EULYNX Initiative

Europe's Rail Joint Undertaking

Requirements specification for subsystem TDS

Document number: Eu.Doc.43
Version: 4.1 (0.A)

Contents

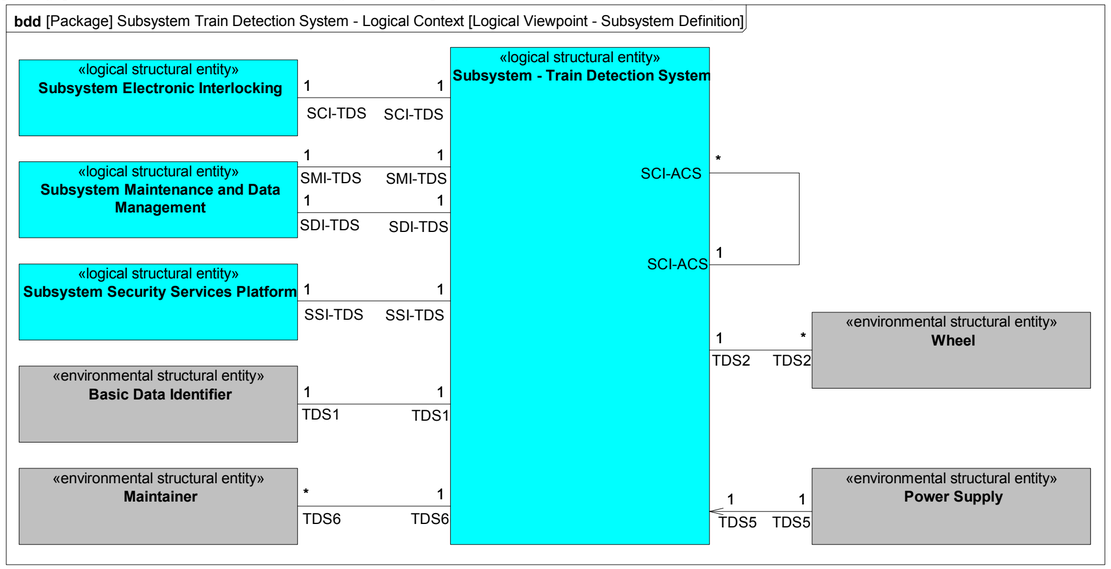
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.1	Head	**1 Introduction**		
Eu.TDS.2	Head	**1.1 Release information**		
Eu.TDS.3	Info	[Eu.Doc.43] Requirements specification for subsystem TDS CENELEC Phase: 4 Version: 4.1 (0.A) Approval date: 15.06.2023		
Eu.TDS.4	Info	**Version history**		
Eu.TDS.7081	Info	version number: 4.0 (0.A) date: 19.05.2022 author: Marie Gehrmann model version: 18 generic profile version: 36 Generic interface and subsystem requirements version: 4.0 (0.A) Generic interface and subsystem requirements for SCI version: 1.0 (0.A) review: CCB changes: EUTDS-390, EUTDS-404, EUTDS-405, EUTDS-406, EUTDS-409, EUTDS-412, EUTDS-413		
Eu.TDS.7091	Info	version number: 4.0 (1.A) date: 08.03.2023 author: Marie Gehrmann model version: 21 Generic interface and subsystem requirements version: 4.0 (0.A) Generic interface and subsystem requirements for SCI version: 1.0 (0.A) review: changes: EUTDS-420, EUTDS-427, EUTDS-428, EUTDS-429, EUTDS-430		
Eu.TDS.7126	Info	version number: 4.0 (2.A) date: 06.04.2023 author: Marie Gehrmann model version: 21 Generic interface and subsystem requirements version: 4.0 (1.A) Generic interface and subsystem requirements for SCI version: 1.0 (1.A) review: Cluster changes: EUTDS-431, EUTDS-432, EUTDS-435, EUTDS-436, EUTDS-437, EUTDS-438, EUTDS-439		
Eu.TDS.7165	Info	version number: 4.1 (0.A) date: 27.06.2023 author: Marie Gehrmann model version: 22 Generic interface and subsystem requirements version: 4.0 (3.A) Generic interface and subsystem requirements for SCI version: 1.0 (3.A) review: TACS Mirror Group changes: EUTDS-440, EUTDS-441, EUTDS-442, EUTDS-443, EUTDS-444, EUTDS-445, EUTDS-449, EUTDS-450, EUTDS-451, EUTDS-452, EUTDS-454, EUTDS-455, EUTDS-460, EUTDS-461, EUTDS-462		
Eu.TDS.8	Head	**1.2 Impressum**		
Eu.TDS.9	Info	Publisher: **Europe's Rail Joint Undertaking** https://rail-research.europa.eu/ **EULYNX Initiative** A full list of the EULYNX Partners can be found on www.eulynx.eu/index.php/members		
Eu.TDS.10	Info	Responsible for this document: EU-Rail System Pillar Trackside Assets Control and Supervision domain		
Eu.TDS.2122	Info	Copyright EULYNX Partners All information included or disclosed in this document is licensed under the European Union Public Licence EUPL, Version 1.2 or later.		
Eu.TDS.11	Head	**1.3 Purpose**		
Eu.TDS.12	Info	The purpose of the document is the specification of functional requirements for the Subsystem - Train Detection System.		
Eu.TDS.2045	Info	This document describes functional, non-functional and technical requirements for the Subsystem – Train Detection System and functional requirements for interface SCI-TDS.		
Eu.TDS.13	Info	This document is intended for the following users: • safety authorities • infrastructure managers • safety assessors • signalling system suppliers • validators		
Eu.TDS.14	Info	This document is the basis for the implementation by the supplier and for approval by the infrastructure manager.		
Eu.TDS.7166	Info	This document is applicable for both the EU-Rail System Pillar target architecture and the EULYNX architecture. The document is delivered as a single specification fitting both the System Pillar documentation sets and the EULYNX documentation sets. EU-Rail System Pillar is the technical authority for this document.		
Eu.TDS.15	Head	**1.4 Applicable standards and regulations**		
Eu.TDS.16	Info	A list of applicable standards and regulations used in EULYNX is listed in the EULYNX Reference Document List [Eu.Doc.12].		
Eu.TDS.17	Head	**1.5 Applicable documents**		

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.18	Info	The current versions of documents used as input or related to this document are listed in the EULYNX Documentation Plan [Eu.Doc.11]. The relationships between the documents are displayed in the Appendix A1 Documentation plan and structure [Eu.Doc.11_A1].		
Eu.TDS.28	Head	**1.6 Terms and abbreviations**		
Eu.TDS.29	Info	The terms and abbreviations are listed in the EULYNX Glossary [Eu.Doc.9].		
Eu.TDS.1139	Head	**1.7 Variability management**		
Eu.TDS.1140	Info	This document describes harmonised requirements. Variability management is not applicable.		
Eu.TDS.2117	Head	**1.8 Definition of object types**		
Eu.TDS.2118	Info	The following definition for object types is applied in this document:		
Eu.TDS.2119	Info	• "Req" - This denotes a mandatory requirement.		
Eu.TDS.2120	Info	• "Info" - This denotes additional information to help understand the specification. These objects do not specify any additional requirements.		
Eu.TDS.2121	Info	• "Head" - This denotes chapter headings.		
Eu.TDS.30	Head	**1.9 Modelling**		
Eu.TDS.31	Info	The section "Functional requirements specification" follows a model based systems engineering process using Systems Modelling Language (SysML) and defines the functional system requirements for the Subsystem - Train Detection System operational in stimulus-response form. Furthermore the information objects (stimuli and responses) exchanged over the interfaces of the Subsystem - Train Detection System are defined.		
Eu.TDS.32	Info	The diagrams presented in this document are modelled in SysML [SysML].		
Eu.TDS.2369	Info	The rules for the interpretation of the model based parts of specification are defined in [Eu.Doc.29].		
Eu.TDS.2355	Info	In chapter 3 "Functional requirements specification" the functional system requirements, defined in the form of a SysML model in the PTC Integrity Modeler are depicted as a surrogate of this model in the form of DOORS-objects.		
Eu.TDS.2356	Info	A requirement thereby consists of the respective SysML model element, for instance a SysML diagram, and if necessary an additional extension of the requirement.		
Eu.TDS.2471	Info	In the column “Requirement Part 1” the particular SysML model element is depicted and in the column “Requirement Part 2” the corresponding extension of the definition is given. The stated object type normally applies both to “Requirement Part 1” and to “Requirement Part 2”.		
Eu.TDS.2357	Info	There are requirements with type "Req" given, where the column "Requirement Part 2" or a part of it is provided with the heading "Information". In this case, the defined type only applies to the column "Requirement Part 1" and the part of "Requirement Part 2", which is not labelled as "Information".		
Eu.TDS.33	Head	**2 Conditions of use**		
Eu.TDS.5729	Req	All references to Eu.Doc.20 refer to version 4.0 (3.A) of that document.		
Eu.TDS.7075	Req	All references to Eu.Doc.119 refer to version 1.0 (3.A) of that document.		
Eu.TDS.7076	Info	References to Eu.Doc.120 do not refer to a concrete version of that document. The applicable version shall be defined by national specifications. Note: In future phases of the System Pillar, national specifications will be replaced by harmonised specifications.		
Eu.TDS.34	Info	The specifications defined in this document shall follow the requirements of the EULYNX System Architecture Specification [Eu.Doc.16].		
Eu.TDS.7064	Head	**2.1 Functional packages**		
Eu.TDS.7065	Info	The specifications in this document are divided into functional packages. There are two types of packages related to the product capabilities.		
Eu.TDS.7066	Info	‘Basic packages’: One or more packages, at least one of them must be implemented. It is allowed to combine and implement more than one ‘basic package’ in a product.		
Eu.TDS.7067	Info	‘Optional package’: One or more packages that can be optionally implemented in addition to one or more basic packages.		
Eu.TDS.7068	Info	The specifications of the Subsystem – Train Detection System are divided into the following functional packages:		
Eu.TDS.7069	Info	TDS for basic axle counter functionality (basic package) [Basic TDS AC]		
Eu.TDS.7070	Info	TDS for Train Detection Point functionality (basic package) [Basic TDS TDP]		
Eu.TDS.7072	Info	TDS for track circuit functionality (basic package) [Basic TDS TC]		
Eu.TDS.7071	Info	Handling FC-P and FC-P-A commands (optional package that can be combined with the basic package TDS for basic axle counter functionality) [Option FC-P/-A]		
Eu.TDS.7073	Info	Handling ‘update filling level’ (optional package that can be combined with the basic package TDS for basic axle counter functionality) [Option Update FL]		
Eu.TDS.199	Head	**3 Functional requirements specification**		
Eu.TDS.6525	Head	**3.1 Subsystem Train Detection System - General Infos and Assumptions**		
Eu.TDS.7149	Info	The configuration of a TVPS which works with axle counters distinguishes between two different behaviours while having a disturbance with an operational reason. The two functional variants are called Variant A and B.		Basic TDS AC
Eu.TDS.7150	Info	The behaviour of both variants is defined in detail by the sequence and state machine diagrams. The main differences are stated below.		Basic TDS AC

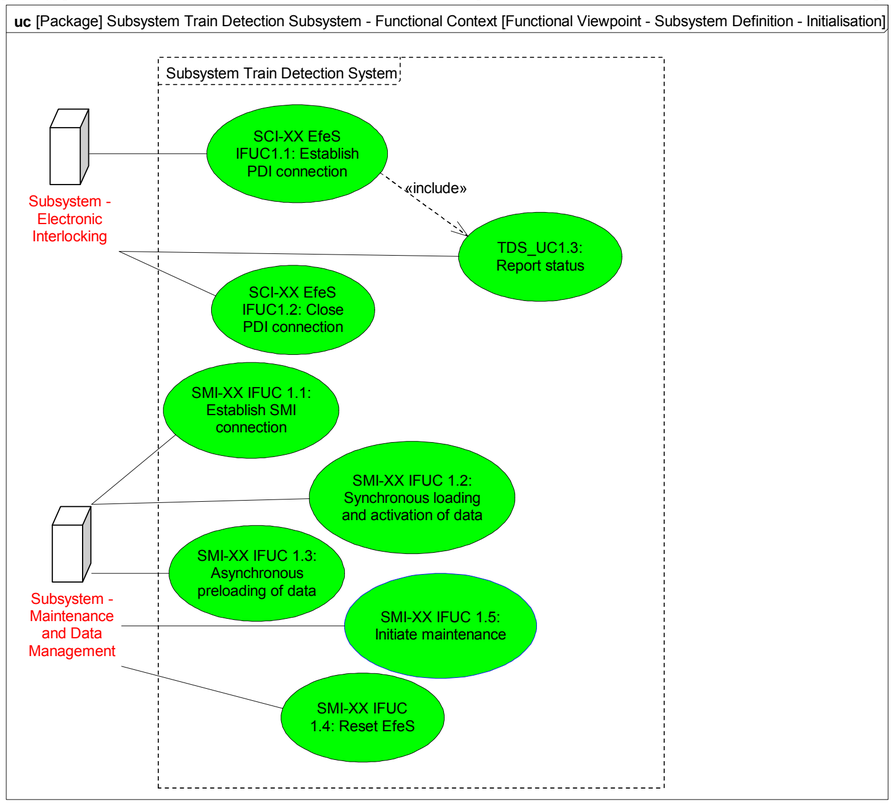
Eu.TDS.7151	Info	• Initial state of the TVPS after a (re)booting the system:
		  • Variant A: The initial state of the TVPS is disturbed with an operational reason and able to be forced to clear.
		  • Variant B: The initial state of the TVPS is disturbed with an operational reason and unable to be forced to clear.
				Basic TDS AC

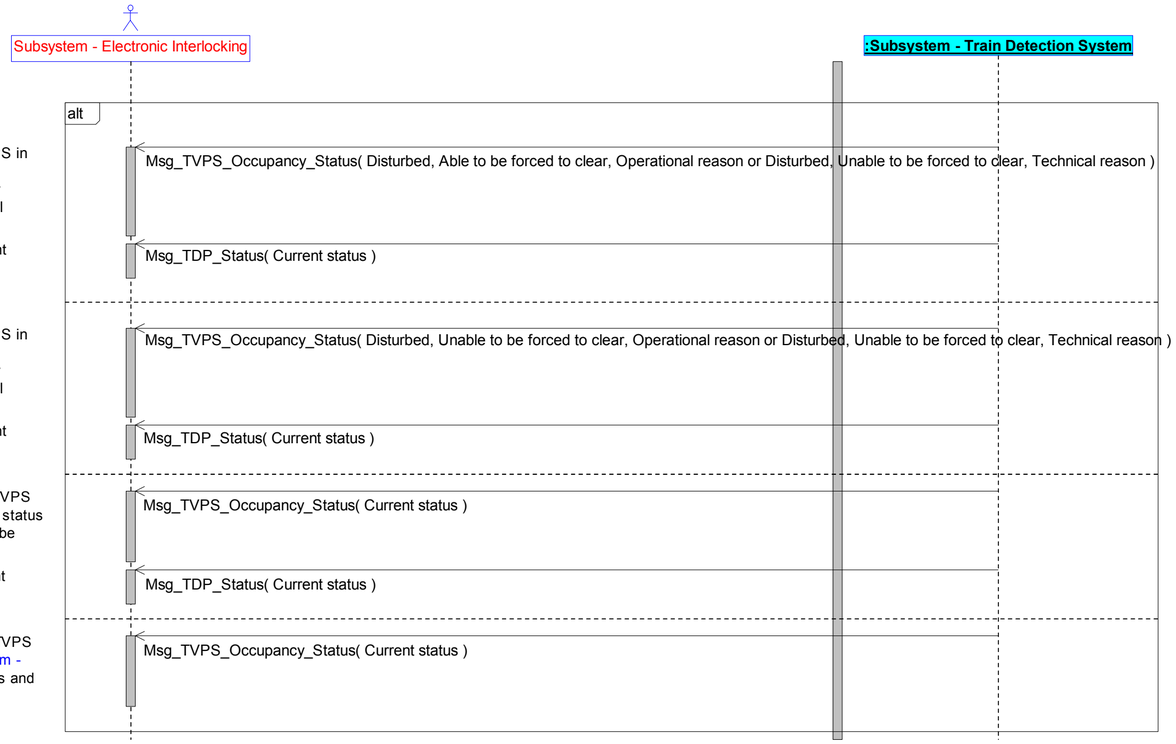
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.

Eu.TDS.7152	Info	• The handling of ability to be forced to clear while having a disturbance with an operational reason:
		  • Variant A: The TVPS is always able to be forced to clear after expiration of the inhibition timer (independent from the last detected passing (incoming wheel, outgoing wheel or uninterpretable pattern)).
		  • Variant B: The ability to be forced to clear depends on the last detected passing (incoming wheel, outgoing wheel or uninterpretable pattern) and the inhibition timer. If the last detected Wheel was an outgoing Wheel, the TVPS is able to be forced to clear after the expiration of the inhibition timer. If the last detected Wheel was an incoming Wheel or an uninterpretable or undefined pattern, the TVPS remains unable to be forced to clear after the expiration of the inhibition timer, and the DRFC command is allowed.
				Basic TDS AC

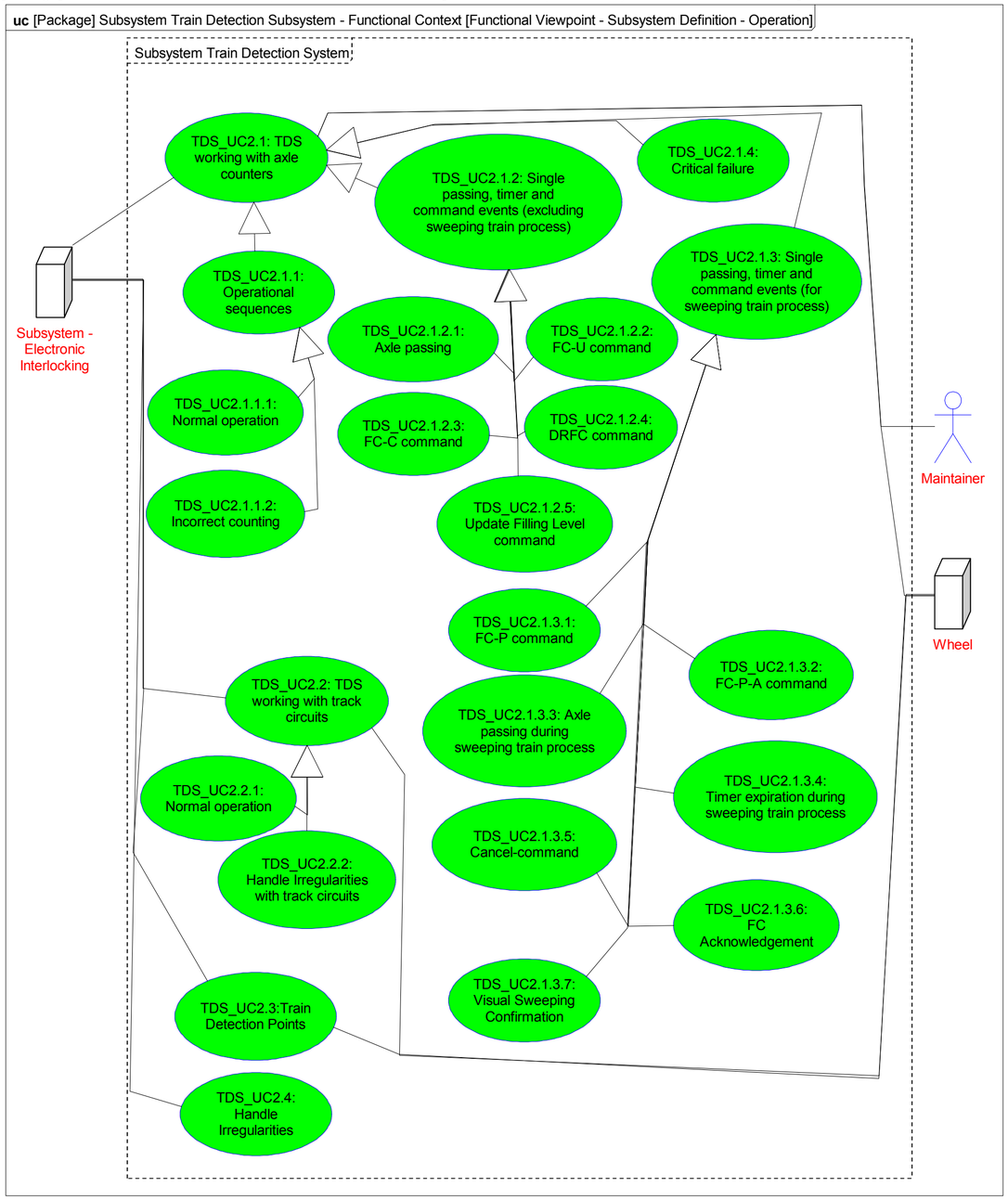
Eu.TDS.1112	Head	**3.2 Subsystem Train Detection System - Logical Viewpoint**		
Eu.TDS.6859	Head	**3.2.1 Subsystem Train Detection System - Logical Context**		
Eu.TDS.1113	Info	[Package] Subsystem Train Detection System - Logical Context [Logical Viewpoint - Subsystem Definition]  	The Subsystem - Train Detection System has to provide the technical interfaces which are pictured in "[Package] Subsystem Train Detection System - Logical Context [Logical Viewpoint - Subsystem Definition]" , to the pictured Actors. The amount of Actors that should be able to be connected are defined in the pictured multiplicities. The Interface SCI-ACS may be defined in later deliveries.	Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.5964	Head	**3.3 Subsystem Train Detection System - Functional Viewpoint**		
Eu.TDS.1211	Head	**3.3.1 Definition of time values**		
Eu.TDS.7077	Info	The generic time values for SCI are specified in Eu.Doc.119.		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.7078	Info	The generic time values for SMI are specified in Eu.Doc.120		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.1212	Req	Con_t_Inhibition_Timer	Con_t_Inhibition_Timer is a configurable delay, defining the duration between the detection of a passing for a TVPS (incoming wheel, outgoing wheel or uninterpretable pattern) and the moment that the state of a TVPS is considered stable. Cd_Cancel is not rejected during inhibition timer. Until expiration of this timer, all FC, DRFC and UFL commands to the TVPS are rejected. - Proposed resolution: steps of 100 ms - Proposed range: from 100 ms up to 10 s	Basic TDS AC

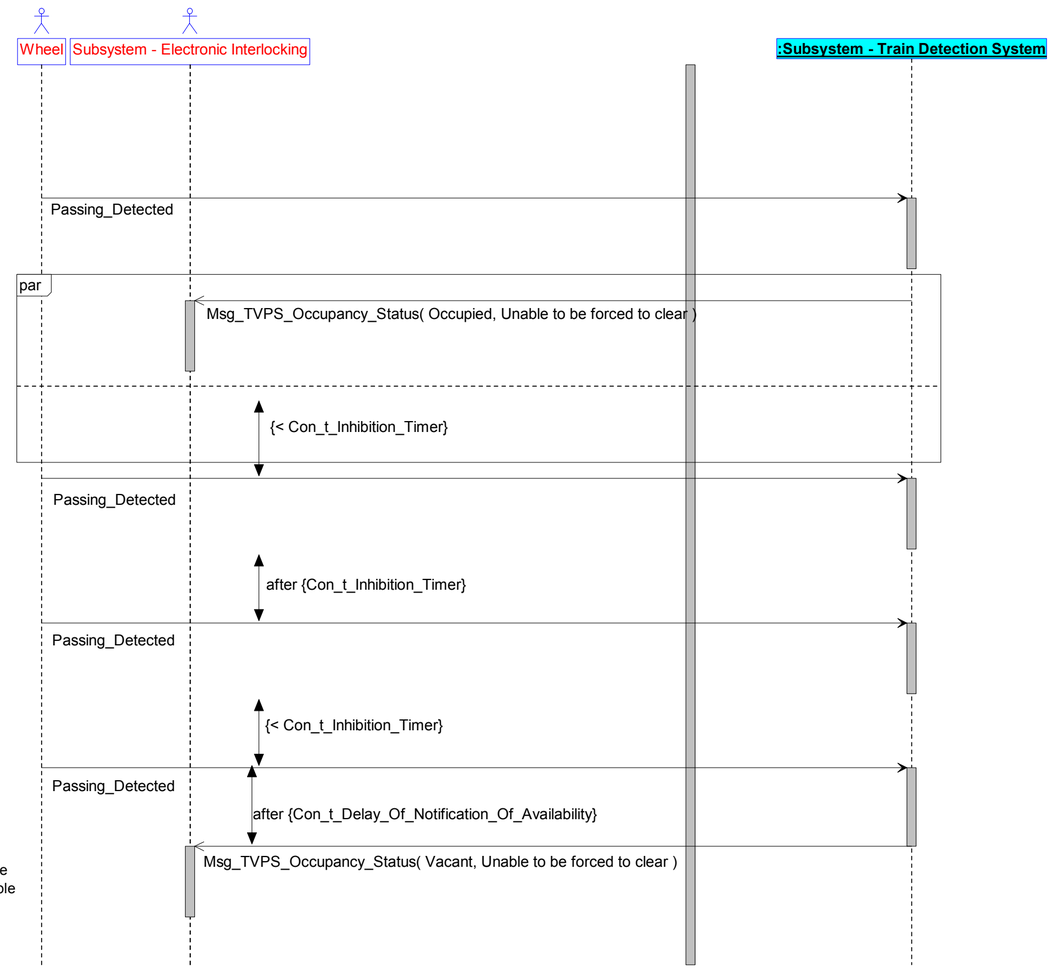
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.1213	Req	Con_t_Delay_Of_Notification_Of_Availability	Con_t_Delay_Of_Notification_Of_Availability is a configurable delay of reporting vacant from the Subsystem - Train Detection System to the Subsystem - Electronic Interlocking, following the state change of a TVPS from occupied to vacant. The delay of notification is only effective if the state change was triggered by a train not by a FC-command. Until expiration of this timer, all commands to the TVPS are rejected. - Proposed resolution: steps of 100 ms - Proposed range: from 0 s up to 10 s	Basic TDS AC
Eu.TDS.1214	Req	Con_t_Max_FC_P_or_FC_P_A	Con_t_Max_FC_P_or_FC_P_A is a configurable timer, defining the maximum time between detecting a sweeping train and confirmation of a succesfull sweeping. - Proposed resolution: steps of 1 s - Proposed range: from 0 s up to 7200 s	Option FC-P/-A
Eu.TDS.1215	Req	Con_t_Min_FC_P_or_FC_P_A	Con_t_Min_FC_P_or_FC_P_A is a configurable timer, which starts with the first detected incomming Wheel. This timer can be used for plausibility check. E.g. the timeout can be configured with the minimal time the sweeping train plausibly needs to transit the section with a maximal allowed sweeping train speed (e.g. 40km/h). With this timeout another train (not the sweeping train) can be detected which could generate outgoing axles. An outgoing Wheel before expiration of Con_t_Min_FC_P_or_FC_P_A leads to an unsuccessful sweeping. - Proposed resolution: steps of 0,5 s - Proposed range: from 0 s up to 3600 s	Option FC-P/-A
Eu.TDS.5452	Req	Con_t_TDP_Delay	Con_t_TDP_Delay is a configurable delay, defining the duration of a passed TDP and the message, that the TDP is in state "TDP not passed". - Proposed resolution: steps of 100 ms - Proposed range: from 0 s up to 10 s	Basic TDS TDP
Eu.TDS.5965	Req	Con_t_TDP_Undefinded_Pattern_Delay	Con_t_TDP_Undefinded_Pattern_Delay is a configurable delay, defining the duration after an undefined pattern was detected till the TDP is reported as Disturbed. When a passing is detected during the duration of Con_t_TDP_Undefinded_Pattern_Delay the TDP will report this passing and no disturbance. - Proposed resolution: steps of 100 ms - Proposed range: from 0 s up to 10 s	Basic TDS TDP
Eu.TDS.238	Head	**3.3.2 Subsystem Train Detection System - Functional Context**		

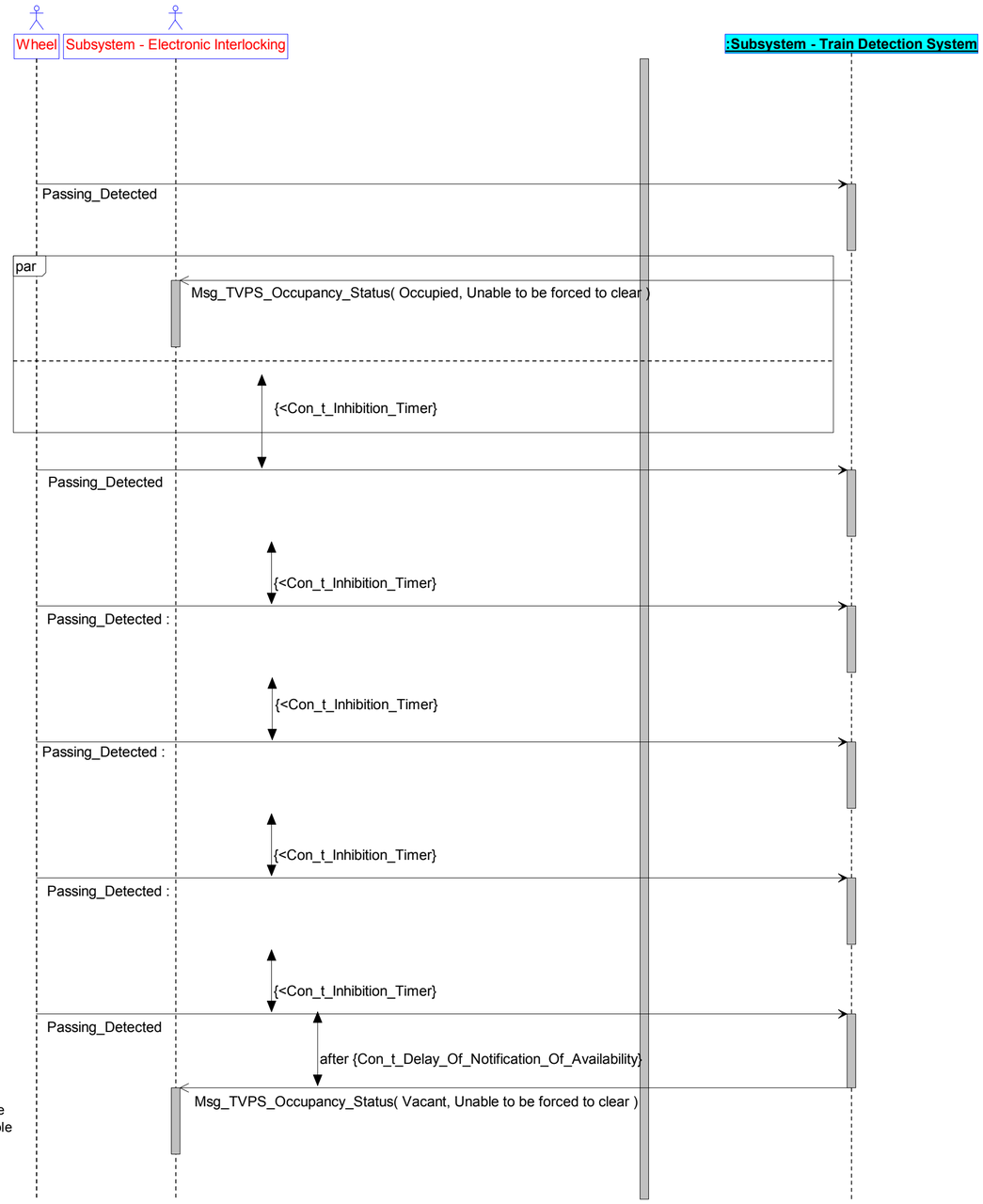
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.380	Info	[Package] Subsystem Train Detection Subsystem - Functional Context [Functional Viewpoint - Subsystem Definition - Initialisation] 		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.5976	Info	The generic UseCases SCI-XX EfeS IFUC1.1: Establish PDI connection and SCI-XX EfeS IFUC1.2: Close PDI connection are specified in Eu.Doc.119. The generic UseCases SMI-XX IFUC 1.1: Establish SMI connection, SMI-XX IFUC 1.2: Synchronous loading and activation of data, SMI-XX IFUC 1.3: Asynchronous preloading of data, SMI-XX IFUC 1.4: Reset EfeS and SMI-XX IFUC 1.5: Initiate maintenance are specified in Eu.Doc.120.		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.1305	Info	TDS_UC1.3: Report status	The Subsystem-UseCase "TDS_UC1.3: Report status" defines a scenario about the transmission of status data of Subsystem - Train Detection System to the Subsystem - Electronic Interlocking, while Process Data Interface protocol connection is establishing.	Basic TDS AC Basic TDS TDP Basic TDS TC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.1954	Info	TDS SD 1.3.1 **TDS_UC1.3: Report status** Main Success Scenario: Report status [TDS SD 1.3.1] **alt** [PDI connection establishment during initialisation (after system restart) of the TDS and the TDS is configured as Variant A] **1.a1** The Subsystem - Train Detection System reports each TVPS in state "TVPS disturbed and able to be forced to clear with an operational reason" to the Subsystem - Electronic Interlocking or "TVPS disturbed and unable to be forced to clear with a technical reason" if the relevant TVPS has a critical failure. **1.a2** The Subsystem - Train Detection System reports the current status of the TDP to the Subsystem - Electronic Interlocking. **else alt** [PDI connection establishment during initialisation (after system restart) of the TDS and the TDS is configured as Variant B] **1.b1** The Subsystem - Train Detection System reports each TVPS in state "TVPS disturbed and unable to be forced to clear with an operational reason" to the Subsystem - Electronic Interlocking or "TVPS disturbed and unable to be forced to clear with a technical reason" if the relevant TVPS has a critical failure. **1.b2** The Subsystem - Train Detection System reports the current status of the TDP to the Subsystem - Electronic Interlocking. **else alt** [PDI connection re-establishment (without system restart)] **1.c1** The Subsystem - Train Detection System reports for each TVPS the current state to the Subsystem - Electronic Interlocking. The status includes the occupancy status and whether the TVPS is able to be forced to clear. **1.c2** The Subsystem - Train Detection System reports the current status of the TDP to the Subsystem - Electronic Interlocking. **else alt** [TVPS works with track circuit] **1.d1** The Subsystem - Train Detection System reports for each TVPS which works with track circuit the current status to the Subsystem - Electronic Interlocking. The status includes the occupancy status and whether the TVPS is able to be forced to clear. **end alt**  	During initialisation, changes of occupancy states shall be reported immediately to the Subsystem - Electronic Interlocking. The correct sequence shall be ensured and no changes of states missed.	Basic TDS AC Basic TDS TDP Basic TDS TC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.5973	Info	[Package] Subsystem Train Detection Subsystem - Functional Context [Functional Viewpoint - Subsystem Definition - Operation]		Basic TDS AC Basic TDS TDP Basic TDS TC Option FC-P/-A Option Update FL

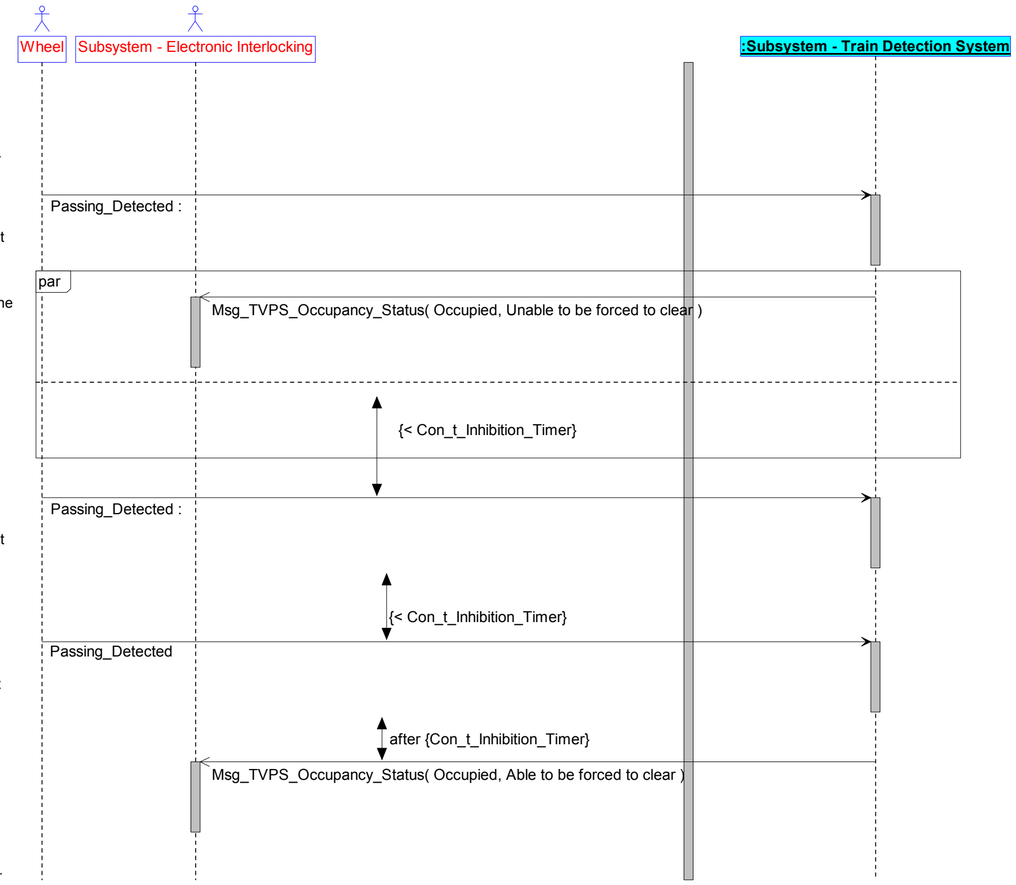


ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6043	Info	TDS_UC2.1: TDS working with axle counters	The Subsystem-UseCase "TDS_UC2.1: TDS working with axle counters" defines the behaviour of the Subsystem - Train Detection System which works with axle counters. The behaviour will be defined in the following UseCases: TDS_UC2.1.1: Operational sequences TDS_UC2.1.2: Single passing, timer and command events (excluding sweeping train process) TDS_UC2.1.3: Single passing, timer and command events (for sweeping train process) TDS_UC2.1.4: Critical failure	Basic TDS AC Option FC-P/-A
Eu.TDS.5989	Info	TDS_UC2.1.1: Operational sequences	The Subsystem-UseCase "TDS_UC2.1.1: Operational sequences" defines the behaviour of operational sequences of the Subsystem - Train Detection System which works with axle counters. The behaviour will be defined in the following UseCases: TDS_UC2.1.1.1: Normal operation TDS_UC2.1.1.2: Incorrect counting	Basic TDS AC
Eu.TDS.5977	Info	TDS_UC2.1.1.1: Normal operation	The Subsystem-UseCase "TDS_UC2.1.1.1: Normal operation" defines the behaviour of the Subsystem - Train Detection System while a Train passing through the section.	Basic TDS AC
Eu.TDS.5979	Info	TDS SD 2.1.1.1.1 **TDS_UC2.1.1.1: Normal operation** Main Success Scenario: Train passing through section [TDS SD 2.1.1.1.1] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS is in the state "TVPS vacant and unable to be forced to clear". **Interaction 2.1.1.1.1.A:** **1.** - One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an incoming Wheel for the relevant TVPS. **par** **2.a1** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS occupied and unable to be forced to clear". **also par** **2.b1** The Subsystem - Train Detection System starts the Inhibition Timer. **end par** **3.** - One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an incoming Wheel for the relevant TVPS. **4.** The Subsystem - Train Detection System starts the Inhibition Timer. **Interaction 2.1.1.1.1.B:** **5.** - One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an outgoing Wheel for the relevant TVPS. **6.** The Subsystem - Train Detection System starts the Inhibition Timer. **Interaction 2.1.1.1.1.C:** **7.** - One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an outgoing Wheel for the relevant TVPS. The sum of incoming and outgoing Wheels is zero. **8.** The Subsystem - Train Detection System reports, after Delay of notification of availability, the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS vacant and unable to be forced to clear". **Postcondition:** The relevant TVPS is in the state "TVPS vacant and unable to be forced to clear". 	If the Con_t_Delay_Of_Notification_Of_Availability is configured with the value 0, the reporting of the new status vacant will be sent immediately after the detection of the last outgoing Wheel.	Basic TDS AC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.5978	Info	TDS SD 2.1.1.1.2 **TDS_UC2.1.1.1: Normal operation** Alternative Scenario: Train passing through short section [TDS SD 2.1.1.1.2] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS is in the state "TVPS vacant and unable to be forced to clear". **Interaction 2.1.1.1.2.A:** **1.** - One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an incoming Wheel for the relevant TVPS. **par** **2.a1** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS occupied and unable to be forced to clear". **also par** **2.b1** The Subsystem - Train Detection System starts the Inhibition Timer. **end par** **Interaction 2.1.1.1.2.B:** **3.** - One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an incoming Wheel for the relevant TVPS. **4.** The Subsystem - Train Detection System starts the Inhibition Timer. **Interaction 2.1.1.1.2.C:** **5.** - One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an outgoing Wheel for the relevant TVPS. **6.** The Subsystem - Train Detection System starts the Inhibition Timer. **Interaction 2.1.1.1.2.D:** **7.** - One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an incoming Wheel for the relevant TVPS. **8.** The Subsystem - Train Detection System starts the Inhibition Timer. **Interaction 2.1.1.1.2.E:** **9.** - One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an outgoing Wheel for the relevant TVPS. **10.** The Subsystem - Train Detection System starts the Inhibition Timer. **Interaction 2.1.1.1.2.F:** **11.** - One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an outgoing Wheel for the relevant TVPS. The sum of incoming and outgoing Wheels is zero. **12.** The Subsystem - Train Detection System reports, after Delay of notification of availability, the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS vacant and unable to be forced to clear". **Postcondition:** The relevant TVPS is in the state "TVPS vacant and unable to be forced to clear".  	If the Con_t_Delay_Of_Notification_Of_Availability is configured with the value 0, the reporting of the new status vacant will be sent immediately after the detection of the last outgoing Wheel.	Basic TDS AC
Eu.TDS.5980	Info	TDS_UC2.1.1.2: Incorrect counting	The Subsystem-UseCase "TDS_UC2.1.1.2: Incorrect counting" defines the behaviour of the Subsystem - Train Detection System while a Train passing through the section but the count is incorrect.	Basic TDS AC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.5981	Info	TDS SD 2.1.1.2.1		Basic TDS AC

TDS_UC2.1.1.2: Incorrect counting



Alternative Scenario: Incomplete counting out [TDS SD 2.1.1.2.1]

Precondition:

The Subsystem - Train Detection System is in the state OPERATIONAL.
The relevant TVPS is in the state "TVPS vacant and unable to be forced to clear".

Interaction 2.1.1.2.1.A:

1. - One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an incoming Wheel for the relevant TVPS.

par

2.a1 The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking.
The status includes the information that the TVPS is in the state "TVPS occupied and unable to be forced to clear".

also par

2.b1 The Subsystem - Train Detection System starts the Inhibition Timer.

end par

Interaction 2.1.1.2.1.B:

3. - One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an incoming Wheel for the relevant TVPS.

4. The Subsystem - Train Detection System starts the Inhibition Timer.

Interaction 2.1.1.2.1.C:

5. - One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an outgoing Wheel for the relevant TVPS.

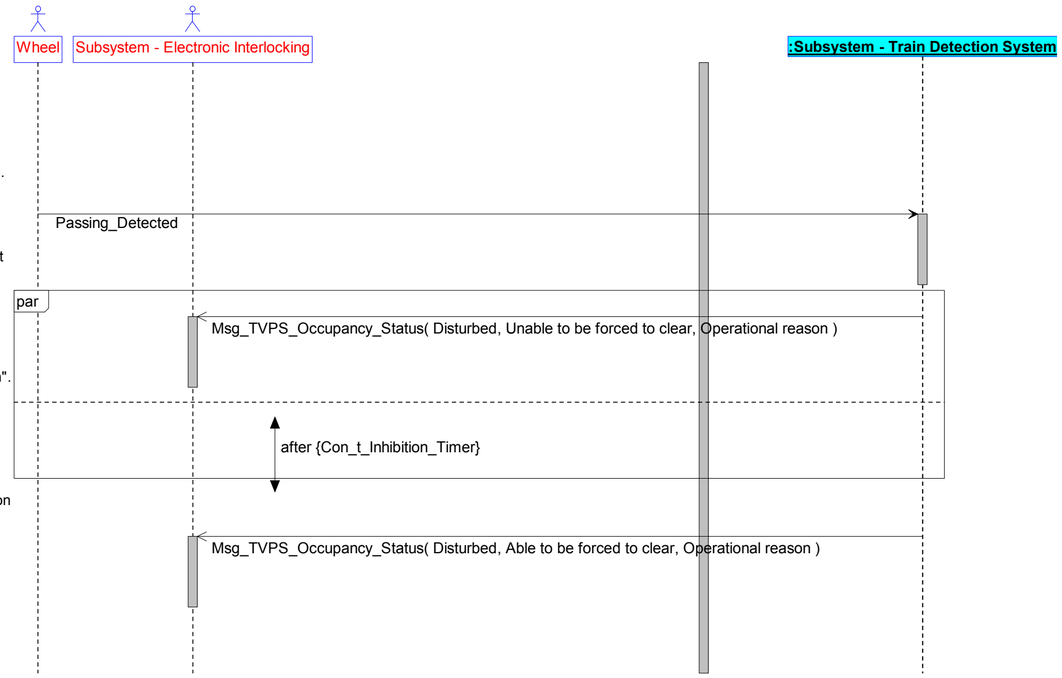
6. The Subsystem - Train Detection System starts the Inhibition Timer.

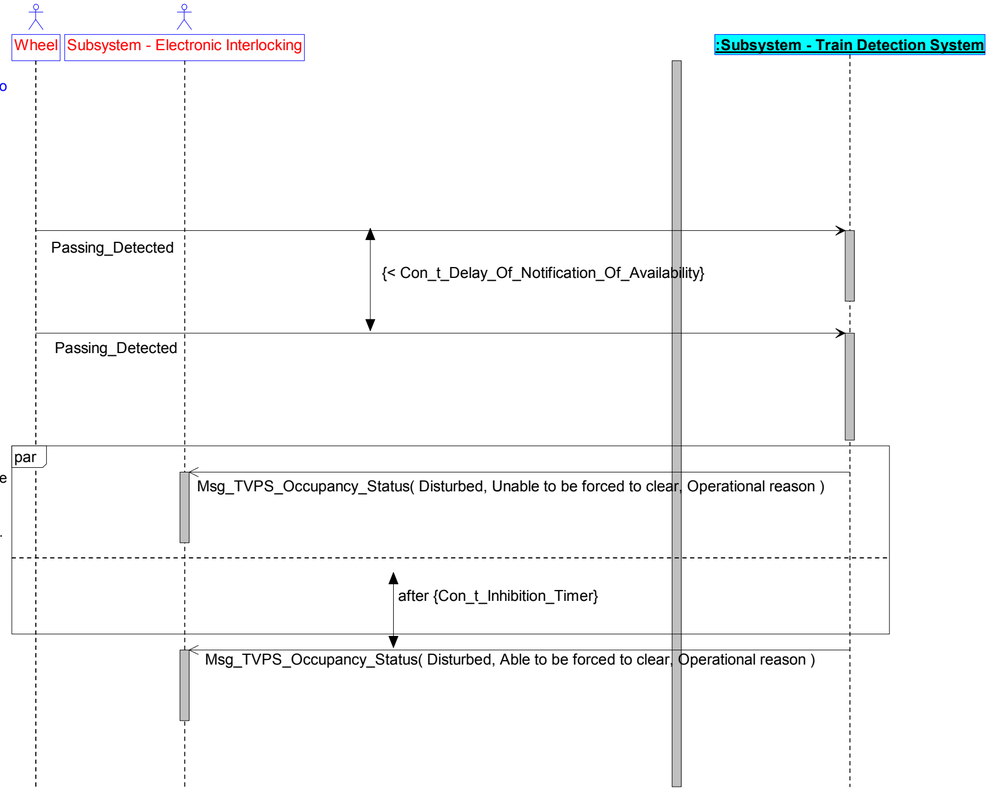
7. The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking.
The status includes the information that the TVPS is in the state "TVPS occupied and able to be forced to clear".

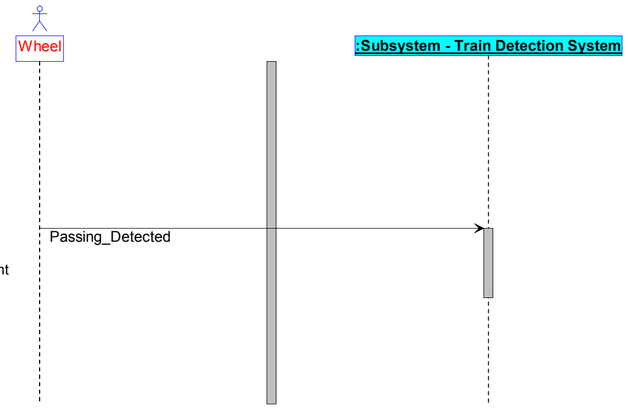
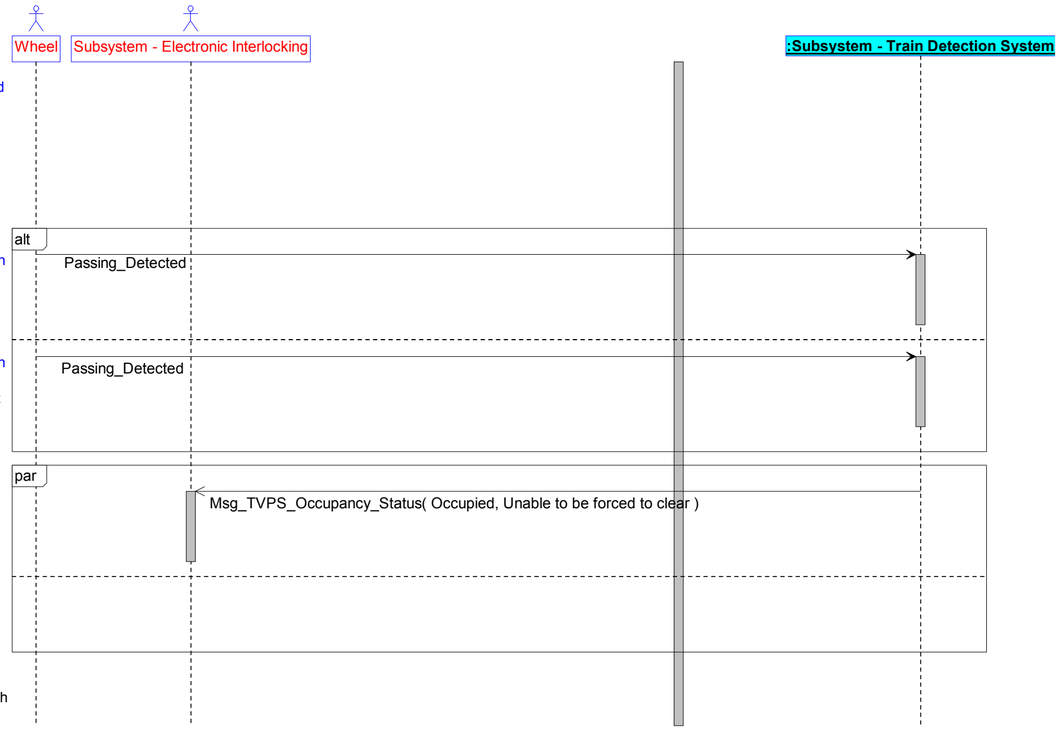
Postcondition:

The relevant TVPS is in the state "TVPS occupied and able to be forced to clear".

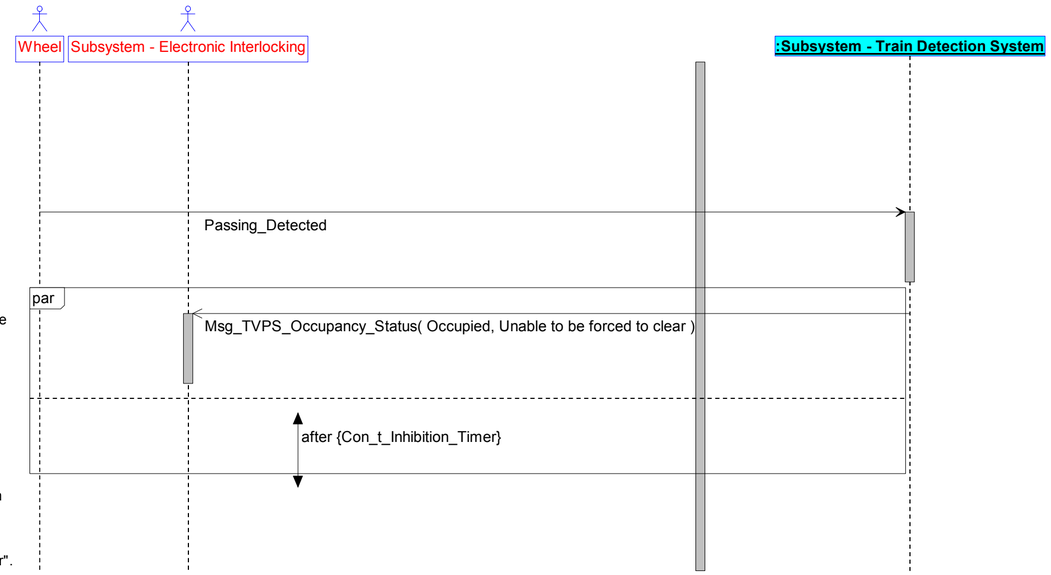
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.5983	Info	TDS SD 2.1.1.2.2 **TDS_UC2.1.1.2: Incorrect counting** Alternative Scenario: Negative counting "TVPS vacant and unable to be forced to clear" [TDS SD 2.1.1.2.2] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS is in the state "TVPS vacant and unable to be forced to clear". **Interaction 2.1.1.2.2.A:** **1.** - One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an outgoing Wheel for the relevant TVPS. **par** **2.a1** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS disturbed and unable to be forced to clear with an operational reason". **also par** **2.b1** The Subsystem - Train Detection System starts the Inhibition Timer. **end par** **3.** The Subsystem - Train Detection System detects the expiration of the Inhibition Timer. **4.** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS disturbed and able to be forced to clear with an operational reason". **Postcondition:** The relevant TVPS is in the state "TVPS disturbed and able to be forced to clear with an operational reason".		Basic TDS AC
Eu.TDS.5982	Info	TDS SD 2.1.1.2.3 **TDS_UC2.1.1.2: Incorrect counting** Alternative Scenario: Negative counting "TVPS occupied and unable to be forced to clear" [TDS SD 2.1.1.2.3] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS is in the state "TVPS occupied and unable to be forced to clear". **Interaction 2.1.1.2.3.A:** **1.** - One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an outgoing Wheel for the relevant TVPS.The sum of incoming and outgoing Wheels is zero. **Interaction 2.1.1.2.3.B:** **2.** - One Wheel is passing a Detection Point of the Subsystem - Train Detection System before expiration or exactly in the moment of expiration of Con_t_Delay_Of_Notification_Of_Availability. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an outgoing Wheel for the relevant TVPS. The amount of counted outgoing Wheels is greater than the amount of counted incoming Wheels. **par** **3.a1** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS disturbed and unable to be forced to clear with an operational reason". **also par** **3.b1** The Subsystem - Train Detection System starts the Inhibition Timer. **end par** **4.** The Subsystem - Train Detection System reports, after waiting for expiration of the Inhibition Timer, the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS disturbed and able to be forced to clear with an operational reason". **Postcondition:** The relevant TVPS is in the state "TVPS disturbed and able to be forced to clear with an operational reason".		Basic TDS AC

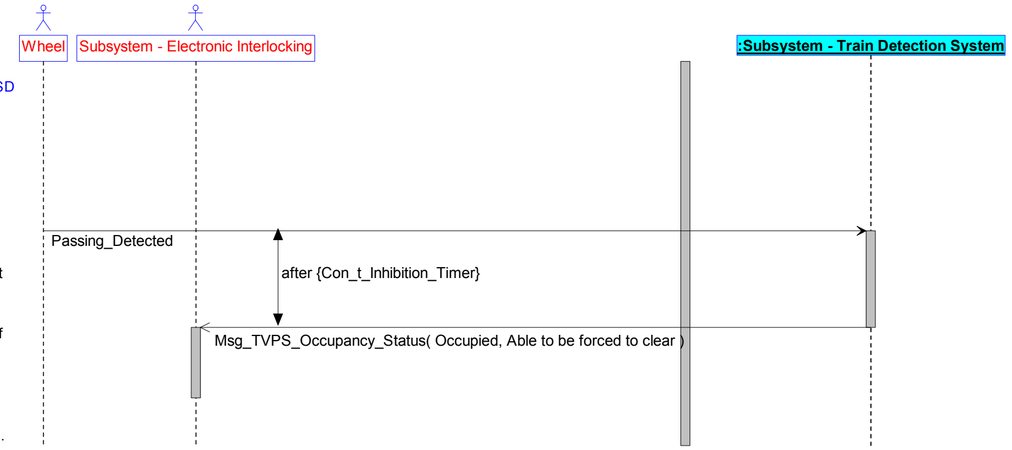
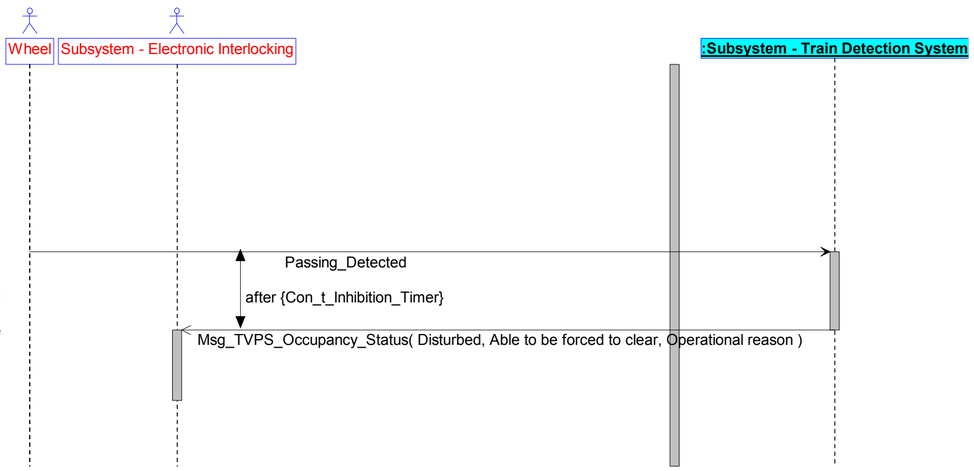
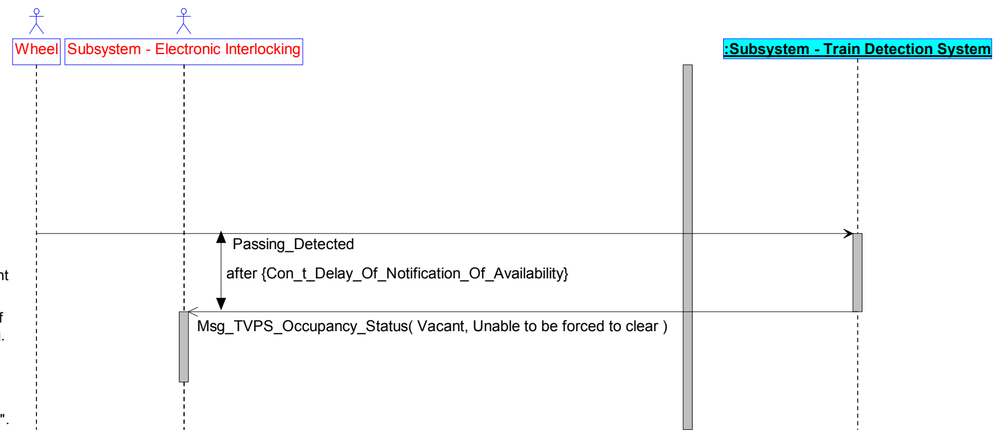


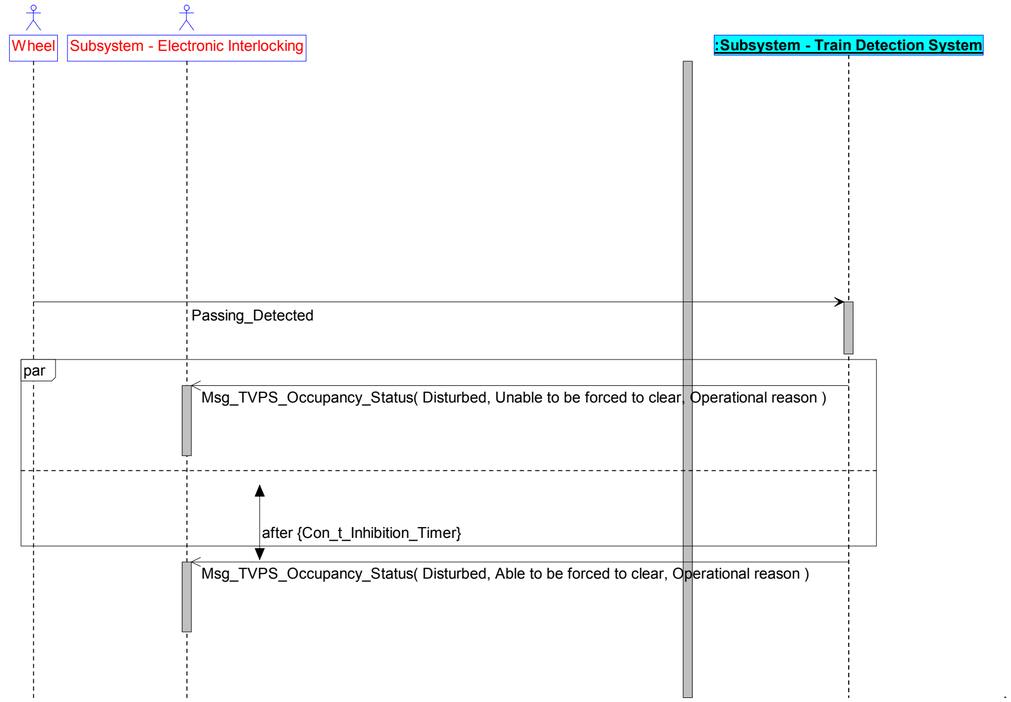
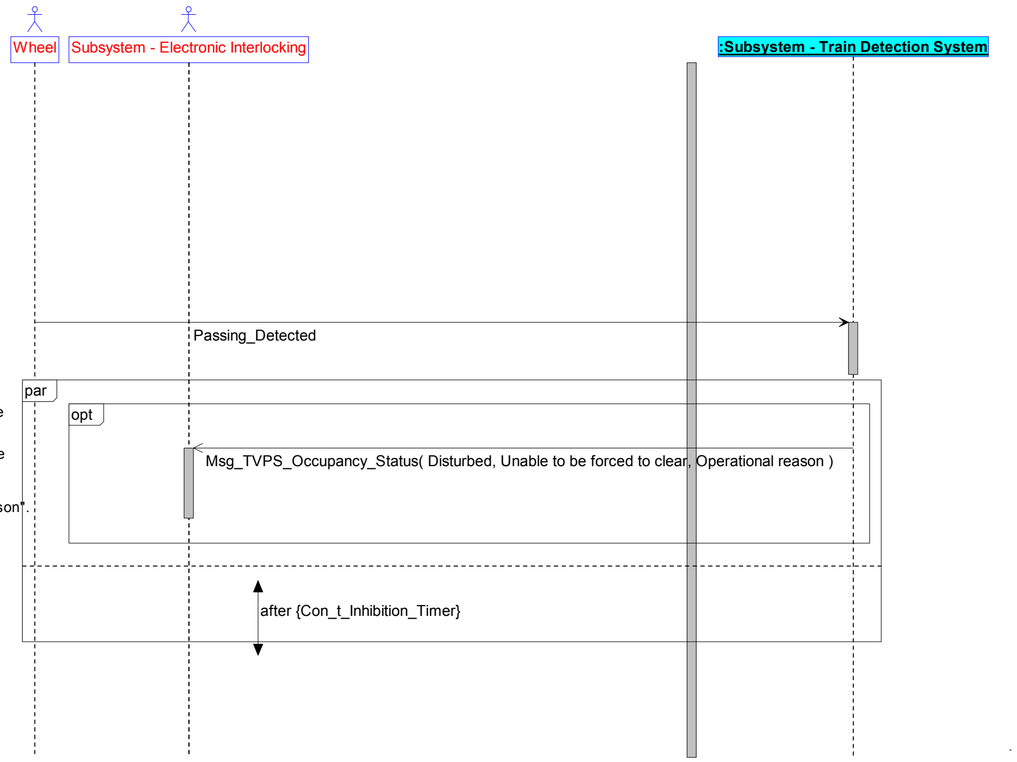


ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.7083	Info	TDS SD 2.1.1.2.4 **TDS_UC2.1.1.2: Incorrect counting** Alternative Scenario: Additional incoming axle while waiting for Delay of Notification of Availability [TDS SD 2.1.1.2.4] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS is in the state "TVPS occupied and unable to be forced to clear" with a running Delay of Notification of Availability. **Interaction 2.1.1.2.4.A:** **1.** - One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an incoming Wheel for the relevant TVPS. **2.** The Subsystem - Train Detection System stops the Delay of Notification of Availability and starts the Inhibition Timer. **Postcondition:** The relevant TVPS is in the state "TVPS occupied and unable to be forced to clear" with a running Inhibition Timer. 		Basic TDS AC
Eu.TDS.7082	Info	TDS SD 2.1.1.2.5 **TDS_UC2.1.1.2: Incorrect counting** Alternative Scenario: Additional counting in state "TVPS occupied and able to be forced to clear" [TDS SD 2.1.1.2.5] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS is in the state "TVPS occupied and able to be forced to clear". The difference between incoming and outgoing Wheels is bigger than one. **Interaction 2.1.1.2.5.A:** **alt** **1.a1** - One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an outgoing Wheel for the relevant TVPS. **else alt** **1.b1** - One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an incoming Wheel for the relevant TVPS. **end alt** **par** **2.a1** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS occupied and unable to be forced to clear". **also par** **2.b1** The Subsystem - Train Detection System starts the Inhibition Timer. **end par** **Postcondition:** The relevant TVPS is in the state "TVPS occupied and unable to be forced to clear" with a running Inhibition Timer. 		Basic TDS AC
Eu.TDS.6015	Info	TDS_UC2.1.2: Single passing, timer and command events (excluding sweeping train process)	The Subsystem-UseCase "TDS_UC2.1.2: Single passing, timer and command events (excluding sweeping train process)" defines the behaviour of single passing, timer and command events (excluding sweeping train process) of the Subsystem - Train Detection System. The behaviour will be defined in the following UseCases: TDS_UC2.1.2.1: Axle passing TDS_UC2.1.2.2: FC-U command TDS_UC2.1.2.3: FC-C command TDS_UC2.1.2.4: DRFC command TDS_UC2.1.2.5: Update Filling Level command	Basic TDS AC
Eu.TDS.5990	Info	TDS_UC2.1.2.1: Axle passing	The Subsystem-UseCase "TDS_UC2.1.2.1: Axle passing" defines the behaviour of the Subsystem - Train Detection System detecting incoming or outgoing Wheels and uninterpretable pattern of a Wheel.	Basic TDS AC

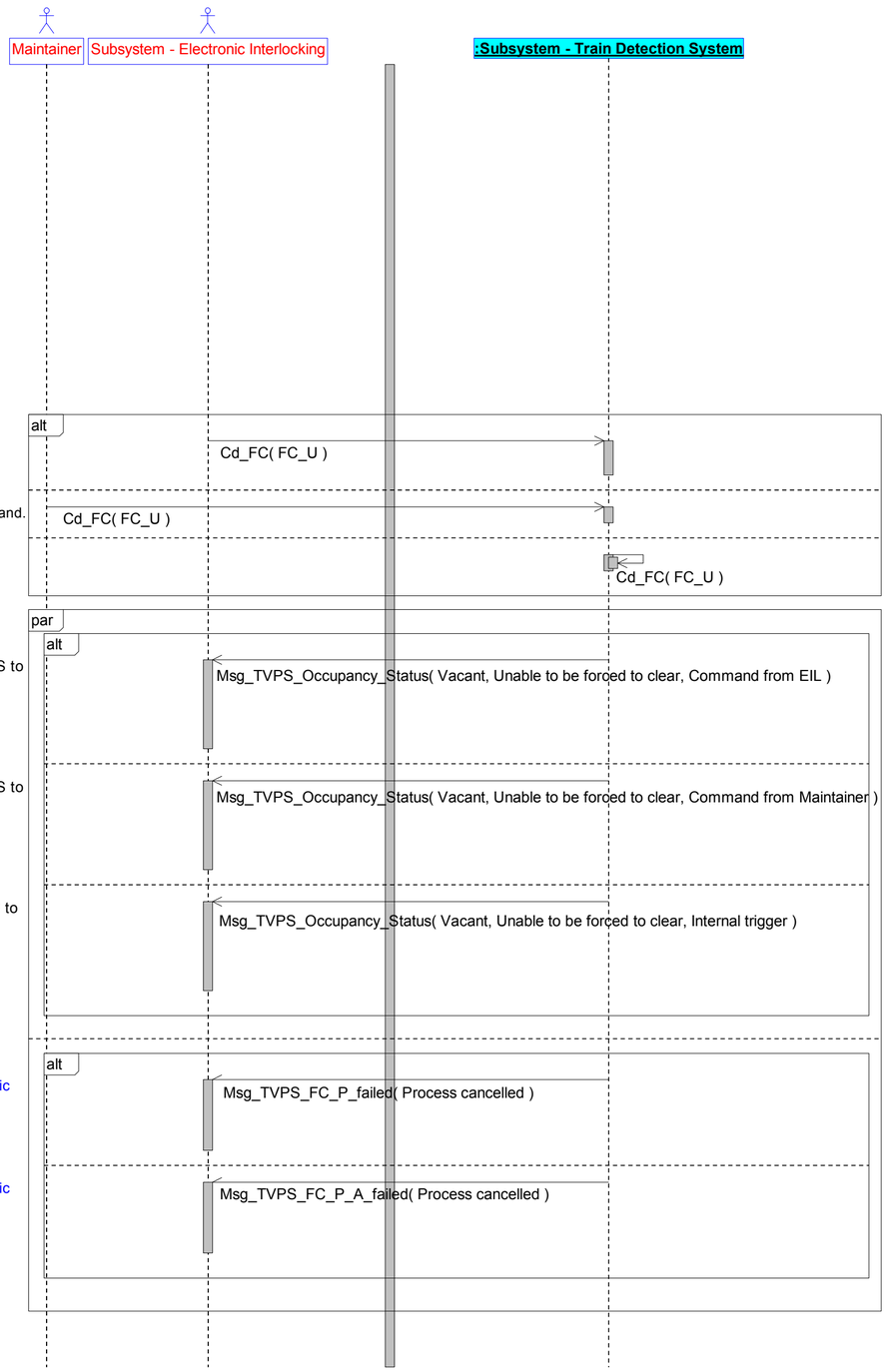
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.5992	Info	TDS SD 2.1.2.1.1 **TDS_UC2.1.2.1: Axle passing** Alternative Scenario: Incoming axle detected (to state Occupied Unable FC) [TDS SD 2.1.2.1.1] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS is in the state "TVPS vacant and unable to be forced to clear". **Interaction 2.1.2.1.1.A:** **1.** - One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an incoming Wheel for the relevant TVPS. **par** **2.a1** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS occupied and unable to be forced to clear". **also par** **2.b1** The Subsystem - Train Detection System starts the Inhibition Timer. **end par** **3.** The Subsystem - Train Detection System detects the expiration of the Inhibition Timer. **Postcondition:** The relevant TVPS is in the state "TVPS occupied and unable to be forced to clear".		Basic TDS AC
Eu.TDS.5991	Info	TDS SD 2.1.2.1.2 **TDS_UC2.1.2.1: Axle passing** Alternative Scenario: Incoming axle detected (to state Disturbed Unable FC) [TDS SD 2.1.2.1.2] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The Subsystem - Train Detection System is configured as Variant B. The relevant TVPS is in the state "TVPS disturbed and able to be forced to clear with an operational reason". **Interaction 2.1.2.1.2.A:** **1.** - One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an incoming Wheel for the relevant TVPS. **par** **2.a1** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS disturbed and unable to be forced to clear with an operational reason". **also par** **2.b1** The Subsystem - Train Detection System starts the Inhibition Timer. **end par** **3.** The Subsystem - Train Detection System detects the expiration of the Inhibition Timer. **Postcondition:** The relevant TVPS is in the state "TVPS disturbed and unable to be forced to clear with an operational reason".		Basic TDS AC

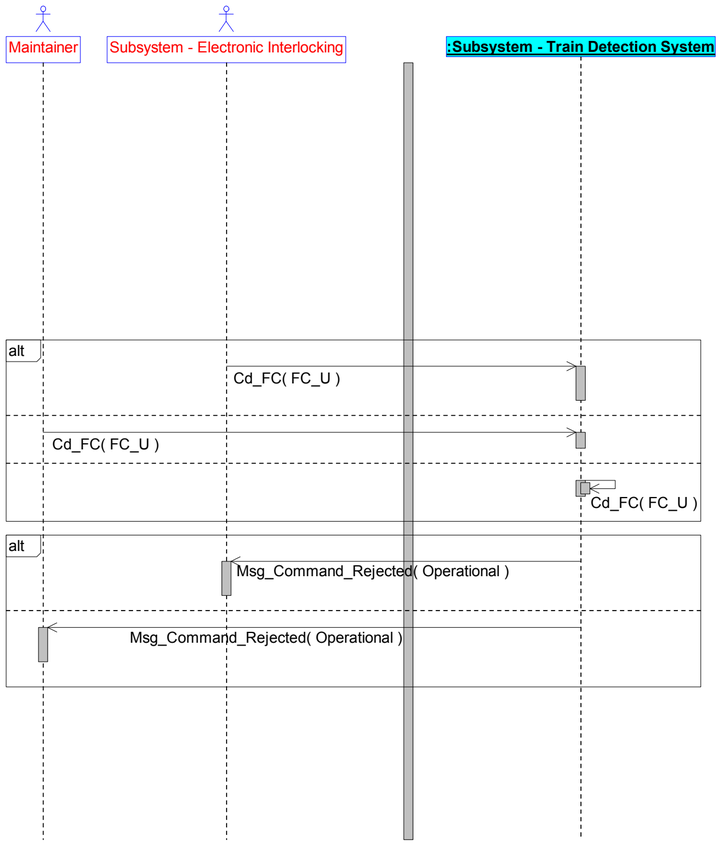


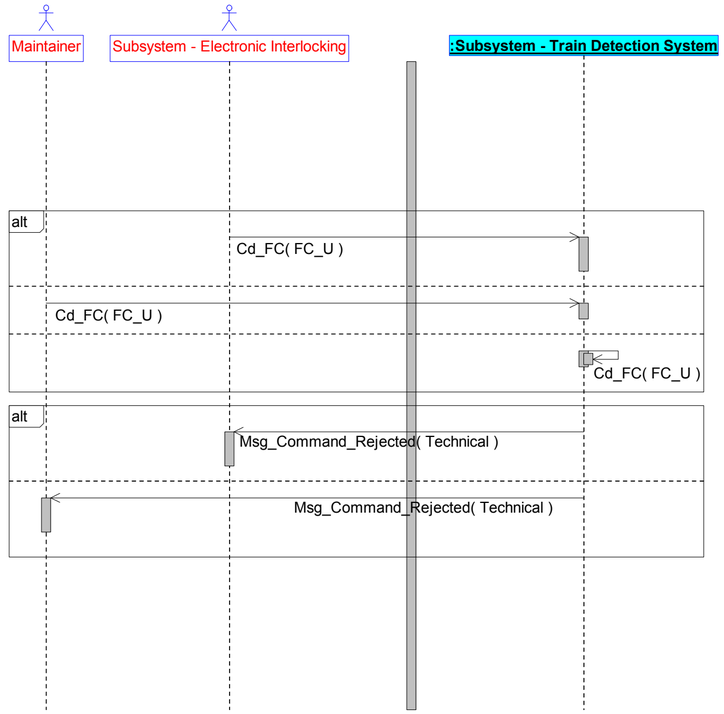
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.5995	Info	TDS SD 2.1.2.1.3 **TDS_UC2.1.2.1: Axle passing** Alternative Scenario: Outgoing axle detected (to state Occupied Able FC) [TDS SD 2.1.2.1.3] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS is in the state "TVPS occupied and unable to be forced to clear". **Interaction 2.1.2.1.3.A:** **1.** - One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an outgoing Wheel for the relevant TVPS. The amount of counted incoming Wheels is greater than the amount of counted outgoing Wheels. **2.** The Subsystem - Train Detection System reports, after waiting for expiration of the Inhibition Timer, the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS occupied and able to be forced to clear". **Postcondition:** The relevant TVPS is in the state "TVPS occupied and able to be forced to clear".  		Basic TDS AC
Eu.TDS.5994	Info	TDS SD 2.1.2.1.4 **TDS_UC2.1.2.1: Axle passing** Alternative Scenario: Outgoing axle detected (to state Disturbed Able FC) [TDS SD 2.1.2.1.4] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The Subsystem - Train Detection System is configured as Variant B. The relevant TVPS is in the state “TVPS disturbed and unable to be forced to clear with an operational reason". **Interaction 2.1.2.1.4.A:** **1.** - One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an outgoing Wheel for the relevant TVPS. **2.** The Subsystem - Train Detection System reports, after waiting for expiration of the Inhibition Timer, the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS disturbed and able to be forced to clear with an operational reason". **Postcondition:** The relevant TVPS is in the state "TVPS disturbed and able to be forced to clear with an operational reason".  		Basic TDS AC
Eu.TDS.5993	Info	TDS SD 2.1.2.1.5 **TDS_UC2.1.2.1: Axle passing** Alternative Scenario: Last outgoing axle detected (to state Vacant) [TDS SD 2.1.2.1.5] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS is in the state "TVPS occupied and unable to be forced to clear". **Interaction 2.1.2.1.5.A:** **1.** - One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an outgoing Wheel for the relevant TVPS.The sum of incoming and outgoing Wheels is zero. **2.** The Subsystem - Train Detection System reports, after Delay of notification of availability, the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS vacant and unable to be forced to clear". **Postcondition:** The relevant TVPS is in the state "TVPS vacant and unable to be forced to clear".  	If the Con_t_Delay_Of_Notification_Of_Availability is configured with the value 0, the reporting of the new status vacant will be sent immediately after the detection of the last outgoing Wheel.	Basic TDS AC

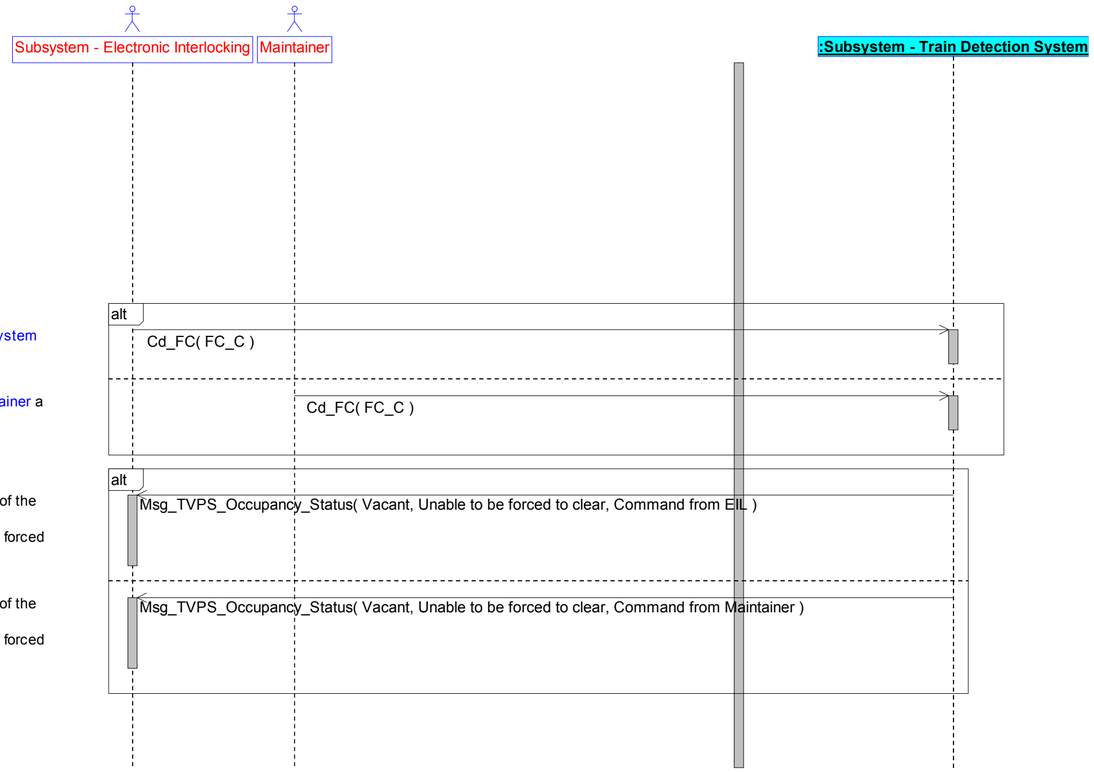
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.5996	Info	TDS SD 2.1.2.1.6 **TDS_UC2.1.2.1: Axle passing** Alternative Scenario: Uninterpretable pattern detected (to state Disturbed Able FC) for Variant A [TDS SD 2.1.2.1.6] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The Subsystem - Train Detection System is configured as Variant A. The relevant TVPS is in the states: - "TVPS vacant and unable to be forced to clear", - "TVPS occupied and unable to be forced to clear", - "TVPS occupied and able to be forced to clear" or - "TVPS disturbed and able to be forced to clear with an operational reason". **Interaction 2.1.2.1.6.A:** **1.** - One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises that a sensor of a detection point received an uninterpretable or undefined pattern. **par** **2.a1** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS disturbed and unable to be forced to clear with an operational reason". **also par** **2.b1** The Subsystem - Train Detection System starts the Inhibition Timer. **end par** **3.** The Subsystem - Train Detection System reports, after waiting for expiration of the Inhibition Timer, the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS disturbed and able to be forced to clear with an operational reason". **Postcondition:** The relevant TVPS is in the state "TVPS disturbed and able to be forced to clear with an operational reason".  		Basic TDS AC
Eu.TDS.5997	Info	TDS SD 2.1.2.1.7 **TDS_UC2.1.2.1: Axle passing** Alternative Scenario: Uninterpretable pattern detected (to state Disturbed Unable FC) for Variant B [TDS SD 2.1.2.1.7] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The Subsystem - Train Detection System is configured as Variant B. The relevant TVPS is in the states: - "TVPS vacant and unable to be forced to clear", - "TVPS occupied and unable to be forced to clear", - "TVPS occupied and able to be forced to clear", - "TVPS disturbed and able to be forced to clear with an operational reason" or - "TVPS disturbed and unable to be forced to clear with an operational reason". **Interaction 2.1.2.1.7.A:** **1.** - One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises that a sensor of a detection point received an uninterpretable or undefined pattern. **par** **opt** [The relevant TVPS was not in the state "TVPS disturbed and unable to be forced to clear with an operational reason" **2.a1.1** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS disturbed and unable to be forced to clear with an operational reason". **end opt** **also par** **2.b1** The Subsystem - Train Detection System starts the Inhibition Timer. **end par** **3.** The Subsystem - Train Detection System detects the expiration of the Inhibition Timer. **Postcondition:** The relevant TVPS is in the state "TVPS disturbed and unable to be forced to clear with an operational reason".  		Basic TDS AC

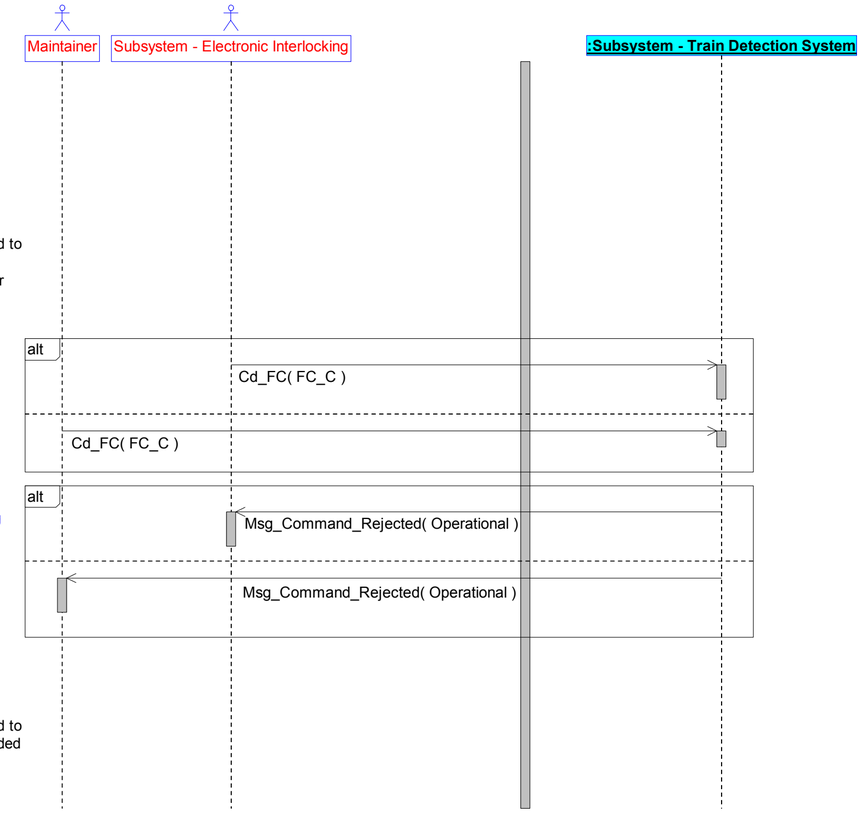
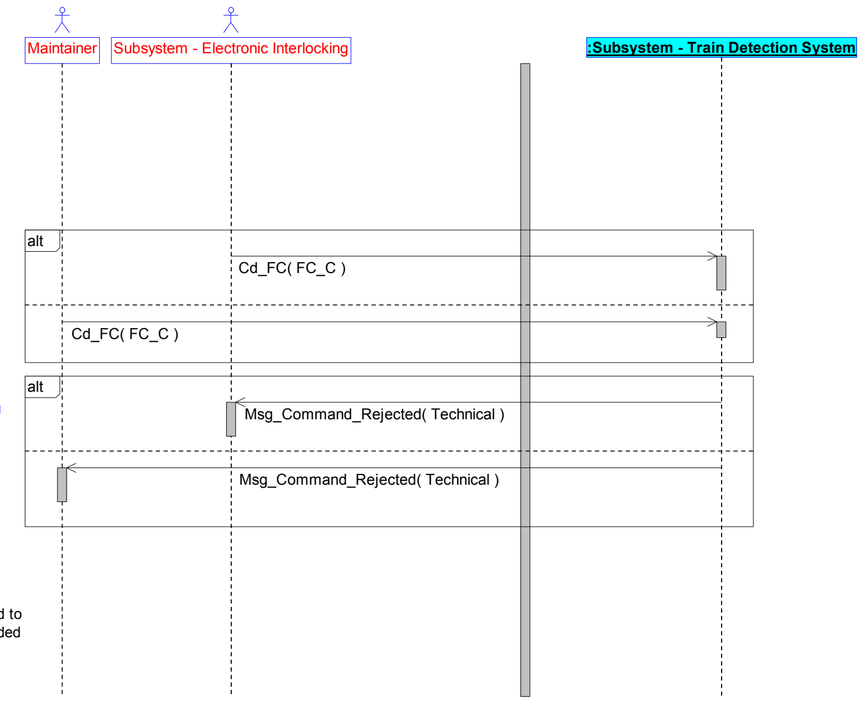
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.5998	Info	TDS_UC2.1.2.2: FC-U command	The Subsystem-UseCase "TDS_UC2.1.2.2: FC-U command" defines the behaviour of the Subsystem - Train Detection System after receiving a FC-U- command from the Subsystem - Electronic Interlocking, from the Maintainer or from internal.	Basic TDS AC
Eu.TDS.6001	Info	TDS SD 2.1.2.2.1 **TDS_UC2.1.2.2: FC-U command** Main Success Scenario: Successful execution of FC-U [TDS SD 2.1.2.2.1] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS is configured to execute FC-U. The relevant TVPS is in the states: - "TVPS occupied and able to be forced to clear", - "TVPS disturbed and able to be forced to clear with an operational reason", - "TVPS occupied and unable to be forced to clear", - "TVPS disturbed and unable to be forced to clear with an operational reason" for Variant B, - "TVPS is waiting for an acknowledgment after FC-P-A command and unable to be forced to clear", - "TVPS is in state sweeping train detected and unable to be forced to clear" or - "TVPS is in state waiting for a sweeping train after FC-P-A or FC-P command and unable to be forced to clear". For the relevant TVPS the inhibition timer is not running. For the relevant TVPS the delay of notification of availability timer is not running **Interaction 2.1.2.2.1.A:** **alt** **1.a1** - The Subsystem - Train Detection System receives from the Subsystem - Electronic Interlocking a FC-U-command. **else alt** **1.b1** - The Subsystem - Train Detection System receives from the Maintainer a FC-U-command. **else alt** **1.c1** - The Subsystem - Train Detection System receives from internal a FC-U-command. **end alt** **par** **alt** [FC-U-command was received from the Subsystem - Electronic Interlocking] **2.a1.a1** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS vacant and unable to be forced to clear". The filling level of the relevant TVPS is set to zero. **else alt** [FC-U-command was received from the Maintainer] **2.a1.b1** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS vacant and unable to be forced to clear". The filling level of the relevant TVPS is set to zero. **else alt** [FC-U-command was received from internal] **2a1.c1** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS vacant and unable to be forced to clear". The filling level of the relevant TVPS is set to zero. **end alt** **also par** **alt** [The Last command before the FC-U-command was a FC-P-command] **2.b1.a1** The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the execution of the previously sent FC-P command was not successful. The telegram contains the information that the process was cancelled. **else alt** [The Last command before the FC-U-command was a FC-P-A-command] **2.b1.b1** The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the execution of the previously sent FC-P-A command was not successful. The telegram contains the information that the process was cancelled. **end alt** **end par** **Postcondition:** The relevant TVPS is in the state "TVPS vacant and unable to be forced to clear".		Basic TDS AC Option FC-P/-A

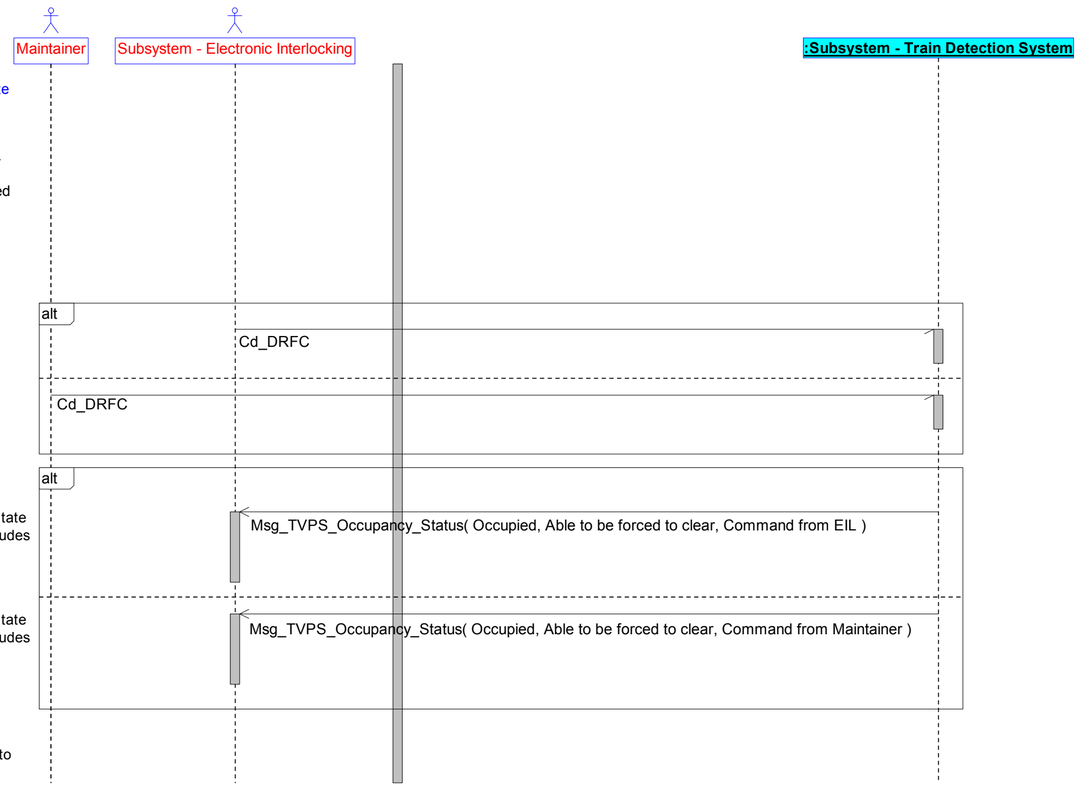


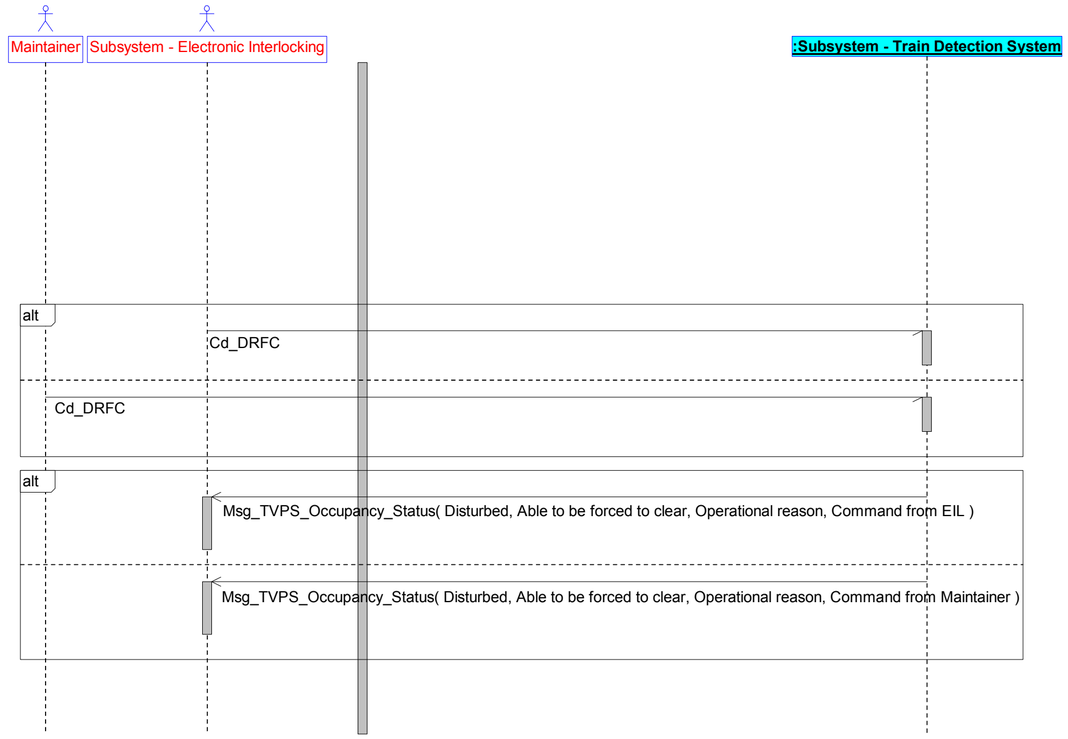
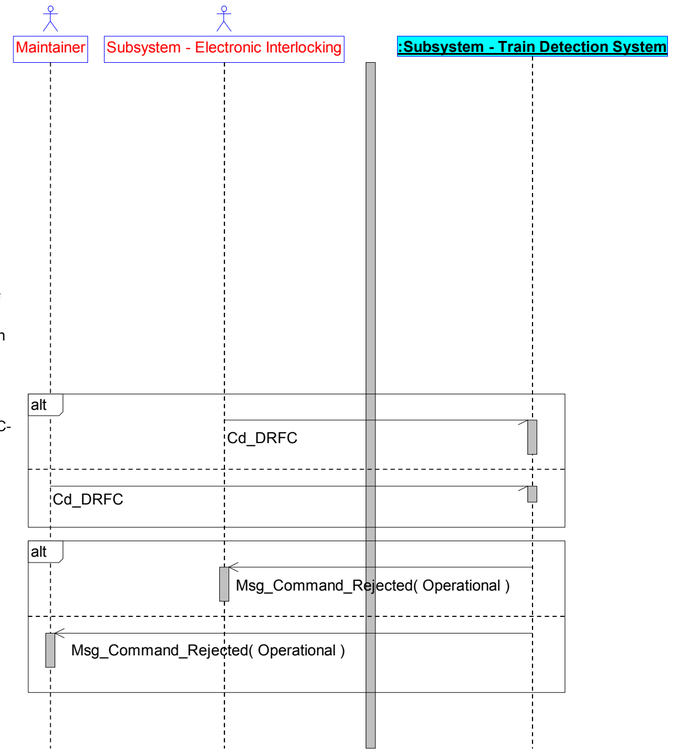
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.5999	Info	TDS SD 2.1.2.2.2 **TDS_UC2.1.2.2: FC-U command** Alternative Scenario: Unsuccessful execution of FC-U (operational reason) [TDS SD 2.1.2.2.2] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS is configured to execute FC-U. The relevant TVPS is in the states: - "TVPS vacant and unable to be forced to clear", - "TVPS occupied and unable to be forced to clear" with a running Inhibition Timer or running Delay of Notification of Availability, - "TVPS disturbed and unable to be forced to clear with an operational reason" with a running Inhibition Timer, - "TVPS is waiting for an acknowledgment after FC-P-A command and unable to be forced to clear" with a running Inhibition Timer, - "TVPS is in state sweeping train detected and unable to be forced to clear" with a running Inhibition Timer. **Interaction 2.1.2.2.2.A:** **alt** **1.a1** - The Subsystem - Train Detection System receives from the Subsystem - Electronic Interlocking a FC-U-command. **else alt** **1.b1** - The Subsystem - Train Detection System receives from the Maintainer a FC-U-command. **else alt** **1.c1** - The Subsystem - Train Detection System receives from internal a FC-U-command. **end alt** **alt** [FC-U-command was received from the Subsystem - Electronic Interlocking] **2.a1** The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the previously sent command was rejected with an operational reason. **else alt** [FC-U-command was received from the Maintainer] **2.b1** The Subsystem - Train Detection System reports to the Maintainer that the previously sent command was rejected with an operational reason. **end alt** **Postcondition:** --- **Note:** This scenario should normally be avoided because the Subsystem - Electronic Interlocking is expected to check the ability to force section to clear condition before sending the FC command. This SD is included to cover scenarios where the Subsystem - Electronic Interlocking and Subsystem - Train Detection System have different opinions on the ability to force the section to clear condition, such as when the condition changes soon after the command has been sent.  		Basic TDS AC

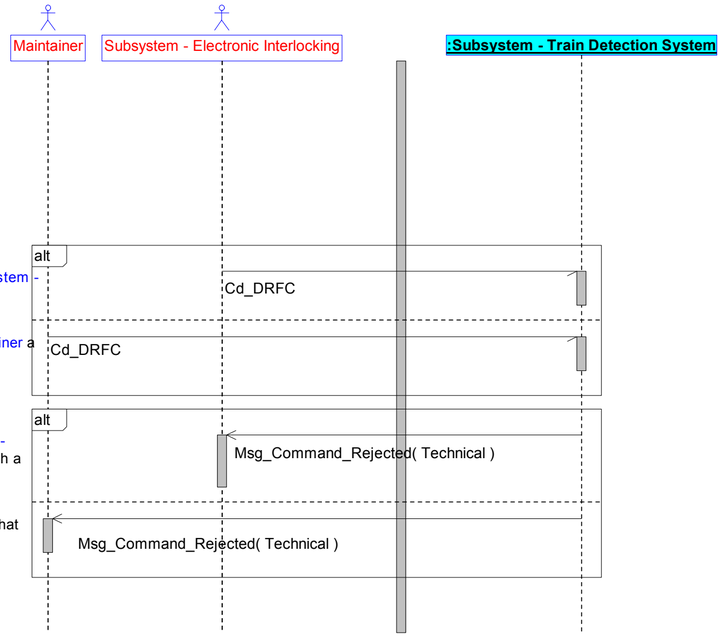
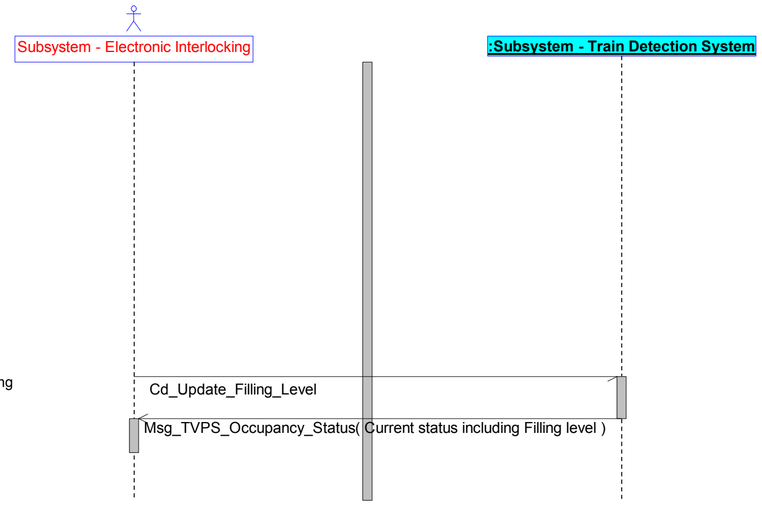
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6000	Info	TDS SD 2.1.2.2.3 **TDS_UC2.1.2.2: FC-U command** Alternative Scenario: Unsuccessful execution of FC-U (technical reason) [TDS SD 2.1.2.2.3] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS is configured to execute FC-U. The relevant TVPS is in the state "TVPS disturbed and unable to be forced to clear with a technical reason". **Interaction 2.1.2.2.3.A:** alt **1.a1** - The Subsystem - Train Detection System receives from the Subsystem - Electronic Interlocking a FC-U-command. else alt **1.b1** - The Subsystem - Train Detection System receives from the Maintainer a FC-U-command. else alt **1.c1.** - The Subsystem - Train Detection System receives from internal a FC-U-command. end alt **alt** [FC-U-command was received from the Subsystem - Electronic Interlocking] **2.a1** The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the previously sent command was rejected with a technical reason. **else alt** [FC-U-command was received from the Maintainer] **2.b1** The Subsystem - Train Detection System reports to the Maintainer that the previously sent command was rejected with technical reason. **end alt** **Postcondition:** --- **Note:** This scenario should normally be avoided because the Subsystem - Electronic Interlocking is expected to check the ability to force section to clear condition before sending the FC command. This SD is included to cover scenarios where the Subsystem - Electronic Interlocking and Subsystem - Train Detection System have different opinions on the ability to force the section to clear condition, such as when the condition changes soon after the command has been sent.  		Basic TDS AC
Eu.TDS.6002	Info	TDS_UC2.1.2.3: FC-C command	The Subsystem-UseCase "TDS_UC2.1.2.3: FC-C command" defines the behaviour of the Subsystem - Train Detection System after receiving a FC-C- command from the Subsystem - Electronic Interlocking or from the Maintainer.	Basic TDS AC

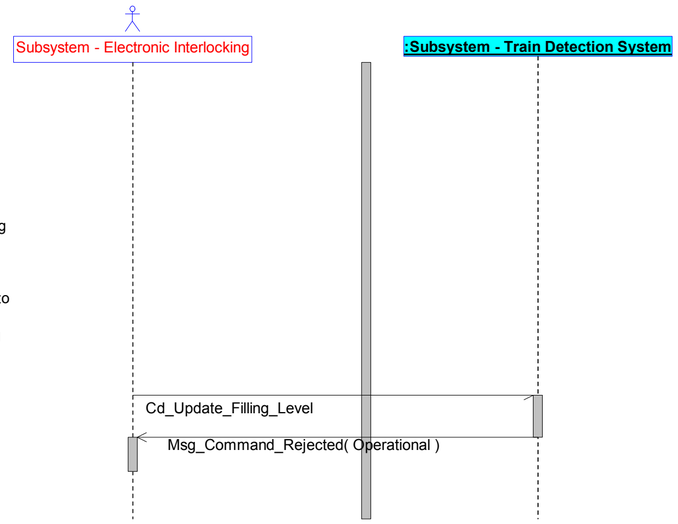
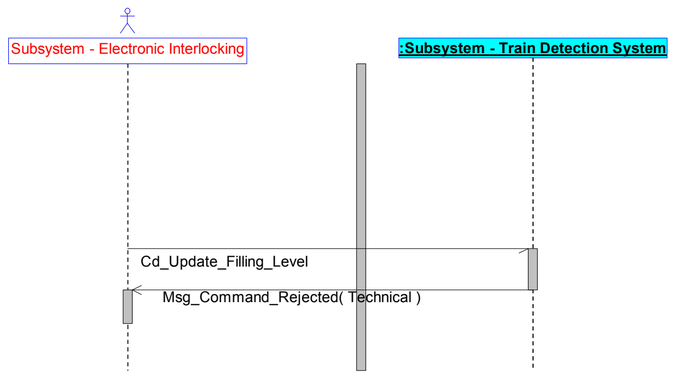
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6005	Info	TDS SD 2.1.2.3.1 **TDS_UC2.1.2.3: FC-C command** Main Success Scenario: Successful execution of FC-C [TDS SD 2.1.2.3.1] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS is configured to execute FC-C. The relevant TVPS is in the states: - "TVPS occupied and able to be forced to clear" or - "TVPS disturbed and able to be forced to clear with an operational reason". For the relevant TVPS the inhibition timer is not running. For the relevant TVPS the delay of notification of availability timer is not running. **Interaction 2.1.2.3.1.A:** **alt** **1.a1** - The Subsystem - Train Detection System receives from the Subsystem - Electronic Interlocking a FC-C-command. **else alt** **1.b1** - The Subsystem - Train Detection System receives from the Maintainer a FC-C-command. **end alt** **alt** [FC-C-command received from the Subsystem - Electronic Interlocking] **2.a1** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS vacant and unable to be forced to clear". The filling level of the relevant TVPS is set to zero. **else alt** [FC-C-command received from the Maintainer] **2.b1** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS vacant and unable to be forced to clear". The filling level of the relevant TVPS is set to zero. **end alt** **Postcondition:** The relevant TVPS is in the state "TVPS vacant and unable to be forced to clear". 		Basic TDS AC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6003	Info	TDS SD 2.1.2.3.2 **TDS_UC2.1.2.3: FC-C command** Alternative Scenario: Unsuccessful execution of FC-C (operational reason) [TDS SD 2.1.2.3.2] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS is configured to execute FC-C. The relevant TVPS is in the states: - "TVPS vacant and unable to be forced to clear", - "TVPS occupied and unable to be forced to clear" - "TVPS is in state sweeping train detected and unable to be forced to clear", - "TVPS is in state waiting for a sweeping train after FC-P-A or FC-P command and unable to be forced to clear" - "TVPS is waiting for an acknowledgement after FC-P-A command and unable to be forced to clear" or - “TVPS disturbed and unable to be forced to clear with an operational reason" for Variant B. **Interaction 2.1.2.3.2.A:** **alt** **1.a1** - The Subsystem - Train Detection System receives from the Subsystem - Electronic Interlocking a FC-C-command. **else alt** **1.b1** - The Subsystem - Train Detection System receives from the Maintainer a FC-C-command. **end alt** **alt** [FC-C-command received from the Subsystem - Electronic Interlocking] **2.a1** The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the previously sent command was rejected with an operational reason. **else alt** [FC-C-command received from the Maintainer] **2.b1** The Subsystem - Train Detection System reports to the Maintainer that the previously sent command was rejected with an operational reason. **end alt** **Postcondition:** --- **Note:** This scenario should normally be avoided because the Subsystem - Electronic Interlocking is expected to check the ability to force section to clear condition before sending the FC command. This SD is included to cover scenarios where the Subsystem - Electronic Interlocking and Subsystem - Train Detection System have different opinions on the ability to force the section to clear condition, such as when the condition changes soon after the command has been sent.  		Basic TDS AC
Eu.TDS.6004	Info	TDS SD 2.1.2.3.3 **TDS_UC2.1.2.3: FC-C command** Alternative Scenario: Unsuccessful execution of FC-C (technical reason) [TDS SD 2.1.2.3.3] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS is configured to execute FC-C. The relevant TVPS is in the state "TVPS disturbed and unable to be forced to clear with a technical reason". **Interaction 2.1.2.3.3.A:** alt **1.a1** - The Subsystem - Train Detection System receives from the Subsystem - Electronic Interlocking a FC-C-command. else alt **1.b1** - The Subsystem - Train Detection System receives from the Maintainer a FC-C-command. end alt **alt** [FC-C-command received from the Subsystem - Electronic Interlocking] **2.a1** The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the previously sent command was rejected with a technical reason. **else alt** [FC-C-command received from the Maintainer] **2.b1** The Subsystem - Train Detection System reports to the Maintainer that the previously sent command was rejected with a technical reason. **end alt** **Postcondition:** --- **Note:** This scenario should normally be avoided because the Subsystem - Electronic Interlocking is expected to check the ability to force section to clear condition before sending the FC command. This SD is included to cover scenarios where the Subsystem - Electronic Interlocking and Subsystem - Train Detection System have different opinions on the ability to force the section to clear condition, such as when the condition changes soon after the command has been sent.  		Basic TDS AC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6006	Info	TDS_UC2.1.2.4: DRFC command	The Subsystem-UseCase "TDS_UC2.1.2.4: DRFC command" defines the behaviour of the Subsystem - Train Detection System after receiving a DRFC-command from the Subsystem - Electronic Interlocking or from the Maintainer.	Basic TDS AC
Eu.TDS.6010	Info	TDS SD 2.1.2.4.1 **TDS_UC2.1.2.4: DRFC command** Main Success Scenario: DRFC command received and accepted (to state Occupied Able FC) [TDS SD 2.1.2.4.1] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS is configured to execute DRFC. The relevant TVPS is in the state "TVPS occupied and unable to be forced to clear". For the relevant TVPS the inhibition timer is not running For the relevant TVPS the delay of notification of availability timer is not running **Interaction 2.1.2.4.1.A:** **alt** **1.a1** - The Subsystem - Train Detection System receives from the Subsystem - Electronic Interlocking a DRFC-command. **else alt** **1.b1** - The Subsystem - Train Detection System receives from the Maintainer a DRFC-command. **end alt** **alt** [DRFC-command was received from Subsystem - Electronic Interlocking] **2.a1** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS occupied and able to be forced to clear". **else alt** [DRFC-command was received from Maintainer] **2.b1** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS occupied and able to be forced to clear". **end alt** **Postcondition:** The relevant TVPS is in the state "TVPS occupied and able to be forced to clear". 		Basic TDS AC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6009	Info	TDS SD 2.1.2.4.2 **TDS_UC2.1.2.4: DRFC command** Alternative Scenario: DRFC command received and accepted (to state Disturbed Able FC,reason operational Variant B) [TDS SD 2.1.2.4.2] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The Subsystem - Train Detection System is configured as Variant B. The relevant TVPS is configured to execute DRFC. The relevant TVPS is in the state “TVPS disturbed and unable to be forced to clear with an operational reason" for Variant B. For the relevant TVPS the inhibition timer is not running For the relevant TVPS the delay of notification of availability timer is not running **Interaction 2.1.2.4.2.A:** **alt** **1.a1** - The Subsystem - Train Detection System receives from the Subsystem - Electronic Interlocking a DRFC-command. **else alt** **1.b1** - The Subsystem - Train Detection System receives from the Maintainer a DRFC-command. **end alt** **alt** [DRFC-command was received from Subsystem - Electronic Interlocking] **2.a1.** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS disturbed and able to be forced to clear with an operational reason". **else alt** [DRFC-command was received from Maintainer] **2.b1** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS disturbed and able to be forced to clear with an operational reason". **end alt** **Postcondition:** The relevant TVPS is in the state "TVPS disturbed and able to be forced to clear with an operational reason". 		Basic TDS AC
Eu.TDS.6007	Info	TDS SD 2.1.2.4.3 **TDS_UC2.1.2.4: DRFC command** Alternative Scenario: DRFC command rejected (operational reason) [TDS SD 2.1.2.4.3] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS is configured to execute DRFC. The relevant TVPS is in the states: - "TVPS vacant and unable to be forced to clear", - "TVPS occupied and able to be forced to clear" - "TVPS is in state sweeping train detected and unable to be forced to clear", - "TVPS is in state waiting for a sweeping train after FC-P-A or FC-P command and unable to be forced to clear" - "TVPS is waiting for an acknowledgement after FC-P-A command and unable to be forced to clear" - "TVPS disturbed and able to be forced to clear with an operational reason", - "TVPS occupied and unable to be forced to clear" with a running Inhibition Timer or running Delay of Notification of Availability or - "TVPS disturbed and unable to be forced to clear with an operational reason" for Variant B with a running Inhibition Timer. **Interaction 2.1.2.4.3.A:** **alt** **1.a1** - The Subsystem - Train Detection System receives from the Subsystem - Electronic Interlocking a DRFC-command. **else alt** **1.b1** - The Subsystem - Train Detection System receives from the Maintainer a DRFC-command. **end alt** **alt** [DRFC-command was received from Subsystem - Electronic Interlocking] **2.a1** The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the previously sent command was rejected with an operational reason. **else alt** [DRFC-command was received from Maintainer] **2.b1** The Subsystem - Train Detection System reports to the Maintainer that the previously sent command was rejected with an operational reason. **end alt** **Postcondition:** --- 		Basic TDS AC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6008	Info	TDS SD 2.1.2.4.4 **TDS_UC2.1.2.4: DRFC command** Alternative Scenario: DRFC command rejected (technical reason) [TDS SD 2.1.2.4.4] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS is configured to execute DRFC. The relevant TVPS is in the state "TVPS disturbed and unable to be forced to clear with a technical reason". **Interaction 2.1.2.4.4.A:** **alt** **1.a1** - The Subsystem - Train Detection System receives from the Subsystem - Electronic Interlocking a DRFC-command. **else alt** **1.b1** - The Subsystem - Train Detection System receives from the Maintainer a DRFC-command. **end alt** **alt** [DRFC-command was received from Subsystem - Electronic Interlocking] **2.a1** The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the previously sent command was rejected with a technical reason. **else alt** [DRFC-command was received from Maintainer] **2.b1** The Subsystem - Train Detection System reports to the Maintainer that the previously sent command was rejected with a technical reason. **end alt** **Postcondition:** ---  		Basic TDS AC
Eu.TDS.6011	Info	TDS_UC2.1.2.5: Update Filling Level command	The Subsystem-UseCase "TDS_UC2.1.2.5: Update Filling Level command" defines the behaviour of the Subsystem - Train Detection System after receiving a Update Filling Level-command from the Subsystem - Electronic Interlocking.	Option Update FL
Eu.TDS.6014	Info	TDS SD 2.1.2.5.1 **TDS_UC2.1.2.5: Update Filling Level command** Main Success Scenario: Update Filling Level command received [TDS SD 2.1.2.5.1] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS is configured to execute UFL. The relevant TVPS is in the states: - "TVPS occupied and able to be forced to clear", - "TVPS disturbed and able to be forced to clear with an operational reason", - "TVPS occupied and unable to be forced to clear", - "TVPS disturbed and unable to be forced to clear with an operational reason" for Variant B, - "TVPS is in state sweeping train detected and unable to be forced to clear", - "TVPS is waiting for an acknowledgment after FC-P-A command and unable to be forced to clear" or - "TVPS is in state waiting for a sweeping train after FC-P-A or FC-P command and unable to be forced to clear". For the relevant TVPS the inhibition timer is not running. For the relevant TVPS the delay of notification of availability timer is not running **Interaction 2.1.2.5.1.A:** **1.** - The Subsystem - Train Detection System receives from the Subsystem - Electronic Interlocking a Update Filling Level - command. **2.** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the current Filling Level. **Postcondition:** ---  		Option Update FL

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6012	Info	TDS SD 2.1.2.5.2 **TDS_UC2.1.2.5: Update Filling Level command** Alternative Scenario: Update Filling Level command rejected (operational reason) [TDS SD 2.1.2.5.2] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS is configured to execute UFL. The relevant TVPS is in the states: - "TVPS vacant and unable to be forced to clear", - "TVPS occupied and unable to be forced to clear" with a running Inhibition Timer or running Delay of Notification of Availability, - ""TVPS disturbed and unable to be forced to clear with an operational reason" with a running Inhibition Timer, - "TVPS is waiting for an acknowledgment after FC-P-A command and unable to be forced to clear" with a running Inhibition Timer, - "TVPS is in state sweeping train detected and unable to be forced to clear" with a running Inhibition Timer. **Interaction 2.1.2.5.2.A:** **1.** - The Subsystem - Train Detection System receives from the Subsystem - Electronic Interlocking a Update Filling Level - command. **2.** The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the previously sent command was rejected with an operational reason. **Postcondition:** --- 		Option Update FL
Eu.TDS.6013	Info	TDS SD 2.1.2.5.3 **TDS_UC2.1.2.5: Update Filling Level command** Alternative Scenario: Update Filling Level command rejected (technical reason) [TDS SD 2.1.2.5.3] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS is configured to execute UFL. The relevant TVPS is in the state "TVPS disturbed and unable to be forced to clear with a technical reason". **Interaction 2.1.2.5.3.A:** **1.** - The Subsystem - Train Detection System receives from the Subsystem - Electronic Interlocking a Update Filling Level - command. **2.** The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the previously sent command was rejected with a technical reason. **Postcondition:** --- 		Option Update FL
Eu.TDS.6016	Info	TDS_UC2.1.3: Single passing, timer and command events (for sweeping train process)	The Subsystem-UseCase "TDS_UC2.1.3: Single passing, timer and command events (for sweeping train process)" defines the behaviour of single passing, timer and command events (for sweeping train process) of the Subsystem - Train Detection System. The behaviour will be defined in the following UseCases: TDS_UC2.1.3.1: FC-P command TDS_UC2.1.3.2: FC-P-A command TDS_UC2.1.3.3: Axle passing during sweeping train process TDS_UC2.1.3.4: Timer expiration during sweeping train process TDS_UC2.1.3.5: Cancel-command TDS_UC2.1.3.6: FC Acknowledgement TDS_UC2.1.3.7: Visual Sweeping Confirmation	Option FC-P/-A
Eu.TDS.6018	Info	TDS_UC2.1.3.1: FC-P command	The Subsystem-UseCase "TDS_UC2.1.3.1: FC-P command" defines the behaviour of the Subsystem - Train Detection System after receiving a FC-P- command from the Subsystem - Electronic Interlocking.	Option FC-P/-A

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.5987	Info	TDS SD 2.1.3.1.1		Option FC-P/-A

TDS_UC2.1.3.1: FC-P command

Main Success Scenario: Successful execution of FC-P [TDS SD 2.1.3.1.1]

Precondition:

The Subsystem - Train Detection System is in the state OPERATIONAL.
The relevant TVPS is configured to execute FC-P.
The relevant TVPS is in the states:
- "TVPS occupied and able to be forced to clear",
- "TVPS disturbed and able to be forced to clear with an operational reason",
- "TVPS occupied and unable to be forced to clear",
- "TVPS disturbed and unable to be forced to clear with an operational reason" for Variant B.

For the relevant TVPS the inhibition timer is not running.
For the relevant TVPS the delay of notification of availability timer is not running

Interaction 2.1.3.1.1.A:

1. - The Subsystem - Train Detection System receives from the Subsystem - Electronic Interlocking a FC-P command.

2. The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS is in state waiting for a sweeping train after FC-P-A or FC-P command and unable to be forced to clear".

Interaction 2.1.3.1.1.B:

3. - One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an incoming Wheel for the relevant TVPS.

4. The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS is in state sweeping train detected and unable to be forced to clear".

Interaction 2.1.3.1.1.C:

5. - One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an outgoing Wheel for the relevant TVPS.

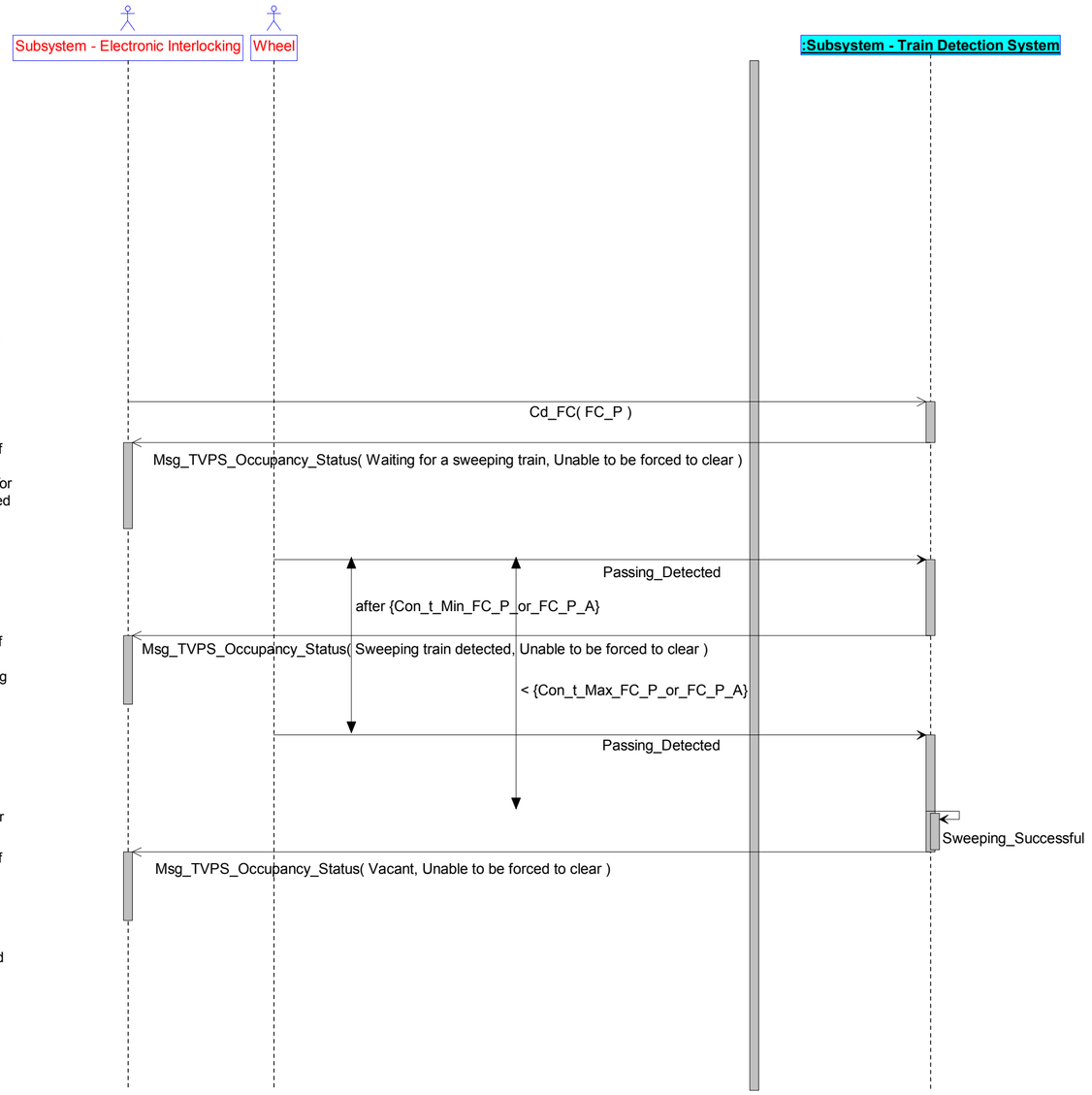
6. The Subsystem - Train Detection System receives the internal trigger that the sweeping was successful.

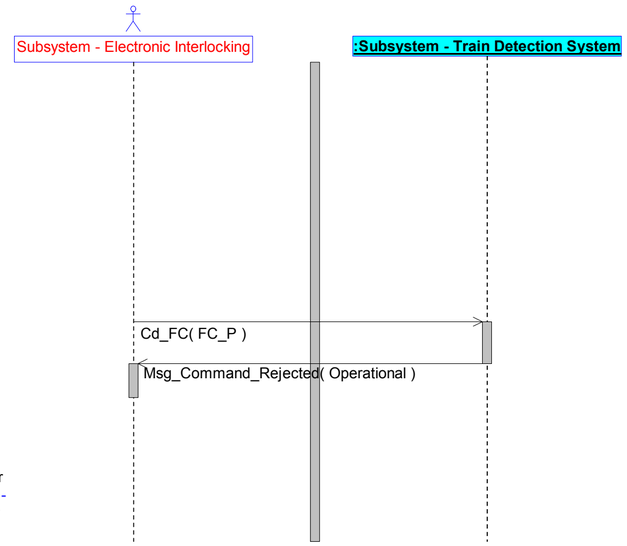
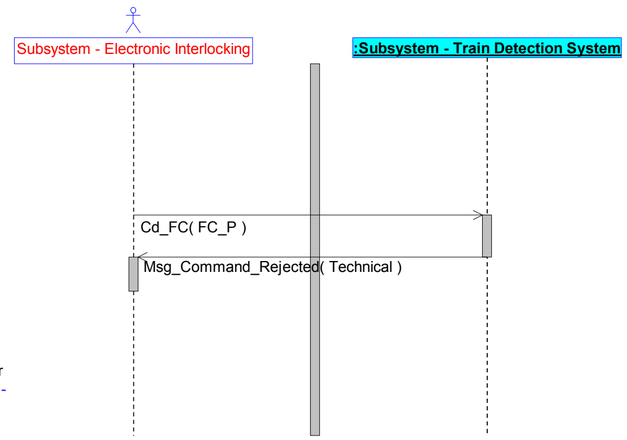
7. The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS is in state vacant and unable to be forced to clear".

Postcondition:

The relevant TVPS is in the state "TVPS vacant and unable to be forced to clear".

Note: The detection and the behaviour of the detection of incoming/outgoing wheels, the resulting state changes as well as the inhibition timer and delay of notification timer in UC 2.1.1. and UC 2.1.2 are still valid and work in parallel but are not shown in this Sequence diagram.



ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.7000	Info	TDS SD 2.1.3.1.2 **TDS_UC2.1.3.1: FC-P command** Alternative Scenario: Unsuccessful execution of FC-P (operational reason) [TDS SD 2.1.3.1.2] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS is configured to execute FC-P. The relevant TVPS is in the states: - "TVPS vacant and unable to be forced to clear", - "TVPS occupied and unable to be forced to clear" with a running Inhibition Timer or running Delay of Notification of Availability, - "TVPS disturbed and unable to be forced to clear with an operational reason" with a running Inhibition Timer, - "TVPS is waiting for an acknowledgment after FC-P-A command and unable to be forced to clear", - "TVPS is in state sweeping train detected and unable to be forced to clear" or - "TVPS is in state waiting for a sweeping train after FC-P-A or FC-P command and unable to be forced to clear". **Interaction 2.1.3.1.2.A:** **1.** - The Subsystem - Train Detection System receives from the Subsystem - Electronic Interlocking a FC-P-command. **2.** The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the previously sent command was rejected with an operational reason. **Postcondition:** --- **Note:** This scenario should normally be avoided because the Subsystem - Electronic Interlocking is expected to check the ability to force section to clear condition before sending the FC command. This SD is included to cover scenarios where the Subsystem - Electronic Interlocking and Subsystem - Train Detection System have different opinions on the ability to force the section to clear condition, such as when the condition changes soon after the command has been sent. 		Option FC-P/-A
Eu.TDS.7001	Info	TDS SD 2.1.3.1.3 **TDS_UC2.1.3.1: FC-P command** Alternative Scenario: Unsuccessful execution of FC-P (technical reason) [TDS SD 2.1.3.1.3] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS is configured to execute FC-P. The relevant TVPS is in the state "TVPS disturbed and unable to be forced to clear with a technical reason". **Interaction 2.1.3.1.3.A:** **1.** - The Subsystem - Train Detection System receives from the Subsystem - Electronic Interlocking a FC-P-command. **2.** The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the previously sent command was rejected with a technical reason. **Postcondition:** --- **Note:** This scenario should normally be avoided because the Subsystem - Electronic Interlocking is expected to check the ability to force section to clear condition before sending the FC command. This SD is included to cover scenarios where the Subsystem - Electronic Interlocking and Subsystem - Train Detection System have different opinions on the ability to force the section to clear condition, such as when the condition changes soon after the command has been sent. 		Option FC-P/-A
Eu.TDS.6021	Info	TDS_UC2.1.3.2: FC-P-A command	The Subsystem-UseCase "TDS_UC2.1.3.2: FC-P-A command" defines the behaviour of the Subsystem - Train Detection System after receiving a FC-P-A-command from the Subsystem - Electronic Interlocking.	Option FC-P/-A

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.5988	Info	TDS SD 2.1.3.2.1		Option FC-P/-A

TDS_UC2.1.3.2: FC-P-A command

Main Success Scenario: Successful execution of FC-P-A [TDS SD 2.1.3.2.1]

Precondition:

The Subsystem - Train Detection System is in the state OPERATIONAL.
The relevant TVPS is configured to execute FC-P-A.
The relevant TVPS is in the states:
- "TVPS occupied and able to be forced to clear",
- "TVPS disturbed and able to be forced to clear with an operational reason",
- "TVPS occupied and unable to be forced to clear",
- "TVPS disturbed and unable to be forced to clear with an operational reason" for Variant B.

For the relevant TVPS the inhibition timer is not running.
For the relevant TVPS the delay of notification of availability timer is not running

Interaction 2.1.3.2.1.A:

1. - The Subsystem - Train Detection System receives from the Subsystem - Electronic Interlocking a FC-P-A-command.

2. The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS is in state waiting for a sweeping train after FC-P-A or FC-P command and unable to be forced to clear".

Interaction 2.1.3.2.1.B:

3. - One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an incoming Wheel for the relevant TVPS.

4. The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS is in state sweeping train detected and unable to be forced to clear".

Interaction 2.1.3.2.1.C:

5. - One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an outgoing Wheel for the relevant TVPS.

6. The Subsystem - Train Detection System receives the internal trigger that the sweeping was successful.

7. The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS is waiting for an acknowledgment after FC-P-A command and unable to be forced to clear".

Interaction 2.1.3.2.1.D:

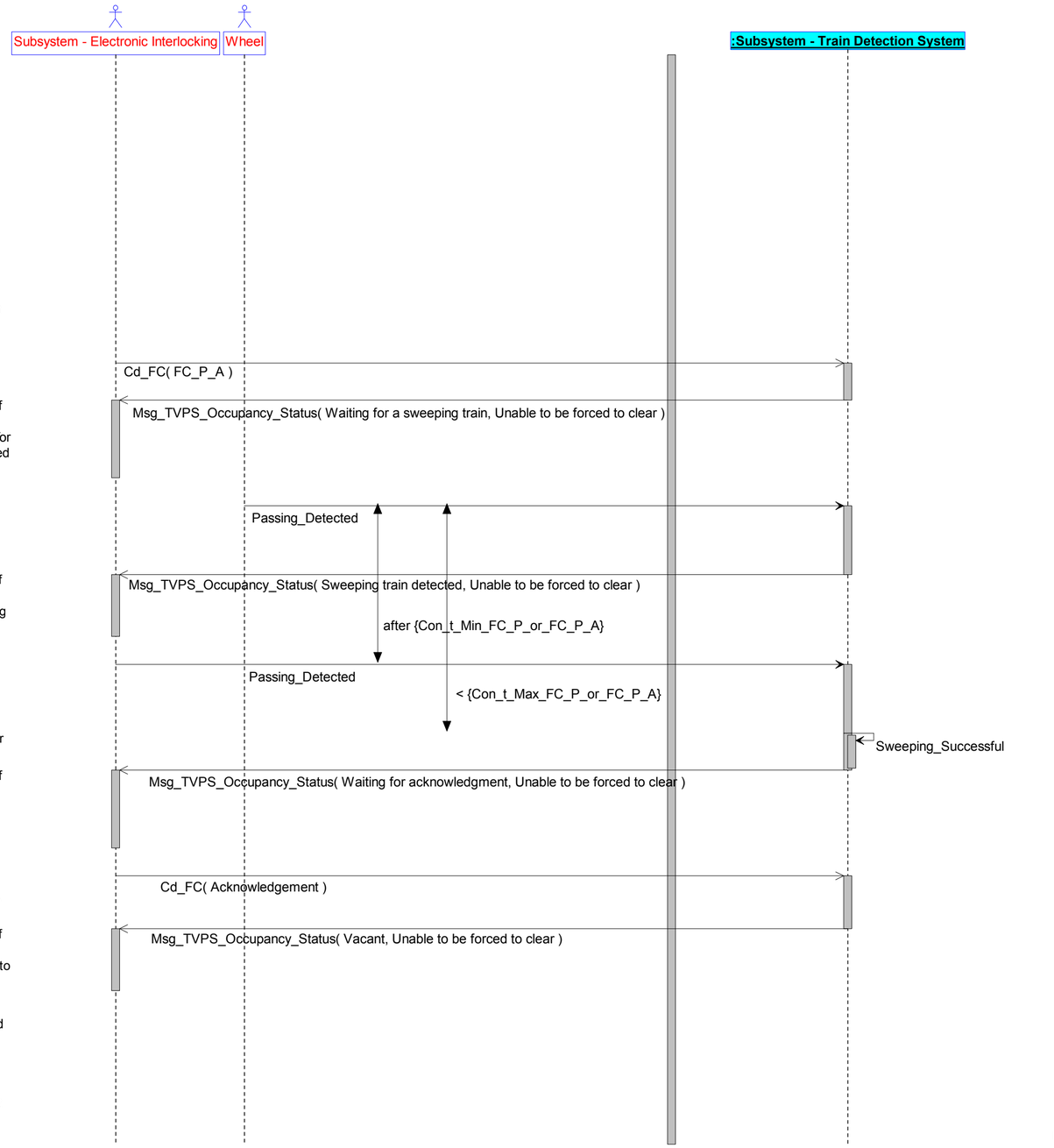
8. - The Subsystem - Train Detection System receives from the Subsystem - Electronic Interlocking an Acknowledgement after FC-P-A command.

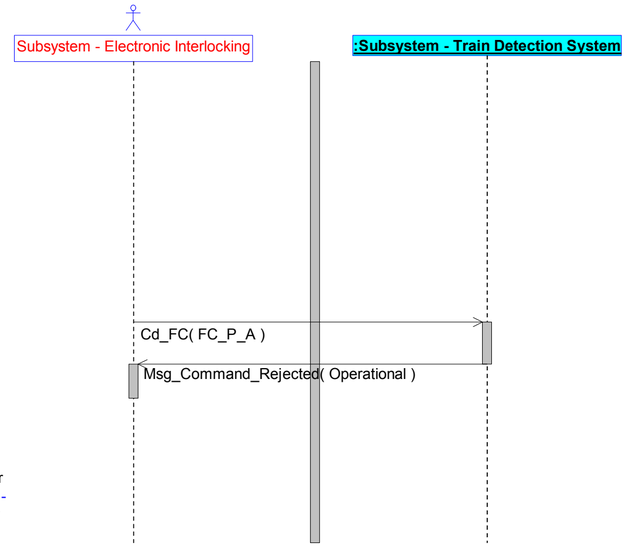
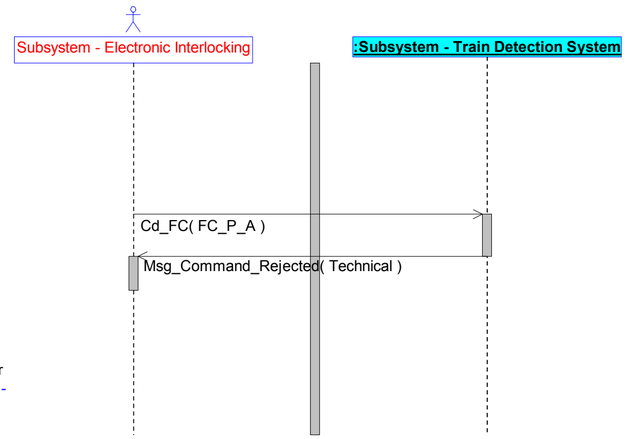
9. The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS vacant and unable to be forced to clear". The filling level of the relevant TVPS is set to zero.

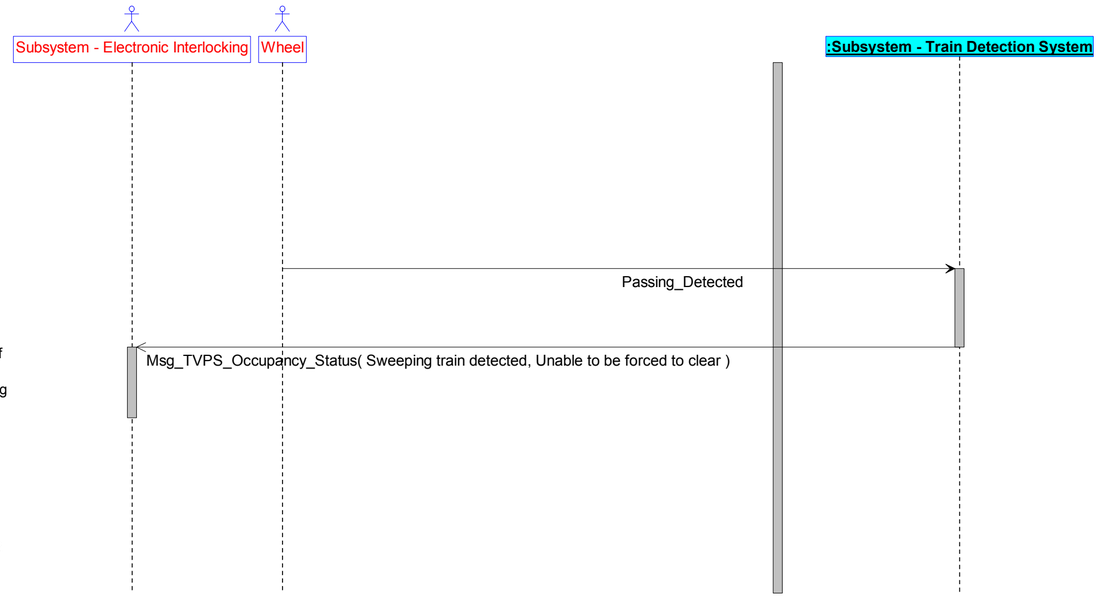
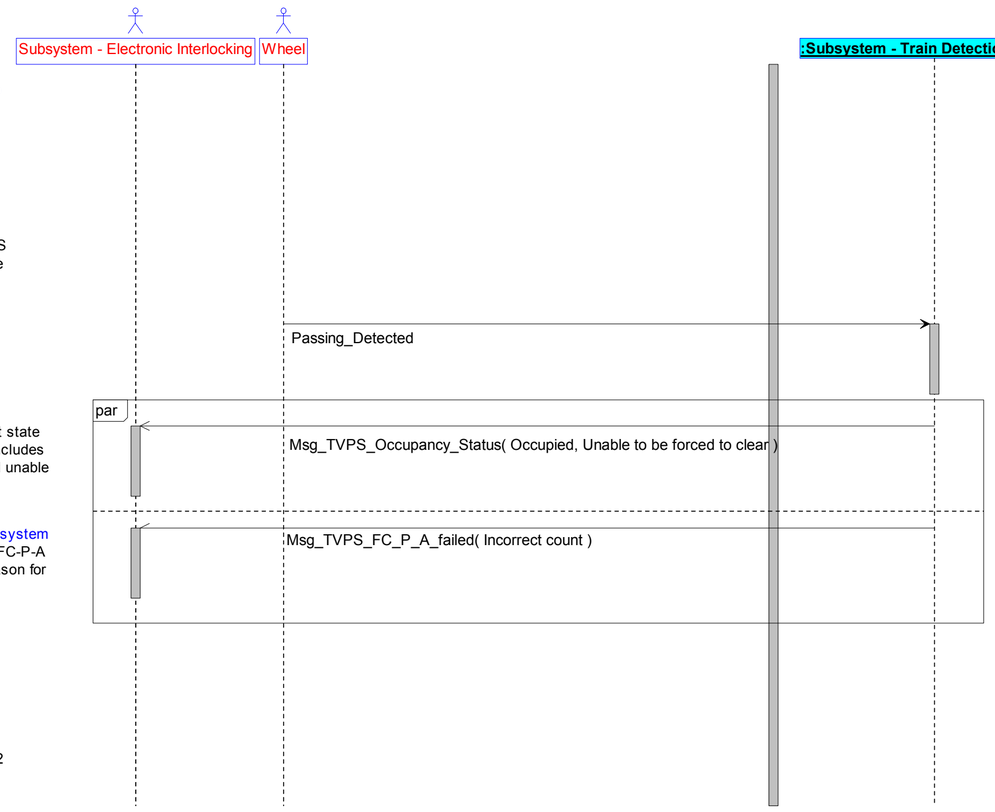
Postcondition:

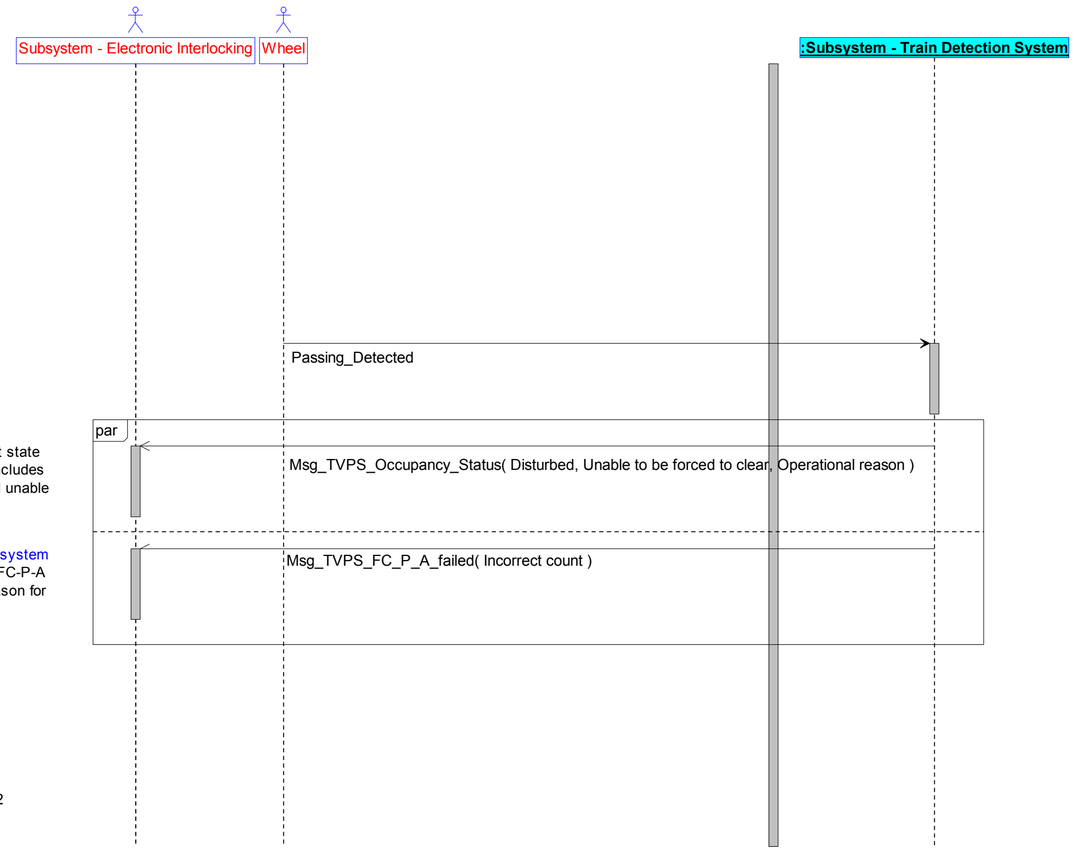
The relevant TVPS is in the state "TVPS vacant and unable to be forced to clear".

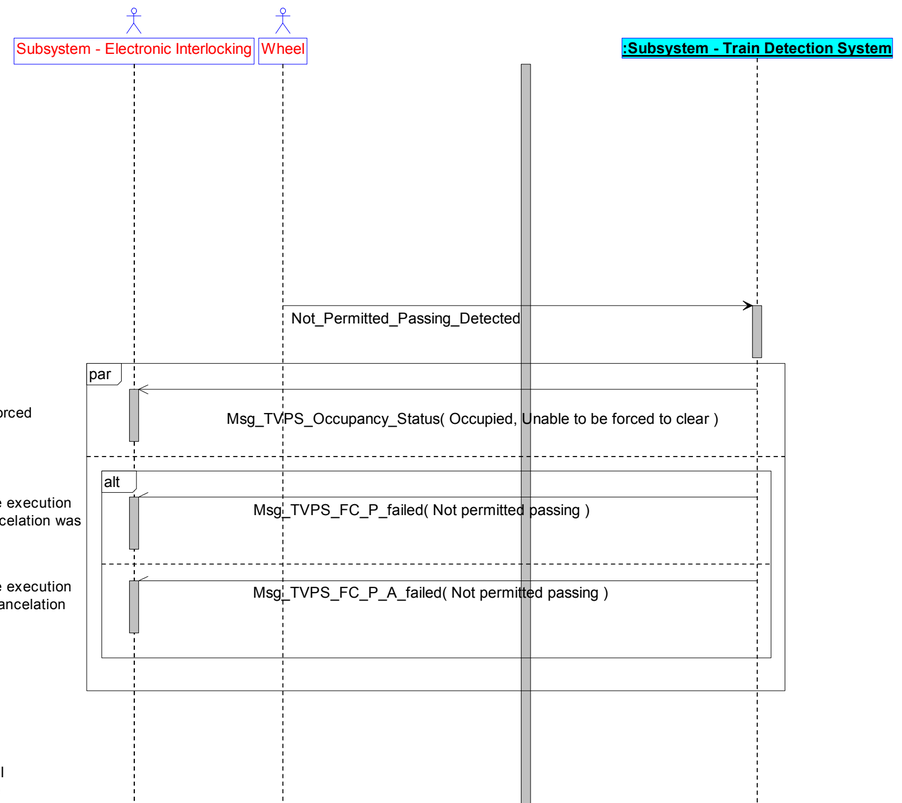
Note: The detection and the behaviour of the detection of incoming/outgoing wheels, the resulting state changes as well as the inhibition timer and delay of notification timer in UC 2.1.1. and UC 2.1.2 are still valid and work in parallel but are not shown in this Sequence diagram.

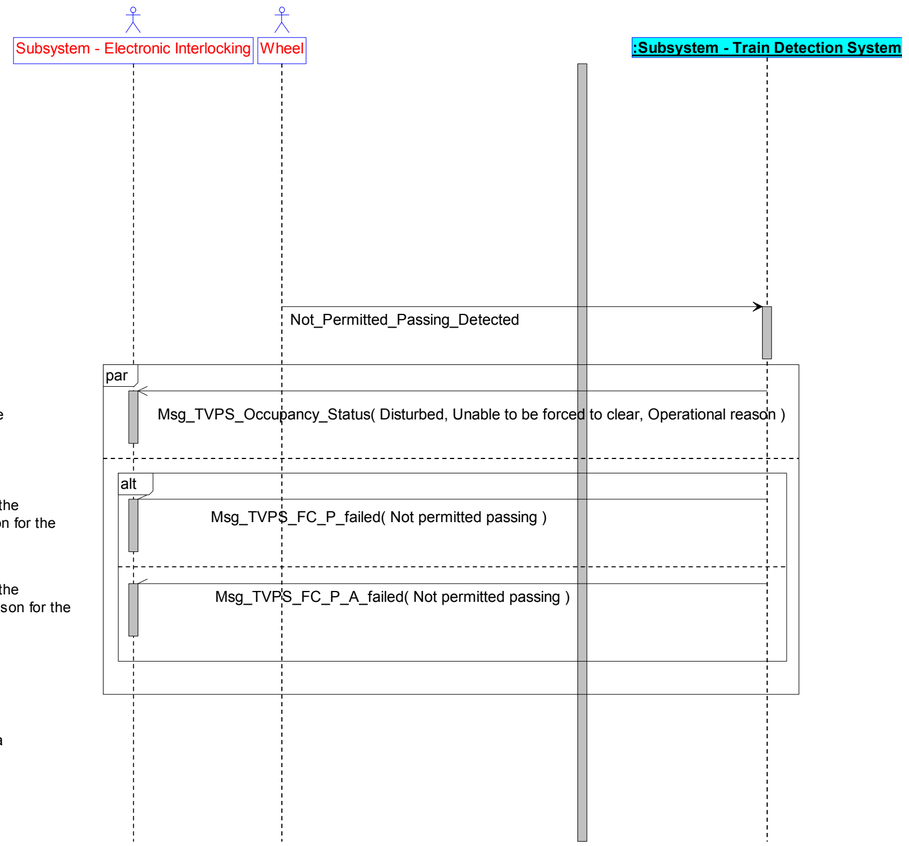


ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.7002	Info	TDS SD 2.1.3.2.2 **TDS_UC2.1.3.2: FC-P-A command** Alternative Scenario: Unsuccessful execution of FC-P-A (operational reason) [TDS SD 2.1.3.2.2] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS is configured to execute FC-P-A. The relevant TVPS is in the states: - "TVPS vacant and unable to be forced to clear", - "TVPS occupied and unable to be forced to clear" with a running Inhibition Timer or running Delay of Notification of Availability, - "TVPS disturbed and unable to be forced to clear with an operational reason" with a running Inhibition Timer, - "TVPS is waiting for an acknowledgment after FC-P-A command and unable to be forced to clear", - "TVPS is in state sweeping train detected and unable to be forced to clear" or - "TVPS is in state waiting for a sweeping train after FC-P-A or FC-P command and unable to be forced to clear". **Interaction 2.1.3.2.2.A:** **1.** - The Subsystem - Train Detection System receives from the Subsystem - Electronic Interlocking a FC-P-A-command. **2.** The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the previously sent command was rejected with an operational reason. **Postcondition:** --- **Note:** This scenario should normally be avoided because the Subsystem - Electronic Interlocking is expected to check the ability to force section to clear condition before sending the FC command. This SD is included to cover scenarios where the Subsystem - Electronic Interlocking and Subsystem - Train Detection System have different opinions on the ability to force the section to clear condition, such as when the condition changes soon after the command has been sent.  		Option FC-P/-A
Eu.TDS.7003	Info	TDS SD 2.1.3.2.3 **TDS_UC2.1.3.2: FC-P-A command** Alternative Scenario: Unsuccessful execution of FC-P-A (technical reason) [TDS SD 2.1.3.2.3] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS is configured to execute FC-P. The relevant TVPS is in the state "TVPS disturbed and unable to be forced to clear with a technical reason". **Interaction 2.1.3.2.3.A:** **1.** - The Subsystem - Train Detection System receives from the Subsystem - Electronic Interlocking a FC-P-A-command. **2.** The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the previously sent command was rejected with a technical reason. **Postcondition:** --- **Note:** This scenario should normally be avoided because the Subsystem - Electronic Interlocking is expected to check the ability to force section to clear condition before sending the FC command. This SD is included to cover scenarios where the Subsystem - Electronic Interlocking and Subsystem - Train Detection System have different opinions on the ability to force the section to clear condition, such as when the condition changes soon after the command has been sent.  		Option FC-P/-A
Eu.TDS.6024	Info	TDS_UC2.1.3.3: Axle passing during sweeping train process	The Subsystem-UseCase "TDS_UC2.1.3.3: Axle passing during sweeping train process" defines the behaviour of the Subsystem - Train Detection System detecting axles during sweeping train process.	Option FC-P/-A

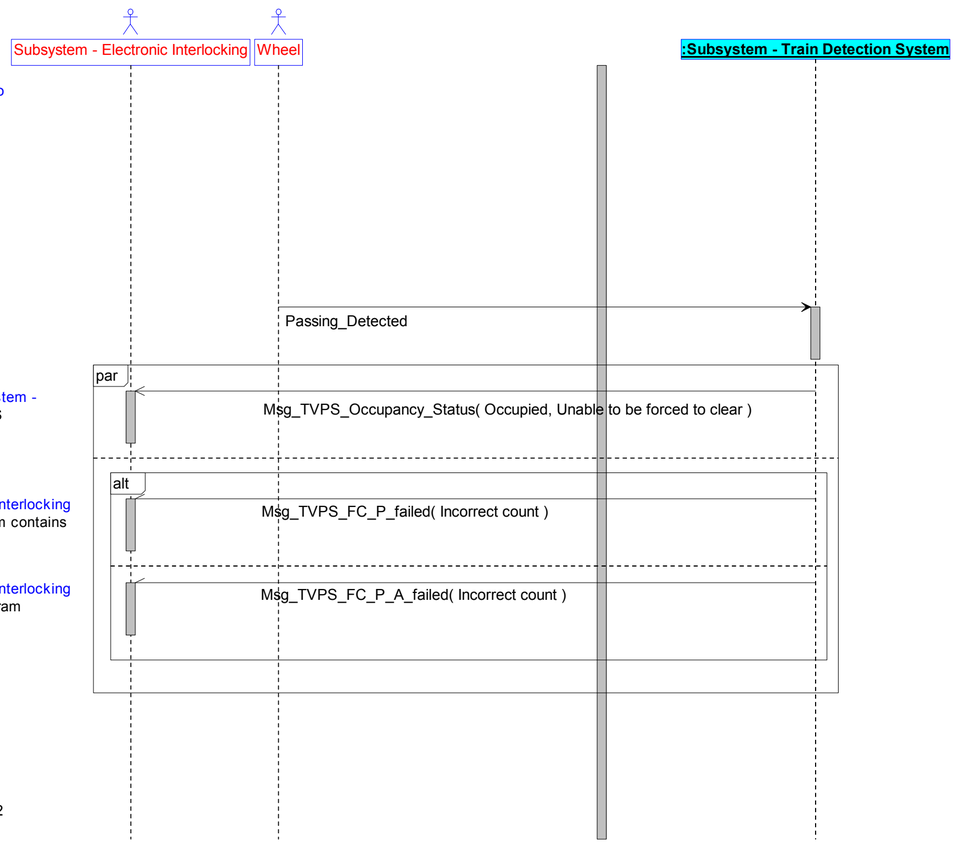
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6034	Info	TDS SD 2.1.3.3.1 **TDS_UC2.1.3.3: Axle passing during sweeping train process** Main Success Scenario: Correct incoming axle detected [TDS SD 2.1.3.3.1] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS is in the states "TVPS is in state waiting for a sweeping train after FC-P-A or FC-P command and unable to be forced to clear". **Interaction 2.1.3.3.1.A:** **1.** - One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an incoming Wheel for the relevant TVPS. **2.** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS is in state sweeping train detected and unable to be forced to clear". **Postcondition:** The relevant TVPS is in the state "TVPS is in state sweeping train detected and unable to be forced to clear". **Note:** The detection and the behaviour of the detection of incoming/outgoing wheels, the resulting state changes as well as the inhibition timer and delay of notification timer in UC 2.1.1. and UC 2.1.2 are still valid and work in parallel but are not shown in this Sequence diagram. 		Option FC-P/-A
Eu.TDS.6026	Info	TDS SD 2.1.3.3.2 **TDS_UC2.1.3.3: Axle passing during sweeping train process** Alternative Scenario: Incoming axle detected while waiting for ackn. (to no process state, Occupied Unable FC) [TDS SD 2.1.3.3.2] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS is in the state "TVPS is waiting for an acknowledgment after FC-P-A command and unable to be forced to clear". Before Sweeping Train Process the relevant TVPS was in states "TVPS occupied and able to be forced to clear" or "TVPS occupied and unable to be forced to clear". **Interaction 2.1.3.3.2.A:** **1.** - One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an incoming Wheel for the relevant TVPS. **par** **2.a1** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS occupied and unable to be forced to clear". **also par** **2.b**1 The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the execution of the previously sent FC-P-A command was not successful. The telegram contains that the reason for the cancelation was an incorrect count. **end par** **Postcondition:** The relevant TVPS is in the state "TVPS occupied and unable to be forced to clear" with a running Inhibition Timer. **Note:** The detection and the behaviour of the detection of incoming/outgoing wheels, the resulting state changes as well as the inhibition timer and delay of notification timer in UC 2.1.1. and UC 2.1.2 are still valid and work in parallel but are not shown in this Sequence diagram. 		Option FC-P/-A

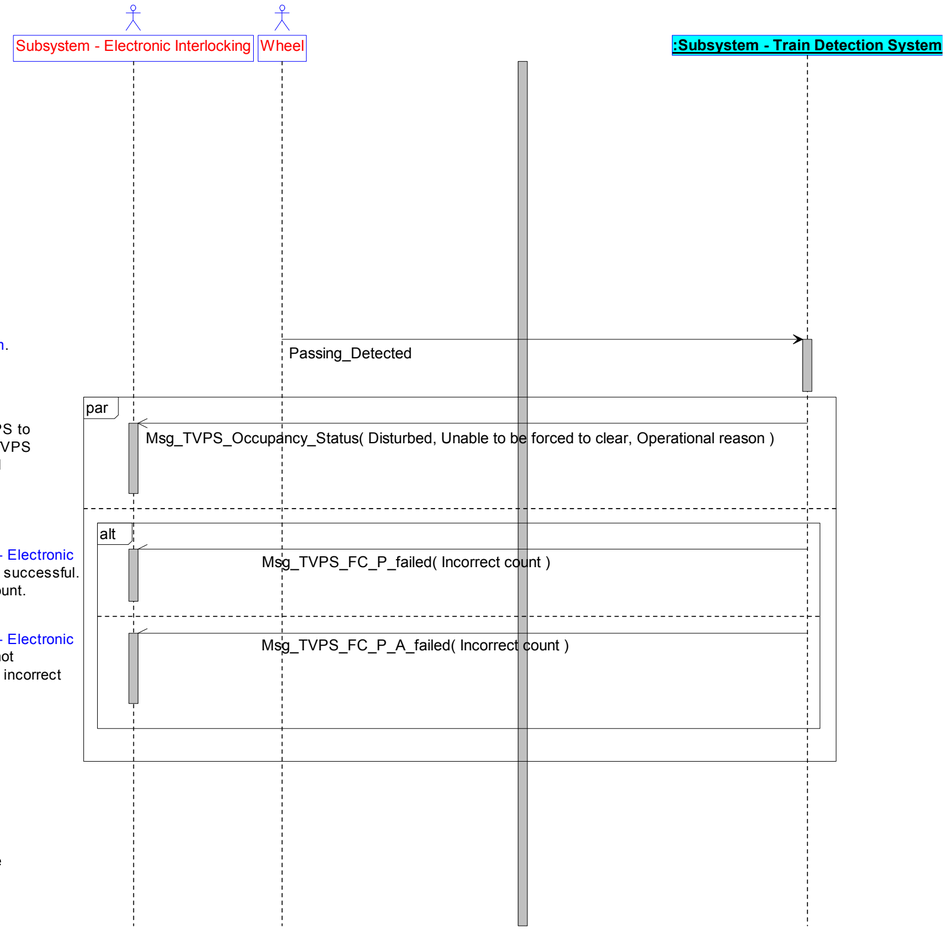
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6025	Info	TDS SD 2.1.3.3.3 **TDS_UC2.1.3.3: Axle passing during sweeping train process** Alternative Scenario: Incoming axle detected while waiting for ackn. (to no process state, Disturbed Unable FC) [TDS SD 2.1.3.3.3] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS is in the state "TVPS is waiting for an acknowledgement after FC-P-A command and unable to be forced to clear". Before Sweeping Train Process the relevant TVPS was in state "TVPS disturbed and able to be forced to clear with an operational reason" or “TVPS disturbed and unable to be forced to clear with an operational reason" for Variant B. **Interaction 2.1.3.3.3.A:** **1.** - One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an incoming Wheel for the relevant TVPS. **par** **2.a1** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state “TVPS disturbed and unable to be forced to clear with an operational reason". **also par** **2.a2** The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the execution of the previously sent FC-P-A command was not successful. The telegram contains that the reason for the cancelation was an incorrect count. **end par** **Postcondition:** The relevant TVPS is in the state “TVPS disturbed and unable to be forced to clear with an operational reason" with a running Inhibition Timer. **Note:** The detection and the behaviour of the detection of incoming/outgoing wheels, the resulting state changes as well as the inhibition timer and delay of notification timer in UC 2.1.1. and UC 2.1.2 are still valid and work in parallel but are not shown in this Sequence diagram. 		Option FC-P/-A

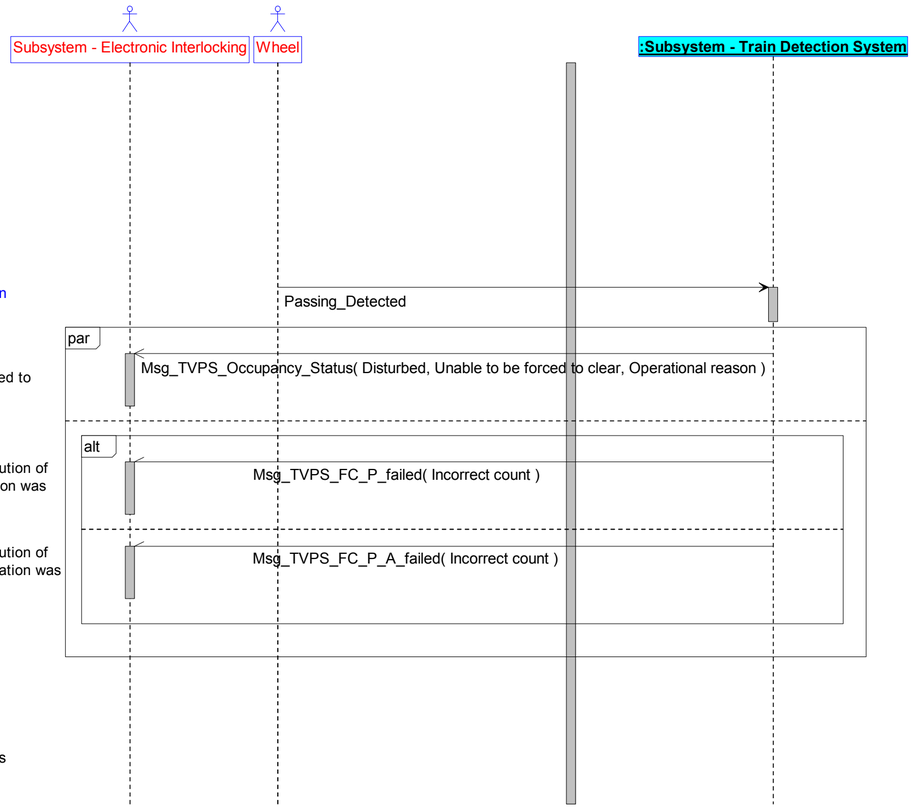
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6033	Info	TDS SD 2.1.3.3.4 **TDS_UC2.1.3.3: Axle passing during sweeping train process** Alternative Scenario: Not-permitted incoming axle detected (to no process state, Occupied Unable FC) [TDS SD 2.1.3.3.4] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS is in the state: - "TVPS is in state sweeping train detected and unable to be forced to clear", - "TVPS is in state waiting for a sweeping train after FC-P-A or FC-P command and unable to be forced to clear" or - "TVPS is waiting for an acknowledgment after FC-P-A command and unable to be forced to clear". Before Sweeping Train Process the relevant TVPS was in states "TVPS occupied and able to be forced to clear"or "TVPS occupied and unable to be forced to clear". **Interaction 2.1.3.3.4.A:** **1.** The Subsystem - Train Detection System recognises a passing of a detection point which is configured as not permitted for FC-P-A or FC-P. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an incoming Wheel for the relevant TVPS. **par** **2.a1** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS occupied and unable to be forced to clear". **also par** **alt** [The previous received command was a FC-P-Command] **2.b1.a1** The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the execution of the previously sent FC-P command was not successful. The telegram contains that the reason for the cancelation was a not permitted passing. **else alt** [The previous received command was a FC-P-A-Command] **2.b1.b1** The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the execution of the previously sent FC-P-A command was not successful. The telegram contains that the reason for the cancelation was a not permitted passing. **end alt** **end par** **Postcondition:** The relevant TVPS is in the state "TVPS occupied and unable to be forced to clear" with a running Inhibition Timer. **Note:** The detection and the behaviour of the detection of incoming/outgoing wheels, the resulting state changes as well as the inhibition timer and delay of notification timer in UC 2.1.1. and UC 2.1.2 are still valid and work in parallel but are not shown in this Sequence diagram.  		Option FC-P/-A

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6027	Info	TDS SD 2.1.3.3.5 **TDS_UC2.1.3.3: Axle passing during sweeping train process** Alternative Scenario: Not-permitted incoming axle detected (to no process state, Disturbed Unable FC) [TDS SD 2.1.3.3.5] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS is in the state: - "TVPS is in state sweeping train detected and unable to be forced to clear", - "TVPS is in state waiting for a sweeping train after FC-P-A or FC-P command and unable to be forced to clear" or - "TVPS is waiting for an acknowledgment after FC-P-A command and unable to be forced to clear". Before Sweeping Train Process the relevant TVPS was in states "TVPS disturbed and able to be forced to clear with an operational reason" or "TVPS disturbed and unable to be forced to clear with an operational reason" for Variant B. **Interaction 2.1.3.3.5.A:** **1.** The Subsystem - Train Detection System recognises a passing of a detection point which is configured as not permitted for FC-P-A or FC-P. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an incoming Wheel for the relevant TVPS. **par** **2.a1** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS disturbed and unable to be forced to clear with an operational reason". **also par** **alt** [The previous received command was a FC-P-Command] **2.b1.a1** The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the execution of the previously sent FC-P command was not successful. The telegram contains that the reason for the cancelation was a not permitted passing. **else alt** [The previous received command was a FC-P-A-Command] **2.b2.b1** The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the execution of the previously sent FC-P-A command was not successful. The telegram contains that the reason for the cancelation was a not permitted passing. **end alt** **end par** **Postcondition:** The relevant TVPS is in the state "TVPS disturbed and unable to be forced to clear with an operational reason" with a running Inhibition Timer. **Note:** The detection and the behaviour of the detection of incoming/outgoing wheels, the resulting state changes as well as the inhibition timer and delay of notification timer in UC 2.1.1. and UC 2.1.2 are still valid and work in parallel but are not shown in this Sequence diagram.  		Option FC-P/-A

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6029	Info	TDS SD 2.1.3.3.6 **TDS_UC2.1.3.3: Axle passing during sweeping train process** Alternative Scenario: Outgoing axle detected while waiting for sweeping train or acknowledgement (to no process state, Occupied Unable FC) [TDS SD 2.1.3.3.6] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS is in the state: - "TVPS is in state waiting for a sweeping train after FC-P-A or FC-P command and unable to be forced to clear" or - "TVPS is waiting for an acknowledgment after FC-P-A command and unable to be forced to clear". Before Sweeping Train Process the relevant TVPS was in states "TVPS occupied and able to be forced to clear"or "TVPS occupied and unable to be forced to clear". **Interaction 2.1.3.3.6.A:** **1.** - One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an outgoing Wheel for the relevant TVPS. **par** **2.a1** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS occupied and unable to be forced to clear". **also par** **alt** [The previous received command was a FC-P-Command] **2.b1.a1** The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the execution of the previously sent FC-P command was not successful. The telegram contains that the reason for the cancelation was an incorrect count. **else alt** [The previous received command was a FC-P-A-Command] **2.b1.b1** The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the execution of the previously sent FC-P-A command was not successful. The telegram contains that the reason for the cancelation was an incorrect count. **end alt** **end par** **Postcondition:** The relevant TVPS is in the state "TVPS occupied and unable to be forced to clear" with a running Inhibition Timer. **Note:** The detection and the behaviour of the detection of incoming/outgoing wheels, the resulting state changes as well as the inhibition timer and delay of notification timer in UC 2.1.1. and UC 2.1.2 are still valid and work in parallel but are not shown in this Sequence diagram.		Option FC-P/-A



ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6028	Info	TDS SD 2.1.3.3.7 **TDS_UC2.1.3.3: Axle passing during sweeping train process** Alternative Scenario: Outgoing axle detected while waiting for sweeping train or acknowledgement (to no process state, Disturbed Unable FC) [TDS SD 2.1.3.3.7] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS is in the state: - "TVPS is in state waiting for a sweeping train after FC-P-A or FC-P command and unable to be forced to clear" or - "TVPS is waiting for an acknowledgement after FC-P-A command and unable to be forced to clear". Before Sweeping Train Process the relevant TVPS was in state "TVPS disturbed and able to be forced to clear with an operational reason" or "TVPS disturbed and unable to be forced to clear with an operational reason" for Variant B. **Interaction 2.1.3.3.7.A:** **1.** - One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an outgoing Wheel for the relevant TVPS. **par** **2.a1** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS disturbed and unable to be forced to clear with an operational reason". **also par** **alt** [The previous received command was a FC-P-Command] **2.b1.a1** The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the execution of the previously sent FC-P command was not successful. The telegram contains that the reason for the cancelation was an incorrect count. **else alt** [The previous received command was a FC-P-A-Command] **2.b1.b1** The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the execution of the previously sent FC-P-A command was not successful. The telegram contains that the reason for the cancelation was an incorrect count. **end alt** **end par** **Postcondition:** The relevant TVPS is in the state "TVPS disturbed and unable to be forced to clear with an operational reason" with a running Inhibition Timer. **Note:** The detection and the behaviour of the detection of incoming/outgoing wheels, the resulting state changes as well as the inhibition timer and delay of notification timer in UC 2.1.1. and UC 2.1.2 are still valid and work in parallel but are not shown in this Sequence diagram.  		Option FC-P/-A

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6032	Info	TDS SD 2.1.3.3.8 **TDS_UC2.1.3.3: Axle passing during sweeping train process** Alternative Scenario: Uninterpretable pattern detected (to state Disturbed Unable FC) [TDS SD 2.1.3.3.8] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS is in the state: - "TVPS is in state waiting for a sweeping train after FC-P-A or FC-P command and unable to be forced to clear", - "TVPS is in the state sweeping train detected and unable to be forced to clear" or - "TVPS is waiting for an acknowledgment after FC-P-A command and unable to be forced to clear". Before Sweeping Train Process the relevant TVPS was in state "TVPS disturbed and able to be forced to clear with an operational reason" or "TVPS disturbed and unable to be forced to clear with an operational reason" for Variant B.. **Interaction 2.1.3.3.8.A:** **1.** - One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises that a sensor of a detection point received an uninterpretable or undefined pattern. **par** **2.a1** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS disturbed and unable to be forced to clear with an operational reason". **also par** **alt** [The previous received command was a FC-P-Command] **2.b1** The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the execution of the previously sent FC-P command was not successful. The telegram contains that the reason for the cancelation was an incorrect count. **else alt** [The previous received command was a FC-P-A-Command] **2.b2** The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the execution of the previously sent FC-P-A command was not successful. The telegram contains that the reason for the cancelation was an incorrect count. **end alt** **end par** **Postcondition:** The relevant TVPS is in the state "TVPS disturbed and unable to be forced to clear with an operational reason" with a running Inhibition Timer. **Note:** The detection and the behaviour of the detection of incoming/outgoing wheels, the resulting state changes as well as the inhibition timer and delay of notification timer in UC 2.1.1. and UC 2.1.2 are still valid and work in parallel but are not shown in this Sequence diagram.  		Option FC-P/-A

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6030	Info	TDS SD 2.1.3.3.9		Option FC-P/-A

TDS_UC2.1.3.3: Axle passing during sweeping train process

Alternative Scenario: Too early outgoing axle detected (to no process state, Disturbed Unable FC) [TDS SD 2.1.3.3.9]

Precondition:

The Subsystem - Train Detection System is in the state OPERATIONAL.
The relevant TVPS is in the state "TVPS is in state waiting for a sweeping train after FC-P-A or FC-P command and unable to be forced to clear".
Before Sweeping Train Process the relevant TVPS was in states "TVPS disturbed and able to be forced to clear with an operational reason" or "TVPS disturbed and unable to be forced to clear with an operational reason" for Variant B.

Interaction 2.1.3.3.9.A:

1. - One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an incoming Wheel for the relevant TVPS.

2. The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS is in state sweeping train detected and unable to be forced to clear".

Interaction 2.1.3.3.9.B:

3. - One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an outgoing Wheel for the relevant TVPS.

par

4.a1 The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS disturbed and unable to be forced to clear with an operational reason".

also par

alt [The previous received command was a FC-P-Command]

4.b1 The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the execution of the previously sent FC-P command was not successful. The telegram contains that the reason for the cancelation was an outgoing Wheel before Con_t_Min_FC_P_or_FC_P_A was expired.

else alt [The previous received command was a FC-P-A-Command]

4.b2 The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the execution of the previously sent FC-P-A command was not successful. The telegram contains that the reason for the cancelation was an outgoing Wheel before Con_t_Min_FC_P_or_FC_P_A was expired..

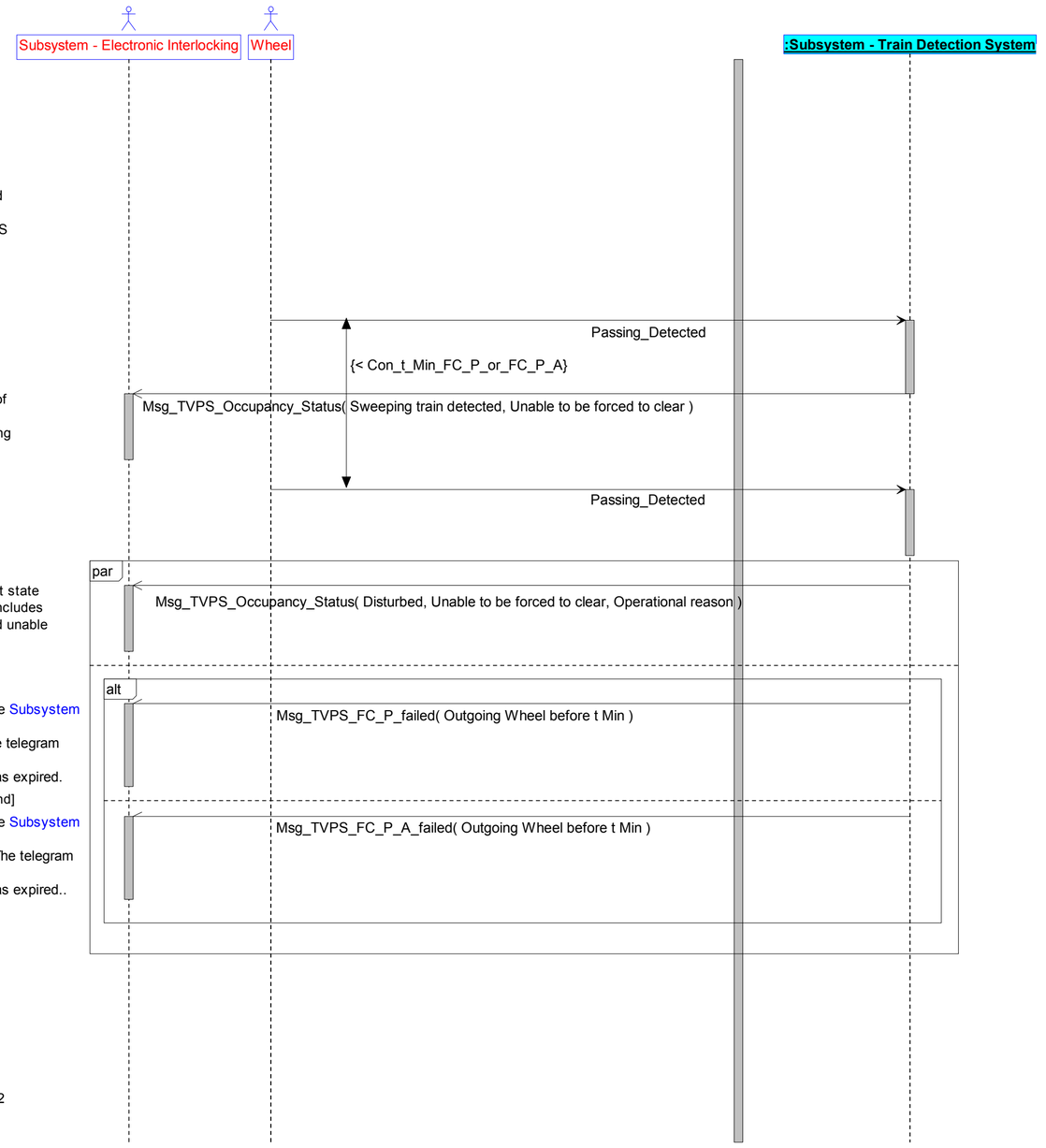
end alt

end par

Postcondition:

The relevant TVPS is in the state "TVPS disturbed and unable to be forced to clear with an operational reason" with a running Inhibition Timer.

Note: The detection and the behaviour of the detection of incoming/outgoing wheels, the resulting state changes as well as the inhibition timer and delay of notification timer in UC 2.1.1. and UC 2.1.2 are still valid and work in parallel but are not shown in this Sequence diagram.



ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6031	Info	TDS SD 2.1.3.3.10		Option FC-P/-A

TDS_UC2.1.3.3: Axle passing during sweeping train process

Alternative Scenario: Too early outgoing axle detected (to no process state, Occupied Unable FC [TDS SD 2.1.3.3.10]

Precondition:

The Subsystem - Train Detection System is in the state OPERATIONAL.
The relevant TVPS is in the state "TVPS is in state waiting for a sweeping train after FC-P-A or FC-P command and unable to be forced to clear".
Before Sweeping Train Process the relevant TVPS was in states "TVPS occupied and able to be forced to clear" or "TVPS occupied and unable to be forced to clear".

Interaction 2.1.3.3.10.A:

1. - One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an incoming Wheel for the relevant TVPS.

2. The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS is in state sweeping train detected and unable to be forced to clear".

Interaction 2.1.3.3.10.B:

3. - One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an outgoing Wheel for the relevant TVPS.

par

4.a1 The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS is in state occupied and unable to be forced to clear".

also par

alt [The previous received command was a FC-P-Command]

4.b1 The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the execution of the previously sent FC-P command was not successful. The telegram contains that the reason for the cancelation was an outgoing Wheel before Con_t_Min_FC_P_or_FC_P_A was expired.

else alt [The previous received command was a FC-P-A-Command]

4.b2 The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the execution of the previously sent FC-P-A command was not successful. The telegram contains that the reason for the cancelation was an outgoing Wheel before Con_t_Min_FC_P_or_FC_P_A was expired..

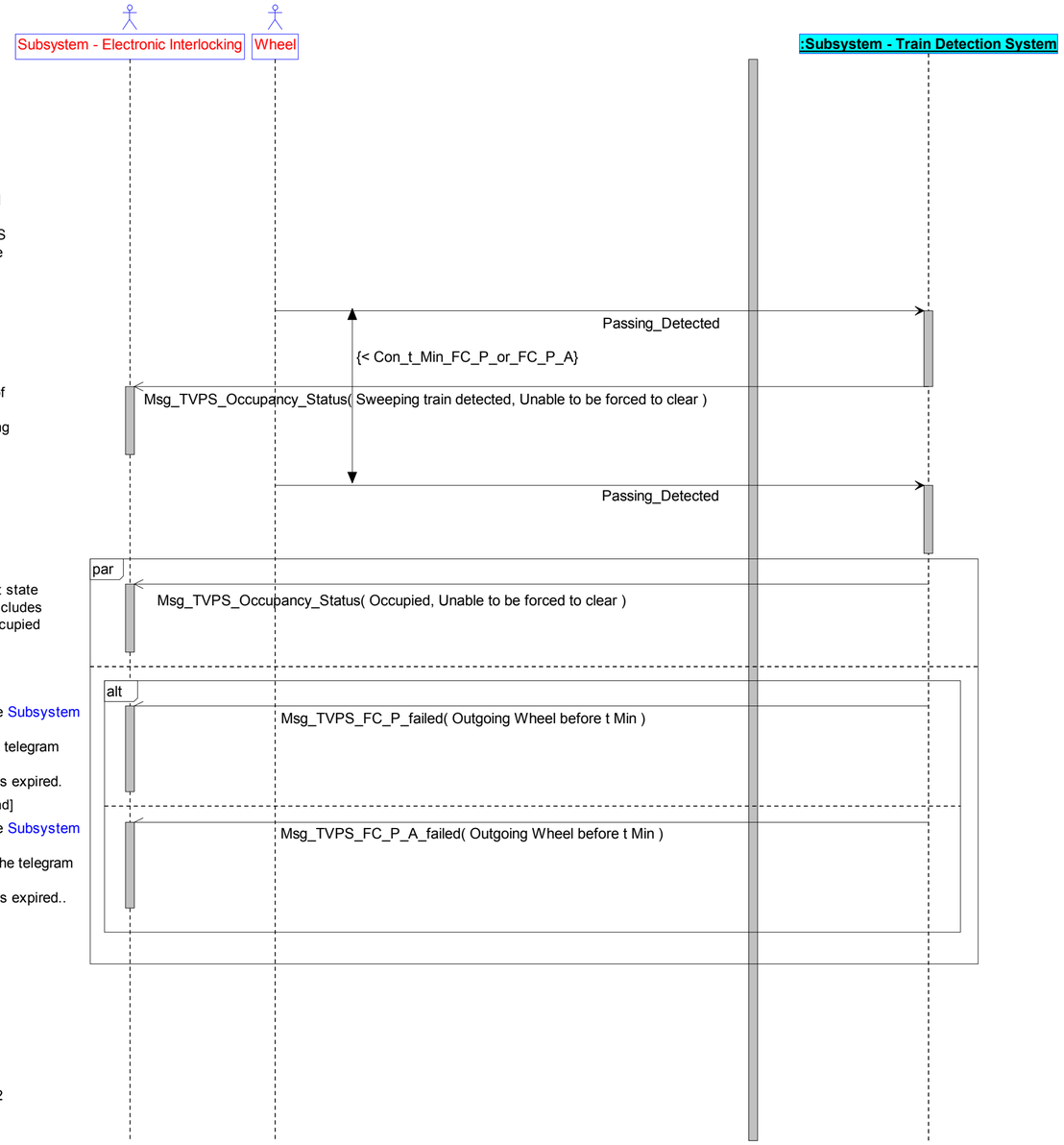
end alt

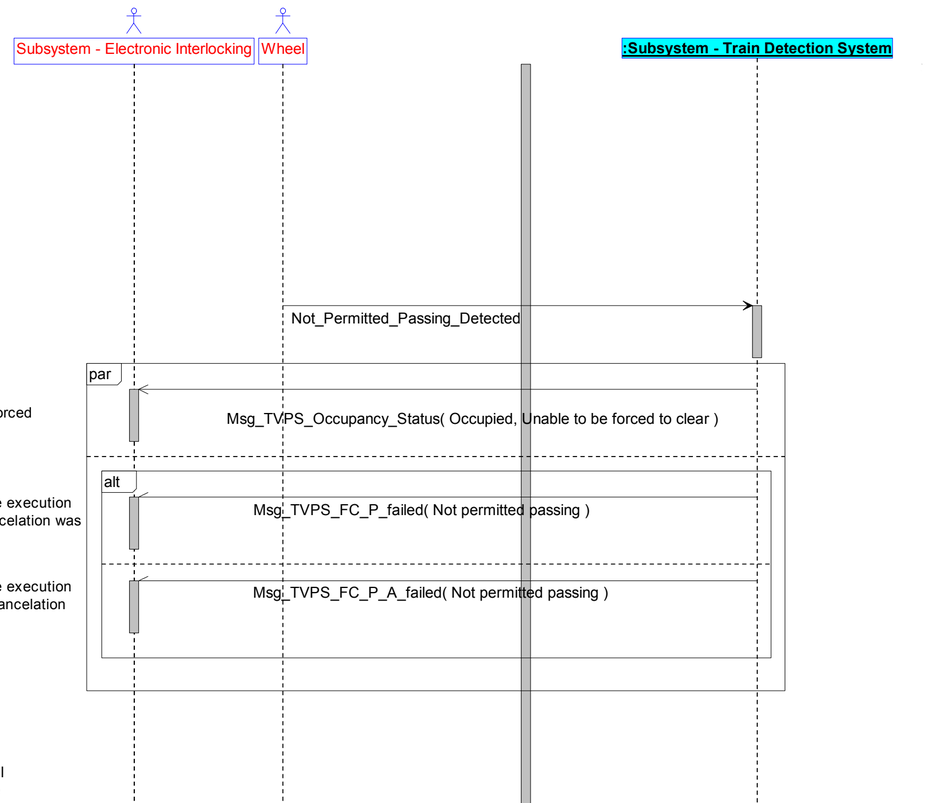
end par

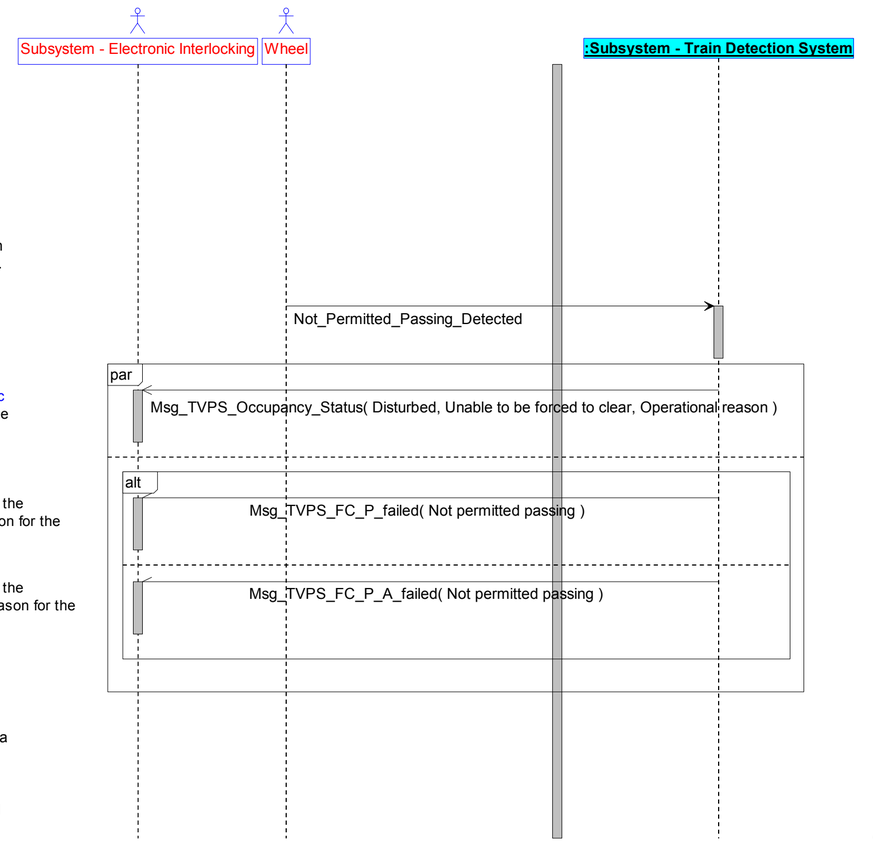
Postcondition:

The relevant TVPS is in the state "TVPS occupied and unable to be forced to clear" with a running Inhibition Timer.

Note: The detection and the behaviour of the detection of incoming/outgoing wheels, the resulting state changes as well as the inhibition timer and delay of notification timer in UC 2.1.1. and UC 2.1.2 are still valid and work in parallel but are not shown in this Sequence diagram.



ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.7043	Info	TDS SD 2.1.3.3.11 **TDS_UC2.1.3.3: Axle passing during sweeping train process** Alternative Scenario: Not-permitted outgoing axle detected (to no process state, Occupied Unable FC) [TDS SD 2.1.3.3.11] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS is in the state: - "TVPS is in state sweeping train detected and unable to be forced to clear", - "TVPS is in state waiting for a sweeping train after FC-P-A or FC-P command and unable to be forced to clear" or - "TVPS is waiting for an acknowledgment after FC-P-A command and unable to be forced to clear". Before Sweeping Train Process the relevant TVPS was in states "TVPS occupied and able to be forced to clear"or "TVPS occupied and unable to be forced to clear". **Interaction 2.1.3.3.11.A:** **1.** The Subsystem - Train Detection System recognises a passing of a detection point which is configured as not permitted for FC-P-A or FC-P. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an outgoing Wheel for the relevant TVPS. **par** **2.a1** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS occupied and unable to be forced to clear". **also par** **alt** [The previous received command was a FC-P-Command] **2.b1.a1** The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the execution of the previously sent FC-P command was not successful. The telegram contains that the reason for the cancelation was a not permitted passing. **else alt** [The previous received command was a FC-P-A-Command] **2.b1.b1** The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the execution of the previously sent FC-P-A command was not successful. The telegram contains that the reason for the cancelation was a not permitted passing. **end alt** **end par** **Postcondition:** The relevant TVPS is in the state "TVPS occupied and unable to be forced to clear" with a running Inhibition Timer. **Note:** The detection and the behaviour of the detection of incoming/outgoing wheels, the resulting state changes as well as the inhibition timer and delay of notification timer in UC 2.1.1. and UC 2.1.2 are still valid and work in parallel but are not shown in this Sequence diagram.  		Option FC-P/-A

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.7042	Info	TDS SD 2.1.3.3.12 **TDS_UC2.1.3.3: Axle passing during sweeping train process** Alternative Scenario: Not-permitted outgoing axle detected (to no process state, Disturbed Unable FC) [TDS SD 2.1.3.3.12] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS is in the state: - "TVPS is in state sweeping train detected and unable to be forced to clear", - "TVPS is in state waiting for a sweeping train after FC-P-A or FC-P command and unable to be forced to clear" or - "TVPS is waiting for an acknowledgment after FC-P-A command and unable to be forced to clear". Before Sweeping Train Process the relevant TVPS was in states "TVPS disturbed and able to be forced to clear with an operational reason" or "TVPS disturbed and unable to be forced to clear with an operational reason" for Variant B. **Interaction 2.1.3.3.5.A:** **1.** The Subsystem - Train Detection System recognises a passing of a detection point which is configured as not permitted for FC-P-A or FC-P. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an outgoing Wheel for the relevant TVPS. **par** **2.a1** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS disturbed and unable to be forced to clear with an operational reason". **also par** **alt** [The previous received command was a FC-P-Command] **2.b1.a1** The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the execution of the previously sent FC-P command was not successful. The telegram contains that the reason for the cancelation was a not permitted passing. **else alt** [The previous received command was a FC-P-A-Command] **2.b2.b1** The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the execution of the previously sent FC-P-A command was not successful. The telegram contains that the reason for the cancelation was a not permitted passing. **end alt** **end par** **Postcondition:** The relevant TVPS is in the state "TVPS disturbed and unable to be forced to clear with an operational reason" with a running Inhibition Timer. **Note:** The detection and the behaviour of the detection of incoming/outgoing wheels, the resulting state changes as well as the inhibition timer and delay of notification timer in UC 2.1.1. and UC 2.1.2 are still valid and work in parallel but are not shown in this Sequence diagram.  		Option FC-P/-A
Eu.TDS.6035	Info	TDS_UC2.1.3.4: Timer expiration during sweeping train process	The Subsystem-UseCase "TDS_UC2.1.3.4: Timer expiration during sweeping train process" defines the behaviour of the Subsystem - Train Detection System while Timer expiration during sweeping train process.	Option FC-P/-A

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.7004	Info	TDS SD 2.1.3.4.1		Option FC-P/-A

TDS_UC2.1.3.4: Timer expiration during sweeping train process

Alternative Scenario: Maximum sweeping timer expires (to no process state, Occupied Able FC) [TDS SD 2.1.3.4.1]

Precondition:

The Subsystem - Train Detection System is in the state OPERATIONAL.
The relevant TVPS is in the state "TVPS is waiting for a sweeping train and unable to be forced to clear".
Before Sweeping Train Process the relevant TVPS was in states "TVPS occupied and able to be forced to clear"or "TVPS occupied and unable to be forced to clear".

Interaction 2.1.3.4.1.A:

1. - One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an incoming Wheel for the relevant TVPS.

2. The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS is in state sweeping train detected and unable to be forced to clear".

3. - One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an outgoing Wheel for the relevant TVPS.

4. The Subsystem - Train Detection System starts the Inhibition Timer.

5. The Subsystem - Train Detection System detects the expiration of the Inhibition Timer

Interaction 2.1.3.4.1.B:

6. - The Subsystem - Train Detection System detects the expiration of Con_t_Max_FC_P_or_FC_P_A.

par

7.a1 The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS is in state occupied and able to be forced to clear".

also par

alt [The previous received command was a FC-P-Command]

7.b1 The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the execution of the previously sent FC-P command was not successful. The telegram contains that the reason for the cancelation was the expiration of Con_t_Max_FC_P_or_FC_P_A.

else alt [The previous received command was a FC-P-A-Command]

7.b2 The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the execution of the previously sent FC-P-A command was not successful. The telegram contains that the reason for the cancelation was the expiration of Con_t_Max_FC_P_or_FC_P_A.

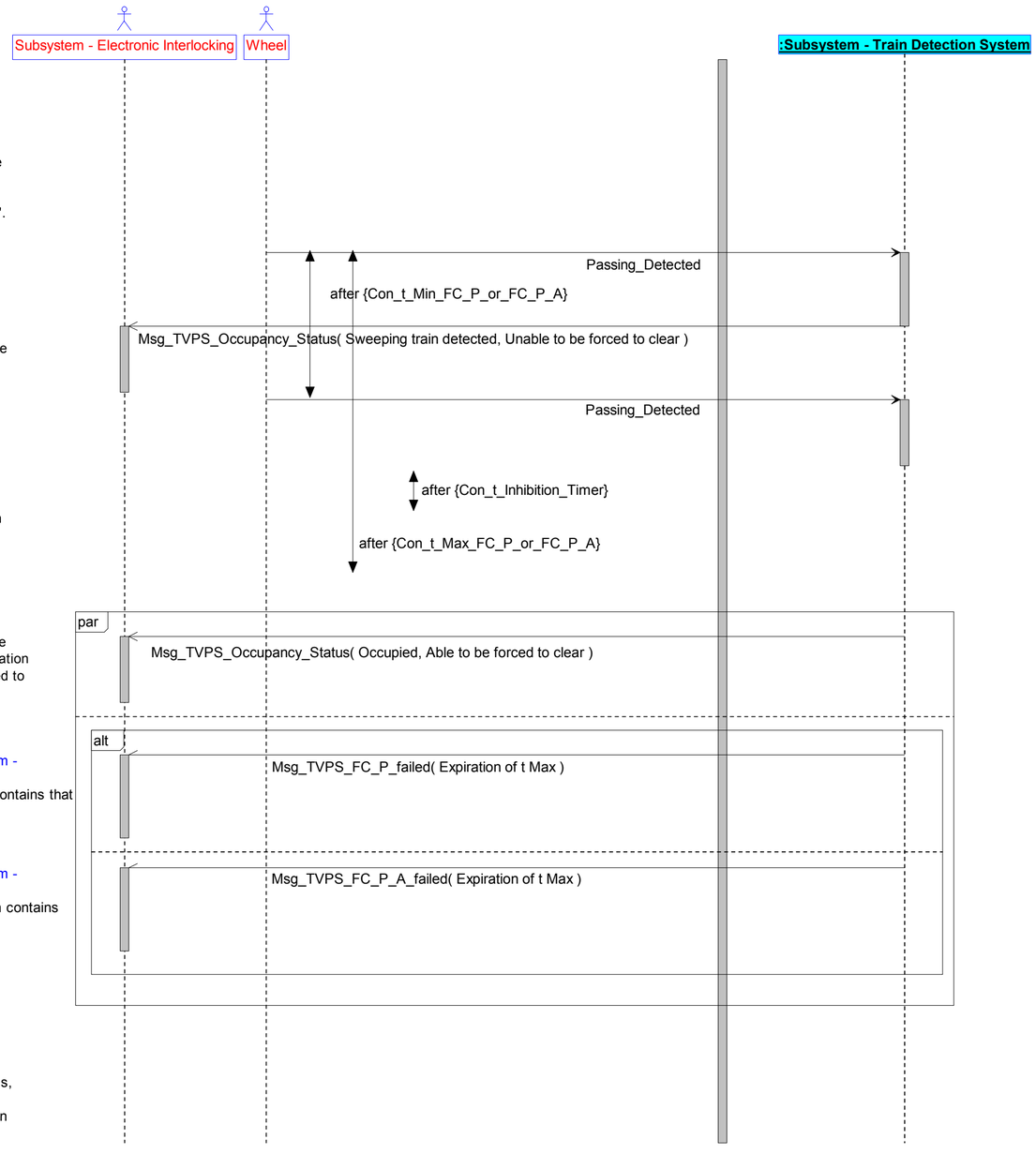
end alt

end par

Postcondition:

The relevant TVPS is in the state "TVPS occupied and able to be forced to clear".

Note: The detection and the behaviour of the detection of incoming/outgoing wheels, the resulting state changes as well as the inhibition timer and delay of notification timer in UC 2.1.1. and UC 2.1.2 are still valid and work in parallel but are not shown in this Sequence diagram.



ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.7015	Info	TDS SD 2.1.3.4.2		Option FC-P/-A

TDS_UC2.1.3.4: Timer expiration during sweeping train process

Alternative Scenario: Maximum sweeping timer expires (to no process state, Occupied Unable FC) [TDS SD 2.1.3.4.2]

Precondition:

The Subsystem - Train Detection System is in the state OPERATIONAL.
The relevant TVPS is in the state "TVPS is waiting for a sweeping train and unable to be forced to clear".
Before Sweeping Train Process the relevant TVPS was in states "TVPS occupied and able to be forced to clear"or "TVPS occupied and unable to be forced to clear".

Interaction 2.1.3.4.2.A:

1. - One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an incoming Wheel for the relevant TVPS.

2. The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS is in state sweeping train detected and unable to be forced to clear".

opt

3.a1 - One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an outgoing Wheel for the relevant TVPS.

3.a2 The Subsystem - Train Detection System starts the Inhibition Timer.

end opt

Interaction 2.1.3.4.2.B:

4. - The Subsystem - Train Detection System detects the expiration of Con_t_Max_FC_P_or_FC_P_A.

par

5.a1 The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS is in state occupied and unable to be forced to clear".

also par

alt [The previous received command was a FC-P-Command]

5.b1 The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the execution of the previously sent FC-P command was not successful. The telegram contains that the reason for the cancelation was the expiration of Con_t_Max_FC_P_or_FC_P_A.

else alt [The previous received command was a FC-P-A-Command]

5.b2 The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the execution of the previously sent FC-P-A command was not successful. The telegram contains that the reason for the cancelation was the expiration of Con_t_Max_FC_P_or_FC_P_A.

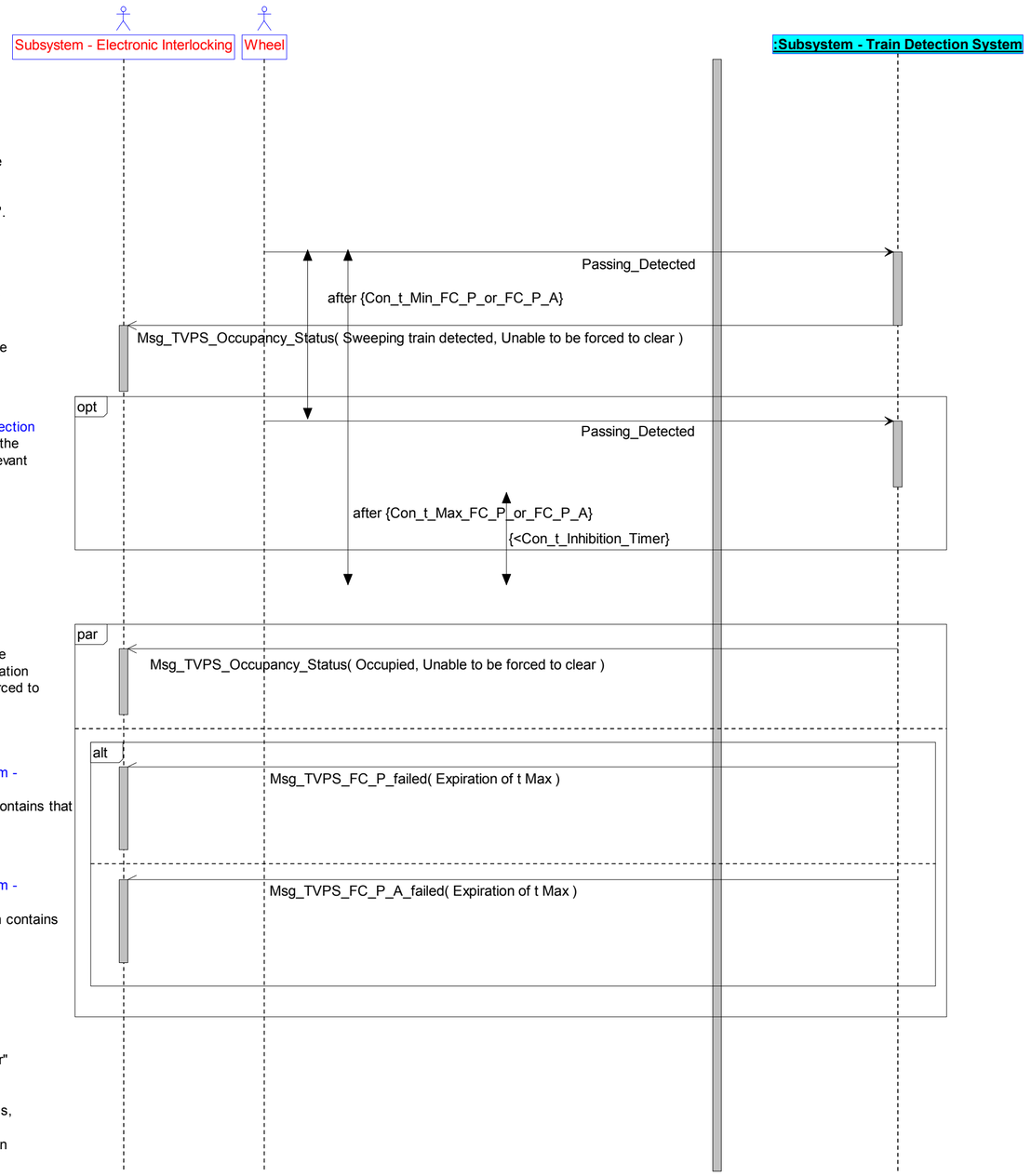
end alt

end par

Postcondition:

The relevant TVPS is in the state "TVPS occupied and unable to be forced to clear" with a running Inhibition Timer for alternativ 3.a1.

Note: The detection and the behaviour of the detection of incoming/outgoing wheels, the resulting state changes as well as the inhibition timer and delay of notification timer in UC 2.1.1. and UC 2.1.2 are still valid and work in parallel but are not shown in this Sequence diagram.



ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.7013	Info	TDS SD 2.1.3.4.3		Option FC-P/-A

TDS_UC2.1.3.4: Timer expiration during sweeping train process

Alternative Scenario: Maximum sweeping timer expires (to no process state, Disturbed Able FC) [TDS SD 2.1.3.4.3]

Precondition:

The Subsystem - Train Detection System is in the state OPERATIONAL.
The relevant TVPS is in the state "TVPS is waiting for a sweeping train and unable to be forced to clear".
Before Sweeping Train Process the relevant TVPS was in states "TVPS disturbed and able to be forced to clear with an operational reason" or "TVPS disturbed and unable to be forced to clear with an operational reason" for Variant B.

Interaction 2.1.3.4.3.A:

1. - One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an incoming Wheel for the relevant TVPS.

2. The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS is in state sweeping train detected and unable to be forced to clear".

3. - One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an outgoing Wheel for the relevant TVPS.

4. The Subsystem - Train Detection System starts the Inhibition Timer.

5. The Subsystem - Train Detection System detects the expiration of the Inhibition Timer

Interaction 2.1.3.4.3.B:

6. - The Subsystem - Train Detection System detects the expiration of Con_t_Max_FC_P_or_FC_P_A.

par

7.a1 The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS disturbed and able to be forced to clear with an operational reason".

also par

alt [The previous received command was a FC-P-Command]

7.b1 The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the execution of the previously sent FC-P command was not successful. The telegram contains that the reason for the cancelation was the expiration of Con_t_Max_FC_P_or_FC_P_A.

else alt [The previous received command was a FC-P-A-Command]

7.b2 The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the execution of the previously sent FC-P-A command was not successful. The telegram contains that the reason for the cancelation was the expiration of Con_t_Max_FC_P_or_FC_P_A.

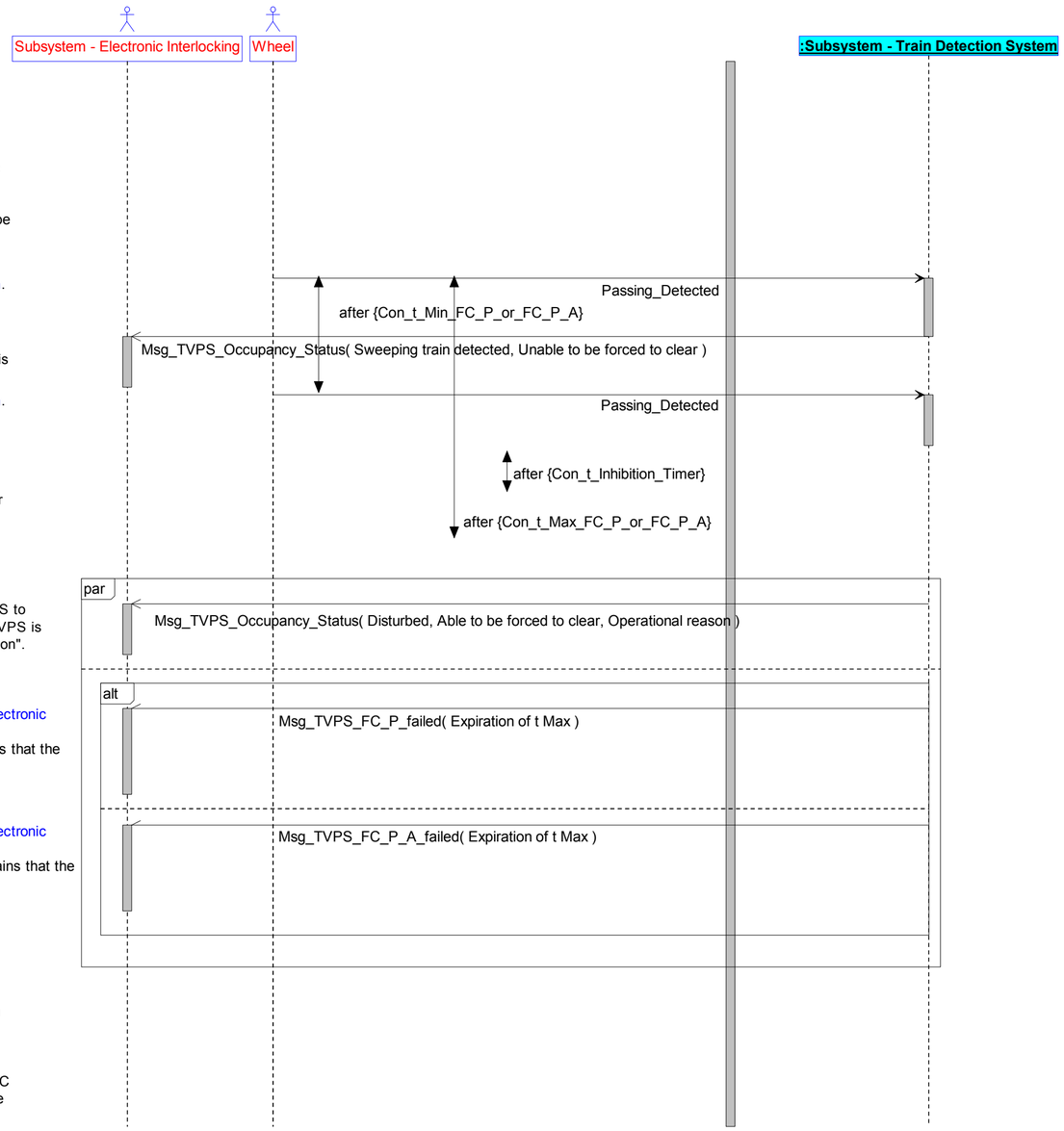
end alt

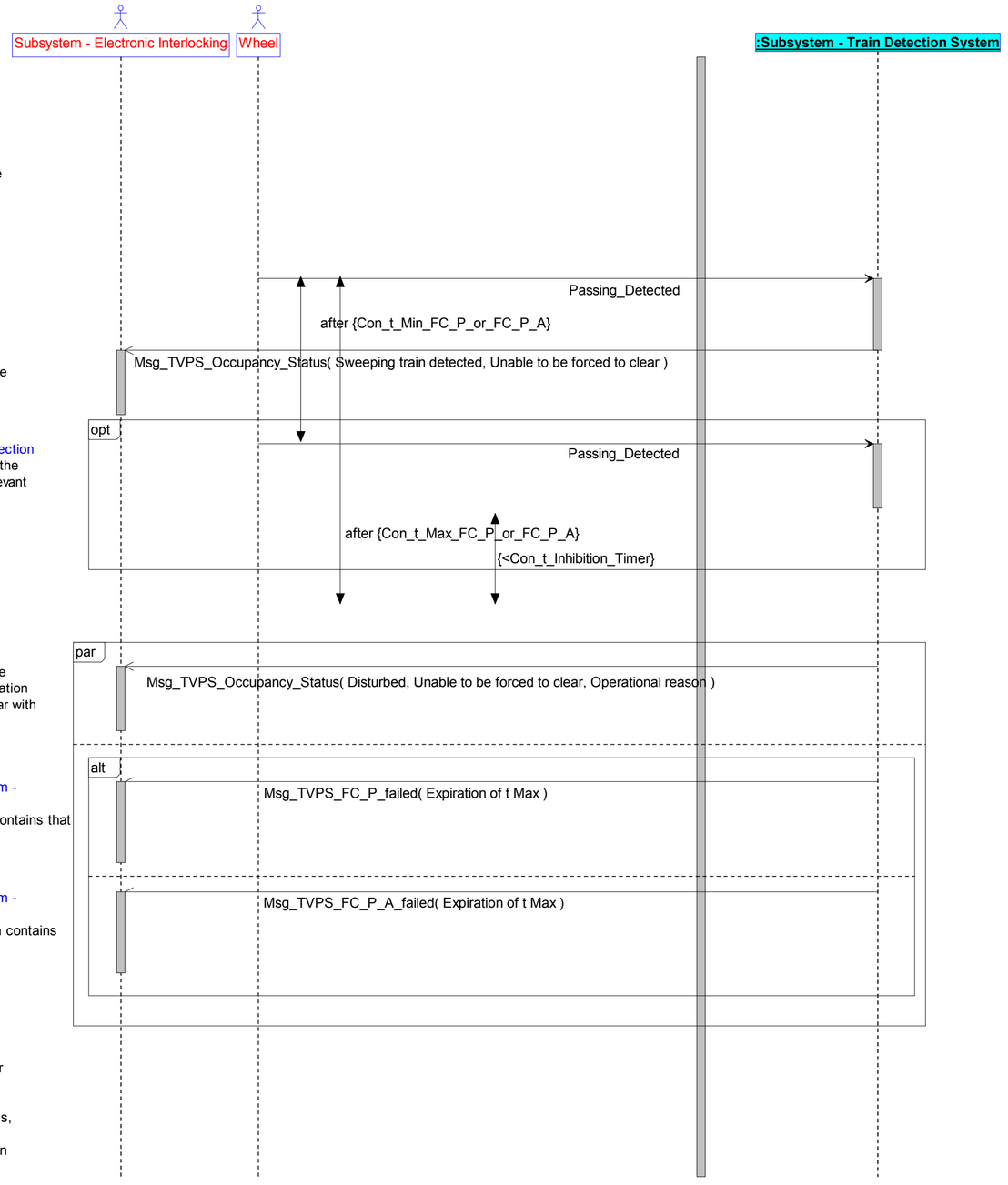
end par

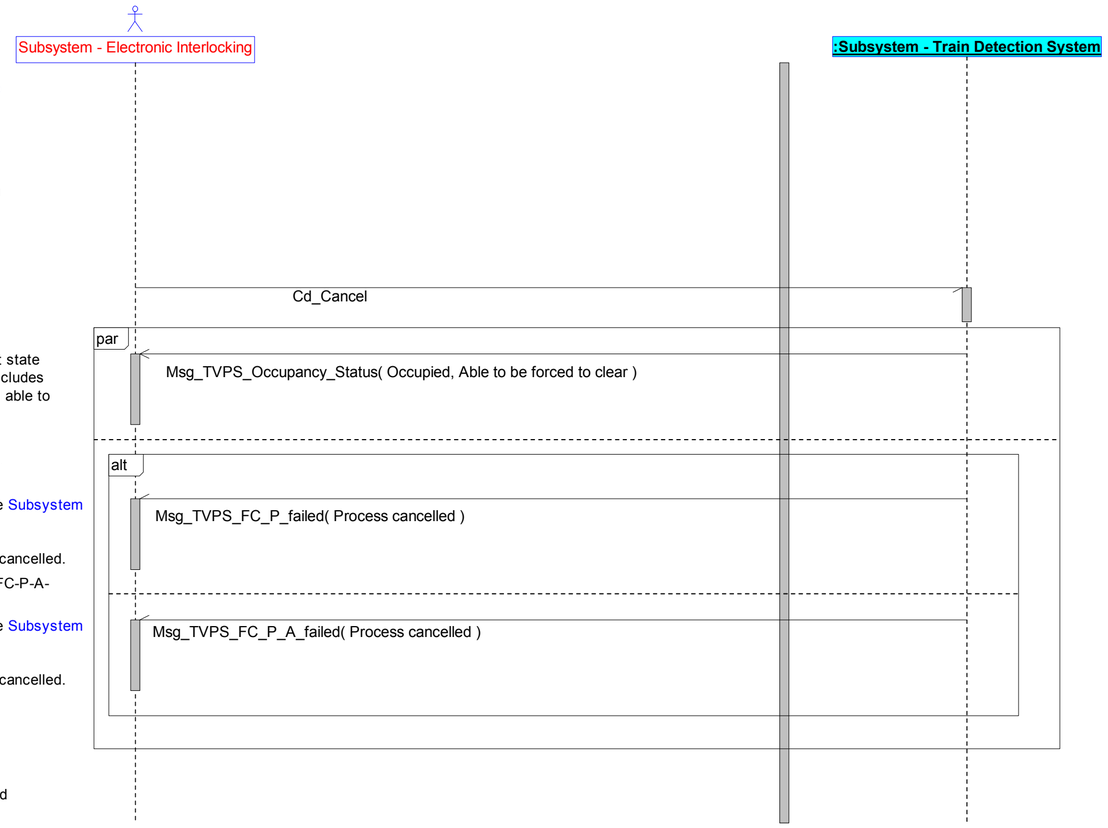
Postcondition:

The relevant TVPS is in the state "TVPS disturbed and able to be forced to clear with an operational reason".

Note: The detection and the behaviour of the detection of incoming/outgoing wheels, the resulting state changes as well as the inhibition timer and delay of notification timer in UC 2.1.1. and UC 2.1.2 are still valid and work in parallel but are not shown in this Sequence diagram.



ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.7014	Info	TDS SD 2.1.3.4.4 **TDS_UC2.1.3.4: Timer expiration during sweeping train process** Alternative Scenario: Maximum sweeping timer expires (to no process state, Disturbed Unable FC) [TDS SD 2.1.3.4.4] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The Subsystem - Train Detection System is configured as Variant B. The relevant TVPS is in the state "TVPS is waiting for a sweeping train and unable to be forced to clear". Before Sweeping Train Process the relevant TVPS was in states "TVPS disturbed and able to be forced to clear with an operational reason" or "TVPS disturbed and unable to be forced to clear with an operational reason" for Variant B. **Interaction 2.1.3.4.4.A:** **1.** - One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an incoming Wheel for the relevant TVPS. **2.** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS is in state sweeping train detected and unable to be forced to clear". **opt** **3.a1** - One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an outgoing Wheel for the relevant TVPS. **3.a2** The Subsystem - Train Detection System starts the Inhibition Timer. **end opt** **Interaction 2.1.3.4.4.B:** **4.** - The Subsystem - Train Detection System detects the expiration of Con_t_Max_FC_P_or_FC_P_A. **par** **5.a1** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS disturbed and unable to be forced to clear with an operational reason". **also par** **alt** [The previous received command was a FC-P-Command] **5.b1** The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the execution of the previously sent FC-P command was not successful. The telegram contains that the reason for the cancelation was the expiration of Con_t_Max_FC_P_or_FC_P_A. **else alt** [The previous received command was a FC-P-A-Command] **5.b2** The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the execution of the previously sent FC-P-A command was not successful. The telegram contains that the reason for the cancelation was the expiration of Con_t_Max_FC_P_or_FC_P_A. **end alt** **end par** **Postcondition:** The relevant TVPS is in the state "TVPS disturbed and unable to be forced to clear with an operational reason" with a running Inhibition Timer for alternativ 3.a1. **Note:** The detection and the behaviour of the detection of incoming/outgoing wheels, the resulting state changes as well as the inhibition timer and delay of notification timer in UC 2.1.1. and UC 2.1.2 are still valid and work in parallel but are not shown in this Sequence diagram. 		Option FC-P/-A
Eu.TDS.6039	Info	TDS_UC2.1.3.5: Cancel-command	The Subsystem-UseCase "TDS_UC2.1.3.5: Cancel-command" defines the behaviour of the Subsystem - Train Detection System after receiving a Cancel-command from the Subsystem - Electronic Interlocking.	Option FC-P/-A

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6040	Info	TDS SD 2.1.3.5.1 **TDS_UC2.1.3.5: Cancel-command** Alternative Scenario: Successful execution of Cancel-command (to no process state, Occupied Able FC) (case 1) [TDS SD 2.1.3.5.1] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS is in the state "TVPS is waiting for a sweeping train and unable to be forced to clear". Before Sweeping Train Process the relevant TVPS was in state "TVPS occupied and able to be forced to clear". **Interaction 2.1.3.5.1.A:** **1.** - The Subsystem - Train Detection System receives from the Subsystem - Electronic Interlocking a Cancel-command. **par** **2.a1** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS occupied and able to be forced to clear". **also par** **alt** [The Last command before the Cancel-command was a FC-P-command] **2.b1** The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the execution of the previously sent FC-P command was not successful. The telegram contains the information that the process was cancelled. **else alt** [The Last command before the Cancel-command was a FC-P-A-command] **2.b2** The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the execution of the previously sent FC-P-A command was not successful. The telegram contains the information that the process was cancelled. **end alt** **end par** **Postcondition:** The relevant TVPS is in the state "TVPS occupied and able to be forced to clear".  		Option FC-P/-A

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.7021	Info	TDS SD 2.1.3.5.2		Option FC-P/-A

TDS_UC2.1.3.5: Cancel-command

Alternative Scenario: Successful execution of Cancel-command (to no process state, Occupied Able FC) (case 2) [TDS SD 2.1.3.5.2]

Precondition:

The Subsystem - Train Detection System is in the state OPERATIONAL.
The relevant TVPS is in the state "TVPS is in state sweeping train detected and unable to be forced to clear".
Before Sweeping Train Process the relevant TVPS was in state "TVPS occupied and able to be forced to clear".

Interaction 2.1.3.5.2.A:

1. - One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an outgoing Wheel for the relevant TVPS.

2. The Subsystem - Train Detection System starts the Inhibition Timer.

Interaction 2.1.3.5.2.B:

3. - The Subsystem - Train Detection System receives from the Subsystem - Electronic Interlocking a Cancel-command after the Inhibition Timer is expired.

par

4.a1 The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS occupied and able to be forced to clear".

also par

alt [The Last command before the Cancel-command was a FC-P-command]

4.b1 The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the execution of the previously sent FC-P command was not successful.
The telegram contains the information that the process was cancelled.

else alt [The Last command before the Cancel-command was a FC-P-A-command]

4.b2 The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the execution of the previously sent FC-P-A command was not successful.
The telegram contains the information that the process was cancelled.

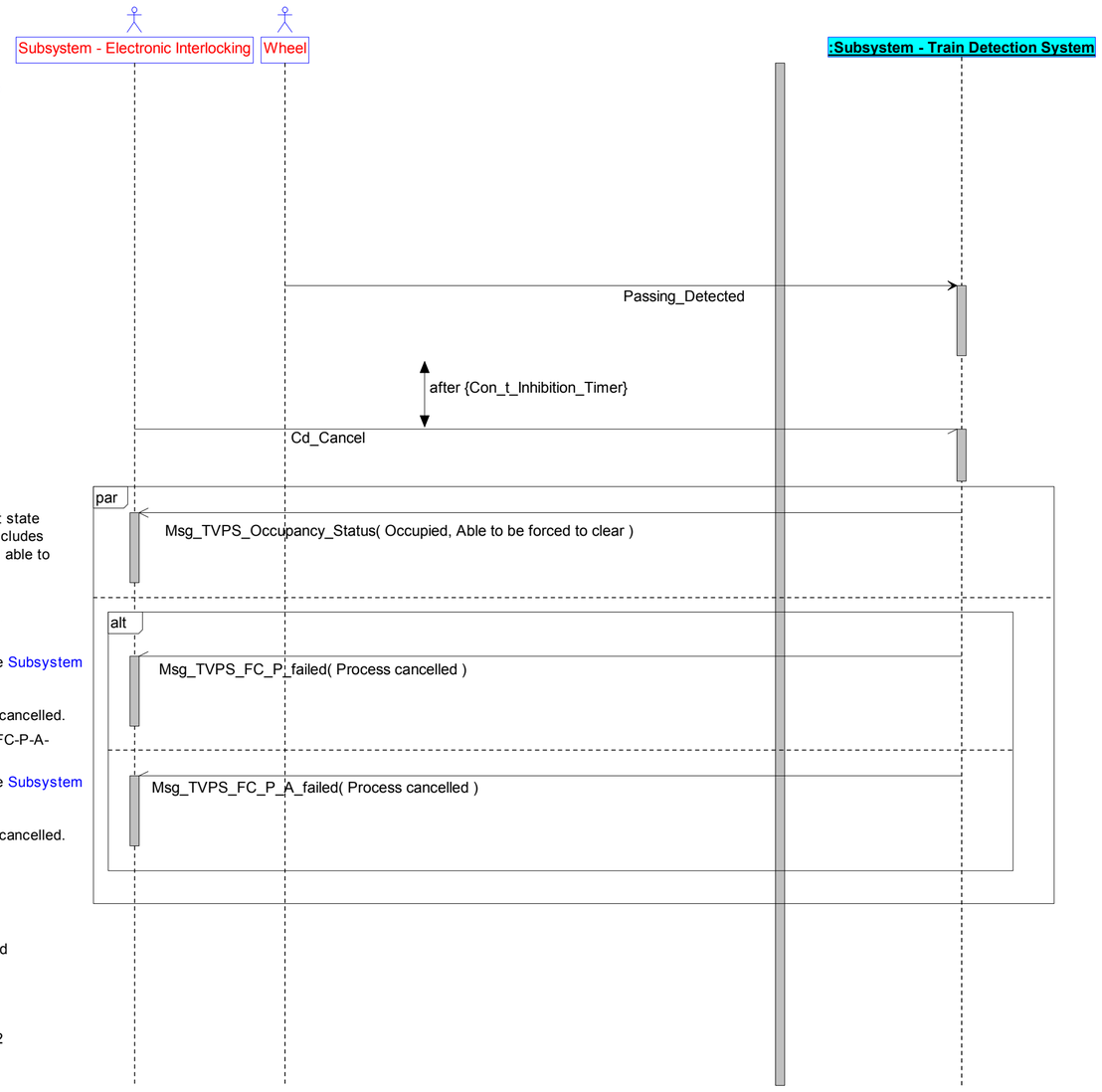
end alt

end par

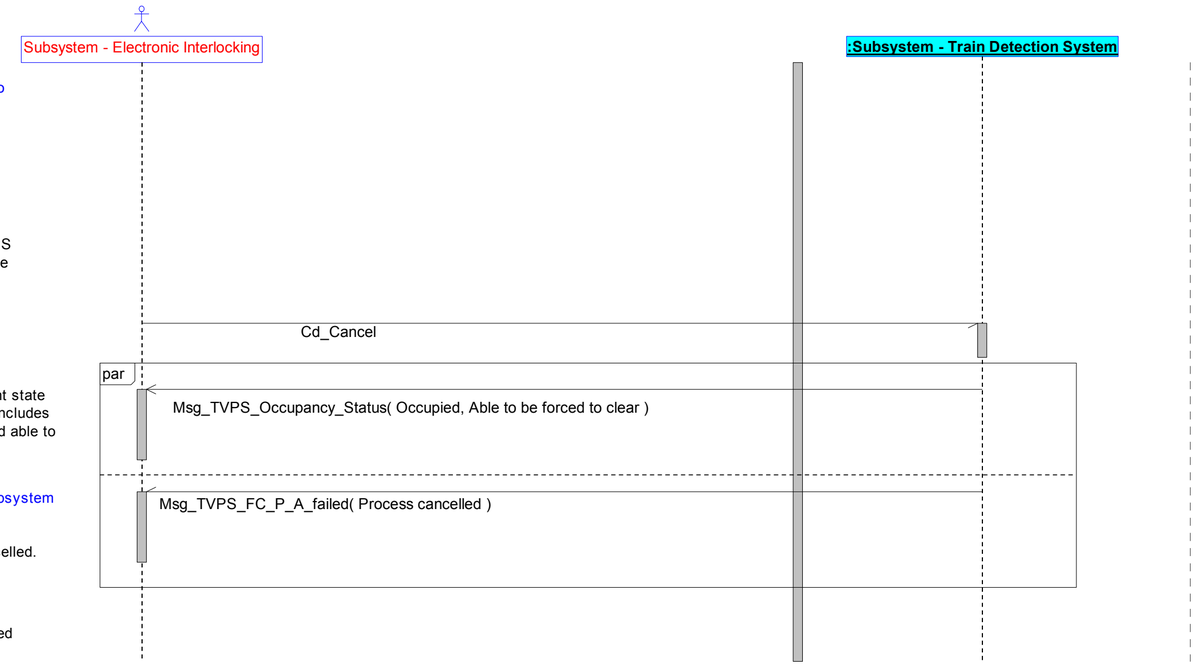
Postcondition:

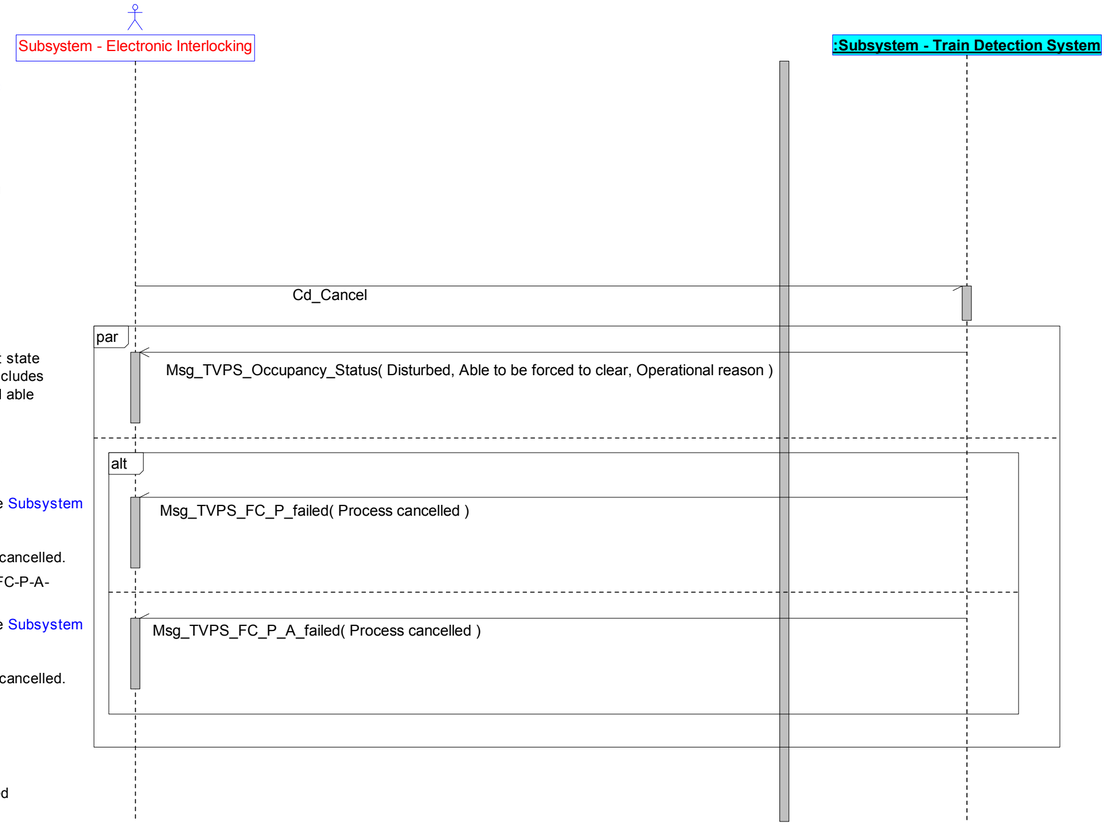
The relevant TVPS is in the state "TVPS occupied and able to be forced to clear".

Note: The detection and the behaviour of the detection of incoming/outgoing wheels, the resulting state changes as well as the inhibition timer and delay of notification timer in UC 2.1.1. and UC 2.1.2 are still valid and work in parallel but are not shown in this Sequence diagram.



ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.7022	Info	TDS SD 2.1.3.5.3 **TDS_UC2.1.3.5: Cancel-command** Alternative Scenario: Successful execution of Cancel-command (to no process state, Occupied Able FC) (case 3) [TDS SD 2.1.3.5.3] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS is in the state "TVPS is waiting for an acknowledgement after FC-P-A command and unable to be forced to clear". Before Sweeping Train Process the relevant TVPS was in states "TVPS occupied and able to be forced to clear" or "TVPS occupied and unable to be forced to clear". **Interaction 2.1.3.5.3.A:** **1.** - The Subsystem - Train Detection System receives from the Subsystem - Electronic Interlocking a Cancel-command. **par** **2.a1** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS occupied and able to be forced to clear". **also par** **2.b1** The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the execution of the previously sent FC-P-A command was not successful. The telegram contains the information that the process was cancelled. **end par** **Postcondition:** The relevant TVPS is in the state "TVPS occupied and able to be forced to clear".		Option FC-P/-A
Eu.TDS.7016	Info	TDS SD 2.1.3.5.4 **TDS_UC2.1.3.5: Cancel-command** Alternative Scenario: Successful execution of Cancel-command (to no process state, Disturbed Able FC) (case 1) [TDS SD 2.1.3.5.4] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS is in the state "TVPS is waiting for a sweeping train and unable to be forced to clear". Before Sweeping Train Process the relevant TVPS was in state "TVPS disturbed and able to be forced to clear with an operational reason". **Interaction 2.1.3.5.4.A:** **1.** - The Subsystem - Train Detection System receives from the Subsystem - Electronic Interlocking a Cancel-command. **par** **2.a1** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS disturbed and able to be forced to clear with an operational reason". **also par** **alt** [The Last command before the Cancel-command was a FC-P-command] **2.b1** The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the execution of the previously sent FC-P command was not successful. The telegram contains the information that the process was cancelled. **else alt** [The Last command before the Cancel-command was a FC-P-A-command] **2.b2** The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the execution of the previously sent FC-P-A command was not successful. The telegram contains the information that the process was cancelled. **end alt** **end par** **Postcondition:** The relevant TVPS is in the state "TVPS disturbed and able to be forced to clear with an operational reason".		Option FC-P/-A





ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.7017	Info	TDS SD 2.1.3.5.5		Option FC-P/-A

TDS_UC2.1.3.5: Cancel-command

Alternative Scenario: Successful execution of Cancel-command (to no process state, Disturbed Able FC) (case 2) [TDS SD 2.1.3.5.5]

Precondition:

The Subsystem - Train Detection System is in the state OPERATIONAL.
The relevant TVPS is in the state "TVPS is in state sweeping train detected and unable to be forced to clear".
Before Sweeping Train Process the relevant TVPS was in state "TVPS disturbed and able to be forced to clear with an operational reason".

Interaction 2.1.3.5.5.A:

1. - One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an outgoing Wheel for the relevant TVPS.

2. The Subsystem - Train Detection System starts the Inhibition Timer.

Interaction 2.1.3.5.5.B:

3. - The Subsystem - Train Detection System receives from the Subsystem - Electronic Interlocking a Cancel-command after the Inhibition Timer is expired.

par

4.a1 The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS disturbed and able to be forced to clear with an operational reason".

also par

alt [The Last command before the Cancel-command was a FC-P-command]

4.b1 The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the execution of the previously sent FC-P command was not successful.
The telegram contains the information that the process was cancelled.

else alt [The Last command before the Cancel-command was a FC-P-A-command]

4.b2 The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the execution of the previously sent FC-P-A command was not successful.
The telegram contains the information that the process was cancelled.

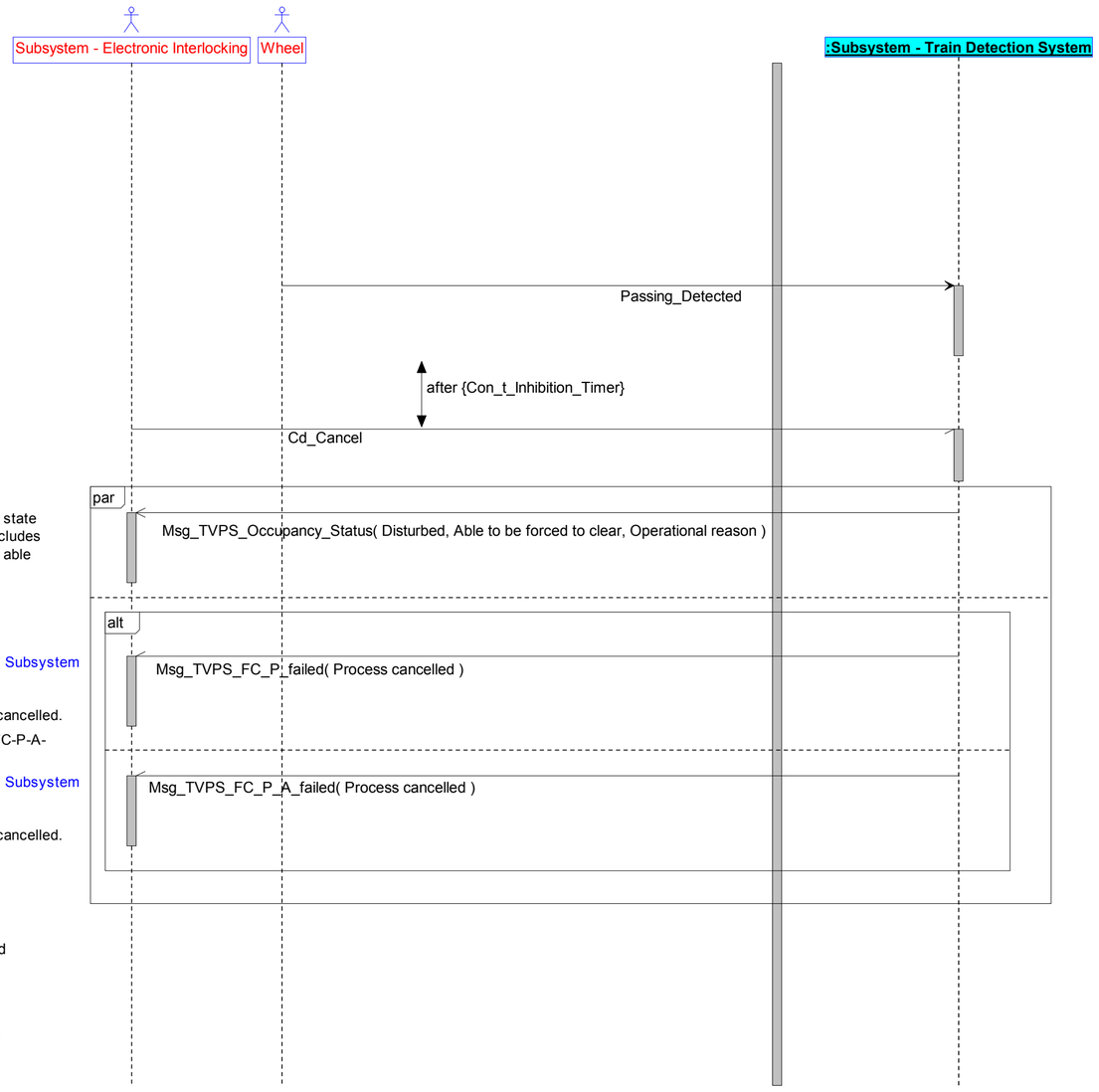
end alt

end par

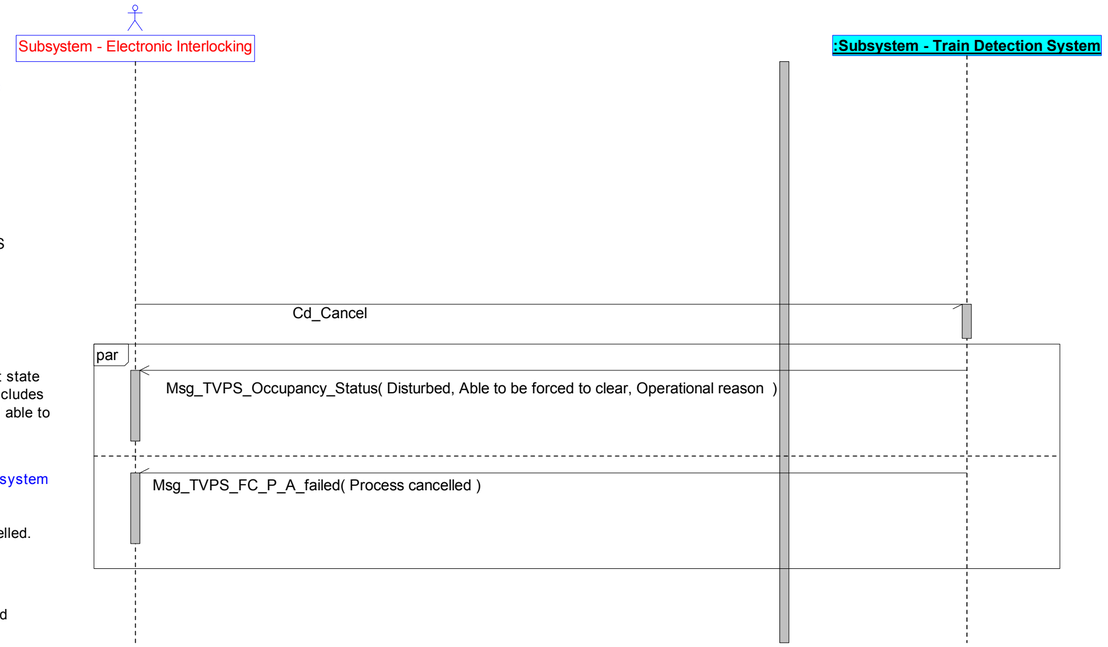
Postcondition:

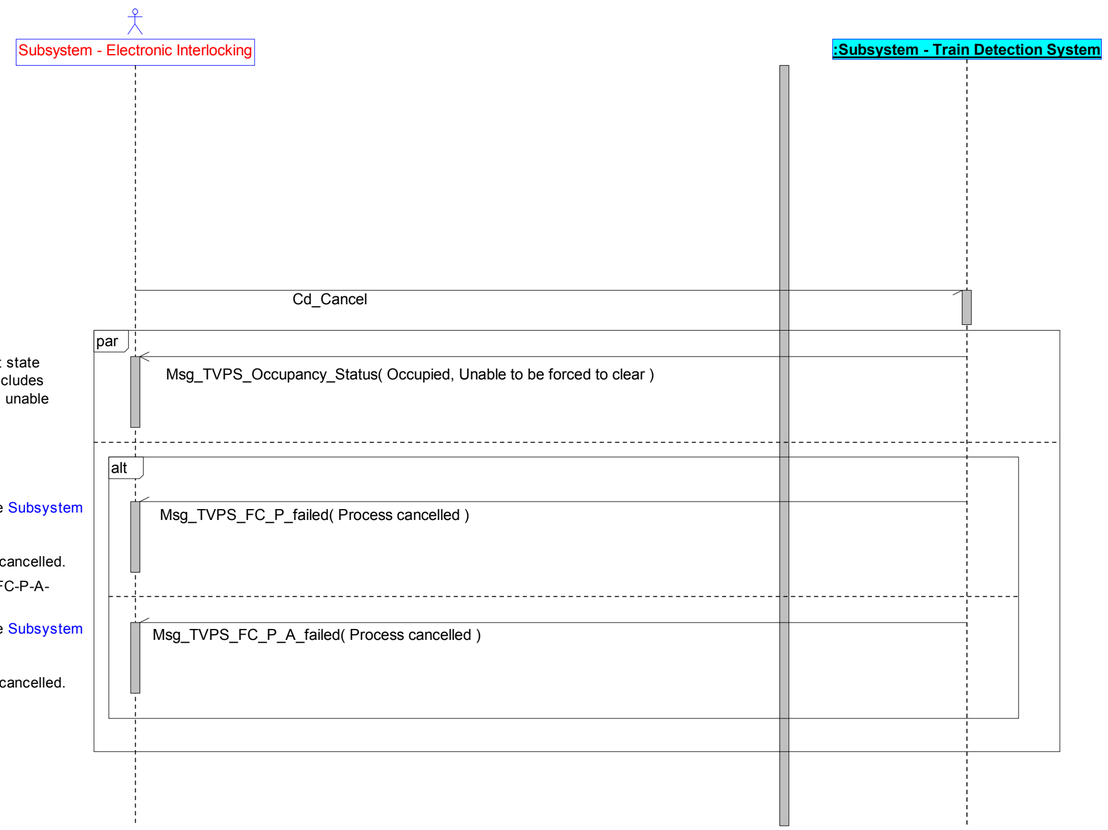
The relevant TVPS is in the state "TVPS disturbed and able to be forced to clear with an operational reason".

Note: The detection and the behaviour of the detection of incoming/outgoing wheels, the resulting state changes as well as the inhibition timer and delay of notification timer in UC 2.1.1. and UC 2.1.2 are still valid and work in parallel but are not shown in this Sequence diagram.



ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.7018	Info	TDS SD 2.1.3.5.6 **TDS_UC2.1.3.5: Cancel-command** Alternative Scenario: Successful execution of Cancel-command (to no process state, Disturbed Able FC) (case 3) [TDS SD 2.1.3.5.6] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS is in the state "TVPS is waiting for an acknowledgment after FC-P-A command and unable to be forced to clear". Before Sweeping Train Process the relevant TVPS was in states "TVPS disturbed and able to be forced to clear with an operational reason". **Interaction 2.1.3.5.6.A:** **1.** - The Subsystem - Train Detection System receives from the Subsystem - Electronic Interlocking a Cancel-command. **par** **2.a1** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS disturbed and able to be forced to clear with an operational reason". **also par** **2.b1** The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the execution of the previously sent FC-P-A command was not successful. The telegram contains the information that the process was cancelled. **end par** **Postcondition:** The relevant TVPS is in the state "TVPS disturbed and able to be forced to clear with an operational reason".		Option FC-P/-A
Eu.TDS.7023	Info	TDS SD 2.1.3.5.7 **TDS_UC2.1.3.5: Cancel-command** Alternative Scenario: Successful execution of Cancel-command (to no process state, Occupied Unable FC) (case 1) [TDS SD 2.1.3.5.7] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS is in the state "TVPS is waiting for a sweeping train and unable to be forced to clear". Before Sweeping Train Process the relevant TVPS was in state "TVPS occupied and unable to be forced to clear". **Interaction 2.1.3.5.7.A:** **1.** - The Subsystem - Train Detection System receives from the Subsystem - Electronic Interlocking a Cancel-command. **par** **2.a1** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS occupied and unable to be forced to clear". **also par** **alt** [The Last command before the Cancel-command was a FC-P-command] **2.b1** The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the execution of the previously sent FC-P command was not successful. The telegram contains the information that the process was cancelled. **else alt** [The Last command before the Cancel-command was a FC-P-A-command] **2.b2** The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the execution of the previously sent FC-P-A command was not successful. The telegram contains the information that the process was cancelled. **end alt** **end par** **Postcondition:** The relevant TVPS is in the state "TVPS occupied and unable to be forced to clear".		Option FC-P/-A





ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.7024	Info	TDS SD 2.1.3.5.8		Option FC-P/-A

TDS_UC2.1.3.5: Cancel-command

Alternative Scenario: Successful execution of Cancel-command (to no process state, Occupied Unable FC) (case 2) [TDS SD 2.1.3.5.8]

Precondition:

The Subsystem - Train Detection System is in the state OPERATIONAL.
he relevant TVPS is in the state "TVPS is waiting for a sweeping train and unable to be forced to clear".
Before Sweeping Train Process the relevant TVPS was in state "TVPS occupied and unable to be forced to clear".

Interaction 2.1.3.5.8.A:

1. - One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an incoming Wheel for the relevant TVPS.

2. The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS is in state sweeping train detected and unable to be forced to clear".

opt

3.a1 One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an outgoing Wheel for the relevant TVPS.

3.a2 The Subsystem - Train Detection System starts the Inhibition Timer.

end opt

Interaction 2.1.3.5.8.B:

3. - The Subsystem - Train Detection System receives from the Subsystem - Electronic Interlocking a Cancel-command.

par

4.a1 The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS occupied and unable to be forced to clear".

also par

alt [The Last command before the Cancel-command was a FC-P-command]

4.b1.a1 The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the execution of the previously sent FC-P command was not successful.
The telegram contains the information that the process was cancelled.

else alt [The Last command before the Cancel-command was a FC-P-A-command]

4.b1.b1 The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the execution of the previously sent FC-P-A command was not successful.
The telegram contains the information that the process was cancelled.

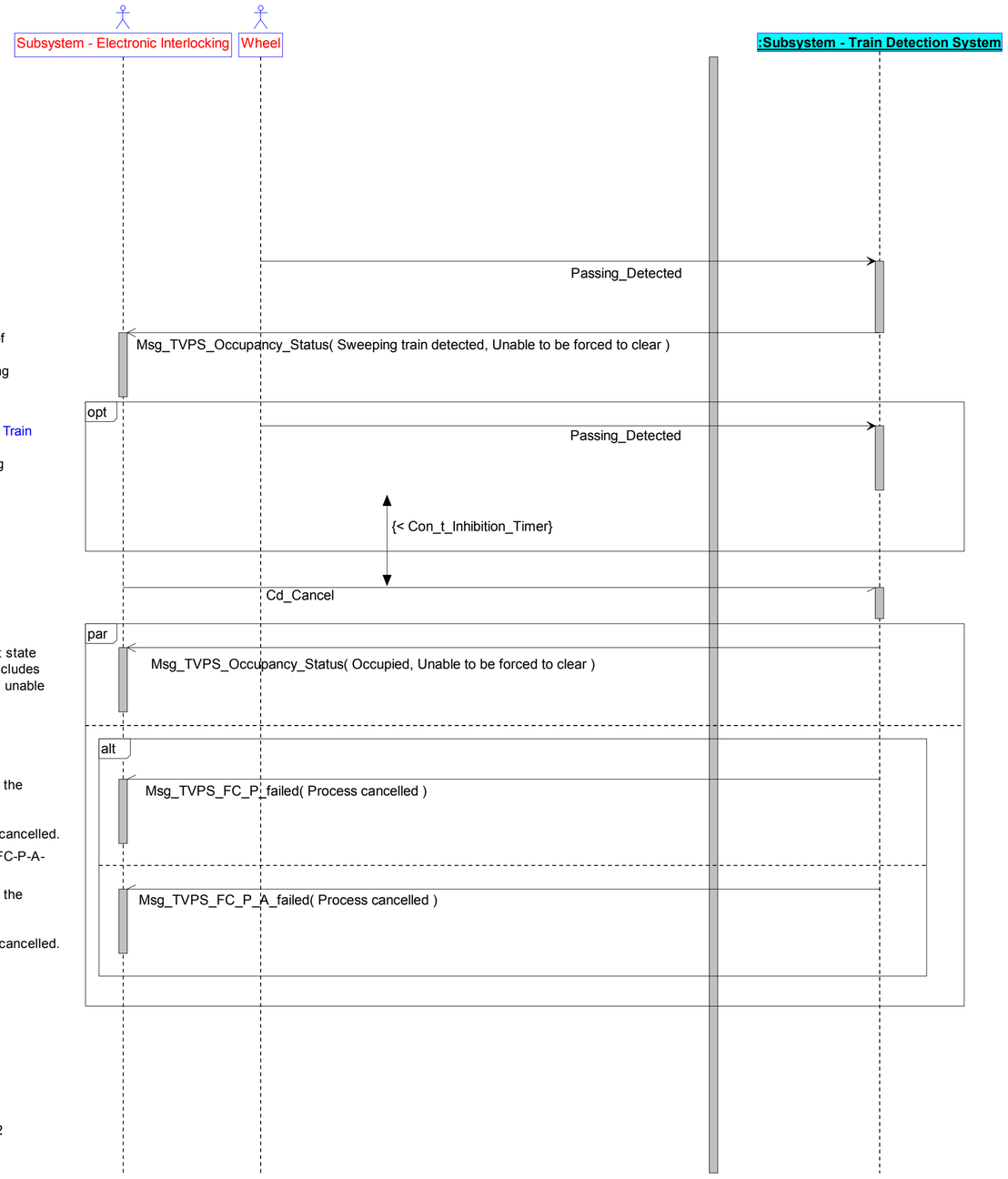
end alt

end par

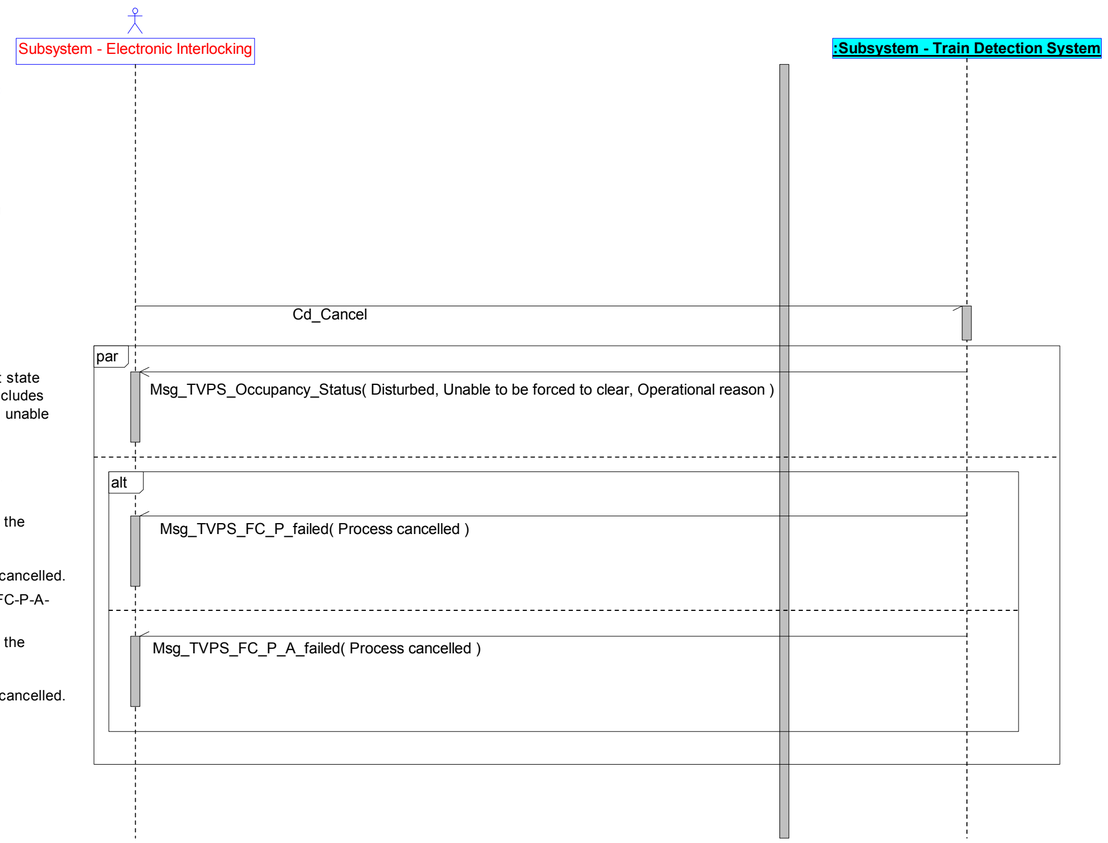
Postcondition:

The relevant TVPS is in the state "TVPS occupied and unable to be forced to clear" with a running Inhibition Timer for alternativ 3.a1.

Note: The detection and the behaviour of the detection of incoming/outgoing wheels, the resulting state changes as well as the inhibition timer and delay of notification timer in UC 2.1.1. and UC 2.1.2 are still valid and work in parallel but are not shown in this Sequence diagram.



ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.7020	Info	TDS SD 2.1.3.5.9 **TDS_UC2.1.3.5: Cancel-command** Alternative Scenario: Successful execution of Cancel-command (to no process state, Disturbed Unable FC) (case 1) [TDS SD 2.1.3.5.9] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The Subsystem - Train Detection System is configured as Variant B. The relevant TVPS is in the state "TVPS is waiting for a sweeping train and unable to be forced to clear". Before Sweeping Train Process the relevant TVPS was in state “TVPS disturbed and unable to be forced to clear with an operational reason". **Interaction 2.1.3.5.9.A:** **1.** - The Subsystem - Train Detection System receives from the Subsystem - Electronic Interlocking a Cancel-command. **par** **2.a1** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state “TVPS disturbed and unable to be forced to clear with an operational reason". **also par** **alt** [The Last command before the Cancel-command was a FC-P-command] **2.b1.a1** The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the execution of the previously sent FC-P command was not successful. The telegram contains the information that the process was cancelled. **else alt** [The Last command before the Cancel-command was a FC-P-A-command] **2.b1.b1** The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the execution of the previously sent FC-P-A command was not successful. The telegram contains the information that the process was cancelled. **end alt** **end par** **Postcondition:** The relevant TVPS is in the state “TVPS disturbed and unable to be forced to clear with an operational reason".		Option FC-P/-A



ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.7019	Info	TDS SD 2.1.3.5.10		Option FC-P/-A

TDS_UC2.1.3.5: Cancel-command

Alternative Scenario: Successful execution of Cancel-command (to no process state, Disturbed Unable FC) (case 2) [TDS SD 2.1.3.5.10]

Precondition:

The Subsystem - Train Detection System is in the state OPERATIONAL.
The Subsystem - Train Detection System is configured as Variant B.
The relevant TVPS is in the state "TVPS is waiting for a sweeping train and unable to be forced to clear".
Before Sweeping Train Process the relevant TVPS was in state “TVPS disturbed and unable to be forced to clear with an operational reason".

Interaction 2.1.3.5.10.A:

1. - One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an incoming Wheel for the relevant TVPS.

2. The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS is in state sweeping train detected and unable to be forced to clear".

opt

3.a1 One Wheel is passing a Detection Point of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is an outgoing Wheel for the relevant TVPS.

3.a2 The Subsystem - Train Detection System starts the Inhibition Timer.

end opt

Interaction 2.1.3.5.10.B:

3. - The Subsystem - Train Detection System receives from the Subsystem - Electronic Interlocking a Cancel-command.

par

4.a1 The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state “TVPS disturbed and unable to be forced to clear with an operational reason".

also par

alt [The Last command before the Cancel-command was a FC-P-command]

4.b1.a1 The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the execution of the previously sent FC-P command was not successful.
The telegram contains the information that the process was cancelled.

else alt [The Last command before the Cancel-command was a FC-P-A-command]

4.b1.b1 The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the execution of the previously sent FC-P-A command was not successful.
The telegram contains the information that the process was cancelled.

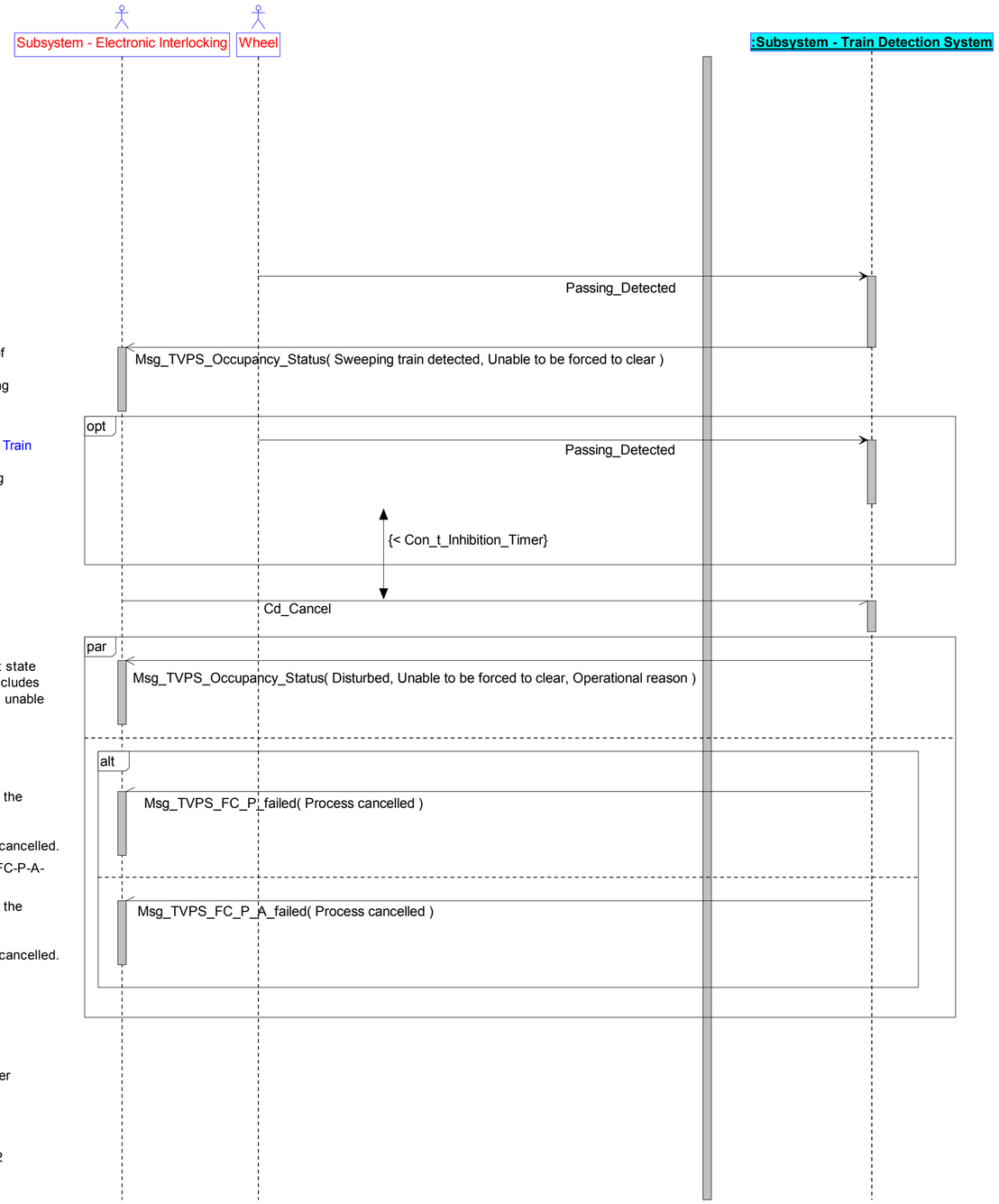
end alt

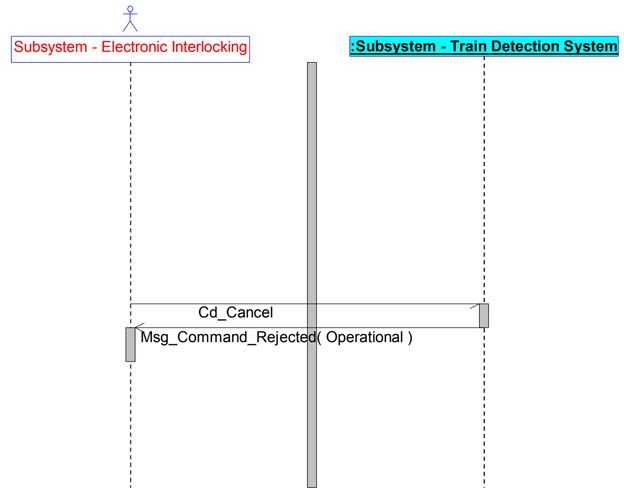
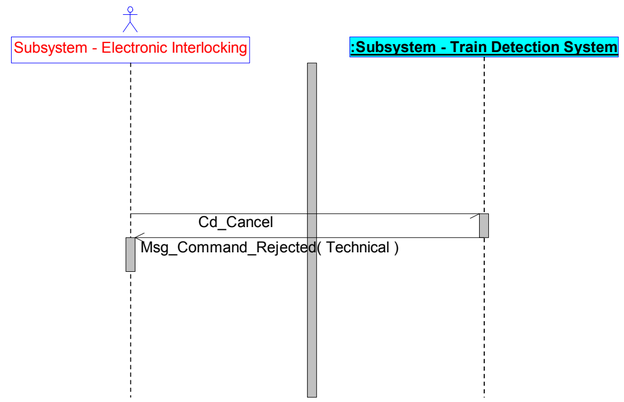
end par

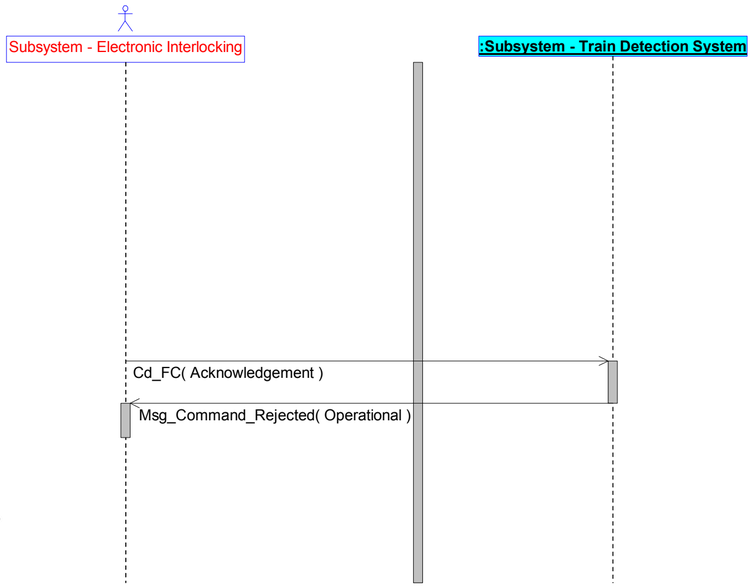
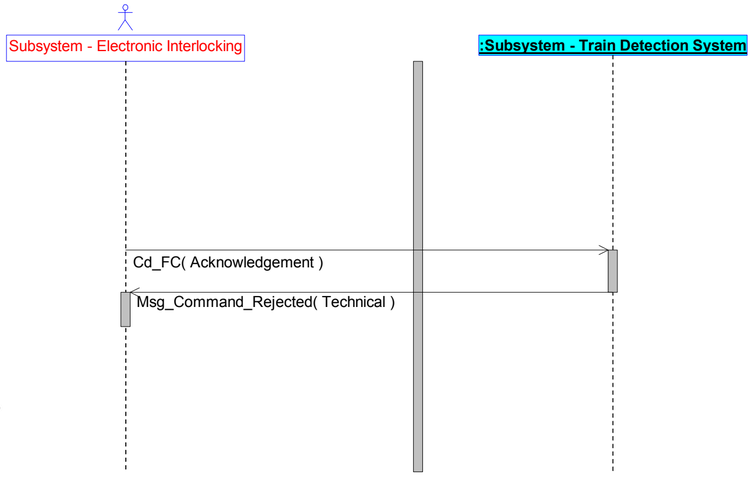
Postcondition:

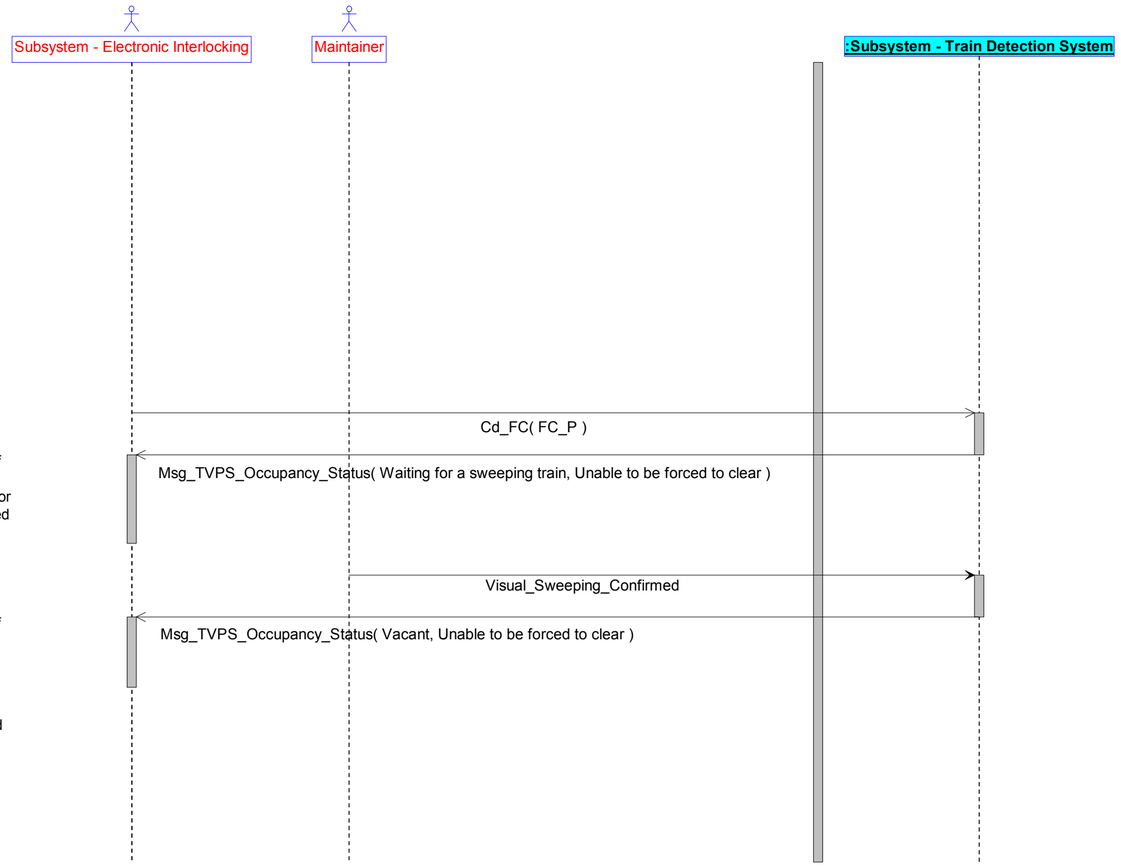
The relevant TVPS is in the state “TVPS disturbed and unable to be forced to clear with an operational reason" with a running Inhibition Timer for alternativ 3.a1.

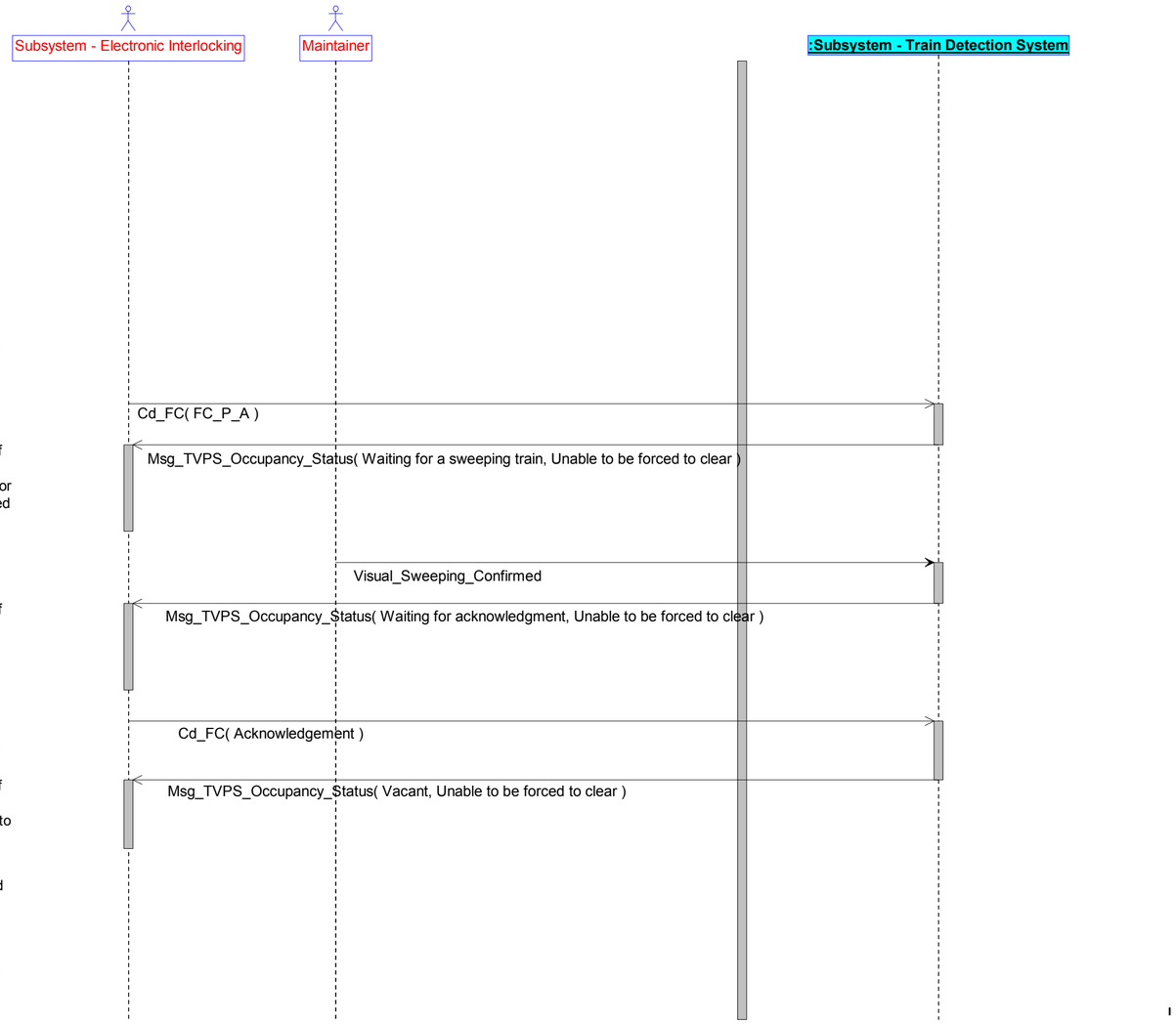
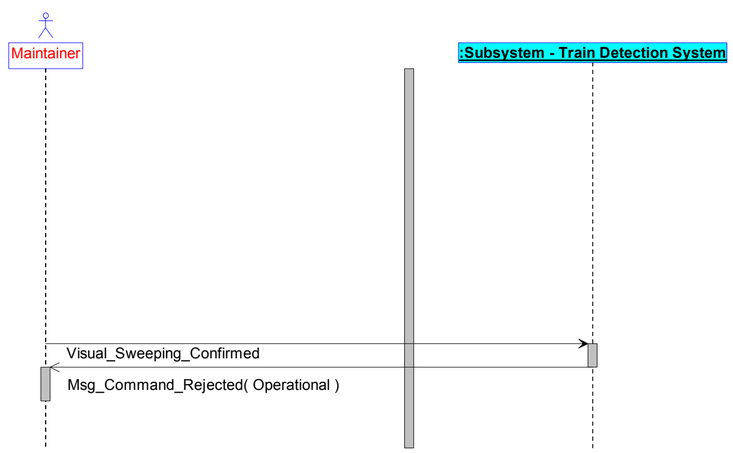
Note: The detection and the behaviour of the detection of incoming/outgoing wheels, the resulting state changes as well as the inhibition timer and delay of notification timer in UC 2.1.1. and UC 2.1.2 are still valid and work in parallel but are not shown in this Sequence diagram.

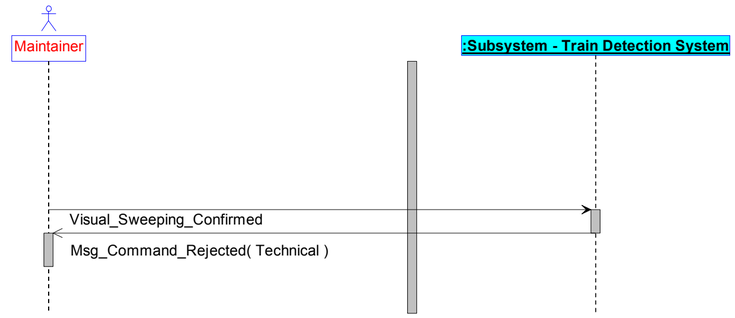
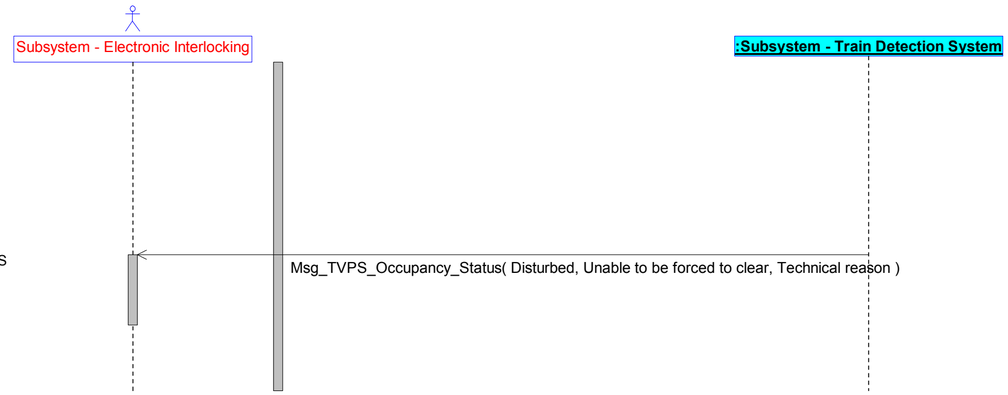


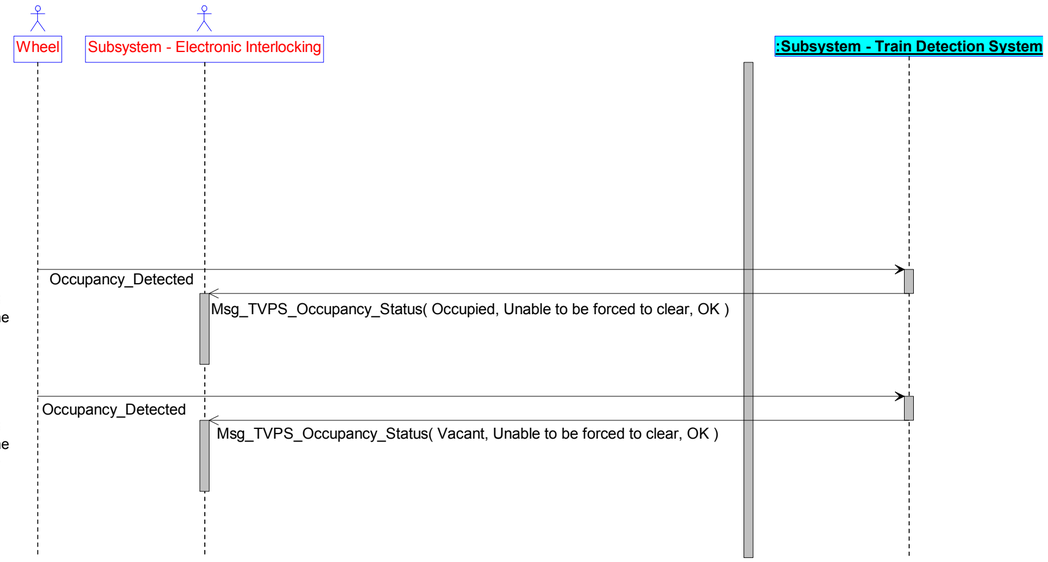
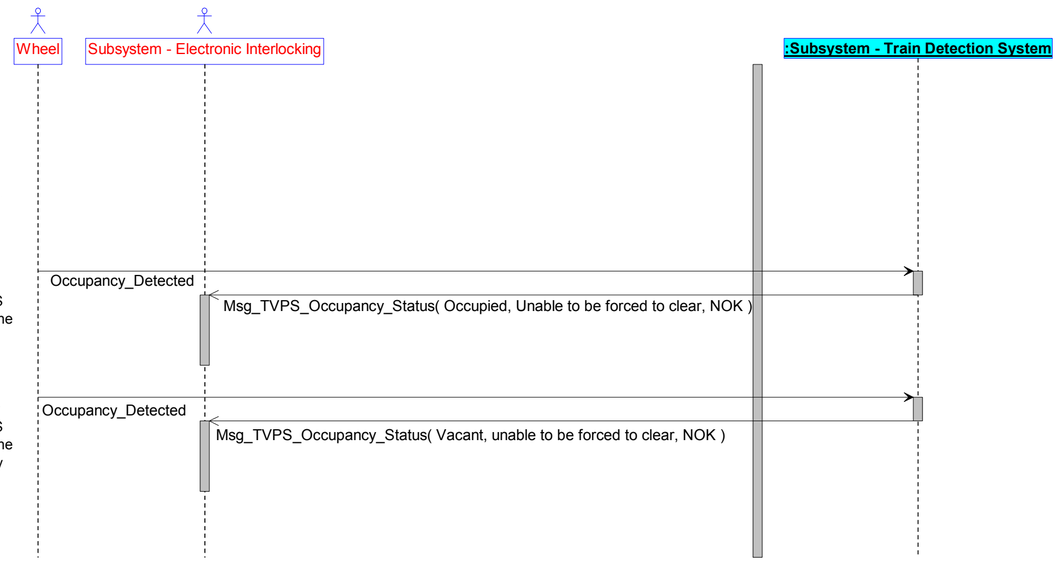
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.7025	Info	TDS SD 2.1.3.5.11 **TDS_UC2.1.3.5: Cancel-command** Alternative Scenario: Unsuccessful execution of Cancel-command (operational reason) [TDS SD 2.1.3.5.11] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS is configured to execute FC-P or FC-P-A. The relevant TVPS is in the states: - "TVPS vacant and unable to be forced to clear", - "TVPS occupied and able to be forced to clear", - "TVPS occupied and unable to be forced to clear", - "TVPS disturbed and able to be forced to clear with an operational reason" or - “TVPS disturbed and unable to be forced to clear with an operational reason" for Variant B. **Interaction 2.1.3.5.11.A:** **1.** - The Subsystem - Train Detection System receives from the Subsystem - Electronic Interlocking a Cancel-command. **2.** The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the previously sent command was rejected with an operational reason. **Postcondition:** --- **Note:** This scenario should normally be avoided because the Subsystem - Electronic Interlocking is expected to check the process state before sending the Cancel command. This SD is included to cover scenarios where the Subsystem - Electronic Interlocking and Subsystem - Train Detection System have different opinions on the process state, such as when the condition changes soon after the command has been sent. 		Option FC-P/-A
Eu.TDS.7026	Info	TDS SD 2.1.3.5.12 **TDS_UC2.1.3.5: Cancel-command** Alternative Scenario: Unsuccessful execution of Cancel-command (technical reason) [TDS SD 2.1.3.5.12] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS is configured to execute FC-P or FC-P-A. The relevant TVPS is in the state "TVPS disturbed and unable to be forced to clear with a technical reason". **Interaction 2.1.3.5.12.A:** **1.** - The Subsystem - Train Detection System receives from the Subsystem - Electronic Interlocking a Cancel-command. **2.** The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the previously sent command was rejected with a technical reason. **Postcondition:** --- **Note:** This scenario should normally be avoided because the Subsystem - Electronic Interlocking is expected to check the process state before sending the Cancel command. This SD is included to cover scenarios where the Subsystem - Electronic Interlocking and Subsystem - Train Detection System have different opinions on the process state, such as when the condition changes soon after the command has been sent. 		Option FC-P/-A
Eu.TDS.6041	Info	TDS_UC2.1.3.6: FC Acknowledgement	The Subsystem-UseCase "TDS_UC2.1.3.1: FC-P command" defines the behaviour of the Subsystem - Train Detection System after receiving a FC-Acknowledgement- command from the Subsystem - Electronic Interlocking.	Option FC-P/-A

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.7027	Info	TDS SD 2.1.3.6.1 **TDS_UC2.1.3.6: FC Acknowledgement** Alternative Scenario: Unsuccessful execution of FC-Acknowledgement (operational reason) [TDS SD 2.1.3.6.1] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS is configured to execute FC-P-A. The relevant TVPS is in the states: - "TVPS vacant and unable to be forced to clear", - "TVPS occupied and able to be forced to clear", - "TVPS disturbed and able to be forced to clear with an operational reason", - "TVPS occupied and unable to be forced to clear", - "TVPS disturbed and unable to be forced to clear with an operational reason" for Variant B, - "TVPS is waiting for sweeping train and unable to be forced to clear" or - "TVPS is in state sweeping train detected and unable to be forced to clear". **Interaction 2.1.3.6.1.A:** **1.** - The Subsystem - Train Detection System receives from the Subsystem - Electronic Interlocking a FC-Acknowledgement-command. **2.** The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the previously sent command was rejected with an operational reason. **Postcondition:** --- **Note:** This scenario should normally be avoided because the Subsystem - Electronic Interlocking is expected to check the process state before sending the FC command. This SD is included to cover scenarios where the Subsystem - Electronic Interlocking and Subsystem - Train Detection System have different opinions on the process state, such as when the condition changes soon after the command has been sent. 		Option FC-P/-A
Eu.TDS.7028	Info	TDS SD 2.1.3.6.2 **TDS_UC2.1.3.6: FC Acknowledgement** Alternative Scenario: Unsuccessful execution of FC-Acknowledgement (technical reason) [TDS SD 2.1.3.6.2] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS is configured to execute FC-P-A. The relevant TVPS is in the state "TVPS disturbed and unable to be forced to clear with a technical reason". **Interaction 2.1.3.6.2.A:** **1.** - The Subsystem - Train Detection System receives from the Subsystem - Electronic Interlocking a FC-Acknowledgement-command. **2.** The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the previously sent command was rejected with a technical reason. **Postcondition:** --- **Note:** This scenario should normally be avoided because the Subsystem - Electronic Interlocking is expected to check the process state before sending the FC command. This SD is included to cover scenarios where the Subsystem - Electronic Interlocking and Subsystem - Train Detection System have different opinions on the process state, such as when the condition changes soon after the command has been sent. 		Option FC-P/-A
Eu.TDS.7061	Info	TDS_UC2.1.3.7: Visual Sweeping Confirmation	The Subsystem-UseCase "TDS_UC2.1.3.7: Visual Sweeping Confirmation" defines the behaviour of the Subsystem - Train Detection System after receiving a Visual Sweeping Confirmation - command from the Maintainer.	Option FC-P/-A

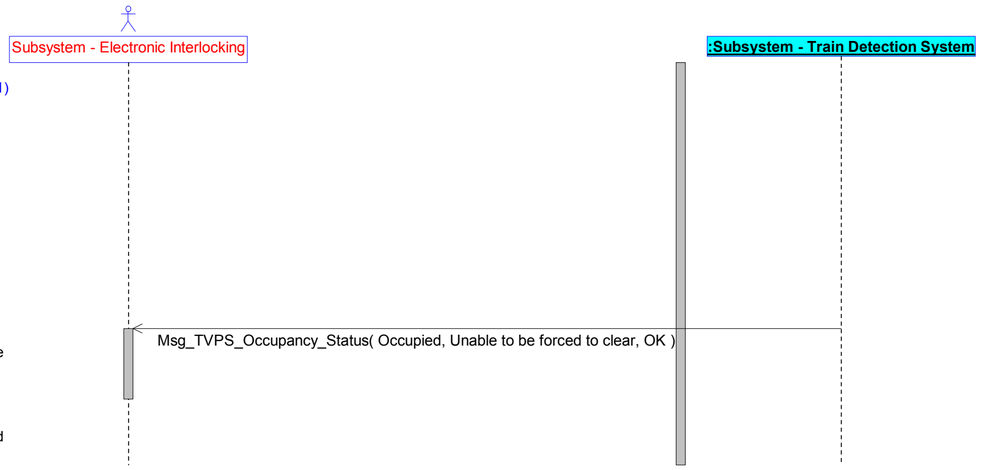
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.7040	Info	TDS SD 2.1.3.7.1 **TDS_UC2.1.3.7: Visual Sweeping Confirmation** Alternative Scenario: Successful execution of FC-P with Visual Sweeping Confirmation from Maintainer [TDS SD 2.1.3.7.1] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS is configured to execute FC-P. The relevant TVPS is in the states: - "TVPS occupied and able to be forced to clear", - "TVPS disturbed and able to be forced to clear with an operational reason", - "TVPS occupied and unable to be forced to clear", - "TVPS disturbed and unable to be forced to clear with an operational reason" for Variant B. For the relevant TVPS the inhibition timer is not running. For the relevant TVPS the delay of notification of availability timer is not running **Interaction 2.1.3.7.1.A:** **1.** - The Subsystem - Train Detection System receives from the Subsystem - Electronic Interlocking a FC-P command. **2.** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS is in state waiting for a sweeping train after FC-P-A or FC-P command and unable to be forced to clear". **Interaction 2.1.3.7.1.B:** **3.** - The Subsystem - Train Detection System receives from the Maintainer a visual sweeping confirmation. **4.** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS is in state vacant and unable to be forced to clear". **Postcondition:** The relevant TVPS is in the state "TVPS vacant and unable to be forced to clear". **Note:** The detection and the behaviour of the detection of incoming/outgoing wheels, the resulting state changes as well as the inhibition timer and delay of notification timer in UC 2.1.1. and UC 2.1.2 are still valid and work in parallel but are not shown in this Sequence diagram.  		Option FC-P/-A

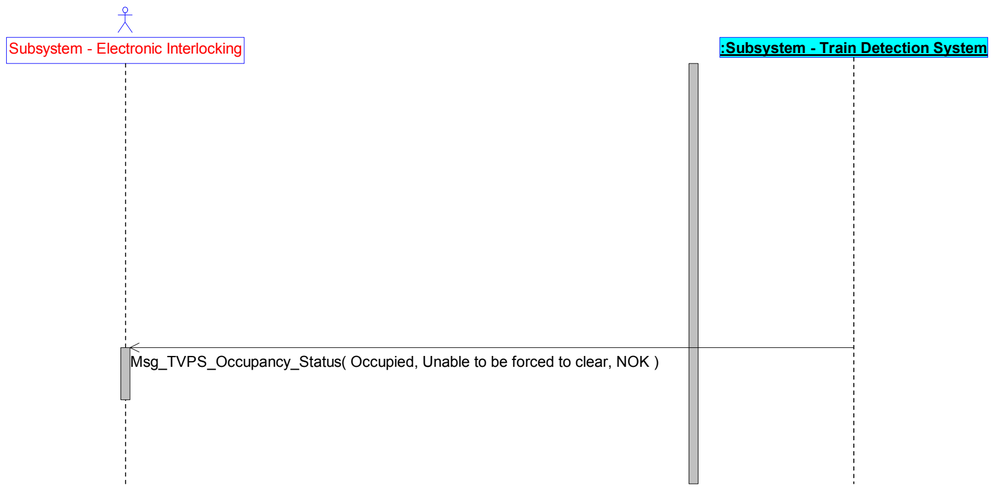
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.7041	Info	TDS SD 2.1.3.7.2 **TDS_UC2.1.3.7: Visual Sweeping Confirmation** Alternative Scenario: Successful execution of FC-P-A with Visual Sweeping Confirmation from Maintainer [TDS SD 2.1.3.7.2] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS is configured to execute FC-P-A. The relevant TVPS is in the states: - "TVPS occupied and able to be forced to clear", - "TVPS disturbed and able to be forced to clear with an operational reason", - "TVPS occupied and unable to be forced to clear", - "TVPS disturbed and unable to be forced to clear with an operational reason" for Variant B. For the relevant TVPS the inhibition timer is not running. For the relevant TVPS the delay of notification of availability timer is not running **Interaction 2.1.3.7.2.A:** **1.** - The Subsystem - Train Detection System receives from the Subsystem - Electronic Interlocking a FC-P-A-command. **2.** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS is in state waiting for a sweeping train after FC-P-A or FC-P command and unable to be forced to clear". **Interaction 2.1.3.7.2.B:** **3.** - The Subsystem - Train Detection System receives from the Maintainer a visual sweeping confirmation. **4.** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS is waiting for an acknowledgment after FC-P-A command and unable to be forced to clear". **Interaction 2.1.3.7.2.C:** **5.** - The Subsystem - Train Detection System receives from the Subsystem - Electronic Interlocking an Acknowledgement after FC-P-A command. **6.** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS vacant and unable to be forced to clear". The filling level of the relevant TVPS is set to zero. **Postcondition:** The relevant TVPS is in the state "TVPS vacant and unable to be forced to clear". **Note:** The detection and the behaviour of the detection of incoming/outgoing wheels, the resulting state changes as well as the inhibition timer and delay of notification timer in UC 2.1.1. and UC 2.1.2 are still valid and work in parallel but are not shown in this Sequence diagram. 		Option FC-P/-A
Eu.TDS.7062	Info	TDS SD 2.1.3.7.3 **TDS_UC2.1.3.7: Visual Sweeping Confirmation** Alternative Scenario: Unsuccessful execution Sweeping Confirmation from Maintainer (operational reason) [TDS SD 2.1.3.7.3] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS is in the states: - "TVPS vacant and unable to be forced to clear", - "TVPS occupied and able to be forced to clear", - "TVPS occupied and unable to be forced to clear", - "TVPS disturbed and able to be forced to clear with an operational reason", - "TVPS disturbed and unable to be forced to clear with an operational reason" for Variant B, - "TVPS is waiting for an acknowledgment after FC-P-A command and unable to be forced to clear" or - "TVPS is in state sweeping train detected and unable to be forced to clear". **Interaction 2.1.3.7.3.A:** **1.** - The Subsystem - Train Detection System receives from the Maintainer a visual sweeping confirmation. **2.** The Subsystem - Train Detection System reports to the Maintainer that the previously sent command was rejected with an operational reason. **Postcondition:** --- 		Option FC-P/-A

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.7063	Info	TDS SD 2.1.3.7.4 **TDS_UC2.1.3.7: Visual Sweeping Confirmation** Alternative Scenario: Unsuccessful execution Sweeping Confirmation from Maintainer (technical reason) [TDS SD 2.1.3.7.4] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS is in the state "TVPS disturbed and unable to be forced to clear with a technical reason"". **Interaction 2.1.3.7.4.A:** **1.** - The Subsystem - Train Detection System receives from the Maintainer a visual sweeping confirmation. **2.** The Subsystem - Train Detection System reports to the Maintainer that the previously sent command was rejected with technical reason. **Postcondition:** --- 		Option FC-P/-A
Eu.TDS.6042	Info	TDS_UC2.1.4: Critical failure	The Subsystem-UseCase "TDS_UC2.1.4: Critical failure" defines the behaviour of the Subsystem - Train Detection System after a critical failure.	Basic TDS AC
Eu.TDS.6860	Info	TDS SD 2.1.4.1 **TDS_UC2.1.4: Critical failure** Alternative Scenario: Handle and report of critical failure of a TVPS [TDS SD 2.1.4.1] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. **Interaction 2.1.4.1.A:** **1.** - The Subsystem - Train Detection System recognises a critical failure of a TVPS, e.g. an interface disturbance between the components of the TVPS or a hardware failure of the components of the Subsystem - Train Detection System. **2.** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS disturbed and unable to be forced to clear with a technical reason". **Postcondition:** The relevant TVPS is in the state "TVPS disturbed and unable to be forced to clear with a technical reason". 		Basic TDS AC
Eu.TDS.7036	Info	TDS_UC2.2: TDS working with track circuits	The Subsystem-UseCase "TDS_UC2.2: TDS working with track circuits" defines the behaviour of the Subsystem - Train Detection System which works with track circuits. The behaviour will be defined in the following UseCases: TDS_UC2.2.1: Normal operation TDS_UC2.2.2: Handle Irregularities with track circuits	Basic TDS TC
Eu.TDS.6044	Info	TDS_UC2.2.1: Normal operation	The Subsystem-UseCase "TDS_UC2.2.1: Normal operation" describe the content of the occupancy status of „TVPS occupied“, „TVPS vacant“ and "TVPS disturbed" to the Subsystem - Electronic Interlocking and the detection of the occupancy status by a track circuit.	Basic TDS TC

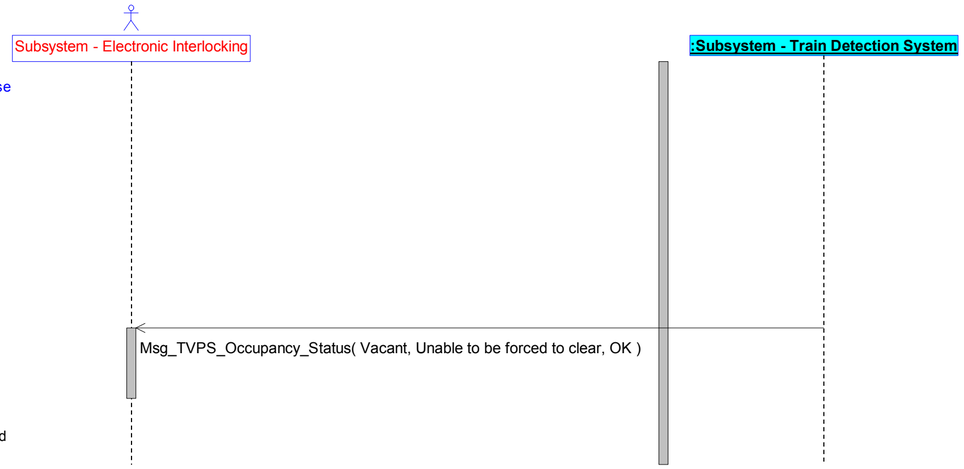
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.555	Info	TDS SD 2.2.1.1 **TDS_UC2.2.1: Normal operation** Alternative Scenario: Handle and report of the TVPS occupancy status with track circuit [TDS SD 2.2.1.1] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS works with track circuit. The relevant POM is in the state “power supply OK”. The relevant TVPS is in the state "TVPS vacant, unable to be forced to clear and power supply OK". **Interaction 2.2.1.1.A:** **1.** - One Wheel enters the TVPS of the Subsystem - Train Detection System. **2.** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS occupied, unable to be forced to clear and power supply OK". **Interaction 2.2.1.1.B:** **3.** - The last Wheel leaves the TVPS of the Subsystem - Train Detection System. **4.** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS vacant, unable to be forced to clear and power supply OK". **Postcondition:** The relevant TVPS is in the state "TVPS vacant, unable to be forced to clear and power supply OK". 		Basic TDS TC
Eu.TDS.4157	Info	TDS SD 2.2.1.2 **TDS_UC2.2.1: Normal operation** Alternative Scenario: Handle and report of the TVPS occupancy status with track circuit [TDS SD 2.2.1.2] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS works with track circuit. The relevant POM is in the state “power supply NOK” due to a failure of the POM. The relevant TVPS is in the state "TVPS vacant, unable to be forced to clear and power supply NOK". **Interaction 2.2.1.2.A:** **1.** - One Wheel enters the TVPS of the Subsystem - Train Detection System. **2.** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS occupied, unable to be forced to clear and power supply NOK". **Interaction 2.2.1.2.B:** **3.** - The last Wheel leaves the TVPS of the Subsystem - Train Detection System. **4.** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS vacant, unable to be forced to clear and power supply NOK". **Postcondition:** The relevant TVPS is in the state "TVPS vacant, unable to be forced to clear and power supply NOK". 		Basic TDS TC
Eu.TDS.6045	Info	TDS_UC2.2.2: Handle Irregularities with track circuits	The Subsystem-UseCase "TDS_UC2.2.2: Handle Irregularities with track circuits" defines the behaviour of the Subsystem - Train Detection System when an irregularity occurs with track circuits.	Basic TDS TC

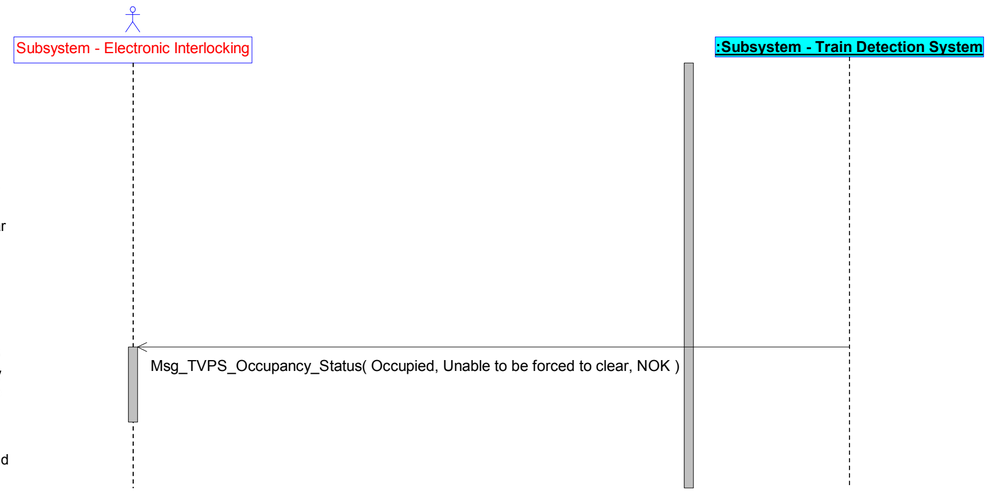
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.2574	Info	TDS SD 2.2.2.1 **TDS_UC2.2.2: Handle Irregularities with track circuits** Alternative Scenario: Revoking a critical failure of a TVPS with track circuit (case 1) [TDS SD 2.2.2.1] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS works with track circuit. The relevant POM is in the state “power supply OK”. The relevant TVPS is in the state “TVPS disturbed and unable to be forced to clear with a technical reason and power supply OK". The relevant TVPS is occupied by at least one Wheel. **Interaction 2.2.2.1.A:** **1.** - The Subsystem - Train Detection System detects that the hardware of the TVPS is adjusted by Maintainer. **2.** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS occupied, unable to be forced to clear and power supply OK". **Postcondition:** The relevant TVPS is in the state "TVPS occupied, unable to be forced to clear and power supply OK".		Basic TDS TC
Eu.TDS.2583	Info	TDS SD 2.2.2.2 **TDS_UC2.2.2: Handle Irregularities with track circuits** Alternative Scenario: Revoking a critical failure of a TVPS with track circuit (case 2) [TDS SD 2.2.2.2] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS works with track circuit. The relevant POM is in the state “power supply NOK” due to the failure of the TVPS power supply or a failure of the POM. The relevant TVPS is in the state "TVPS disturbed and unable to be forced to clear with a technical reason and power supply NOK". The relevant TVPS is occupied by at least one Wheel. **Interaction 2.2.2.2.A:** **1.** - The Subsystem - Train Detection System detects that the hardware of the TVPS is adjusted by Maintainer. **2.** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS occupied, unable to be forced to clear and power supply NOK". **Postcondition:** The relevant TVPS is in the state "TVPS occupied, unable to be forced to clear and power supply NOK" due to a failure of the TVPS power supply or the combination of a failure of the POM and the Wheel(s) in the TVPS.		Basic TDS TC

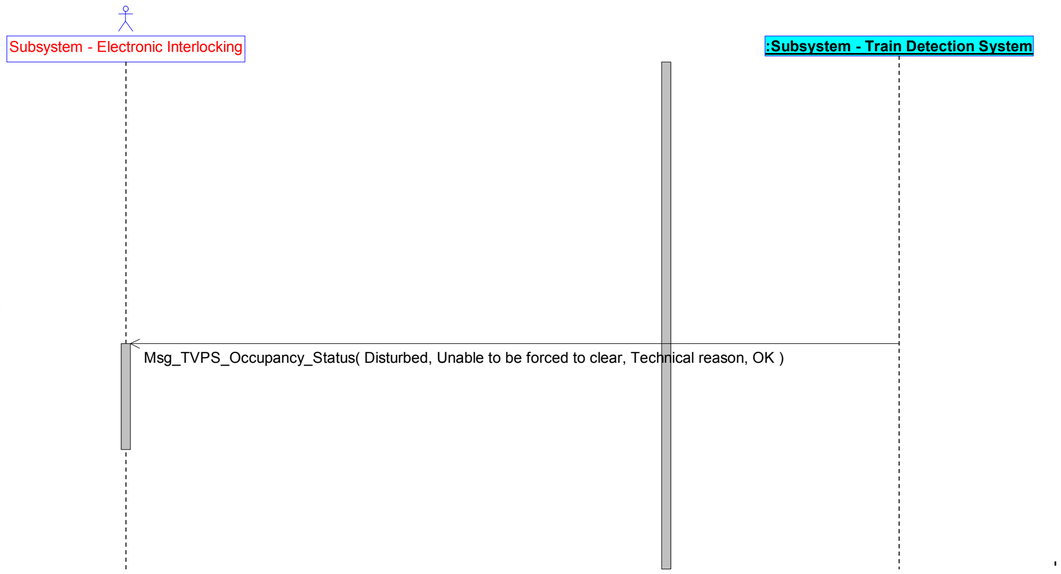
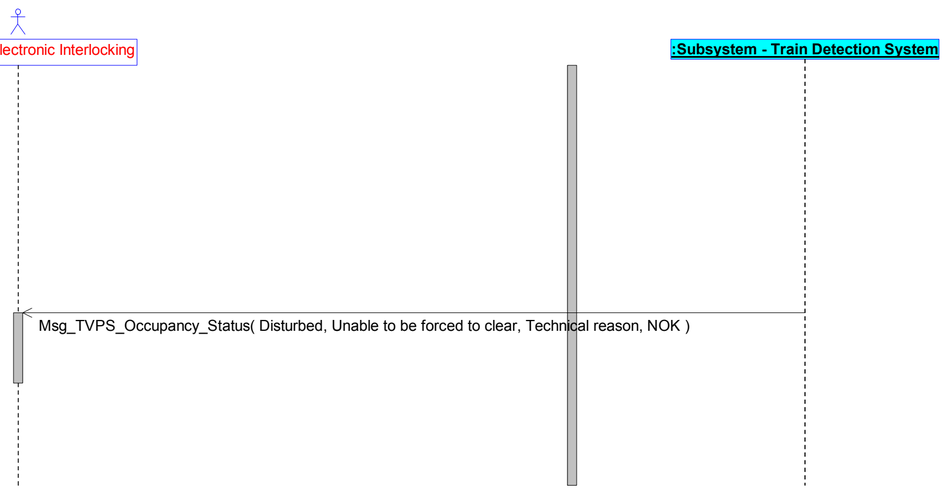


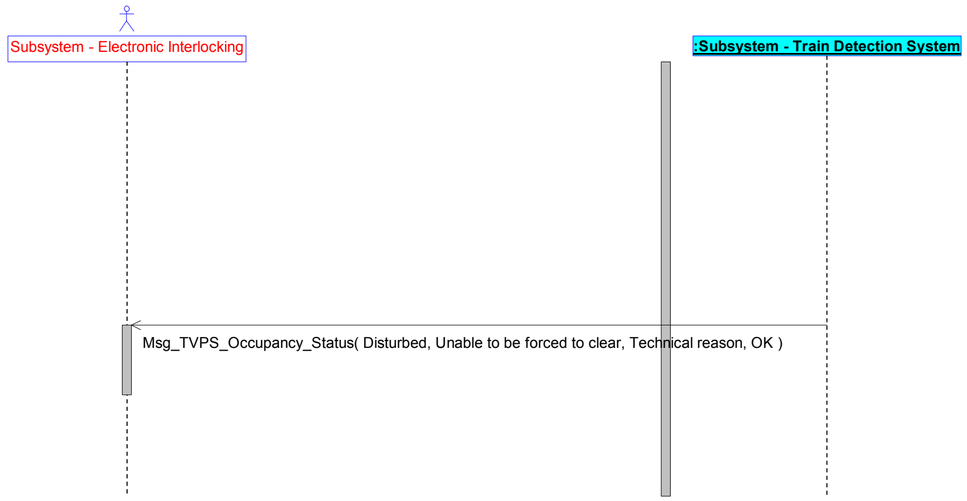
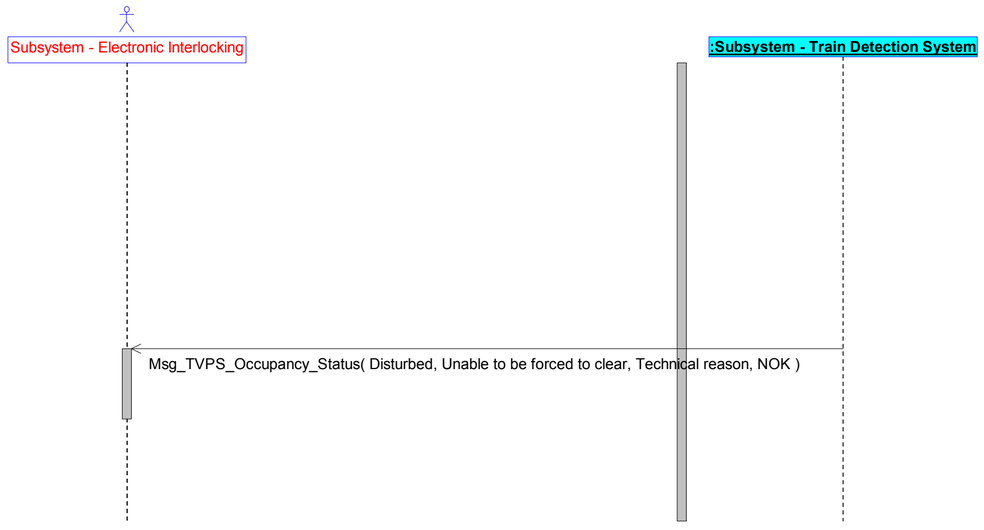


ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.3541	Info	TDS SD 2.2.2.3 **TDS_UC2.2.2: Handle Irregularities with track circuits** Alternative Scenario: Revoking a critical failure of a TVPS with track circuit (case 3) [TDS SD 2.2.2.3] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS works with track circuit. The relevant POM is in the state “power supply OK”. The relevant TVPS is in the state “TVPS disturbed and unable to be forced to clear with a technical reason and power supply OK". The relevant TVPS is not occupied by a Wheel. **Interaction 2.2.2.3.A:** **1.** - The Subsystem - Train Detection System detects that the hardware of the TVPS is adjusted by Maintainer. **2.** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS vacant, unable to be forced to clear and power supply OK". **Postcondition:** The relevant TVPS is in the state "TVPS vacant, unable to be forced to clear and power supply OK".		Basic TDS TC
Eu.TDS.3550	Info	TDS SD 2.2.2.4 **TDS_UC2.2.2: Handle Irregularities with track circuits** Alternative Scenario: Revoking a critical failure of a TVPS with track circuit (case 4) [TDS SD 2.2.2.4] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS works with track circuit. The relevant POM is in the state “power supply NOK” due to a failure of the power supply of the relevant TVPS. The relevant TVPS is in the state "TVPS disturbed and unable to be forced to clear with a technical reason and power supply NOK". The relevant TVPS is not occupied by a Wheel. **Interaction 2.2.2.4.A:** **1.** - The Subsystem - Train Detection System detects that the hardware of the TVPS is adjusted by Maintainer. **2.** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status depends on the power supply of the relevant TVPS. The status includes the information that the TVPS is in the state "TVPS occupied, unable to be forced to clear and power supply NOK". **Postcondition:** The relevant TVPS is in the state "TVPS occupied, unable to be forced to clear and power supply NOK" due to a failure of the power supply of the relevant TVPS.		Basic TDS TC

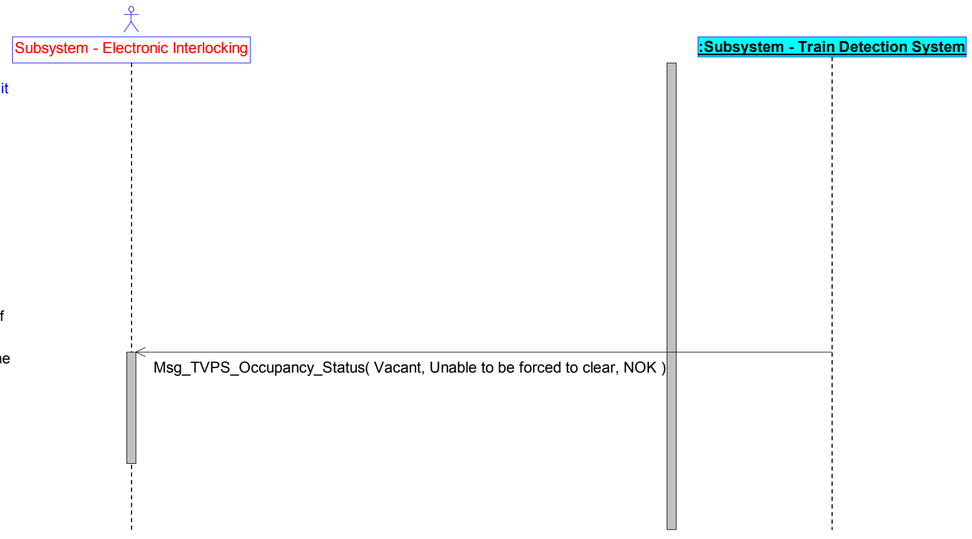




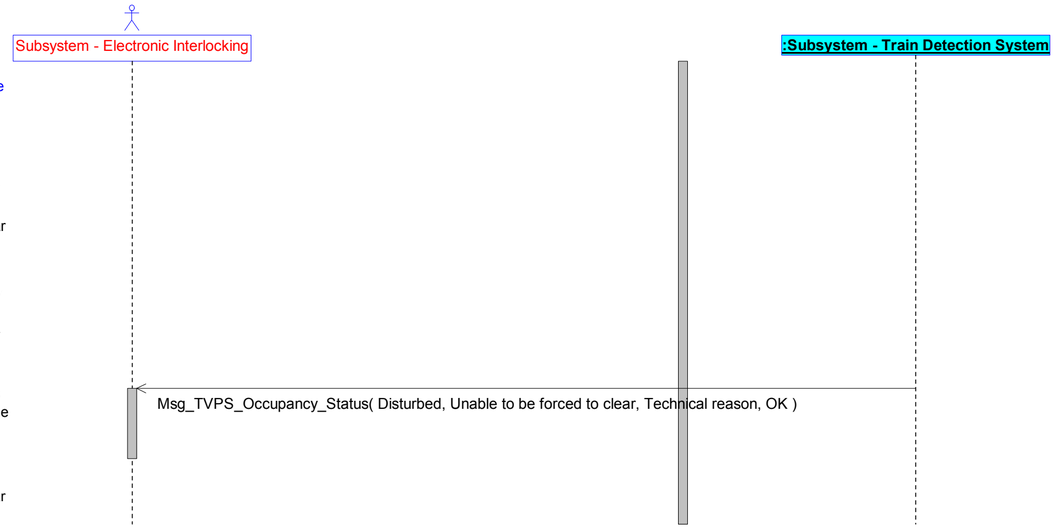
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.3523	Info	TDS SD 2.2.2.5 **TDS_UC2.2.2: Handle Irregularities with track circuits** Alternative Scenario: Handle and report of failure of a TVPS with track circuit (case 1) [TDS SD 2.2.2.5] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS works with track circuit. The relevant POM is in the state “power supply OK”. The relevant TVPS is in the state "TVPS vacant, unable to be forced to clear and power supply OK". **Interaction 2.2.2.5.A:** **1.** - The Subsystem - Train Detection System recognises a failure of a TVPS, e.g. a hardware failure of the components of the Subsystem - Train Detection System. **2.** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS disturbed and unable to be forced to clear with a technical reason and power supply OK". **Postcondition:** The relevant TVPS is in the state "TVPS disturbed and unable to be forced to clear with a technical reason and power supply OK". The Subsystem - Train Detection System knows that the reason for the disturbance of the relevant TVPS is a failure			Basic TDS TC
Eu.TDS.4208	Info	TDS SD 2.2.2.6 **TDS_UC2.2.2: Handle Irregularities with track circuits** Alternative Scenario: Handle and report of failure of a TVPS with track circuit (case 2) [TDS SD 2.2.2.6] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS works with track circuit. The relevant POM is in the state “power supply NOK” due to a failure of the POM. The relevant TVPS is in the state "TVPS vacant, unable to be forced to clear and power supply NOK". **Interaction 2.2.2.6.A:** **1.** - The Subsystem - Train Detection System recognises a failure of a TVPS, e.g. a hardware failure of the components of the Subsystem - Train Detection System. **2.** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS disturbed and unable to be forced to clear with a technical reason and power supply NOK". **Postcondition:** The relevant TVPS is in the state "TVPS disturbed and unable to be forced to clear with a technical reason and power supply NOK". The Subsystem - Train Detection System knows that the reason for the disturbance of the relevant TVPS is a failure			Basic TDS TC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.3532	Info	TDS SD 2.2.2.7 **TDS_UC2.2.2: Handle Irregularities with track circuits** Alternative Scenario: Handle and report of failure of a TVPS with track circuit (case 3) [TDS SD 2.2.2.7] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS works with track circuit. The relevant POM is in the state “power supply OK”. The relevant TVPS is in the state "TVPS occupied, unable to be forced to clear and power supply OK". **Interaction 2.2.2.7.A:** **1.** - The Subsystem - Train Detection System recognises a critical failure of a TVPS, e.g. a hardware failure of the components of the Subsystem - Train Detection System. **2.** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS disturbed and unable to be forced to clear with a technical reason and power supply OK". **Postcondition:** The relevant TVPS is in the state "TVPS disturbed and unable to be forced to clear with a technical reason and power supply OK". The Subsystem - Train Detection System knows that the reason for the disturbance of the relevant TVPS is a failure			Basic TDS TC
Eu.TDS.4217	Info	TDS SD 2.2.2.8 **TDS_UC2.2.2: Handle Irregularities with track circuits** Alternative Scenario: Handle and report of failure of a TVPS with track circuit (case 4) [TDS SD 2.2.2.8] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS works with track circuit. The relevant POM is in the state “power supply NOK” due to a failure of the power supply of the TVPS or a failure of the POM. The relevant TVPS is in the state "TVPS occupied, unable to be forced to clear and power supply NOK". **Interaction 2.2.2.8.A:** **1.** - The Subsystem - Train Detection System recognises a critical failure of a TVPS, e.g. a hardware failure of the components of the Subsystem - Train Detection System. **2.** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS disturbed and unable to be forced to clear with a technical reason and power supply NOK". **Postcondition:** The relevant TVPS is in the state "TVPS disturbed and unable to be forced to clear with a technical reason and power supply NOK". The Subsystem - Train Detection System knows that the reason for the disturbance of the relevant TVPS is a failure			Basic TDS TC

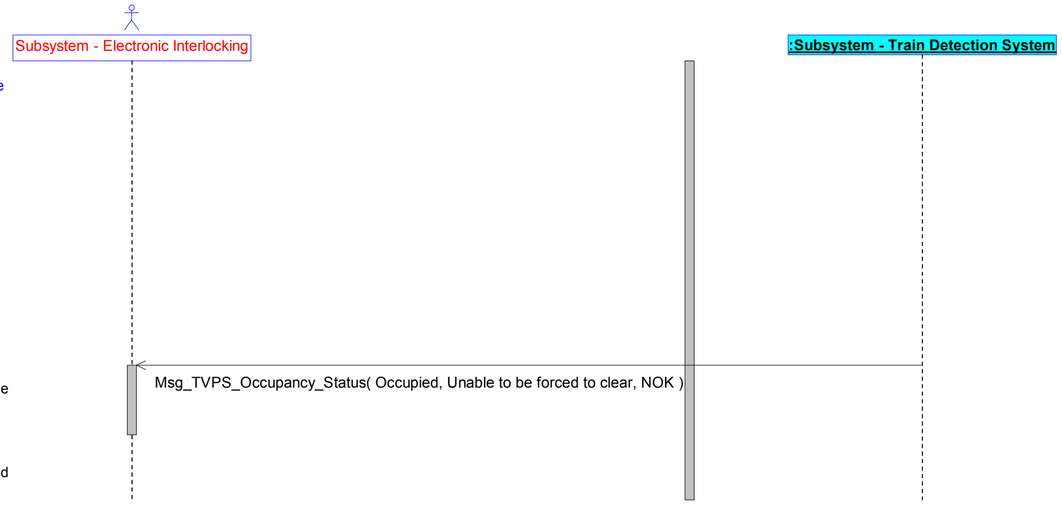
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.4226	Info	TDS SD 2.2.2.9 **TDS_UC2.2.2: Handle Irregularities with track circuits** Alternative Scenario: Handle and report of failure of a TVPS with track circuit (case 5) [TDS SD 2.2.2.9] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS works with track circuit. The relevant POM is in the state “power supply OK”. The relevant TVPS is in the state “TVPS disturbed and unable to be forced to clear with a technical reason and power supply OK". **Interaction 2.2.2.9.A:** **1.** The POM reports "power supply NOK", due to a failure of the power supply of the TVPS or a failure of the POM. **2.** The Subsystem - Train Detection System recognizes a failure of the power supply of the TVPS or a failure of the POM reporting "power supply NOK". **3.** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS disturbed and unable to be forced to clear with a technical reason and power supply NOK". **Postcondition:** The relevant TVPS is in the state "TVPS disturbed and unable to be forced to clear with a technical reason and power supply NOK" due to a failure of the power supply of the TVPS or a failure of the POM.		Basic TDS TC
Eu.TDS.4169	Info	TDS SD 2.2.2.10 **TDS_UC2.2.2: Handle Irregularities with track circuits** Alternative Scenario: Revoking a critical failure of a TVPS with track circuit (case 5) [TDS SD 2.2.2.10] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS works with track circuit. The relevant POM is in the state “power supply NOK” due to a failure of the POM. The relevant TVPS is in the state TVPS disturbed and unable to be forced to clear with a technical reason and power supply NOK". The relevant TVPS is not occupied by a Wheel. **Interaction 2.2.2.10.A:** **1.** - The Subsystem - Train Detection System detects that the hardware of the TVPS is adjusted by Maintainer. **2.** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status depends on the power supply of the relevant TVPS. In this case the TVPS is not occupied by wheels and the power supply has not failed. The status includes the information that the TVPS is in the state "TVPS vacant, unable to be forced to clear and power supply NOK". **Postcondition:** The relevant TVPS is in the state "TVPS vacant, unable to be forced to clear and power supply NOK".		Basic TDS TC

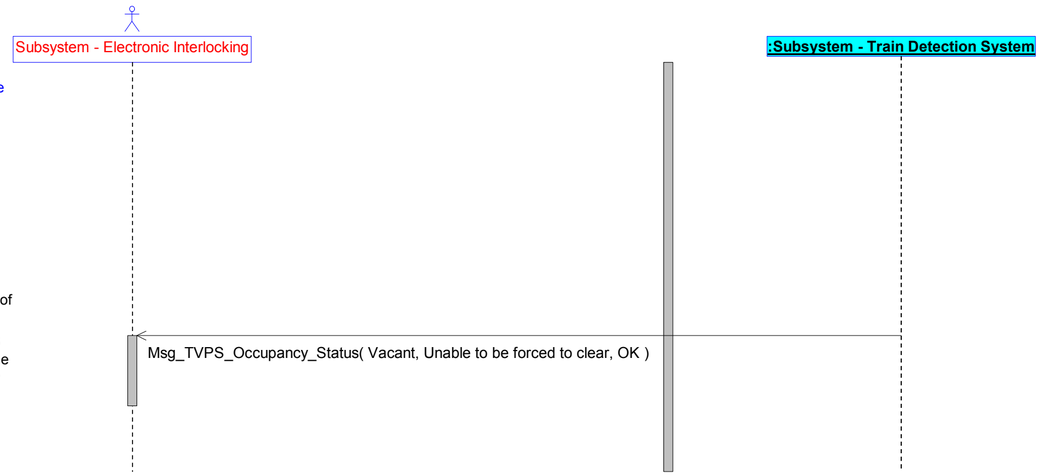


ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.4236	Info	TDS SD 2.2.2.11 **TDS_UC2.2.2: Handle Irregularities with track circuits** Alternative Scenario: Handle and report of failure of a TVPS with track circuit (case 6) [TDS SD 2.2.2.11] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS works with track circuit. The relevant POM is in the state “power supply NOK” due to a failure of the power supply of the TVPS or a failure of the POM. The relevant TVPS is in the state "TVPS disturbed and unable to be forced to clear with a technical reason and power supply NOK". **Interaction 2.2.2.11.A:** **1.** The POM reports “power supply OK”, due to the restoration of the power supply or the restoration of the POM. **2.** The Subsystem - Train Detection System recognizes a restoration of the power supply of a TVPS or a restoration of the POM due to the relevant POM reporting "power supply OK". **3.** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state TVPS disturbed and unable to be forced to clear with a technical reason and power supply OK". **Postcondition:** The relevant TVPS is in the state "TVPS disturbed and unable to be forced to clear with a technical reason and power supply OK".		Basic TDS TC
Eu.TDS.4246	Info	TDS SD 2.2.2.12 **TDS_UC2.2.2: Handle Irregularities with track circuits** Alternative Scenario: Handle and report of failure of a TVPS with track circuit (case 7) [TDS SD 2.2.2.12] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS works with track circuit. The relevant POM is in the state “power supply OK”. The relevant TVPS is in the state "TVPS vacant, unable to be forced to clear and power supply OK". **Interaction 2.2.2.12.A:** **1.** The relevant POM reports “power supply NOK”, due to the failure of the POM. **2.** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS vacant, unable to be forced to clear and power supply NOK". **Postcondition:** The relevant TVPS is in the state "TVPS vacant, unable to be forced to clear and power supply NOK" due to the failure of the POM.		Basic TDS TC

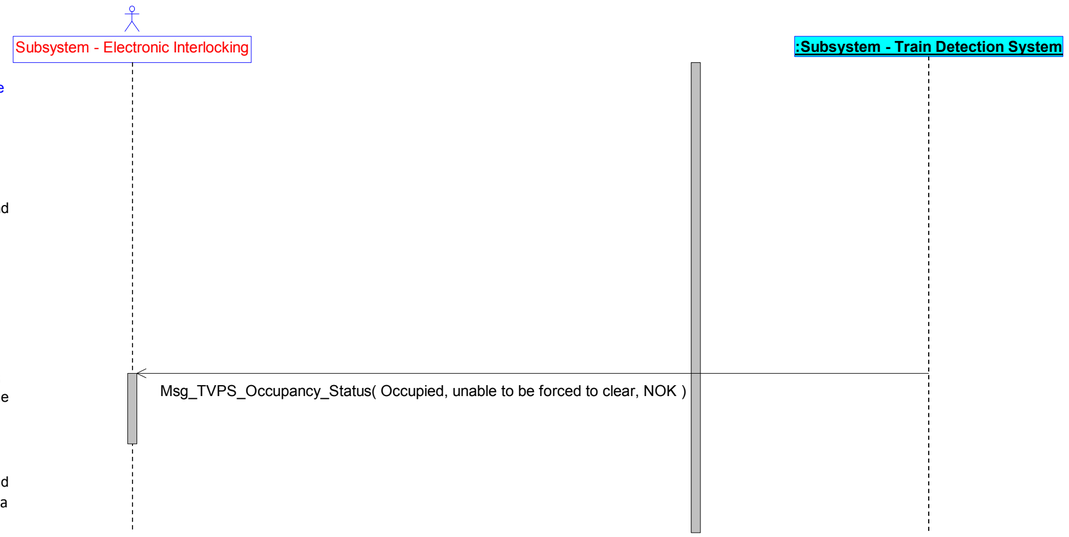


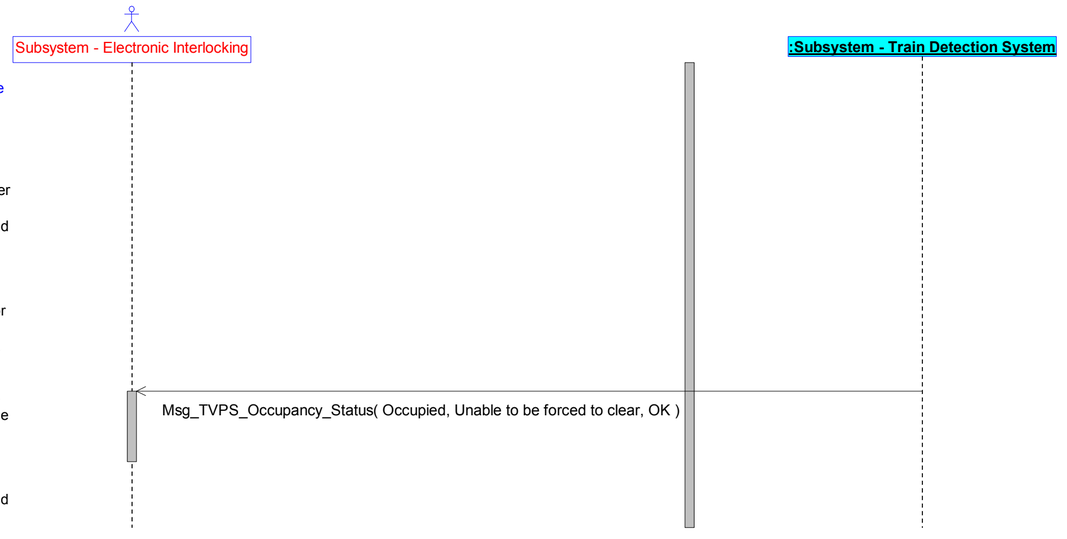
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.4255	Info	TDS SD 2.2.2.13 **TDS_UC2.2.2: Handle Irregularities with track circuits** Alternative Scenario: Handle and report of failure of a TVPS with track circuit (case 8) [TDS SD 2.2.2.13] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS works with track circuit. The relevant POM is in the state “power supply OK”. The relevant TVPS is in the state "TVPS vacant, unable to be forced to clear and power supply OK". **Interaction 2.2.2.13.A:** **1.** The relevant POM reports “power supply NOK”, due to the failure of the power supply of the relevant TVPS. **2.** The Subsystem - Train Detection System recognizes a failure of the power supply of a TVPS due to the combination of the relevant POM reporting power supply NOK and the relevant TVPS reports occupied. **3.** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS occupied, unable to be forced to clear and power supply NOK". **Postcondition:** The relevant TVPS is in the state "TVPS occupied, unable to be forced to clear and power supply NOK".		Basic TDS TC
Eu.TDS.4265	Info	TDS SD 2.2.2.14 **TDS_UC2.2.2: Handle Irregularities with track circuits** Alternative Scenario: Handle and report of failure of a TVPS with track circuit (case 9) [TDS SD 2.2.2.14] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS works with track circuit. The relevant POM is in the state “power supply NOK” due to a failure of the POM. The relevant TVPS is in the state "TVPS vacant, unable to be forced to clear and power supply NOK". **Interaction 2.2.2.14.A:** **1.** The relevant POM reports "power supply OK", due to a restoration of the POM. **2.** The Subsystem - Train Detection System recognizes a restoration of the POM of a TVPS due to the relevant POM reporting power supply OK. **3.** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS vacant, unable to be forced to clear and power supply OK". **Postcondition:** The relevant TVPS is in the state "TVPS vacant, unable to be forced to clear and power supply OK".		Basic TDS TC



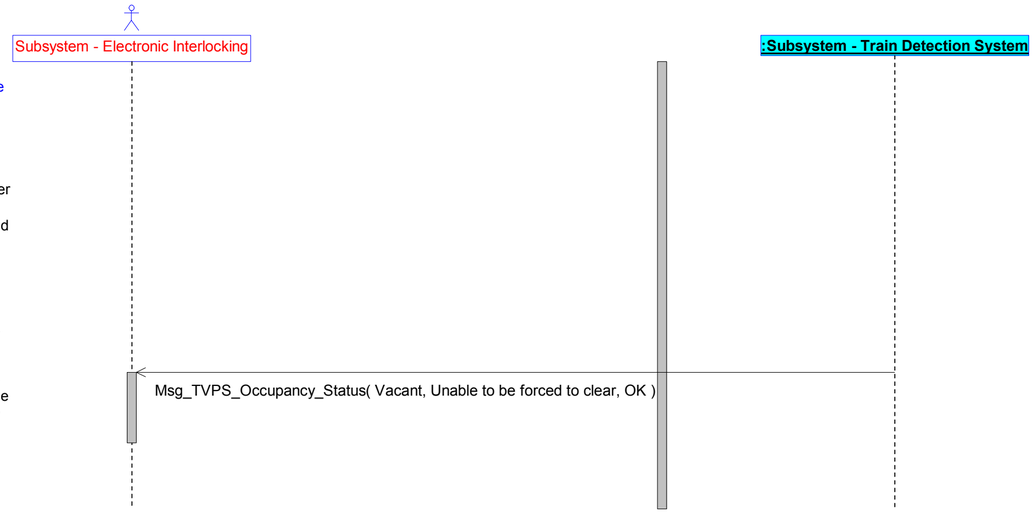


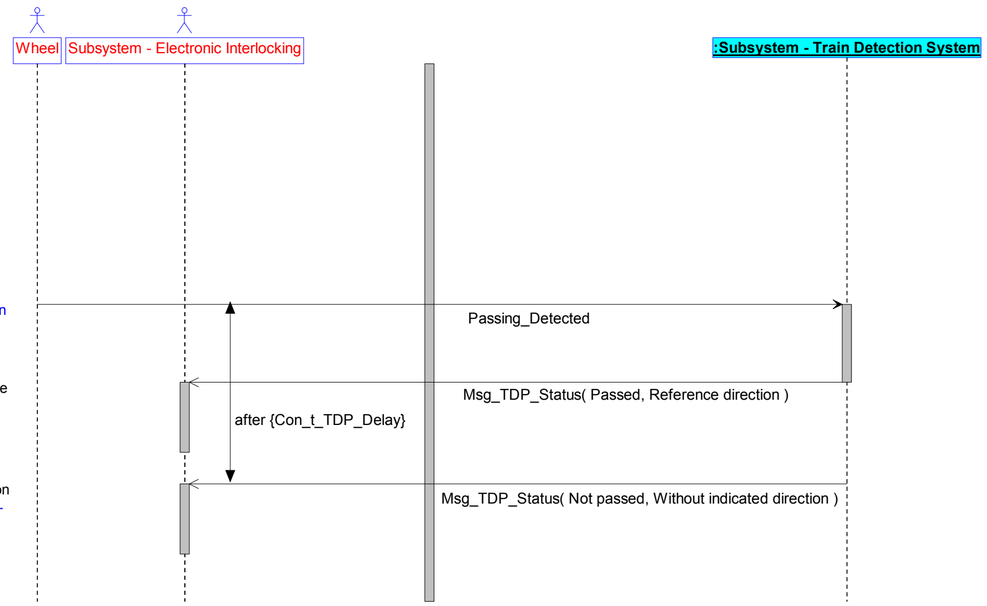
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.4178	Info	TDS SD 2.2.2.15 **TDS_UC2.2.2: Handle Irregularities with track circuits** Alternative Scenario: Handle and report of failure of a TVPS with track circuit (case 10) [TDS SD 2.2.2.15] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS works with track circuit. The relevant POM is in the state “power supply OK”. The relevant TVPS is in the state "TVPS occupied, unable to be forced to clear and power supply OK". **Interaction 2.2.2.15.A:** **1.** The POM reports “power supply NOK”, due to the failure of the power supply of the relevant TVPS or a failure of the POM. **2.** The Subsystem - Train Detection System recognizes a failure of the power supply of a TVPS due to the or a failure of the POM due to the relevant POM reporting power supply NOK. **3.** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS occupied, unable to be forced to clear and power supply NOK". **Postcondition:** The relevant TVPS is in the state "TVPS occupied, unable to be forced to clear and power supply NOK" due to the failure of the power supply of the relevant TVPS or a failure of the POM.		Basic TDS TC
Eu.TDS.4188	Info	TDS SD 2.2.2.16 **TDS_UC2.2.2: Handle Irregularities with track circuits** Alternative Scenario: Handle and report of failure of a TVPS with track circuit (case 11) [TDS SD 2.2.2.16] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS works with track circuit. The relevant POM is in the state “power supply NOK” due to the failure of the power supply of the relevant TVPS or a failure of the POM. The relevant TVPS is in the state "TVPS occupied, unable to be forced to clear and power supply NOK". The relevant TVPS is occupied by at least one Wheel. **Interaction 2.2.2.16.A:** **1.** The POM reports “power supply OK”, due to a restoration of the power supply or due to a restoration of the POM. **2.** The Subsystem - Train Detection System recognizes a restoration of the power supply of a TVPS due to the relevant POM reporting power supply OK. **3.** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS occupied, unable to be forced to clear and power supply OK". **Postcondition:** The relevant TVPS is in the state "TVPS occupied, unable to be forced to clear and power supply OK".		Basic TDS TC



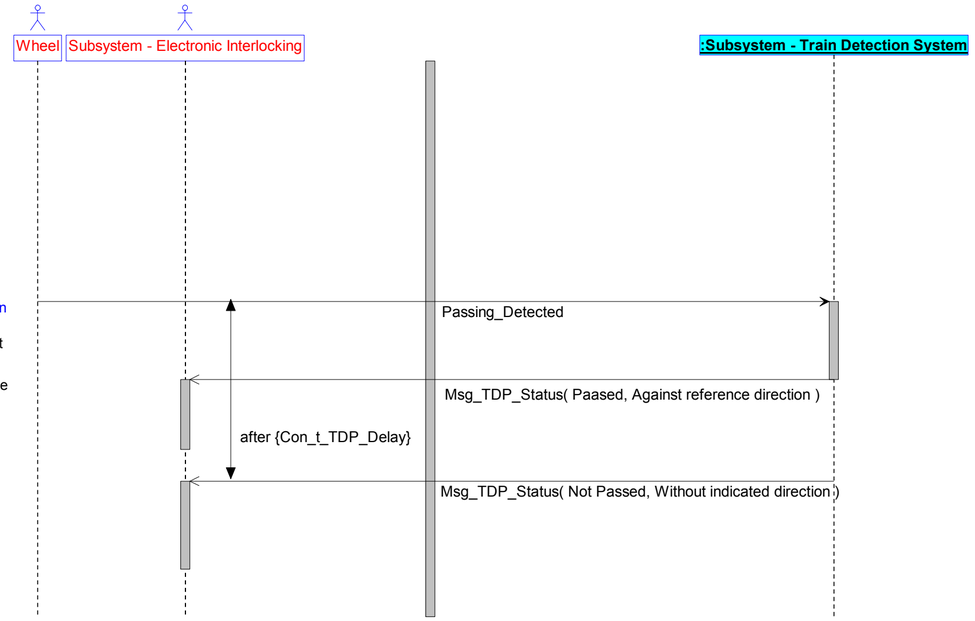


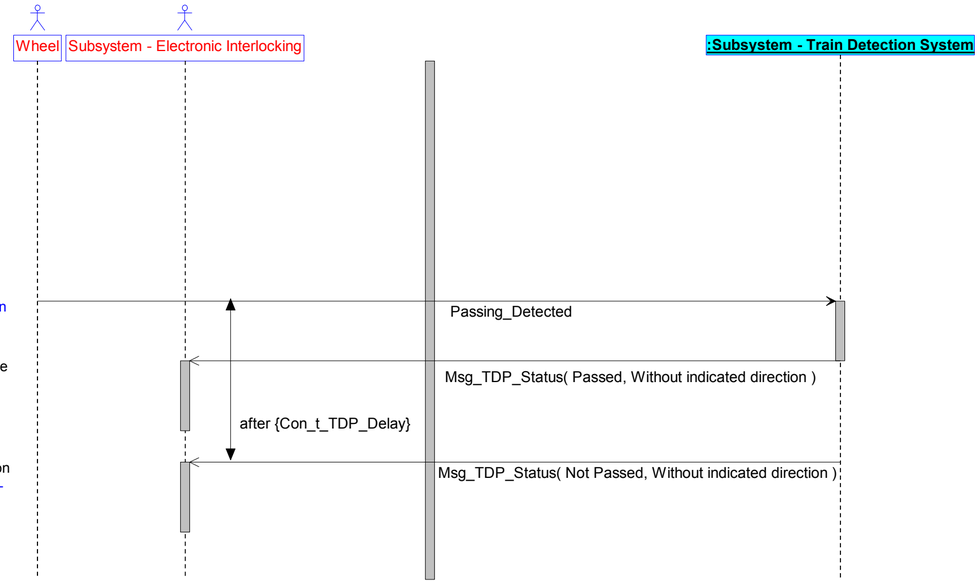
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.4198	Info	TDS SD 2.2.2.17 **TDS_UC2.2.2: Handle Irregularities with track circuits** Alternative Scenario: Handle and report of failure of a TVPS with track circuit (case 12) [TDS SD 2.2.2.17] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS works with track circuit. The relevant POM is in the state “power supply NOK” due to the failure of the power supply of the relevant TVPS. The relevant TVPS is in the state "TVPS occupied, unable to be forced to clear and power supply NOK". The relevant TVPS is not occupied by a Wheel. **Interaction 2.2.2.17.A:** **1.** The POM reports “power supply OK”, due to a restoration of the power supply. **2.** The Subsystem - Train Detection System recognizes a restoration of the power supply of a TVPS due to the relevant POM reporting power supply OK. **3.** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS vacant, unable to be forced to clear and power supply OK". **Postcondition:** The relevant TVPS is in the state "TVPS vacant, unable to be forced to clear and power supply OK".		Basic TDS TC
Eu.TDS.6862	Info	TDS_UC2.3:Train Detection Points	The Subsystem-UseCase "TDS_UC2.3:Train Detection Points" defines the behaviour of the Subsystem - Train Detection System which includes TDP.	Basic TDS TDP
Eu.TDS.6866	Info	TDS SD 2.3.1 **TDS_UC2.3:Train Detection Points** Alternative Scenario: Detecting a Train running in reference direction [TDS SD 2.3.1] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TDP is in the state "TDP not passed" or "TDP disturbed", the Subsystem - Train Detection System knows via its engineering data that the reason for the disturbance of the relevant TDP is operational. The relevant TDP is configured to detect direction of passing. **Interaction 2.3.1.A:** **1.** - One Wheel is passing a TDP of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is in reference direction. **2.** The Subsystem - Train Detection System reports the current state of the TDP to Subsystem - Electronic Interlocking. The status includes the information that the TDP is in the state "TDP passed in reference direction". **Interaction 2.3.1.B:** **3.** - The Subsystem - Train Detection System reports, after expiration of the delay of the TDP, the current state of the TDP to Subsystem - Electronic Interlocking. The status includes the information that the TDP is in the state "TDP not passed without indicated direction". **Postcondition:** ---		Basic TDS TDP

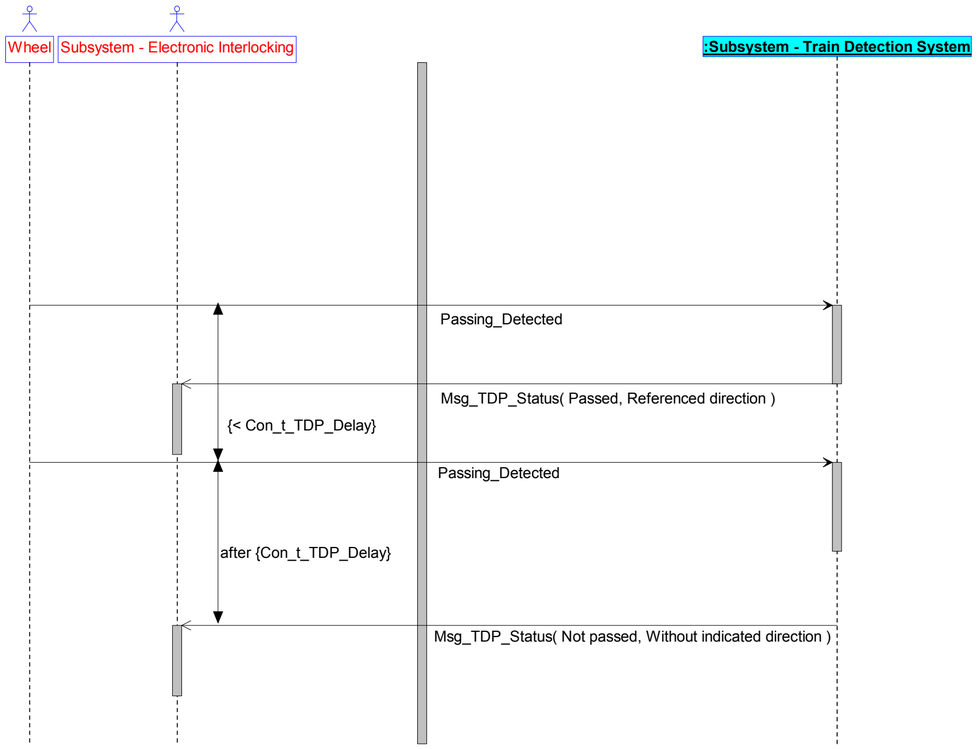


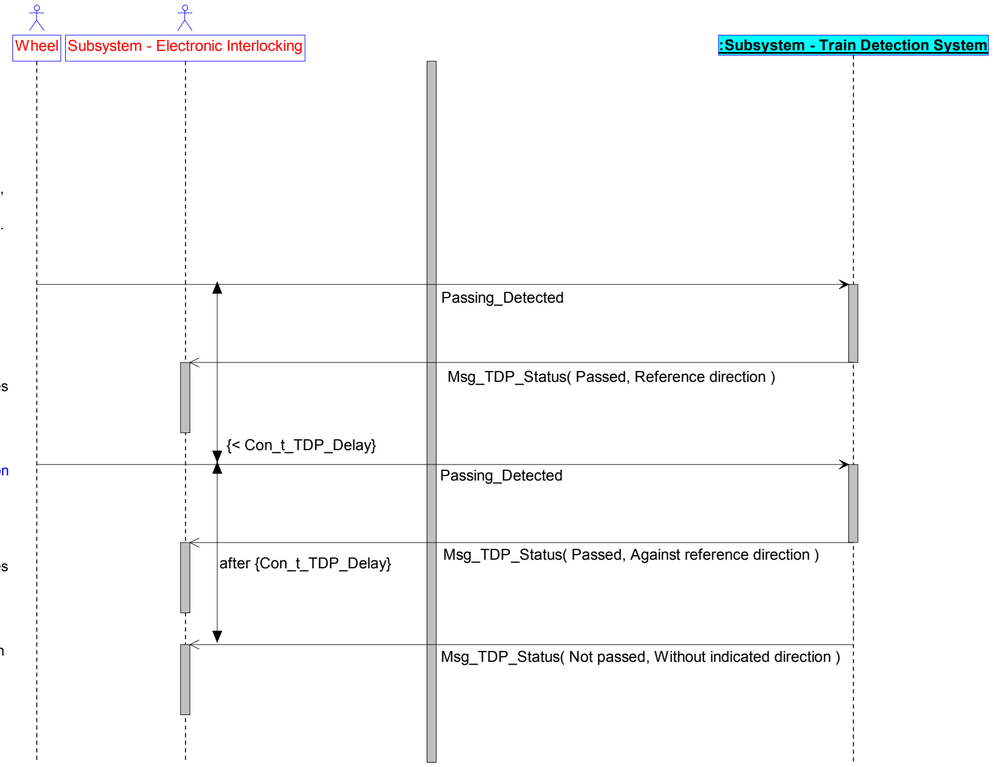
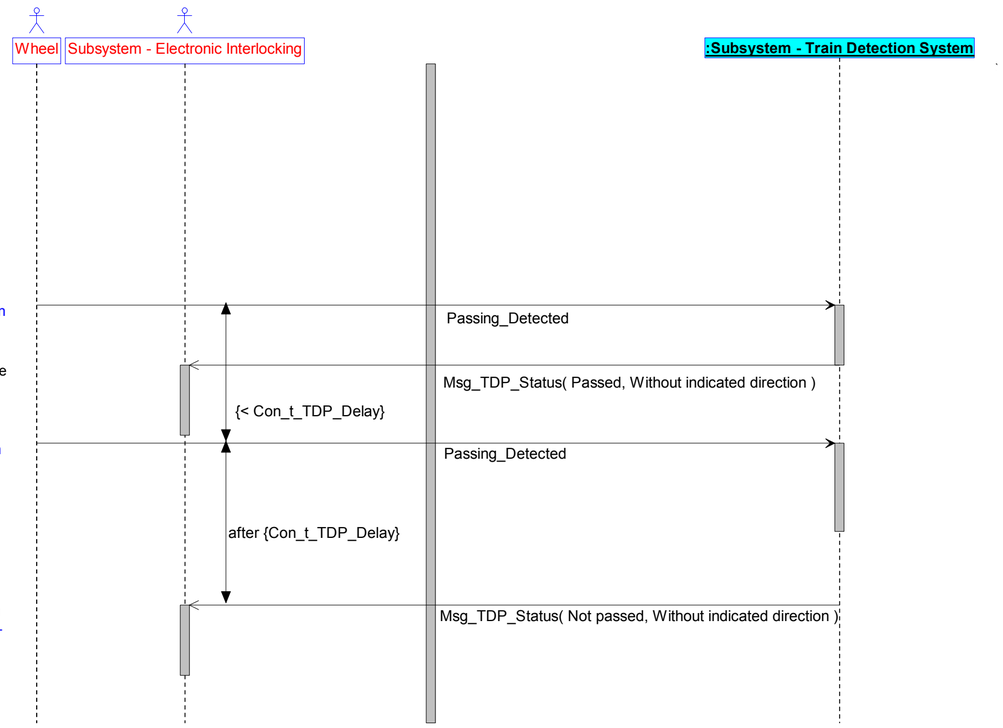


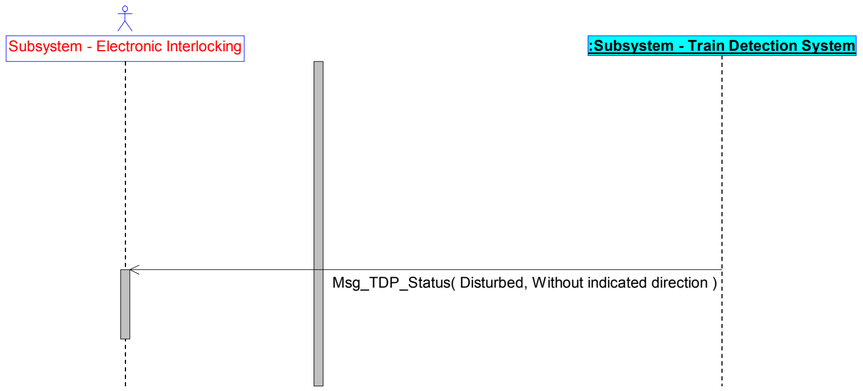
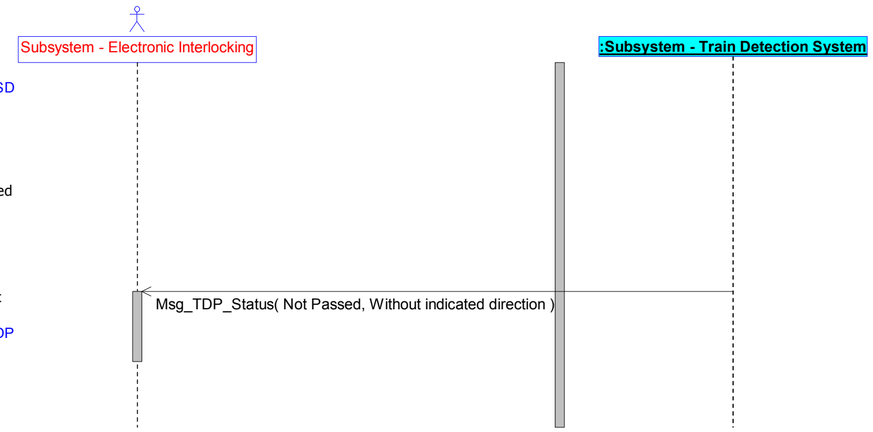
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6865	Info	TDS SD 2.3.2 **TDS_UC2.3:Train Detection Points** Alternative Scenario: Detecting a Train running against reference direction [TDS SD 2.3.2] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TDP is in the state "TDP not passed" or "TDP disturbed", the Subsystem - Train Detection System knows via its engineering data that the reason for the disturbance of the relevant TDP is operational. The relevant TDP is configured to detect direction of passing. **Interaction 2.3.2.A:** **1.** - One Wheel is passing a TDP of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is against the reference direction. **2.** The Subsystem - Train Detection System reports the current state of the TDP to Subsystem - Electronic Interlocking. The status includes the information that the TDP is in the state "TDP passed against the reference direction". **Interaction 2.3.2.B:** **3.** - The Subsystem - Train Detection System reports, after expiration of the delay of the TDP, the current state of the TDP to Subsystem - Electronic Interlocking. The status includes the information that the TDP is in the state "TDP not passed without indicated direction". **Postcondition:** ---		Basic TDS TDP
Eu.TDS.6867	Info	TDS SD 2.3.3 **TDS_UC2.3:Train Detection Points** Alternative Scenario: Detecting a Train running without indicated direction [TDS SD 2.3.3] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TDP is in the state "TDP not passed" or "TDP disturbed", the Subsystem - Train Detection System knows via its engineering data that the reason for the disturbance of the relevant TDP is operational. The relevant TDP is configured not to detect direction of passing. **Interaction 2.3.3.A:** **1.** - One Wheel is passing a TDP of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises that the passing Wheel is without indicated direction. **2.** The Subsystem - Train Detection System reports the current state of the TDP to Subsystem - Electronic Interlocking. The status includes the information that the TDP is in the state "TDP passed without indicated direction". **Interaction 2.3.3.B:** **3.** - The Subsystem - Train Detection System reports, after expiration of the delay of the TDP, the current state of the TDP to Subsystem - Electronic Interlocking. The status includes the information that the TDP is in the state "TDP not passed without indicated direction". **Postcondition:** ---		Basic TDS TDP



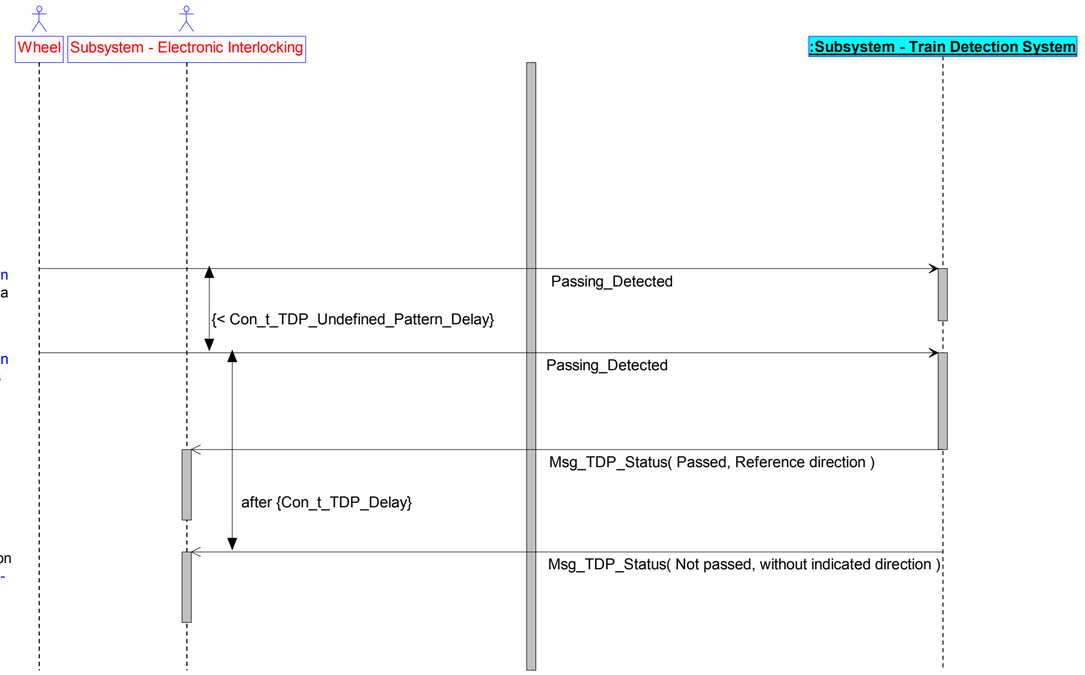


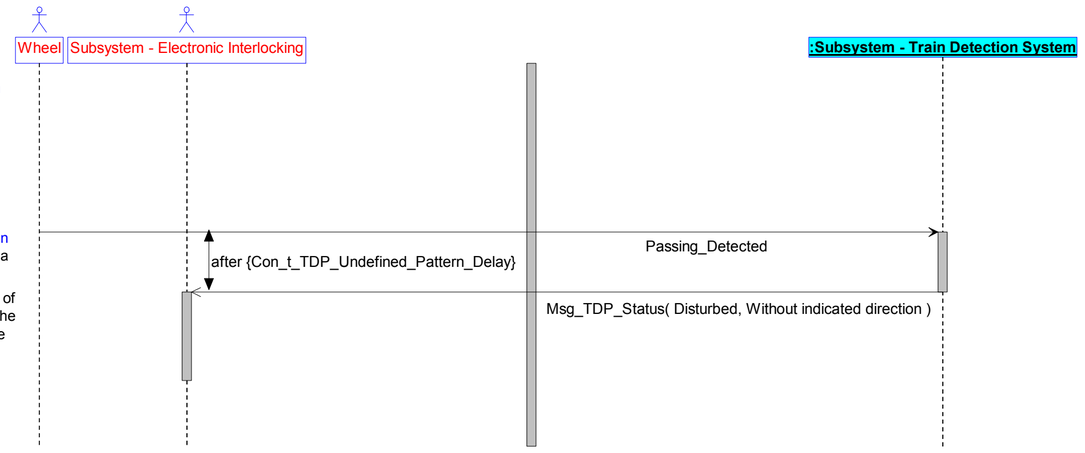
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6863	Info	TDS SD 2.3.4 **TDS_UC2.3:Train Detection Points** Alternative Scenario: Detecting a further passing in reference direction [TDS SD 2.3.4] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TDP is in the state "TDP not passed" or "TDP disturbed", the Subsystem - Train Detection System knows via its engineering data that the reason for the disturbance of the relevant TDP is operational. The relevant TDP is configured to detect direction of passing. **Interaction 2.3.4.A:** **1.** - One Wheel is passing a TDP of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is in reference direction. **2.** The Subsystem - Train Detection System reports the current state of the TDP to Subsystem - Electronic Interlocking. The status includes the information, that the TDP is in the state "TDP passed in reference direction". **3.** - One Wheel is passing a TDP of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is also in reference direction or a sensor of a TDP received an uninterpretable or undefined pattern. **4.** - The Subsystem - Train Detection System recognises, that the conditions for sending the current state of the TDP are not fulfilled. **Interaction 2.3.4.B:** **5.** The Subsystem - Train Detection System reports, after expiration of the delay of the TDP, the current state of the TDP to Subsystem - Electronic Interlocking. The status includes the information that the TDP is in the state "TDP not passed without indicated direction". **Postcondition:** ---  	Note: The same behaviour is valid for a further passing against reference direction.	Basic TDS TDP

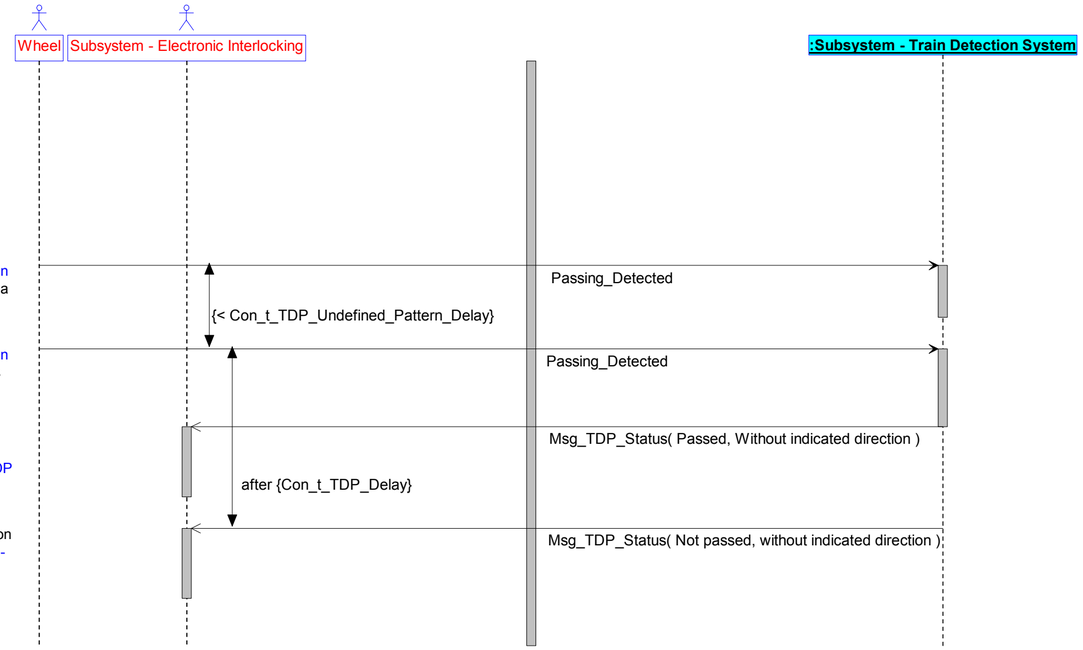
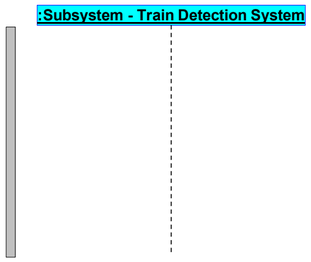
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6872	Info	TDS SD 2.3.5 **TDS_UC2.3:Train Detection Points** Alternative Scenario: Sudden detection of a passing Wheel against reference direction [TDS SD 2.3.5] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TDP is in the state "TDP not passed" or "TDP disturbed", the Subsystem - Train Detection System knows via its engineering data that the reason for disturbance of the relevant TDP is operational. The relevant TDP is configured to detect direction of passing. **Interaction 2.3.5.A:** **1.** - One Wheel is passing a TDP of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is in reference direction. **2.** The Subsystem - Train Detection System reports the current state of the TDP to Subsystem - Electronic Interlocking. The status includes the information, that the TDP is in the state "TDP passed in reference direction". **Interaction 2.3.5.B:** **3.** - One Wheel is passing the TDP of the Subsystem - Train Detection System before expiration of the delay of the TDP. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is against the reference direction. **4.** The Subsystem - Train Detection System reports the current state of the TDP to Subsystem - Electronic Interlocking. The status includes the information, that the TDP is in the state "TDP passed against the reference direction". **Interaction 2.3.5.C:** **5.** - The Subsystem - Train Detection System reports, after expiration of the delay of the TDP, the current state of the TDP to Subsystem - Electronic Interlocking. The status includes the information that the TDP is in the state "TDP not passed without indicated direction". **Postcondition:** ---  	Note: The same behaviour is valid for the sudden detection of a passing wheel in reference direction.	Basic TDS TDP
Eu.TDS.6864	Info	TDS SD 2.3.6 **TDS_UC2.3:Train Detection Points** Alternative Scenario: Detecting a further passing without indicated direction [TDS SD 2.3.6] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TDP is in the state "TDP not passed" or "TDP disturbed", the Subsystem - Train Detection System knows via its engineering data that the reason for the disturbance of the relevant TDP is operational. The relevant TDP is configured not to detect direction of passing. **Interaction 2.3.6.A:** **1.** - One Wheel is passing a TDP of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises that the passing Wheel is without indicated direction. **2.** The Subsystem - Train Detection System reports the current state of the TDP to Subsystem - Electronic Interlocking. The status includes the information, that the TDP is in the state "TDP passed without indicated direction". **3.** - A Wheel is passing the TDP of the Subsystem - Train Detection System before expiration of the delay of the TDP. The Subsystem - Train Detection System recognises that the passing Wheel is also without indicated direction or a sensor of a TDP received an uninterpretable or undefined pattern. **4.** - The Subsystem - Train Detection System recognises, that the conditions for sending the current state of the TDP are not fulfilled. **Interaction 2.3.6.B:** **5.** The Subsystem - Train Detection System reports, after expiration of the delay of the TDP, the current state of the TDP to Subsystem - Electronic Interlocking. The status includes the information that the TDP is in the state "TDP not passed without indicated direction". **Postcondition:** ---  		Basic TDS TDP

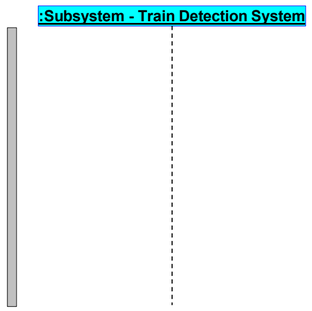
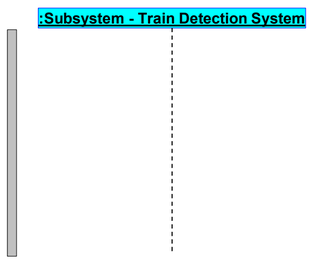
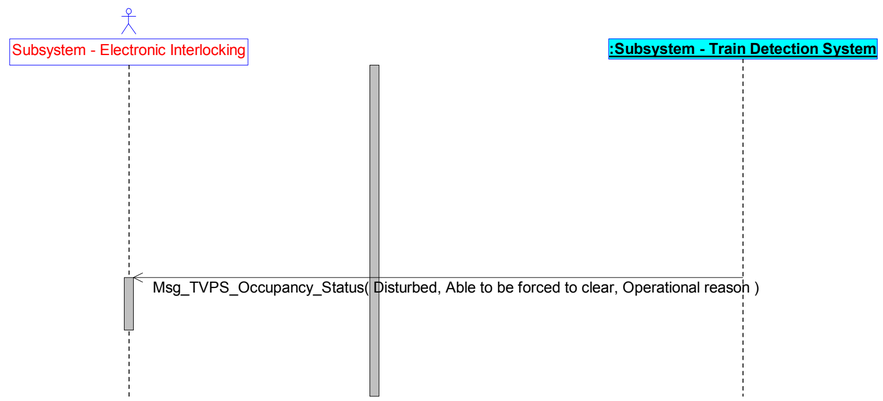
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6870	Info	TDS SD 2.3.7 **TDS_UC2.3:Train Detection Points** Alternative Scenario: Handle and report of critical failure of a TDP [TDS SD 2.3.7] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. **Interaction 2.3.7.A:** **1.** The Subsystem - Train Detection System recognises a critical failure of a TDP, e.g. an interface disturbance between the components of the TDP or a hardware failure of the components of the Subsystem - Train Detection System. **2.** The Subsystem - Train Detection System reports the current state of the TDP to Subsystem - Electronic Interlocking. The status includes the information, that the TDP is in the state "TDP disturbed without indicated direction". **Postcondition:** The relevant TDP is in the state "TDP disturbed without indicated direction".			Basic TDS TDP
Eu.TDS.6871	Info	TDS SD 2.3.8 **TDS_UC2.3:Train Detection Points** Alternative Scenario: Revoking a critical failure of a TDP [TDS SD 2.3.8] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TDP is in the state "TDP disturbed without indicated direction". **Interaction 2.3.8.A:** **1.** - The Subsystem - Train Detection System detects that the critical failure is revoked. **2.** The Subsystem - Train Detection System reports the current state of the TDP to Subsystem - Electronic Interlocking. The status includes the information, that the TDP is in the state "TDP not passed without indicated direction". **Postcondition:** The relevant TDP is in the state "TDP not passed without indicated direction".			Basic TDS TDP

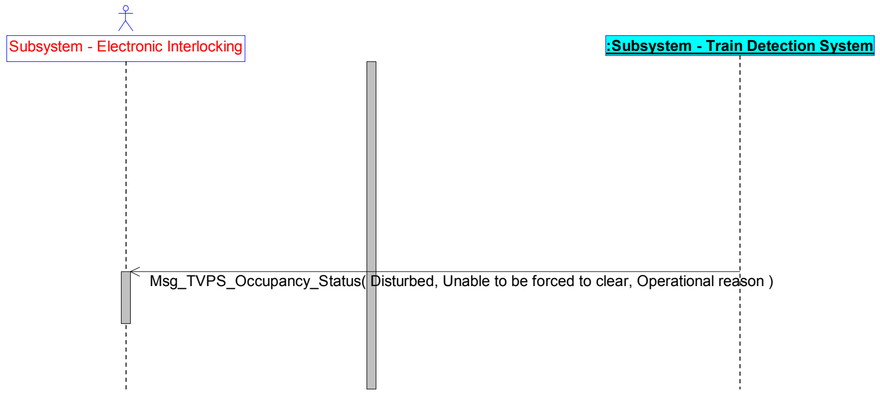
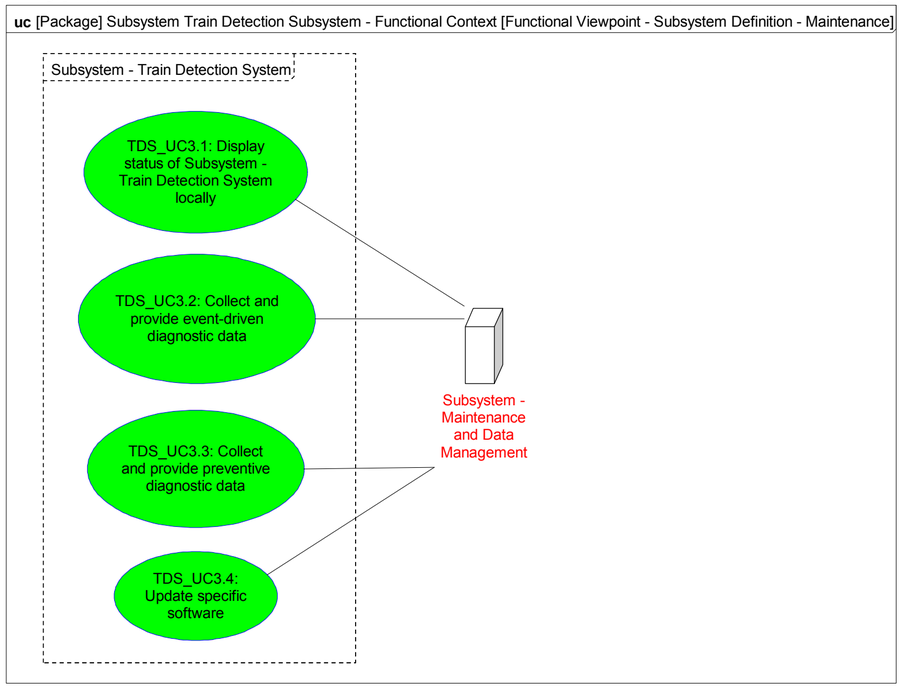
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6869	Info	TDS SD 2.3.9 **TDS_UC2.3:Train Detection Points** Alternative Scenario: Handle and report an uninterpretable or undefined pattern of a Detection Point, delay not expired (case 1) [TDS SD 2.3.9] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TDP is in the state "TDP not passed". The relevant TDP is configured to detect direction of passing. **Interaction 2.3.9.A:** **1.** - One Wheel is passing a TDP of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises that a sensor of a TDP received an uninterprettable or undefined pattern. **Interaction 2.3.9.B:** **2.** - One Wheel is passing a TDP of the Subsystem - Train Detection System before the information delay about an undefined pattern has expired. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is in reference direction. **3.** The Subsystem - Train Detection System reports the current state of the TDP to Subsystem - Electronic Interlocking. The status includes the information, that the TDP is in the state "TDP passed in reference direction". **Interaction 2.3.9.C:** **4. -** The Subsystem - Train Detection System reports, after expiration of the delay of the TDP, the current state of the TDP to Subsystem - Electronic Interlocking. The status includes the information that the TDP is in the state "TDP not passed without indicated direction". **Postcondition:** ---	Note: The same behaviour is valid for a passing against reference direction in step 2.	Basic TDS TDP
Eu.TDS.6868	Info	TDS SD 2.3.10 **TDS_UC2.3:Train Detection Points** Alternative Scenario: Handle an uninterpretable or undefined pattern of a Detection Point, delay expired [TDS SD 2.3.10] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TDP is in the state "TDP not passed". **Interaction 2.3.10.A:** **1.** - One Wheel is passing a TDP of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises that a sensor of a TDP received an uninterpretable or undefined pattern. **2.** The Subsystem - Train Detection System reports,after expiration of the delay for the undefined pattern information, the current state of the TDP to Subsystem - Electronic Interlocking. The status includes the information, that the TDP is in the state "TDP disturbed without indicated direction". **Postcondition:** The relevant TDP is in the state "TDP disturbed without indicated direction".		Basic TDS TDP





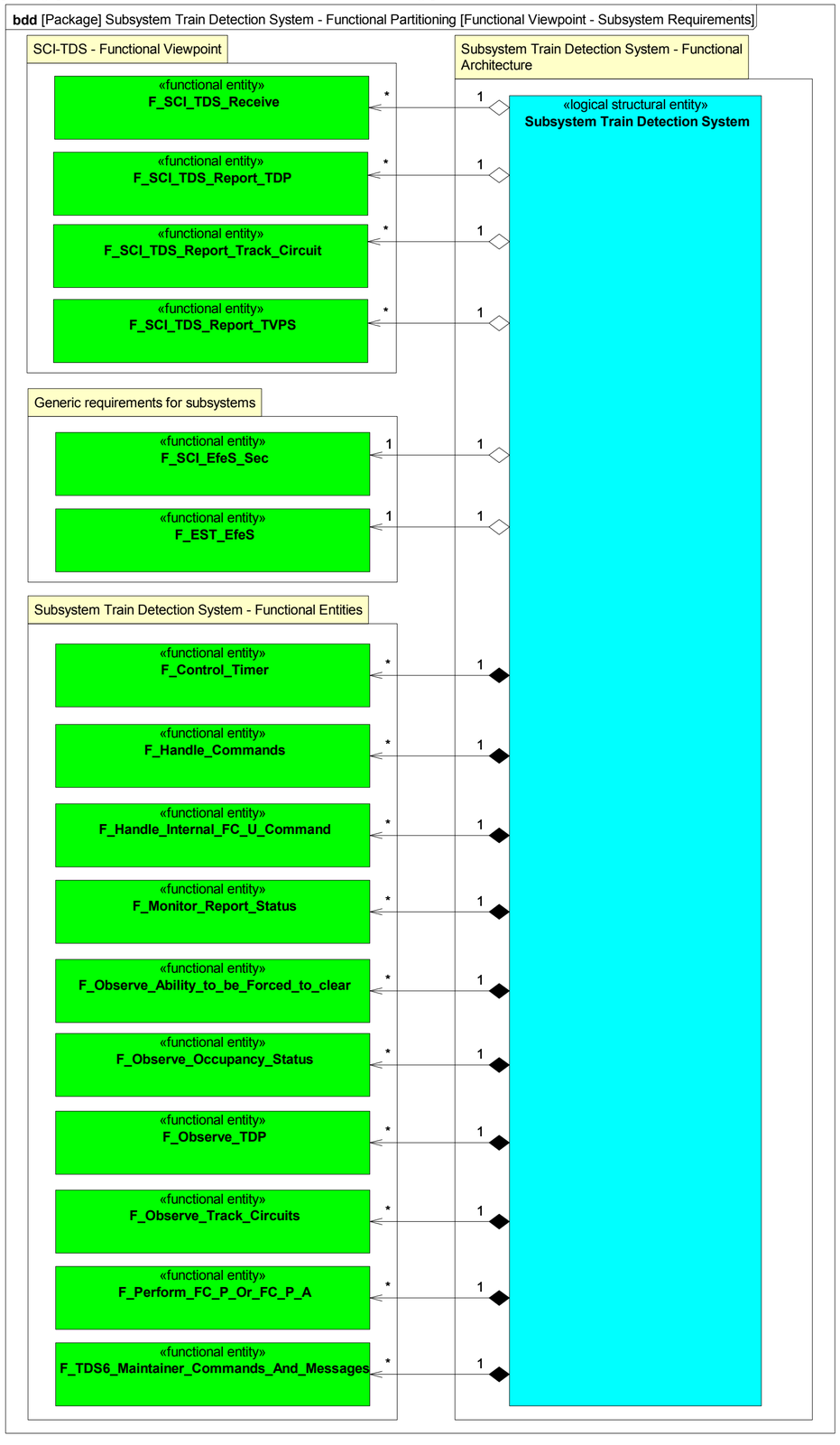
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.7124	Info	TDS SD 2.3.11 **TDS_UC2.3:Train Detection Points** Alternative Scenario: Handle and report an uninterpretable or undefined pattern of a Detection Point, delay not expired (case 2) [TDS SD 2.3.11] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TDP is in the state "TDP not passed". The relevant TDP is configured not to detect direction of passing. **Interaction 2.3.11.A:** **1.** - One Wheel is passing a TDP of the Subsystem - Train Detection System. The Subsystem - Train Detection System recognises that a sensor of a TDP received an uninterpretable or undefined pattern. **Interaction 2.3.11.B:** **2.** - One Wheel is passing a TDP of the Subsystem - Train Detection System before the information delay about an undefined pattern has expired. The Subsystem - Train Detection System recognises that the passing Wheel is without indicated direction. **3.** The Subsystem - Train Detection System reports the current state of the TDP to Subsystem - Electronic Interlocking. The status includes the information, that the TDP is in the state "TDP passed without indicated direction". **Interaction 2.3.11.C:** **4. -** The Subsystem - Train Detection System reports, after expiration of the delay of the TDP, the current state of the TDP to Subsystem - Electronic Interlocking. The status includes the information that the TDP is in the state "TDP not passed without indicated direction". **Postcondition:** ---  		Basic TDS TDP
Eu.TDS.6873	Info	TDS_UC2.4: Handle Irregularities	The Subsystem-UseCase "TDS_UC2.4: Handle Irregularities" defines the behaviour of the Subsystem - Train Detection System when an irregularity occurs.	Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.6874	Info	TDS SD 2.4.1 **TDS_UC2.4: Handle Irregularities** Alternative Scenario: Perform fallback operation [SubSTDS SD 2.4.1] **Precondition:** --- **Interaction 2.4.1.A:** **1.** - The Subsystem - Train Detection System enters the state FALLBACK_MODE. **Postcondition:** The Subsystem - Train Detection System is in the state FALLBACK_MODE.  		Basic TDS AC Basic TDS TDP Basic TDS TC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6876	Info	TDS SD 2.4.2 **TDS_UC2.4: Handle Irregularities**  Alternative Scenario: Handling of interrupted PDI connection [SubSTDS SD 2.4.2] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. **Interaction 2.4.2.A:** **1.** - The PDI connection has been terminated. **2.** The Subsystem - Train Detection System changes from the state OPERATIONAL to the state INITIALISING. All functionalities of Subsystem - Train Detection System must still be executable (e.g. the determination of the occupancy status of the TVPS). **Postcondition:** The Subsystem - Train Detection System is in the state INITIALISING. The PDI connection is terminated.		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.6877	Info	TDS SD 2.4.3 **TDS_UC2.4: Handle Irregularities**  Alternative Scenario: Reset occurs [SubSTDS SD 2.4.3] **Precondition:** The Subsystem - Train Detection System is in the state INITIALISING or OPERATIONAL or FALLBACK_MODE. **Interaction 2.4.3.A:** **1.** - A reset has occurred. **Postcondition:** The Subsystem - Train Detection System is in the state BOOTING.		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.6875	Info	TDS SD 2.4.4 **TDS_UC2.4: Handle Irregularities**  Alternative Scenario: Revoking a critical failure of a TVPS for Variant A [SubSTDS SD 2.4.4] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The Subsystem - Train Detection System is configured as Variant A. The relevant TVPS is in the state "TVPS disturbed and unable to be forced to clear with a technical reason". **Interaction 2.4.4.A:** **1.** - The Subsystem - Train Detection System detects that the hardware of the TVPS is adjusted by Maintainer. **2.** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS disturbed and able to be forced to clear with an operational reason". **Postcondition:** The relevant TVPS is in the state "TVPS disturbed and able to be forced to clear with an operational reason".		Basic TDS AC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.7029	Info	TDS SD 2.4.5 **TDS_UC2.4: Handle Irregularities** Alternative Scenario: Revoking a critical failure of a TVPS for Variant B [SubSTDS SD 2.4.5] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The Subsystem - Train Detection System is configured as Variant B. The relevant TVPS is in the state "TVPS disturbed and unable to be forced to clear with a technical reason". **Interaction 2.4.5.A:** **1.** - The Subsystem - Train Detection System detects that the hardware of the TVPS is adjusted by Maintainer. **2.** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS disturbed and unable to be forced to clear with an operational reason". **Postcondition:** The relevant TVPS is in the state "TVPS disturbed and unable to be forced to clear with an operational reason".  		Basic TDS AC
Eu.TDS.243	Info	[Package] Subsystem Train Detection Subsystem - Functional Context [Functional Viewpoint - Subsystem Definition - Maintenance]  		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.2415	Info	TDS_UC3.1: Display status of Subsystem - Train Detection System locally	Information: The Subsystem-UseCase "TDS_UC3.1: Display status of Subsystem - Train Detection System locally" defines the local display of the Subsystem - Train Detection System. See ID Eu.TDS.205.	Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.241	Info	TDS_UC3.2: Collect and provide event-driven diagnostic data	Information: The Subsystem-UseCase "TDS_UC3.2: Collect and provide event-driven diagnostic data" defines the event driven collection and provision of diagnostic data in case of irregularities. See ID Eu.TDS.234.	Basic TDS AC Basic TDS TDP Basic TDS TC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.242	Info	TDS_UC3.3: Collect and provide preventive diagnostic data	Information: The Subsystem-UseCase "TDS_UC3.3: Collect and provide preventive diagnostic data" defines the continuous collection and provision of diagnostic data for preventive maintenance. See ID Eu.TDS.234.	Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.2416	Info	TDS_UC3.4: Update specific software	Information: The Subsystem-UseCase "TDS_UC3.4: Update specific software" defines the process of updating the specific software between Subsystem - Maintenance and Data Management and the Subsystem.	Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.6523	Head	**3.3.3 Subsystem Train Detection System - Functional Partitioning**		

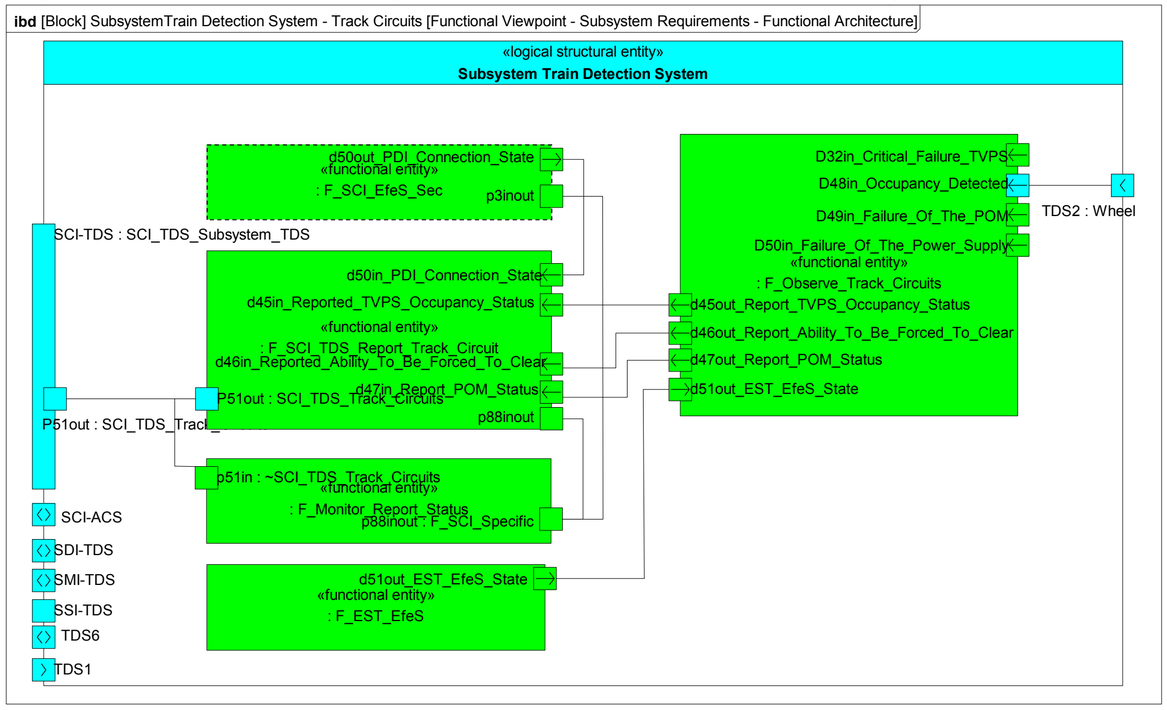
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6524	Info	[Package] Subsystem Train Detection System - Functional Partitioning [Functional Viewpoint - Subsystem Requirements]		Basic TDS AC Basic TDS TDP Basic TDS TC

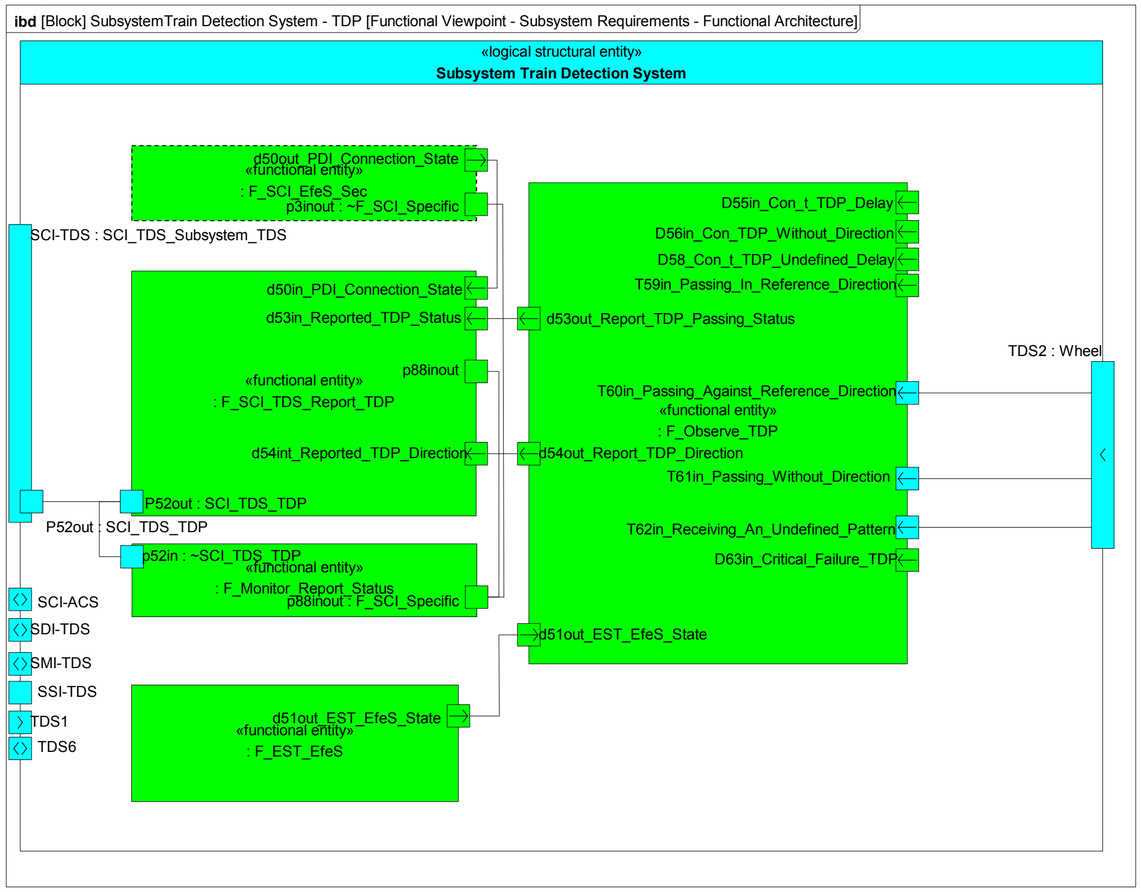


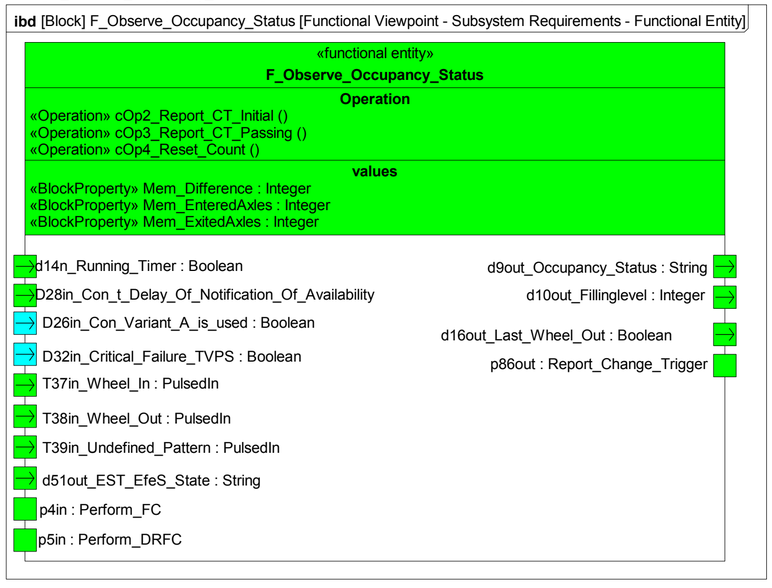
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.2618	Head	**3.3.4 Subsystem Train Detection System - Functional Architecture**		
Eu.TDS.2619	Info	Subsystem Train Detection System		Basic TDS AC Basic TDS TDP Basic TDS TC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.2627	Info	[Block] SubsystemTrain Detection System - Axle Counter [Functional Viewpoint - Subsystem Requirements - Functional Architecture]		Basic TDS AC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.5967	Info	[Block] SubsystemTrain Detection System - Track Circuits [Functional Viewpoint - Subsystem Requirements - Functional Architecture]		Basic TDS TC

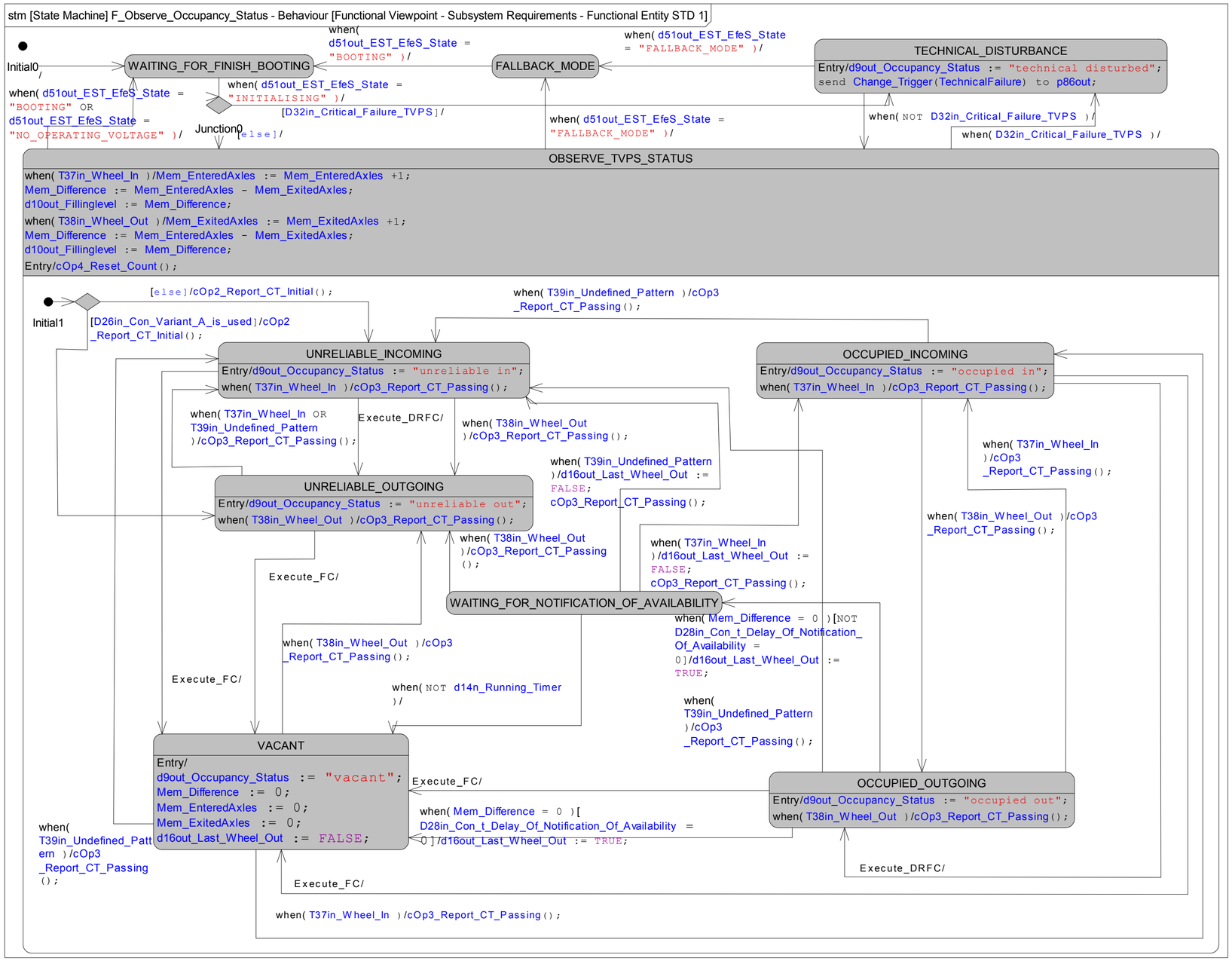


ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.5966	Info	[Block] SubsystemTrain Detection System - TDP [Functional Viewpoint - Subsystem Requirements - Functional Architecture] 		Basic TDS TDP
Eu.TDS.5968	Info	SCI-ACS	This interface may be defined in later deliveries.	Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.5969	Info	SCI-TDS	The functional Process Data interface to the Subsystem - Electronic Interlocking (SCI: Standard Communication Interface). The InformationFlow through the interface is further defined in SCI-TDS (Subsystem - Electronic Interlocking).	Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.5970	Info	SDI-TDS	The functional Diagnostic interface to the Subsystem - Maintenance and Data Management for the InformationFlow through the interface, which is defined by "Subsystem_MDM_D".	Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.5971	Info	SMI-TDS	The functional Maintenance Interface to the Subsystem - Maintenance and Data Management for the InformationFlow through the interface, which is defined by "Subsystem_MDM_M".	Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.6999	Info	SSI-TDS	The Security Service Interface to the Subsystem Security Services Platform. The InformationFlow through the interface is further defined in SSI-TDS (Subsystem - Security Services Platform).	Basic TDS AC Basic TDS TDP Basic TDS TC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.5972	Info	TDS1	The functional System Data interface to the Basic Data identifier. The InformationFlow through the interface is defined by "Basic_Data_Identifier".	Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.2628	Info	TDS2	The functional interface to the Wheel. The Information Flow through the interface is defined by "Wheel".	Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.2629	Info	TDS6	The functional Local Operate and Display interface to the Maintainer. The Information Flow through the interface is defined by "Maintainer".	Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.2631	Head	**3.3.5 Subsystem Train Detection System - Functional Entities**		
Eu.TDS.5001	Info	F_Observe_Occupancy_Status		Basic TDS AC
Eu.TDS.5312	Info	[Block] F_Observe_Occupancy_Status [Functional Viewpoint - Subsystem Requirements - Functional Entity] 		Basic TDS AC
Eu.TDS.6255	Info	p4in		Basic TDS AC
Eu.TDS.6256	Info	p5in		Basic TDS AC
Eu.TDS.6257	Info	p86out		Basic TDS AC
Eu.TDS.5038	Info	D26in_Con_Variant_A_is_used	The port D26in_Con_Variant_A_is_used provides the configuration of Variant A or Variant B. Permitted value: - True: Variant A - False: Variant B	Basic TDS AC
Eu.TDS.5031	Info	D32in_Critical_Failure_TVPS	The port D32in_Critical_Failure_TVPS represents a critical failure of a TVPS, e.g. an interface disturbance between the components of the TVPS or a hardware failure of the components of the Subsystem - Train Detection System. - True: critical failure of a TVPS - False: no critical failure of a TVPS	Basic TDS AC
Eu.TDS.5322	Info	T37in_Wheel_In	The port T37in_Wheel_In refines the FlowProperty Passing_Detected and represents an incoming Wheel at a Detection Point of the relevant TVPS.	Basic TDS AC
Eu.TDS.5323	Info	T38in_Wheel_Out	The port T38in_Wheel_Out refines the FlowProperty Passing_Detected and represents a outgoing Wheel at an Detection Point of the relevant TVPS.	Basic TDS AC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.5324	Info	T39in_Undefined_Pattern	The port T39in_Undefined_Pattern refines the FlowProperty Passing_Detected and represents that a sensor of a detection point receives an uninterpretable or undefined pattern.	Basic TDS AC
Eu.TDS.5036	Info	d51out_EST_EfeS_State		Basic TDS AC
Eu.TDS.7051	Info	D28in_Con_t_Delay_Of_Notification_Of_Availability	The port D28in_Con_t_Delay_Of_Notification_Of_Availability refines the time value for Con_t_Delay_Of_Notification_Of_Availability. This is is a delay of reporting vacant from the Subsystem - Train Detection System to the Subsystem - Electronic Interlocking.	Basic TDS AC
Eu.TDS.5049	Info	d9out_Occupancy_Status		Basic TDS AC
Eu.TDS.6203	Info	d10out_Fillinglevel		Basic TDS AC
Eu.TDS.6204	Info	d14n_Running_Timer		Basic TDS AC
Eu.TDS.6205	Info	d16out_Last_Wheel_Out		Basic TDS AC
Eu.TDS.6201	Info	cOp2_Report_CT_Initial	send Change_Trigger(ChangeTrigger.InitialSectionState) to p86out;	Basic TDS AC
Eu.TDS.6202	Info	cOp3_Report_CT_Passing	send Change_Trigger(ChangeTrigger.PassingDetected) to p86out;	Basic TDS AC
Eu.TDS.6206	Info	F_Observe_Occupancy_Status - Behaviour		Basic TDS AC

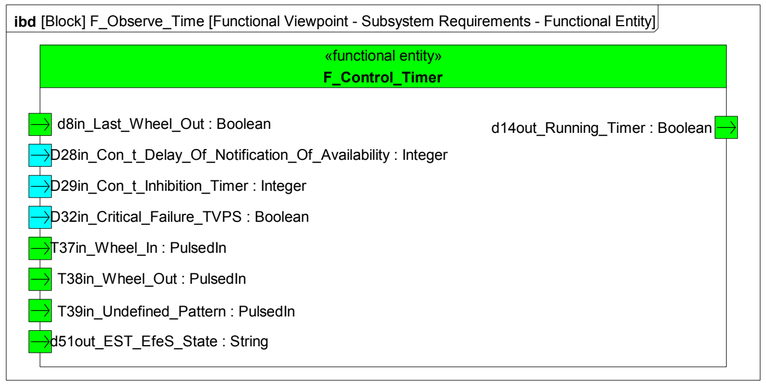
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6209	Info	Functional Viewpoint - Subsystem Requirements - Functional Entity STD 1		Basic TDS AC

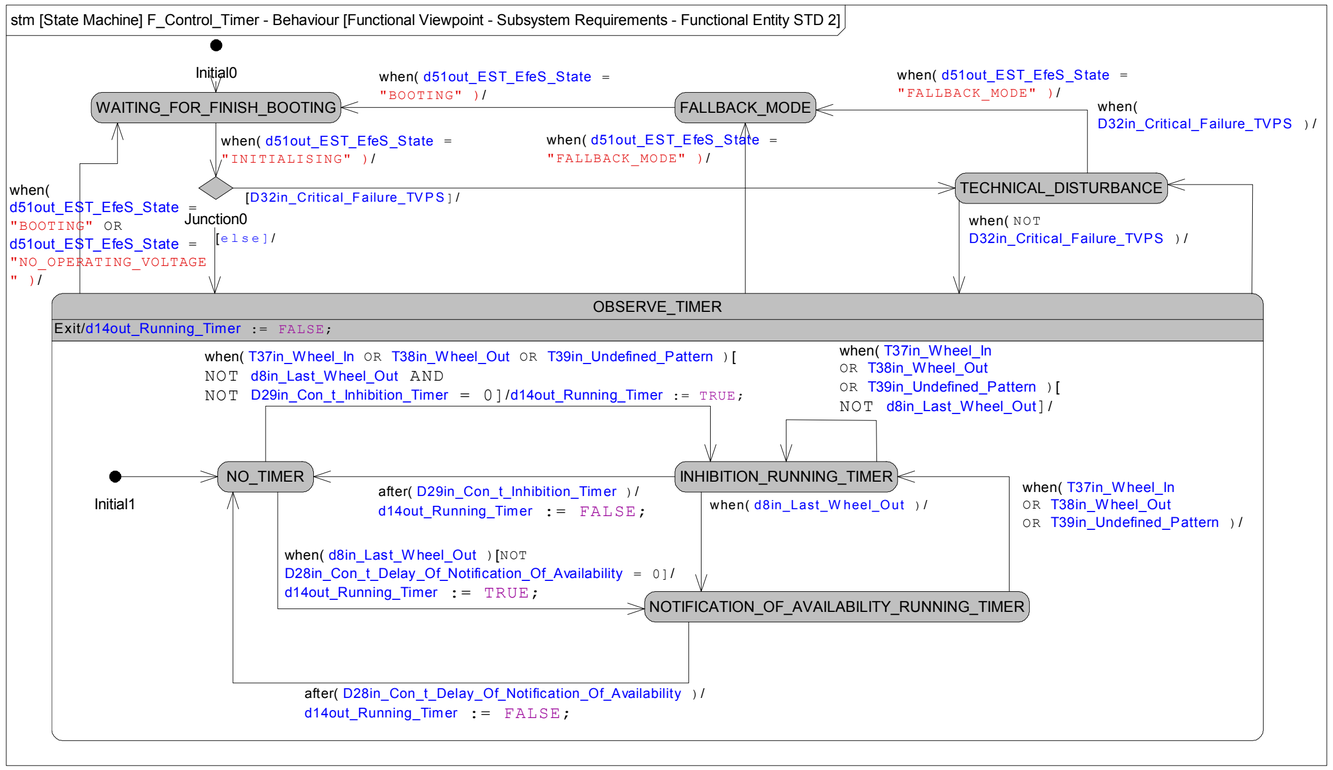


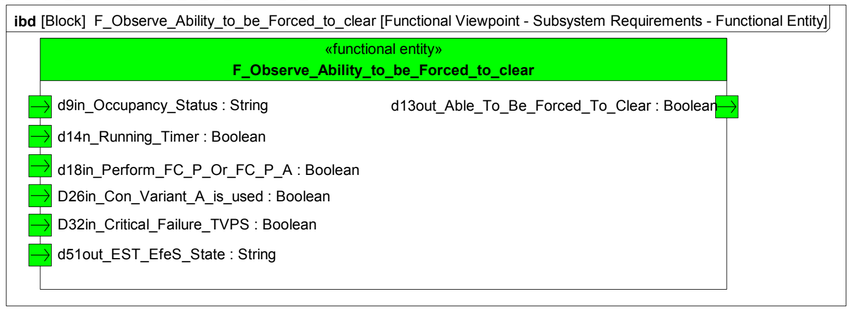
Eu.TDS.6207	Info	FALLBACK_MODE		Basic TDS AC
Eu.TDS.6208	Req	when(d51out_EST_EfeS_State = "BOOTING")/{FALLBACK_MODE - WAITING_FOR_FINISH_BOOTING}		Basic TDS AC
Eu.TDS.6210	Info	Initial0		Basic TDS AC
Eu.TDS.6211	Req	/{Initial0 - WAITING_FOR_FINISH_BOOTING}		Basic TDS AC
Eu.TDS.6212	Info	Junction0		Basic TDS AC
Eu.TDS.6213	Req	[else]/{Junction0 - OBSERVE_TVPS_STATUS}		Basic TDS AC

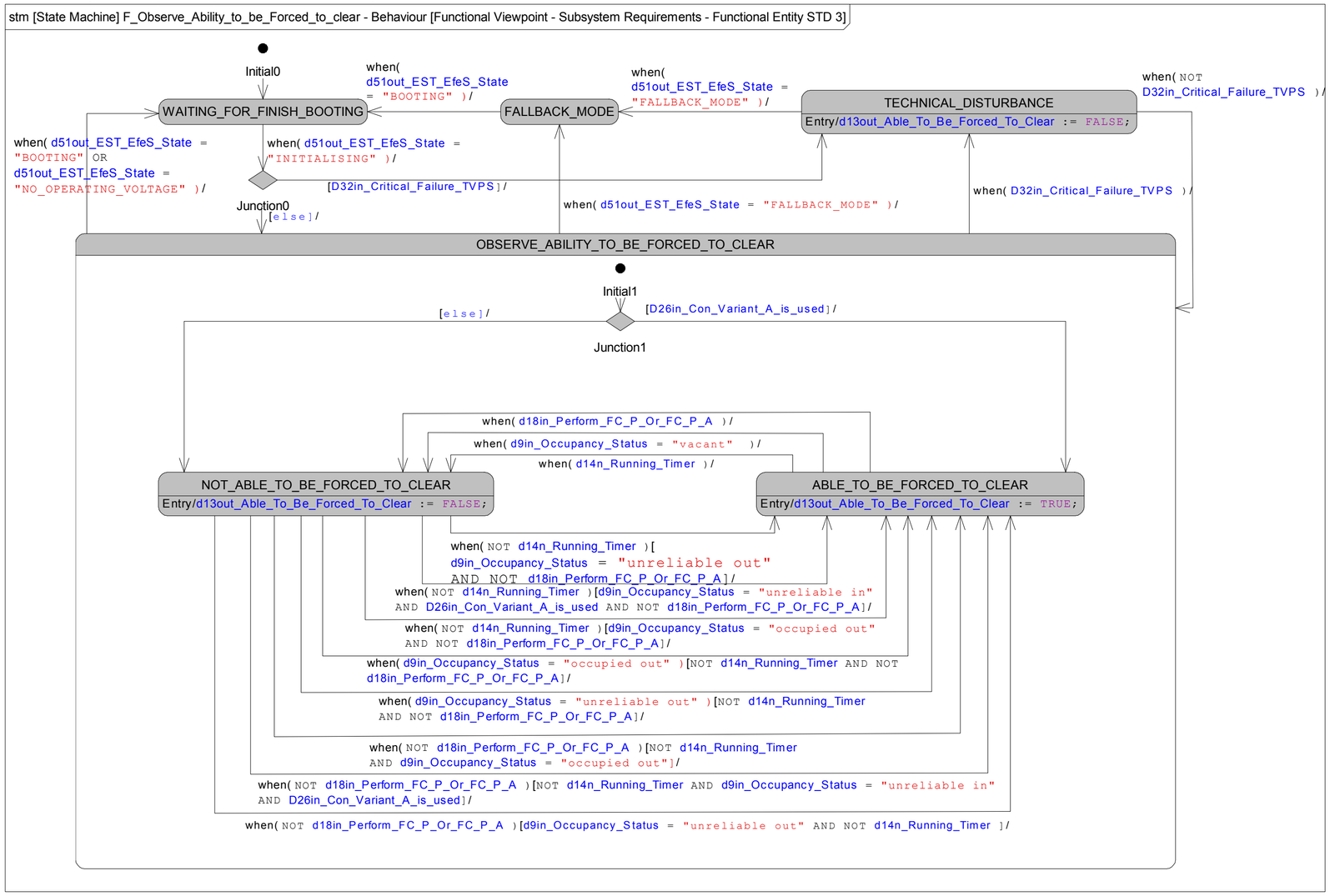
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6214	Req	[D32in_Critical_Failure_TVPS]/{Junction0 - TECHNICAL_DISTURBANCE}		Basic TDS AC
Eu.TDS.6215	Info	OBSERVE_TVPS_STATUS		Basic TDS AC
Eu.TDS.6216	Info	Initial1		Basic TDS AC
Eu.TDS.6217	Req	/{Initial1 - Junction}		Basic TDS AC
Eu.TDS.6218	Info	Junction		Basic TDS AC
Eu.TDS.6219	Req	[else]/cOp2_Report_CT_Initial();{Junction - UNRELIABLE_INCOMING}		Basic TDS AC
Eu.TDS.6220	Req	[D26in_Con_Variant_A_is_used]/cOp2_Report_CT_Initial();{Junction - UNRELIABLE_OUTGOING}		Basic TDS AC
Eu.TDS.6221	Info	OCCUPIED_INCOMING		Basic TDS AC
Eu.TDS.6222	Req	Execute_DRFC/{OCCUPIED_INCOMING - OCCUPIED_OUTGOING}		Basic TDS AC
Eu.TDS.6223	Req	Execute_FC/{OCCUPIED_INCOMING - VACANT}		Basic TDS AC
Eu.TDS.6225	Req	when(T38in_Wheel_Out)/cOp3_Report_CT_Passing();{OCCUPIED_INCOMING - OCCUPIED_OUTGOING}		Basic TDS AC
Eu.TDS.6226	Req	when(T39in_Undefined_Pattern)/cOp3_Report_CT_Passing();{OCCUPIED_INCOMING - UNRELIABLE_INCOMING}		Basic TDS AC
Eu.TDS.6900	Req	entry/d9out_Occupancy_Status := "occupied in";{State-internal in OCCUPIED_INCOMING}		Basic TDS AC
Eu.TDS.6901	Req	when(T37in_Wheel_In)/cOp3_Report_CT_Passing();{State-internal in OCCUPIED_INCOMING}		Basic TDS AC
Eu.TDS.6227	Info	OCCUPIED_OUTGOING		Basic TDS AC
Eu.TDS.6228	Req	Execute_FC/{OCCUPIED_OUTGOING - VACANT}		Basic TDS AC
Eu.TDS.6229	Req	when(Mem_Difference = 0)[NOT D28in_Con_t_Delay_Of_Notification_Of_Availability = 0]/d16out_Last_Wheel_Out := TRUE;{OCCUPIED_OUTGOING - WAITING_FOR_NOTIFICATION_OF_AVAILABILITY}		Basic TDS AC
Eu.TDS.6230	Req	when(T37in_Wheel_In)/cOp3_Report_CT_Passing();{OCCUPIED_OUTGOING - OCCUPIED_INCOMING}		Basic TDS AC
Eu.TDS.6231	Req	when(T39in_Undefined_Pattern)/cOp3_Report_CT_Passing();{OCCUPIED_OUTGOING - UNRELIABLE_INCOMING}		Basic TDS AC
Eu.TDS.6902	Req	entry/d9out_Occupancy_Status := "occupied out";{State-internal in OCCUPIED_OUTGOING}		Basic TDS AC
Eu.TDS.7052	Req	when(T38in_Wheel_Out)/cOp3_Report_CT_Passing();{State-internal in OCCUPIED_OUTGOING}		Basic TDS AC
Eu.TDS.7053	Req	when(Mem_Difference = 0)[D28in_Con_t_Delay_Of_Notification_Of_Availability = 0]/d16out_Last_Wheel_Out := TRUE;{OCCUPIED_OUTGOING - VACANT}		Basic TDS AC
Eu.TDS.6232	Info	UNRELIABLE_INCOMING		Basic TDS AC
Eu.TDS.6233	Req	Execute_DRFC/{UNRELIABLE_INCOMING - UNRELIABLE_OUTGOING}		Basic TDS AC
Eu.TDS.6234	Req	Execute_FC/{UNRELIABLE_INCOMING - VACANT}		Basic TDS AC
Eu.TDS.6235	Req	when(T38in_Wheel_Out)/cOp3_Report_CT_Passing();{UNRELIABLE_INCOMING - UNRELIABLE_OUTGOING}		Basic TDS AC
Eu.TDS.6906	Req	entry/d9out_Occupancy_Status := "unreliable in";{State-internal in UNRELIABLE_INCOMING}		Basic TDS AC
Eu.TDS.6907	Req	when(T37in_Wheel_In)/cOp3_Report_CT_Passing();{State-internal in UNRELIABLE_INCOMING}		Basic TDS AC
Eu.TDS.6236	Info	UNRELIABLE_OUTGOING		Basic TDS AC
Eu.TDS.6237	Req	Execute_FC/{UNRELIABLE_OUTGOING - VACANT}		Basic TDS AC
Eu.TDS.6238	Req	when(T37in_Wheel_In OR T39in_Undefined_Pattern)/cOp3_Report_CT_Passing();{UNRELIABLE_OUTGOING - UNRELIABLE_INCOMING}		Basic TDS AC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6908	Req	entry/d9out_Occupancy_Status := "unreliable out";{State-internal in UNRELIABLE_OUTGOING}		Basic TDS AC
Eu.TDS.6909	Req	when(T38in_Wheel_Out)/cOp3_Report_CT_Passing();{State-internal in UNRELIABLE_OUTGOING}		Basic TDS AC
Eu.TDS.6239	Info	VACANT		Basic TDS AC
Eu.TDS.6240	Req	when(T37in_Wheel_In)/cOp3_Report_CT_Passing();{VACANT - OCCUPIED_INCOMING}		Basic TDS AC
Eu.TDS.6241	Req	when(T38in_Wheel_Out)/cOp3_Report_CT_Passing();{VACANT - UNRELIABLE_OUTGOING}		Basic TDS AC
Eu.TDS.6242	Req	when(T39in_Undefined_Pattern)/cOp3_Report_CT_Passing();{VACANT - UNRELIABLE_INCOMING}		Basic TDS AC
Eu.TDS.6910	Req	entry/ d9out_Occupancy_Status := "vacant"; Mem_Difference := 0; Mem_EnteredAxles := 0; Mem_ExitedAxles := 0; d16out_Last_Wheel_Out := FALSE;{State-internal in VACANT}		Basic TDS AC
Eu.TDS.6243	Info	WAITING_FOR_NOTIFICATION_OF_AVAILABILITY		Basic TDS AC
Eu.TDS.6244	Req	when(NOT d14n_Running_Timer)/{WAITING_FOR_NOTIFICATION_OF_AVAILABILITY - VACANT}		Basic TDS AC
Eu.TDS.6245	Req	when(T37in_Wheel_In)/d16out_Last_Wheel_Out := FALSE; cOp3_Report_CT_Passing();{WAITING_FOR_NOTIFICATION_OF_AVAILABILITY - OCCUPIED_INCOMING}		Basic TDS AC
Eu.TDS.6246	Req	when(T38in_Wheel_Out)/cOp3_Report_CT_Passing();{WAITING_FOR_NOTIFICATION_OF_AVAILABILITY - UNRELIABLE_OUTGOING}		Basic TDS AC
Eu.TDS.6247	Req	when(T39in_Undefined_Pattern)/d16out_Last_Wheel_Out := FALSE; cOp3_Report_CT_Passing();{WAITING_FOR_NOTIFICATION_OF_AVAILABILITY - UNRELIABLE_INCOMING}		Basic TDS AC
Eu.TDS.6248	Req	when(D32in_Critical_Failure_TVPS)/{OBSERVE_TVPS_STATUS - TECHNICAL_DISTURBANCE}		Basic TDS AC
Eu.TDS.6249	Req	when(d51out_EST_EfeS_State = "FALLBACK_MODE")/{OBSERVE_TVPS_STATUS - FALLBACK_MODE}		Basic TDS AC
Eu.TDS.6904	Req	when(T37in_Wheel_In)/Mem_EnteredAxles := Mem_EnteredAxles +1; Mem_Difference := Mem_EnteredAxles - Mem_ExitedAxles; d10out_Fillinglevel := Mem_Difference;{State-internal in OBSERVE_TVPS_STATUS}		Basic TDS AC
Eu.TDS.6905	Req	when(T38in_Wheel_Out)/Mem_ExitedAxles := Mem_ExitedAxles +1; Mem_Difference := Mem_EnteredAxles - Mem_ExitedAxles; d10out_Fillinglevel := Mem_Difference;{State-internal in OBSERVE_TVPS_STATUS}		Basic TDS AC
Eu.TDS.7054	Req	entry/cOp4_Reset_Count();{State-internal in OBSERVE_TVPS_STATUS}		Basic TDS AC
Eu.TDS.7055	Req	when(d51out_EST_EfeS_State = "BOOTING" OR d51out_EST_EfeS_State = "NO_OPERATING_VOLTAGE")/{OBSERVE_TVPS_STATUS - WAITING_FOR_FINISH_BOOTING}		Basic TDS AC
Eu.TDS.6250	Info	TECHNICAL_DISTURBANCE		Basic TDS AC
Eu.TDS.6251	Req	when(d51out_EST_EfeS_State = "FALLBACK_MODE")/{TECHNICAL_DISTURBANCE - FALLBACK_MODE}		Basic TDS AC
Eu.TDS.6252	Req	when(NOT D32in_Critical_Failure_TVPS)/{TECHNICAL_DISTURBANCE - OBSERVE_TVPS_STATUS}		Basic TDS AC
Eu.TDS.6912	Req	entry/d9out_Occupancy_Status := "technical disturbed"; send Change_Trigger(TechnicalFailure) to p86out;{State-internal in TECHNICAL_DISTURBANCE}		Basic TDS AC
Eu.TDS.6253	Info	WAITING_FOR_FINISH_BOOTING		Basic TDS AC
Eu.TDS.6254	Req	when(d51out_EST_EfeS_State = "INITIALISING")/{WAITING_FOR_FINISH_BOOTING - Junction0}		Basic TDS AC
Eu.TDS.7050	Info	cOp4_Reset_Count	Mem_EnteredAxles := 0; Mem_ExitedAxles := 0; Mem_Difference := 0;	Basic TDS AC
Eu.TDS.6047	Info	F_Control_Timer		Basic TDS AC

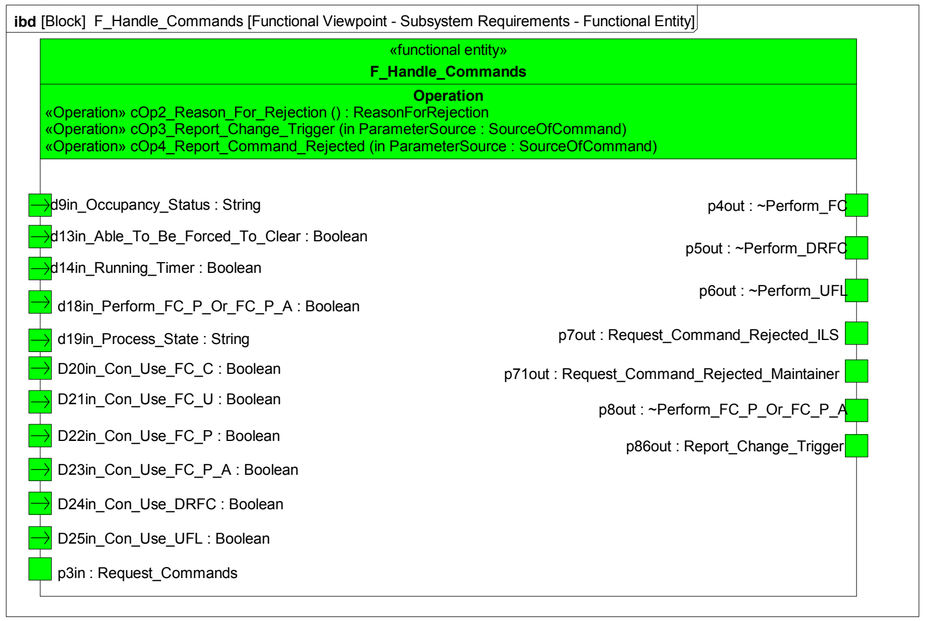
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6048	Info	[Block] F_Observe_Time [Functional Viewpoint - Subsystem Requirements - Functional Entity] 		Basic TDS AC
Eu.TDS.6083	Info	T37in_Wheel_In	The port T37in_Wheel_In refines the FlowProperty Passing_Detected and represents an incoming Wheel at a Detection Point of the relevant TVPS.	Basic TDS AC
Eu.TDS.6084	Info	T38in_Wheel_Out	The port T38in_Wheel_Out refines the FlowProperty Passing_Detected and represents an outgoing Wheel at a Detection Point of the relevant TVPS.	Basic TDS AC
Eu.TDS.6085	Info	T39in_Undefined_Pattern	The port T39in_Undefined_Pattern refines the FlowProperty Passing_Detected and represents that a sensor of a detection point receives an uninterpretable or undefined pattern.	Basic TDS AC
Eu.TDS.6049	Info	d14out_Running_Timer		Basic TDS AC
Eu.TDS.6050	Info	D28in_Con_t_Delay_Of_Notification_Of_Availability	The port D28in_Con_t_Delay_Of_Notification_Of_Availability refines the time value for Con_t_Delay_Of_Notification_Of_Availability. This is is a delay of reporting vacant from the Subsystem - Train Detection System to the Subsystem - Electronic Interlocking.	Basic TDS AC
Eu.TDS.6051	Info	D29in_Con_t_Inhibition_Timer	The port D29in_Con_t_Inhibition_Timer refines the time value for Con_t_Inhibition_Timer. This is is a delay between the detection of a passing for a TVPS (incoming wheel, outgoing wheel or uninterpretable pattern) and the moment that the state of a TVPS is considered stable.	Basic TDS AC
Eu.TDS.6052	Info	D32in_Critical_Failure_TVPS	The port D32in_Critical_Failure_TVPS represents a critical failure of a TVPS, e.g. an interface disturbance between the components of the TVPS or a hardware failure of the components of the Subsystem - Train Detection System. - True: critical failure of a TVPS - False: no critical failure of a TVPS	Basic TDS AC
Eu.TDS.6053	Info	d51out_EST_EfeS_State		Basic TDS AC
Eu.TDS.6054	Info	d8in_Last_Wheel_Out		Basic TDS AC
Eu.TDS.6055	Info	F_Control_Timer - Behaviour		Basic TDS AC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6058	Info	Functional Viewpoint - Subsystem Requirements - Functional Entity STD 2 		Basic TDS AC
Eu.TDS.6056	Info	FALLBACK_MODE		Basic TDS AC
Eu.TDS.6057	Req	when(d51out_EST_EfeS_State = "BOOTING")/{FALLBACK_MODE - WAITING_FOR_FINISH_BOOTING}		Basic TDS AC
Eu.TDS.6059	Info	Initial0		Basic TDS AC
Eu.TDS.6060	Req	/{Initial0 - WAITING_FOR_FINISH_BOOTING}		Basic TDS AC
Eu.TDS.6061	Info	Junction0		Basic TDS AC
Eu.TDS.6062	Req	[else]/{Junction0 - OBSERVE_TIMER}		Basic TDS AC
Eu.TDS.6063	Req	[D32in_Critical_Failure_TVPS]/{Junction0 - TECHNICAL_DISTURBANCE}		Basic TDS AC
Eu.TDS.6064	Info	OBSERVE_TIMER		Basic TDS AC
Eu.TDS.6065	Info	INHIBITION_RUNNING_TIMER		Basic TDS AC
Eu.TDS.6066	Req	after(D29in_Con_t_Inhibition_Timer)/ d14out_Running_Timer := FALSE;{INHIBITION_RUNNING_TIMER - NO_TIMER}		Basic TDS AC
Eu.TDS.6067	Req	when(d8in_Last_Wheel_Out)/{INHIBITION_RUNNING_TIMER - NOTIFICATION_OF_AVAILABILITY_RUNNING_TIMER}		Basic TDS AC
Eu.TDS.6068	Req	when(T37in_Wheel_In OR T38in_Wheel_Out OR T39in_Undefined_Pattern)[NOT d8in_Last_Wheel_Out]/{INHIBITION_RUNNING_TIMER - INHIBITION_RUNNING_TIMER}		Basic TDS AC
Eu.TDS.6069	Info	Initial1		Basic TDS AC
Eu.TDS.6070	Req	/{Initial1 - NO_TIMER}		Basic TDS AC
Eu.TDS.6071	Info	NO_TIMER		Basic TDS AC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6072	Req	when(T37in_Wheel_In OR T38in_Wheel_Out OR T39in_Undefined_Pattern)[NOT d8in_Last_Wheel_Out AND NOT D29in_Con_t_Inhibition_Timer = 0]/d14out_Running_Timer := TRUE;{NO_TIMER - INHIBITION_RUNNING_TIMER}		Basic TDS AC
Eu.TDS.7044	Req	when(d8in_Last_Wheel_Out)[NOT D28in_Con_t_Delay_Of_Notification_Of_Availability = 0]/ d14out_Running_Timer := TRUE;{NO_TIMER - NOTIFICATION_OF_AVAILABILITY_RUNNING_TIMER}		Basic TDS AC
Eu.TDS.6073	Info	NOTIFICATION_OF_AVAILABILITY_RUNNING_TIMER		Basic TDS AC
Eu.TDS.6074	Req	after(D28in_Con_t_Delay_Of_Notification_Of_Availability)/ d14out_Running_Timer := FALSE;{NOTIFICATION_OF_AVAILABILITY_RUNNING_TIMER - NO_TIMER}		Basic TDS AC
Eu.TDS.6075	Req	when(T37in_Wheel_In OR T38in_Wheel_Out OR T39in_Undefined_Pattern)/{NOTIFICATION_OF_AVAILABILITY_RUNNING_TIMER - INHIBITION_RUNNING_TIMER}		Basic TDS AC
Eu.TDS.6076	Req	when(D32in_Critical_Failure_TVPS)/{OBSERVE_TIMER - TECHNICAL_DISTURBANCE}		Basic TDS AC
Eu.TDS.6077	Req	when(d51out_EST_EfeS_State = "FALLBACK_MODE")/{OBSERVE_TIMER - FALLBACK_MODE}		Basic TDS AC
Eu.TDS.7045	Req	exit/d14out_Running_Timer := FALSE;{State-internal in OBSERVE_TIMER}		Basic TDS AC
Eu.TDS.7046	Req	when(d51out_EST_EfeS_State = "BOOTING" OR d51out_EST_EfeS_State = "NO_OPERATING_VOLTAGE")/{OBSERVE_TIMER - WAITING_FOR_FINISH_BOOTING}		Basic TDS AC
Eu.TDS.6078	Info	TECHNICAL_DISTURBANCE		Basic TDS AC
Eu.TDS.6079	Req	when(d51out_EST_EfeS_State = "FALLBACK_MODE")/{TECHNICAL_DISTURBANCE - FALLBACK_MODE}		Basic TDS AC
Eu.TDS.6080	Req	when(NOT D32in_Critical_Failure_TVPS)/{TECHNICAL_DISTURBANCE - OBSERVE_TIMER}		Basic TDS AC
Eu.TDS.6081	Info	WAITING_FOR_FINISH_BOOTING		Basic TDS AC
Eu.TDS.6082	Req	when(d51out_EST_EfeS_State = "INITIALISING")/{WAITING_FOR_FINISH_BOOTING - Junction0}		Basic TDS AC
Eu.TDS.6157	Info	F_Observe_Ability_to_be_Forced_to_clear		Basic TDS AC
Eu.TDS.6158	Info	[Block] F_Observe_Ability_to_be_Forced_to_clear [Functional Viewpoint - Subsystem Requirements - Functional Entity] 		Basic TDS AC
Eu.TDS.6159	Info	d13out_Able_To_Be_Forced_To_Clear		Basic TDS AC
Eu.TDS.6160	Info	d14n_Running_Timer		Basic TDS AC
Eu.TDS.6161	Info	d18in_Perform_FC_P_Or_FC_P_A		Basic TDS AC
Eu.TDS.6162	Info	D26in_Con_Variant_A_is_used	The port D26in_Con_Variant_A_is_used provides the configuration of Variant A or Variant B. Permitted value: - True: Variant A - False: Variant B	Basic TDS AC
Eu.TDS.6163	Info	D32in_Critical_Failure_TVPS	The port D32in_Critical_Failure_TVPS represents a critical failure of a TVPS, e.g. an interface disturbance between the components of the TVPS or a hardware failure of the components of the Subsystem - Train Detection System. - True: critical failure of a TVPS - False: no critical failure of a TVPS	Basic TDS AC
Eu.TDS.6164	Info	d51out_EST_EfeS_State		Basic TDS AC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6165	Info	d9in_Occupancy_Status		Basic TDS AC
Eu.TDS.6166	Info	F_Observe_Ability_to_be_Forced_to_clear - Behaviour		Basic TDS AC
Eu.TDS.6169	Info	Functional Viewpoint - Subsystem Requirements - Functional Entity STD 3 		Basic TDS AC
Eu.TDS.6167	Info	FALLBACK_MODE		Basic TDS AC
Eu.TDS.6168	Req	when(d51out_EST_EfeS_State = "BOOTING")/{FALLBACK_MODE - WAITING_FOR_FINISH_BOOTING}		Basic TDS AC
Eu.TDS.6170	Info	Initial0		Basic TDS AC
Eu.TDS.6171	Req	/{Initial0 - WAITING_FOR_FINISH_BOOTING}		Basic TDS AC
Eu.TDS.6172	Info	Junction0		Basic TDS AC
Eu.TDS.6173	Req	[else]/{Junction0 - OBSERVE_ABILITY_TO_BE_FORCED_TO_CLEAR}		Basic TDS AC
Eu.TDS.6174	Req	[D32in_Critical_Failure_TVPS]/{Junction0 - TECHNICAL_DISTURBANCE}		Basic TDS AC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6175	Info	OBSERVE_ABILITY_TO_BE_FORCED_TO_CLEAR		Basic TDS AC
Eu.TDS.6176	Info	ABLE_TO_BE_FORCED_TO_CLEAR		Basic TDS AC
Eu.TDS.6177	Req	when(d14n_Running_Timer)/{ABLE_TO_BE_FORCED_TO_CLEAR - NOT_ABLE_TO_BE_FORCED_TO_CLEAR}		Basic TDS AC
Eu.TDS.6178	Req	when(d18in_Perform_FC_P_Or_FC_P_A)/{ABLE_TO_BE_FORCED_TO_CLEAR - NOT_ABLE_TO_BE_FORCED_TO_CLEAR}		Basic TDS AC
Eu.TDS.6179	Req	when(d9in_Occupancy_Status = "vacant")/{ABLE_TO_BE_FORCED_TO_CLEAR - NOT_ABLE_TO_BE_FORCED_TO_CLEAR}		Basic TDS AC
Eu.TDS.6897	Req	entry/d13out_Able_To_Be_Forced_To_Clear := TRUE;{State-internal in ABLE_TO_BE_FORCED_TO_CLEAR}		Basic TDS AC
Eu.TDS.6180	Info	Initial1		Basic TDS AC
Eu.TDS.6181	Req	/{Initial1 - Junction1}		Basic TDS AC
Eu.TDS.6182	Info	Junction1		Basic TDS AC
Eu.TDS.6183	Req	[D26in_Con_Variant_A_is_used]/{Junction1 - ABLE_TO_BE_FORCED_TO_CLEAR}		Basic TDS AC
Eu.TDS.6184	Req	[else]/{Junction1 - NOT_ABLE_TO_BE_FORCED_TO_CLEAR}		Basic TDS AC
Eu.TDS.6185	Info	NOT_ABLE_TO_BE_FORCED_TO_CLEAR		Basic TDS AC
Eu.TDS.6186	Req	when(d9in_Occupancy_Status = "occupied out")[NOT d14n_Running_Timer AND NOT d18in_Perform_FC_P_Or_FC_P_A]/{NOT_ABLE_TO_BE_FORCED_TO_CLEAR - ABLE_TO_BE_FORCED_TO_CLEAR}		Basic TDS AC
Eu.TDS.6187	Req	when(d9in_Occupancy_Status = "unreliable out")[NOT d14n_Running_Timer AND NOT d18in_Perform_FC_P_Or_FC_P_A]/{NOT_ABLE_TO_BE_FORCED_TO_CLEAR - ABLE_TO_BE_FORCED_TO_CLEAR}		Basic TDS AC
Eu.TDS.6188	Req	when(NOT d14n_Running_Timer)[d9in_Occupancy_Status = "unreliable out" AND NOT d18in_Perform_FC_P_Or_FC_P_A]/{NOT_ABLE_TO_BE_FORCED_TO_CLEAR - ABLE_TO_BE_FORCED_TO_CLEAR}		Basic TDS AC
Eu.TDS.6189	Req	when(NOT d14n_Running_Timer)[d9in_Occupancy_Status = "occupied out" AND NOT d18in_Perform_FC_P_Or_FC_P_A]/{NOT_ABLE_TO_BE_FORCED_TO_CLEAR - ABLE_TO_BE_FORCED_TO_CLEAR}		Basic TDS AC
Eu.TDS.6190	Req	when(NOT d14n_Running_Timer)[d9in_Occupancy_Status = "unreliable in" AND D26in_Con_Variant_A_is_used AND NOT d18in_Perform_FC_P_Or_FC_P_A]/{NOT_ABLE_TO_BE_FORCED_TO_CLEAR - ABLE_TO_BE_FORCED_TO_CLEAR}		Basic TDS AC
Eu.TDS.6191	Req	when(NOT d18in_Perform_FC_P_Or_FC_P_A)[NOT d14n_Running_Timer AND d9in_Occupancy_Status = "unreliable in" AND D26in_Con_Variant_A_is_used]/{NOT_ABLE_TO_BE_FORCED_TO_CLEAR - ABLE_TO_BE_FORCED_TO_CLEAR}		Basic TDS AC
Eu.TDS.6192	Req	when(NOT d18in_Perform_FC_P_Or_FC_P_A)[d9in_Occupancy_Status = "unreliable out" AND NOT d14n_Running_Timer]/{NOT_ABLE_TO_BE_FORCED_TO_CLEAR - ABLE_TO_BE_FORCED_TO_CLEAR}		Basic TDS AC
Eu.TDS.6193	Req	when(NOT d18in_Perform_FC_P_Or_FC_P_A)[NOT d14n_Running_Timer AND d9in_Occupancy_Status = "occupied out"]/{NOT_ABLE_TO_BE_FORCED_TO_CLEAR - ABLE_TO_BE_FORCED_TO_CLEAR}		Basic TDS AC
Eu.TDS.6898	Req	entry/d13out_Able_To_Be_Forced_To_Clear := FALSE;{State-internal in NOT_ABLE_TO_BE_FORCED_TO_CLEAR}		Basic TDS AC
Eu.TDS.6194	Req	when(D32in_Critical_Failure_TVPS)/{OBSERVE_ABILITY_TO_BE_FORCED_TO_CLEAR - TECHNICAL_DISTURBANCE}		Basic TDS AC
Eu.TDS.6195	Req	when(d51out_EST_EfeS_State = "FALLBACK_MODE")/{OBSERVE_ABILITY_TO_BE_FORCED_TO_CLEAR - FALLBACK_MODE}		Basic TDS AC
Eu.TDS.7049	Req	when(d51out_EST_EfeS_State = "BOOTING" OR d51out_EST_EfeS_State = "NO_OPERATING_VOLTAGE")/{OBSERVE_ABILITY_TO_BE_FORCED_TO_CLEAR - WAITING_FOR_FINISH_BOOTING}		Basic TDS AC
Eu.TDS.6196	Info	TECHNICAL_DISTURBANCE		Basic TDS AC
Eu.TDS.6197	Req	when(d51out_EST_EfeS_State = "FALLBACK_MODE")/{TECHNICAL_DISTURBANCE - FALLBACK_MODE}		Basic TDS AC
Eu.TDS.6198	Req	when(NOT D32in_Critical_Failure_TVPS)/{TECHNICAL_DISTURBANCE - OBSERVE_ABILITY_TO_BE_FORCED_TO_CLEAR}		Basic TDS AC
Eu.TDS.6899	Req	entry/d13out_Able_To_Be_Forced_To_Clear := FALSE;{State-internal in TECHNICAL_DISTURBANCE}		Basic TDS AC
Eu.TDS.6199	Info	WAITING_FOR_FINISH_BOOTING		Basic TDS AC
Eu.TDS.6200	Req	when(d51out_EST_EfeS_State = "INITIALISING")/{WAITING_FOR_FINISH_BOOTING - Junction0}		Basic TDS AC
Eu.TDS.6086	Info	F_Handle_Commands		Basic TDS AC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6087	Info	[Block] F_Handle_Commands [Functional Viewpoint - Subsystem Requirements - Functional Entity] 		Basic TDS AC
Eu.TDS.6107	Info	p3in		Basic TDS AC
Eu.TDS.6108	Info	p4out		Basic TDS AC
Eu.TDS.6109	Info	p5out		Basic TDS AC
Eu.TDS.6110	Info	p6out		Basic TDS AC
Eu.TDS.6111	Info	p71out		Basic TDS AC
Eu.TDS.6112	Info	p7out		Basic TDS AC
Eu.TDS.6113	Info	p86out		Basic TDS AC
Eu.TDS.6114	Info	p8out		Basic TDS AC

Eu.TDS.6088	Info	cOp2_Reason_For_Rejection	if (d9in_Occupancy_Status = "technical disturbed") then
			return ReasonForRejection.Technical;
			else
			return ReasonForRejection.Operational;
			end if
				Basic TDS AC

Eu.TDS.6089	Info	cOp3_Report_Change_Trigger	if (ParameterSource = SourceOfCommand.EIL) then
			send Change_Trigger (ChangeTrigger.CommandFromEIL) to p86out;
			elseif (ParameterSource = SourceOfCommand.Maintainer) then
			send Change_Trigger (ChangeTrigger.CommandFromMaintainer) to p86out;
			elseif (ParameterSource = SourceOfCommand.Internal) then
			send Change_Trigger (ChangeTrigger.InternalTrigger) to p86out;
			end if
				Basic TDS AC

Eu.TDS.6090	Info	cOp4_Report_Command_Rejected	if (ParameterSource = SourceOfCommand.EIL) then
			send Report_Command_Rejected(cOp2_Reason_For_Rejection()) to p7out;
			elseif (ParameterSource = SourceOfCommand.Maintainer) then
			send Report_Command_Rejected(cOp2_Reason_For_Rejection()) to p71out;
			end if
				Basic TDS AC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6091	Info	d13in_Able_To_Be_Forced_To_Clear		Basic TDS AC
Eu.TDS.6092	Info	d14in_Running_Timer		Basic TDS AC
Eu.TDS.6093	Info	d18in_Perform_FC_P_Or_FC_P_A		Basic TDS AC Option FC-P/-A
Eu.TDS.6094	Info	d19in_Process_State		Basic TDS AC
Eu.TDS.6095	Info	D20in_Con_Use_FC_C	The port D20in_Con_Use_FC_C provides the configuration value whether the TVPS is configured to use Force section status to clear, conditional. This is just a simplification, the configuration and engineering data for the Subsystem - Train Detection System will also include the opportunity to configure also the permitted source of the command.	Basic TDS AC
Eu.TDS.6096	Info	D21in_Con_Use_FC_U	The port D21in_Con_Use_FC_U provides the configuration value whether the TVPS is configured to use Force section status to clear, unconditional. This is just a simplification, the configuration and engineering data for the Subsystem - Train Detection System will also include the opportunity to configure also the permitted source of the command.	Basic TDS AC
Eu.TDS.6097	Info	D22in_Con_Use_FC_P	The port D22in_Con_Use_FC_P provides the configuration value whether the TVPS is configured to use Force section status to clear, preparatory.	Basic TDS AC Option FC-P/-A
Eu.TDS.6098	Info	D23in_Con_Use_FC_P_A	The port D23in_Con_Use_FC_P_A provides the configuration value whether the TVPS is configured to use Force section status to clear, preparatory, with acknowledgement.	Basic TDS AC Option FC-P/-A
Eu.TDS.6099	Info	D24in_Con_Use_DRFC	The port D24in_Con_Use_DRFC provides the configuration value whether the TVPS is configured to use Disable restriction to force section to clear. This is just a simplification, the configuration and engineering data for the Subsystem - Train Detection System will also include the opportunity to configure also the permitted source of the command.	Basic TDS AC
Eu.TDS.6100	Info	D25in_Con_Use_UFL	The port D25in_Con_Use_UFL provides the configuration value whether the TVPS is configured to use Update Filling level.	Option Update FL
Eu.TDS.6101	Info	d9in_Occupancy_Status		Basic TDS AC
Eu.TDS.6102	Info	F_Handle_Commands - Behaviour		Basic TDS AC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.

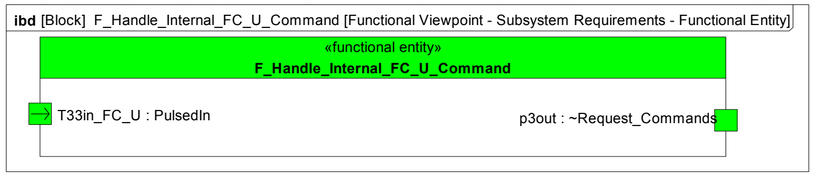
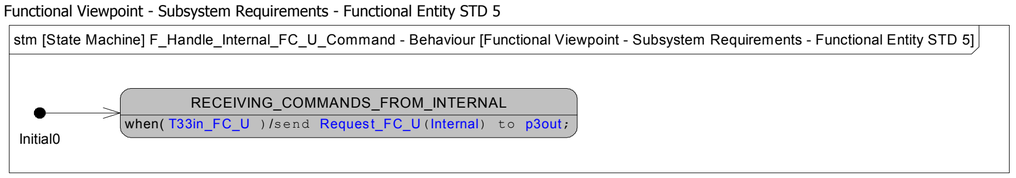
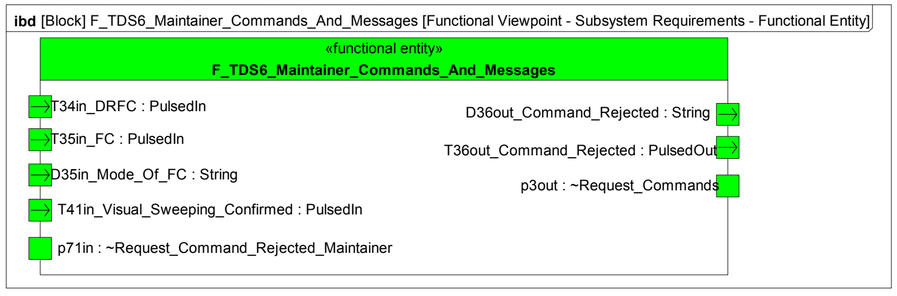
Eu.TDS.6103	Info	Functional Viewpoint - Subsystem Requirements - Functional Entity STD 4
		stm [State Machine] F_Handle_Commands - Behaviour [Functional Viewpoint - Subsystem Requirements - Functional Entity STD 4]
		Initial0
		RECEIVE_COMMANDS
		Request_FC_C[D20in_Con_Use_FC_C AND d13in_Able_To_Be_Forced_To_Clear]/cOp3_Report_Change_Trigger(ReportedSource);
		send Execute_FC to p4out;
		Request_FC_U[D21in_Con_Use_FC_U AND (NOT d9in_Occupancy_Status = "vacant" AND NOT d9in_Occupancy_Status = "technical disturbed" AND NOT d14in_Running_Timer)]/
		cOp3_Report_Change_Trigger(ReportedSource);
		if d18in_Perform_FC_P_Or_FC_P_A then
		send Execute_Cancel to p8out;
		endif
		send Execute_FC to p4out;
		Request_FC_C[D20in_Con_Use_FC_C AND NOT d13in_Able_To_Be_Forced_To_Clear]/
		cOp4_Report_Command_Rejected(ReportedSource);
		Request_FC_U[D21in_Con_Use_FC_U AND (d9in_Occupancy_Status = "vacant" OR d9in_Occupancy_Status = "technical disturbed" OR d14in_Running_Timer)]/
		cOp4_Report_Command_Rejected(ReportedSource);
		Request_FC_P[D22in_Con_Use_FC_P AND
		(NOT d18in_Perform_FC_P_Or_FC_P_A AND NOT d9in_Occupancy_Status = "vacant" AND NOT d9in_Occupancy_Status = "technical disturbed" AND NOT d14in_Running_Timer)]/
		send Change_Trigger (CommandFromEIL) to p86out;
		send Execute_FC_P to p8out;
		Request_FC_P[D22in_Con_Use_FC_P AND (d18in_Perform_FC_P_Or_FC_P_A OR d9in_Occupancy_Status = "vacant" OR d9in_Occupancy_Status = "technical disturbed" OR d14in_Running_Timer)]/
		send Report_Command_Rejected(cOp2_Reason_For_Rejection()) to p7out;
		Request_FC_P_A[D23in_Con_Use_FC_P_A AND
		(NOT d18in_Perform_FC_P_Or_FC_P_A AND NOT d9in_Occupancy_Status = "vacant" AND NOT d9in_Occupancy_Status = "technical disturbed" AND NOT d14in_Running_Timer)]/
		send Change_Trigger (CommandFromEIL) to p86out;
		send Execute_FC_P_A to p8out;
		Request_FC_P_A[
		D23in_Con_Use_FC_P_A AND
		(d18in_Perform_FC_P_Or_FC_P_A OR d9in_Occupancy_Status = "vacant" OR d9in_Occupancy_Status = "technical disturbed" OR d14in_Running_Timer)]/
		send Report_Command_Rejected(cOp2_Reason_For_Rejection()) to p7out;
		Request_Acknowledgement[D23in_Con_Use_FC_P_A AND d19in_Process_State = "Waiting for an acknowledgment"]/send Change_Trigger (CommandFromEIL) to p86out;
		send Confirm_Acknowledgement to p8out;
		Request_Acknowledgement[D23in_Con_Use_FC_P_A AND NOT d19in_Process_State = "Waiting for an acknowledgment"]/
		send Report_Command_Rejected(cOp2_Reason_For_Rejection()) to p7out;
		Request_Cancel[(D22in_Con_Use_FC_P OR D23in_Con_Use_FC_P_A) AND d18in_Perform_FC_P_Or_FC_P_A]/send Change_Trigger (CommandFromEIL) to p86out;
		send Execute_Cancel to p8out;
		Request_Cancel[(D22in_Con_Use_FC_P OR D23in_Con_Use_FC_P_A) AND NOT d18in_Perform_FC_P_Or_FC_P_A]/
		send Report_Command_Rejected(cOp2_Reason_For_Rejection()) to p7out;
		Request_DRFC[
		D24in_Con_Use_DRFC AND (NOT d13in_Able_To_Be_Forced_To_Clear AND NOT d14in_Running_Timer) AND
		(d9in_Occupancy_Status = "occupied in" OR d9in_Occupancy_Status = "unreliable in")]/
		cOp3_Report_Change_Trigger(ReportedSource);
		send Execute_DRFC to p5out;
		Request_DRFC[
		D24in_Con_Use_DRFC AND (d13in_Able_To_Be_Forced_To_Clear OR d14in_Running_Timer OR
		d9in_Occupancy_Status = "vacant" OR d9in_Occupancy_Status = "technical disturbed" OR d18in_Perform_FC_P_Or_FC_P_A)]/
		cOp4_Report_Command_Rejected(ReportedSource);
		Request_UFL[D25in_Con_Use_UFL AND (NOT d9in_Occupancy_Status = "vacant" AND NOT d9in_Occupancy_Status = "technical disturbed" AND NOT d14in_Running_Timer)]/
		send Change_Trigger (CommandFromEIL) to p86out;
		send Execute_UFL to p6out;
		Request_UFL[D25in_Con_Use_UFL AND (d9in_Occupancy_Status = "vacant" OR d9in_Occupancy_Status = "technical disturbed" OR d14in_Running_Timer)]/
		send Report_Command_Rejected(cOp2_Reason_For_Rejection()) to p7out;
		Request_Visual_Sweeping_Confirmation[(D22in_Con_Use_FC_P OR D23in_Con_Use_FC_P_A) AND d19in_Process_State = "Waiting for sweeping train"]/
		send Execute_Visual_Sweeping_Confirmation to p8out;
		Request_Visual_Sweeping_Confirmation[(D22in_Con_Use_FC_P OR D23in_Con_Use_FC_P_A) AND NOT d19in_Process_State = "Waiting for sweeping train"]/
		send Report_Command_Rejected(cOp2_Reason_For_Rejection()) to p71out;
				Basic TDS AC
				Option FC-P/-A
				Option Update FL

Eu.TDS.6104	Info	Initial0		Basic TDS AC
Eu.TDS.6105	Req	/{Initial0 - RECEIVE_COMMANDS}		Basic TDS AC
Eu.TDS.6106	Info	RECEIVE_COMMANDS		Basic TDS AC
Eu.TDS.6878	Req	Request_Acknowledgement[D23in_Con_Use_FC_P_A AND d19in_Process_State = "Waiting for an acknowledgment"]/send Change_Trigger (CommandFromEIL) to p86out; send Confirm_Acknowledgement to p8out;{State-internal in RECEIVE_COMMANDS}		Basic TDS AC Option FC-P/-A

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6879	Req	Request_FC_P[D22in_Con_Use_FC_P AND (NOT d18in_Perform_FC_P_Or_FC_P_A AND NOT d9in_Occupancy_Status = "vacant" AND NOT d9in_Occupancy_Status = "technical disturbed" AND NOT d14in_Running_Timer)]/ send Change_Trigger (CommandFromEIL) to p86out; send Execute_FC_P to p8out;{State-internal in RECEIVE_COMMANDS}		Basic TDS AC Option FC-P/-A
Eu.TDS.6880	Req	Request_FC_P_A[D23in_Con_Use_FC_P_A AND (NOT d18in_Perform_FC_P_Or_FC_P_A AND NOT d9in_Occupancy_Status = "vacant" AND NOT d9in_Occupancy_Status = "technical disturbed" AND NOT d14in_Running_Timer)]/ send Change_Trigger (CommandFromEIL) to p86out; send Execute_FC_P_A to p8out;{State-internal in RECEIVE_COMMANDS}		Basic TDS AC Option FC-P/-A
Eu.TDS.6881	Req	Request_FC_P_A[D23in_Con_Use_FC_P_A AND (d18in_Perform_FC_P_Or_FC_P_A OR d9in_Occupancy_Status = "vacant" OR d9in_Occupancy_Status = "technical disturbed" OR d14in_Running_Timer)]/ send Report_Command_Rejected(cOp2_Reason_For_Rejection()) to p7out;{State-internal in RECEIVE_COMMANDS}		Basic TDS AC Option FC-P/-A
Eu.TDS.6882	Req	Request_FC_U[D21in_Con_Use_FC_U AND (d9in_Occupancy_Status = "vacant" OR d9in_Occupancy_Status = "technical disturbed" OR d14in_Running_Timer)]/ cOp4_Report_Command_Rejected(ReportedSource);{State-internal in RECEIVE_COMMANDS}		Basic TDS AC

Eu.TDS.6883	Req	Request_FC_U[D21in_Con_Use_FC_U AND (NOT d9in_Occupancy_Status = "vacant" AND NOT d9in_Occupancy_Status = "technical disturbed" AND NOT d14in_Running_Timer)]/
		cOp3_Report_Change_Trigger(ReportedSource);
		if d18in_Perform_FC_P_Or_FC_P_A then
		send Execute_Cancel to p8out;
		endif
		send Execute_FC to p4out;{State-internal in RECEIVE_COMMANDS}
				Basic TDS
				AC

Eu.TDS.6884	Req	Request_UFL[D25in_Con_Use_UFL AND (d9in_Occupancy_Status = "vacant" OR d9in_Occupancy_Status = "technical disturbed" OR d14in_Running_Timer)]/ send Report_Command_Rejected(cOp2_Reason_For_Rejection()) to p7out;{State-internal in RECEIVE_COMMANDS}		Basic TDS AC Option Update FL
Eu.TDS.6885	Req	Request_UFL[D25in_Con_Use_UFL AND (NOT d9in_Occupancy_Status = "vacant" AND NOT d9in_Occupancy_Status = "technical disturbed" AND NOT d14in_Running_Timer)]/ send Change_Trigger (CommandFromEIL) to p86out; send Execute_UFL to p6out;{State-internal in RECEIVE_COMMANDS}		Basic TDS AC Option Update FL
Eu.TDS.6886	Req	Request_Visual_Sweeping_Confirmation[(D22in_Con_Use_FC_P OR D23in_Con_Use_FC_P_A) AND NOT d19in_Process_State = "Waiting for sweeping train"]/ send Report_Command_Rejected(cOp2_Reason_For_Rejection()) to p71out;{State-internal in RECEIVE_COMMANDS}		Basic TDS AC Option FC-P/-A
Eu.TDS.6887	Req	Request_Visual_Sweeping_Confirmation[(D22in_Con_Use_FC_P OR D23in_Con_Use_FC_P_A) AND d19in_Process_State = "Waiting for sweeping train"]/ send Execute_Visual_Sweeping_Confirmation to p8out;{State-internal in RECEIVE_COMMANDS}		Basic TDS AC Option FC-P/-A
Eu.TDS.6888	Req	Request_Acknowledgement[D23in_Con_Use_FC_P_A AND NOT d19in_Process_State = "Waiting for an acknowledgment"]/ send Report_Command_Rejected(cOp2_Reason_For_Rejection()) to p7out;{State-internal in RECEIVE_COMMANDS}		Basic TDS AC Option FC-P/-A
Eu.TDS.6889	Req	Request_Cancel[(D22in_Con_Use_FC_P OR D23in_Con_Use_FC_P_A) AND NOT d18in_Perform_FC_P_Or_FC_P_A]/ send Report_Command_Rejected(cOp2_Reason_For_Rejection()) to p7out;{State-internal in RECEIVE_COMMANDS}		Basic TDS AC Option FC-P/-A
Eu.TDS.6890	Req	Request_Cancel[(D22in_Con_Use_FC_P OR D23in_Con_Use_FC_P_A) AND d18in_Perform_FC_P_Or_FC_P_A]/send Change_Trigger (CommandFromEIL) to p86out; send Execute_Cancel to p8out;{State-internal in RECEIVE_COMMANDS}		Basic TDS AC Option FC-P/-A
Eu.TDS.6891	Req	Request_DRFC[D24in_Con_Use_DRFC AND (NOT d13in_Able_To_Be_Forced_To_Clear AND NOT d14in_Running_Timer) AND (d9in_Occupancy_Status = "occupied in" OR d9in_Occupancy_Status = "unreliable in")]/ cOp3_Report_Change_Trigger(ReportedSource); send Execute_DRFC to p5out;{State-internal in RECEIVE_COMMANDS}		Basic TDS AC
Eu.TDS.6892	Req	Request_DRFC[D24in_Con_Use_DRFC AND (d13in_Able_To_Be_Forced_To_Clear OR d14in_Running_Timer OR d9in_Occupancy_Status = "vacant" OR d9in_Occupancy_Status = "technical disturbed" OR d18in_Perform_FC_P_Or_FC_P_A)]/ cOp4_Report_Command_Rejected(ReportedSource);{State-internal in RECEIVE_COMMANDS}		Basic TDS AC
Eu.TDS.6893	Req	Request_FC_C[D20in_Con_Use_FC_C AND d13in_Able_To_Be_Forced_To_Clear]/cOp3_Report_Change_Trigger(ReportedSource); send Execute_FC to p4out;{State-internal in RECEIVE_COMMANDS}		Basic TDS AC
Eu.TDS.6894	Req	Request_FC_C[D20in_Con_Use_FC_C AND NOT d13in_Able_To_Be_Forced_To_Clear]/ cOp4_Report_Command_Rejected(ReportedSource);{State-internal in RECEIVE_COMMANDS}		Basic TDS AC
Eu.TDS.6895	Req	Request_FC_P[D22in_Con_Use_FC_P AND (d18in_Perform_FC_P_Or_FC_P_A OR d9in_Occupancy_Status = "vacant" OR d9in_Occupancy_Status = "technical disturbed" OR d14in_Running_Timer)]/ send Report_Command_Rejected(cOp2_Reason_For_Rejection()) to p7out;{State-internal in RECEIVE_COMMANDS}		Basic TDS AC Option FC-P/-A
Eu.TDS.6115	Info	F_Handle_Internal_FC_U_Command		Basic TDS AC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6116	Info	[Block] F_Handle_Internal_FC_U_Command [Functional Viewpoint - Subsystem Requirements - Functional Entity] 		Basic TDS AC
Eu.TDS.6122	Info	p3out		Basic TDS AC
Eu.TDS.6123	Info	T33in_FC_U	The port T33in_FC_U represents the trigger to execute Force section status to clear, unconditional from internal.	Basic TDS AC
Eu.TDS.6117	Info	F_Handle_Internal_FC_U_Command - Behaviour		Basic TDS AC
Eu.TDS.6118	Info	Functional Viewpoint - Subsystem Requirements - Functional Entity STD 5 		Basic TDS AC
Eu.TDS.6119	Info	Initial0		Basic TDS AC
Eu.TDS.6120	Req	/{Initial0 - RECEIVING_COMMANDS_FROM_INTERNAL}		Basic TDS AC
Eu.TDS.6121	Info	RECEIVING_COMMANDS_FROM_INTERNAL		Basic TDS AC
Eu.TDS.6896	Req	when(T33in_FC_U)/send Request_FC_U(Internal) to p3out;{State-internal in RECEIVING_COMMANDS_FROM_INTERNAL}		Basic TDS AC
Eu.TDS.6508	Info	F_TDS6_Maintainer_Commands_And_Messages		Basic TDS AC
Eu.TDS.6509	Info	[Block] F_TDS6_Maintainer_Commands_And_Messages [Functional Viewpoint - Subsystem Requirements - Functional Entity] 		Basic TDS AC
Eu.TDS.6517	Info	p3out		Basic TDS AC
Eu.TDS.6518	Info	p71in		Basic TDS AC
Eu.TDS.6519	Info	T34in_DRFC	The port T34in_DRFC represents the receiving of the command Cd_DRFC via TDS6 from Maintainer.	Basic TDS AC
Eu.TDS.6520	Info	T35in_FC	The port T35in_FC represents the receiving of the command Cd_FC via TDS6 from Maintainer.	Basic TDS AC
Eu.TDS.6521	Info	T36out_Command_Rejected	The port T36out_Command_Rejected represents the sending of the message Msg_TVPS_Occupancy_Status via TDS6 to the Maintainer.	Basic TDS AC
Eu.TDS.6522	Info	T41in_Visual_Sweeping_Confirmed	The port T41in_Visual_Sweeping_Confirmed represents the receiving of the command Cd_Visual_Sweeping_Confirmed via TDS6 from Maintainer.	Basic TDS AC
Eu.TDS.6510	Info	D35in_Mode_Of_FC	The port D35in_Mode_Of_FC defines the FC-Mode (FC-C or FC-U) to T35in_FC.	Basic TDS AC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6511	Info	D36out_Command_Rejected	The port D36out_Command_Rejected defines the reason for rejection of the last received command (Operational or Technical) to T36out_Command_Rejected.	Basic TDS AC
Eu.TDS.6512	Info	F_TDS6_Maintainer_Commands_And_Messages - Behaviour		Basic TDS AC

Eu.TDS.6513	Info	Functional Viewpoint - Subsystem Requirements - Functional Entity STD 6
		stm [State Machine] F_TDS6_Maintainer_Commands_And_Messages - Behaviour [Functional Viewpoint - Subsystem Requirements - Functional Entity STD 6]
		Initial0
		RECEIVING_COMMANDS_AND_REPORT_MESSAGES
		when(T35in_FC)[D35in_Mode_Of_FC = "FC-C"]/send Request_FC_C(Maintainer) to p3out;
		when(T35in_FC)[D35in_Mode_Of_FC = "FC-U"]/send Request_FC_U(Maintainer) to p3out;
		when(T34in_DRFC)/send Request_DRFC(Maintainer) to p3out;
		Report_Command_Rejected[ReportedReasonForRejection = Operational]/D36out_Command_Rejected := "Operational";
		T36out_Command_Rejected := TRUE;
		Report_Command_Rejected[ReportedReasonForRejection = Technical]/D36out_Command_Rejected := "Technical";
		T36out_Command_Rejected := TRUE;
		when(T41in_Visual_Sweeping_Confirmed)/send Request_Visual_Sweeping_Confirmation to p3out;
				Basic TDS AC

Eu.TDS.6514	Info	Initial0		Basic TDS AC
Eu.TDS.6515	Req	/{Initial0 - RECEIVING_COMMANDS_AND_REPORT_MESSAGES}		Basic TDS AC
Eu.TDS.6516	Info	RECEIVING_COMMANDS_AND_REPORT_MESSAGES		Basic TDS AC
Eu.TDS.6932	Req	Report_Command_Rejected[ReportedReasonForRejection = Operational]/D36out_Command_Rejected := "Operational"; T36out_Command_Rejected := TRUE;{State-internal in RECEIVING_COMMANDS_AND_REPORT_MESSAGES}		Basic TDS AC
Eu.TDS.6933	Req	Report_Command_Rejected[ReportedReasonForRejection = Technical]/D36out_Command_Rejected := "Technical"; T36out_Command_Rejected := TRUE;{State-internal in RECEIVING_COMMANDS_AND_REPORT_MESSAGES}		Basic TDS AC
Eu.TDS.6934	Req	when(T34in_DRFC)/send Request_DRFC(Maintainer) to p3out;{State-internal in RECEIVING_COMMANDS_AND_REPORT_MESSAGES}		Basic TDS AC
Eu.TDS.6935	Req	when(T35in_FC)[D35in_Mode_Of_FC = "FC-U"]/send Request_FC_U(Maintainer) to p3out;{State-internal in RECEIVING_COMMANDS_AND_REPORT_MESSAGES}		Basic TDS AC
Eu.TDS.6936	Req	when(T35in_FC)[D35in_Mode_Of_FC = "FC-C"]/send Request_FC_C(Maintainer) to p3out;{State-internal in RECEIVING_COMMANDS_AND_REPORT_MESSAGES}		Basic TDS AC
Eu.TDS.6937	Req	when(T41in_Visual_Sweeping_Confirmed)/send Request_Visual_Sweeping_Confirmation to p3out;{State-internal in RECEIVING_COMMANDS_AND_REPORT_MESSAGES}		Basic TDS AC
Eu.TDS.6443	Info	F_Perform_FC_P_Or_FC_P_A		Option FC-P/-A
Eu.TDS.6444	Info	[Block] F_Perform_FC_P_Or_FC_P_A [Functional Viewpoint - Subsystem Requirements - Functional Entity] ibd [Block] F_Perform_FC_P_Or_FC_P_A [Functional Viewpoint - Subsystem Requirements - Functional Entity] «functional entity» F_Perform_FC_P_Or_FC_P_A Operation «Operation» cOp2_Report_Incorrect_Count () «Operation» cOp3_Report_Timeout_t_Max () «Operation» cOp4_Report_Not_Permitted_Passing () «Operation» cOp5_Report_Outgoing_Wheel_before_t_Min () «Operation» cOp6_Report_Process_Canceled () D30in_Con_t_Max_FC_P_or_FC_P_A : Integer D31in_Con_t_Min_FC_P_or_FC_P_A : Integer D32in_Critical_Failure_TVPS : Boolean T39in_Undefined_Pattern : PulsedIn T40in_Sweeping_Successful : PulsedIn T42in_In_Permitted_Wheel : PulsedIn T43in_Out_Not_Permitted_Wheel : PulsedIn T44in_Out_Permitted_Wheel : PulsedIn T88in_In_Not_Permitted_Wheel : PulsedIn p8in : Perform_FC_P_Or_FC_P_A d18out_Perform_FC_P_or_FC_A : Boolean d19out_Process_State : String p4out : Perform_FC p86out : Report_Change_Trigger p87out : ReportReasonForFailure		Option FC-P/-A

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.

Eu.TDS.6445	Info	cOp2_Report_Incorrect_Count	if Mem_Last_Command = "FC-P" then
			send Reason_FC_P_failed(ReasonForFailure.IncorrectCount) to p87out;
			elseif Mem_Last_Command = "FC-P-A" then
			send Reason_FC_P_A_failed(ReasonForFailure.IncorrectCount) to p87out;
			end if
				Option FC-P/-A

Eu.TDS.6446	Info	cOp3_Report_Timeout_t_Max	if Mem_Last_Command = "FC-P" then
			send Reason_FC_P_failed(ReasonForFailure.Timeout_t_Max) to p87out;
			elseif Mem_Last_Command = "FC-P-A" then
			send Reason_FC_P_A_failed(ReasonForFailure.Timeout_t_Max) to p87out;
			end if
				Option FC-P/-A

Eu.TDS.6447	Info	cOp4_Report_Not_Permitted_Passing	if Mem_Last_Command = "FC-P" then
			send Reason_FC_P_failed(ReasonForFailure.NotPermittedPassing) to p87out;
			elseif Mem_Last_Command = "FC-P-A" then
			send Reason_FC_P_A_failed(ReasonForFailure.NotPermittedPassing) to p87out;
			end if
				Option FC-P/-A

Eu.TDS.6448	Info	cOp5_Report_Outgoing_Wheel_before_t_Min	if Mem_Last_Command = "FC-P" then
			send Reason_FC_P_failed(ReasonForFailure.OutgoingWheelBefore_t_Min) to p87out;
			elseif Mem_Last_Command = "FC-P-A" then
			send Reason_FC_P_A_failed(ReasonForFailure.OutgoingWheelBefore_t_Min) to p87out;
			end if
				Option FC-P/-A

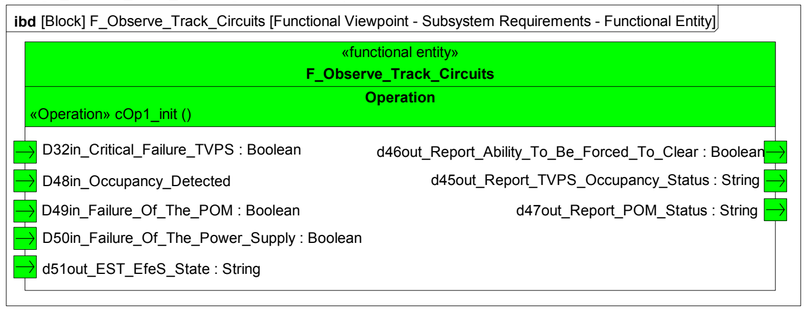
Eu.TDS.6449	Info	cOp6_Report_Process_Canceled	if Mem_Last_Command = "FC-P" then
			send Reason_FC_P_failed(ReasonForFailure.ProcessCanceled) to p87out;
			elseif Mem_Last_Command = "FC-P-A" then
			send Reason_FC_P_A_failed(ReasonForFailure.ProcessCanceled) to p87out;
			end if
				Option FC-P/-A

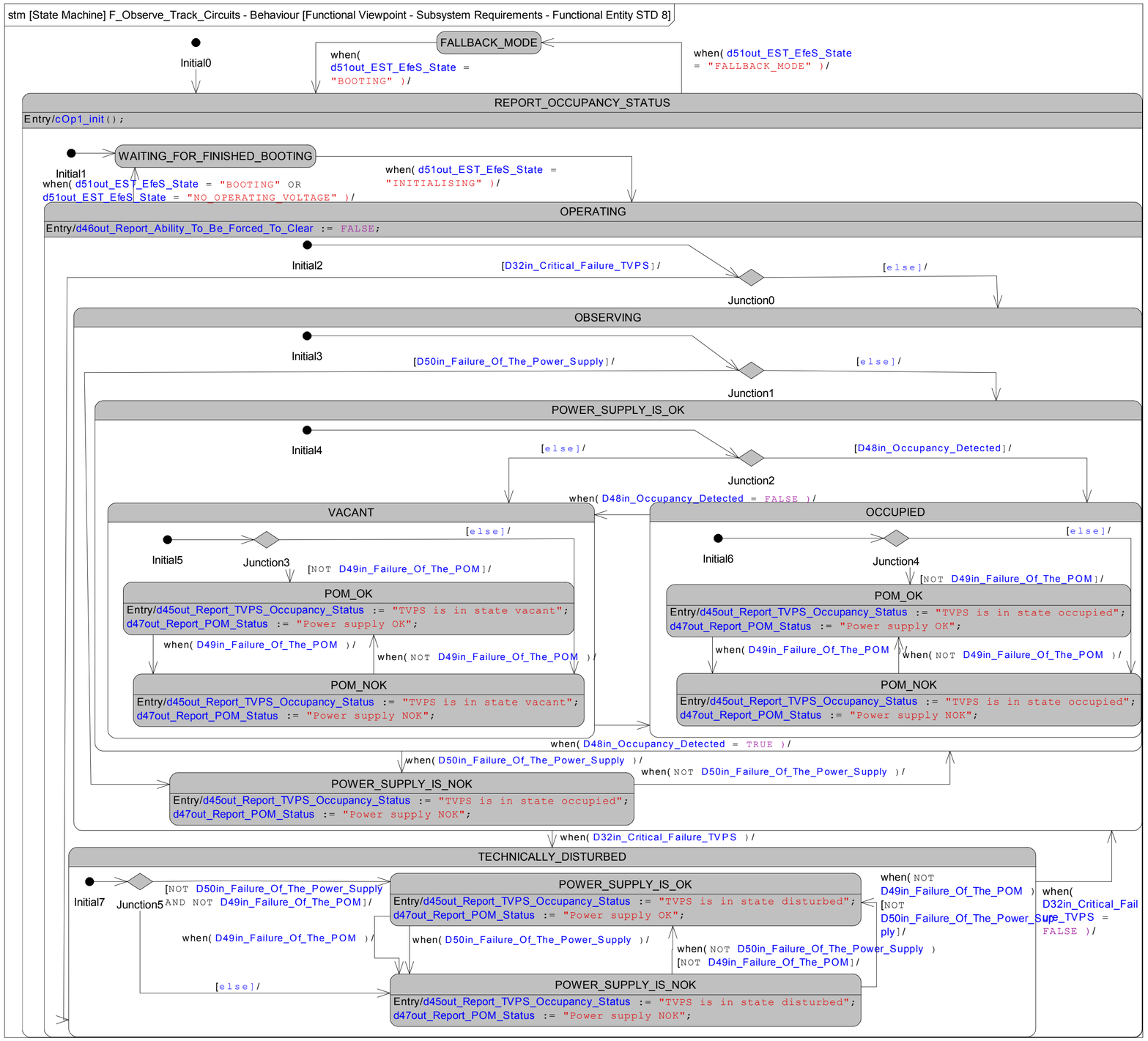
Eu.TDS.6498	Info	p4out		Option FC-P/-A
Eu.TDS.6499	Info	p86out		Option FC-P/-A
Eu.TDS.6500	Info	p87out		Option FC-P/-A
Eu.TDS.6501	Info	p8in		Option FC-P/-A
Eu.TDS.6502	Info	T39in_Undefined_Pattern	The port T39in_Undefined_Pattern refines the FlowProperty Passing_Detected and represents that a sensor of a detection point receives an uninterpretable or undefined pattern.	Option FC-P/-A
Eu.TDS.6503	Info	T40in_Sweeping_Successful	The port T40in_Sweeping_Successful represents the trigger to confirm that a Sweeping Train was successful. Note: The conditions for a successful sweeping are defined by national specifications. In future phases of the System Pillar, national specifications will be replaced by harmonised specifications.	Option FC-P/-A
Eu.TDS.6504	Info	T42in_In_Permitted_Wheel	The port T42in_In_Permitted_Wheel refines the FlowProperty Passing_Detected and represents an incomming Wheel at a Detection Point of the relevant TVPS which is permitted by configuration, during execution of a FC-P or FC-P-A command.	Option FC-P/-A
Eu.TDS.6505	Info	T43in_Out_Not_Permitted_Wheel	The port T43in_Out_Not_Permitted_Wheel refines the FlowProperty Not_Permitted_Passing_Detected and represents a passing (outgoing) of a Detection Point, which is not permitted by configuration, during execution of a FC-P or FC-P-A command.	Option FC-P/-A

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6506	Info	T44in_Out_Permitted_Wheel	The port T38in_Wheel_Out refines the FlowProperty Passing_Detected and represents an outcomming Wheel at a Detection Point of the relevant TVPS which is permitted by configuration, during execution of a FC-P or FC-P-A command.	Option FC-P/-A
Eu.TDS.6507	Info	T88in_In_Not_Permitted_Wheel	The port T88in_In_Not_Permitted_Wheel refines the FlowProperty Not_Permitted_Passing_Detected and represents a passing (incoming) of a Detection Point, which is not permitted by configuration, during execution of a FC-P or FC-P-A command.	Option FC-P/-A
Eu.TDS.6450	Info	d18out_Perform_FC_P_or_FC_A		Option FC-P/-A
Eu.TDS.6451	Info	d19out_Process_State		Option FC-P/-A
Eu.TDS.6452	Info	D30in_Con_t_Max_FC_P_or_FC_P_A	The port D30in_Con_t_Max_FC_P_or_FC_P_A refines the time value for Con_t_Max_FC_P_or_FC_P_A. This is a configurable timer, defining the maximum time between detecting a sweeping train and confirmation of a succesfull sweeping.	Option FC-P/-A
Eu.TDS.6453	Info	D31in_Con_t_Min_FC_P_or_FC_P_A	The port D31in_Con_t_Min_FC_P_or_FC_P_A refines the time value for Con_t_Min_FC_P_or_FC_P_A. This is a configurable timer, which starts with the first detected incomming Wheel. - Proposed resolution: steps of 0,5 s - Proposed range: from 0 s up to 3600 s	Option FC-P/-A
Eu.TDS.6454	Info	D32in_Critical_Failure_TVPS	The port D32in_Critical_Failure_TVPS represents a critical failure of a TVPS, e.g. an interface disturbance between the components of the TVPS or a hardware failure of the components of the Subsystem - Train Detection System. - True: critical failure of a TVPS - False: no critical failure of a TVPS	Option FC-P/-A
Eu.TDS.6455	Info	F_Perform_FC_P_Or_FC_P_A - Behaviour		Option FC-P/-A

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6458	Info	Functional Viewpoint - Subsystem Requirements - Functional Entity STD 7		Option FC-P/-A
Eu.TDS.6456	Info	FAILED		Option FC-P/-A
Eu.TDS.6457	Req	/{FAILED - WAITING}		Option FC-P/-A
Eu.TDS.6459	Info	Initial0		Option FC-P/-A
Eu.TDS.7005	Req	/{Initial0 - WAITING}		Option FC-P/-A
Eu.TDS.6461	Info	PERFORM_FC_P_OR_FC_P_A		Option FC-P/-A
Eu.TDS.6462	Req	Execute_Cancel/cOp6_Report_Process_Canceled();{PERFORM_FC_P_OR_FC_P_A - FAILED}		Option FC-P/-A
Eu.TDS.6463	Info	Initial1		Option FC-P/-A
Eu.TDS.7006	Req	/{Initial1 - WAITING_FOR_SWEEPING_TRAIN}		Option FC-P/-A
Eu.TDS.6465	Info	SUCCESSFUL_SWEEPING		Option FC-P/-A
Eu.TDS.6466	Req	[Mem_Last_Command = "FC-P"]/ send Execute_FC to p4out;{SUCCESSFUL_SWEEPING - WAITING}		Option FC-P/-A
Eu.TDS.6467	Req	[Mem_Last_Command = "FC-P-A"]/{SUCCESSFUL_SWEEPING - WAITING_FOR_ACKNOWLEDGEMENT}		Option FC-P/-A
Eu.TDS.6468	Info	SWEEPING_TRAIN_DETECTED		Option FC-P/-A

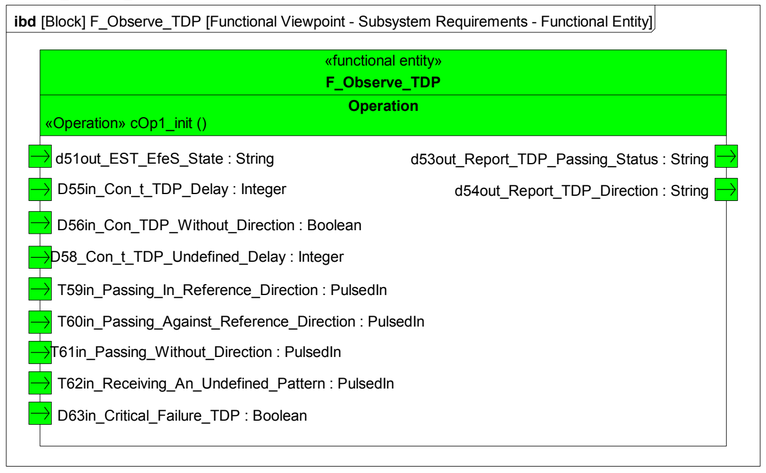
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6469	Req	after(D30in_Con_t_Max_FC_P_or_FC_P_A)/cOp3_Report_Timeout_t_Max(); send Change_Trigger(InternalTrigger) to p86out;{SWEEPING_TRAIN_DETECTED - FAILED}		Option FC-P/-A
Eu.TDS.6470	Info	MONITOR_LAST_COUNTING_ACTION		Option FC-P/-A
Eu.TDS.6471	Info	INCOMING		Option FC-P/-A
Eu.TDS.6472	Req	when(T44in_Out_Permitted_Wheel)/{INCOMING - OUTGOING}		Option FC-P/-A
Eu.TDS.6473	Info	Initial3		Option FC-P/-A
Eu.TDS.7007	Req	/{Initial3 - OUTGOING}		Option FC-P/-A
Eu.TDS.6475	Info	OUTGOING		Option FC-P/-A
Eu.TDS.6476	Req	when(T40in_Sweeping_Successful)/send Change_Trigger(InternalTrigger) to p86out;{OUTGOING - SUCCESSFUL_SWEEPING}		Option FC-P/-A
Eu.TDS.6477	Req	when(T42in_In_Permitted_Wheel)/{OUTGOING - INCOMING}		Option FC-P/-A
Eu.TDS.6478	Info	MONITOR_T_MIN		Option FC-P/-A
Eu.TDS.6479	Info	Initial2		Option FC-P/-A
Eu.TDS.7008	Req	/{Initial2 - WAIITING_FOR_T_MIN}		Option FC-P/-A
Eu.TDS.6481	Info	T_MIM_EXPIRED		Option FC-P/-A
Eu.TDS.6482	Info	WAIITING_FOR_T_MIN		Option FC-P/-A
Eu.TDS.6483	Req	after(D31in_Con_t_Min_FC_P_or_FC_P_A)/{WAIITING_FOR_T_MIN - T_MIM_EXPIRED}		Option FC-P/-A
Eu.TDS.6484	Req	when(T44in_Out_Permitted_Wheel)/cOp5_Report_Outgoing_Wheel_before_t_Min();{WAIITING_FOR_T_MIN - FAILED}		Option FC-P/-A
Eu.TDS.6926	Req	entry/d19out_Process_State := "Sweeping train detected";{State-internal in SWEEPING_TRAIN_DETECTED}		Option FC-P/-A
Eu.TDS.6485	Info	WAITING_FOR_ACKNOWLEDGEMENT		Option FC-P/-A
Eu.TDS.6486	Req	Confirm_Acknowledgement/ send Execute_FC to p4out;{WAITING_FOR_ACKNOWLEDGEMENT - WAITING}		Option FC-P/-A
Eu.TDS.6487	Req	when(T42in_In_Permitted_Wheel OR T44in_Out_Permitted_Wheel)/ cOp2_Report_Incorrect_Count();{WAITING_FOR_ACKNOWLEDGEMENT - FAILED}		Option FC-P/-A
Eu.TDS.6929	Req	entry/d19out_Process_State := "Waiting for an acknowledgment";{State-internal in WAITING_FOR_ACKNOWLEDGEMENT}		Option FC-P/-A
Eu.TDS.6488	Info	WAITING_FOR_SWEEPING_TRAIN		Option FC-P/-A
Eu.TDS.6489	Req	Execute_Visual_Sweeping_Confirmation/send Change_Trigger(CommandFromMaintainer) to p86out;{WAITING_FOR_SWEEPING_TRAIN - SUCCESSFUL_SWEEPING}		Option FC-P/-A
Eu.TDS.6490	Req	when(T42in_In_Permitted_Wheel)/{WAITING_FOR_SWEEPING_TRAIN - SWEEPING_TRAIN_DETECTED}		Option FC-P/-A
Eu.TDS.6491	Req	when(T44in_Out_Permitted_Wheel)/cOp2_Report_Incorrect_Count();{WAITING_FOR_SWEEPING_TRAIN - FAILED}		Option FC-P/-A
Eu.TDS.6930	Req	entry/d19out_Process_State := "Waiting for sweeping train";{State-internal in WAITING_FOR_SWEEPING_TRAIN}		Option FC-P/-A
Eu.TDS.6492	Req	when(D32in_Critical_Failure_TVPS)/{PERFORM_FC_P_OR_FC_P_A - WAITING}		Option FC-P/-A
Eu.TDS.6493	Req	when(T39in_Undefined_Pattern)/cOp2_Report_Incorrect_Count();{PERFORM_FC_P_OR_FC_P_A - FAILED}		Option FC-P/-A
Eu.TDS.6494	Req	when(T88in_In_Not_Permitted_Wheel OR T43in_Out_Not_Permitted_Wheel)/cOp4_Report_Not_Permitted_Passing();{PERFORM_FC_P_OR_FC_P_A - FAILED}		Option FC-P/-A
Eu.TDS.6927	Req	entry/d18out_Perform_FC_P_or_FC_A := TRUE;{State-internal in PERFORM_FC_P_OR_FC_P_A}		Option FC-P/-A
Eu.TDS.6928	Req	exit/d18out_Perform_FC_P_or_FC_A := FALSE;{State-internal in PERFORM_FC_P_OR_FC_P_A}		Option FC-P/-A

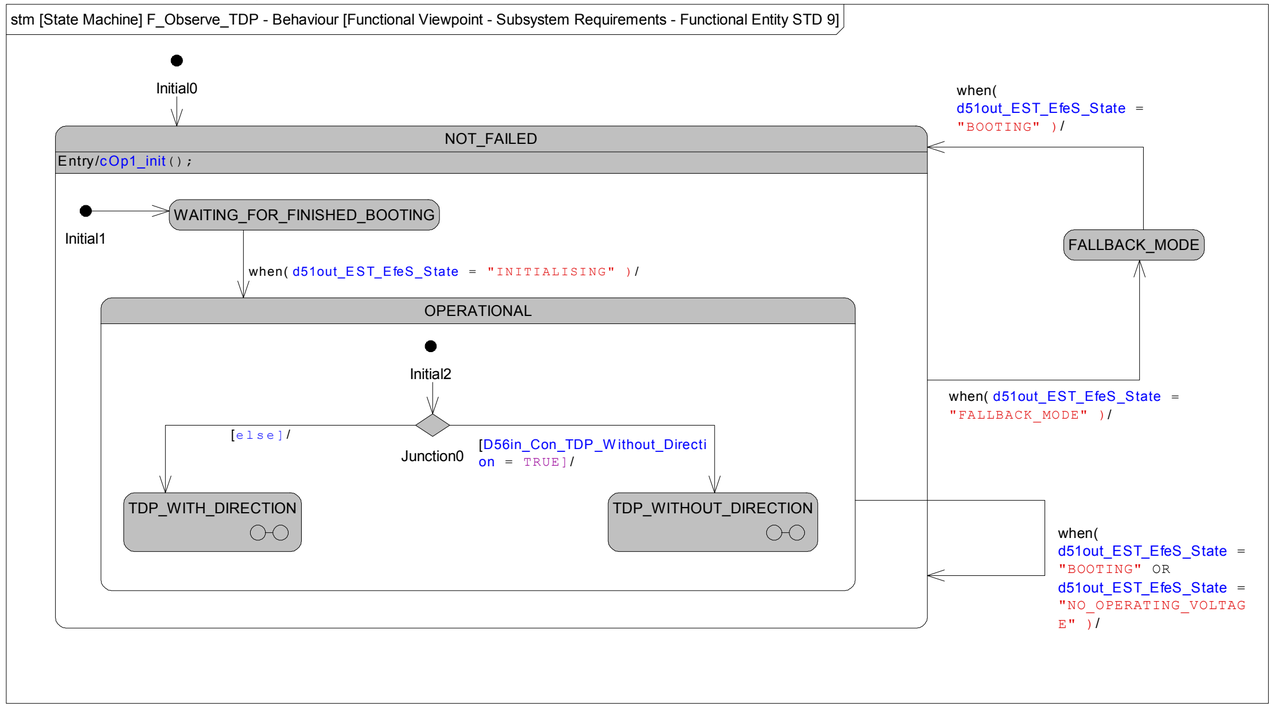
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6495	Info	WAITING		Option FC-P/-A
Eu.TDS.6496	Req	Execute_FC_P/ Mem_Last_Command := "FC-P";{WAITING - PERFORM_FC_P_OR_FC_P_A}		Option FC-P/-A
Eu.TDS.6497	Req	Execute_FC_P_A/Mem_Last_Command := "FC-P-A";{WAITING - PERFORM_FC_P_OR_FC_P_A}		Option FC-P/-A
Eu.TDS.6931	Req	entry/d19out_Process_State := "Waiting";{State-internal in WAITING}		Option FC-P/-A
Eu.TDS.6357	Info	F_Observe_Track_Circuits		Basic TDS TC
Eu.TDS.6358	Info	[Block] F_Observe_Track_Circuits [Functional Viewpoint - Subsystem Requirements - Functional Entity] 		Basic TDS TC
Eu.TDS.6359	Info	cOp1_init	d46out_Report_Ability_To_Be_Forced_To_Clear := FALSE; d45out_Report_TVPS_Occupancy_Status := "undefined"; d47out_Report_POM_Status := "undefined";	Basic TDS TC
Eu.TDS.6360	Info	D32in_Critical_Failure_TVPS	The port D32in_Critical_Failure_TVPS represents a critical failure of a TVPS, e.g. an interface disturbance between the components of the TVPS or a hardware failure of the components of the Subsystem - Train Detection System. - True: critical failure of a TVPS - False: no critical failure of a TVPS	Basic TDS TC
Eu.TDS.6361	Info	d45out_Report_TVPS_Occupancy_Status		Basic TDS TC
Eu.TDS.6362	Info	d46out_Report_Ability_To_Be_Forced_To_Clear		Basic TDS TC
Eu.TDS.6363	Info	d47out_Report_POM_Status		Basic TDS TC
Eu.TDS.6364	Info	D48in_Occupancy_Detected	The port D48in_Occupancy_Detected refines the FlowProperty Occupancy_Detected and represents a changing occupancy of a track circuit by a Wheel. This FlowPort will be used in later deliveries.	Basic TDS TC
Eu.TDS.6365	Info	D49in_Failure_Of_The_POM	The port D49in_Failure_Of_The_POM represents a failure of the POM. - True: failure of the POM - False: no failure of the POM	Basic TDS TC
Eu.TDS.6366	Info	D50in_Failure_Of_The_Power_Supply	The port D50in_Failure_Of_The_Power_Supply represents a failure of the Power Supply of the track circuit. - True: failure of the Power Supply - False: no failure of the Power Supply	Basic TDS TC
Eu.TDS.6367	Info	d51out_EST_EfeS_State		Basic TDS TC
Eu.TDS.6368	Info	F_Observe_Track_Circuits - Behaviour		Basic TDS TC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6371	Info	Functional Viewpoint - Subsystem Requirements - Functional Entity STD 8 		Basic TDS TC
Eu.TDS.6369	Info	FALLBACK_MODE		Basic TDS TC
Eu.TDS.6370	Req	when(d51out_EST_EfeS_State = "BOOTING")/{FALLBACK_MODE - REPORT_OCCUPANCY_STATUS}		Basic TDS TC
Eu.TDS.6372	Info	Initial0		Basic TDS TC

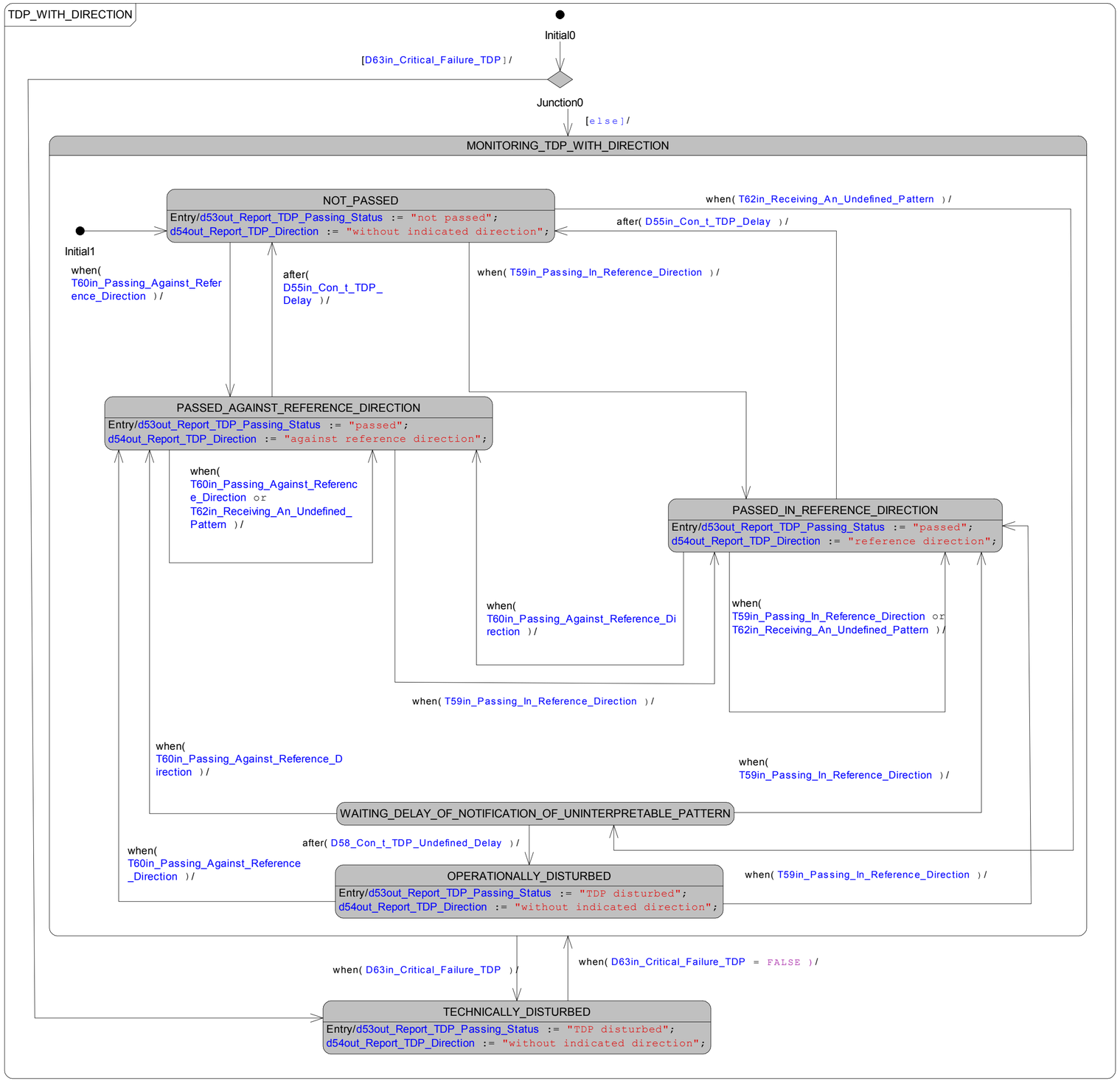
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6373	Req	/{Initial0 - REPORT_OCCUPANCY_STATUS}		Basic TDS TC
Eu.TDS.6374	Info	REPORT_OCCUPANCY_STATUS		Basic TDS TC
Eu.TDS.6375	Info	Initial1		Basic TDS TC
Eu.TDS.6376	Req	/{Initial1 - WAITING_FOR_FINISHED_BOOTING}		Basic TDS TC
Eu.TDS.6377	Info	OPERATING		Basic TDS TC
Eu.TDS.6380	Info	Initial2		Basic TDS TC
Eu.TDS.6381	Req	/{Initial2 - Junction0}		Basic TDS TC
Eu.TDS.6382	Info	Junction0		Basic TDS TC
Eu.TDS.6383	Req	[else]/{Junction0 - OBSERVING}		Basic TDS TC
Eu.TDS.6384	Req	[D32in_Critical_Failure_TVPS]/{Junction0 - TECHNICALLY_DISTURBED}		Basic TDS TC
Eu.TDS.6385	Info	OBSERVING		Basic TDS TC
Eu.TDS.6386	Info	Initial3		Basic TDS TC
Eu.TDS.6387	Req	/{Initial3 - Junction1}		Basic TDS TC
Eu.TDS.6388	Info	Junction1		Basic TDS TC
Eu.TDS.6389	Req	[D50in_Failure_Of_The_Power_Supply]/{Junction1 - POWER_SUPPLY_IS_NOK}		Basic TDS TC
Eu.TDS.6390	Req	[else]/{Junction1 - POWER_SUPPLY_IS_OK}		Basic TDS TC
Eu.TDS.6391	Info	POWER_SUPPLY_IS_NOK		Basic TDS TC
Eu.TDS.6392	Req	when(NOT D50in_Failure_Of_The_Power_Supply)/{POWER_SUPPLY_IS_NOK - POWER_SUPPLY_IS_OK}		Basic TDS TC
Eu.TDS.6918	Req	entry/d45out_Report_TVPS_Occupancy_Status := "TVPS is in state occupied"; d47out_Report_POM_Status := "Power supply NOK";{State-internal in POWER_SUPPLY_IS_NOK}		Basic TDS TC
Eu.TDS.6393	Info	POWER_SUPPLY_IS_OK		Basic TDS TC
Eu.TDS.6394	Info	Initial4		Basic TDS TC
Eu.TDS.6395	Req	/{Initial4 - Junction2}		Basic TDS TC
Eu.TDS.6396	Info	Junction2		Basic TDS TC
Eu.TDS.6397	Req	[D48in_Occupancy_Detected]/{Junction2 - OCCUPIED}		Basic TDS TC
Eu.TDS.6398	Req	[else]/{Junction2 - VACANT}		Basic TDS TC
Eu.TDS.6399	Info	OCCUPIED		Basic TDS TC
Eu.TDS.6400	Info	Initial6		Basic TDS TC
Eu.TDS.6401	Req	/{Initial6 - Junction4}		Basic TDS TC
Eu.TDS.6402	Info	Junction4		Basic TDS TC
Eu.TDS.6403	Req	[else]/{Junction4 - POM_NOK}		Basic TDS TC
Eu.TDS.6404	Req	[NOT D49in_Failure_Of_The_POM]/{Junction4 - POM_OK}		Basic TDS TC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6405	Info	POM_NOK		Basic TDS TC
Eu.TDS.6406	Req	when(NOT D49in_Failure_Of_The_POM)/{POM_NOK - POM_OK}		Basic TDS TC
Eu.TDS.6919	Req	entry/d45out_Report_TVPS_Occupancy_Status := "TVPS is in state occupied"; d47out_Report_POM_Status := "Power supply NOK";{State-internal in POM_NOK}		Basic TDS TC
Eu.TDS.6407	Info	POM_OK		Basic TDS TC
Eu.TDS.6408	Req	when(D49in_Failure_Of_The_POM)/{POM_OK - POM_NOK}		Basic TDS TC
Eu.TDS.6920	Req	entry/d45out_Report_TVPS_Occupancy_Status := "TVPS is in state occupied"; d47out_Report_POM_Status := "Power supply OK";{State-internal in POM_OK}		Basic TDS TC
Eu.TDS.6411	Req	when(D48in_Occupancy_Detected = FALSE)/{OCCUPIED - VACANT}		Basic TDS TC
Eu.TDS.6412	Info	VACANT		Basic TDS TC
Eu.TDS.6413	Info	Initial5		Basic TDS TC
Eu.TDS.6414	Req	/{Initial5 - Junction3}		Basic TDS TC
Eu.TDS.6415	Info	Junction3		Basic TDS TC
Eu.TDS.6416	Req	[else]/{Junction3 - POM_NOK}		Basic TDS TC
Eu.TDS.6417	Req	[NOT D49in_Failure_Of_The_POM]/{Junction3 - POM_OK}		Basic TDS TC
Eu.TDS.6418	Info	POM_NOK		Basic TDS TC
Eu.TDS.6419	Req	when(NOT D49in_Failure_Of_The_POM)/{POM_NOK - POM_OK}		Basic TDS TC
Eu.TDS.6921	Req	entry/d45out_Report_TVPS_Occupancy_Status := "TVPS is in state vacant"; d47out_Report_POM_Status := "Power supply NOK";{State-internal in POM_NOK}		Basic TDS TC
Eu.TDS.6420	Info	POM_OK		Basic TDS TC
Eu.TDS.6421	Req	when(D49in_Failure_Of_The_POM)/{POM_OK - POM_NOK}		Basic TDS TC
Eu.TDS.6922	Req	entry/d45out_Report_TVPS_Occupancy_Status := "TVPS is in state vacant"; d47out_Report_POM_Status := "Power supply OK";{State-internal in POM_OK}		Basic TDS TC
Eu.TDS.6424	Req	when(D48in_Occupancy_Detected = TRUE)/{VACANT - OCCUPIED}		Basic TDS TC
Eu.TDS.6425	Req	when(D50in_Failure_Of_The_Power_Supply)/{POWER_SUPPLY_IS_OK - POWER_SUPPLY_IS_NOK}		Basic TDS TC
Eu.TDS.6426	Req	when(D32in_Critical_Failure_TVPS)/{OBSERVING - TECHNICALLY_DISTURBED}		Basic TDS TC
Eu.TDS.6427	Info	TECHNICALLY_DISTURBED		Basic TDS TC
Eu.TDS.6428	Info	Initial7		Basic TDS TC
Eu.TDS.6429	Req	/{Initial7 - Junction5}		Basic TDS TC
Eu.TDS.6430	Info	Junction5		Basic TDS TC
Eu.TDS.6431	Req	[else]/{Junction5 - POWER_SUPPLY_IS_NOK}		Basic TDS TC
Eu.TDS.6432	Req	[NOT D50in_Failure_Of_The_Power_Supply AND NOT D49in_Failure_Of_The_POM]/{Junction5 - POWER_SUPPLY_IS_OK}		Basic TDS TC
Eu.TDS.6433	Info	POWER_SUPPLY_IS_NOK		Basic TDS TC
Eu.TDS.6434	Req	when(NOT D50in_Failure_Of_The_Power_Supply)[NOT D49in_Failure_Of_The_POM]/{POWER_SUPPLY_IS_NOK - POWER_SUPPLY_IS_OK}		Basic TDS TC
Eu.TDS.6923	Req	entry/d45out_Report_TVPS_Occupancy_Status := "TVPS is in state disturbed"; d47out_Report_POM_Status := "Power supply NOK";{State-internal in POWER_SUPPLY_IS_NOK}		Basic TDS TC

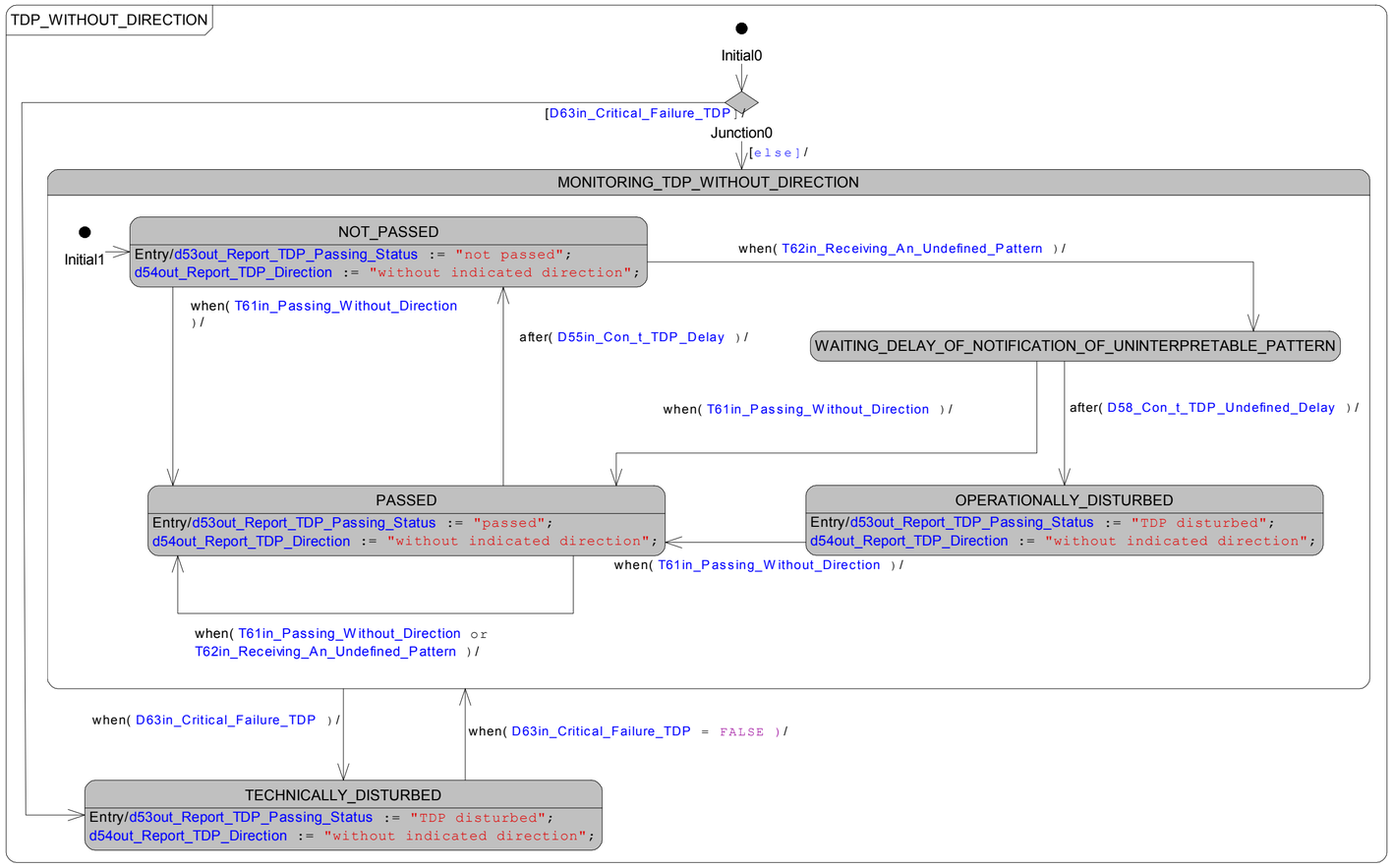
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.7056	Req	when(NOT D49in_Failure_Of_The_POM)[NOT D50in_Failure_Of_The_Power_Supply]/{POWER_SUPPLY_IS_NOK - POWER_SUPPLY_IS_OK}		Basic TDS TC
Eu.TDS.6435	Info	POWER_SUPPLY_IS_OK		Basic TDS TC
Eu.TDS.6436	Req	when(D50in_Failure_Of_The_Power_Supply)/{POWER_SUPPLY_IS_OK - POWER_SUPPLY_IS_NOK}		Basic TDS TC
Eu.TDS.6924	Req	entry/d45out_Report_TVPS_Occupancy_Status := "TVPS is in state disturbed"; d47out_Report_POM_Status := "Power supply OK";{State-internal in POWER_SUPPLY_IS_OK}		Basic TDS TC
Eu.TDS.7057	Req	when(D49in_Failure_Of_The_POM)/{POWER_SUPPLY_IS_OK - POWER_SUPPLY_IS_NOK}		Basic TDS TC
Eu.TDS.6437	Req	when(D32in_Critical_Failure_TVPS = FALSE)/{TECHNICALLY_DISTURBED - OBSERVING}		Basic TDS TC
Eu.TDS.6925	Req	entry/d46out_Report_Ability_To_Be_Forced_To_Clear := FALSE;{State-internal in OPERATING}		Basic TDS TC
Eu.TDS.7058	Req	when(d51out_EST_EfeS_State = "BOOTING" OR d51out_EST_EfeS_State = "NO_OPERATING_VOLTAGE")/{OPERATING - WAITING_FOR_FINISHED_BOOTING}		Basic TDS TC
Eu.TDS.6439	Req	entry/cOp1_init();{State-internal in REPORT_OCCUPANCY_STATUS}		Basic TDS TC
Eu.TDS.6440	Info	WAITING_FOR_FINISHED_BOOTING		Basic TDS TC
Eu.TDS.6441	Req	when(d51out_EST_EfeS_State = "INITIALISING")/{WAITING_FOR_FINISHED_BOOTING - OPERATING}		Basic TDS TC
Eu.TDS.6442	Req	when(d51out_EST_EfeS_State = "FALLBACK_MODE")/{REPORT_OCCUPANCY_STATUS - FALLBACK_MODE}		Basic TDS TC
Eu.TDS.6258	Info	F_Observe_TDP		Basic TDS TDP
Eu.TDS.6259	Info	[Block] F_Observe_TDP [Functional Viewpoint - Subsystem Requirements - Functional Entity] 		Basic TDS TDP
Eu.TDS.6353	Info	T59in_Passing_In_Reference_Direction	The port T59in_Passing_In_Reference_Direction refines the FlowProperty Passing_Detected and represents a Wheel in reference direction at a TDP.	Basic TDS TDP
Eu.TDS.6354	Info	T60in_Passing_Against_Reference_Direction	The port T60in_Passing_Against_Reference_Direction refines the FlowProperty Passing_Detected and represents a Wheel in against reference direction at a TDP.	Basic TDS TDP
Eu.TDS.6355	Info	T61in_Passing_Without_Direction	The port T59in_Passing_In_Reference_Direction refines the FlowProperty Passing_Detected and represents a Wheel in reference direction at a TDP.	Basic TDS TDP
Eu.TDS.6356	Info	T62in_Receiving_An_Undefined_Pattern	The port T62in_Receiving_An_Undefined_Pattern refines the FlowProperty Passing_Detected and represents that a sensor of a TDP receives an uninterpretable or undefined pattern.	Basic TDS TDP
Eu.TDS.6260	Info	cOp1_init	d53out_Report_TDP_Passing_Status := "undefined"; d54out_Report_TDP_Direction := "undefined";	Basic TDS TDP

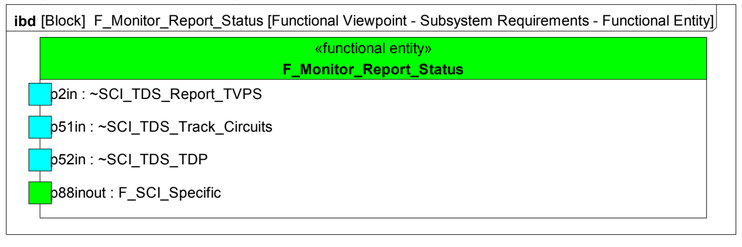
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6261	Info	d51out_EST_EfeS_State		Basic TDS TDP
Eu.TDS.6262	Info	d53out_Report_TDP_Passing_Status		Basic TDS TDP
Eu.TDS.6263	Info	d54out_Report_TDP_Direction		Basic TDS TDP
Eu.TDS.6264	Info	D55in_Con_t_TDP_Delay	The port D55in_Con_t_TDP_Delay refines the time value for Con_t_TDP_Delay. This timer defines the duration of a passed TDP and the message, that the TDP is in state "TDP not passed".	Basic TDS TDP
Eu.TDS.6265	Info	D56in_Con_TDP_Without_Direction	The port D56in_Con_TDP_Without_Direction provides the configuration whether the TDP reports the direction of the passing. The following values are permitted: - True: TDP is commanded - False: TDP is not commanded	Basic TDS TDP
Eu.TDS.6266	Info	D58_Con_t_TDP_Undefined_Delay	The port D58_Con_t_TDP_Undefined_Delay refines the time value for Con_t_TDP_Undefinded_Pattern_Delay. This timer defines the duration after an undefined pattern was detected till the TDP is reported as Disturbed. When a passing is detected during the duration of Con_t_TDP_Undefinded_Pattern_Delay the TDP will report this passing and no disturbace.	Basic TDS TDP
Eu.TDS.6267	Info	D63in_Critical_Failure_TDP	The port D63in_Critical_Failure_TDP represents a critical failure of a TDP, e.g. an interface disturbance between the components of the TDP or a hardware failure of the components of the Subsystem - Train Detection System. - True: critical failure of a TDP - False: no critical failure of a TDP	Basic TDS TDP
Eu.TDS.6268	Info	F_Observe_TDP - Behaviour		Basic TDS TDP
Eu.TDS.6271	Info	Functional Viewpoint - Subsystem Requirements - Functional Entity STD 9 		Basic TDS TDP
Eu.TDS.6269	Info	FALLBACK_MODE		Basic TDS TDP
Eu.TDS.6270	Req	when(d51out_EST_EfeS_State = "BOOTING")/{FALLBACK_MODE - NOT_FAILED}		Basic TDS TDP
Eu.TDS.6272	Info	Initial0		Basic TDS TDP

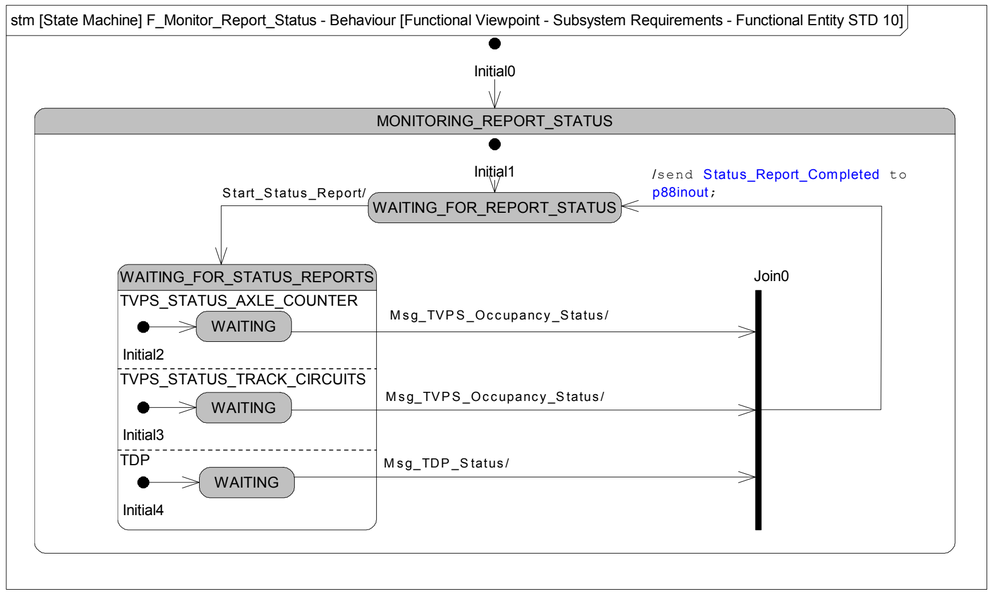
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6273	Req	/{Initial0 - NOT_FAILED}		Basic TDS TDP
Eu.TDS.6274	Info	NOT_FAILED		Basic TDS TDP
Eu.TDS.6275	Info	Initial1		Basic TDS TDP
Eu.TDS.6276	Req	/{Initial1 - WAITING_FOR_FINISHED_BOOTING}		Basic TDS TDP
Eu.TDS.6277	Info	OPERATIONAL		Basic TDS TDP
Eu.TDS.6278	Info	Initial2		Basic TDS TDP
Eu.TDS.6279	Req	/{Initial2 - Junction0}		Basic TDS TDP
Eu.TDS.6280	Info	Junction0		Basic TDS TDP
Eu.TDS.6281	Req	[else]/{Junction0 - TDP_WITH_DIRECTION}		Basic TDS TDP
Eu.TDS.6282	Req	[D56in_Con_TDP_Without_Direction = TRUE]/{Junction0 - TDP_WITHOUT_DIRECTION}		Basic TDS TDP
Eu.TDS.6283	Info	TDP_WITH_DIRECTION		Basic TDS TDP

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6316	Info	Functional Viewpoint - Subsystem Requirements - Functional Entity STD 9.1 		Basic TDS TDP
Eu.TDS.6284	Info	Initial0		Basic TDS TDP
Eu.TDS.6285	Req	/{Initial0 - Junction0}		Basic TDS TDP

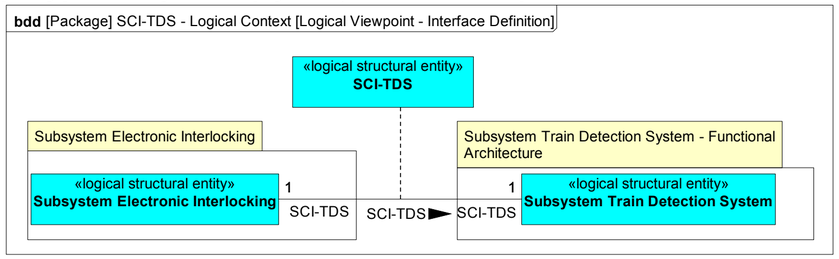
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6286	Info	Junction0		Basic TDS TDP
Eu.TDS.6287	Req	[else]/{Junction0 - MONITORING_TDP_WITH_DIRECTION}		Basic TDS TDP
Eu.TDS.6288	Req	[D63in_Critical_Failure_TDP]/{Junction0 - TECHNICALLY_DISTURBED}		Basic TDS TDP
Eu.TDS.6289	Info	MONITORING_TDP_WITH_DIRECTION		Basic TDS TDP
Eu.TDS.6290	Info	Initial1		Basic TDS TDP
Eu.TDS.6291	Req	/{Initial1 - NOT_PASSED}		Basic TDS TDP
Eu.TDS.6292	Info	NOT_PASSED		Basic TDS TDP
Eu.TDS.6294	Req	entry/d53out_Report_TDP_Passing_Status := "not passed"; d54out_Report_TDP_Direction := "without indicated direction";{State-internal in NOT_PASSED}		Basic TDS TDP
Eu.TDS.6295	Req	when(T59in_Passing_In_Reference_Direction)/{NOT_PASSED - PASSED_IN_REFERENCE_DIRECTION}		Basic TDS TDP
Eu.TDS.6296	Req	when(T60in_Passing_Against_Reference_Direction)/{NOT_PASSED - PASSED_AGAINST_REFERENCE_DIRECTION}		Basic TDS TDP
Eu.TDS.6297	Req	when(T62in_Receiving_An_Undefined_Pattern)/{NOT_PASSED - WAITING_DELAY_OF_NOTIFICATION_OF_UNINTERPRETABLE_PATTERN}		Basic TDS TDP
Eu.TDS.6298	Info	OPERATIONALLY_DISTURBED		Basic TDS TDP
Eu.TDS.6299	Req	when(T59in_Passing_In_Reference_Direction)/{OPERATIONALLY_DISTURBED - PASSED_IN_REFERENCE_DIRECTION}		Basic TDS TDP
Eu.TDS.6300	Req	when(T60in_Passing_Against_Reference_Direction)/{OPERATIONALLY_DISTURBED - PASSED_AGAINST_REFERENCE_DIRECTION}		Basic TDS TDP
Eu.TDS.6913	Req	entry/d53out_Report_TDP_Passing_Status := "TDP disturbed"; d54out_Report_TDP_Direction := "without indicated direction";{State-internal in OPERATIONALLY_DISTURBED}		Basic TDS TDP
Eu.TDS.6301	Info	PASSED_AGAINST_REFERENCE_DIRECTION		Basic TDS TDP
Eu.TDS.6302	Req	after(D55in_Con_t_TDP_Delay)/{PASSED_AGAINST_REFERENCE_DIRECTION - NOT_PASSED}		Basic TDS TDP
Eu.TDS.6304	Req	when(T59in_Passing_In_Reference_Direction)/{PASSED_AGAINST_REFERENCE_DIRECTION - PASSED_IN_REFERENCE_DIRECTION}		Basic TDS TDP
Eu.TDS.6305	Req	when(T60in_Passing_Against_Reference_Direction or T62in_Receiving_An_Undefined_Pattern)/{PASSED_AGAINST_REFERENCE_DIRECTION - PASSED_AGAINST_REFERENCE_DIRECTION}		Basic TDS TDP
Eu.TDS.6914	Req	entry/d53out_Report_TDP_Passing_Status := "passed"; d54out_Report_TDP_Direction := "against reference direction";{State-internal in PASSED_AGAINST_REFERENCE_DIRECTION}		Basic TDS TDP
Eu.TDS.6306	Info	PASSED_IN_REFERENCE_DIRECTION		Basic TDS TDP
Eu.TDS.6307	Req	after(D55in_Con_t_TDP_Delay)/{PASSED_IN_REFERENCE_DIRECTION - NOT_PASSED}		Basic TDS TDP
Eu.TDS.6309	Req	when(T59in_Passing_In_Reference_Direction or T62in_Receiving_An_Undefined_Pattern)/{PASSED_IN_REFERENCE_DIRECTION - PASSED_IN_REFERENCE_DIRECTION}		Basic TDS TDP
Eu.TDS.6310	Req	when(T60in_Passing_Against_Reference_Direction)/{PASSED_IN_REFERENCE_DIRECTION - PASSED_AGAINST_REFERENCE_DIRECTION}		Basic TDS TDP
Eu.TDS.6915	Req	entry/d53out_Report_TDP_Passing_Status := "passed"; d54out_Report_TDP_Direction := "reference direction";{State-internal in PASSED_IN_REFERENCE_DIRECTION}		Basic TDS TDP
Eu.TDS.6311	Info	WAITING_DELAY_OF_NOTIFICATION_OF_UNINTERPRETABLE_PATTERN		Basic TDS TDP
Eu.TDS.6312	Req	after(D58_Con_t_TDP_Undefined_Delay)/{WAITING_DELAY_OF_NOTIFICATION_OF_UNINTERPRETABLE_PATTERN - OPERATIONALLY_DISTURBED}		Basic TDS TDP
Eu.TDS.6313	Req	when(T59in_Passing_In_Reference_Direction)/{WAITING_DELAY_OF_NOTIFICATION_OF_UNINTERPRETABLE_PATTERN - PASSED_IN_REFERENCE_DIRECTION}		Basic TDS TDP
Eu.TDS.6314	Req	when(T60in_Passing_Against_Reference_Direction)/{WAITING_DELAY_OF_NOTIFICATION_OF_UNINTERPRETABLE_PATTERN - PASSED_AGAINST_REFERENCE_DIRECTION}		Basic TDS TDP
Eu.TDS.6315	Req	when(D63in_Critical_Failure_TDP)/{MONITORING_TDP_WITH_DIRECTION - TECHNICALLY_DISTURBED}		Basic TDS TDP
Eu.TDS.6317	Info	TECHNICALLY_DISTURBED		Basic TDS TDP

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6318	Req	entry/d53out_Report_TDP_Passing_Status := "TDP disturbed"; d54out_Report_TDP_Direction := "without indicated direction";{State-internal in TECHNICALLY_DISTURBED}		Basic TDS TDP
Eu.TDS.6320	Req	when(D63in_Critical_Failure_TDP = FALSE)/{TECHNICALLY_DISTURBED - MONITORING_TDP_WITH_DIRECTION}		Basic TDS TDP
Eu.TDS.6321	Info	TDP_WITHOUT_DIRECTION		Basic TDS TDP
Eu.TDS.6343	Info	Functional Viewpoint - Subsystem Requirements - Functional Entity STD 9.2 		Basic TDS TDP
Eu.TDS.6322	Info	Initial0		Basic TDS TDP
Eu.TDS.6323	Req	/{Initial0 - Junction0}		Basic TDS TDP
Eu.TDS.6324	Info	Junction0		Basic TDS TDP
Eu.TDS.6325	Req	[else]/{Junction0 - MONITORING_TDP_WITHOUT_DIRECTION}		Basic TDS TDP
Eu.TDS.6326	Req	[D63in_Critical_Failure_TDP]/{Junction0 - TECHNICALLY_DISTURBED}		Basic TDS TDP
Eu.TDS.6327	Info	MONITORING_TDP_WITHOUT_DIRECTION		Basic TDS TDP
Eu.TDS.6328	Info	Initial1		Basic TDS TDP
Eu.TDS.6329	Req	/{Initial1 - NOT_PASSED}		Basic TDS TDP
Eu.TDS.6330	Info	NOT_PASSED		Basic TDS TDP
Eu.TDS.6331	Req	entry/d53out_Report_TDP_Passing_Status := "not passed"; d54out_Report_TDP_Direction := "without indicated direction";{State-internal in NOT_PASSED}		Basic TDS TDP

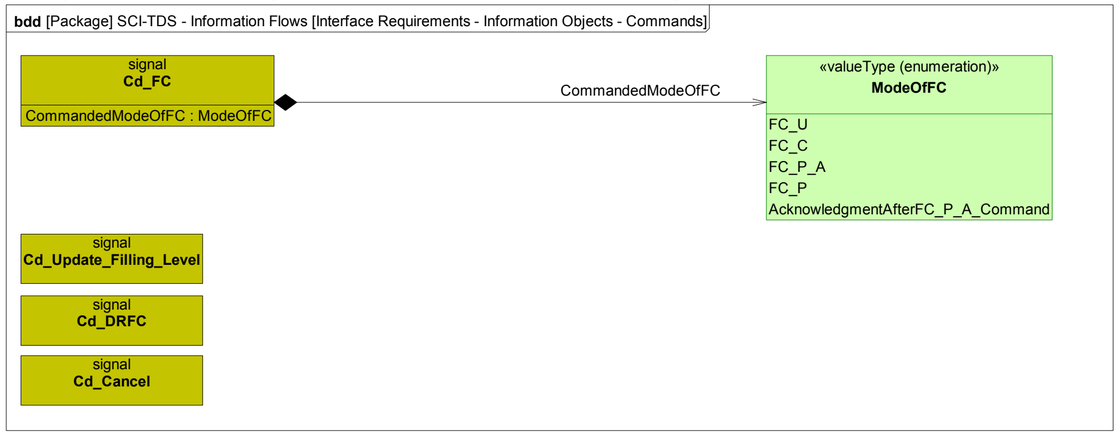
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6332	Req	when(T61in_Passing_Without_Direction)/{NOT_PASSED - PASSED}		Basic TDS TDP
Eu.TDS.6333	Req	when(T62in_Receiving_An_Undefined_Pattern)/{NOT_PASSED - WAITING_DELAY_OF_NOTIFICATION_OF_UNINTERPRETABLE_PATTERN}		Basic TDS TDP
Eu.TDS.6334	Info	OPERATIONALLY_DISTURBED		Basic TDS TDP
Eu.TDS.6335	Req	when(T61in_Passing_Without_Direction)/{OPERATIONALLY_DISTURBED - PASSED}		Basic TDS TDP
Eu.TDS.6916	Req	entry/d53out_Report_TDP_Passing_Status := "TDP disturbed"; d54out_Report_TDP_Direction := "without indicated direction";{State-internal in OPERATIONALLY_DISTURBED}		Basic TDS TDP
Eu.TDS.6336	Info	PASSED		Basic TDS TDP
Eu.TDS.6337	Req	after(D55in_Con_t_TDP_Delay)/{PASSED - NOT_PASSED}		Basic TDS TDP
Eu.TDS.6338	Req	when(T61in_Passing_Without_Direction or T62in_Receiving_An_Undefined_Pattern)/{PASSED - PASSED}		Basic TDS TDP
Eu.TDS.6917	Req	entry/d53out_Report_TDP_Passing_Status := "passed"; d54out_Report_TDP_Direction := "without indicated direction";{State-internal in PASSED}		Basic TDS TDP
Eu.TDS.6339	Info	WAITING_DELAY_OF_NOTIFICATION_OF_UNINTERPRETABLE_PATTERN		Basic TDS TDP
Eu.TDS.6340	Req	after(D58_Con_t_TDP_Undefined_Delay)/{WAITING_DELAY_OF_NOTIFICATION_OF_UNINTERPRETABLE_PATTERN - OPERATIONALLY_DISTURBED}		Basic TDS TDP
Eu.TDS.6341	Req	when(T61in_Passing_Without_Direction)/{WAITING_DELAY_OF_NOTIFICATION_OF_UNINTERPRETABLE_PATTERN - PASSED}		Basic TDS TDP
Eu.TDS.6342	Req	when(D63in_Critical_Failure_TDP)/{MONITORING_TDP_WITHOUT_DIRECTION - TECHNICALLY_DISTURBED}		Basic TDS TDP
Eu.TDS.6344	Info	TECHNICALLY_DISTURBED		Basic TDS TDP
Eu.TDS.6345	Req	entry/d53out_Report_TDP_Passing_Status := "TDP disturbed"; d54out_Report_TDP_Direction := "without indicated direction";{State-internal in TECHNICALLY_DISTURBED}		Basic TDS TDP
Eu.TDS.6347	Req	when(D63in_Critical_Failure_TDP = FALSE)/{TECHNICALLY_DISTURBED - MONITORING_TDP_WITHOUT_DIRECTION}		Basic TDS TDP
Eu.TDS.6348	Req	when(d51out_EST_EfeS_State = "BOOTING" OR d51out_EST_EfeS_State = "NO_OPERATING_VOLTAGE")/{OPERATIONAL - NOT_FAILED}		Basic TDS TDP
Eu.TDS.6349	Req	entry/cOp1_init();{State-internal in NOT_FAILED}		Basic TDS TDP
Eu.TDS.6350	Info	WAITING_FOR_FINISHED_BOOTING		Basic TDS TDP
Eu.TDS.6351	Req	when(d51out_EST_EfeS_State = "INITIALISING")/{WAITING_FOR_FINISHED_BOOTING - OPERATIONAL}		Basic TDS TDP
Eu.TDS.6352	Req	when(d51out_EST_EfeS_State = "FALLBACK_MODE")/{NOT_FAILED - FALLBACK_MODE}		Basic TDS TDP
Eu.TDS.6124	Info	F_Monitor_Report_Status		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.6125	Info	[Block] F_Monitor_Report_Status [Functional Viewpoint - Subsystem Requirements - Functional Entity] 		Basic TDS AC Basic TDS TDP Basic TDS TC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6153	Info	p2in		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.6154	Info	p51in		Basic TDS TC
Eu.TDS.6155	Info	p52in		Basic TDS TDP
Eu.TDS.6156	Info	p88inout		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.6126	Info	F_Monitor_Report_Status - Behaviour		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.6127	Info	Functional Viewpoint - Subsystem Requirements - Functional Entity STD 10 		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.6128	Info	Initial0		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.6129	Req	/{Initial0 - MONITORING_REPORT_STATUS}		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.6130	Info	MONITORING_REPORT_STATUS		Basic TDS AC Basic TDS TDP Basic TDS TC

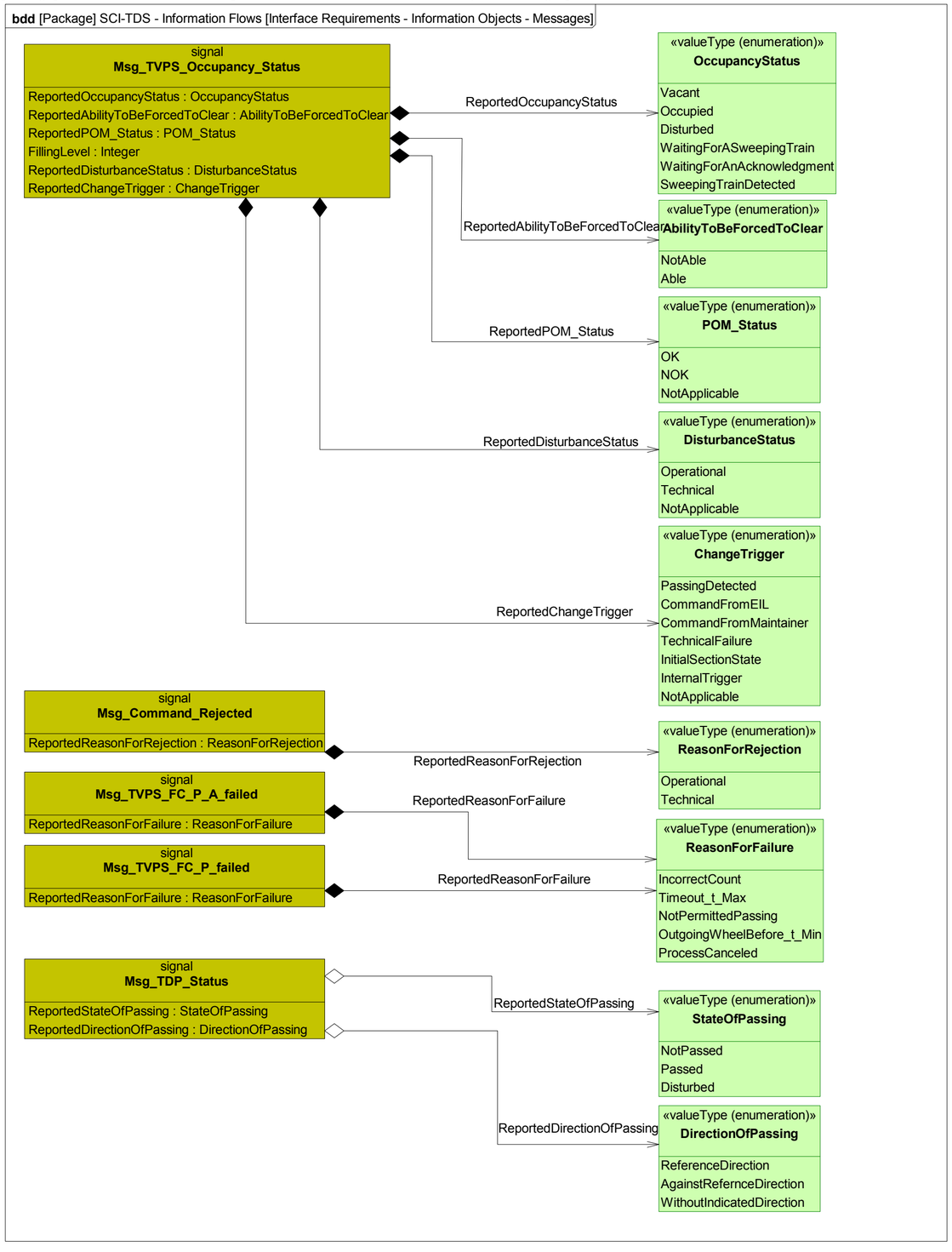
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6131	Info	Initial1		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.6132	Req	/{Initial1 - WAITING_FOR_REPORT_STATUS}		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.6133	Info	Join0		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.6134	Req	/send Status_Report_Completed to p88inout;{Join0 - WAITING_FOR_REPORT_STATUS}		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.6135	Info	WAITING_FOR_REPORT_STATUS		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.6136	Req	Start_Status_Report/{WAITING_FOR_REPORT_STATUS - WAITING_FOR_STATUS_REPORTS}		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.6137	Info	WAITING_FOR_STATUS_REPORTS		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.6143	Info	TVPS_STATUS_AXLE_COUNTER		Basic TDS AC
Eu.TDS.6144	Info	Initial2		Basic TDS AC
Eu.TDS.6145	Req	/{Initial2 - WAITING}		Basic TDS AC
Eu.TDS.6146	Info	WAITING		Basic TDS AC
Eu.TDS.6147	Req	Msg_TVPS_Occupancy_Status/{WAITING - Join0}		Basic TDS AC
Eu.TDS.6148	Info	TVPS_STATUS_TRACK_CIRCUITS		Basic TDS TC
Eu.TDS.6149	Info	Initial3		Basic TDS TC
Eu.TDS.6150	Req	/{Initial3 - WAITING}		Basic TDS TC
Eu.TDS.6151	Info	WAITING		Basic TDS TC
Eu.TDS.6152	Req	Msg_TVPS_Occupancy_Status/{WAITING - Join0}		Basic TDS TC
Eu.TDS.6138	Info	TDP		Basic TDS TDP
Eu.TDS.6139	Info	Initial4		Basic TDS TDP
Eu.TDS.6140	Req	/{Initial4 - WAITING}		Basic TDS TDP
Eu.TDS.6141	Info	WAITING		Basic TDS TDP

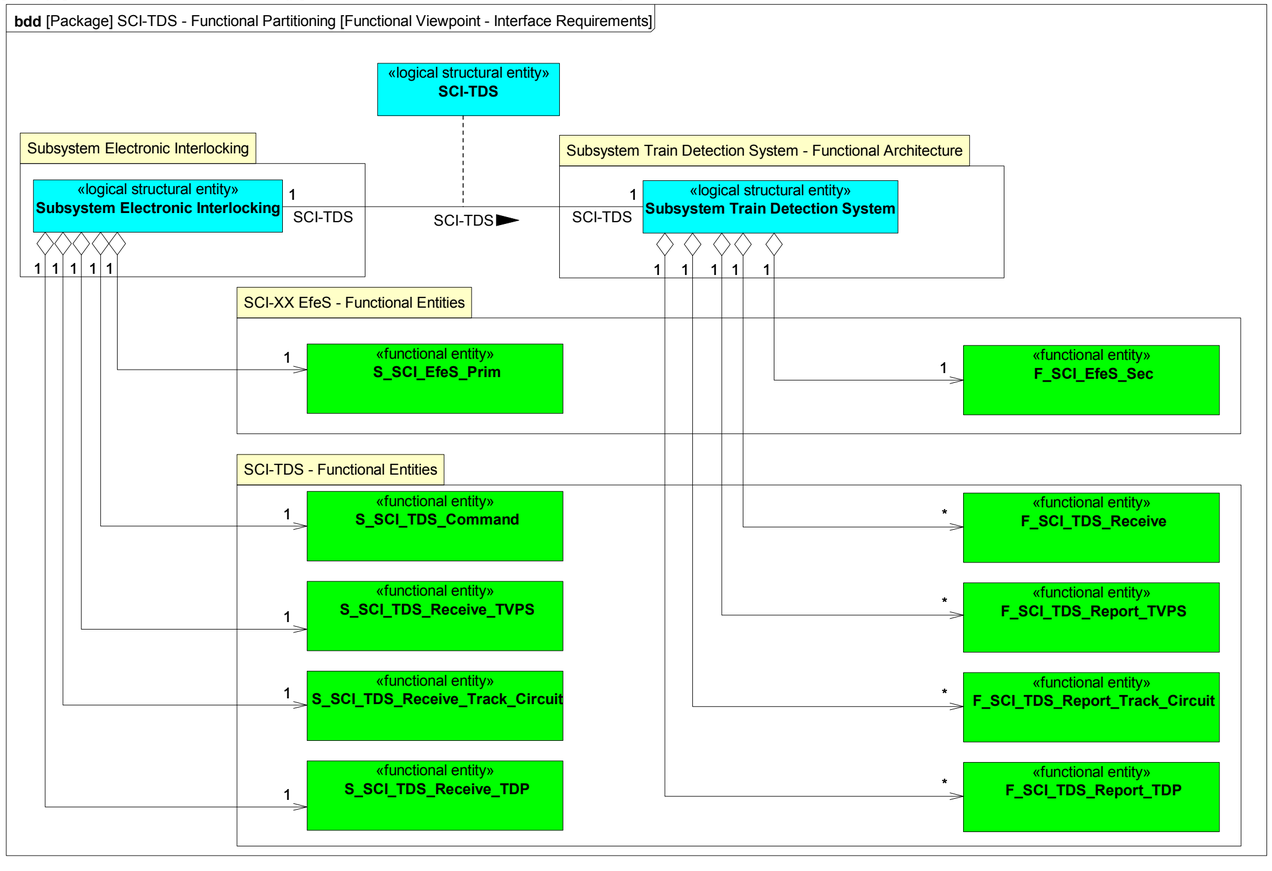
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6142	Req	Msg_TDP_Status/{WAITING - Join0}		Basic TDS TDP
Eu.TDS.202	Head	**3.4 Subsystem Train Detection System - Interfaces**		
Eu.TDS.217	Head	**3.4.1 SCI-TDS (Subsystem – Electronic Interlocking)**		
Eu.TDS.6852	Head	**3.4.1.1 SCI-TDS - Logical Viewpoint**		
Eu.TDS.6853	Head	**3.4.1.1.1 SCI-TDS - Logical Context**		
Eu.TDS.6854	Info	[Package] SCI-TDS - Logical Context [Logical Viewpoint - Interface Definition] 		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.6797	Head	**3.4.1.2 SCI-TDS - Information Flows**		
Eu.TDS.2543	Info	The generic commands and messages through the SCI-TDS are specified in Eu.Doc.119.		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.6798	Info	[Package] SCI-TDS - Information Flows [Interface Requirements - Direction of Information Objects] bdd [Package] SCI-TDS - Information Flows [Interface Requirements - Direction of Information Objects] «interfaceBlock» «information flow» **SCI_TDS_Subsystem_EIL** **proxyPorts** «ProxyPort» P1inout : SCI_GEN «ProxyPort» P1out : SCI_TDS_Command_TVPS «ProxyPort» P2in : SCI_TDS_Report_TVPS «ProxyPort» P51in : SCI_TDS_Track_Circuits «ProxyPort» P52in : SCI_TDS_TDP «interfaceBlock» «information flow» **SCI_TDS_Subsystem_TDS** **proxyPorts** «ProxyPort» P1in : SCI_TDS_Command_TVPS «ProxyPort» p1inout : SCI_GEN «ProxyPort» P2out : SCI_TDS_Report_TVPS «ProxyPort» P51out : SCI_TDS_Track_Circuits «ProxyPort» P52out : SCI_TDS_TDP «interfaceBlock» «information flow» **SCI_TDS_Report_TVPS** reqd «signal» Msg_TVPS_Occupancy_Status reqd «signal» Msg_TVPS_FC_P_failed reqd «signal» Msg_TVPS_FC_P_A_failed reqd «signal» Msg_Command_Rejected «interfaceBlock» «information flow» **SCI_TDS_Track_Circuits** reqd «signal» Msg_TVPS_Occupancy_Status «interfaceBlock» «information flow» **SCI_TDS_Command_TVPS** prov «signal» Cd_FC prov «signal» Cd_DRFC prov «signal» Cd_Update_Filling_Level prov «signal» Cd_Cancel «interfaceBlock» «information flow» **SCI_GEN** prov «signal» Cd_PDI_Version_Check reqd «signal» Msg_PDI_Version_Check prov «signal» Cd_Close_PDI prov «signal» Cd_Initialisation_Request reqd «signal» Msg_Start_Initialisation reqd «signal» Msg_Initialisation_Completed prov «signal» Cd_Release_PDI_for_Maintenance reqd «signal» Msg_PDI_Available reqd «signal» Msg_PDI_Not_Available reqd «signal» Msg_Reset_PDI «interfaceBlock» «information flow» **SCI_TDS_TDP** reqd «signal» Msg_TDP_Status		Basic TDS AC Basic TDS TDP Basic TDS TC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6799	Info	[Package] SCI-TDS - Information Flows [Interface Requirements - Information Objects - Commands]		Basic TDS AC

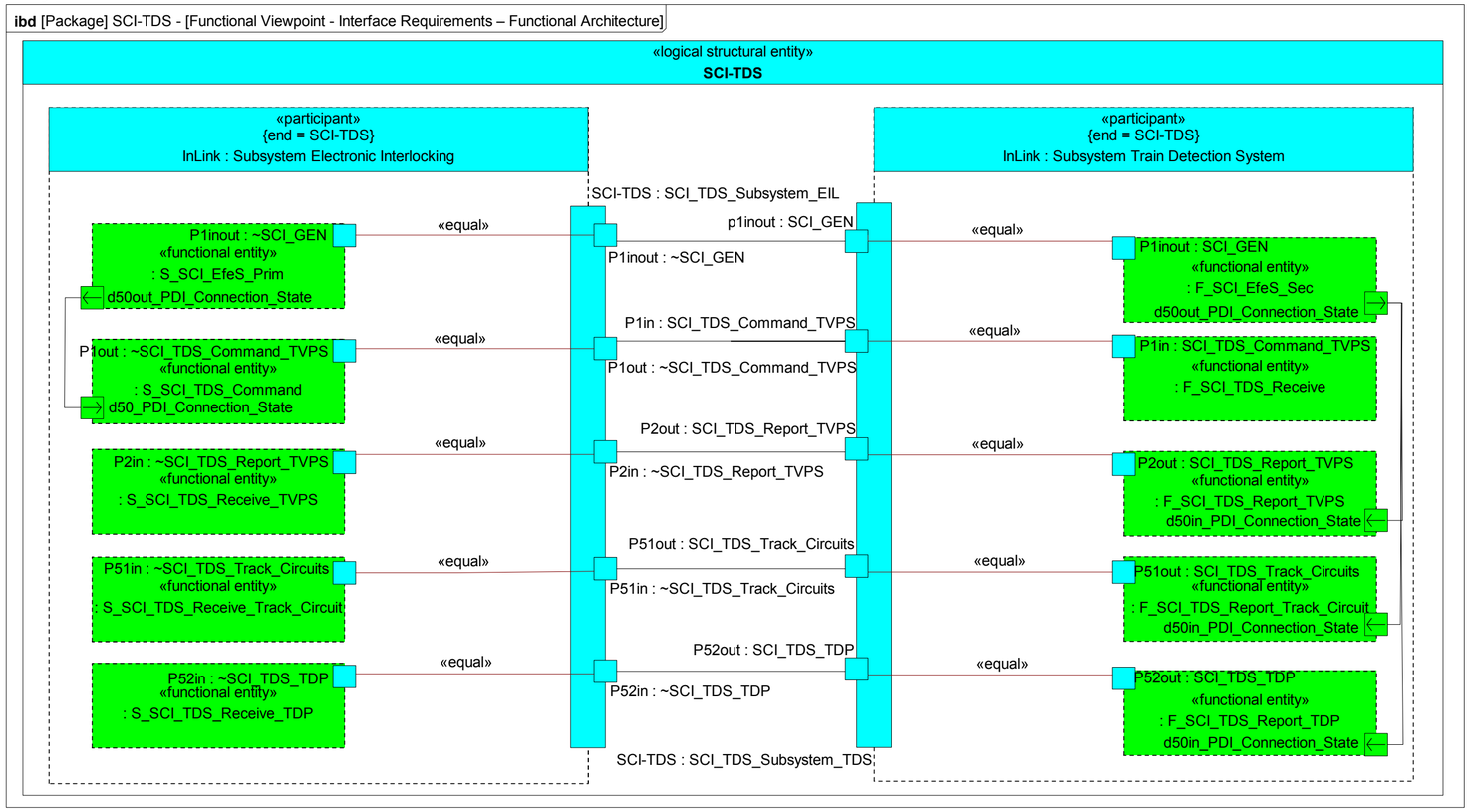


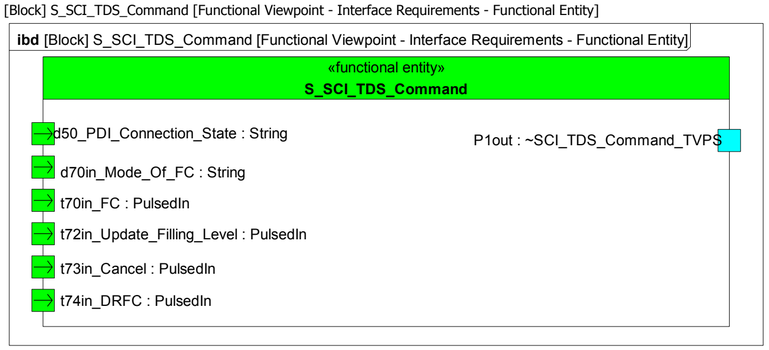
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6800	Info	[Package] SCI-TDS - Information Flows [Interface Requirements - Information Objects - Messages]		Basic TDS AC Basic TDS TDP Basic TDS TC



ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6803	Info	Cd_FC		Basic TDS AC
Eu.TDS.6806	Info	Cd_Update_Filling_Level		Option Update FL
Eu.TDS.6802	Info	Cd_DRFC		Basic TDS AC
Eu.TDS.6801	Info	Cd_Cancel		Option FC-P/-A
Eu.TDS.6824	Info	Msg_TVPS_Occupancy_Status		Basic TDS AC
Eu.TDS.6817	Info	Msg_Command_Rejected		Basic TDS AC
Eu.TDS.6822	Info	Msg_TVPS_FC_P_A_failed		Option FC-P/-A
Eu.TDS.6823	Info	Msg_TVPS_FC_P_failed		Option FC-P/-A
Eu.TDS.6832	Info	Msg_TDP_Status		Basic TDS TDP
Eu.TDS.6528	Head	**3.4.1.3 SCI-TDS - Functional Viewpoint**		
Eu.TDS.6795	Head	**3.4.1.3.1 SCI-TDS - Functional Partitioning**		
Eu.TDS.6796	Info	[Package] SCI-TDS - Functional Partitioning [Functional Viewpoint - Interface Requirements] 		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.6529	Head	**3.4.1.3.2 SCI-TDS - Functional Architecture**		

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6530	Info	SCI-TDS		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.6531	Info	[Package] SCI-TDS - [Functional Viewpoint - Interface Requirements – Functional Architecture]		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.6532	Head	**3.4.1.3.3 SCI-TDS - Functional Entities**		
Eu.TDS.6733	Info	S_SCI_TDS_Command		Basic TDS AC
Eu.TDS.6734	Info	[Block] S_SCI_TDS_Command [Functional Viewpoint - Interface Requirements - Functional Entity]		Basic TDS AC
Eu.TDS.6743	Info	t70in_FC		Basic TDS AC Option FC-P/-A

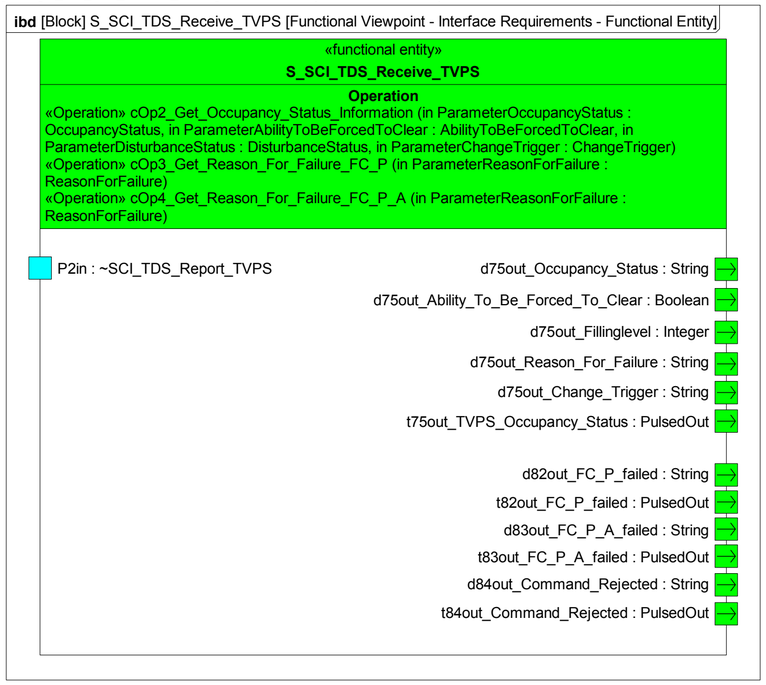




ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6744	Info	t72in_Update_Filling_Level		Option Update FL
Eu.TDS.6745	Info	t73in_Cancel		Option FC-P/-A
Eu.TDS.6746	Info	t74in_DRFC		Basic TDS AC
Eu.TDS.6735	Info	d50_PDI_Connection_State		Basic TDS AC
Eu.TDS.6736	Info	d70in_Mode_Of_FC		Basic TDS AC
Eu.TDS.6737	Info	P1out	The port P1out exchanges information objects according to SCI_TDS_Command_TVPS.	Basic TDS AC
Eu.TDS.6738	Info	S_SCI_TDS_Command - Behaviour		Basic TDS AC

Eu.TDS.6739	Info	Functional Viewpoint - Interface Requirements - Functional Entity STD 1
		stm [State Machine] S_SCI_TDS_Command - Behaviour [Functional Viewpoint - Interface Requirements - Functional Entity STD 1]
		Initial0
		SENDING_COMMANDS
		when(t70in_FC)[d70in_Mode_Of_FC = "FC-C" AND d50_PDI_Connection_State = "ESTABLISHED"]/send Cd_FC(FC_C) to P1out;
		when(t70in_FC)[d70in_Mode_Of_FC = "FC-U" AND d50_PDI_Connection_State = "ESTABLISHED"]/send Cd_FC(FC_U) to P1out;
		when(t70in_FC)[d70in_Mode_Of_FC = "FC-P" AND d50_PDI_Connection_State = "ESTABLISHED"]/send Cd_FC(FC_P) to P1out;
		when(t70in_FC)[d70in_Mode_Of_FC = "FC-P-A" AND d50_PDI_Connection_State = "ESTABLISHED"]/send Cd_FC(FC_P_A) to P1out;
		when(t70in_FC)[d70in_Mode_Of_FC = "Acknowledgement after FC-P-A command" AND d50_PDI_Connection_State = "ESTABLISHED"]/
		send Cd_FC(AcknowledgmentAfterFC_P_A_Command) to P1out;
		when(t72in_Update_Filling_Level)[d50_PDI_Connection_State = "ESTABLISHED"]/send Cd_Update_Filling_Level to P1out;
		when(t73in_Cancel)[d50_PDI_Connection_State = "ESTABLISHED"]/send Cd_Cancel to P1out;
		when(t74in_DRFC)[d50_PDI_Connection_State = "ESTABLISHED"]/send Cd_DRFC to P1out;
				Basic TDS AC

Eu.TDS.6740	Info	Initial0		Basic TDS AC
Eu.TDS.6741	Req	/{Initial0 - SENDING_COMMANDS}		Basic TDS AC
Eu.TDS.6742	Info	SENDING_COMMANDS		Basic TDS AC
Eu.TDS.6973	Req	when(t70in_FC)[d70in_Mode_Of_FC = "FC-U" AND d50_PDI_Connection_State = "ESTABLISHED"]/send Cd_FC(FC_U) to P1out;{State-internal in SENDING_COMMANDS}		Basic TDS AC
Eu.TDS.6974	Req	when(t70in_FC)[d70in_Mode_Of_FC = "FC-P" AND d50_PDI_Connection_State = "ESTABLISHED"]/send Cd_FC(FC_P) to P1out;{State-internal in SENDING_COMMANDS}		Option FC-P/-A
Eu.TDS.6975	Req	when(t70in_FC)[d70in_Mode_Of_FC = "FC-P-A" AND d50_PDI_Connection_State = "ESTABLISHED"]/send Cd_FC(FC_P_A) to P1out;{State-internal in SENDING_COMMANDS}		Option FC-P/-A
Eu.TDS.6976	Req	when(t70in_FC)[d70in_Mode_Of_FC = "Acknowledgement after FC-P-A command" AND d50_PDI_Connection_State = "ESTABLISHED"]/ send Cd_FC(AcknowledgmentAfterFC_P_A_Command) to P1out;{State-internal in SENDING_COMMANDS}		Option FC-P/-A
Eu.TDS.6977	Req	when(t70in_FC)[d70in_Mode_Of_FC = "FC-C" AND d50_PDI_Connection_State = "ESTABLISHED"]/send Cd_FC(FC_C) to P1out;{State-internal in SENDING_COMMANDS}		Basic TDS AC
Eu.TDS.6978	Req	when(t72in_Update_Filling_Level)[d50_PDI_Connection_State = "ESTABLISHED"]/send Cd_Update_Filling_Level to P1out;{State-internal in SENDING_COMMANDS}		Option Update FL
Eu.TDS.6979	Req	when(t73in_Cancel)[d50_PDI_Connection_State = "ESTABLISHED"]/send Cd_Cancel to P1out;{State-internal in SENDING_COMMANDS}		Option FC-P/-A
Eu.TDS.6980	Req	when(t74in_DRFC)[d50_PDI_Connection_State = "ESTABLISHED"]/send Cd_DRFC to P1out;{State-internal in SENDING_COMMANDS}		Basic TDS AC
Eu.TDS.6771	Info	S_SCI_TDS_Receive_TVPS		Basic TDS AC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6772	Info	[Block] S_SCI_TDS_Receive_TVPS [Functional Viewpoint - Interface Requirements - Functional Entity] 		Basic TDS AC
Eu.TDS.6790	Info	t75out_TVPS_Occupancy_Status		Basic TDS AC
Eu.TDS.6792	Info	t82out_FC_P_failed		Option FC-P/-A
Eu.TDS.6793	Info	t83out_FC_P_A_failed		Option FC-P/-A
Eu.TDS.6794	Info	t84out_Command_Rejected		Basic TDS AC
Eu.TDS.6776	Info	d75out_Ability_To_Be_Forced_To_Clear		Basic TDS AC
Eu.TDS.6777	Info	d75out_Change_Trigger		Basic TDS AC
Eu.TDS.6778	Info	d75out_Fillinglevel		Option Update FL
Eu.TDS.6779	Info	d75out_Occupancy_Status		Basic TDS AC
Eu.TDS.6780	Info	d75out_Reason_For_Failure		Basic TDS AC
Eu.TDS.6781	Info	d82out_FC_P_failed		Option FC-P/-A
Eu.TDS.6782	Info	d83out_FC_P_A_failed		Option FC-P/-A
Eu.TDS.6783	Info	d84out_Command_Rejected		Basic TDS AC
Eu.TDS.6784	Info	P2in	The port P2in exchanges information objects according to SCI_TDS_Report_TVPS.	Basic TDS AC
Eu.TDS.6773	Info	cOp2_Get_Occupancy_Status_Information	if ParameterOccupancyStatus = OccupancyStatus.Vacant then d75out_Occupancy_Status := "Vacant"; elseif ParameterOccupancyStatus = OccupancyStatus.Occupied then d75out_Occupancy_Status := "Occupied"; elseif ParameterOccupancyStatus = OccupancyStatus.Disturbed then d75out_Occupancy_Status := "Disturbed"; elseif ParameterOccupancyStatus = OccupancyStatus.WaitingForASweepingTrain then	Basic TDS AC

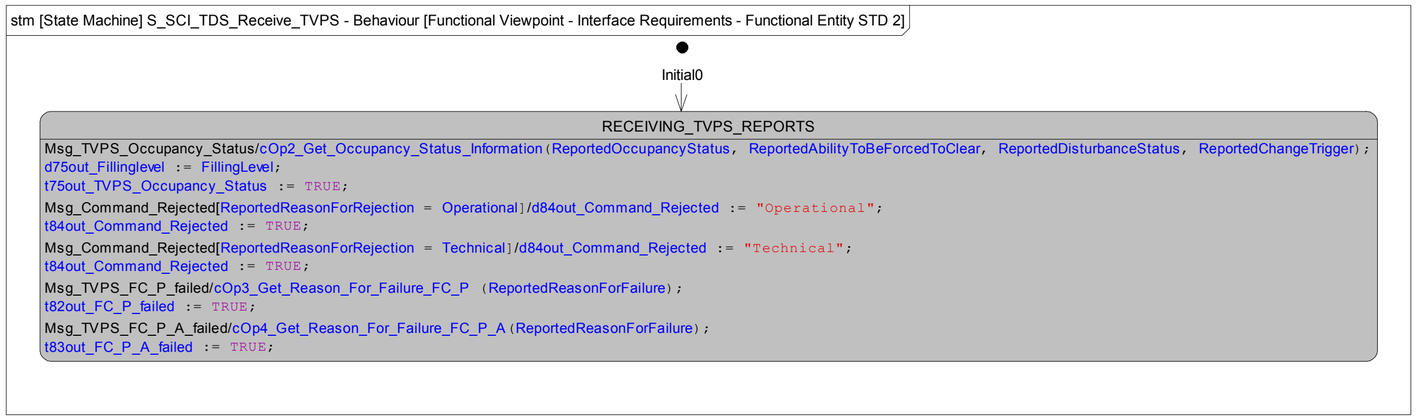
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.

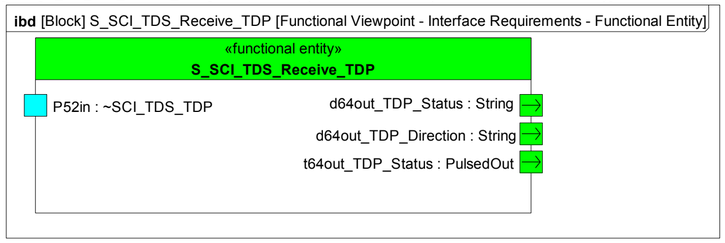
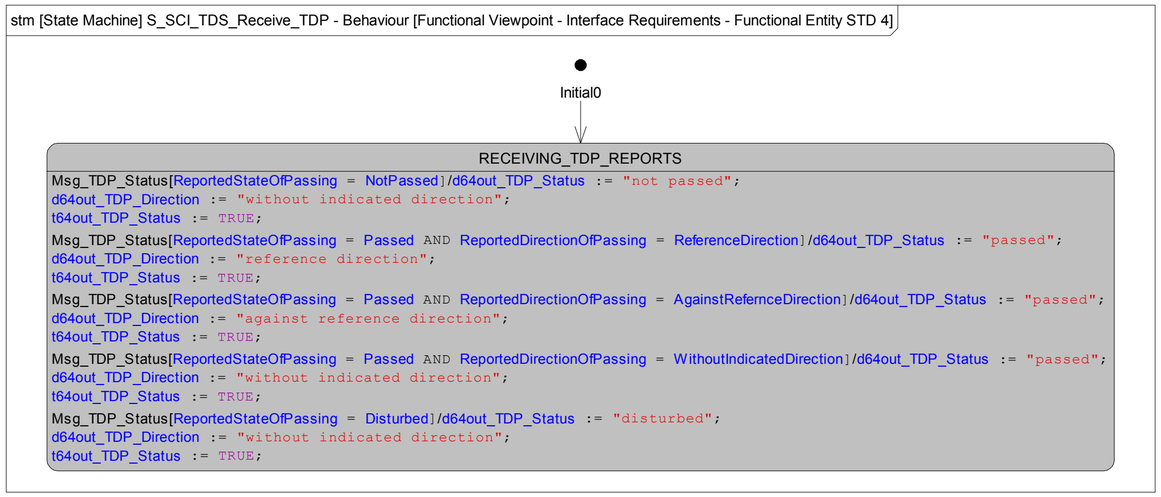
			d75out_Occupancy_Status := "Waiting for sweeping train";
			elseif ParameterOccupancyStatus = OccupancyStatus.SweepingTrainDetected then
			d75out_Occupancy_Status := "Sweeping train detected";
			elseif ParameterOccupancyStatus = OccupancyStatus.WaitingForAnAcknowledgment then
			d75out_Occupancy_Status := "Waiting for acknowledgement";
			end if
			if ParameterAbilityToBeForcedToClear = AbilityToBeForcedToClear.Able then
			d75out_Ability_To_Be_Forced_To_Clear := TRUE;
			elseif ParameterAbilityToBeForcedToClear = AbilityToBeForcedToClear.NotAble then
			d75out_Ability_To_Be_Forced_To_Clear := FALSE;
			end if
			if ParameterChangeTrigger = ChangeTrigger.CommandFromEIL then
			d75out_Change_Trigger := "Command from EIL";
			elseif ParameterChangeTrigger = ChangeTrigger.PassingDetected then
			d75out_Change_Trigger := "Passing detected";
			elseif ParameterChangeTrigger = ChangeTrigger.CommandFromMaintainer then
			d75out_Change_Trigger := "Command from Maintainer";
			elseif ParameterChangeTrigger = ChangeTrigger.TechnicalFailure then
			d75out_Change_Trigger := "Technical Failure";
			elseif ParameterChangeTrigger = ChangeTrigger.InitialSectionState then
			d75out_Change_Trigger := "Initial Section State";
			elseif ParameterChangeTrigger = ChangeTrigger.InternalTrigger then
			d75out_Change_Trigger := "Internal Trigger";
			end if
			if ParameterDisturbanceStatus = DisturbanceStatus.Operational then
			d75out_Reason_For_Failure := "Operational";
			elseif ParameterDisturbanceStatus = DisturbanceStatus.Technical then
			d75out_Reason_For_Failure := "Technical";
			elseif ParameterDisturbanceStatus = DisturbanceStatus.NotApplicable then
			d75out_Reason_For_Failure := "Not Applicable";
			end if	

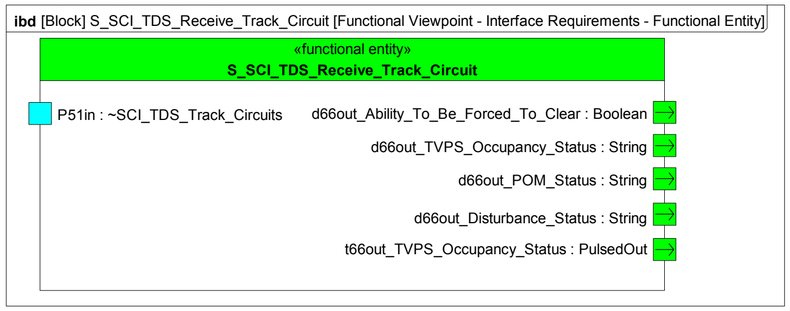
Eu.TDS.6774	Info	cOp3_Get_Reason_For_Failure_FC_P	if ParameterReasonForFailure = ReasonForFailure.IncorrectCount then
			d82out_FC_P_failed := "Incorrect count";
			elseif ParameterReasonForFailure = ReasonForFailure.Timeout_t_Max then
			d82out_FC_P_failed := "Timeout t_Max";
			elseif ParameterReasonForFailure = ReasonForFailure.NotPermittedPassing then
			d82out_FC_P_failed := "Not permitted passing";
			elseif ParameterReasonForFailure = ReasonForFailure.OutgoingWheelBefore_t_Min then
			d82out_FC_P_failed := "Outgoing Wheel before t_Min";
			elseif ParameterReasonForFailure = ReasonForFailure.ProcessCanceled then
			d82out_FC_P_failed := "Process canceled";
			end if
				Option FC-P/-A

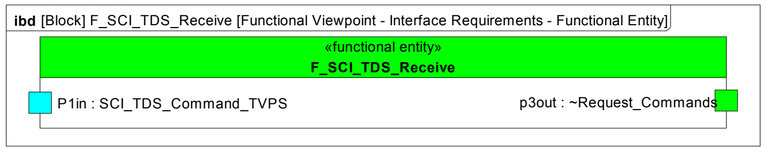
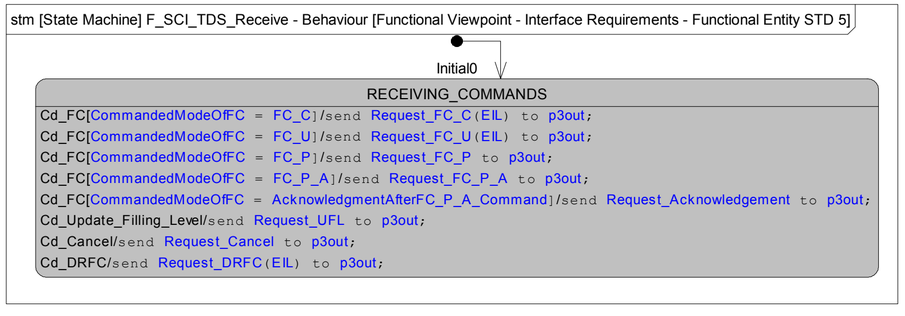
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.

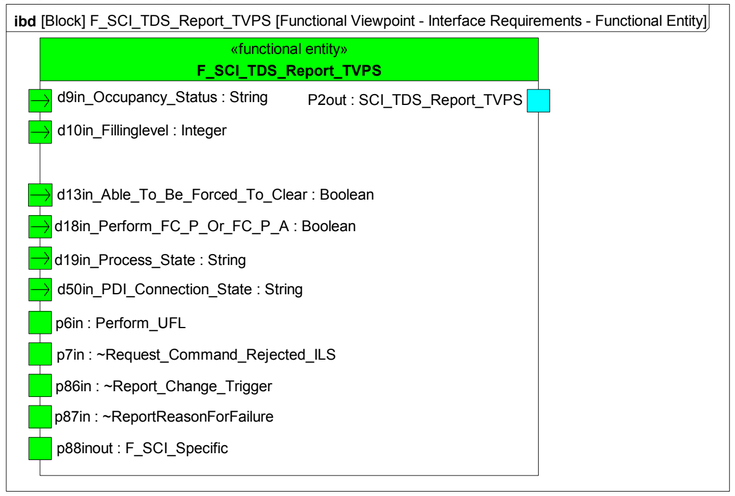
Eu.TDS.6775	Info	cOp4_Get_Reason_For_Failure_FC_P_A	if ParameterReasonForFailure = ReasonForFailure.IncorrectCount then
			d83out_FC_P_A_failed := "Incorrect count";
			elseif ParameterReasonForFailure = ReasonForFailure.Timeout_t_Max then
			d83out_FC_P_A_failed := "Timeout t_Max";
			elseif ParameterReasonForFailure = ReasonForFailure.NotPermittedPassing then
			d83out_FC_P_A_failed := "Not permitted passing";
			elseif ParameterReasonForFailure = ReasonForFailure.OutgoingWheelBefore_t_Min then
			d83out_FC_P_A_failed := "Outgoing Wheel before t_Min";
			elseif ParameterReasonForFailure = ReasonForFailure.ProcessCanceled then
			d83out_FC_P_A_failed := "Process canceled";
			end if
				Option FC-P/-A

Eu.TDS.6785	Info	S_SCI_TDS_Receive_TVPS - Behaviour		Basic TDS AC
Eu.TDS.6786	Info	Functional Viewpoint - Interface Requirements - Functional Entity STD 2 		Basic TDS AC
Eu.TDS.6787	Info	Initial0		Basic TDS AC
Eu.TDS.6788	Req	/{Initial0 - RECEIVING_TVPS_REPORTS}		Basic TDS AC
Eu.TDS.6789	Info	RECEIVING_TVPS_REPORTS		Basic TDS AC
Eu.TDS.6993	Req	Msg_Command_Rejected[ReportedReasonForRejection = Operational]/d84out_Command_Rejected := "Operational"; t84out_Command_Rejected := TRUE;{State-internal in RECEIVING_TVPS_REPORTS}		Basic TDS AC
Eu.TDS.6994	Req	Msg_Command_Rejected[ReportedReasonForRejection = Technical]/d84out_Command_Rejected := "Technical"; t84out_Command_Rejected := TRUE;{State-internal in RECEIVING_TVPS_REPORTS}		Basic TDS AC
Eu.TDS.6995	Req	Msg_TVPS_FC_P_A_failed/cOp4_Get_Reason_For_Failure_FC_P_A(ReportedReasonForFailure); t83out_FC_P_A_failed := TRUE;{State-internal in RECEIVING_TVPS_REPORTS}		Option FC-P/-A
Eu.TDS.6996	Req	Msg_TVPS_FC_P_failed/cOp3_Get_Reason_For_Failure_FC_P (ReportedReasonForFailure); t82out_FC_P_failed := TRUE;{State-internal in RECEIVING_TVPS_REPORTS}		Option FC-P/-A
Eu.TDS.6997	Req	Msg_TVPS_Occupancy_Status/cOp2_Get_Occupancy_Status_Information(ReportedOccupancyStatus, ReportedAbilityToBeForcedToClear, ReportedDisturbanceStatus, ReportedChangeTrigger); d75out_Fillinglevel := FillingLevel; t75out_TVPS_Occupancy_Status := TRUE;{State-internal in RECEIVING_TVPS_REPORTS}		Basic TDS AC
Eu.TDS.6747	Info	S_SCI_TDS_Receive_TDP		Basic TDS TDP

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6748	Info	[Block] S_SCI_TDS_Receive_TDP [Functional Viewpoint - Interface Requirements - Functional Entity] 		Basic TDS TDP
Eu.TDS.6757	Info	t64out_TDP_Status		Basic TDS TDP
Eu.TDS.6749	Info	d64out_TDP_Direction		Basic TDS TDP
Eu.TDS.6750	Info	d64out_TDP_Status		Basic TDS TDP
Eu.TDS.6751	Info	P52in	The port P52in exchanges information objects according to SCI_TDS_TDP.	Basic TDS TDP
Eu.TDS.6752	Info	S_SCI_TDS_Receive_TDP - Behaviour		Basic TDS TDP
Eu.TDS.6753	Info	Functional Viewpoint - Interface Requirements - Functional Entity STD 4 		Basic TDS TDP
Eu.TDS.6754	Info	Initial0		Basic TDS TDP
Eu.TDS.6755	Req	/{Initial0 - RECEIVING_TDP_REPORTS}		Basic TDS TDP
Eu.TDS.6756	Info	RECEIVING_TDP_REPORTS		Basic TDS TDP
Eu.TDS.6981	Req	Msg_TDP_Status[ReportedStateOfPassing = Passed AND ReportedDirectionOfPassing = ReferenceDirection]/d64out_TDP_Status := "passed"; d64out_TDP_Direction := "reference direction"; t64out_TDP_Status := TRUE;{State-internal in RECEIVING_TDP_REPORTS}		Basic TDS TDP
Eu.TDS.6982	Req	Msg_TDP_Status[ReportedStateOfPassing = Passed AND ReportedDirectionOfPassing = AgainstRefernceDirection]/d64out_TDP_Status := "passed"; d64out_TDP_Direction := "against reference direction"; t64out_TDP_Status := TRUE;{State-internal in RECEIVING_TDP_REPORTS}		Basic TDS TDP
Eu.TDS.6983	Req	Msg_TDP_Status[ReportedStateOfPassing = Passed AND ReportedDirectionOfPassing = WithoutIndicatedDirection]/d64out_TDP_Status := "passed"; d64out_TDP_Direction := "without indicated direction"; t64out_TDP_Status := TRUE;{State-internal in RECEIVING_TDP_REPORTS}		Basic TDS TDP
Eu.TDS.6984	Req	Msg_TDP_Status[ReportedStateOfPassing = Disturbed]/d64out_TDP_Status := "disturbed"; d64out_TDP_Direction := "without indicated direction"; t64out_TDP_Status := TRUE;{State-internal in RECEIVING_TDP_REPORTS}		Basic TDS TDP
Eu.TDS.6985	Req	Msg_TDP_Status[ReportedStateOfPassing = NotPassed]/d64out_TDP_Status := "not passed"; d64out_TDP_Direction := "without indicated direction"; t64out_TDP_Status := TRUE;{State-internal in RECEIVING_TDP_REPORTS}		Basic TDS TDP
Eu.TDS.6758	Info	S_SCI_TDS_Receive_Track_Circuit		Basic TDS TC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6759	Info	[Block] S_SCI_TDS_Receive_Track_Circuit [Functional Viewpoint - Interface Requirements - Functional Entity] 		Basic TDS TC
Eu.TDS.6770	Info	t66out_TVPS_Occupancy_Status		Basic TDS TC
Eu.TDS.6760	Info	d66out_Ability_To_Be_Forced_To_Clear		Basic TDS TC
Eu.TDS.6761	Info	d66out_Disturbance_Status		Basic TDS TC
Eu.TDS.6762	Info	d66out_POM_Status		Basic TDS TC
Eu.TDS.6763	Info	d66out_TVPS_Occupancy_Status		Basic TDS TC
Eu.TDS.6764	Info	P51in	The port P51in exchanges information objects according to SCI_TDS_Track_Circuits.	Basic TDS TC
Eu.TDS.6765	Info	S_SCI_TDS_Receive_Track_Circuit - Behaviour		Basic TDS TC
Eu.TDS.6766	Info	Functional Viewpoint - Interface Requirements - Functional Entity STD 3 stm [State Machine] S_SCI_TDS_Receive_Track_Circuit - Behaviour [Functional Viewpoint - Interface Requirements - Functional Entity STD 3] Initial0 REPOPRTING_OCCUPANCY_STATUS Msg_TVPS_Occupancy_Status[ReportedOccupancyStatus = Vacant AND ReportedPOM_Status = OK]/d66out_Ability_To_Be_Forced_To_Clear := FALSE; d66out_TVPS_Occupancy_Status := "TVPS is in state vacant"; d66out_POM_Status := "OK"; d66out_Disturbance_Status := "Not Applicable"; t66out_TVPS_Occupancy_Status := TRUE; Msg_TVPS_Occupancy_Status[ReportedOccupancyStatus = Vacant AND ReportedPOM_Status = NOK]/d66out_Ability_To_Be_Forced_To_Clear := FALSE; d66out_TVPS_Occupancy_Status := "TVPS is in state vacant"; d66out_POM_Status := "NOK"; d66out_Disturbance_Status := "Not Applicable"; t66out_TVPS_Occupancy_Status := TRUE; Msg_TVPS_Occupancy_Status[ReportedOccupancyStatus = Occupied AND ReportedPOM_Status = OK]/d66out_Ability_To_Be_Forced_To_Clear := FALSE; d66out_TVPS_Occupancy_Status := "TVPS is in state occupied"; d66out_POM_Status := "OK"; d66out_Disturbance_Status := "Not Applicable"; t66out_TVPS_Occupancy_Status := TRUE; Msg_TVPS_Occupancy_Status[ReportedOccupancyStatus = Occupied AND ReportedPOM_Status = NOK]/d66out_Ability_To_Be_Forced_To_Clear := FALSE; d66out_TVPS_Occupancy_Status := "TVPS is in state occupied"; d66out_POM_Status := "NOK"; d66out_Disturbance_Status := "Not Applicable"; t66out_TVPS_Occupancy_Status := TRUE; Msg_TVPS_Occupancy_Status[ReportedOccupancyStatus = Disturbed AND ReportedPOM_Status = OK]/d66out_Ability_To_Be_Forced_To_Clear := FALSE; d66out_TVPS_Occupancy_Status := "TVPS is in state disturbed"; d66out_POM_Status := "OK"; d66out_Disturbance_Status := "Technical"; t66out_TVPS_Occupancy_Status := TRUE; Msg_TVPS_Occupancy_Status[ReportedOccupancyStatus = Disturbed AND ReportedPOM_Status = NOK]/d66out_Ability_To_Be_Forced_To_Clear := FALSE; d66out_TVPS_Occupancy_Status := "TVPS is in state disturbed"; d66out_POM_Status := "NOK"; d66out_Disturbance_Status := "Technical"; t66out_TVPS_Occupancy_Status := TRUE;		Basic TDS TC
Eu.TDS.6767	Info	Initial0		Basic TDS TC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6768	Req	/{Initial0 - REPOPRTING_OCCUPANCY_STATUS}		Basic TDS TC
Eu.TDS.6769	Info	REPOPRTING_OCCUPANCY_STATUS		Basic TDS TC
Eu.TDS.6986	Req	Msg_TVPS_Occupancy_Status[ReportedOccupancyStatus = Vacant AND ReportedPOM_Status = NOK]/d66out_Ability_To_Be_Forced_To_Clear := FALSE; d66out_TVPS_Occupancy_Status := "TVPS is in state vacant"; d66out_POM_Status := "NOK"; d66out_Disturbance_Status := "Not Applicable"; t66out_TVPS_Occupancy_Status := TRUE;{State-internal in REPOPRTING_OCCUPANCY_STATUS}		Basic TDS TC
Eu.TDS.6987	Req	Msg_TVPS_Occupancy_Status[ReportedOccupancyStatus = Occupied AND ReportedPOM_Status = OK]/d66out_Ability_To_Be_Forced_To_Clear := FALSE; d66out_TVPS_Occupancy_Status := "TVPS is in state occupied"; d66out_POM_Status := "OK"; d66out_Disturbance_Status := "Not Applicable"; t66out_TVPS_Occupancy_Status := TRUE;{State-internal in REPOPRTING_OCCUPANCY_STATUS}		Basic TDS TC
Eu.TDS.6988	Req	Msg_TVPS_Occupancy_Status[ReportedOccupancyStatus = Occupied AND ReportedPOM_Status = NOK]/d66out_Ability_To_Be_Forced_To_Clear := FALSE; d66out_TVPS_Occupancy_Status := "TVPS is in state occupied"; d66out_POM_Status := "NOK"; d66out_Disturbance_Status := "Not Applicable"; t66out_TVPS_Occupancy_Status := TRUE;{State-internal in REPOPRTING_OCCUPANCY_STATUS}		Basic TDS TC
Eu.TDS.6989	Req	Msg_TVPS_Occupancy_Status[ReportedOccupancyStatus = Disturbed AND ReportedPOM_Status = OK]/d66out_Ability_To_Be_Forced_To_Clear := FALSE; d66out_TVPS_Occupancy_Status := "TVPS is in state disturbed"; d66out_POM_Status := "OK"; d66out_Disturbance_Status := "Technical"; t66out_TVPS_Occupancy_Status := TRUE;{State-internal in REPOPRTING_OCCUPANCY_STATUS}		Basic TDS TC
Eu.TDS.6990	Req	Msg_TVPS_Occupancy_Status[ReportedOccupancyStatus = Disturbed AND ReportedPOM_Status = NOK]/d66out_Ability_To_Be_Forced_To_Clear := FALSE; d66out_TVPS_Occupancy_Status := "TVPS is in state disturbed"; d66out_POM_Status := "NOK"; d66out_Disturbance_Status := "Technical"; t66out_TVPS_Occupancy_Status := TRUE;{State-internal in REPOPRTING_OCCUPANCY_STATUS}		Basic TDS TC
Eu.TDS.6991	Req	Msg_TVPS_Occupancy_Status[ReportedOccupancyStatus = Vacant AND ReportedPOM_Status = OK]/d66out_Ability_To_Be_Forced_To_Clear := FALSE; d66out_TVPS_Occupancy_Status := "TVPS is in state vacant"; d66out_POM_Status := "OK"; d66out_Disturbance_Status := "Not Applicable"; t66out_TVPS_Occupancy_Status := TRUE;{State-internal in REPOPRTING_OCCUPANCY_STATUS}		Basic TDS TC
Eu.TDS.6533	Info	F_SCI_TDS_Receive		Basic TDS AC
Eu.TDS.6534	Info	[Block] F_SCI_TDS_Receive [Functional Viewpoint - Interface Requirements - Functional Entity] 		Basic TDS AC
Eu.TDS.6540	Info	P1in	The port P1in exchanges information objects according to SCI_TDS_Command_TVPS.	Basic TDS AC
Eu.TDS.6541	Info	p3out		Basic TDS AC
Eu.TDS.6535	Info	F_SCI_TDS_Receive - Behaviour		Basic TDS AC
Eu.TDS.6536	Info	Functional Viewpoint - Interface Requirements - Functional Entity STD 5 		Basic TDS AC Option FC-P/-A
Eu.TDS.6537	Info	Initial0		Basic TDS AC
Eu.TDS.6538	Req	/{Initial0 - RECEIVING_COMMANDS}		Basic TDS AC

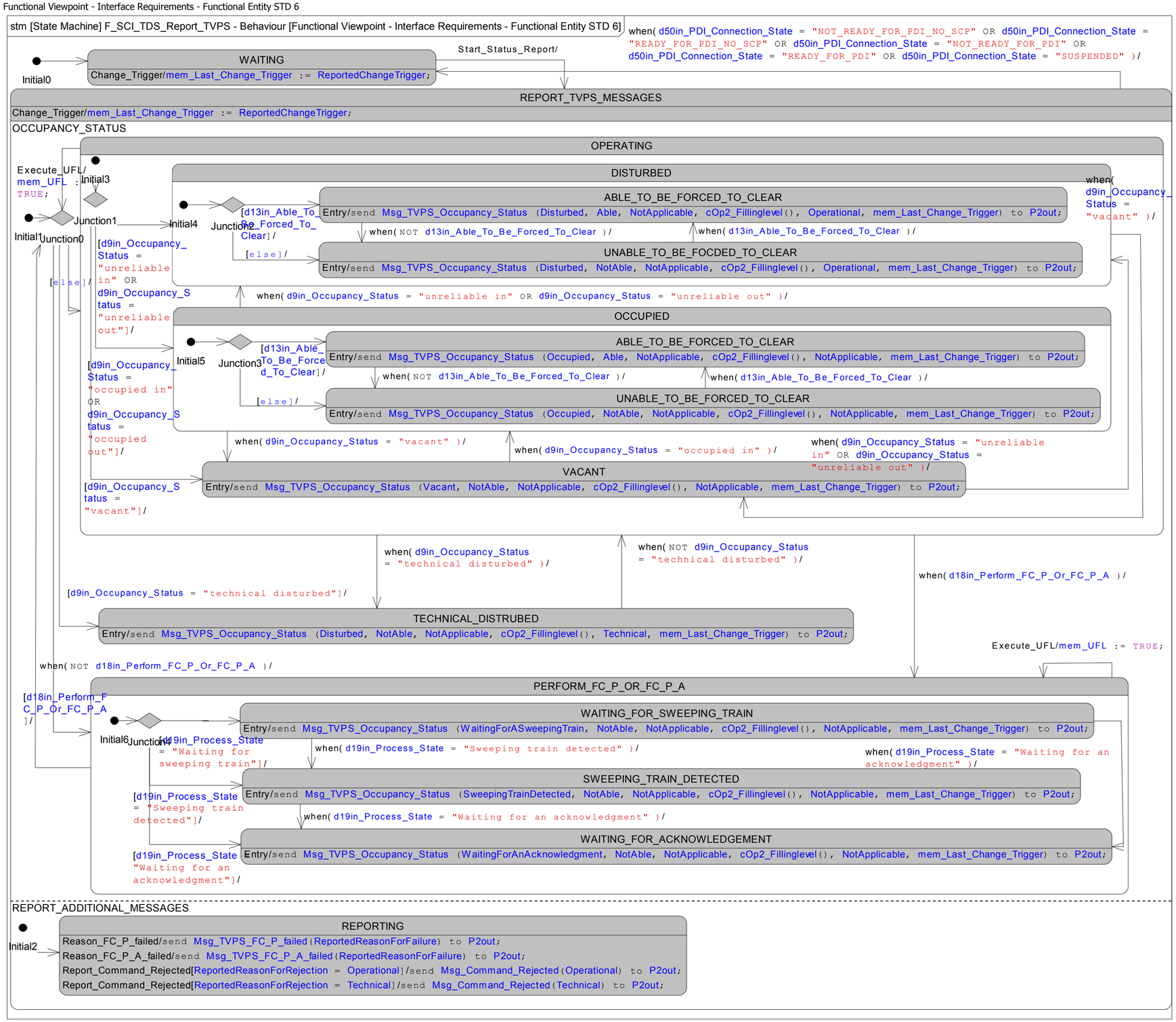
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6539	Info	RECEIVING_COMMANDS		Basic TDS AC
Eu.TDS.6938	Req	Cd_Cancel/send Request_Cancel to p3out;{State-internal in RECEIVING_COMMANDS}		Option FC-P/-A
Eu.TDS.6939	Req	Cd_DRFC/send Request_DRFC(EIL) to p3out;{State-internal in RECEIVING_COMMANDS}		Basic TDS AC
Eu.TDS.6940	Req	Cd_FC[CommandedModeOfFC = FC_P_A]/send Request_FC_P_A to p3out;{State-internal in RECEIVING_COMMANDS}		Option FC-P/-A
Eu.TDS.6941	Req	Cd_FC[CommandedModeOfFC = AcknowledgmentAfterFC_P_A_Command]/send Request_Acknowledgement to p3out;{State-internal in RECEIVING_COMMANDS}		Option FC-P/-A
Eu.TDS.6942	Req	Cd_FC[CommandedModeOfFC = FC_P]/send Request_FC_P to p3out;{State-internal in RECEIVING_COMMANDS}		Option FC-P/-A
Eu.TDS.6943	Req	Cd_FC[CommandedModeOfFC = FC_U]/send Request_FC_U(EIL) to p3out;{State-internal in RECEIVING_COMMANDS}		Basic TDS AC
Eu.TDS.6944	Req	Cd_FC[CommandedModeOfFC = FC_C]/send Request_FC_C(EIL) to p3out;{State-internal in RECEIVING_COMMANDS}		Basic TDS AC
Eu.TDS.6945	Req	Cd_Update_Filling_Level/send Request_UFL to p3out;{State-internal in RECEIVING_COMMANDS}		Option Update FL
Eu.TDS.6644	Info	F_SCI_TDS_Report_TVPS		Basic TDS AC
Eu.TDS.6645	Info	[Block] F_SCI_TDS_Report_TVPS [Functional Viewpoint - Interface Requirements - Functional Entity] 		Basic TDS AC
Eu.TDS.6726	Info	P2out	The port P2out exchanges information objects according to SCI_TDS_Report_TVPS.	Basic TDS AC
Eu.TDS.6727	Info	p6in		Basic TDS AC
Eu.TDS.6728	Info	p7in		Basic TDS AC
Eu.TDS.6729	Info	p86in		Basic TDS AC
Eu.TDS.6730	Info	p87in		Basic TDS AC
Eu.TDS.6731	Info	p88inout		Basic TDS AC
Eu.TDS.6647	Info	d10in_Fillinglevel		Option Update FL
Eu.TDS.6648	Info	d13in_Able_To_Be_Forced_To_Clear		Basic TDS AC
Eu.TDS.6649	Info	d18in_Perform_FC_P_Or_FC_P_A		Option FC-P/-A
Eu.TDS.6650	Info	d19in_Process_State		Basic TDS AC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6651	Info	d50in_PDI_Connection_State		Basic TDS AC

Eu.TDS.6646	Info	cOp2_Fillinglevel	if mem_UFL then
			mem_UFL := FALSE;
			return d10in_Fillinglevel;
			elseif mem_UFL = FALSE then
			return 65535;
			end if
				Option Update FL

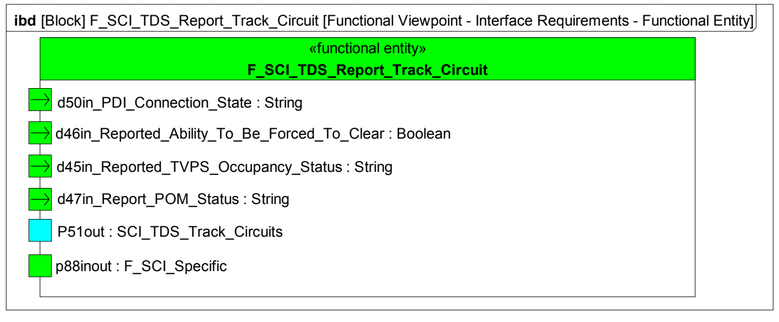
Eu.TDS.6653	Info	d9in_Occupancy_Status		Basic TDS AC
Eu.TDS.6654	Info	F_SCI_TDS_Report_TVPS - Behaviour	The telegram Msg_TVPS_Occupancy_Status will also be send in parallel to the Maintainer via TDS6 (Maintainer).	Basic TDS AC

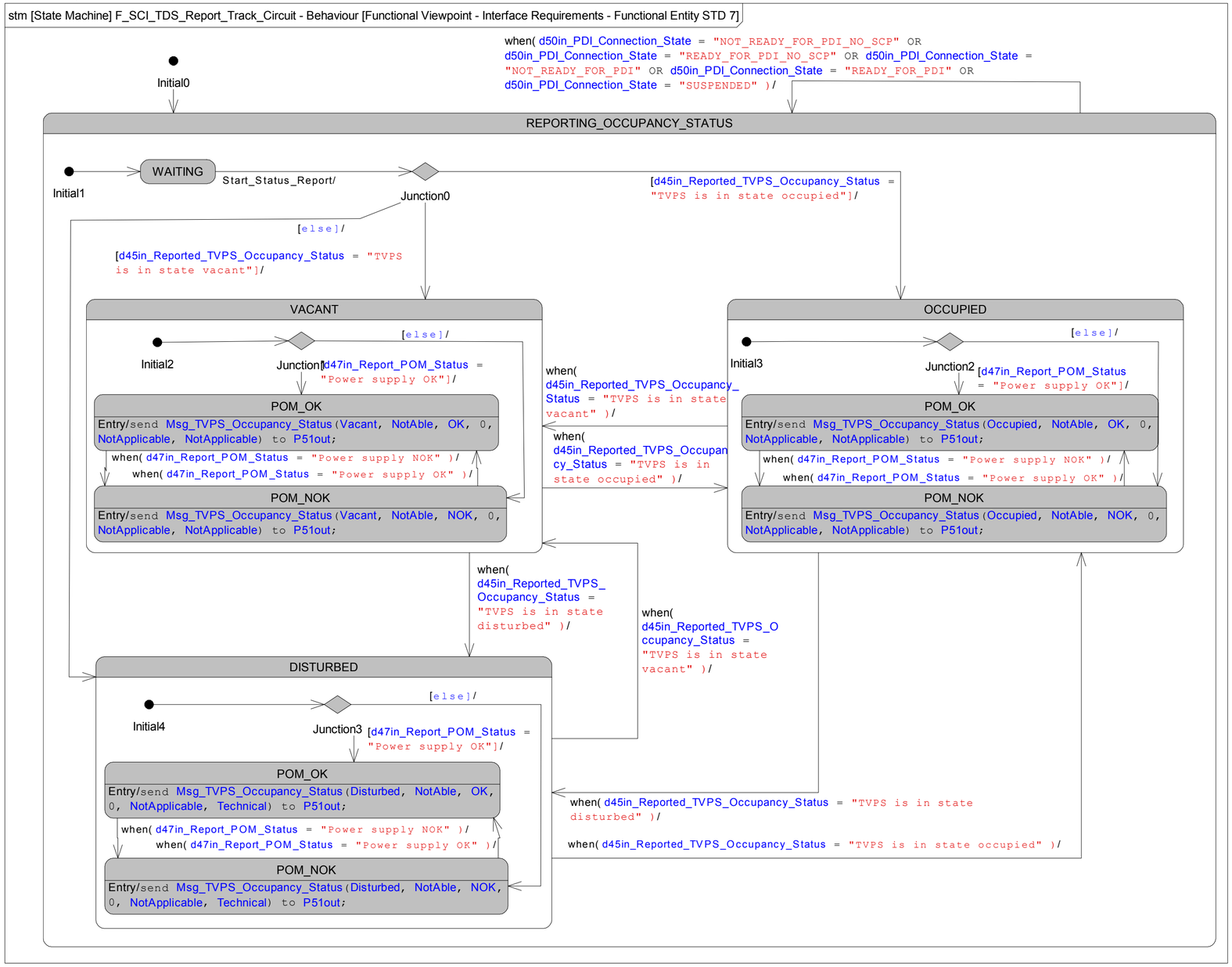
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6655	Info	Functional Viewpoint - Interface Requirements - Functional Entity STD 6	The telegram Msg_TVPS_Occupancy_Status will also be send in parallel to the Maintainer via TDS6 (Maintainer).	Basic TDS AC
Eu.TDS.6656	Info	Initial0		Basic TDS AC



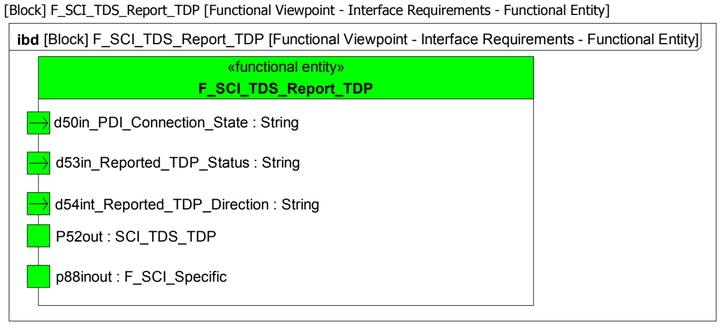
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6657	Req	/{Initial0 - WAITING}		Basic TDS AC
Eu.TDS.6658	Info	REPORT_TVPS_MESSAGES		Basic TDS AC
Eu.TDS.6659	Info	OCCUPANCY_STATUS		Basic TDS AC
Eu.TDS.6660	Info	Initial1		Basic TDS AC
Eu.TDS.6661	Req	/{Initial1 - Junction0}		Basic TDS AC
Eu.TDS.6662	Info	Junction0		Basic TDS AC
Eu.TDS.6663	Req	[else]/{Junction0 - OPERATING}		Basic TDS AC
Eu.TDS.6664	Req	[d18in_Perform_FC_P_Or_FC_P_A]/{Junction0 - PERFORM_FC_P_OR_FC_P_A}		Option FC-P/-A
Eu.TDS.6665	Req	[d9in_Occupancy_Status = "technical disturbed"]/{Junction0 - TECHNICAL_DISTRUBED}		Basic TDS AC
Eu.TDS.6666	Info	OPERATING		Basic TDS AC
Eu.TDS.6667	Info	DISTURBED		Basic TDS AC
Eu.TDS.6668	Info	ABLE_TO_BE_FORCED_TO_CLEAR		Basic TDS AC
Eu.TDS.6669	Req	when(NOT d13in_Able_To_Be_Forced_To_Clear)/{ABLE_TO_BE_FORCED_TO_CLEAR - UNABLE_TO_BE_FOCDED_TO_CLEAR}		Basic TDS AC
Eu.TDS.6957	Req	entry/send Msg_TVPS_Occupancy_Status (Disturbed, Able, NotApplicable, cOp2_Fillinglevel(), Operational, mem_Last_Change_Trigger) to P2out;{State-internal in ABLE_TO_BE_FORCED_TO_CLEAR}		Basic TDS AC
Eu.TDS.6670	Info	Initial4		Basic TDS AC
Eu.TDS.6671	Req	/{Initial4 - Junction2}		Basic TDS AC
Eu.TDS.6672	Info	Junction2		Basic TDS AC
Eu.TDS.6673	Req	[d13in_Able_To_Be_Forced_To_Clear]/{Junction2 - ABLE_TO_BE_FORCED_TO_CLEAR}		Basic TDS AC
Eu.TDS.6674	Req	[else]/{Junction2 - UNABLE_TO_BE_FOCDED_TO_CLEAR}		Basic TDS AC
Eu.TDS.6675	Info	UNABLE_TO_BE_FOCDED_TO_CLEAR		Basic TDS AC
Eu.TDS.6676	Req	when(d13in_Able_To_Be_Forced_To_Clear)/{UNABLE_TO_BE_FOCDED_TO_CLEAR - ABLE_TO_BE_FORCED_TO_CLEAR}		Basic TDS AC
Eu.TDS.6958	Req	entry/send Msg_TVPS_Occupancy_Status (Disturbed, NotAble, NotApplicable, cOp2_Fillinglevel(), Operational, mem_Last_Change_Trigger) to P2out;{State-internal in UNABLE_TO_BE_FOCDED_TO_CLEAR}		Basic TDS AC
Eu.TDS.6677	Req	when(d9in_Occupancy_Status = "vacant")/{DISTURBED - VACANT}		Basic TDS AC
Eu.TDS.6678	Req	Execute_UFL/mem_UFL := TRUE;{OPERATING - Junction0}		Option Update FL
Eu.TDS.6679	Info	Initial3		Basic TDS AC
Eu.TDS.6680	Req	/{Initial3 - Junction1}		Basic TDS AC
Eu.TDS.6681	Info	Junction1		Basic TDS AC
Eu.TDS.6682	Req	[d9in_Occupancy_Status = "unreliable in" OR d9in_Occupancy_Status = "unreliable out"]/{Junction1 - DISTURBED}		Basic TDS AC
Eu.TDS.6683	Req	[d9in_Occupancy_Status = "occupied in" OR d9in_Occupancy_Status = "occupied out"]/{Junction1 - OCCUPIED}		Basic TDS AC
Eu.TDS.6684	Req	[d9in_Occupancy_Status = "vacant"]/{Junction1 - VACANT}		Basic TDS AC
Eu.TDS.6685	Info	OCCUPIED		Basic TDS AC

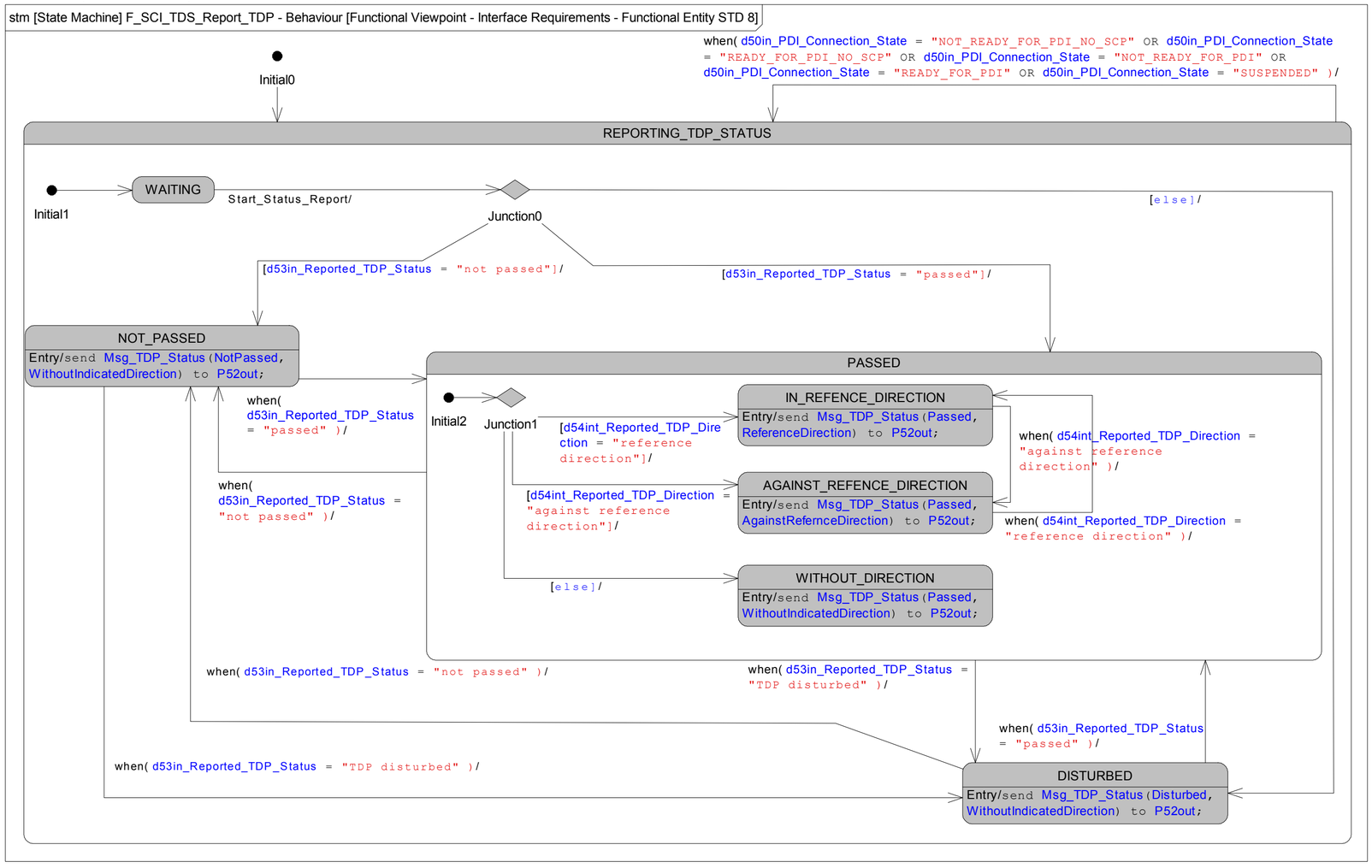
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6686	Info	ABLE_TO_BE_FORCED_TO_CLEAR		Basic TDS AC
Eu.TDS.6687	Req	when(NOT d13in_Able_To_Be_Forced_To_Clear)/{ABLE_TO_BE_FORCED_TO_CLEAR - UNABLE_TO_BE_FORCED_TO_CLEAR}		Basic TDS AC
Eu.TDS.6959	Req	entry/send Msg_TVPS_Occupancy_Status (Occupied, Able, NotApplicable, cOp2_Fillinglevel(), NotApplicable, mem_Last_Change_Trigger) to P2out;{State-internal in ABLE_TO_BE_FORCED_TO_CLEAR}		Basic TDS AC
Eu.TDS.6688	Info	Initial5		Basic TDS AC
Eu.TDS.6689	Req	/{Initial5 - Junction3}		Basic TDS AC
Eu.TDS.6690	Info	Junction3		Basic TDS AC
Eu.TDS.6691	Req	[d13in_Able_To_Be_Forced_To_Clear]/{Junction3 - ABLE_TO_BE_FORCED_TO_CLEAR}		Basic TDS AC
Eu.TDS.6692	Req	[else]/{Junction3 - UNABLE_TO_BE_FORCED_TO_CLEAR}		Basic TDS AC
Eu.TDS.6693	Info	UNABLE_TO_BE_FORCED_TO_CLEAR		Basic TDS AC
Eu.TDS.6694	Req	when(d13in_Able_To_Be_Forced_To_Clear)/{UNABLE_TO_BE_FORCED_TO_CLEAR - ABLE_TO_BE_FORCED_TO_CLEAR}		Basic TDS AC
Eu.TDS.6960	Req	entry/send Msg_TVPS_Occupancy_Status (Occupied, NotAble, NotApplicable, cOp2_Fillinglevel(), NotApplicable, mem_Last_Change_Trigger) to P2out;{State-internal in UNABLE_TO_BE_FORCED_TO_CLEAR}		Basic TDS AC
Eu.TDS.6695	Req	when(d9in_Occupancy_Status = "unreliable in" OR d9in_Occupancy_Status = "unreliable out")/{OCCUPIED - DISTURBED}		Basic TDS AC
Eu.TDS.6696	Req	when(d9in_Occupancy_Status = "vacant")/{OCCUPIED - VACANT}		Basic TDS AC
Eu.TDS.6697	Info	VACANT		Basic TDS AC
Eu.TDS.6698	Req	when(d9in_Occupancy_Status = "occupied in")/{VACANT - OCCUPIED}		Basic TDS AC
Eu.TDS.6699	Req	when(d9in_Occupancy_Status = "unreliable in" OR d9in_Occupancy_Status = "unreliable out")/{VACANT - DISTURBED}		Basic TDS AC
Eu.TDS.6699	Req	when(d9in_Occupancy_Status = "unreliable in" OR d9in_Occupancy_Status = "unreliable out")/{VACANT - DISTURBED}		Basic TDS AC
Eu.TDS.6961	Req	entry/send Msg_TVPS_Occupancy_Status (Vacant, NotAble, NotApplicable, cOp2_Fillinglevel(), NotApplicable, mem_Last_Change_Trigger) to P2out;{State-internal in VACANT}		Basic TDS AC
Eu.TDS.6700	Req	when(d18in_Perform_FC_P_Or_FC_P_A)/{OPERATING - PERFORM_FC_P_OR_FC_P_A}		Option FC-P/-A
Eu.TDS.6701	Req	when(d9in_Occupancy_Status = "technical disturbed")/{OPERATING - TECHNICAL_DISTRUBED}		Basic TDS AC
Eu.TDS.6702	Info	PERFORM_FC_P_OR_FC_P_A		Option FC-P/-A
Eu.TDS.6703	Req	Execute_UFL/mem_UFL := TRUE;{PERFORM_FC_P_OR_FC_P_A - PERFORM_FC_P_OR_FC_P_A}		Option FC-P/-A
Eu.TDS.6704	Info	Initial6		Option FC-P/-A
Eu.TDS.6705	Req	/{Initial6 - Junction4}		Option FC-P/-A
Eu.TDS.6706	Info	Junction4		Option FC-P/-A
Eu.TDS.6707	Req	[d19in_Process_State = "Sweeping train detected"]/{Junction4 - SWEEPING_TRAIN_DETECTED}		Option FC-P/-A
Eu.TDS.6708	Req	[d19in_Process_State = "Waiting for an acknowledgment"]/{Junction4 - WAITING_FOR_ACKNOWLEDGEMENT}		Option FC-P/-A
Eu.TDS.6709	Req	[d19in_Process_State = "Waiting for sweeping train"]/{Junction4 - WAITING_FOR_SWEEPING_TRAIN}		Option FC-P/-A
Eu.TDS.6710	Info	SWEEPING_TRAIN_DETECTED		Option FC-P/-A
Eu.TDS.6711	Req	when(d19in_Process_State = "Waiting for an acknowledgment")/{SWEEPING_TRAIN_DETECTED - WAITING_FOR_ACKNOWLEDGEMENT}		Option FC-P/-A
Eu.TDS.6962	Req	entry/send Msg_TVPS_Occupancy_Status (SweepingTrainDetected, NotAble, NotApplicable, cOp2_Fillinglevel(), NotApplicable, mem_Last_Change_Trigger) to P2out;{State-internal in SWEEPING_TRAIN_DETECTED}		Option FC-P/-A
Eu.TDS.6712	Info	WAITING_FOR_ACKNOWLEDGEMENT		Option FC-P/-A

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6963	Req	entry/send Msg_TVPS_Occupancy_Status (WaitingForAnAcknowledgment, NotAble, NotApplicable, cOp2_Fillinglevel(), NotApplicable, mem_Last_Change_Trigger) to P2out;{State-internal in WAITING_FOR_ACKNOWLEDGEMENT}		Option FC-P/-A
Eu.TDS.6713	Info	WAITING_FOR_SWEEPING_TRAIN		Option FC-P/-A
Eu.TDS.6714	Req	when(d19in_Process_State = "Sweeping train detected")/{WAITING_FOR_SWEEPING_TRAIN - SWEEPING_TRAIN_DETECTED}		Option FC-P/-A
Eu.TDS.6715	Req	when(d19in_Process_State = "Waiting for an acknowledgment")/{WAITING_FOR_SWEEPING_TRAIN - WAITING_FOR_ACKNOWLEDGEMENT}		Option FC-P/-A
Eu.TDS.6964	Req	entry/send Msg_TVPS_Occupancy_Status (WaitingForASweepingTrain, NotAble, NotApplicable, cOp2_Fillinglevel(), NotApplicable, mem_Last_Change_Trigger) to P2out;{State-internal in WAITING_FOR_SWEEPING_TRAIN}		Option FC-P/-A
Eu.TDS.6716	Req	when(NOT d18in_Perform_FC_P_Or_FC_P_A)/{PERFORM_FC_P_OR_FC_P_A - Junction0}		Option FC-P/-A
Eu.TDS.6717	Info	TECHNICAL_DISTRUBED		Basic TDS AC
Eu.TDS.6718	Req	when(NOT d9in_Occupancy_Status = "technical disturbed")/{TECHNICAL_DISTRUBED - OPERATING}		Basic TDS AC
Eu.TDS.6965	Req	entry/send Msg_TVPS_Occupancy_Status (Disturbed, NotAble, NotApplicable, cOp2_Fillinglevel(), Technical, mem_Last_Change_Trigger) to P2out;{State-internal in TECHNICAL_DISTRUBED}		Basic TDS AC
Eu.TDS.6719	Info	REPORT_ADDITIONAL_MESSAGES		Basic TDS AC
Eu.TDS.6720	Info	Initial2		Basic TDS AC
Eu.TDS.6721	Req	/{Initial2 - REPORTING}		Basic TDS AC
Eu.TDS.6722	Info	REPORTING		Basic TDS AC
Eu.TDS.6966	Req	Reason_FC_P_A_failed/send Msg_TVPS_FC_P_A_failed(ReportedReasonForFailure) to P2out;{State-internal in REPORTING}		Option FC-P/-A
Eu.TDS.6967	Req	Reason_FC_P_failed/send Msg_TVPS_FC_P_failed(ReportedReasonForFailure) to P2out;{State-internal in REPORTING}		Option FC-P/-A
Eu.TDS.6968	Req	Report_Command_Rejected[ReportedReasonForRejection = Operational]/send Msg_Command_Rejected(Operational) to P2out;{State-internal in REPORTING}		Basic TDS AC
Eu.TDS.6969	Req	Report_Command_Rejected[ReportedReasonForRejection = Technical]/send Msg_Command_Rejected(Technical) to P2out;{State-internal in REPORTING}		Basic TDS AC
Eu.TDS.6723	Req	when(d50in_PDI_Connection_State = "NOT_READY_FOR_PDI_NO_SCP" OR d50in_PDI_Connection_State = "READY_FOR_PDI_NO_SCP" OR d50in_PDI_Connection_State = "NOT_READY_FOR_PDI" OR d50in_PDI_Connection_State = "READY_FOR_PDI" OR d50in_PDI_Connection_State = "SUSPENDED")/{REPORT_TVPS_MESSAGES - WAITING}		Basic TDS AC
Eu.TDS.6971	Req	Change_Trigger/mem_Last_Change_Trigger := ReportedChangeTrigger;{State-internal in REPORT_TVPS_MESSAGES}		Basic TDS AC
Eu.TDS.6724	Info	WAITING		Basic TDS AC
Eu.TDS.6725	Req	Start_Status_Report/{WAITING - REPORT_TVPS_MESSAGES}		Basic TDS AC
Eu.TDS.6972	Req	Change_Trigger/mem_Last_Change_Trigger := ReportedChangeTrigger;{State-internal in WAITING}		Basic TDS AC
Eu.TDS.6583	Info	F_SCI_TDS_Report_Track_Circuit		Basic TDS TC
Eu.TDS.6584	Info	[Block] F_SCI_TDS_Report_Track_Circuit [Functional Viewpoint - Interface Requirements - Functional Entity] 		Basic TDS TC
Eu.TDS.6642	Info	P51out	The port P51out exchanges information objects according to SCI_TDS_Track_Circuits.	Basic TDS TC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6643	Info	p88inout		Basic TDS TC
Eu.TDS.6585	Info	d45in_Reported_TVPS_Occupancy_Status		Basic TDS TC
Eu.TDS.6586	Info	d46in_Reported_Ability_To_Be_Forced_To_Clear		Basic TDS TC
Eu.TDS.6587	Info	d47in_Report_POM_Status		Basic TDS TC
Eu.TDS.6588	Info	d50in_PDI_Connection_State		Basic TDS TC
Eu.TDS.6589	Info	F_SCI_TDS_Report_Track_Circuit - Behaviour		Basic TDS TC
Eu.TDS.6590	Info	Functional Viewpoint - Interface Requirements - Functional Entity STD 7 		Basic TDS TC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6591	Info	Initial0		Basic TDS TC
Eu.TDS.6592	Req	/{Initial0 - REPORTING_OCCUPANCY_STATUS}		Basic TDS TC
Eu.TDS.6593	Info	REPORTING_OCCUPANCY_STATUS		Basic TDS TC
Eu.TDS.6594	Info	DISTURBED		Basic TDS TC
Eu.TDS.6595	Info	Initial4		Basic TDS TC
Eu.TDS.6596	Req	/{Initial4 - Junction3}		Basic TDS TC
Eu.TDS.6597	Info	Junction3		Basic TDS TC
Eu.TDS.6598	Req	[else]/{Junction3 - POM_NOK}		Basic TDS TC
Eu.TDS.6599	Req	[d47in_Report_POM_Status = "Power supply OK"]/{Junction3 - POM_OK}		Basic TDS TC
Eu.TDS.6600	Info	POM_NOK		Basic TDS TC
Eu.TDS.6601	Req	when(d47in_Report_POM_Status = "Power supply OK")/{POM_NOK - POM_OK}		Basic TDS TC
Eu.TDS.6951	Req	entry/send Msg_TVPS_Occupancy_Status(Disturbed, NotAble, NOK, 0, NotApplicable, Technical) to P51out;{State-internal in POM_NOK}		Basic TDS TC
Eu.TDS.6602	Info	POM_OK		Basic TDS TC
Eu.TDS.6603	Req	when(d47in_Report_POM_Status = "Power supply NOK")/{POM_OK - POM_NOK}		Basic TDS TC
Eu.TDS.6952	Req	entry/send Msg_TVPS_Occupancy_Status(Disturbed, NotAble, OK, 0, NotApplicable, Technical) to P51out;{State-internal in POM_OK}		Basic TDS TC
Eu.TDS.6604	Req	when(d45in_Reported_TVPS_Occupancy_Status = "TVPS is in state occupied")/{DISTURBED - OCCUPIED}		Basic TDS TC
Eu.TDS.6605	Req	when(d45in_Reported_TVPS_Occupancy_Status = "TVPS is in state vacant")/{DISTURBED - VACANT}		Basic TDS TC
Eu.TDS.6607	Info	Initial1		Basic TDS TC
Eu.TDS.6608	Req	/{Initial1 - WAITING}		Basic TDS TC
Eu.TDS.6609	Info	Junction0		Basic TDS TC
Eu.TDS.6610	Req	[else]/{Junction0 - DISTURBED}		Basic TDS TC
Eu.TDS.6611	Req	[d45in_Reported_TVPS_Occupancy_Status = "TVPS is in state occupied"]/{Junction0 - OCCUPIED}		Basic TDS TC
Eu.TDS.6612	Req	[d45in_Reported_TVPS_Occupancy_Status = "TVPS is in state vacant"]/{Junction0 - VACANT}		Basic TDS TC
Eu.TDS.6613	Info	OCCUPIED		Basic TDS TC
Eu.TDS.6614	Info	Initial3		Basic TDS TC
Eu.TDS.6615	Req	/{Initial3 - Junction2}		Basic TDS TC
Eu.TDS.6616	Info	Junction2		Basic TDS TC
Eu.TDS.6617	Req	[else]/{Junction2 - POM_NOK}		Basic TDS TC
Eu.TDS.6618	Req	[d47in_Report_POM_Status = "Power supply OK"]/{Junction2 - POM_OK}		Basic TDS TC
Eu.TDS.6619	Info	POM_NOK		Basic TDS TC
Eu.TDS.6620	Req	when(d47in_Report_POM_Status = "Power supply OK")/{POM_NOK - POM_OK}		Basic TDS TC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6953	Req	entry/send Msg_TVPS_Occupancy_Status(Occupied, NotAble, NOK, 0, NotApplicable, NotApplicable) to P51out;{State-internal in POM_NOK}		Basic TDS TC
Eu.TDS.6621	Info	POM_OK		Basic TDS TC
Eu.TDS.6622	Req	when(d47in_Report_POM_Status = "Power supply NOK")/{POM_OK - POM_NOK}		Basic TDS TC
Eu.TDS.6954	Req	entry/send Msg_TVPS_Occupancy_Status(Occupied, NotAble, OK, 0, NotApplicable, NotApplicable) to P51out;{State-internal in POM_OK}		Basic TDS TC
Eu.TDS.6623	Req	when(d45in_Reported_TVPS_Occupancy_Status = "TVPS is in state disturbed")/{OCCUPIED - DISTURBED}		Basic TDS TC
Eu.TDS.6624	Req	when(d45in_Reported_TVPS_Occupancy_Status = "TVPS is in state vacant")/{OCCUPIED - VACANT}		Basic TDS TC
Eu.TDS.6626	Info	VACANT		Basic TDS TC
Eu.TDS.6627	Info	Initial2		Basic TDS TC
Eu.TDS.6628	Req	/{Initial2 - Junction1}		Basic TDS TC
Eu.TDS.6629	Info	Junction1		Basic TDS TC
Eu.TDS.6630	Req	[else]/{Junction1 - POM_NOK}		Basic TDS TC
Eu.TDS.6631	Req	[d47in_Report_POM_Status = "Power supply OK"]/{Junction1 - POM_OK}		Basic TDS TC
Eu.TDS.6632	Info	POM_NOK		Basic TDS TC
Eu.TDS.6633	Req	when(d47in_Report_POM_Status = "Power supply OK")/{POM_NOK - POM_OK}		Basic TDS TC
Eu.TDS.6955	Req	entry/send Msg_TVPS_Occupancy_Status(Vacant, NotAble, NOK, 0, NotApplicable, NotApplicable) to P51out;{State-internal in POM_NOK}		Basic TDS TC
Eu.TDS.6634	Info	POM_OK		Basic TDS TC
Eu.TDS.6635	Req	when(d47in_Report_POM_Status = "Power supply NOK")/{POM_OK - POM_NOK}		Basic TDS TC
Eu.TDS.6956	Req	entry/send Msg_TVPS_Occupancy_Status(Vacant, NotAble, OK, 0, NotApplicable, NotApplicable) to P51out;{State-internal in POM_OK}		Basic TDS TC
Eu.TDS.6636	Req	when(d45in_Reported_TVPS_Occupancy_Status = "TVPS is in state occupied")/{VACANT - OCCUPIED}		Basic TDS TC
Eu.TDS.6637	Req	when(d45in_Reported_TVPS_Occupancy_Status = "TVPS is in state disturbed")/{VACANT - DISTURBED}		Basic TDS TC
Eu.TDS.6639	Info	WAITING		Basic TDS TC
Eu.TDS.6640	Req	Start_Status_Report/{WAITING - Junction0}		Basic TDS TC
Eu.TDS.6641	Req	when(d50in_PDI_Connection_State = "NOT_READY_FOR_PDI_NO_SCP" OR d50in_PDI_Connection_State = "READY_FOR_PDI_NO_SCP" OR d50in_PDI_Connection_State = "NOT_READY_FOR_PDI" OR d50in_PDI_Connection_State = "READY_FOR_PDI" OR d50in_PDI_Connection_State = "SUSPENDED")/{REPORTING_OCCUPANCY_STATUS - REPORTING_OCCUPANCY_STATUS}		Basic TDS TC
Eu.TDS.6542	Info	F_SCI_TDS_Report_TDP		Basic TDS TDP
Eu.TDS.6543	Info	[Block] F_SCI_TDS_Report_TDP [Functional Viewpoint - Interface Requirements - Functional Entity] 		Basic TDS TDP

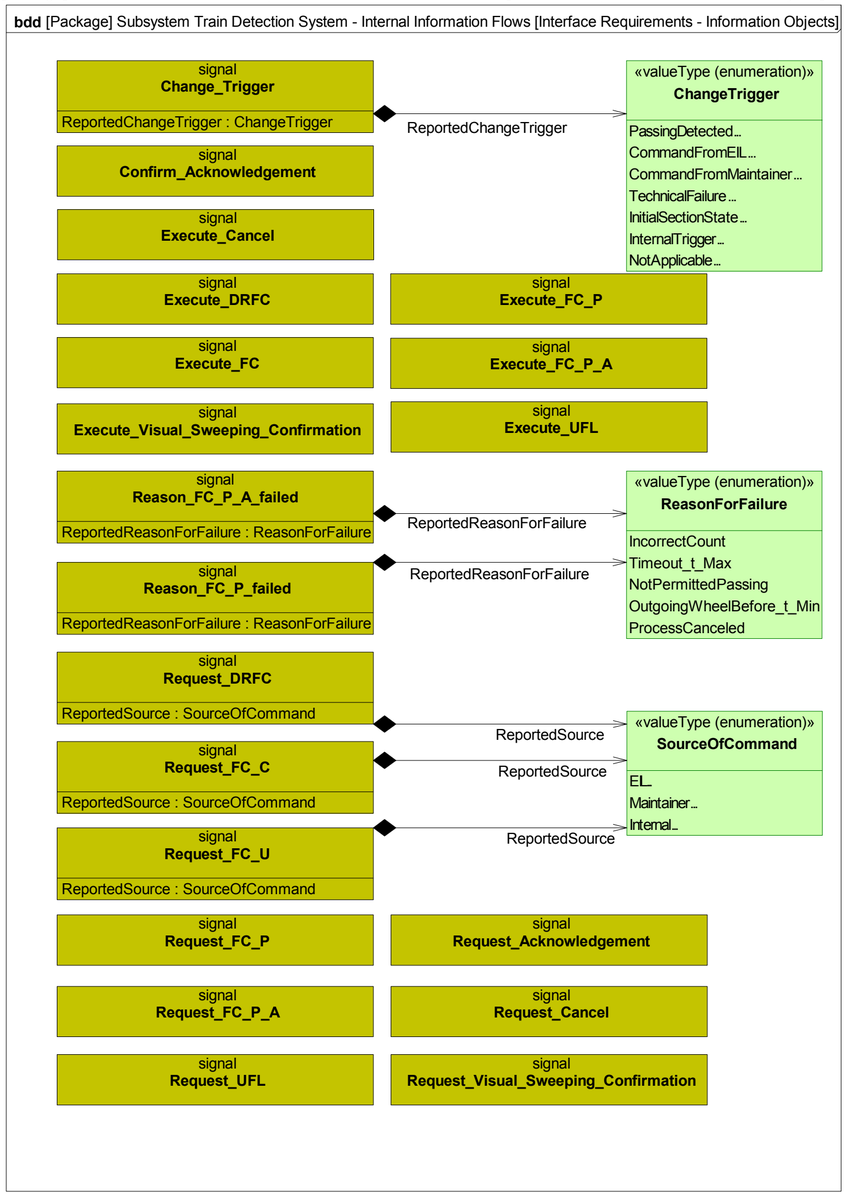
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6581	Info	P52out	The port P52out exchanges information objects according to SCI_TDS_TDP.	Basic TDS TDP
Eu.TDS.6582	Info	p88inout		Basic TDS TDP
Eu.TDS.6544	Info	d50in_PDI_Connection_State		Basic TDS TDP
Eu.TDS.6545	Info	d53in_Reported_TDP_Status		Basic TDS TDP
Eu.TDS.6546	Info	d54int_Reported_TDP_Direction		Basic TDS TDP
Eu.TDS.6547	Info	F_SCI_TDS_Report_TDP - Behaviour	The telegram Msg_TDP_Status will also be send in parallel to the Maintainer via TDS6 (Maintainer).	Basic TDS TDP
Eu.TDS.6548	Info	Functional Viewpoint - Interface Requirements - Functional Entity STD 8 		Basic TDS TDP
Eu.TDS.6549	Info	Initial0		Basic TDS TDP
Eu.TDS.6550	Req	/{Initial0 - REPORTING_TDP_STATUS}		Basic TDS TDP
Eu.TDS.6551	Info	REPORTING_TDP_STATUS		Basic TDS TDP
Eu.TDS.6552	Info	DISTURBED		Basic TDS TDP
Eu.TDS.6553	Req	when(d53in_Reported_TDP_Status = "not passed")/{DISTURBED - NOT_PASSED}		Basic TDS TDP

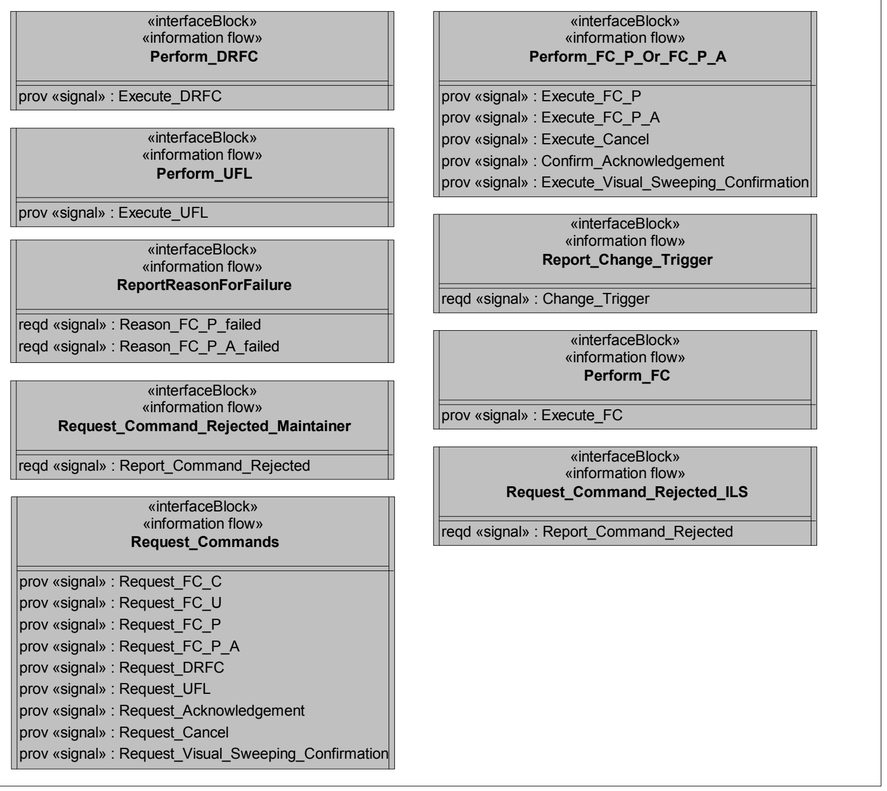
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6554	Req	when(d53in_Reported_TDP_Status = "passed")/{DISTURBED - PASSED}		Basic TDS TDP
Eu.TDS.6946	Req	entry/send Msg_TDP_Status(Disturbed, WithoutIndicatedDirection) to P52out;{State-internal in DISTURBED}		Basic TDS TDP
Eu.TDS.6555	Info	Initial1		Basic TDS TDP
Eu.TDS.6556	Req	/{Initial1 - WAITING}		Basic TDS TDP
Eu.TDS.6557	Info	Junction0		Basic TDS TDP
Eu.TDS.6558	Req	[else]/{Junction0 - DISTURBED}		Basic TDS TDP
Eu.TDS.6559	Req	[d53in_Reported_TDP_Status = "not passed"]/{Junction0 - NOT_PASSED}		Basic TDS TDP
Eu.TDS.6560	Req	[d53in_Reported_TDP_Status = "passed"]/{Junction0 - PASSED}		Basic TDS TDP
Eu.TDS.6561	Info	NOT_PASSED		Basic TDS TDP
Eu.TDS.6562	Req	when(d53in_Reported_TDP_Status = "passed")/{NOT_PASSED - PASSED}		Basic TDS TDP
Eu.TDS.6563	Req	when(d53in_Reported_TDP_Status = "TDP disturbed")/{NOT_PASSED - DISTURBED}		Basic TDS TDP
Eu.TDS.6947	Req	entry/send Msg_TDP_Status(NotPassed, WithoutIndicatedDirection) to P52out;{State-internal in NOT_PASSED}		Basic TDS TDP
Eu.TDS.6564	Info	PASSED		Basic TDS TDP
Eu.TDS.6565	Info	AGAINST_REFENCE_DIRECTION		Basic TDS TDP
Eu.TDS.6566	Req	when(d54int_Reported_TDP_Direction = "reference direction")/{AGAINST_REFENCE_DIRECTION - IN_REFENCE_DIRECTION}		Basic TDS TDP
Eu.TDS.6948	Req	entry/send Msg_TDP_Status(Passed, AgainstRefernceDirection) to P52out;{State-internal in AGAINST_REFENCE_DIRECTION}		Basic TDS TDP
Eu.TDS.6567	Info	IN_REFENCE_DIRECTION		Basic TDS TDP
Eu.TDS.6568	Req	when(d54int_Reported_TDP_Direction = "against reference direction")/{IN_REFENCE_DIRECTION - AGAINST_REFENCE_DIRECTION}		Basic TDS TDP
Eu.TDS.6949	Req	entry/send Msg_TDP_Status(Passed, ReferenceDirection) to P52out;{State-internal in IN_REFENCE_DIRECTION}		Basic TDS TDP
Eu.TDS.6569	Info	Initial2		Basic TDS TDP
Eu.TDS.6570	Req	/{Initial2 - Junction1}		Basic TDS TDP
Eu.TDS.6571	Info	Junction1		Basic TDS TDP
Eu.TDS.6572	Req	[d54int_Reported_TDP_Direction = "against reference direction"]/{Junction1 - AGAINST_REFENCE_DIRECTION}		Basic TDS TDP
Eu.TDS.6573	Req	[d54int_Reported_TDP_Direction = "reference direction"]/{Junction1 - IN_REFENCE_DIRECTION}		Basic TDS TDP
Eu.TDS.6574	Req	[else]/{Junction1 - WITHOUT_DIRECTION}		Basic TDS TDP
Eu.TDS.6575	Req	when(d53in_Reported_TDP_Status = "not passed")/{PASSED - NOT_PASSED}		Basic TDS TDP
Eu.TDS.6576	Req	when(d53in_Reported_TDP_Status = "TDP disturbed")/{PASSED - DISTURBED}		Basic TDS TDP
Eu.TDS.6577	Info	WITHOUT_DIRECTION		Basic TDS TDP
Eu.TDS.6950	Req	entry/send Msg_TDP_Status(Passed, WithoutIndicatedDirection) to P52out;{State-internal in WITHOUT_DIRECTION}		Basic TDS TDP
Eu.TDS.6578	Info	WAITING		Basic TDS TDP
Eu.TDS.6579	Req	Start_Status_Report/{WAITING - Junction0}		Basic TDS TDP

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6580	Req	when(d50in_PDI_Connection_State = "NOT_READY_FOR_PDI_NO_SCP" OR d50in_PDI_Connection_State = "READY_FOR_PDI_NO_SCP" OR d50in_PDI_Connection_State = "NOT_READY_FOR_PDI" OR d50in_PDI_Connection_State = "READY_FOR_PDI" OR d50in_PDI_Connection_State = "SUSPENDED")/{REPORTING_TDP_STATUS - REPORTING_TDP_STATUS}		Basic TDS TDP
Eu.TDS.1193	Head	**3.4.2 SMI-TDS (Subsystem - Maintenance and Data Management)**		
Eu.TDS.2545	Info	The generic InformationFlows and the related FlowProperties through the SMI-TDS are specified in Eu.Doc.120.		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.234	Head	**3.4.3 SDI-TDS (Subsystem - Maintenance and Data Management)**		
Eu.TDS.2544	Info	The generic data points through the SDI-TDS are specified in Eu.Doc.94. The specific data points through the SDI-TDS are specified in Eu.Doc.81.		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.7030	Head	**3.4.4 SSI-TDS (Subsystem - Security Services Platform)**		
Eu.TDS.7031	Info	The generic content through SSI-TDS is specified in Eu.Doc.117.		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.3589	Head	**3.4.5 TDS1 (Basic Data identifier)**		
Eu.TDS.3590	Info	The generic FlowSpecification and the related FlowProperties through TDS1 are specified in Eu.Doc.20.		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.205	Head	**3.4.6 TDS6 (Maintainer)**		
Eu.TDS.4305	Info	The generic FlowProperties through TDS6 are specified in Eu.Doc.20.		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.206	Info	Maintainer	The functional Local Control and Display Interface to the Maintainer. The InformationFlow through the Interface is defined by the FlowSpecification "Maintainer".	Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.1962	Req	Cd_DRFC	Command (Cd) to execute the "Disable the restriction to force section status to clear" (DRFC) operation to the Subsystem - Train Detection System.	Basic TDS AC
Eu.TDS.6855	Req	Cd_FC	Command (Cd) to the Subsystem - Train Detection System to force section status to clear. The following FC-Modes are permitted via TDS6 (Maintainer): FC-C FC-U	Basic TDS AC
Eu.TDS.7059	Req	Cd_Visual_Sweeping_Confirmed	Command (Cd) to the Subsystem - Train Detection System to confirm a successful sweeping while FC-P or FC-P-A.	Option FC-P/-A
Eu.TDS.6856	Req	Msg_Command_Rejected	Message (Msg) from Subsystem - Train Detection System, that the previously sent command was rejected.	Basic TDS AC
Eu.TDS.6858	Req	Msg_TVPS_Occupancy_Status	Message (Msg) from Subsystem - Train Detection System with the current status of the TVPS.	Basic TDS AC Basic TDS TC
Eu.TDS.7125	Req	Msg_TDP_Status	Message (Msg) from Subsystem - Train Detection System with the current status of the TDP.	Basic TDS TDP
Eu.TDS.1177	Head	**3.4.7 SCI-ACS (Subsystem - Train Detection System)**		
Eu.TDS.1178	Info	Subsystem_Train_Detection_System	The Interface SCI-ACS may be defined in later deliveries.	Basic TDS AC Basic TDS TDP Basic TDS TC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.210	Head	**3.4.8 TDS2 (Wheel)**		
Eu.TDS.211	Info	Wheel	Definition of the InformationFlow (FlowSpecification) for the TDS2 (Wheel).	Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.213	Req	Passing_Detected	Recognising of a passing of a Detection Point by a Wheel.	Basic TDS AC Basic TDS TDP
Eu.TDS.1202	Req	Occupancy_Detected	Recognising a changing occupancy of a track circuit by a Wheel.	Basic TDS TC
Eu.TDS.2486	Req	Not_Permitted_Passing_Detected	Recognising the passing of a Detection Point, which is not permitted by configuration, during execution of an FC-P or FC-P-A command. Note: The distinction whether a passing point is permitted or not permitted, during execution of an FC-P or FC-P-A command, may also dynamically depend on other detected passing axles of a sweeping train. The applicable conditions to distinguish between a successful and an unsuccessful sweeping train can be provided as part of configuration data.	Option FC-P/-A
Eu.TDS.7032	Head	**3.5 Subsystem Train Detection System - Internal Information Flows**		

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.7034	Info	[Package] Subsystem Train Detection System - Internal Information Flows [Interface Requirements - Information Objects]		Basic TDS AC Option FC-P/-A Option Update FL



ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.7033	Info	[Package] Subsystem Train Detection System - Internal Information Flows [Interface Requirements - Direction of Information Objects] **bdd** [Package] Subsystem Train Detection System - Internal Information Flows [Interface Requirements - Direction of Information Objects]  		Basic TDS AC Option FC-P/-A Option Update FL
Eu.TDS.6809	Info	Execute_Cancel		Option FC-P/-A
Eu.TDS.6810	Info	Execute_DRFC		Basic TDS AC
Eu.TDS.6811	Info	Execute_FC		Basic TDS AC
Eu.TDS.6812	Info	Execute_FC_P		Option FC-P/-A
Eu.TDS.6813	Info	Execute_FC_P_A		Option FC-P/-A
Eu.TDS.6814	Info	Execute_UFL		Option Update FL
Eu.TDS.6815	Info	Execute_Visual_Sweeping_Confirmation		Option FC-P/-A
Eu.TDS.6827	Info	Reason_FC_P_A_failed		Option FC-P/-A
Eu.TDS.6826	Info	Report_Command_Rejected		Basic TDS AC
Eu.TDS.6828	Info	Reason_FC_P_failed		Option FC-P/-A
Eu.TDS.6829	Info	Request_Acknowledgement		Option FC-P/-A
Eu.TDS.6833	Info	Request_DRFC		Basic TDS AC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6834	Info	Request_FC_C		Basic TDS AC
Eu.TDS.6835	Info	Request_FC_P		Option FC-P/-A
Eu.TDS.6836	Info	Request_FC_P_A		Option FC-P/-A
Eu.TDS.6837	Info	Request_FC_U		Basic TDS AC
Eu.TDS.6838	Info	Request_UFL		Option Update FL
Eu.TDS.6839	Info	Request_Visual_Sweeping_Confirmation		Option FC-P/-A
Eu.TDS.6807	Info	Change_Trigger		Basic TDS AC
Eu.TDS.6808	Info	Confirm_Acknowledgement		Option FC-P/-A
Eu.TDS.6830	Info	Request_Cancel		Option FC-P/-A
Eu.TDS.1937	Head	**4 RAMSS requirements**		
Eu.TDS.1938	Info	The requirements for reliability, availability, maintainability, safety and security are specified in [Eu.Doc.20].		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.1947	Head	**5 Technical requirements**		
Eu.TDS.2056	Info	The generic technical requirements are specified in [Eu.Doc.20].		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.1948	Head	**5.1 Specific technical interface requirements**		
Eu.TDS.1949	Head	**5.1.1 Interface to the Point of Service Signalling (PoS-Signalling)**		
Eu.TDS.1950	Req	Via the technical interface **PoS-Signalling** the data of the functional interface "SCI-TDS" shall be exchanged with the Subsystem - Electronic Interlocking as specified in [Eu.Doc.92].		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.1951	Req	Via the technical interface **PoS-Signalling** the data of the functional interface "SMI-TDS" shall be exchanged with the Subsystem - Maintenance and Data Management as specified in [Eu.Doc.76].		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.1952	Req	Via the technical interface **PoS-Signalling** the data of the functional interface "SDI-TDS" shall be exchanged with the Subsystem - Maintenance and Data Management as specified in [Eu.Doc.77].		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.7012	Req	Via the technical interface **PoS-Signalling** the data of the functional interface "SSI-TDS" shall be exchanged with the Subsystem - Maintenance and Data Management as specified in [Eu.Doc.117].		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.2026	Head	**5.1.2 Interfaces to additional peripheral systems of the Subsystem – Train Detection System**		
Eu.TDS.2027	Info	These requirements shall be defined by national specifications. Note: In future phases of the System Pillar, national specifications will be replaced by harmonised specifications.		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.1983	Head	**5.2 Time behaviour**		

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.2097	Info	These requirements shall be defined by national specifications. Note: In future phases of the System Pillar, national specifications will be replaced by harmonised specifications.		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.7129	Info	**5.2.1 Response times**		
Eu.TDS.7130	Req	The Subsystem Train Detection System shall send the corresponding message telegram to the Subsystem - Electronic Interlocking within 500 ms after the detection of a wheel that changes the status of the TVPS, which works with axle counters, to occupied or disturbed.		Basic TDS AC
Eu.TDS.7131	Req	The Subsystem Train Detection System shall send the corresponding message telegram to the Subsystem - Electronic Interlocking within 500 ms after the detection of a wheel that changes the status of the TVPS, which works with axle counters, to vacant. Note: If there is a delay of notification of availability defined in the relevant UseCase the required response time starts after the expiration of the delay.		Basic TDS AC
Eu.TDS.7132	Req	The Subsystem Train Detection System shall send the corresponding message telegram (new TVPS status or rejection of the command) to the Subsystem - Electronic Interlocking within 500 ms after receiving an FC-command.		Basic TDS AC
Eu.TDS.7133	Req	The Subsystem Train Detection System shall send the corresponding message telegram to the Subsystem - Electronic Interlocking within 500 ms after the detection of a wheel that changes the status of the TVPS, which works with track circuits, to occupied.		Basic TDS TC
Eu.TDS.7134	Req	The Subsystem Train Detection System shall send the corresponding message telegram to the Subsystem - Electronic Interlocking within 700 ms after the detection of a wheel that changes the status of the TVPS, which works with track circuits, to vacant.		Basic TDS TC
Eu.TDS.7135	Req	The Subsystem Train Detection System shall send the corresponding message telegram to the Subsystem - Electronic Interlocking within 500 ms after the detection of a wheel that changes the status of the TDP. Note: If there is a TDP delay defined in the relevant UseCase the required response time starts after the expiration of the delay.		Basic TDS TDP
Eu.TDS.1988	Head	**5.3 Configuration and engineering data**		
Eu.TDS.1989	Head	**5.3.1 Specific data**		
Eu.TDS.1990	Req	The specific configuration and engineering data for the Subsystem – Train Detection System shall include as a minimum the following information:		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.4857	Req	• Composition of TVPS by the mapping of detection point per each TDS.		Basic TDS AC
Eu.TDS.7167	Req	• Composition of TDP by the mapping of detection point per each TDS.		Basic TDS TDP
Eu.TDS.4881	Req	• The handling of the ability to force a TVPS to clear in the state disturbed, reason operational according to Variant A and B. Note: The functional differences between these variants is explained in section Eu.TDS.6525		Basic TDS AC
Eu.TDS.4880	Req	• The permissible FC-modes per each TVPS and per source of the command (Electronic Interlocking, Maintainer or from internal).		Basic TDS AC Option FC-P/-A
Eu.TDS.7037	Req	• The usage of the DRFC-command per each TVPS and per source of the command (Electronic Interlocking or Maintainer).		Basic TDS AC
Eu.TDS.7039	Req	• The usage of the UFL-command per each TVPS.		Option Update FL
Eu.TDS.4858	Req	• The applicable timers defined in chapter Definition of time values (Eu.TDS.1211) per each TVPS.		Basic TDS AC Basic TDS TDP Basic TDS TC Option FC-P/-A
Eu.TDS.5417	Req	• The usage of axle counter or track circuits to determine the occupancy of the TVPS per each TVPS.		Basic TDS AC Basic TDS TC
Eu.TDS.7038	Req	• The detection of the direction of a passing per each TDP.		Basic TDS TDP
Eu.TDS.5732	Req	• Possibility to configure the detection point as not permitted for FC-P or FC-P-A.		Option FC-P/-A
Eu.TDS.1997	Info	Two different data sections can be loaded which are the safety-relevant data and the non safety-relevant data. The following definitions apply to the assignment of the sections:		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.1999	Req	• configuration data, such as the IP addresses of the Subsystem - Electronic Interlocking, the value of the diagnostic data points with attribute type 'configuration', is not safety-relevant. This data shall be used to calculate the CSNS.		Basic TDS AC Basic TDS TDP Basic TDS TC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.2005	Req	• The remaining configuration data is currently categorised as safety-relevant. This data shall be used to calculate the CSS.		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.2006	Req	• The engineering data is safety-relevant. This data shall be used to calculate the CSS.		Basic TDS AC Basic TDS TDP Basic TDS TC