Global Technology Connection

ECU Finterprinting for Intrusion Detection

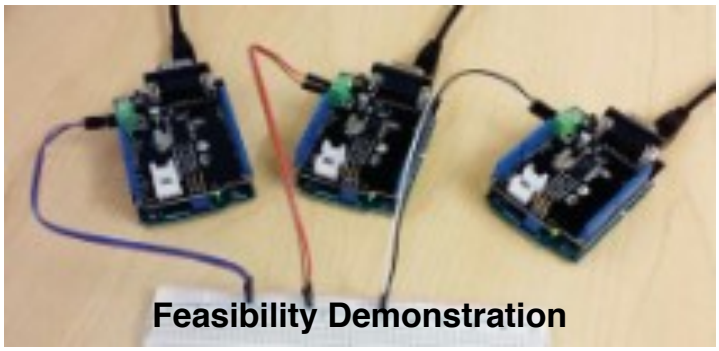
What is ECU Fingerprinting?

Automobiles are increasingly prone to cyberthreats that can compromise a vehicle's safety critical Electronic Control Units (ECUs). ECU fingerprinting is a technique to extract and verify unique ECU voltage and clock signatures. These signatures help validate in-vehicle network messages and to identify and isolate compromised ECUs from affecting vehicle operation.
These algorithms can be implemented without requiring any modification to existing vehicle hardware or software. They self-adapt and tune themselves to new hardware and gradual normal changes in their behavior. This technique provides comprehensive coverage for different cyber-attack types and can even capture new and sophisticated threats.

Capabilities:
- Automated fingerprinting of ECUs
- Provides comprehensive coverage
  - Suspension attacks
  - Fabrication attacks
  - Masquerade attacks
- Adapts to normal ECU changes
- Automated isolation of compromised ECUs

Applications:
- Military ground vehicles
- Commercial Automobiles
- Other platforms using ECUs

Benefits:
- Rapid and robust onboard detection
- Robust to new attack vectors
- No impact on vehicular operation
- No lag to in-network messages
- Patent protected technique



Feasibility Demonstration

Applications

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