Interreg
Ελλάδα-Κύπρος
Ευρωπαϊκό Ταμείο Περιφερειακής Ανάπτυξης
ΕΥΡΩΠΑΪΚΗ ΕΝΩΣΗ
step2smart

ΔΕΣΜΟΙ
ΑΝΑΠΤΥΞΗΣ

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The “Step2Smart” Platform for Historical and Real-Time Transport Analytics and Traffic Management

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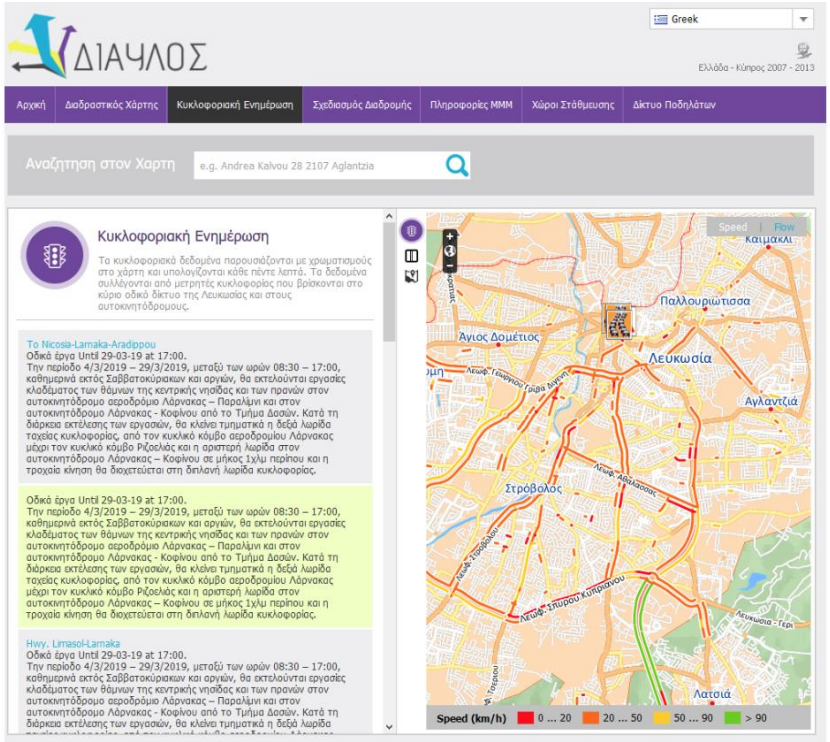
Step2Smart – Project Overview

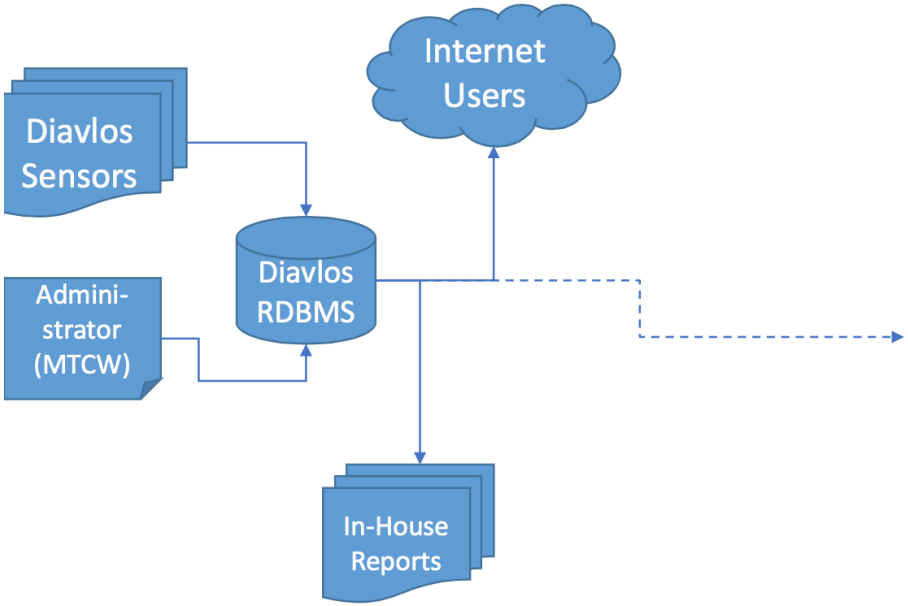
- The main objective of the project is the creation of an Open Architecture Interoperable System for Urban Transport Management and Environmental Impact Assessment.
  - A methodology, based on existing and new systems, will be developed and implemented, evaluated and calibrated for pilot actions in Nicosia, Chania and Kos.
  - Pilot actions will help reduce road delays, improve traffic management, inform users and network operators, and promote Public Transport in cities to achieve visible pollutant reduction results.
  - Project partners:
    - **Cyprus**: Ministry of Transport, Communications and Works, Ministry of Ministry of Labor, Welfare and Social Insurance - Department of Labor Inspection, University of Cyprus
    - **Crete**: Municipality of Chania
    - **Kos**: Municipality of Kos

Step2Smart – Transport Analytics Platform (1)



- Currently, the main source of data/information is the ***Diavlos*** platform and its sensors
  - Bluetooth 56
  - Loop Detectors 31
  - CCTV 5
  - Parking VMS 8
  - Weigh-In-Motion 11
- The data resides on the *Diavlos* server and is visually disseminated to users through the http://www.traffic4cyprus.org.cy website
  - Mainly summarized traffic indices, and not raw/summarized data

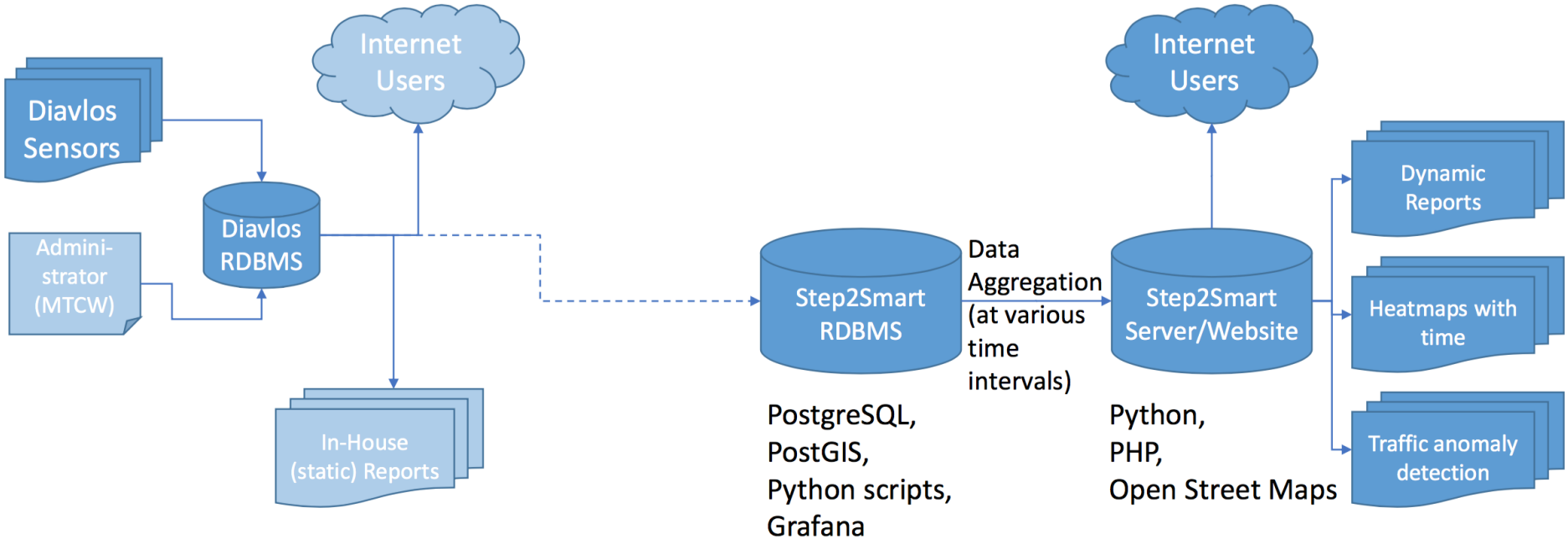
Step2Smart – Transport Analytics Platform (2)



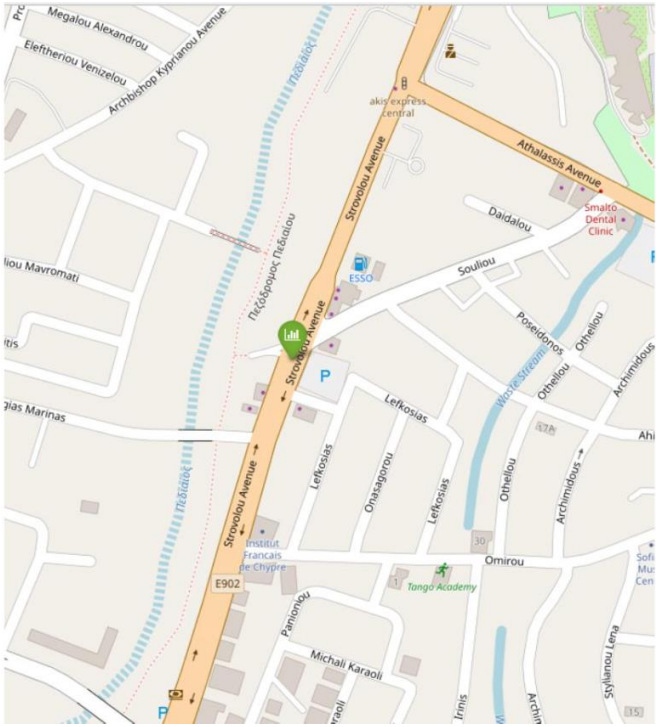
What about

- raw traffic data (to interested parties) and
- transport informatics for a wider range of analysis, either on-demand or in real time?

Step2Smart – Transport Analytics Platform (3)

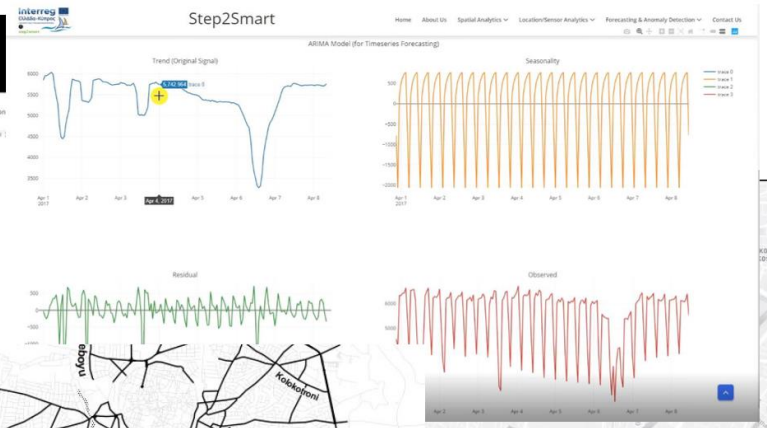


Step2Smart – Transport Analytics Platform (4)



- The data at a glance:
  - Focused on loop detector ‘1002’ (Strovolou Avenue, Nicosia)
  - Data period: 01 Apr. 2017 - 30 Sep. 2017
  - Data size: 6,170,256 database records (i.e. vehicular passes)
  - Data is in daily MDB files (about, 11 MB each and 1.3 GB in total)
- Data was imported into Step2Smart RDBMS Server and **preprocessed**, before analyzed in the Step2Smart Server Application
- In the Step2Smart Application, the analysis is **dynamic** and **on-demand**

Step2Smart – Transport Analytics Platform (5)



Step2Smart – Ongoing Work and Next Steps

- Link to traffic modeling and traffic signaling platforms, and to air- pollution monitoring stations
- Enable real-time processing
  - Government's open-data initiative
  - On-demand data acquisition and analysis
- Extend the traffic anomaly detection capabilities
  - Change-point detection, ANN, Deep ANNs
- Citizen alerts
  - Smartphone app
  - SMS server/notifications
  - VMS

Acknowledgements

- The work is part of the ***Step2Smart*** research project for "***Cross-Border Collaboration of Islandic Urban Areas to Improve Environmental Conditions through the Use of Intelligent Transport Systems***"

  - The Step2Smart research project is co-funded by the European Union and by national funds of Greece and Cyprus (*http://www.greece-cyprus.eu/*)
  - Project website: http://www.eng.ucy.ac.cy/step2smart/