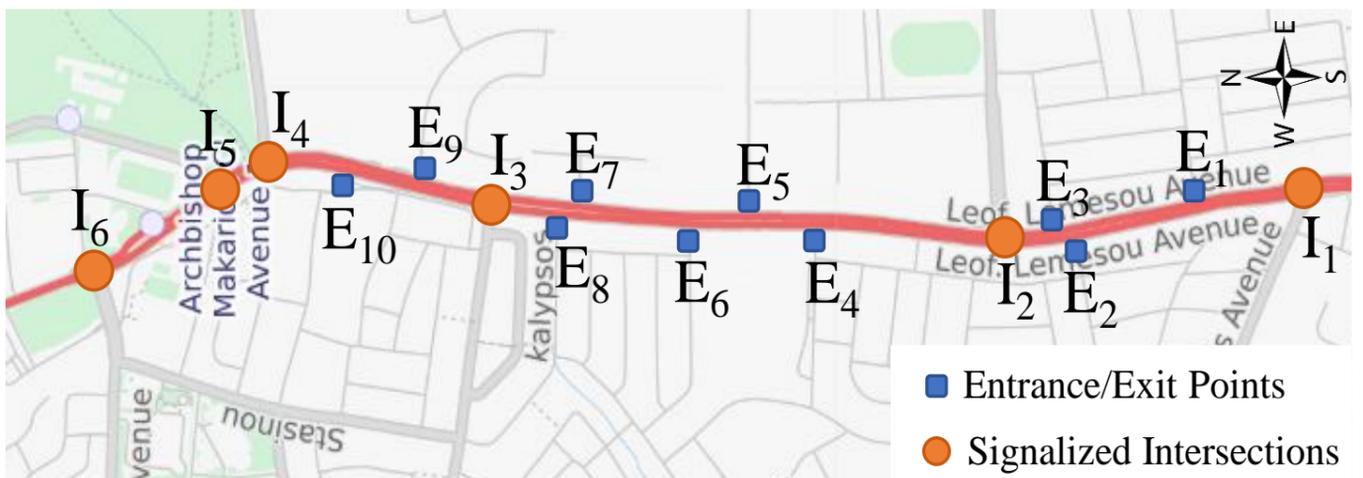


# KIOS TESTBEDS FOR CRITICAL INFRASTRUCTURE SYSTEMS

## Transportation Systems Testbed

Traffic congestion is a major societal challenge causing serious health, economic and environmental issues. To address this challenge, KIOS CoE aims to develop monitoring, control and security solutions for traffic management that utilize state-of-the-art and future technologies (e.g., connected and automated vehicles). The Transportation Systems Testbed facilitates the evaluation of advanced solutions with high-representational accuracy, under real-time and real-life conditions. The ultimate goal is to produce top-quality research and innovation outputs in the area of Intelligent Transportation Systems (ITS).



### ARCHITECTURE

- A main urban arterial of Nicosia, the Lemesou Avenue (see the figure above), will act as a **“live” experimental platform** for evaluating the performance of urban traffic monitoring and control algorithms
- Traffic measurements will be collected in real-time using both **existing and newly installed infrastructure sensors** by sending, analysing and visualising measurements at KIOS premises
- The open-source **microscopic simulator SUMO** will facilitate high representational accuracy of traffic scenaria

### CAPABILITIES

- Integration of real-life measurements in simulation
- Microsimulation of large-scale traffic scenarios
- Incorporation of connected and autonomous vehicles in simulations
- Exchange of information between transportation actors

### IMPACT

- **Scientific:** High-quality research solutions for monitoring, control and security of ITS
- **Societal:** Increased mobility efficiency and safety
- **Environmental:** Reduced fuel consumption and gas emissions
- **Economic:** Reduced congestion cost and increased productivity



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