Secure and Resilient Vehicular Platooning
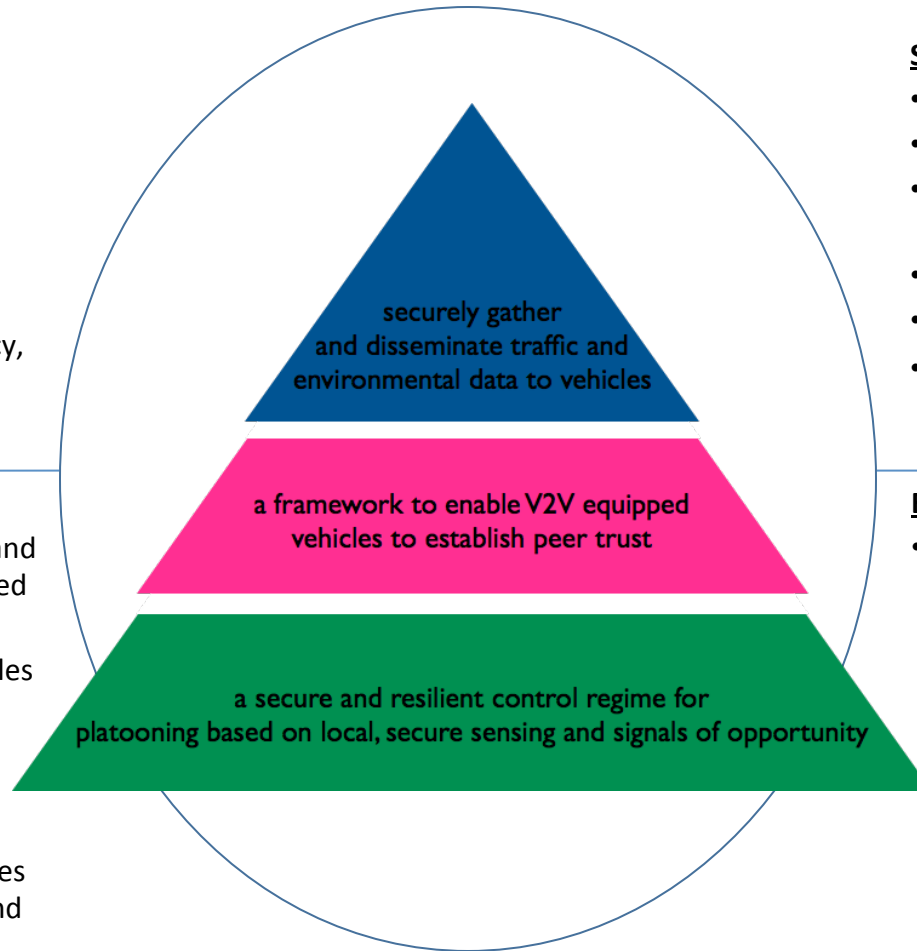
SATS Group
Secure Automated Transportation Systems

Challenge:
- A secure foundation for a transportation system that increasingly relies on cooperative automation strategies and vehicle connectedness to achieve increases in safety, efficiency, and capacity.

Solution:
- Secure and resilient control and sensing regimes for automated vehicles
- A framework to enable vehicles to establish peer trust
- An infrastructure with the ability to securely gather and disseminate traffic and environmental data to vehicles for optimal route planning and accident avoidance.

securely gather and disseminate traffic and environmental data to vehicles

a framework to enable V2V equipped vehicles to establish peer trust

a secure and resilient control regime for platooning based on local, secure sensing and signals of opportunity

Scientific Impact:
- Secure and resilient control
- VANET security
- Trust establishment and management
- Physical-layer security
- Decision theory
- Secure protocol design

Broader Impact:
- Fully automated highway systems are expected to reduce accidents, virtually eliminate traffic jams, and optimize the flow of people and goods across public roads

  It is essential to understand threats to, and prepare for attacks against, the system prior to general deployment

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