Projects in Intelligent Transportation Systems

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**EM-VANETS**

- **EM-VANETS: Emergency message dissemination for safety applications in vehicular ad hoc networks**
  - **Objective:** Design, analyze and evaluate a new generation inter-vehicle communication system to instantly disseminate, hover and route critical safety information to vehicles and emergency services. The system will comprise of three main components

  - A **traffic aware short-range multihop broadcast subsystem** which upon detection of a road hazard will instantly disseminate emergency information to vehicles in the vicinity of the hazard;
  - a **hovering subsystem** which will maintain the emergency information in a relevant area around the hazard for some period of time notifying approaching vehicles of the imminent danger;
  - a **multi-hop routing subsystem** which will facilitate information exchange over large distances.
TRAFFICNET

• TRAFFICNET: Design, Analysis and Evaluation of a Next Generation Highway Traffic Management and Control System

  – design, analyze and evaluate a Highway Traffic Management and Control (HTMC) system

    • develop an adaptive roadway controller with learning capabilities and a scalable and distributed software architecture for the real implementation of the overall highway traffic management and control system.
      - Data Acquisition and Processing Unit (DAP),
        » collect data in real time used to calculate current traffic status and future demand.
        » Process data to extract useful information for ARC and ORU.
      - Adaptive Roadway Controller (ARC) and Optimal Routing Unit (ORU).
        » Use processed information to generate commands for ramp metering and speed limit distribution at various sections of highway as well as optimal routing instructions for vehicles.
TRAFFBUS-BUSSIM

- TRAFFBUS-BUSSIM: Modelling and Analysis of Traffic and Impact of Dedicated Bus Lanes on Strovolos Avenue and Archangelou Ave.
  - examine the use of simulation modelling in order to formulate strategies for improving the traffic flow of the current and future layouts of a major traffic network, in Nicosia
  - Signal Control Strategies and Bus Rapid Transit methods in a microscopic simulated environment.
  - attract more people to use public transportation network