

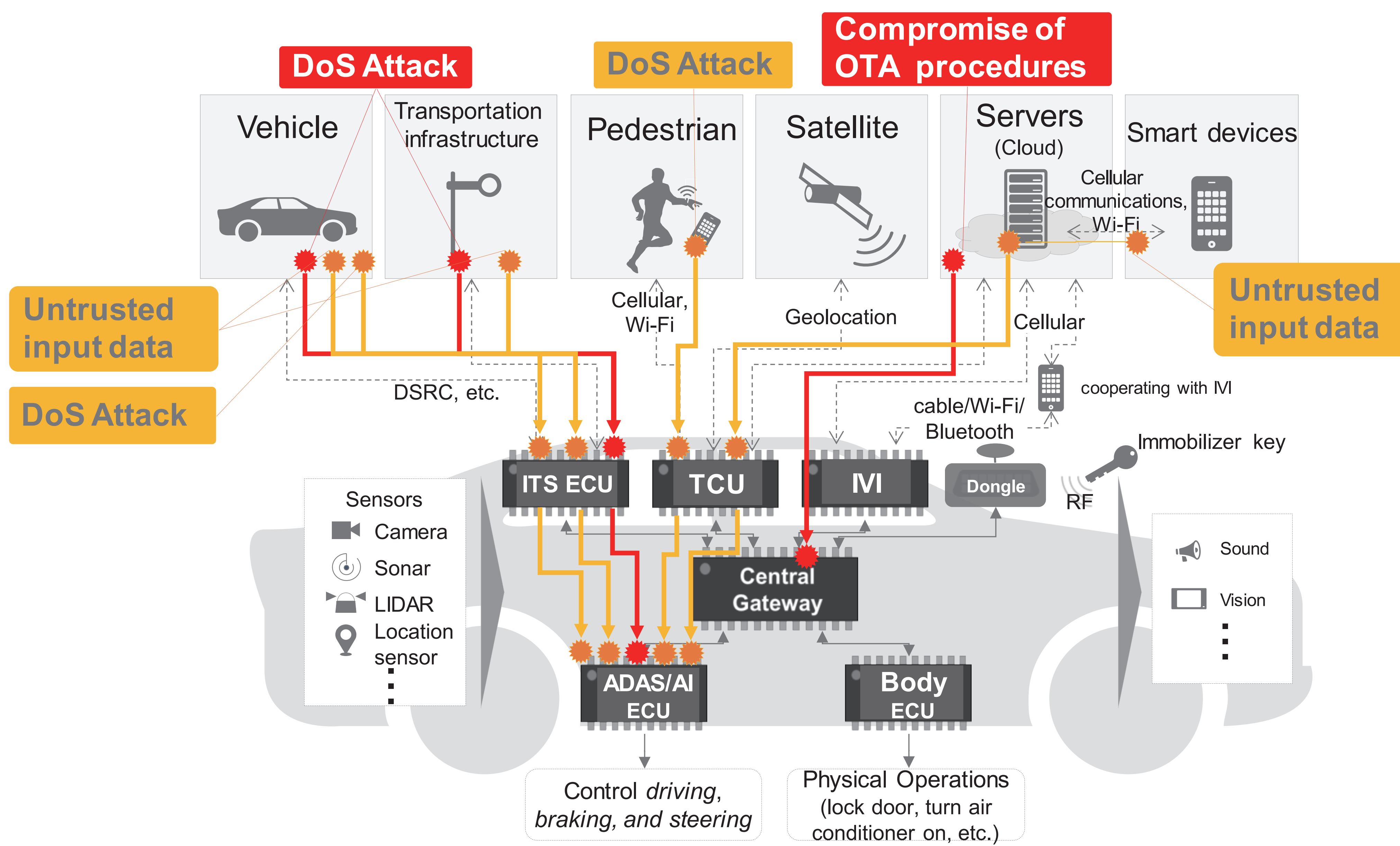
Establishment of Security Evaluation Method against Attacks using Vehicle Communication



Establishment of Vehicle Security Evaluation Method

Formulation of Comprehensive Threat Model

Identified a common model for automated driving system as well as a comprehensive threat model.



【Approach】

- Developed a list of services and features related to automated driving systems.
- Identified a common model.
- Clarified all threats against the common model.
- Developed a framework to evaluate criticality of the threats.

Establishment of Evaluation Method

Using the threat model, established an evaluation method based on actual attack process.

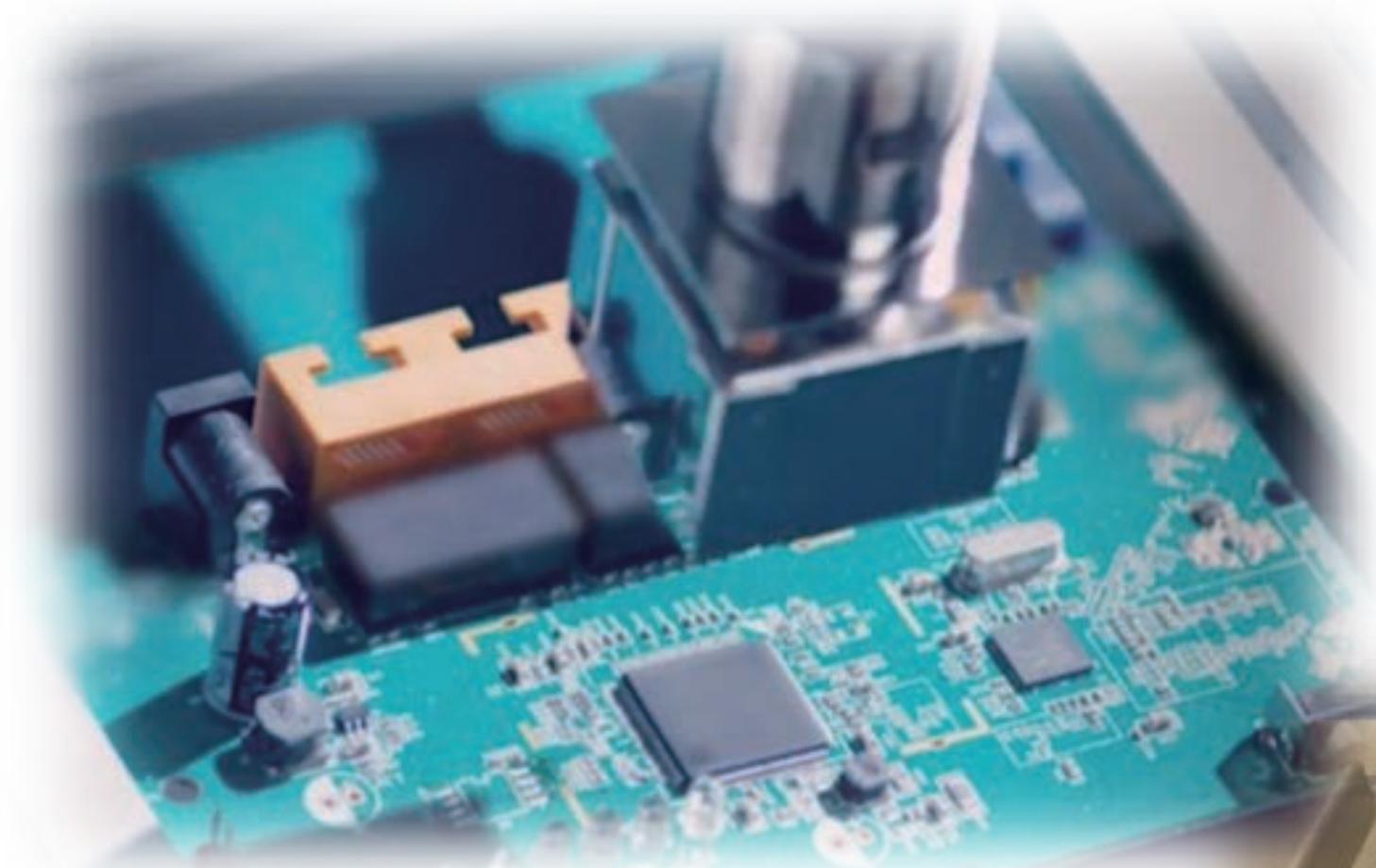
【Point1】

Intrusion from external I/F from actual hacker(attacker)'s viewpoint

Major Items	Middle Item
1.Reconnaissance	1.1 HW research 1.2 SW research
2. Penetration	2.1 Passive attack with user intervention 2.2 Passive attack without user intervention 2.3 Active attack targeting vulnerabilities 2.4 Active attack using information obtained through interception
3. Command & Control	3.1 Remove protection 3.2 Obtain superior authority
4. Actions on Objectives	4.1 Information breach 4.2 Service interruption 4.3 Unauthorized operation (Control System) 4.4 Unauthorized operation (Infotainment System)

【Point2】

Evaluate HW security functions taking into account actual attacks



Desoldering (Chip Remove)



Extract Firmware