CPS: TTP Option: Medium: Identifying, characterizing, and shaping multi-scale cyber-human interactions in mixed autonomous/conventional vehicle traffic

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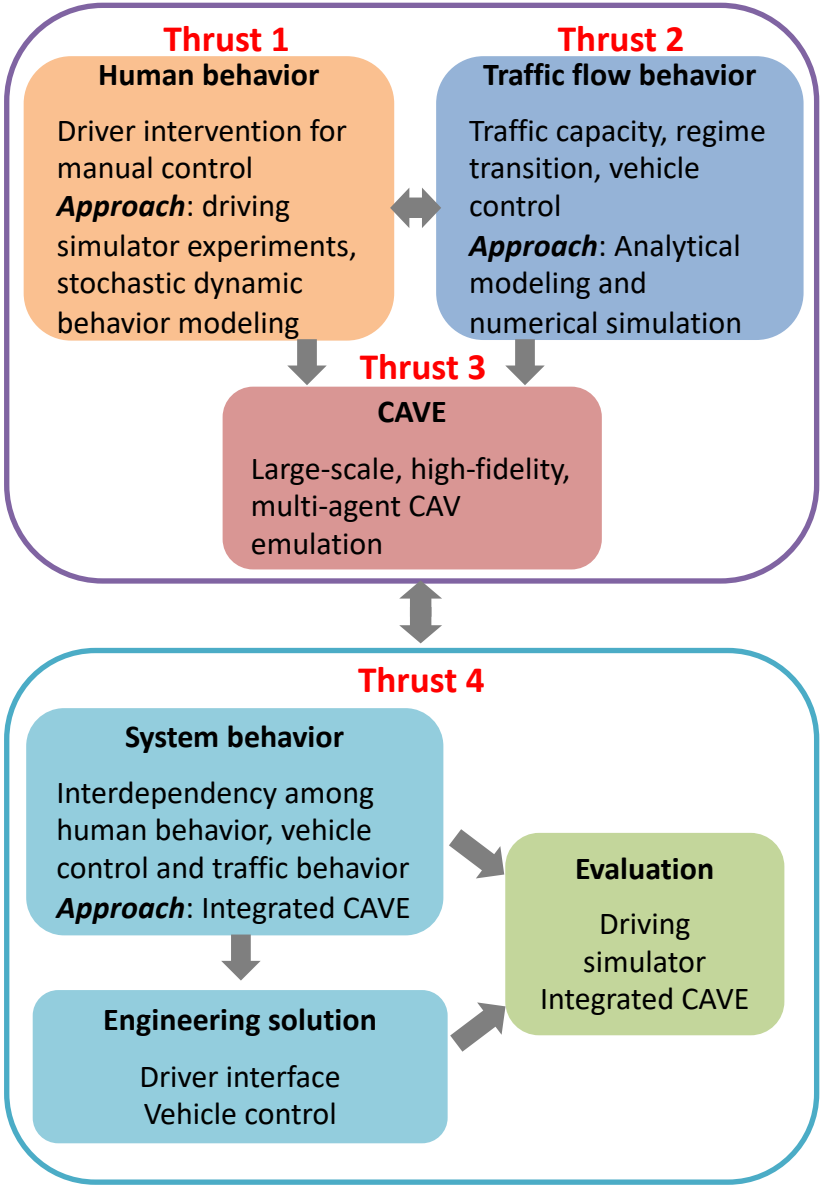
Description

Identify, characterize, and shape multi-scale cyber-human interactions in mixed autonomous and conventional vehicle traffic

Goals of This Project :

- Driver trust in vehicle automation (driver intervention)
- Analytical and computational methods to describe the effects of driver intervention on mixed traffic flow
- Prototype driver interface, vehicle control algorithms, and vehicle platooning strategies to enhance cyber-human interactions and traffic flow

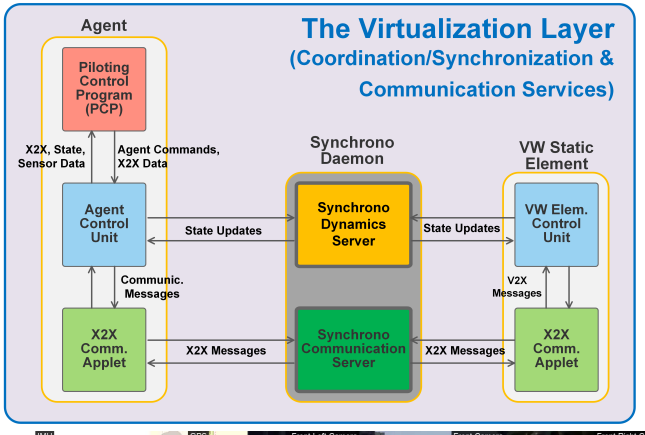


Findings

- Identified measures of the distance between a person's driving style and that of automation.

- Developed an analytical framework to investigate how a traffic disturbance might change the properties of traffic flow and consequently traffic capacity.

- Physics-based modeling and simulation.
  - Establishing multi-agent dynamics simulation engines (multiple vehicle models; i.e., multiple "agents")
  - Sensor simulation
  - Communication simulation
  - Virtual world simulation
  - Modeling human input and avatars



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