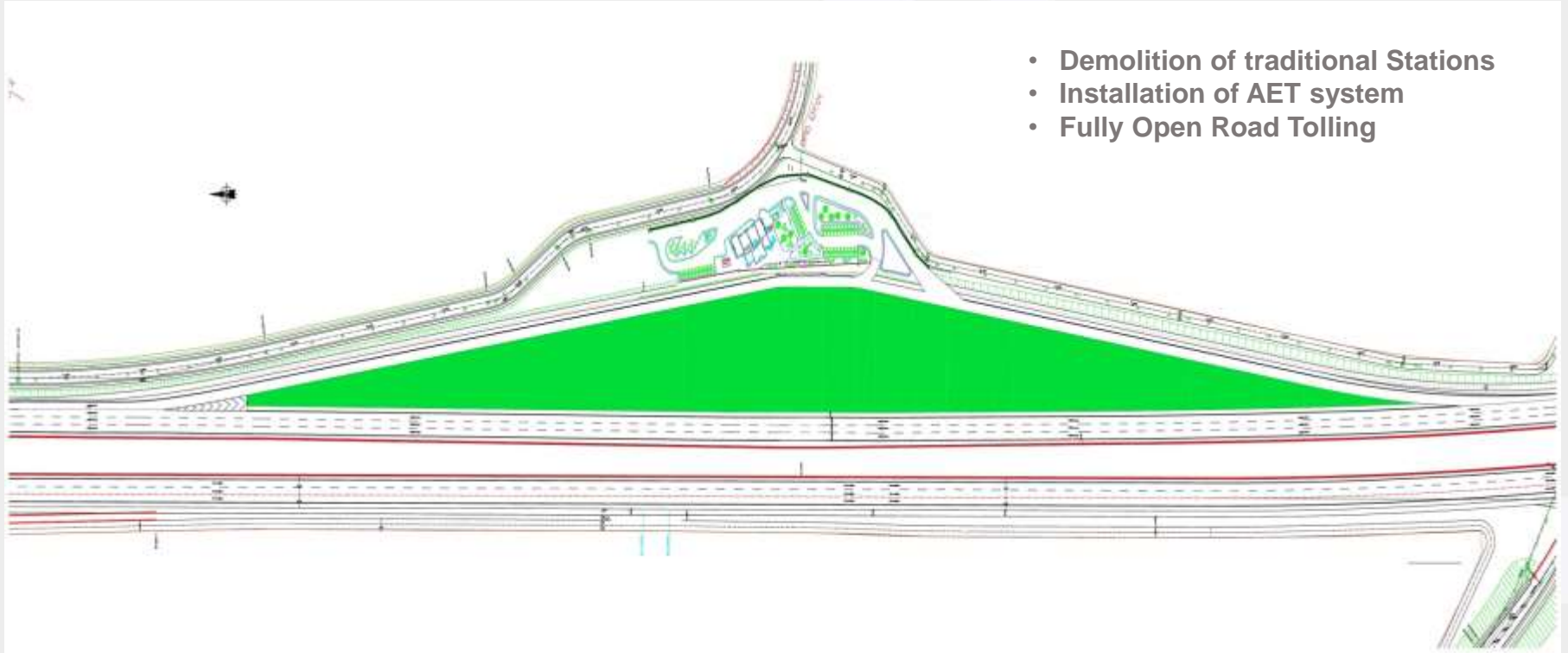
## Conversion in Steps - Phase 2: Why not AET for tag holders?



- Permanent separation of ETC lanes and gantry installation
- Promote cashless operation for rest of the lanes having only automated lanes + 1 Manual lane phased out
- Capacity increase to 1800 – 2200 vehicles per hour for each ORT lane



## 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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