



FEDERATION INTERNATIONALE DE L'AUTOMOBILE
REGION I - EUROPE, THE MIDDLE EAST AND AFRICA

FIA

Protection Against Mileage Fraud by Common Criteria

UNECE 2015-05-05

FIA Protection against Mileage Fraud by Common Criteria

Why does the FIA propose a protection against mileage fraud

Summary

Common Criteria

Target of Evaluation (Annex 5,2)

Protection Profile / Security Target (§2.6, §5.5.2, Annex 5)

Next Steps

FIA Protection against Mileage Fraud by Common Criteria

Why does the FIA propose a protection against mileage fraud

- Mileage Fraud is a safety risk, it causes unexpected faults and leads to breakdowns
- Mileage Fraud undermines legal requirements on the durability of environmental relevant components
- Mileage Fraud leads to an annual loss of €5.6 - €9.6 billion for consumers
- Mileage Fraud affects 8% – 12% of used car sales, rising to 30% - 50% for cross border transactions
- Mileage Fraud can be done for many vehicles in about one minute via the OBD port. The frauding tools are available from 150,-€

FIA Protection against Mileage Fraud by Common Criteria

Summary

- The FIA proposes to develop and verify the protection against mileage fraud with the methodology of common criteria according to ISO/IEC 15408 and ISO/IEC 18045.
- Protection level: Manipulations must be so time effort and cost intensive that they are no longer cost-efficient compared to the higher sales price, risk of mortal danger or environmental perils that can be achieved during the complete lifetime of the vehicle.
- While the Protection Profile is unique and the method of common criteria is standardized, the Vehicle Manufacturer can still individually decide, what measures he takes to meet his specific Security Tag. It will be stated in the VM-specific Security Target.
- The type approval authority must only check the successful evaluation result for VM specific solution.

FIA Protection against Mileage Fraud by Common Criteria

Common Criteria

- FIA proposes the **standardized methodology** of „Common Criteria“ to ease the development for vehicle manufacturers and the approval for authorities of the protected mileage data.
- The approach is **technology neutral**, as it defines a single Protection Profile, but leaves it up to the manufacturer how to realize the solution by his individual Security Target.
- The methodology of Common Criteria is an approved IT process, **accepted in 27 countries** around the world and under constant development to stay state of the art.
- The base for ISO/IEC 15408 and ISO/IEC 18045 is given publicly under <http://www.commoncriteriaportal.org/cc/> (CC and CEM).

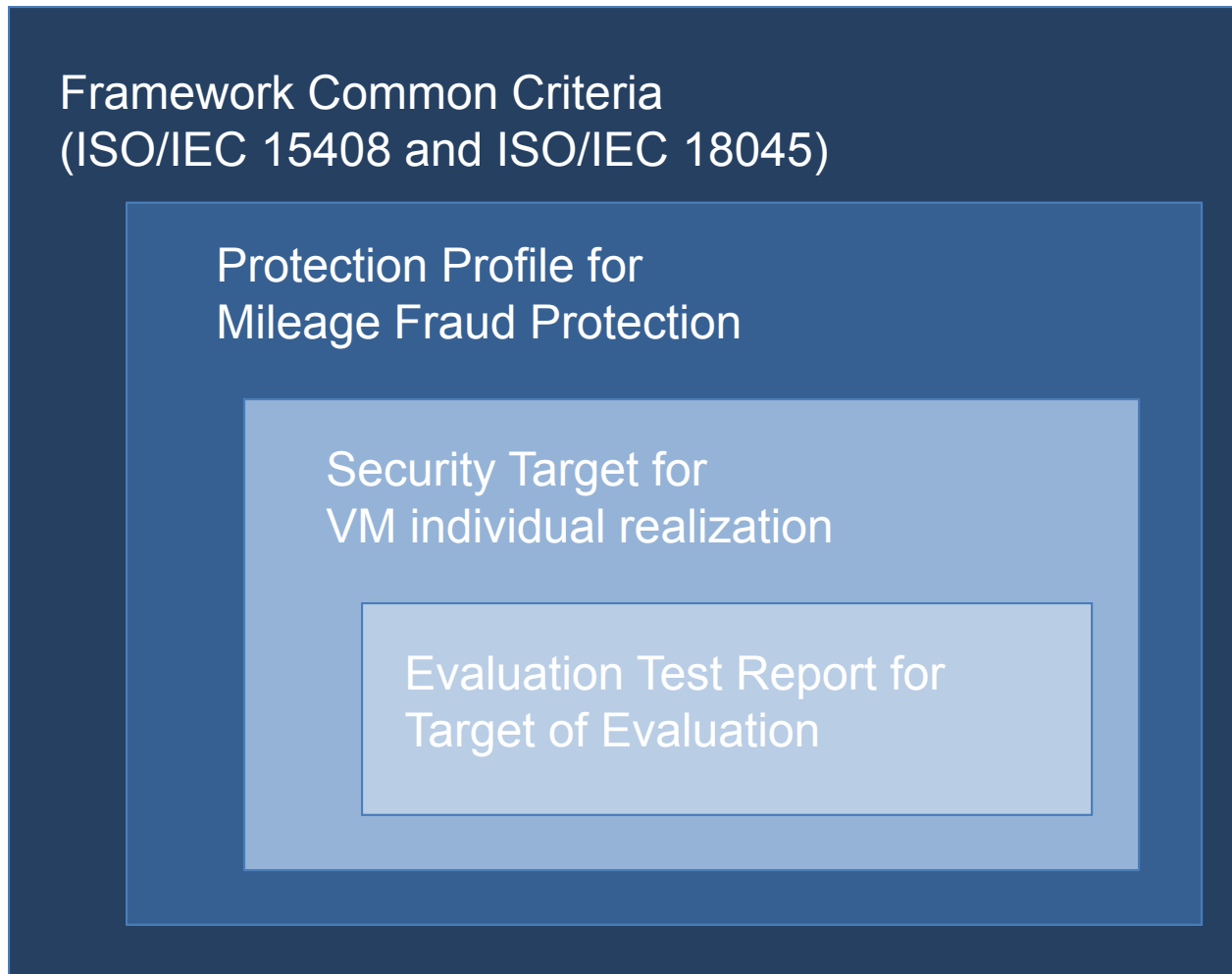
FIA Protection against Mileage Fraud by Common Criteria

Common Criteria used for protection against Mileage Fraud

- A **Protection Profile (PP)** document for the mileage data must be deployed. It states the assets to be protected, the required protection level and can be understood as a kind of “catalogue” for threats and protection mechanisms. This single document will be used as general base for all VMs
- A **Security Target (ST)** document will map the Protection Profile to the individual realization in a system. Thereby, items from the “catalogue” PP will be selected and it will be described, how they act to reach the protection level. This allows a VM-specific implementation
- An Evaluation will be performed by independent, accredited labs on the **Target of Evaluation (TOE = implementation at the VM)** under consideration of PP and ST in order to verify that the required Protection Level is met
- The **Evaluation Test Report (ETR)** of the lab will reveal areas of improvements to VM and deliver a successful confirmation for usage towards the type approval authority

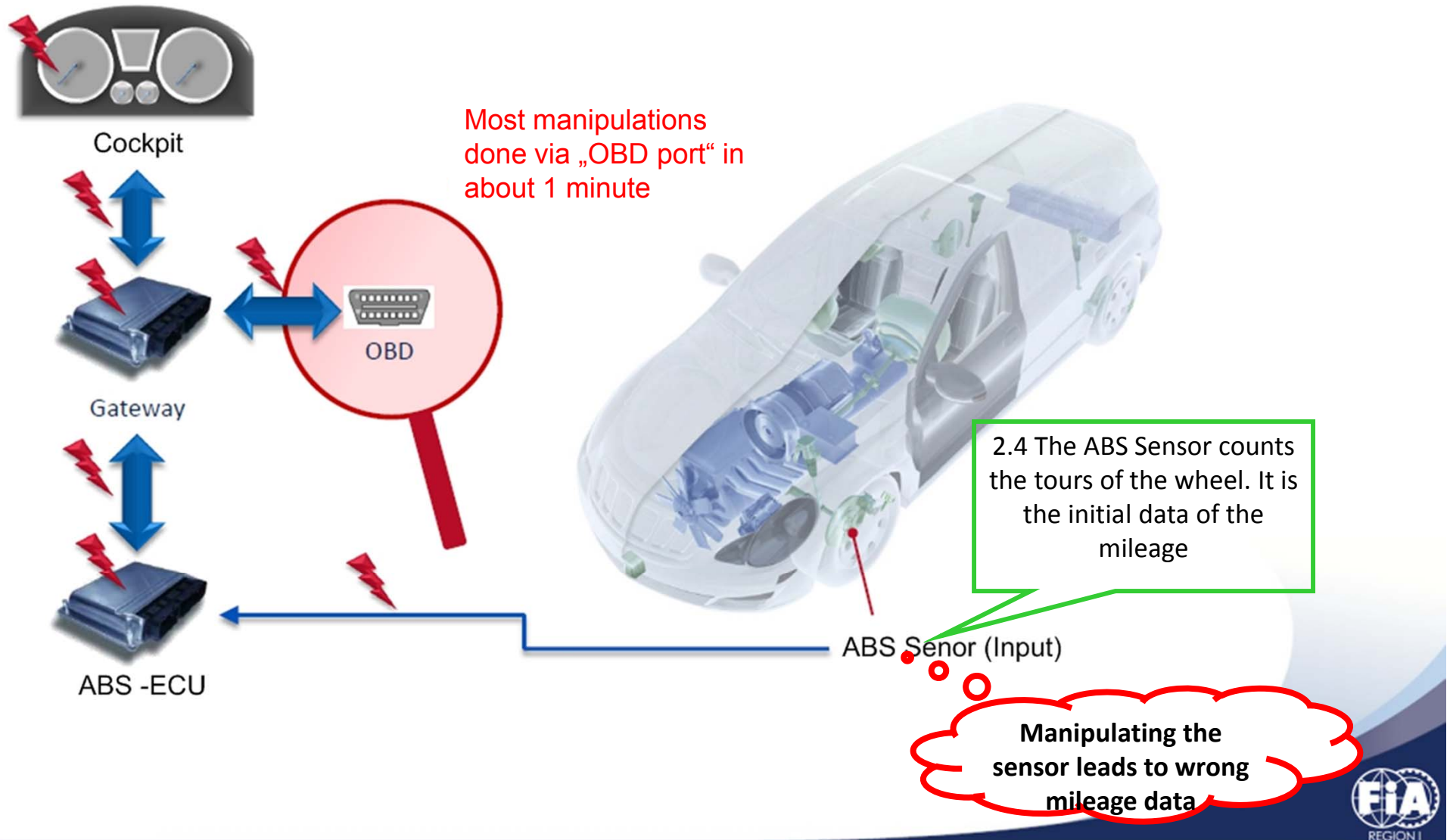
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Common Criteria used for protection against Mileage Fraud



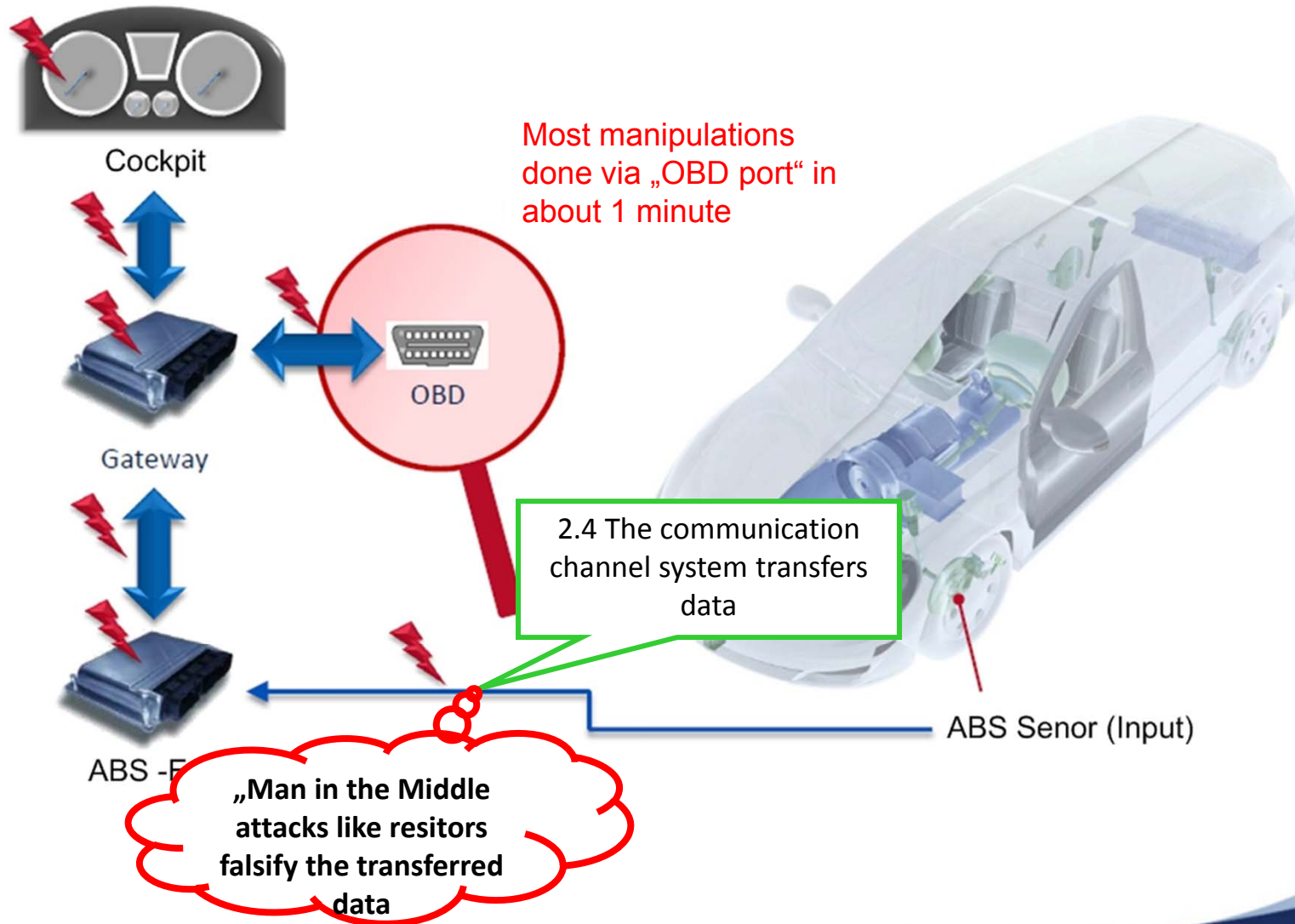
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Target of Evaluation (TOE, Annex 5, 2)



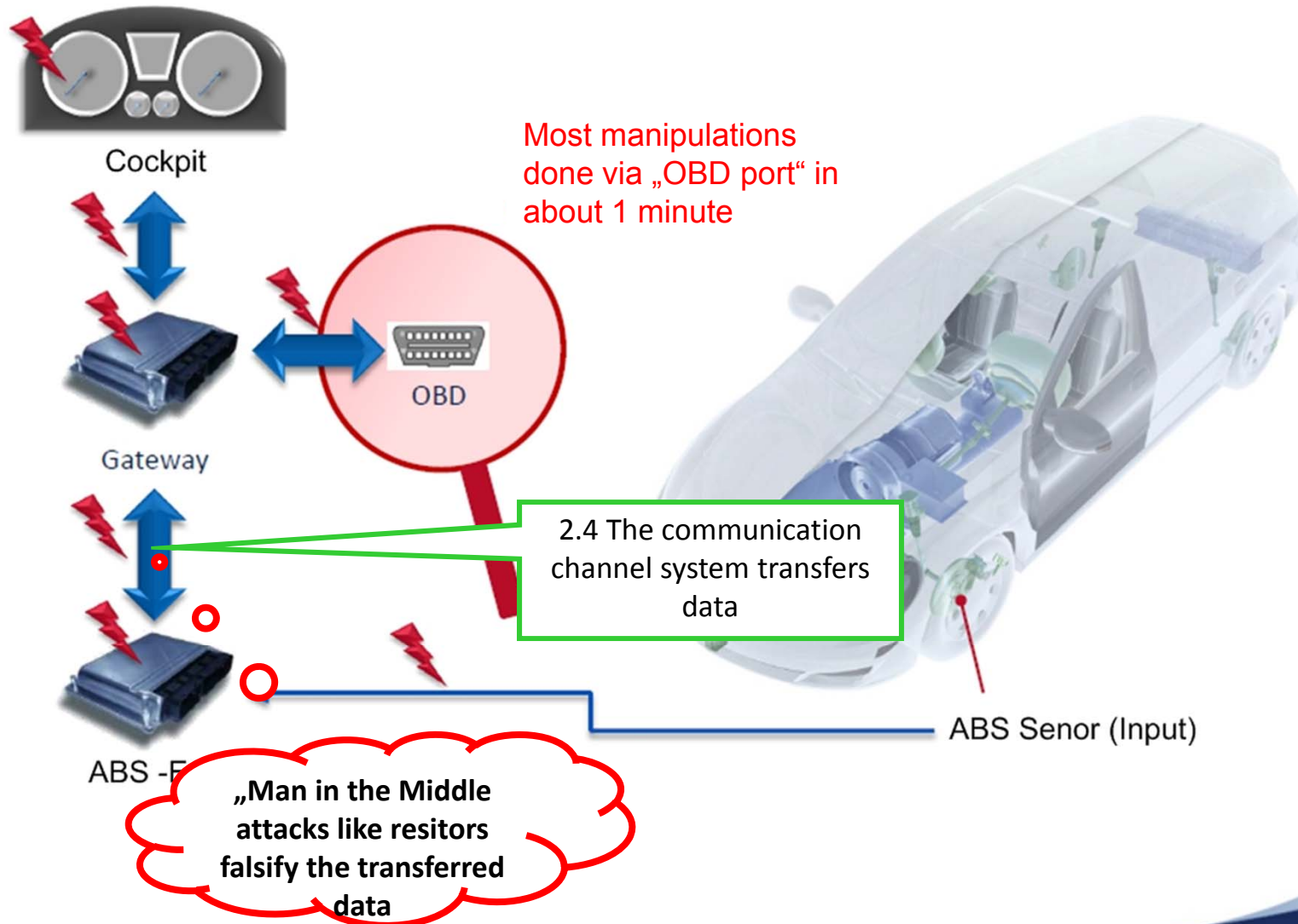
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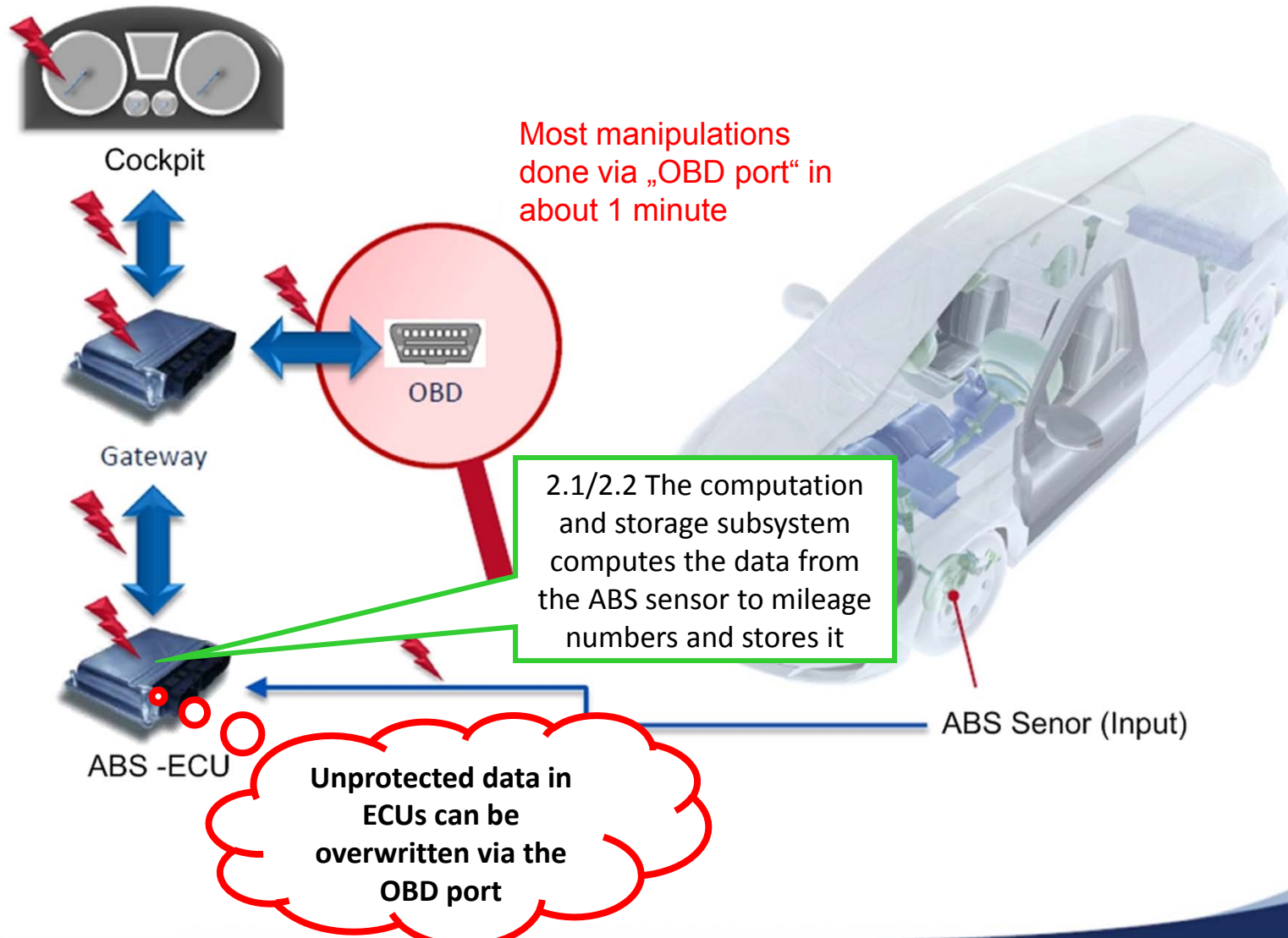
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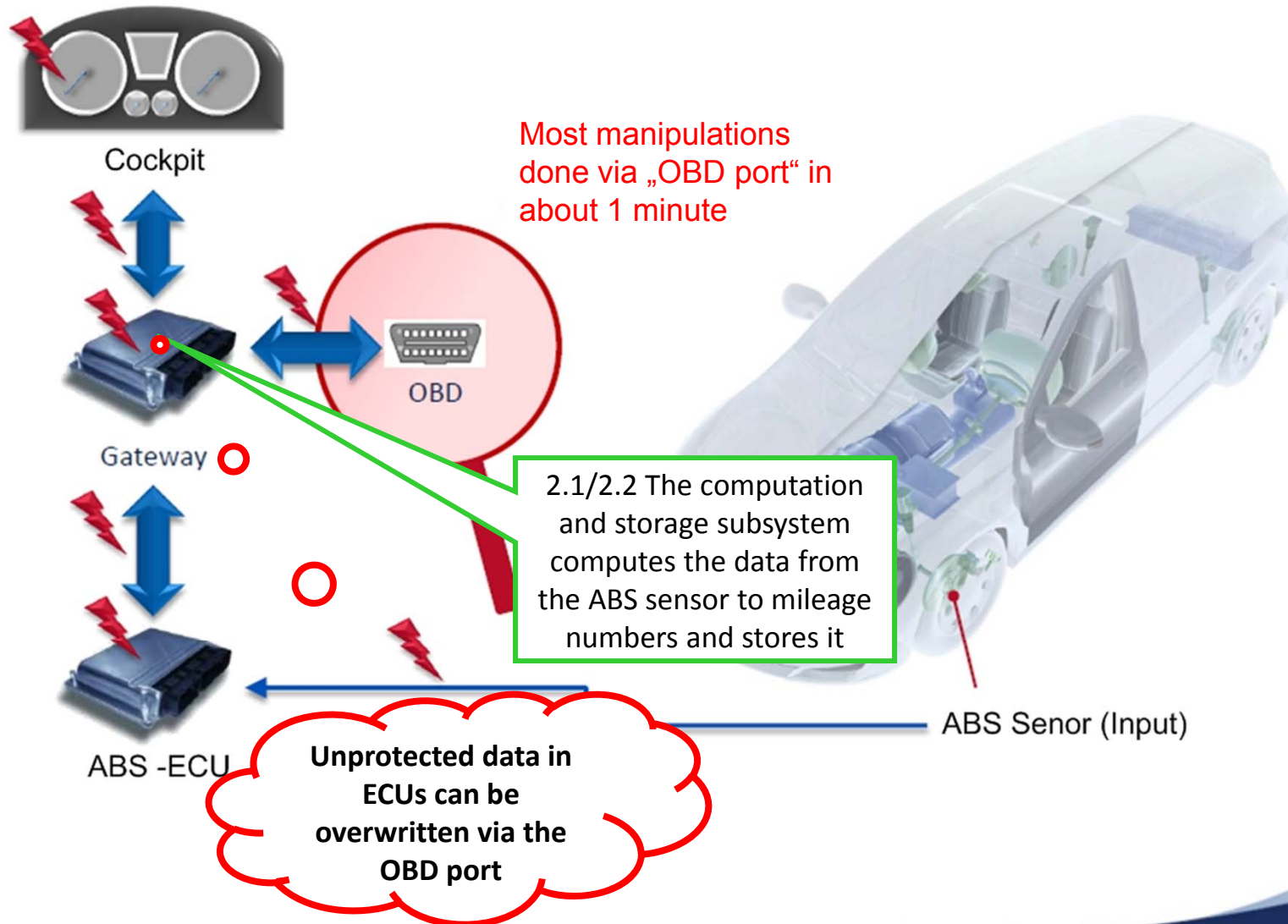
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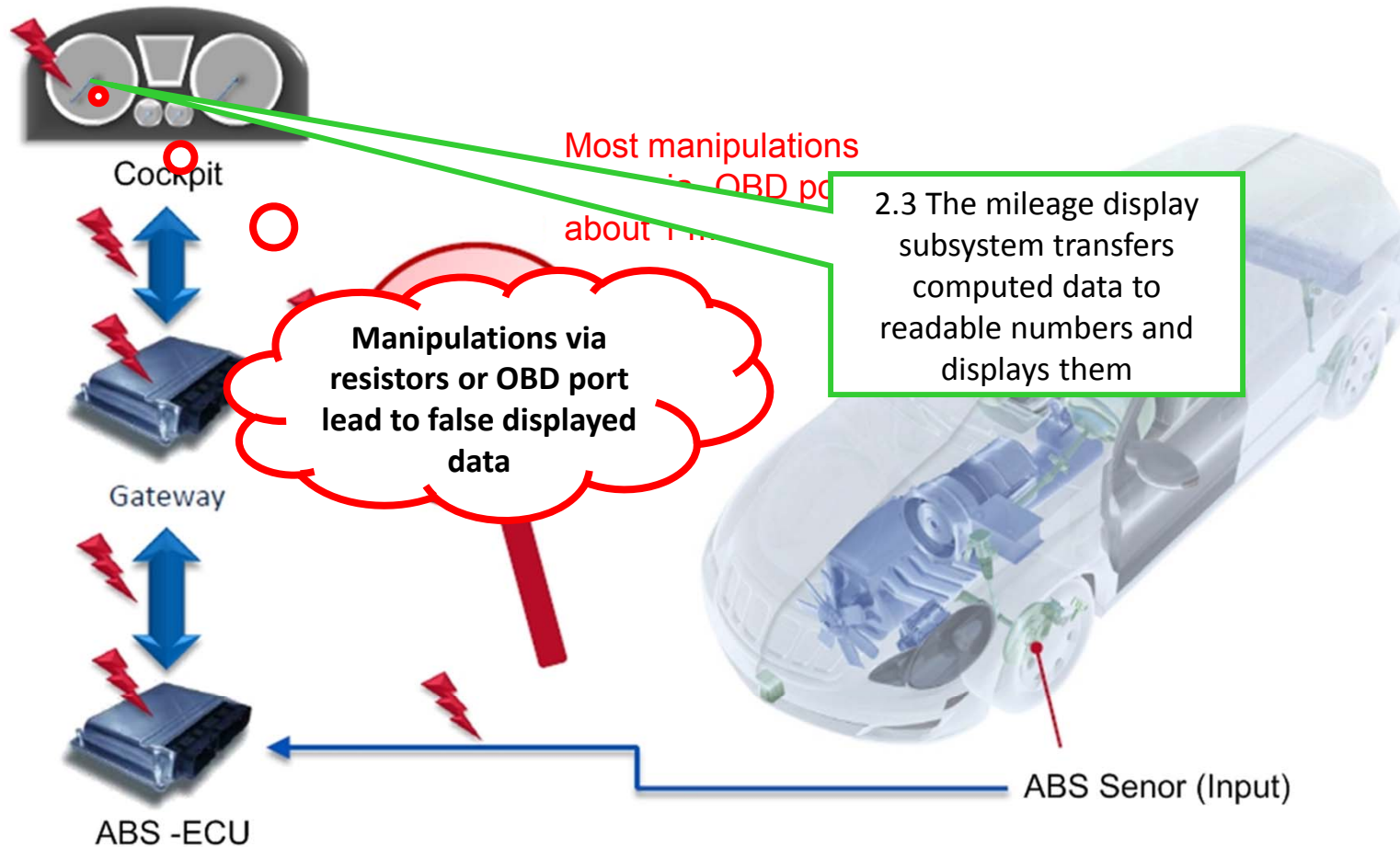
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Target of Evaluation (TOE, Annex 5, 2)



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Target of Evaluation (TOE, Annex 5, 2)



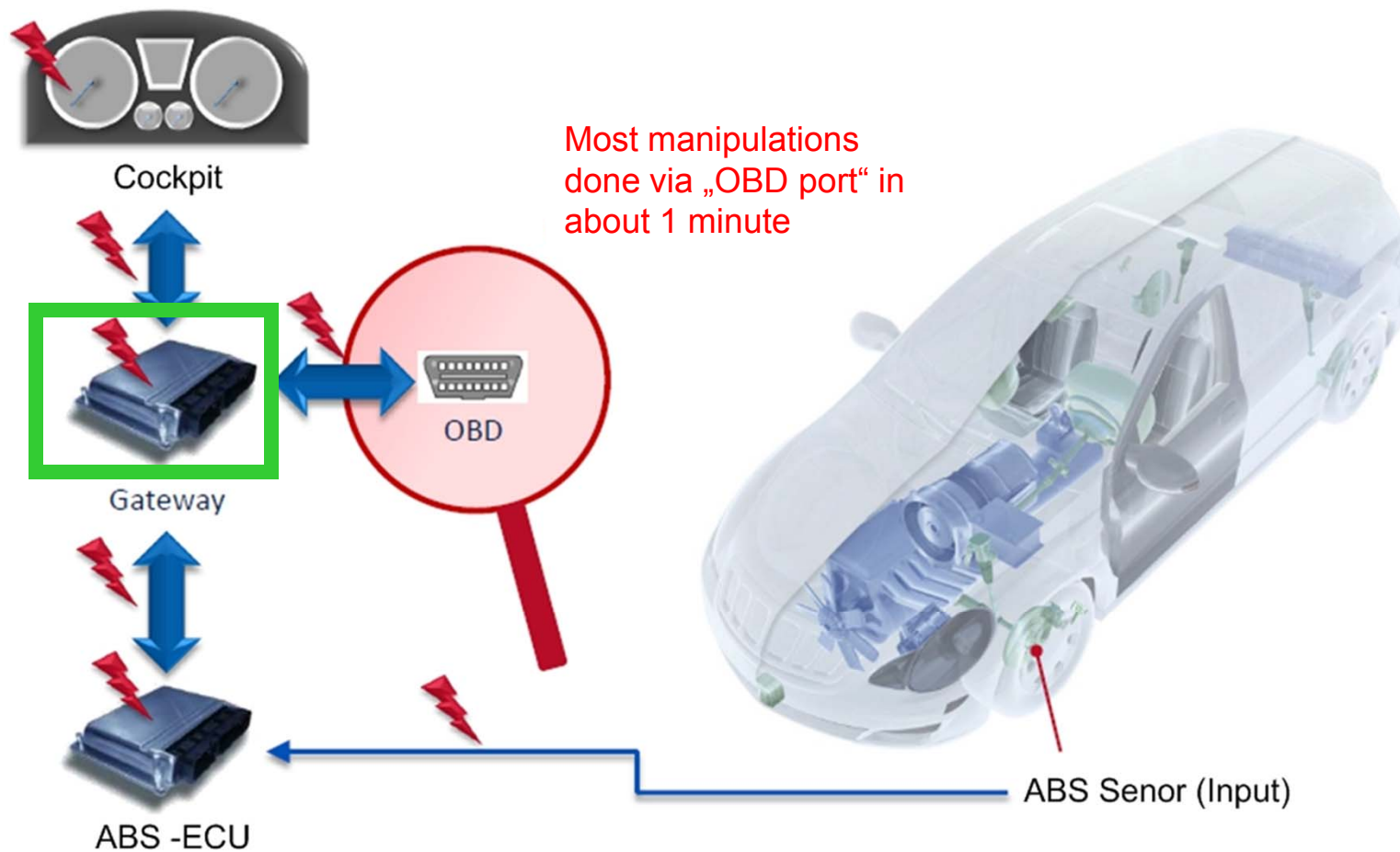
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Protection Profile / Security Target (§2.6, & 5.5.2, Annex 5)

Security Target: 1000€(higher sales price for tampered vehicle)

Target of Evaluation: Gateway ECU

Solution: Secured Data Storage behind a Firewall in the Gateway ECU



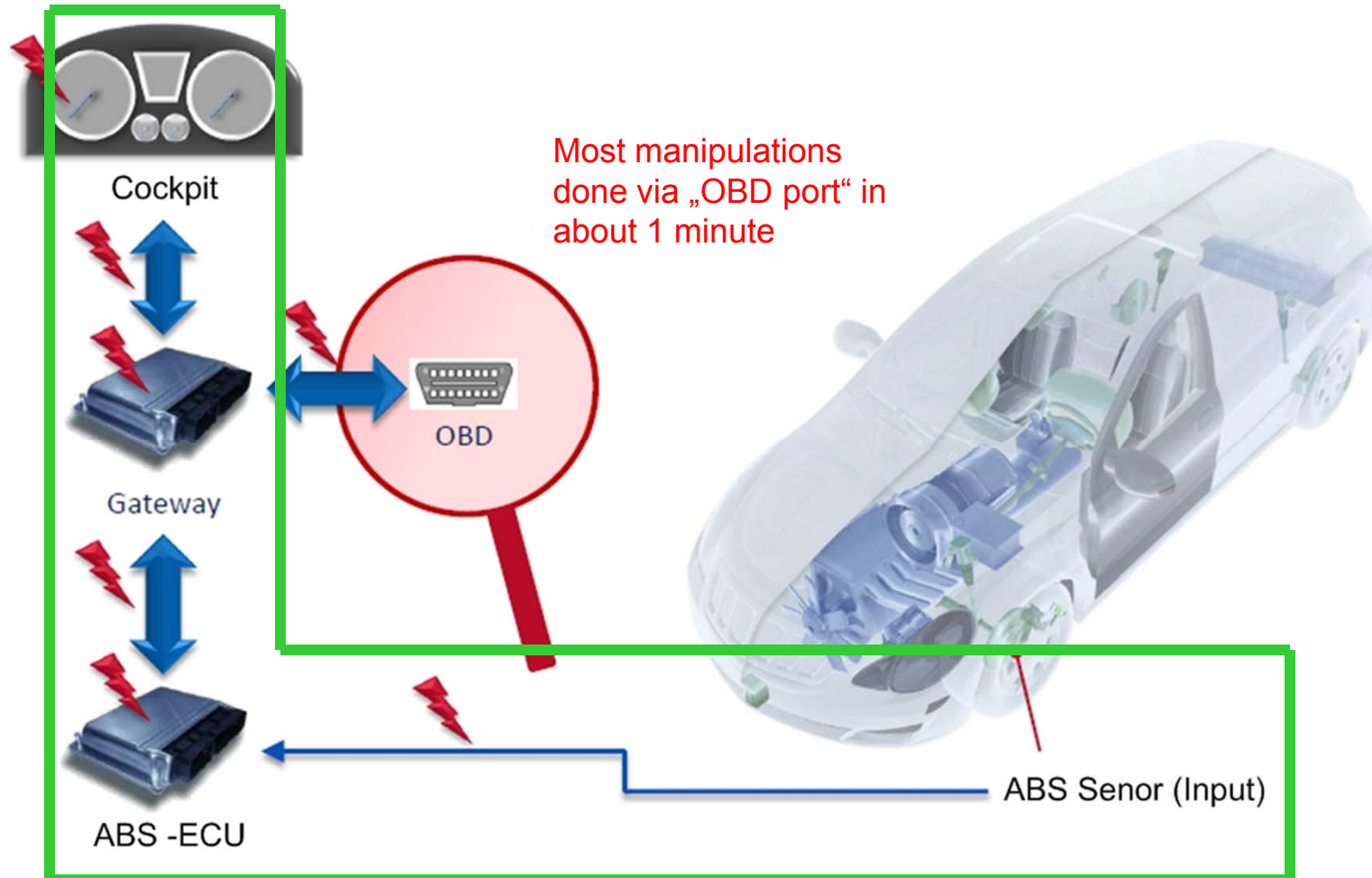
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Protection Profile / Security Target (§2.6, & 5.5.2, Annex 5)

Security Target 6000€ (higher sales price for tampered vehicle)

Target of Evaluation: Whole Odometer System

Solution: Encrypted Data Transfer and Storage of Data behind Firewall



FIA Protection against Mileage Fraud by Common Criteria

Next steps

- Find support in UNECE WP 29 for the FIA proposal
- Setup an informal working group with all stakeholders to work out the protection profile

FIA Protection against Mileage Fraud by Common Criteria

**Thank You
For Your Attention**