Intelligent Transportation Systems:
Vehicular Communication NETworks (VANETs)

Intelligent Transportation Systems (ITS) aims for providing more secure and efficient transportation. An important component of an ITS is the Vehicular Communication NETworks (VANETs). VANETs components can be broadly classified under:

- Drivers/vehicles aim to reach their destinations safely using the shortest and least congested route.
- Road Side Units (RSUs) (infrastructure) collect and disseminate information that assesses drivers to reach their destinations. In particular, RSUs provide information concerning road conditions, road congestion, merging vehicles into the traffic flow, point of interest notification, etc.
- Point of Interest (PoI) is an entity that offers a different kind of services that might be of concern of the passing vehicles (e.g., hotels, restaurants, gas stations, etc.). A PoI depends on RSU to advertise the services it offers by means of PoI notification.

While communication links can be broadly classified under:

- Vehicle-to-Vehicle (V2V): allows the direct vehicular communication without relying on RSUs and can be mainly employed for safety, security, and dissemination applications.
- Vehicle-to-Infrastructure (V2I): allows a vehicle to communicate with RSUs mainly for information.
- Infrastructure -to-Vehicle (I2V): allows RSUs to communicate with vehicles.

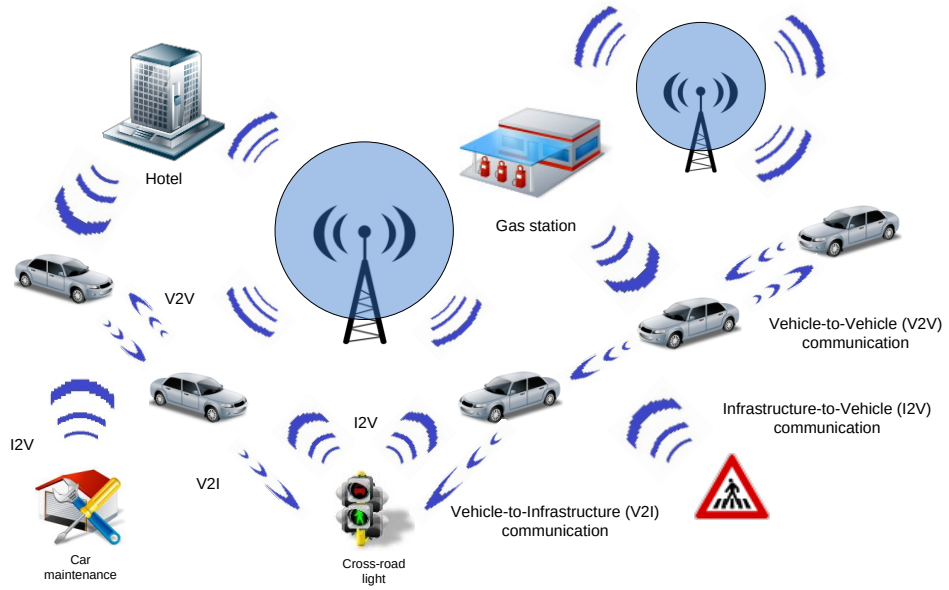

Figura 1 A partial diagram of Intelligent Transportation Systems

VANETs applications have been proven to be useful in increasing the safety of drivers (e.g., pre-crash sensing/warning, Cooperative Forward Collision Warning (CFCW), hazard location notification, etc.), and increasing the traffic efficiency (e.g., enhanced route guidance and navigation, green light optimal speed advisory, point of interest notification, etc.). However, VANETS component systems depend on information to perform and coordinate their activities among one another, and the efficient performance of such systems heavily depends on the quality of information they rely on.