

Subject: Analysis of the Impact of Communication Technologies on Vehicular Networks: Application to the Integration of UAVs in Intelligent Transportation Systems.

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Context:

With the rapid urbanization in large modern cities, traffic management challenges have become increasingly complex due to the constant increase in the number of vehicles on the roads. To address these issues, many cities have begun adopting advanced technologies such as Cooperative Intelligent Transportation Systems (C-ITS) and Unmanned Aerial Vehicles (UAVs, or drones). C-ITS offer a new approach to traffic management by relying on real-time data and cooperative communication to coordinate traffic and improve safety. These systems use connections between vehicles (V2V), between vehicles and infrastructure (V2I), or between vehicles and any other element (V2X).

On the other hand, UAVs provide unique capabilities, including aerial surveillance and emergency response, making them potentially useful as mobile communication relays to enhance C-ITS systems. However, the integration of UAVs into these networks raises questions regarding their impact on overall performance, communication security, and the efficiency of intelligent transportation networks

The integration of UAVs into intelligent vehicular networks is still an emerging field. While UAVs could play a key role as communication relays or mobile sensors, their use introduces technical and organizational challenges, particularly in terms of security, as they expand the attack surface.

In this context, the objective of this project is to:

- Conduct a state-of-the-art review of the integration of UAVs and other similar technologies into ITS networks.
- Conduct a state-of-the-art review of security issues related to the integration of UAVs and other similar technologies into ITS networks.