Press release

# The need for better road monitoring systems

(Athens, November 2021) Road monitoring and traffic management is a challenging process, which involves cars, pedestrians, accidents, natural disasters, and many other potential distortion sources. The dynamic relationship among them, attributed to interactions with each other, can cause unpredicted and dangerous situations. Given the vast area of infrastructures to monitor and the limited personnel, one can understand the challenge. Given the current A.I. capabilities, supporting monitoring systems can be implemented.

A supporting A.I. based system in heavily dependent on the data availability. Cognitive road monitoring systems follow the same principle; the need of more and precise road related data[1]. Data will allow us to develop a management policy against multiple road condition adverse factors, e.g. climate effects or traffic load, and forecast infrastructure defects.

Towards that direction, traffic monitoring systems, that are integrated with road infrastructure, can provide precise road traffic data. These systems, mainly, use multiple type of sensors, e.g. cameras, piezoelectric, inductive loops, that detect the vehicles of an area. Nowadays, smartphones can allow users to provide data streams, together with GPS metadata. These capabilities encourage the utilization of smartphones and application for an efficient road traffic monitoring.

Therefore, the EU funded project PANOPTIS employed different kinds of machine learning approaches, based on multiple sources of inputs, to develop an application for road infrastructure monitoring. Such an application will provide access to multiple channels of information, which can be used to estimate the current traffic condition status and provide feedback to drivers and operators.

Additional information can be found in PANOPTIS site, just follow the link: http://www.panoptis.eu/.

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[1] Marcin Lewandowski, Bartłomiej Płaczek, Marcin Bernas, Piotr Szymała, "Road Traffic Monitoring System Based on Mobile Devices and Bluetooth Low Energy Beacons", *Wireless Communications and Mobile Computing*, vol. 2018, Article ID 3251598, 12 pages, 2018. https://doi.org/10.1155/2018/3251598