

T-SYS & T-Pack: Intrusion Detection for CPS

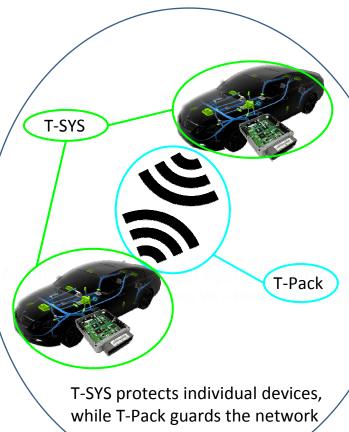
Challenge:

- Real-time systems need protection from cyber attacks
- Standard security
 mechanisms should be
 complemented by
 novel techniques

Solution:

- Detect attacks by timing anomalies
- T-SYS: execution progress tracking
- T-Pack: network packet arrival tracking

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Scientific Impact:

- T-SYS: Configurable protection scope across user-kernel boundaries
- T-Pack: detection of delay attacks on networked real-time systems

Broader Impact and Broader Participation:

- Demo code in a real RTOS
- T-SYS: Lower overhead than other timing-based security measures
- T-Pack: Detects 100% of DDOS attack of small intensity at minute cost