Republic of Cyprus

Progress Report on National Activities and Projects Regarding ITS Priority Areas

According to Reg. 1926/2017

National Law:

«Ο ΠΕΡΙ ΠΛΑΙΣΙΟΥ ΑΝΑΠΤΥΞΗΣ ΤΩΝ ΣΥΣΤΗΜΑΤΩΝ ΕΥΦΥΩΝ ΜΕΤΑΦΟΡΩΝ ΣΤΟΝ ΤΟΜΕΑ ΤΩΝ ΟΔΙΚΩΝ ΜΕΤΑΦΟΡΩΝ ΚΑΙ ΤΩΝ ΔΙΕΠΑΦΩΝ ΜΕ ΑΛΛΟΥΣ ΤΡΟΠΟΥΣ ΜΕΤΑΦΟΡΑΣ ΝΟΜΟΣ 2012»

Adopted on 16 November 2012

Period Covered by this Report:
August 2017 – August 2020

Implementing – Co-ordinating Agency:

Public Works Department,
Ministry of Transport Communications and Works,
165 Strovolos Avenue,
2048 Strovolos,
Nicosia,
Cyprus

Signed:

Socratis Zapitis
Director of Public Works Department

Contacts & Author:

Mr Aristotelis Savva
Tel: 00357-22806646
Fax: 00357-22498910
e-mail: asavva@pwd.mcw.gov.cy

Signed By Author:

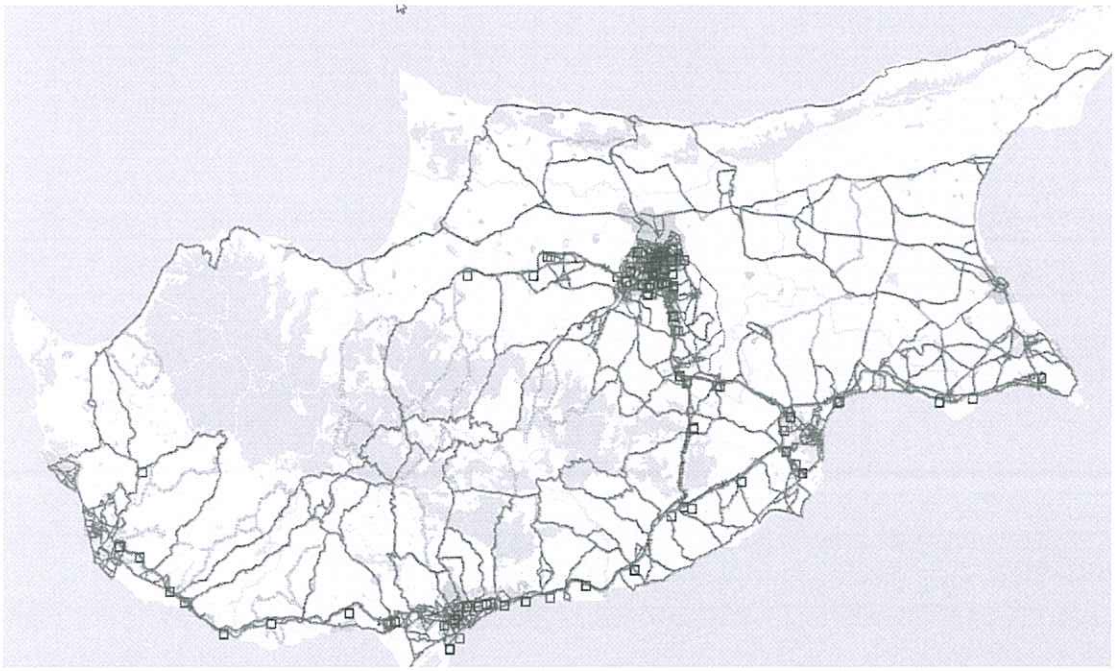
1 Assessment based on Articles 3-8 of Regulation 1926/2017

Cyprus, relatively to other EU Countries, has only recently started investing in ITS Systems for traffic monitoring and information provision.

Based on Article 3 of the Regulation Cyprus must set up a National Access Point that provides free of charge information to multimodal network users and raw data to third parties for developing services. Cyprus is in progress of achieving this in 2021 as described further down in this report. It already has a National Access Point established in 2014 – please see www.traffic4cyprus.org.cy which will be upgraded substantially to meet the requirements of the regulation.

Article 4 – Accessibility, exchange and reuse of static travel and traffic data:

The system covers all Cyprus TEN-T Network (where there is heavy concentration of traffic detectors) and all primary road network of Cyprus. Below a system picture is given showing in blue the road network coverage.



The historic data (from traffic counters) and static data (from GIS) of network is stored in databases since 2014 and that data will be made available to external service providers and interested parties, free of charge with the upgrading of the existing National Access Point.

In addition Road Works on the Cyprus Interurban Network (TEN-T) are planned by the Public Works Department and relevant notices are issued by this public entity which includes the following information:

1. Location of event

2. The Category of Event
3. Behaviour Advice
4. The event has a Start and End time.

The events are inserted in the Traffic Control Centre Platform MISTIC (of Swarco Mizar) – which uses DATEX II protocol for their description.

Article 5 – exchange and reuse of dynamic travel and traffic data:

From each sensor the current system can collect dynamic data and is capable of detecting events.

For each event an authorization and a notification is issued by the Public Works The systems installed on the TENT-T network have the capability to detect changes in traffic flow, speed and travel times and hence can detect incidents which may be due to accidents or planned or unplanned roadworks.

Further description of the system capabilities is given in sections 2-5 of this report.

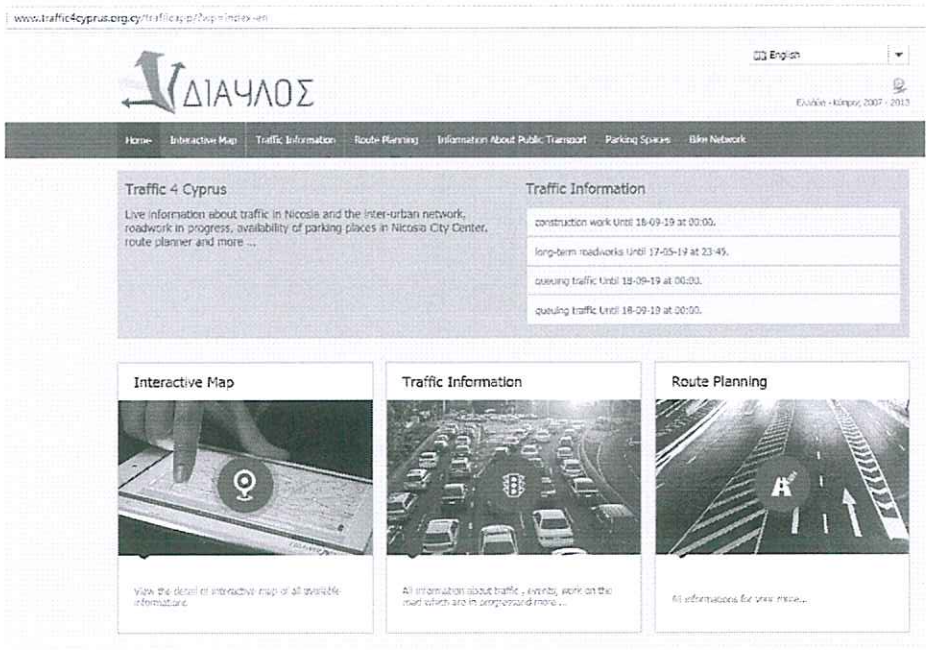
The above dynamic data will be made available in raw reusable format to external interested parties free of charge with the upgrading of the existing National Access Point.

Article 6 – Data Updates:

The above dynamic and static information shall be updated as it happens and made available to the external providers querying the system.

Article 7 – Linking Travel Information Services:

Currently the information is provided to all road users through our website www.traffic4cyprus.org.cy



The development of the Cyprus Single National Access Point in the near future will allow the provision of more traffic and multimodal related information to all stakeholders free of charge and in the format that will be useful for developing Multimodal Services and routing traveler information.

The information provision will be achieved through Application Programming Interfaces (APIs) as described in Section 3.

Article 8 – Requirements for service provisions reuse of travel and traffic data and linking of travel information services

The data shall be available in electronic form without restrictions within the Union on a non-discriminatory basis.

Article 9 – Assessment of Compliance:

The Public Works Department, as the responsible ITS Public Agency in Cyprus, through a Memorandum of Understanding and subsequent agreement with the KIOS Excellence Centre of Cyprus University, has requested the auditing of information available within the Department, it's incorporation in a GIS System, the development of tools to detect and compensate sensor data and the evaluation of its DATEX II protocol.

Also, the Ministry of Transport Communications and Works is currently enhancing its collaboration with the Cyprus University, which will assume responsibility for the creation of a Cyprus ITS Platform and evaluating the stakeholders needs and information provision, including the compliance with Reg. 886/2013 & Reg. 1926/2017.

2 CYPRUS ITS – AN OVERVIEW

Cyprus has an extensive main road network built primarily after 1980s, which connects the Island's main cities, in the area controlled by the Government of the Republic of Cyprus. The total length of the main road network is approximately 2450 Km which is maintained by the Public Works Department (PWD), of the Ministry of Transport Communications and Works, of which 257 Km are motorways of which 182 Km form part of the Cyprus Trans-European Transport Network (TEN-T). There are approximately 5150 kilometres of urban, rural and forest roads which are maintained by municipal authorities, regional authorities and the Forestry Department.

Congestion levels are increasing, mainly in urban areas, but also on motorway sections close to the urban centres, with the situation in some areas becoming critical. It is worth noting that the traffic between 2012-2015 stabilised, breaking the upward trend due to the reduction of the economic activity in the Country. Subsequently, Cyprus is experiencing a traffic upward trend of 3% per year.

Like other member states of the European Union, the Government of Cyprus continues to invest in improving and expanding this network and is examining the deployment of Intelligent Transport Systems (ITS) to maximise its capacity and safety, make a positive impact on the environment and reduce congestion levels. For the deployment of ITS, Cyprus maximises the use of EU Funding Programmes.

3 STRATEGIC APPROACH TO ITS DEPLOYMENT IN CYPRUS

3.1 Strategic planning

The "Study for the design and implementation of ITS in Cyprus and the development of a GIS application" was co-financed by the European Union Transition Facility (77%) and the Government of Cyprus (23%). The project was of the overall value of €1.1 million. It started in October 2007 and finished in December 2008.

The project was executed jointly by Delcan International Ltd (Canadian) and Tredit SA (Greek) and included the following activities:

1. Examination of existing situation in Cyprus in terms of the legal, political and operational framework in relation to the introduction of such systems
2. Examination of existing ITS systems deployed and any strategic intentions from the agencies to expand such systems
3. Examination of ITS deployment in other EU states and developed countries, such as US, Canada and Japan
4. Final list of projects, through consultation and filtering based on maturity and priority indicators, which progressed to the design and feasibility stage
5. Design of selected systems and feasibility study
6. Specifications of systems and preparation of contract documents
7. Set up of an ITS Control Centre to handle future deployment of ITS

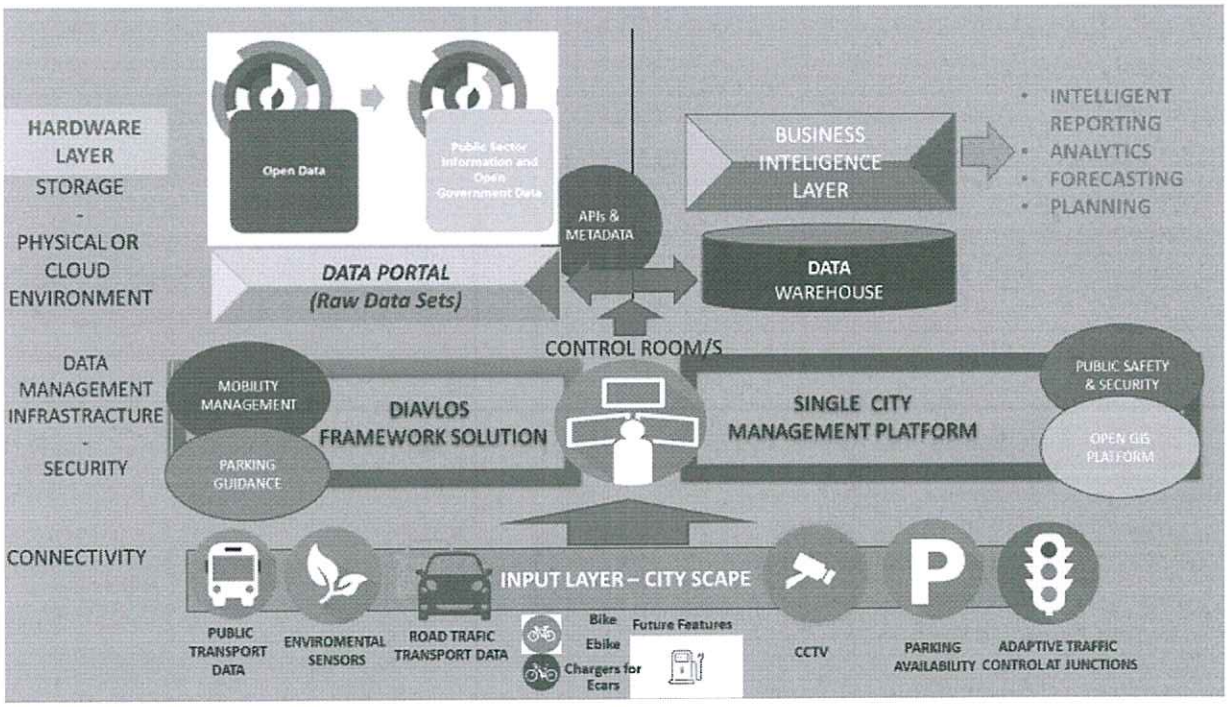
8. A GIS application that provides web-based capabilities

3.2 Planned ITS applications

On the basis of the above study and the development of ITS projects until today in Cyprus, the following systems are planned for the next two years (2020):

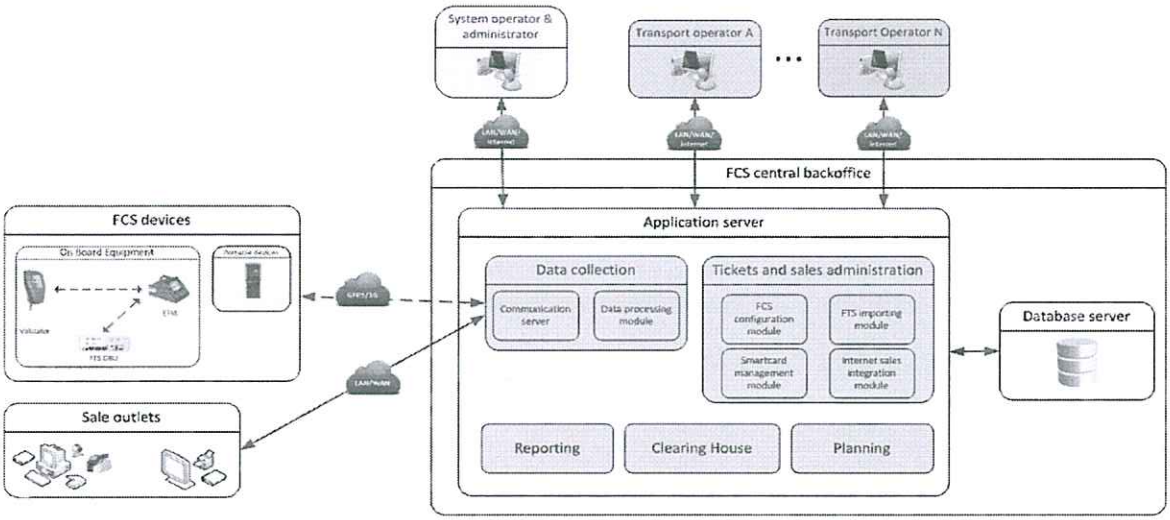
1. The implementation of the Single Access Point of Cyprus is progressed by the Public Works Department, which participates in relevant EU co-funded CEF projects – Crocodile II, Crocodile III, TN-ITS GO and Step2Smart INTEREG Cyprus - Greece. The four projects are building on the results achieved through previously implemented projects "DIAVLOS" & "Prodromos", which were co-funded by the INTEREG Programme Greece-Cyprus 2007-2013.

   Through our participation in the Crocodile II, III, TNITS-GO & Step2Smart projects and in consultation with partners (such as police) and interested private entities that require traffic and mobility data for developing their own services, Cyprus is pursuing the setting up of highly reliable connected data centres, to TIER III standard, the enhancement of the amount of data collected and improvement of data quality. The dissemination of data in an appropriate form will be achieved through web and mobile applications, and Application Programming Interfaces (APIs). The latter will also help external private entities to develop their own services. The data shall be available free of charge. The completion of the Crocodile & Step2Smart projects is expected by mid-2021. Below is shown the logical architecture of the Single Access Point for Cyprus.

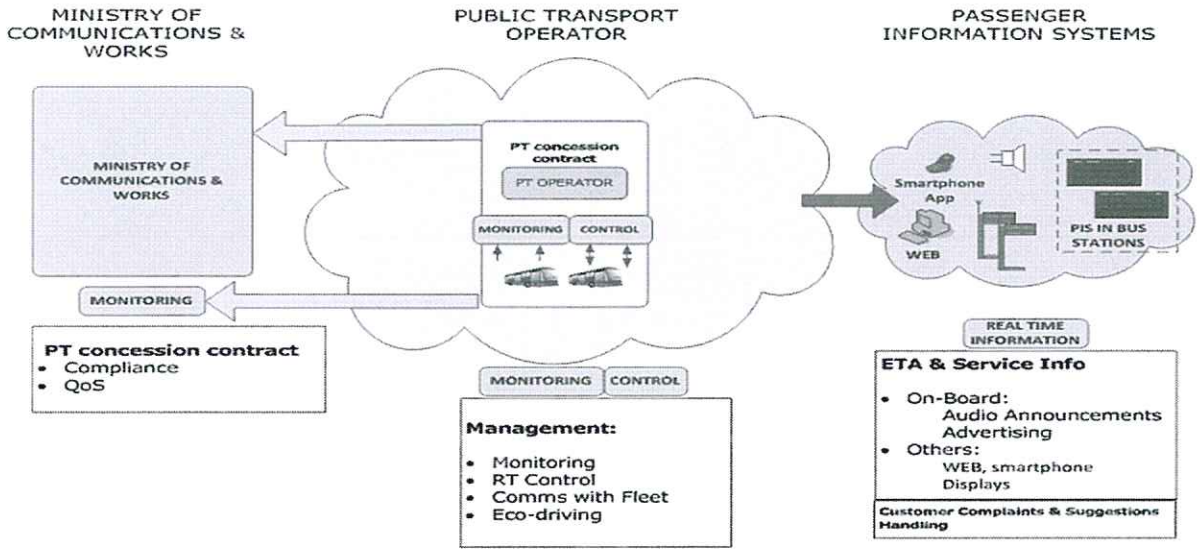


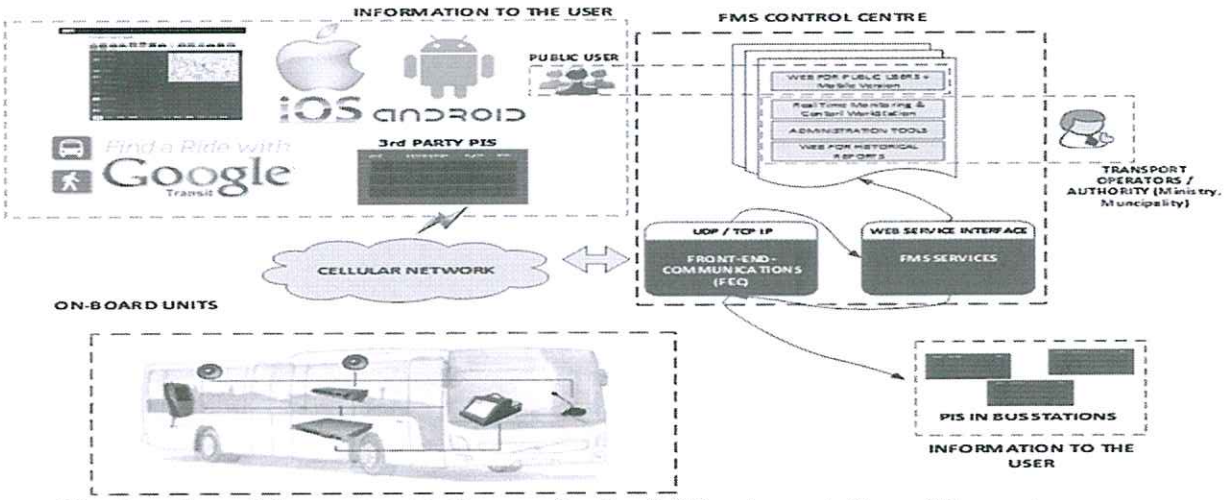
2. On May 2016, the Department of Public Works, on behalf of the Ministry of Transport and Communications, signed a 10-year contract with the Spanish company Grupo Mecanica del Vuelo Sistemas S.A. (GMV Sistemas SA) for the introduction of telematics systems on buses including:

i. Automatic ticket validation system with the use of smart cards. The logical architecture used is shown below:



ii. Fleet management and Passenger Information System. The logical Architecture used is shown below for both Fleet Management & Passenger Information:





The duration of the contract is 2 years for the full implementation of the systems and 8 years of maintenance.

The project is co-funded by the EU Cohesion Fund by 85% and is near to completion.

4 EXISTING ITS APPLICATIONS IN CYPRUS & DEVELOPMENTS

4.1 Current ITS applications that existed prior to the first report period (before 2014):

i. **Adaptive Traffic Signal Control System:** In an effort to improve congestion in urban areas, the Government of Cyprus introduced in 1993 an adaptive Urban Traffic System for the control of traffic-signalised junctions. The system is operated from the Headquarters of the Public Works Department (PWD) in Nicosia and facilitates the control of 90 junctions in Nicosia, Limassol and Larnaca. The current system is SCOOT ver 4.5-Siemens ver. 24.4. The system is used for traffic lights optimization and its main scope is to reduce junction delays and traffic congestion.

ii. **Traffic Counters:** There are about 13 counters which are installed on motorways, inter-urban and rural network. The traffic counters receive data for traffic flow, speed and axle weight; the data collected is used for statistical purposes, conducting traffic studies and for road pavement maintenance. The traffic counters are now connected to the new Traffic Control System.

iii. **Weighing Stations:** there are seven (7) permanent weighing stations installed on the Motorway Network, where sample checks of heavy vehicles is carried out by the traffic police.

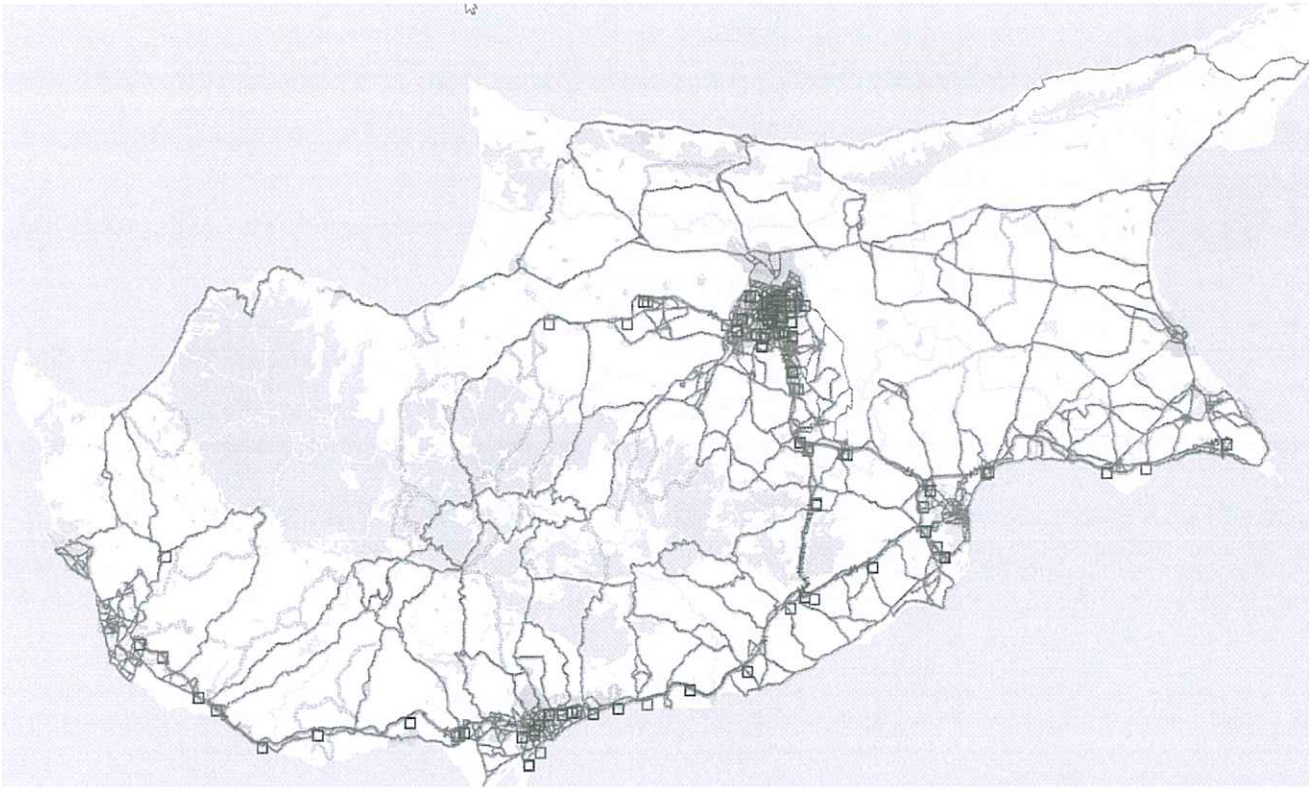
iv. **A number of fleet management services and route guidance systems** were developed by private initiative but were not widely used by the public sector or the industry. These, however are gaining ground as they have proven their effectiveness in improving operations and result in savings. The Government of Cyprus has introduced a fleet management system for all its vehicles in 2015.

4.2 *ITS applications put in operation during the report period (2014-2017):*

i. Traffic Management System & ITS Control Centre

Through the projects "DIAVLOS" & "Prodromos", which were co-funded by the INTEREG Programme Greece-Cyprus 2007-2013 and completed in 2014 and 2015 respectively, a traffic control centre was created in the Public Works Department. The Traffic Control System is now connected with more than 120 field devices collecting traffic data. The data is processed through the OMNIA-MISTIC Traffic Platform of Swarco Mizar and is used for the management of traffic and events. Results are also presented in a simplified form to the road users, including events, via our web site www.traffic4cyprus.org.cy. A picture of the Traffic Control Centre is shown below:

The traffic sensors installed are covering the primary road network of Nicosia, the accesses to the primary ports and airports, the primary accesses to all cities of Cyprus and all the Cyprus TEN-T Network. The data collected concerns traffic travel times, volume, speed, vehicle classification, programmed works, detection of incidents and availability of parking. The incident data is according to DATEX II protocol. The traffic data is collected at the control centre every five minutes. As mentioned above, the information is made available to the interested agencies and public through the website www.traffic4cyprus.org.cy. The picture below shows the location of the traffic sensors and the Traffic Control System overall coverage (in blue):



ii. Parking Management:

A system for calculating the available parking spaces has been installed in 5 central parking areas of Nicosia under the project DIAVLOS. The information is available to road users via electronic signs on the road and the web application www.traffic4cyprus.org.cy. Furthermore, the data is made available for the development of smart phone applications.

The system can be expanded to cover more parking areas in the whole of Cyprus.

iii. E-call Service:

Cyprus is following closely the developments on the e-safety initiative and has participated successfully in the "i-car support" forum. Cyprus has implemented all necessary actions for the functioning of e-call. Cyprus strategy on the e-call

implementation is linked with the further development of its 112 Emergency Service.

5 PROGRESS ACHIEVED IN MEETING DIRECTIVE OBJECTIVES DURING THIS REPORT PERIOD

The Ministry of Transport, Communications and Works continued in the period of 2017-2020 to invest in ITS, understanding the need to manage better its mobility networks using the latest Telematic Applications. In addition, the Ministry pursued better co-operation, on a formal basis, with other public authorities and private sector to promote the co-ordinated deployment of ITS in Cyprus.

The relevant assessment under each Priority Area referred to in the ITS Directive 2010/40/EU is presented below.

5.1 Priority Area I: Optimal Use of Road, Traffic and Travel Data of the Directive 2010/40/EU

As mentioned above, the ITS project "DIAVLOS" was promoted with the aim to improve information provision to road users regarding travel times, congestion, roadworks on the interurban and primary road network of Cyprus. The overall project cost was €0.8m and was completed by 2014.

The above system was subsequently expanded to cover with more traffic sensors the primary road network of Cyprus, including accesses to ports, airports, major

economic development areas and tourist destinations. The expansion was carried under the project "PRODROMOS" in 2015. The overall project cost was €1.1m.

Both projects were co-funded by the INTEREG programme Greece – Cyprus 2013-2015 by 80%.

The information is used for managing traffic and road events and is made available free of charge to responsible agencies and network users via web and smart phone app.

Cyprus, is pursuing the development of its Single Access Point by 2021 through the co-funded projects Crocodile II, III, TN-ITS-GO, Step2Smart and RONDA, bringing together all related traffic, environmental and GIS data available to the Ministry of Transport Communications and Works with the purpose of disseminating that free of charge.

5.2 Priority Area II: Continuity of traffic and freight management ITS services

Cyprus current activities are limited to projects for developing multimodal infomobility tools within Cyprus, which shall be made available through API's to web & mobile application developers.

Cyprus is an island and does not have cross-border road traffic or freight. Hence, no specific action is being taken in this Priority Area by Cyprus.

5.3 Priority Area III: ITS road Safety and Security Applications

Cyprus is following closely the developments on the e-safety initiative. All relevant "e-call" actions for activating the service were completed since 2015. Future Cyprus strategy on the matter is linked with the further development of the 112 Emergency Service.

5.4 Priority Area IV: Linking the Vehicle with the Transport Infrastructure

Cyprus is following closely the ITS Developments in V2I, V2V, V2All & Co-operative and Automated Driving and participates in the relevant EU meetings and initiatives. On this matter, Cyprus follows the lead of the established EU Car and ITS industries.

Once such technologies and systems are proven for their effectiveness and efficiency, Cyprus will consider their deployment. Hence, no specific action is being taken in this Priority Area by Cyprus at the moment.