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[

{

"Requirement": "Req\_SZ\_01",

"RequirementClassification": "SafetyGoal",

"LESS Requirement": "The system should prevent dangerous unintended acceleration"

},

{

"Reference": "test-Req\_SZ\_01",

"Requirement": "Req\_SZ\_01",

"Testobjects": ["system", "acceleration"],

"PRE": {},

"POST": {}

}

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{

"Requirement": "Req\_SZ\_02",

"RequirementClassification": "SafetyGoal",

"LESS Requirement": "The system should avert hazardous unintended acceleration"

},

{

"Reference": "test-Req\_SZ\_02",

"Requirement": "Req\_SZ\_02",

"Testobjects": ["system", "acceleration"],

"PRE": {},

"POST": {}

}

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{

"Requirement": "Req\_SZ\_03",

"RequirementClassification": "SafetyGoal",

"LESS Requirement": "Any dangerous unintended deceleration shall be prevented by the system"

},

{

"Reference": "test-Req\_SZ\_03",

"Requirement": "Req\_SZ\_03",

"Testobjects": ["system", "deceleration"],

"PRE": {},

"POST": {}

}

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[

{

"Requirement": "Req\_SZ\_04",

"RequirementClassification": "SafetyGoal",

"LESS Requirement": "The system should prevent loss of deceleration that is unintended"

},

{

"Reference": "test-Req\_SZ\_04",

"Requirement": "Req\_SZ\_04",

"Testobjects": ["system", "deceleration"],

"PRE": {},

"POST": {}

}

],

[

{

"Requirement": "SReq\_01",

"RequirementClassification": "SafetyFunctional",

"LESS Requirement": "The drive pedal should check the sensor signals of the drive pedal for plausibility"

},

{

"Reference": "test-SReq\_01",

"Requirement": "SReq\_01",

"Testobjects": ["drive\_pedal", "sensor\_signals", "plausibility"],

"PRE": {},

"POST": {}

}

],

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{

"Requirement": "SReq\_01a",

"RequirementClassification": "SafetyFunctional",

"LESS Requirement": "The drive pedal must check its internal sensor signals for plausibility"

},

{

"Reference": "test-SReq\_01a",

"Requirement": "SReq\_01a",

"Testobjects": ["drive\_pedal", "sensor\_signals", "plausibility"],

"PRE": {},

"POST": {}

}

],

[

{

"Requirement": "SReq\_02",

"RequirementClassification": "SafetyFunctional",

"LESS Requirement": "The throttle valve shall check the sensor signals of the throttle valve for plausibility"

},

{

"Reference": "test-SReq\_02",

"Requirement": "SReq\_02",

"Testobjects": ["throttle\_valve", "sensor\_signals", "plausibility"],

"PRE": {},

"POST": {}

}

],

[

{

"Requirement": "SReq\_05",

"RequirementClassification": "SafetyFunctional",

"LESS Requirement": "Using appropriate plausibility checks the engine control unit must detect errors in the actuator"

},

{

"Reference": "test-SReq\_05",

"Requirement": "SReq\_05",

"Testobjects": ["engine\_control\_unit", "actuator", "plausibility\_checks", "errors"],

"PRE": {},

"POST": {}

}

],

[

{

"Requirement": "SReq\_05a",

"RequirementClassification": "SafetyFunctional",

"LESS Requirement": "The engine control unit must check internal actuator signals for plausibility"

},

{

"Reference": "test-SReq\_05a",

"Requirement": "SReq\_05a",

"Testobjects": ["engine\_control\_unit", "actuator", "signals", "plausibility"],

"PRE": {},

"POST": {}

}

],

[

{

"Requirement": "SReq\_06a",

"RequirementClassification": "SafetyFunctional",

"LESS Requirement": "The engine control unit shall detect and confirm any undesired high driving torque state"

},

{

"Reference": "test-SReq\_06a",

"Requirement": "SReq\_06a",

"Testobjects": ["engine\_control\_unit", "driving\_torque"],

"PRE": {"driving\_torque": {"is\_running": true}},

"POST": {"engine\_control\_unit": {"detected": true, "confirmed": true}}

}

],

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{

"Requirement": "SReq\_06a2",

"RequirementClassification": "SafetyFunctional",

"LESS Requirement": "Unintended acceleration shall be detected and confirmed by the engine control unit"

},

{

"Reference": "test-SReq\_06a2",

"Requirement": "SReq\_06a2",

"Testobjects": ["engine\_control\_unit", "acceleration"],

"PRE": {"acceleration": {"is\_running": true}},

"POST": {"engine\_control\_unit": {"detected": true, "confirmed": true}}

}

],

[

{

"Requirement": "SReq\_07",

"RequirementClassification": "SafetyFunctional",

"LESS Requirement": "The engine control unit should monitor the function controller"

},

{

"Reference": "test-SReq\_07",

"Requirement": "SReq\_07",

"Testobjects": ["engine\_control\_unit", "function\_controller"],

"PRE": {},

"POST": {}

}

],

[

{

"Requirement": "Req\_SEC\_ISO40",

"RequirementClassification": "SecurityFunctional",

"LESS Requirement": "The navigation ECU must detect control signals that are malicious"

},

{

"Reference": "test-Req\_SEC\_ISO40",

"Requirement": "Req\_SEC\_ISO40",

"Testobjects": ["navigation\_ECU", "control\_signals"],

"PRE": {"control\_signals": {"malicious": true}},

"POST": {"navigation\_ECU": {"detected": true}}

}

],

[

{

"Requirement": "Req\_SEC\_ISO41",

"RequirementClassification": "SecurityFunctional",

"LESS Requirement": "The navigation ECU should avoid malicious control signals from being transmitted"

},

{

"Reference": "test-Req\_SEC\_ISO41",

"Requirement": "Req\_SEC\_ISO41",

"Testobjects": ["navigation\_ECU", "control\_signals"],

"PRE": {"control\_signals": {"malicious": true}},

"POST": {"navigation\_ECU": {"transmitted": false}}

}

],

[

{

"Requirement": "Req\_SEC\_ISO50",

"RequirementClassification": "SecurityFunctional",

"LESS Requirement": "Control signals that are malicious must be detected by the gateway"

},

{

"Reference": "test-Req\_SEC\_ISO50",

"Requirement": "Req\_SEC\_ISO50",

"Testobjects": ["gateway", "control\_signals"],

"PRE": {"control\_signals": {"malicious": true}},

"POST": {"gateway": {"detected": true}}

}

],

[

{

"Requirement": "Req\_SEC\_ISO51",

"RequirementClassification": "SecurityFunctional",

"LESS Requirement": "The gateway shall drop any detected malicious control signals"

},

{

"Reference": "test-Req\_SEC\_ISO51",

"Requirement": "Req\_SEC\_ISO51",

"Testobjects": ["gateway", "control\_signals"],

"PRE": {"control\_signals": {"malicious": true, "detected": true}},

"POST": {"gateway": {"dropped": true}}

}

],

[

{

"Requirement": "Req\_SEC\_ISO61",

"RequirementClassification": "SecurityFunctional",

"LESS Requirement": "Lamp switch-on requests that are detected as spoofed should be dropped by the power switch"

},

{

"Reference": "test-Req\_SEC\_ISO61",

"Requirement": "Req\_SEC\_ISO61",

"Testobjects": ["power\_switch", "lamp\_switch\_on\_request"],

"PRE": {"lamp\_switch\_on\_request": {"spoofed": true}},

"POST": {"power\_switch": {"dropped": true}}

}

],

[

{

"Requirement": "Req\_SEC\_ISO72",

"RequirementClassification": "SecurityTechnical",

"LESS Requirement": "The gateway must not transfer the signals from the navigation ECU to the headlamp system except for those included in the whitelist"

},

{

"Reference": "test-Req\_SEC\_ISO72",

"Requirement": "Req\_SEC\_ISO72",

"Testobjects": ["gateway", "navigation\_ECU", "headlamp\_system", "signals"],

"PRE": {"signals": {"not\_in\_whitelist": true}},

"POST": {"gateway": {"transferred": false}}

}

]

]