Vehicular Internet Connectivity

- **3G offloading support.** The 3G interface is responsible for providing close-to always available connectivity, while the WLAN one is opportunistically used to offload non-critical traffic from the 3G network. This is achieved by using IP flow mobility mechanisms.

- **VANET connectivity support.** The most widely adopted approach to provide connectivity via WLAN in a vehicular scenario is the use of a multi-hop VANET. This requires specific IP address auto-configuration and routing protocols designed to operate in the vehicular environment, and enhanced for the V2I communications scenario. This is achieved by using TREBOL [14], a vehicular addressing and routing protocol specially designed to support the V2I scenario.

- **Interface management support.** Due to the high mobility nature of the tackled scenario, handover management is of critical importance, as the impact caused by moving traffic between the 3G and WLAN interface has to be minimal from both the application and the user perspectives. This is achieved by using optimized interfaces and layer-2 handover mechanisms based on the IEEE 802.21 standard.

- **Smart handover procedures.** A critical part of the solution is the intelligence responsible for deciding when a flow has to be handed off to a different access network and when it has to be brought back. There are different handover-decision approaches that can