



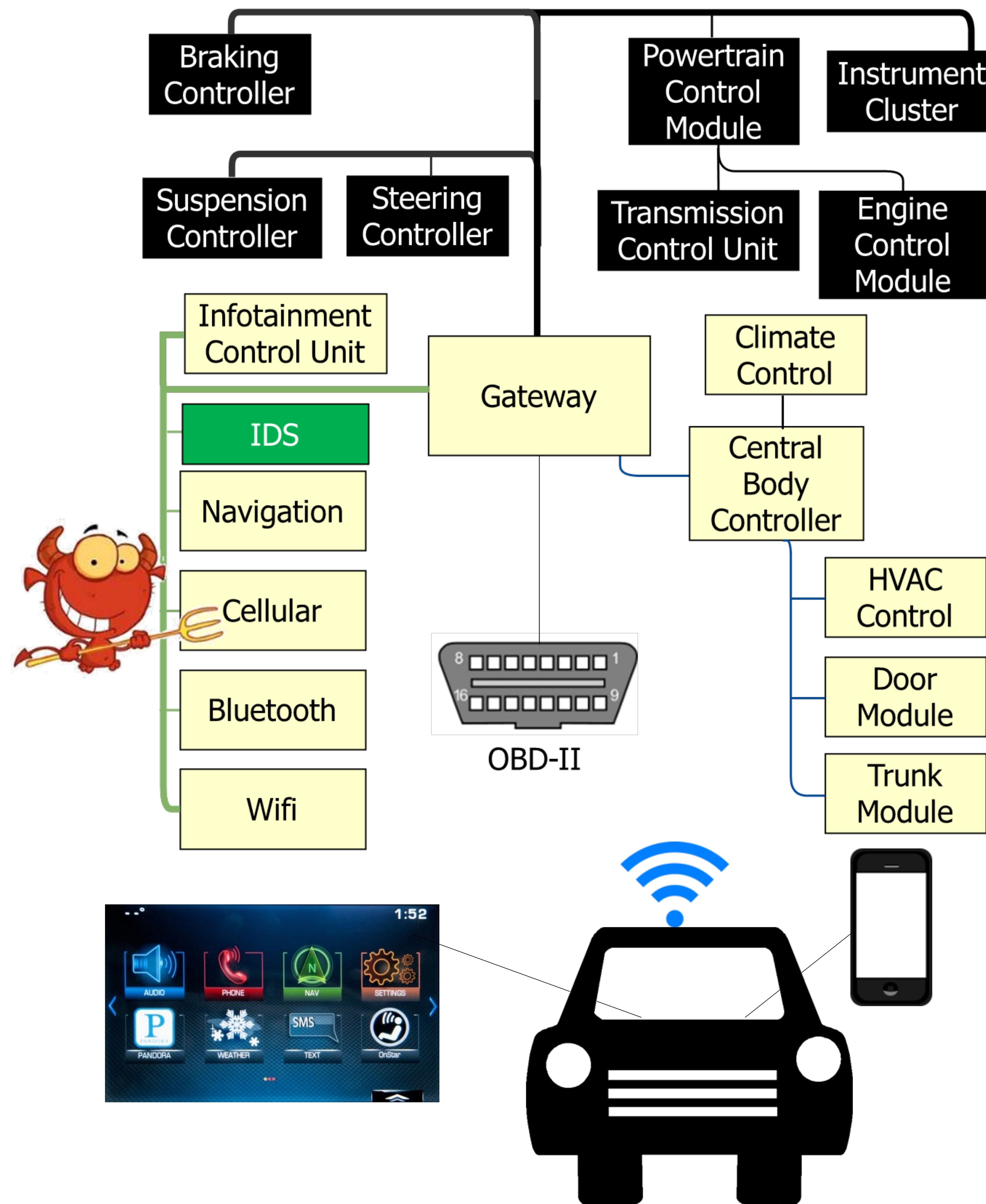
CPS: Breakthrough: Collaborative Research: Track and Fallback: Intrusion Detection to Counteract Carjack Hacks with Fail-Operational Feedback

Challenge:

- Cars need to balance security and safety
- Attack surface is broad
- Technology is legacy

Solution:

- Several novel intrusion detection systems (IDS)
- New attack discovered –WeepingCAN
- Research infrastructure (data, virtual testbeds)



Scientific Impact:

- Specification-based IDS using real-time theory may apply to all control applications across CPS
- Controller Area Network is a concern in many CPS including industrial control system (ICS), agriculture, and maritime

Broader Impact:

- No safety without security
 - Cybersecurity increasingly matters as automobiles become more connected
- Training and BPC
 - 7 undergrad (3 Black) students
 - 4 PhD (2 Black, 1 veteran) students
 - SAE CyberAuto/CyberTruck
 - Cummins Truck Hackathon