EULYNX Initiative

Europe's Rail Joint Undertaking

Requirements specification for subsystem TDS

Document number: Eu.Doc.43
Version: 4.2 (1.A)

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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: 4.2 (1.A) Approval date: 02.06.2025		
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.7206	Info	version number: 4.1 (1.A) date: 18.12.2023 author: Marie Gehrmann model version: 25 Generic interface and subsystem requirements version: 4.0 (4.A) Generic interface and subsystem requirements for SCI version: 1.0 (4.A) review: M&T changes: EUTDS-422, EUTDS-466, EUTDS-483, EUTDS-484, EUTDS-486, EUTDS-485, EUTDS-487, EUTDS-489, EUTDS-488, EUTDS-490, EUTDS-491, EUTDS-497, EUTDS-498		
Eu.TDS.7313	Info	version number: 4.1 (2.A) date: 06.02.2024 author: Marie Gehrmann model version: 25 Generic interface and subsystem requirements version: 4.0 (4.A) Generic interface and subsystem requirements for SCI version: 1.0 (4.A) review: - changes: EUTDS-456, EUTDS-495, EUTDS-499, EUTDS-500, EUTDS-502, EUTDS-503, EUTDS-504, EUTDS-505		
Eu.TDS.7317	Info	version number: 4.1 (3.A) date: 02.04.2024 author: Marie Gehrmann model version: 26 Generic interface and subsystem requirements version: 4.0 (4.A) Generic interface and subsystem requirements for SCI version: 1.0 (4.A) review: - changes: EUTDS-458, EUTDS-506, EUTDS-507, EUTDS-508, EUTDS-510		
Eu.TDS.7379	Info	version number: 4.1 (4.A) date: 30.04.2024 author: Marie Gehrmann model version: 26 Generic interface and subsystem requirements version: 4.0 (5.A) Generic interface and subsystem requirements for SCI version: 1.0 (5.A) review: cluster changes: EUTDS-511, EUTDS-512, EUTDS-513, EUTDS-515, EUTDS-516, EUTDS-521, EUTDS-522		
Eu.TDS.7404	Info	version number: 4.2 (0.A) date: 18.06.2024 author: Marie Gehrmann		

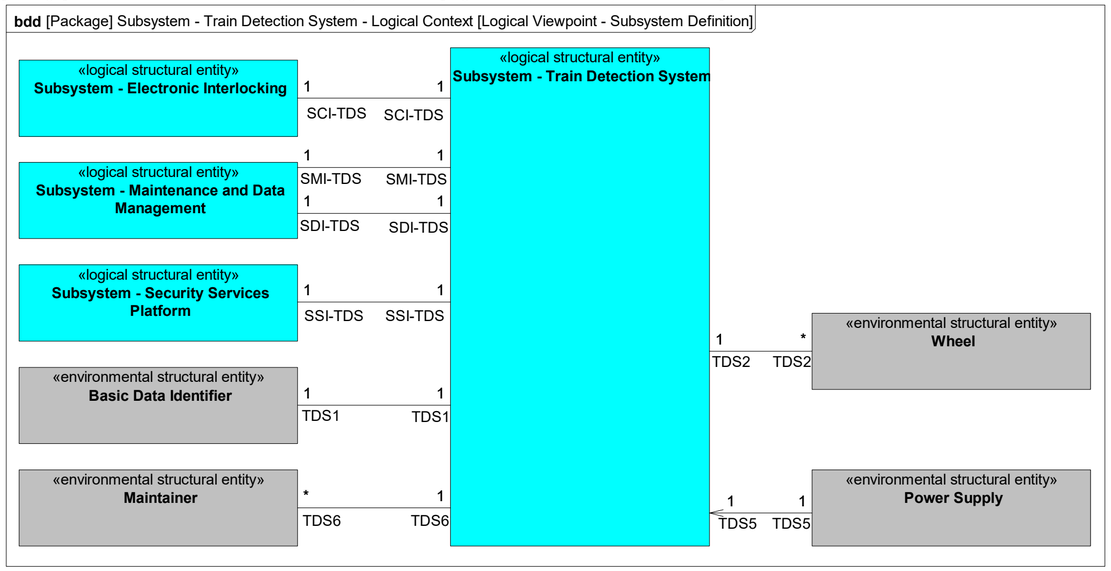
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
		model version: 26 Generic interface and subsystem requirements version: 4.0 (6.A) Generic interface and subsystem requirements for SCI version: 1.1 (0.A) review: TACS Mirror Group changes: EUTDS-522, EUTDS-524, EUTDS-525, EUTDS-529		
Eu.TDS.7417	Info	version number: 4.2 (1.A) date: 19.06.2025 author: Marie Gehrmann model version: 29 Generic interface and subsystem requirements version: 4.0 (7.A) Generic interface and subsystem requirements for SCI version: 1.1 (2.A) review: TACS Mirror Group changes: EUTDS-532, EUTDS-533, EUTDS-536		
Eu.TDS.8	Head	**1.2 Impressum**		
Eu.TDS.9	Info	Publisher: **Europe's Rail Joint Undertaking** https://rail-research.europa.eu/ **EULYNX Initiative** https://eulynx.eu/		
Eu.TDS.10	Info	Responsible for this document: EU-Rail System Pillar Trackside Assets Control and Supervision domain		
Eu.TDS.2122	Info	This document is drafted by and belongs to EU Rail. EU Rail encourages the distribution and re-use of this document, the technical specifications and the information it contains. EU Rail holds several intellectual property rights, such as copyright and trade mark rights, which need to be considered when this document is used. EU Rail authorizes you to re-publish, re-use, copy and store this document without changing it, provided that you indicate its source and include the following mention [EU Rail trade mark, title of the document, year of publication, version of document]. EU Rail makes no representation or warranty as to the accuracy or completeness of the information contained within these documents. EU Rail shall have no liability to any party as a result of the use of the information contained herein. EU Rail will have no liability whatsoever for any indirect or consequential loss or damage, and any such liability is expressly excluded. You may study, research, implement, adapt, improve and otherwise use the information, the content and the models in this document for your own purposes. If you decide to publish or disclose any adapted, modified or improved version of this document, any amended implementation or derivative work, then you must indicate that you have modified this document, with a reference to the document name and the terms of use of this document. You may not use EU Rail's trade marks or name in any way that may state or suggest, directly or indirectly, that EU Rail is the author of your adaptations. EU Rail cannot be held responsible for your product, even if you have used this document and its content. It is your responsibility to verify the quality, completeness and the accuracy of the information you use, for your own purposes.		
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**		
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.7207	Info	• "Def" - This denotes referenceable model elements that are used in the model-based creation of requirements		
Eu.TDS.2120	Info	• "Info" - This denotes additional information to help understand the specification. These objects do not specify any additional requirements.		

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
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.7208	Info	State machines or several state machines linked together in a Functional Architecture define the totality of all functional requirements of an SUS or an SIUS in a coherent and consistent manner. State diagrams of a corresponding state machine are marked with the object type "Req". For the later design and implementation, it is not the description language SysML that is binding, but the domain-specific meaning expressed by it. The specified behaviour can be converted into a vendor specific language but must retain the domain specific meaning describing the functional requirements. The specific model elements are additionally specified and defined by object type "Def" to allow for traceability to supplier designs or test cases. The compliance of products to the specifications must be demonstrated by testing against EULYNX test cases, which are derived from the functionality specified by the models.		
Eu.TDS.33	Head	**2 Conditions of use**		
Eu.TDS.5729	Req	All references to [Eu.Doc.20] refer to version 4.0 of that document.		
Eu.TDS.7075	Req	All references to [Eu.Doc.119] refer to version 1.1 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

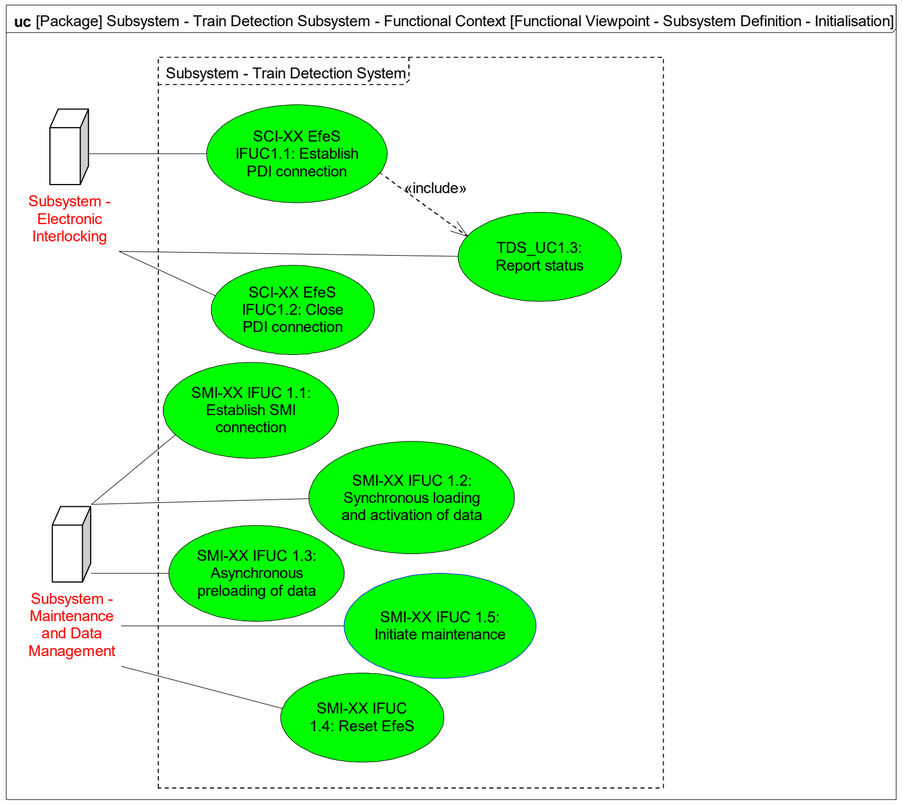
Eu.TDS.7151	Info	• Initial state of the TVPS after a (re)booting the system:
		  • Variant A: The initial state of the TVPS is disturbed with an operational reason and able to be forced to clear.
		  • Variant B: The initial state of the TVPS is disturbed with an operational reason and unable to be forced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

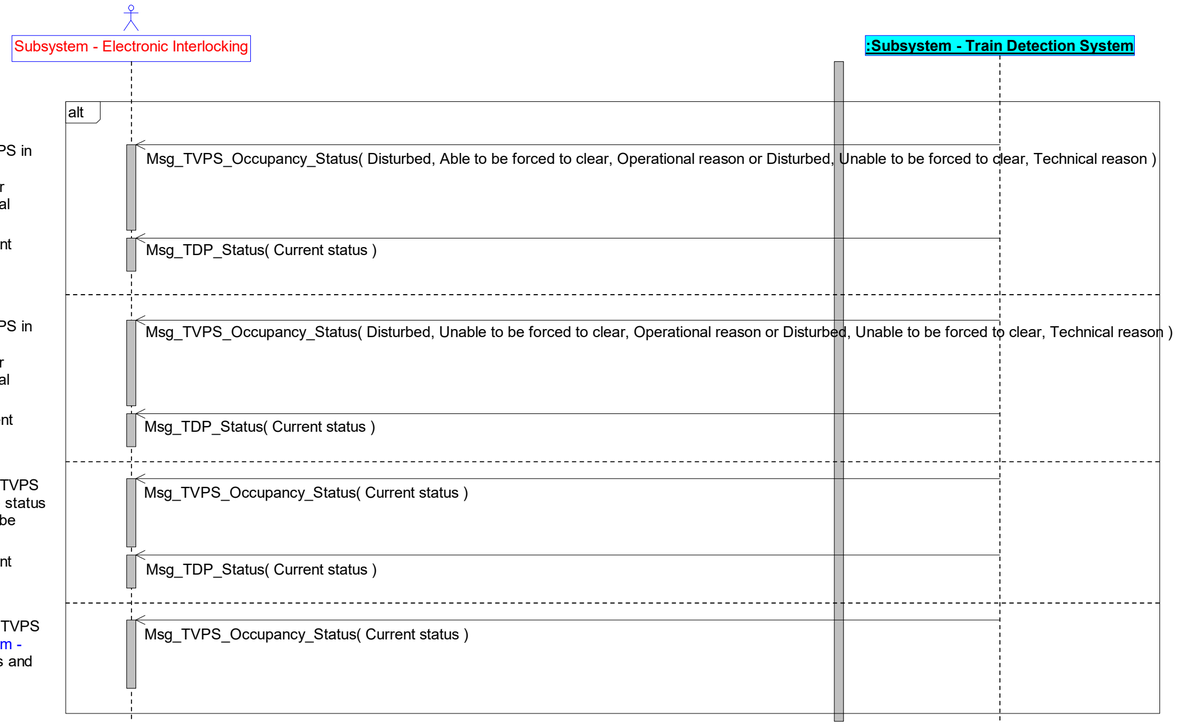
Eu.TDS.7152	Info	• The handling of ability to be forced to clear while having a disturbance with an operational reason:
		  • Variant A: The TVPS is always able to be forced to clear after expiration of the inhibition time (independent from the last detected passing (incoming wheel, outgoing wheel or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

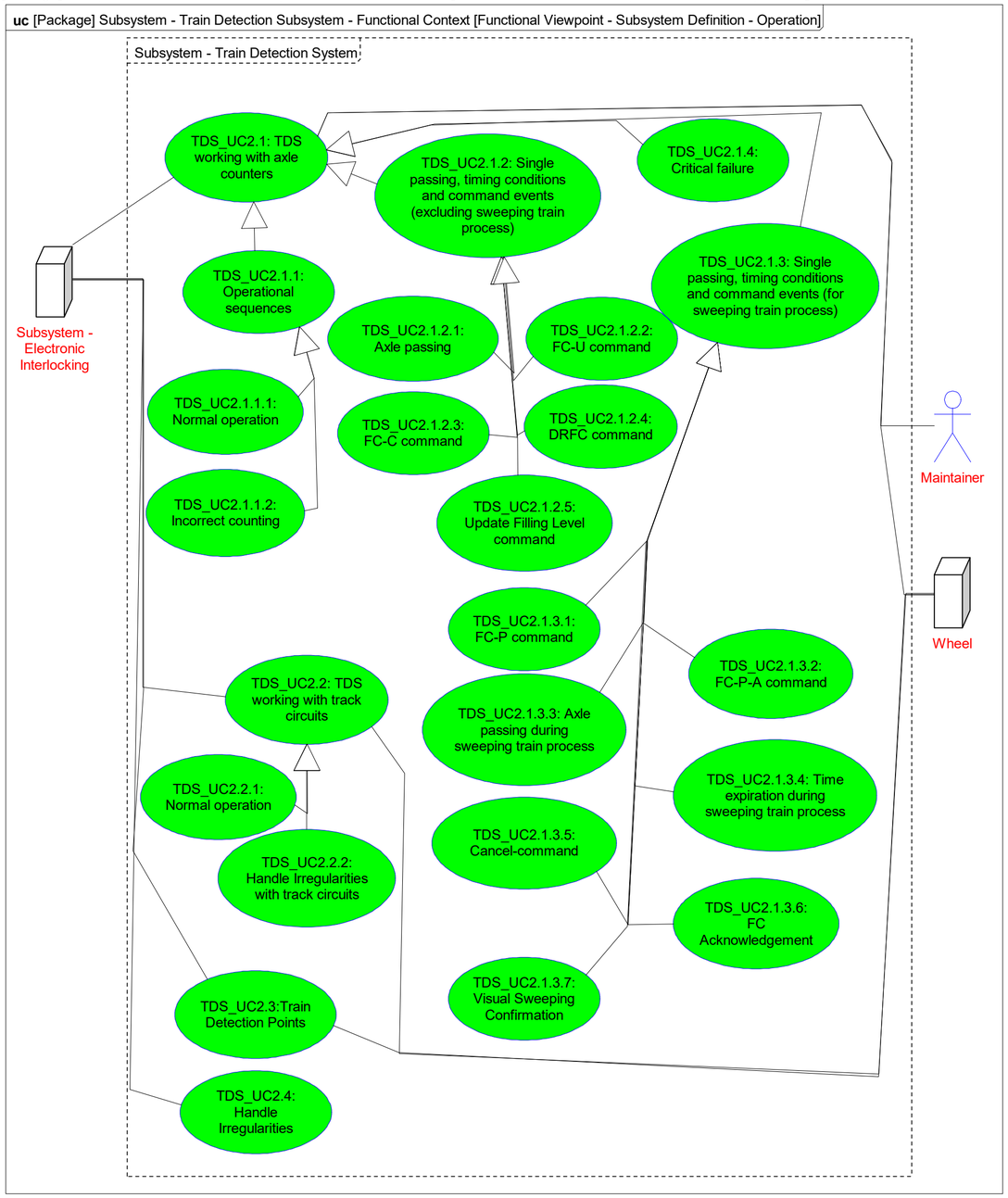
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.1113	Def	[Package] Subsystem - Train Detection System - Logical Context [Logical Viewpoint - Subsystem Definition]  		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.7370	Req	The Subsystem - Train Detection System shall provide a logical interface SCI-TDS to exactly one Subsystem - Electronic Interlocking.		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.7371	Req	The Subsystem - Train Detection System shall provide a logical interface SMI-TDS to exactly one Subsystem - Maintenance and Data Management.		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.7372	Req	The Subsystem - Train Detection System shall provide a logical interface SDI-TDS to exactly one Subsystem - Maintenance and Data Management.		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.7373	Req	The Subsystem - Train Detection System shall provide a logical interface SSI-TDS to exactly one Subsystem - Security Services Platform.		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.7374	Req	The Subsystem - Train Detection System shall provide a logical interface TDS1 to exactly one Basic Data identifier.		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.7375	Req	The Subsystem - Train Detection System shall provide a logical interface TDS6 to exactly one Maintainer.		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.7377	Req	The Subsystem - Train Detection System shall provide a logical interface TDS2 to each Wheel.		Basic TDS AC Basic TDS TDP Basic TDS TC

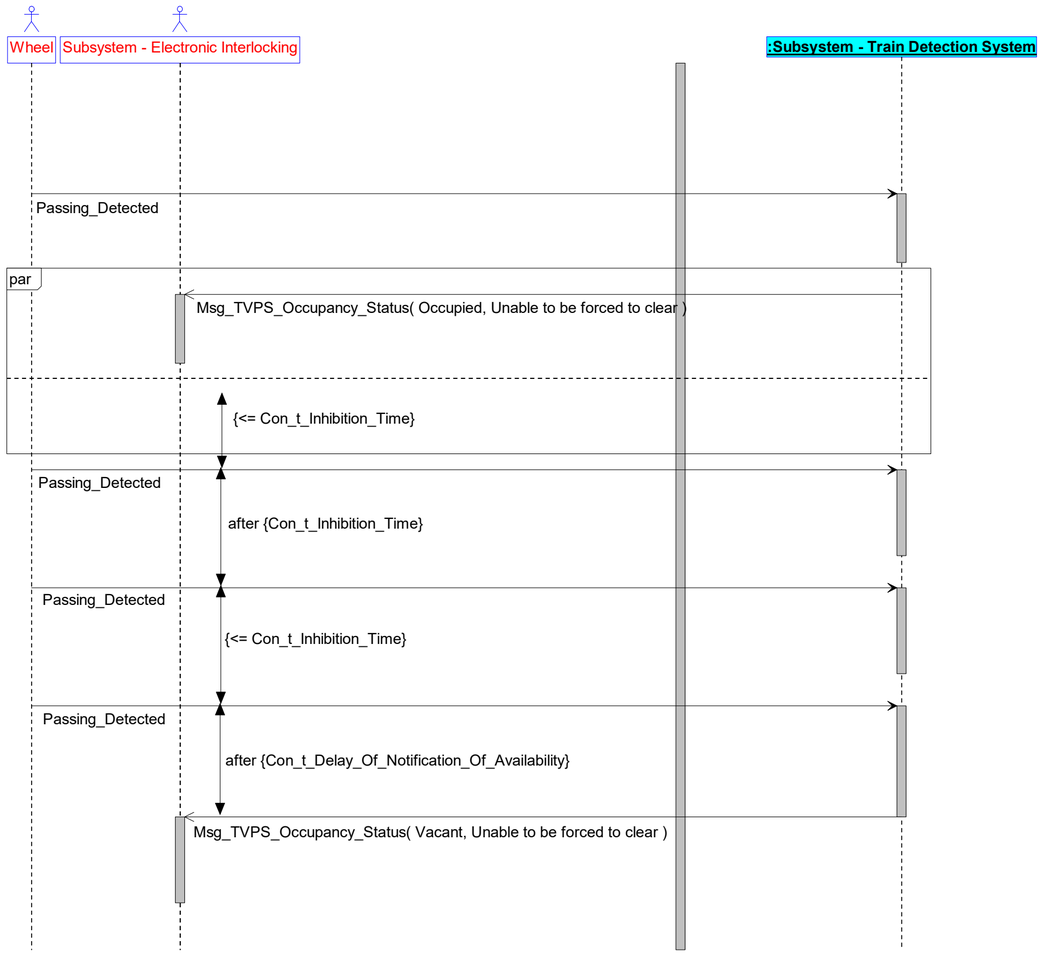
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.7378	Req	The Subsystem - Train Detection System shall provide a logical interface TDS5 to exactly one Power Supply.		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.5964	Head	**3.3 Subsystem - Train Detection System - Functional Viewpoint**		
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	Def	Con_t_Inhibition_Time	Con_t_Inhibition_Time is a configurable delay, defining the duration between the detection of a passing for a TVPS (incoming wheel, outgoing wheel or undefined pattern) and the moment that the state of a TVPS is considered stable. Cd_Cancel is not rejected during inhibition time. Until expiration of this delay, all FC, DRFC and UFL commands to the TVPS are rejected.	Basic TDS AC
Eu.TDS.1213	Def	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 delay, all commands to the TVPS are rejected.	Basic TDS AC
Eu.TDS.1214	Def	Con_t_Max_FC_P_or_FC_P_A	Con_t_Max_FC_P_or_FC_P_A is a configurable time, defining the maximum time between detecting a sweeping train and confirmation of a succesful sweeping.	Option FC-P/-A
Eu.TDS.1215	Def	Con_t_Min_FC_P_or_FC_P_A	Con_t_Min_FC_P_or_FC_P_A is a configurable time, which starts with the first detected incomming Wheel. This timeout 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.	Option FC-P/-A
Eu.TDS.5452	Def	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".	Basic TDS TDP
Eu.TDS.5965	Def	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.	Basic TDS TDP
Eu.TDS.238	Head	**3.3.2 Subsystem - Train Detection System - Functional Context**		

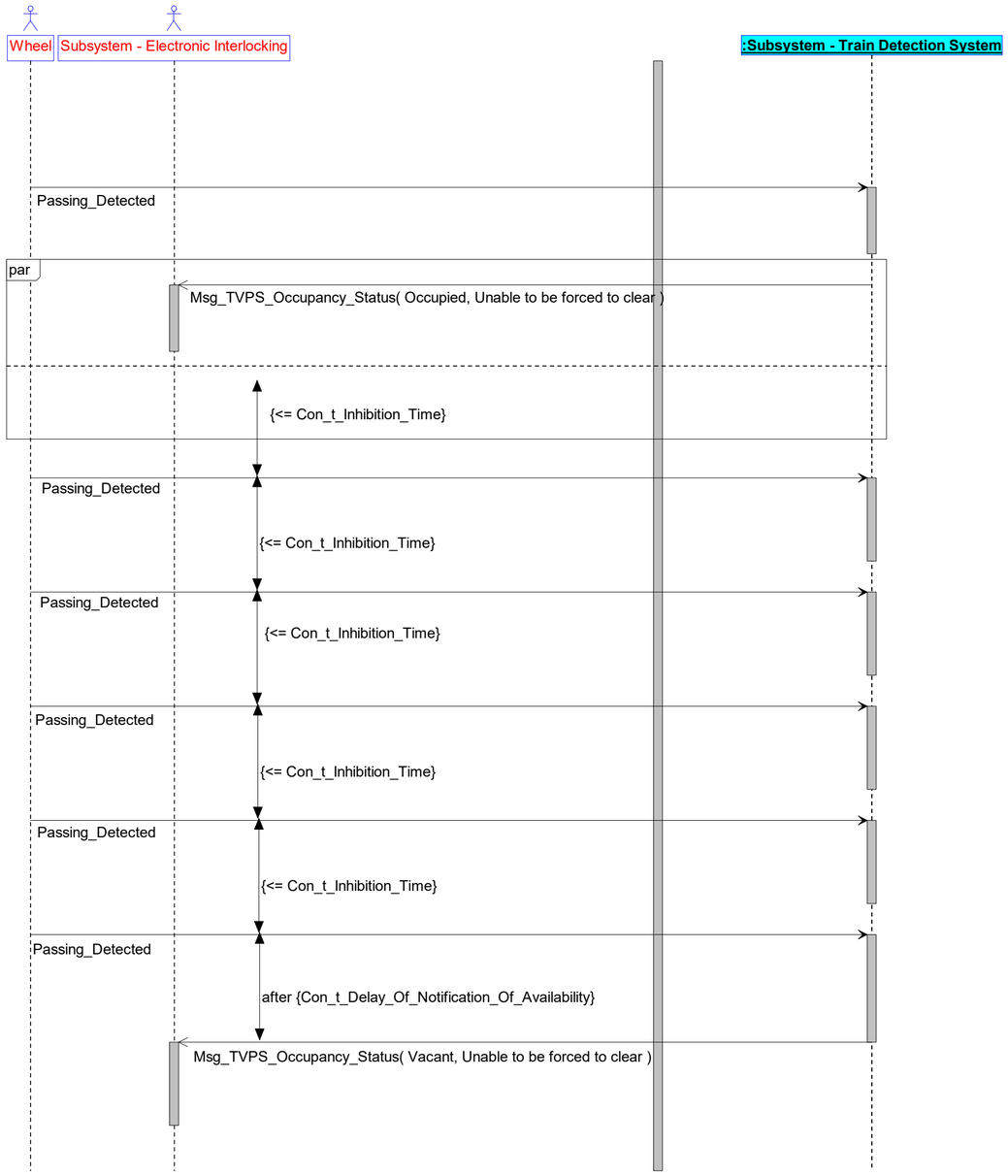
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.380	Info	[Package] Subsystem - Train Detection Subsystem - Functional Context [Functional Viewpoint - Subsystem Definition - Initialisation]  		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.5976	Info	The generic UseCases SCI-XX EfeS IFUC1.1: 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	Main Success Scenario: Report status [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**  	If a change of state occurs whilst establishing the PDI connection and the corresponding status message for the previous state has already been sent, a new status message shall be sent to the Subsystem - Electronic Interlocking as soon as the connection has been fully established. This SD is part of [SCI-XX EfeS IF SD 1.1.1] in [Eu.Doc.119].	Basic TDS AC Basic TDS TDP Basic TDS TC

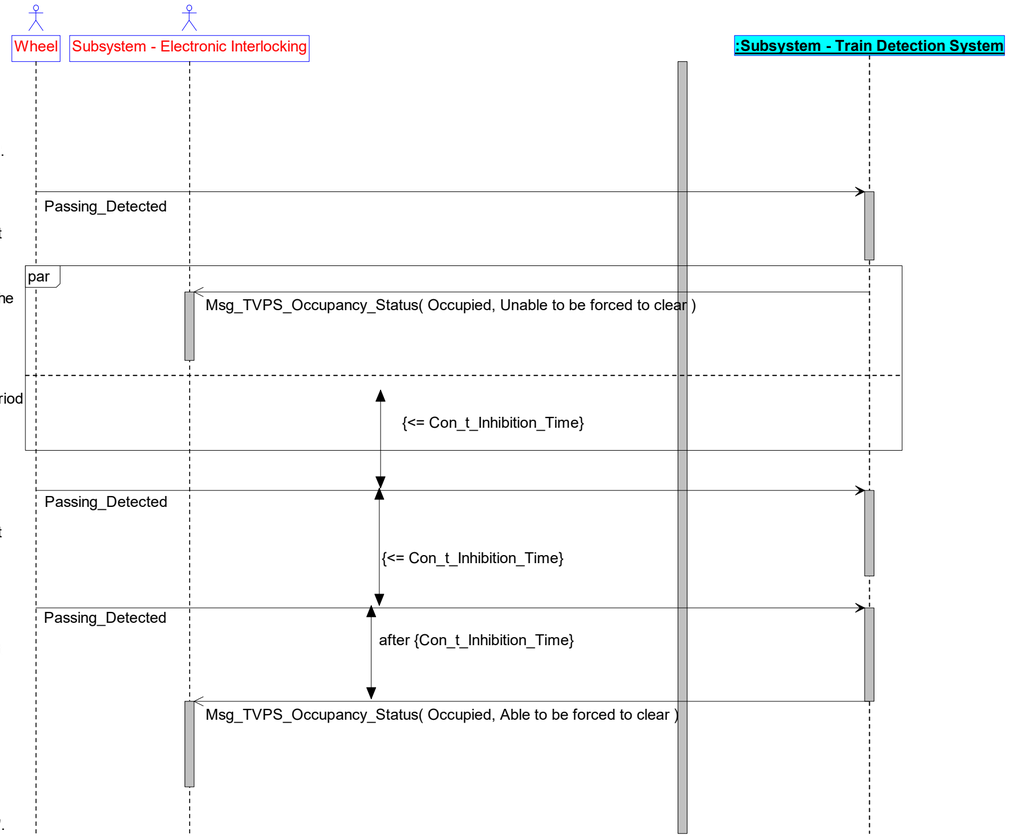
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.5973	Info	[Package] Subsystem - Train Detection Subsystem - Functional Context [Functional Viewpoint - Subsystem Definition - Operation]		Basic TDS AC Basic TDS TDP Basic TDS TC Option FC-P/-A Option Update FL

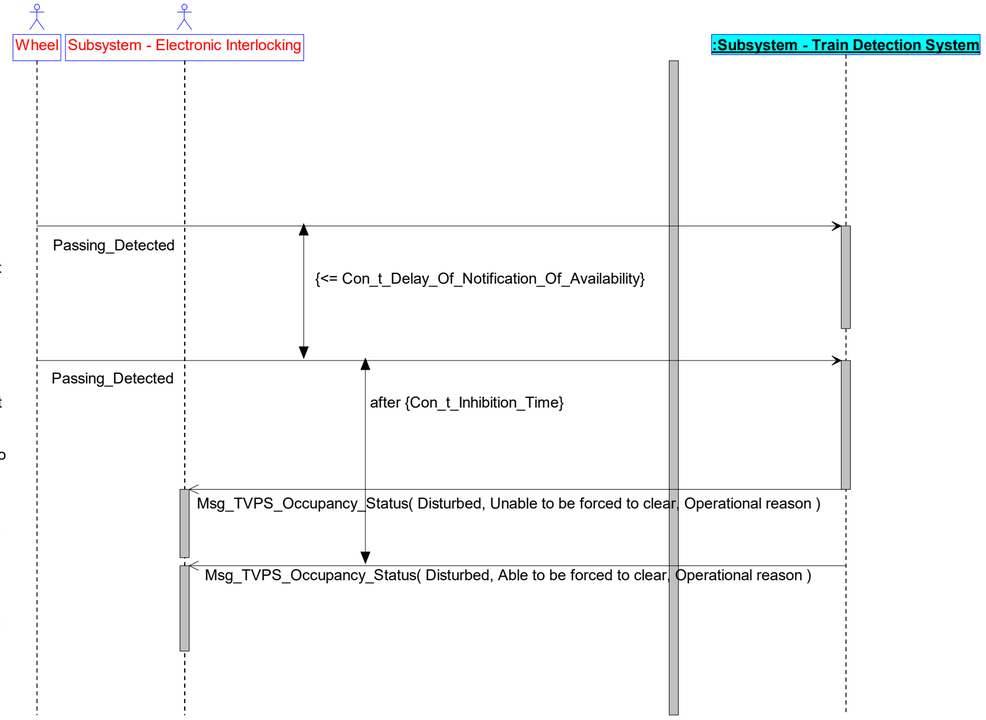


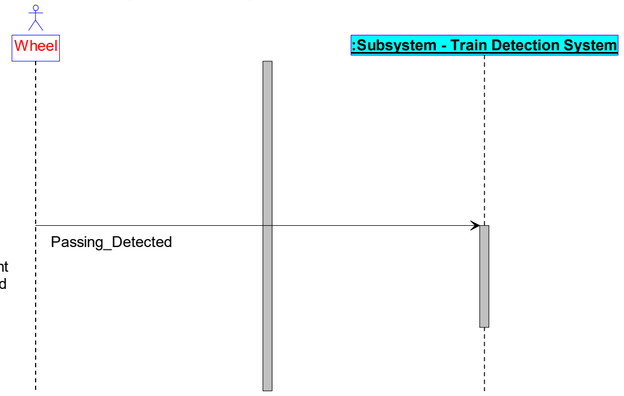
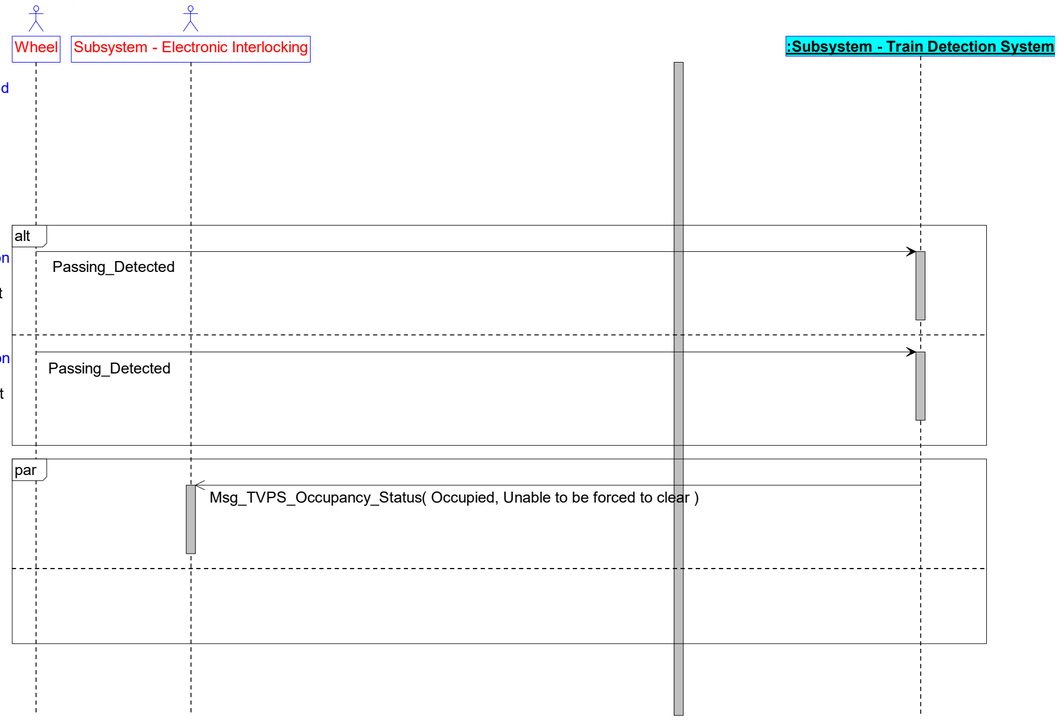
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6043	Info	TDS_UC2.1: TDS working with axle counters	The Subsystem-UseCase "TDS_UC2.1: TDS working with axle counters" defines the behaviour of the Subsystem - Train Detection System which works with axle counters. The behaviour will be defined in the following UseCases: TDS_UC2.1.1: Operational sequences TDS_UC2.1.2: Single passing, timing conditions and command events (excluding sweeping train process) TDS_UC2.1.3: Single passing, timing conditions 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	Main Success Scenario: Train passing through section [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 to monitor the time period Con_t_Inhibition_Time. **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. At this moment the Subsystem - Train Detection System restarts to monitor the time period Con_t_Inhibition_Time. **Interaction 2.1.1.1.1.B:** **4.** - 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. At this moment the Subsystem - Train Detection System restarts to monitor the time period Con_t_Inhibition_Time. **Interaction 2.1.1.1.1.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. The sum of incoming and outgoing Wheels is zero. The Subsystem - Train Detection System stops to monitor the time period Con_t_Inhibition_Time and starts to monitor the time period Con_t_Delay_Of_Notification_Of_Availability. **6.** The Subsystem - Train Detection System detects that the time period Con_t_Delay_Of_Notification_Of_Availability has expired and 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". **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

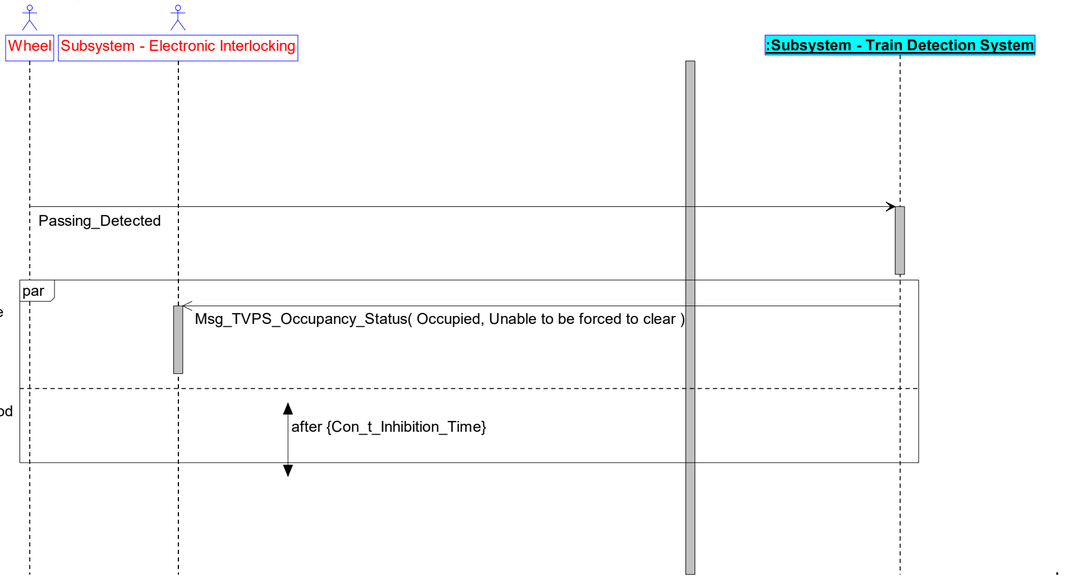
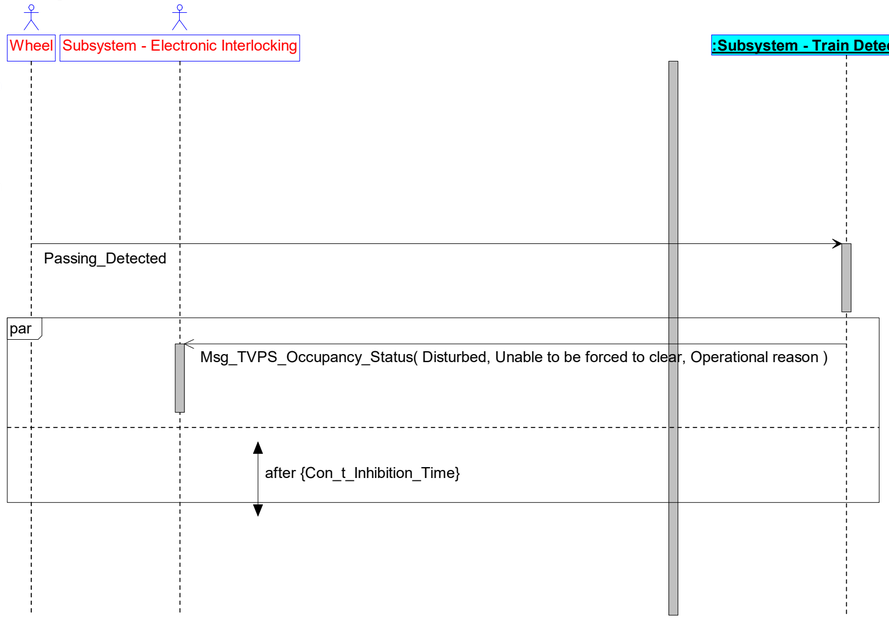
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.5978	Info	Alternative Scenario: Train passing through short section [TDS SD 2.1.1.1.2] **TDS_UC2.1.1.1: Normal operation** Alternative Scenario: Train passing through short section [TDS SD 2.1.1.1.2] **Precondition:** The Subsystem - Train 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 to monitor the time period Con_t_Inhibition_Time. **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. At this moment the Subsystem - Train Detection System restarts to monitor the time period Con_t_Inhibition_Time. **Interaction 2.1.1.1.2.C:** **4.** - 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. At this moment the Subsystem - Train Detection System restarts to monitor the time period Con_t_Inhibition_Time. **Interaction 2.1.1.1.2.D:** **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 incoming Wheel for the relevant TVPS. At this moment the Subsystem - Train Detection System restarts to monitor the time period Con_t_Inhibition_Time. **Interaction 2.1.1.1.2.E:** **6.** - 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. At this moment the Subsystem - Train Detection System restarts to monitor the time period Con_t_Inhibition_Time. **Interaction 2.1.1.1.2.F:** **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. The Subsystem - Train Detection System stops to monitor the time period Con_t_Inhibition_Time and starts to monitor the time period Con_t_Delay_Of_Notification_Of_Availability. **8.** The Subsystem - Train Detection System detects that the time period Con_t_Delay_Of_Notification_Of_Availability has expired and 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". **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

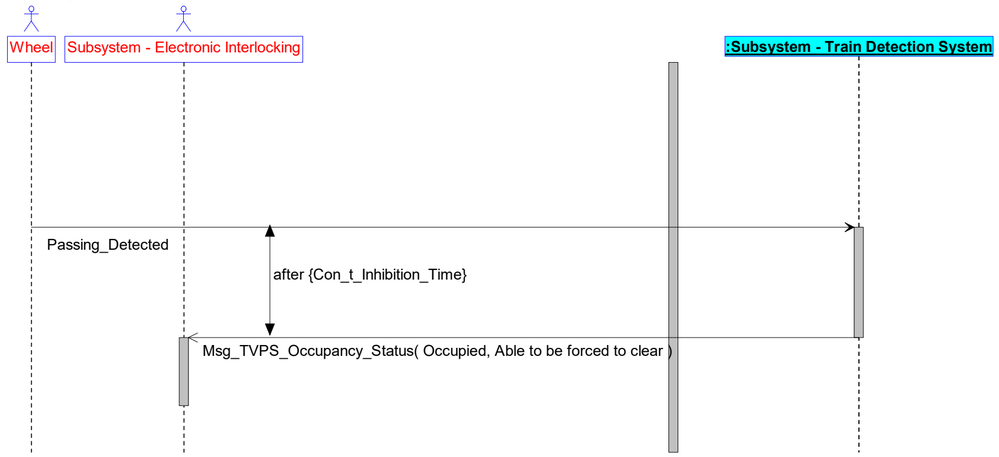
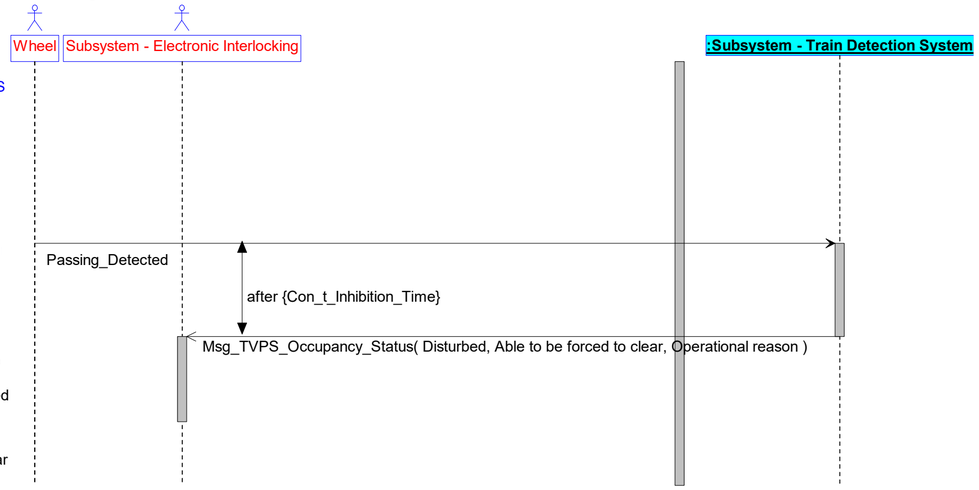
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.5981	Info	Alternative Scenario: Incomplete counting out [TDS SD 2.1.1.2.1] **TDS_UC2.1.1.2: Incorrect counting** Alternative Scenario: Incomplete counting out [TDS SD 2.1.1.2.1] **Precondition:** The Subsystem - Train Detection System is 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 to monitor the time period Con_t_Inhibition_Time. **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. At this moment the Subsystem - Train Detection System restarts to monitor the time period Con_t_Inhibition_Time. **Interaction 2.1.1.2.1.C:** **4.** - 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. At this moment the Subsystem - Train Detection System restarts to monitor the time period Con_t_Inhibition_Time. **5.** The Subsystem - Train Detection System detects that the time period Con_t_Inhibition_Time has expired and 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".		Basic TDS AC

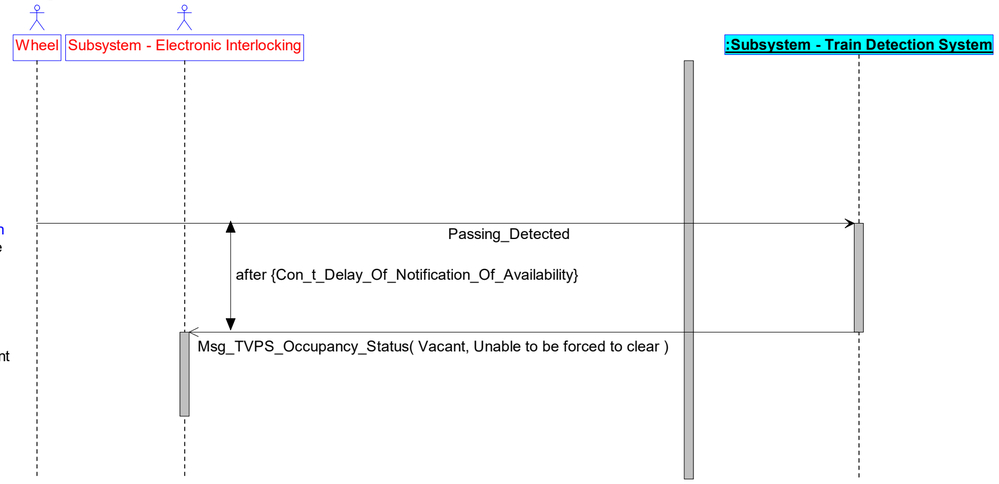
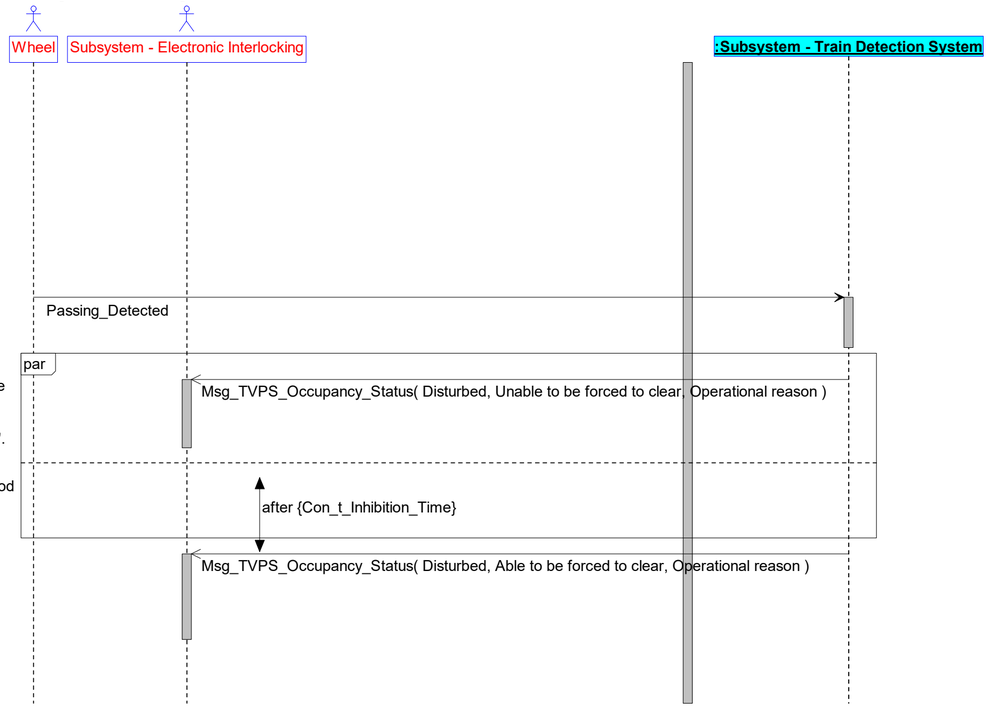


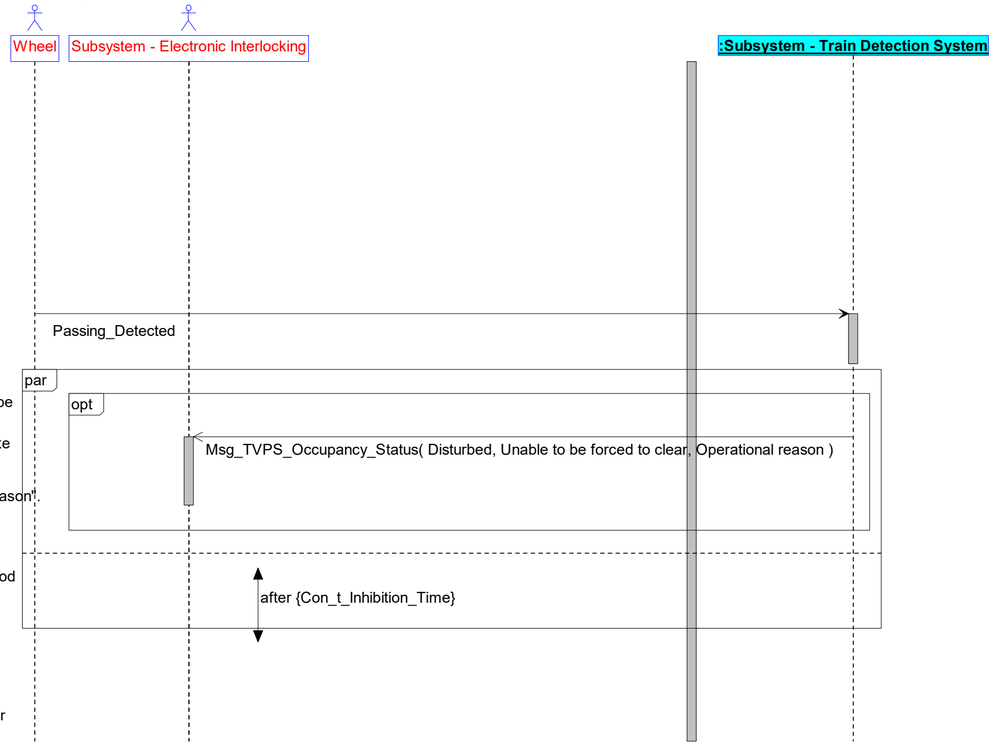
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.5983	Info	Alternative Scenario: Negative counting "TVPS vacant and unable to be forced to clear" [TDS SD 2.1.1.2.2] **TDS_UC2.1.1.2: Incorrect counting** Alternative Scenario: Negative counting "TVPS vacant and unable to be forced to clear" [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 to monitor the time period Con_t_Inhibition_Time. **end par** **3.** The Subsystem - Train Detection System detects that the time period Con_t_Inhibition_Time has expired and 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	Alternative Scenario: Negative counting "TVPS occupied and unable to be forced to clear" [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. The Subsystem - Train Detection System starts to monitor the time period Con_t_Delay_Of_Notification_Of_Availability. **Interaction 2.1.1.2.3.B:** **2.** - 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 outgoing Wheels is greater than the amount of counted incoming Wheels. The Subsystem - Train Detection System stops to monitor the time period Con_t_Delay_Of_Notification_Of_Availability and starts to monitor the time period Con_t_Inhibition_Time. **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 an operational reason". **4.** The Subsystem - Train Detection System detects that the time period Con_t_Inhibition_Time has expired and 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.7083	Info	Alternative Scenario: Additional incoming axle while waiting for Delay of Notification of Availability [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 currently monitored Con_t_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. The Subsystem - Train Detection System stops to monitor the time period Con_t_Delay_Of_Notification_Of_Availability and starts to monitor the time period Con_t_Inhibition_Time **Postcondition:** The relevant TVPS is in the state "TVPS occupied and unable to be forced to clear" with a currently monitored inhibition time Con_t_Inhibition_Time.  		Basic TDS AC
Eu.TDS.7082	Info	Alternative Scenario: Additional counting in state "TVPS occupied and able to be forced to clear" [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 to monitor the time period Con_t_Inhibition_Time. **end par** **Postcondition:** The relevant TVPS is in the state "TVPS occupied and unable to be forced to clear" with a currently monitored inhibition time Con_t_Inhibition_Time.  		Basic TDS AC
Eu.TDS.6015	Info	TDS_UC2.1.2: Single passing, timing conditions and command events (excluding sweeping train process)	The Subsystem-UseCase "TDS_UC2.1.2: Single passing, timing conditions and command events (excluding sweeping train process)" defines the behaviour of single passing, timing conditions 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 undefined pattern of a Wheel.	Basic TDS AC

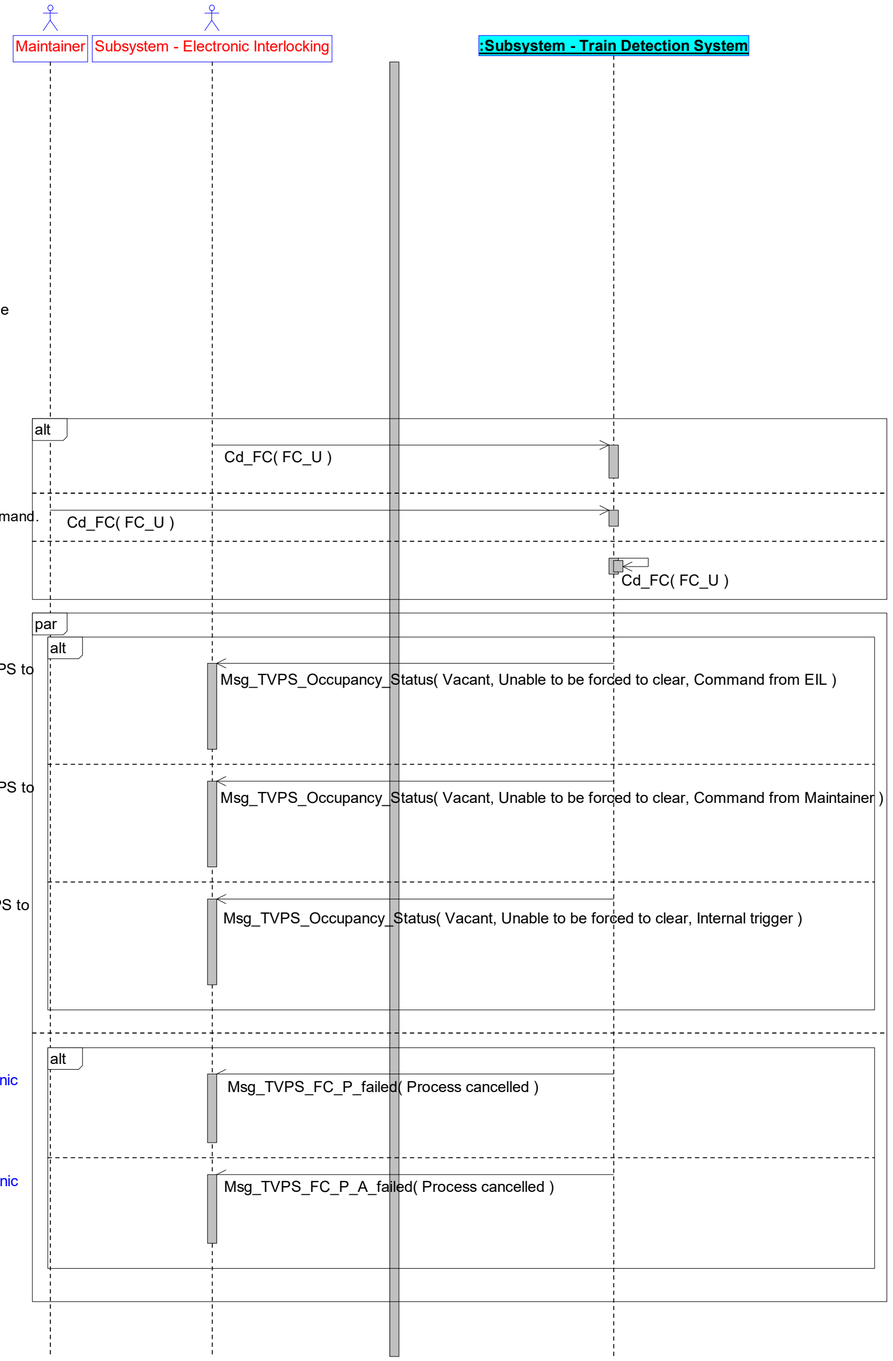
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.5992	Info	Alternative Scenario: Incoming axle detected (to state Occupied Unable FC) [TDS SD 2.1.2.1.1] **TDS_UC2.1.2.1: Axle passing** Alternative Scenario: Incoming axle detected (to state Occupied Unable FC) [TDS SD 2.1.2.1.1] **Precondition:** 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 to monitor the time period Con_t_Inhibition_Time. **end par** **3.** The Subsystem - Train Detection System detects that the time period Con_t_Inhibition_Time has expired. **Postcondition:** The relevant TVPS is in the state "TVPS occupied and unable to be forced to clear".  		Basic TDS AC
Eu.TDS.5991	Info	Alternative Scenario: Incoming axle detected (to state Disturbed Unable FC) [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 to monitor the time period Con_t_Inhibition_Time. **end par** **3.** The Subsystem - Train Detection System detects that the time period Con_t_Inhibition_Time has expired. **Postcondition:** The relevant TVPS is in the state “TVPS disturbed and unable to be forced to clear with an operational reason".  		Basic TDS AC

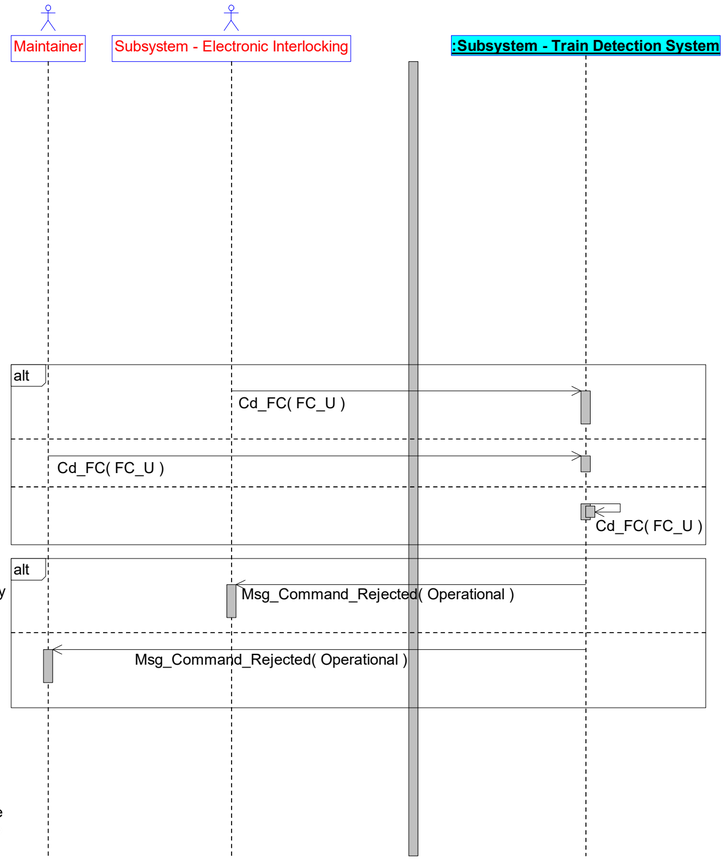
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.5995	Info	Alternative Scenario: Outgoing axle detected (to state Occupied Able FC) [TDS SD 2.1.2.1.3] **TDS_UC2.1.2.1: Axle passing** Alternative Scenario: Outgoing axle detected (to state Occupied Able FC) [TDS SD 2.1.2.1.3] **Precondition:** 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. The Subsystem - Train Detection System starts to monitor the time period Con_t_Inhibition_Time. **2.** The Subsystem - Train Detection System detects that the time period Con_t_Inhibition_Time has expired and 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".  		Basic TDS AC
Eu.TDS.5994	Info	Alternative Scenario: Outgoing axle detected (to state Disturbed Able FC) [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. The Subsystem - Train Detection System starts to monitor the time period Con_t_Inhibition_Time. **2.** The Subsystem - Train Detection System detects that the time period Con_t_Inhibition_Time has expired and 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

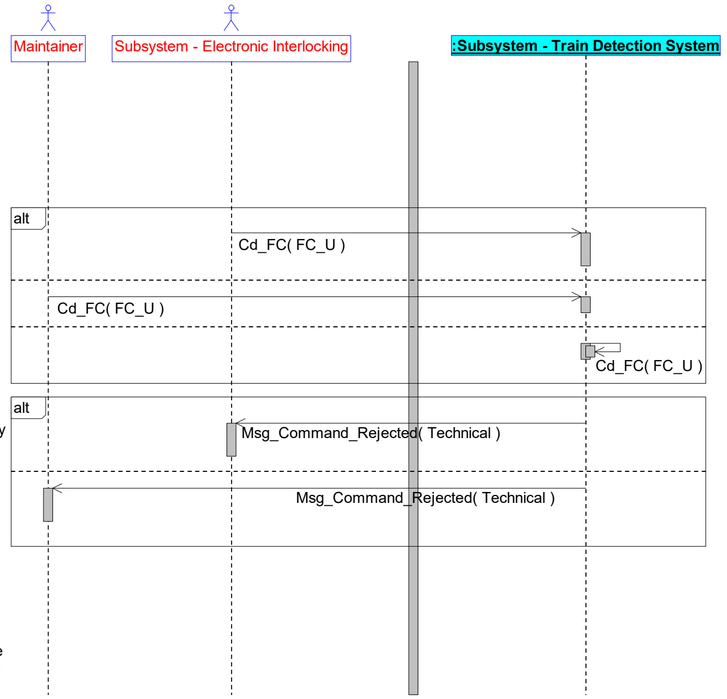
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.5993	Info	Alternative Scenario: Last outgoing axle detected (to state Vacant) [TDS SD 2.1.2.1.5] **TDS_UC2.1.2.1: Axle passing** Alternative Scenario: Last outgoing axle detected (to state Vacant) [TDS SD 2.1.2.1.5] **Precondition:** The 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. The Subsystem - Train Detection System starts to monitor the time period Con_t_Delay_Of_Notification_Of_Availability. **2.** The Subsystem - Train Detection System detects that the time period Con_t_Delay_Of_Notification_Of_Availability has expired and 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". **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.5996	Info	Alternative Scenario: Undefined pattern detected (to state Disturbed Able FC) for Variant A [TDS SD 2.1.2.1.6] **TDS_UC2.1.2.1: Axle passing** Alternative Scenario: Undefined 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 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 to monitor the time period Con_t_Inhibition_Time. **end par** **3.** The Subsystem - Train Detection System detects that the time period Con_t_Inhibition_Time has expired and 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

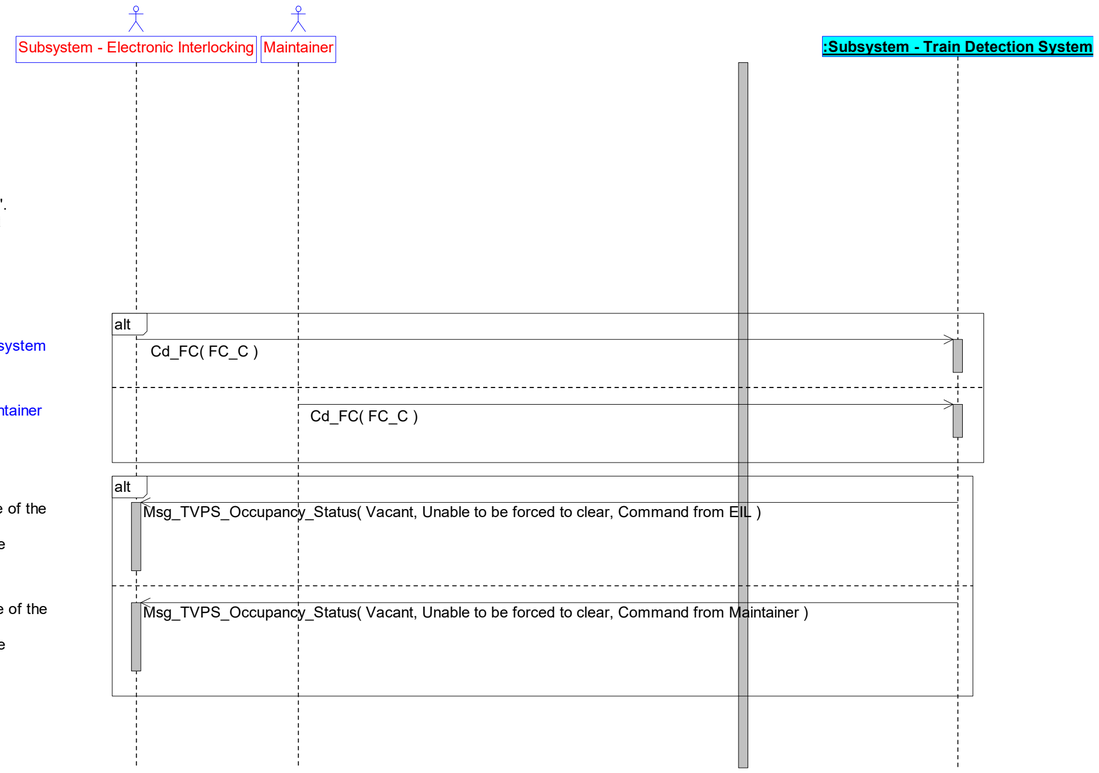
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.5997	Info	Alternative Scenario: Undefined pattern detected (to state Disturbed Unable FC) for Variant B [TDS SD 2.1.2.1.7] **TDS_UC2.1.2.1: Axle passing** Alternative Scenario: Undefined pattern detected (to state Disturbed Unable FC) for 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 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 to monitor the time period Con_t_Inhibition_Time. **end par** **3.** The Subsystem - Train Detection System detects that the time period Con_t_Inhibition_Time has expired. **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.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

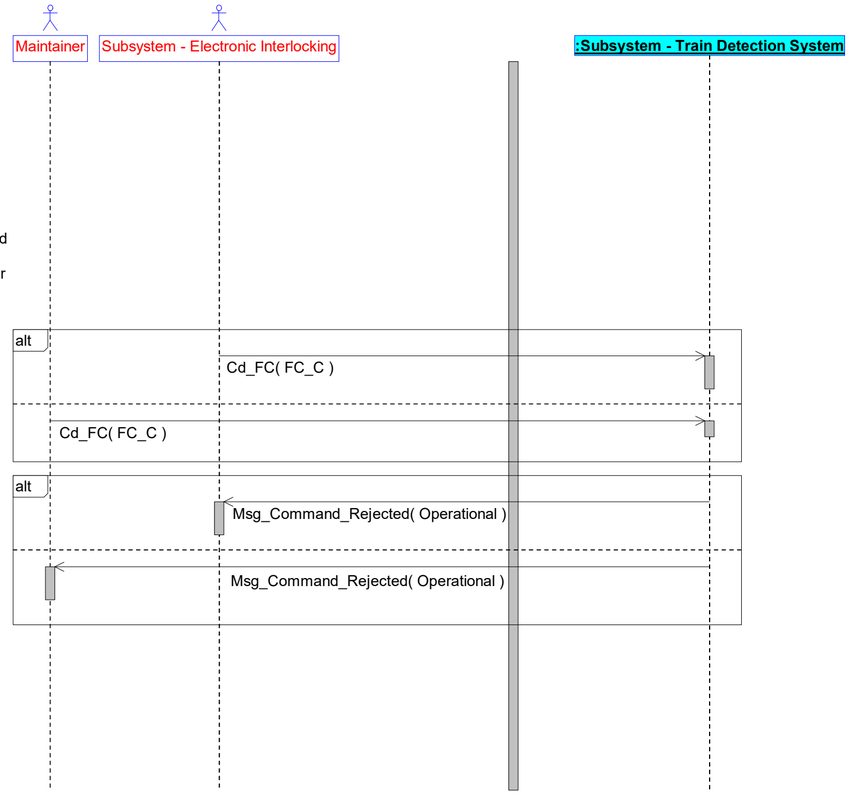
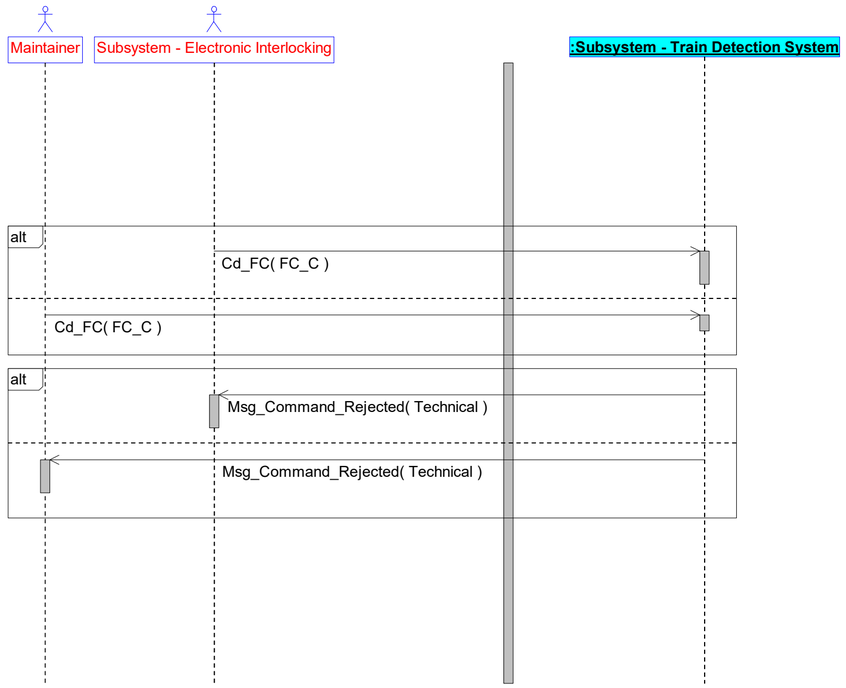
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6001	Info	Main Success Scenario: Successful execution of FC-U [TDS SD 2.1.2.2.1] **TDS_UC2.1.2.2: FC-U command** Main Success Scenario: Successful execution of FC-U [TDS SD 2.1.2.2.1] **Precondition:** The Subsystem - Train Detection System 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 time period Con_t_Inhibition_Time is currently not monitored. For the relevant TVPS, the time period Con_t_Delay_Of_Notification_Of_Availability is currently not monitored. **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



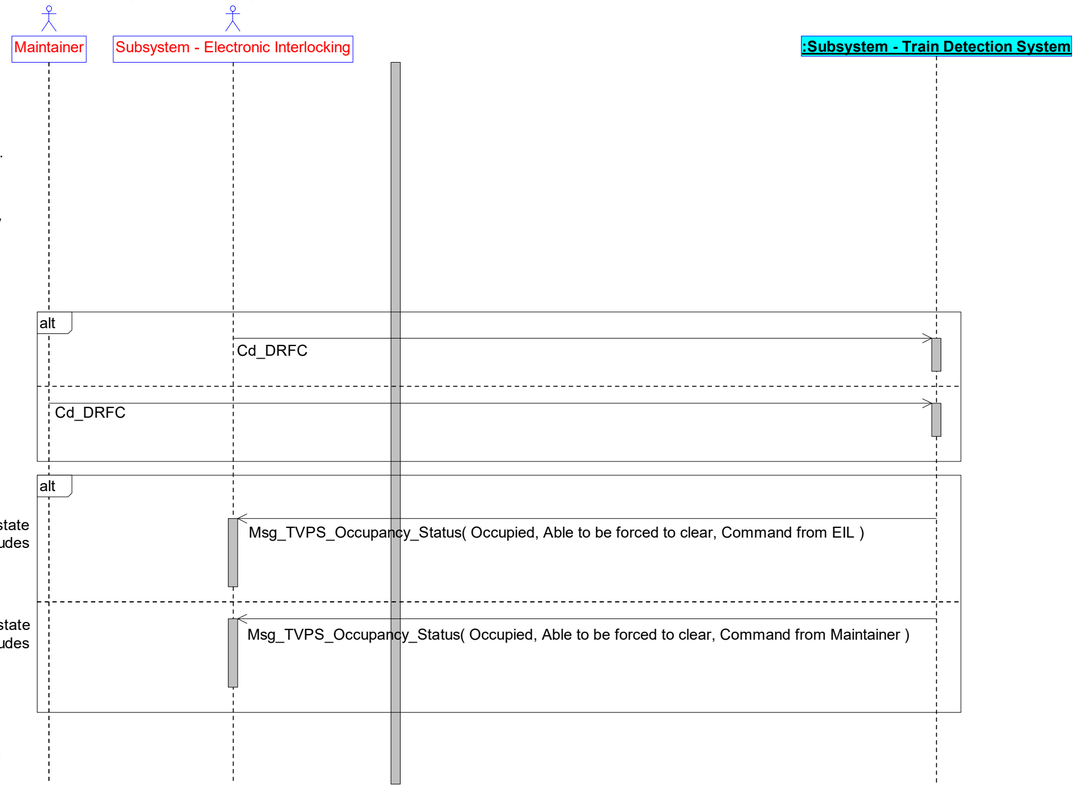
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.5999	Info	Alternative Scenario: Unsuccessful execution of FC-U (operational reason) [TDS SD 2.1.2.2.2] **TDS_UC2.1.2.2: FC-U command** Alternative Scenario: Unsuccessful execution of FC-U (operational reason) [TDS SD 2.1.2.2.2] **Precondition:** 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 currently monitored Con_t_Inhibition_Time or Con_t_Delay_Of_Notification_Of_Availability, - "TVPS disturbed and unable to be forced to clear with an operational reason" with a currently monitored Con_t_Inhibition_Time, - "TVPS is waiting for an acknowledgment after FC-P-A command and unable to be forced to clear" with a currently monitored Con_t_Inhibition_Time, - "TVPS is in state sweeping train detected and unable to be forced to clear" with a currently monitored Con_t_Inhibition_Time. **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

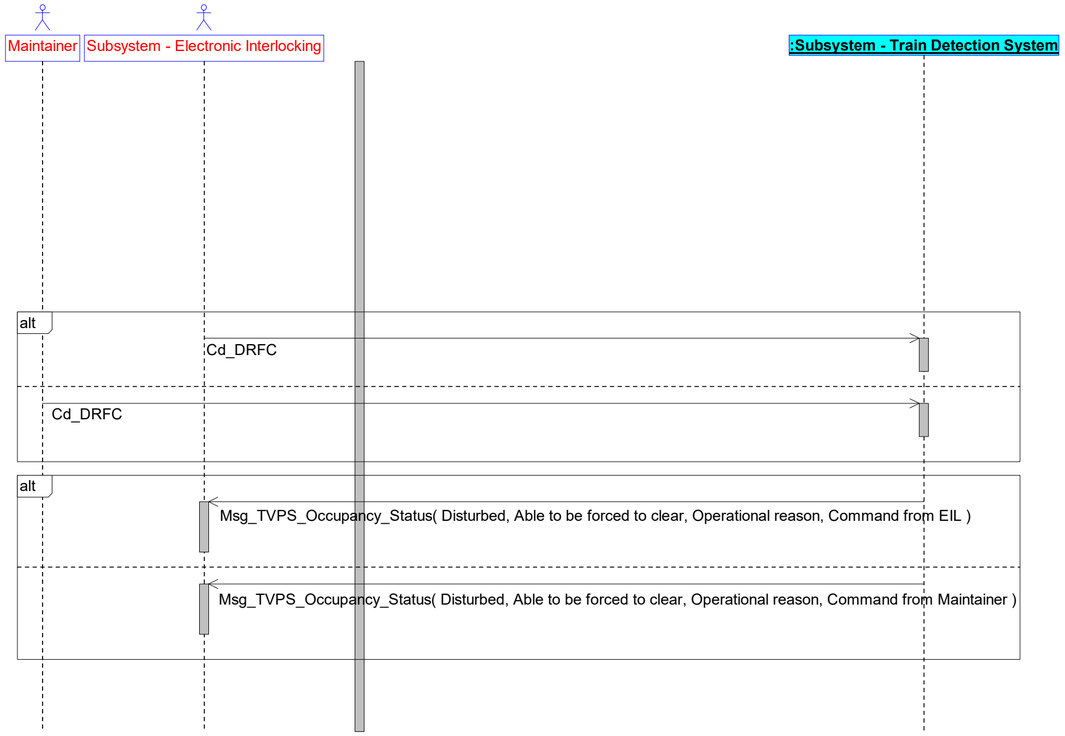
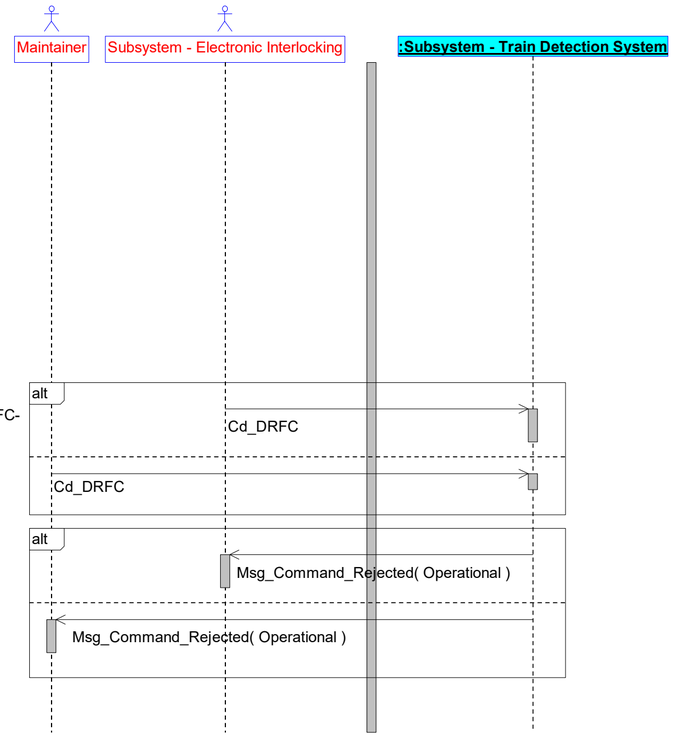
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6000	Info	Alternative Scenario: Unsuccessful execution of FC-U (technical reason) [TDS SD 2.1.2.2.3] **TDS_UC2.1.2.2: FC-U command** Alternative Scenario: Unsuccessful execution of FC-U (technical reason) [TDS SD 2.1.2.2.3] **Precondition:** 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

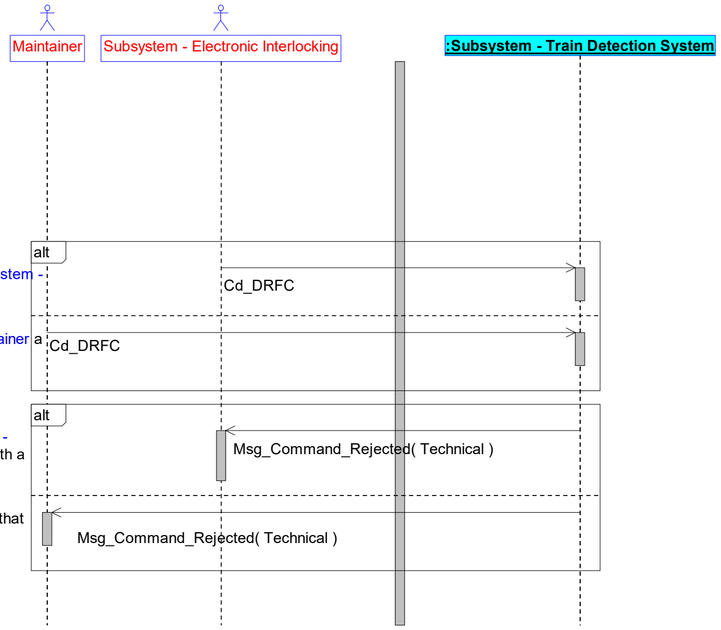
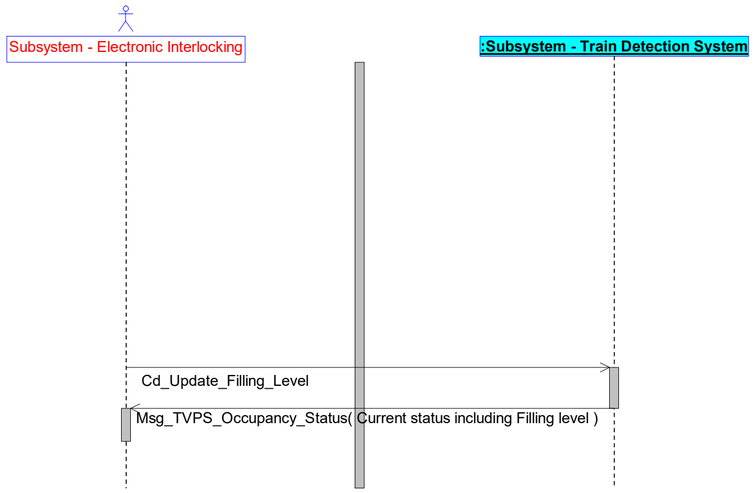
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6005	Info	Main Success Scenario: Successful execution of FC-C [TDS SD 2.1.2.3.1] **TDS_UC2.1.2.3: FC-C command** Main Success Scenario: Successful execution of FC-C [TDS SD 2.1.2.3.1] **Precondition:** The Subsystem - Train Detection System 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 time period Con_t_Inhibition_Time is currently not monitored. For the relevant TVPS the time period Con_t_Delay_Of_Notification_Of_Availability is currently not monitored. **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

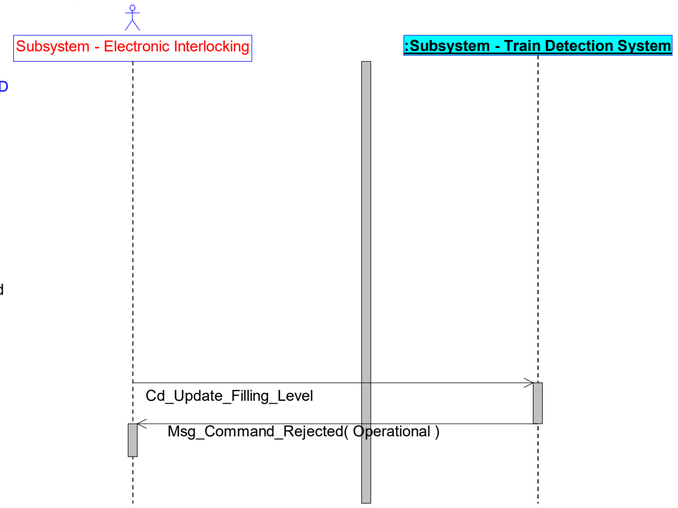
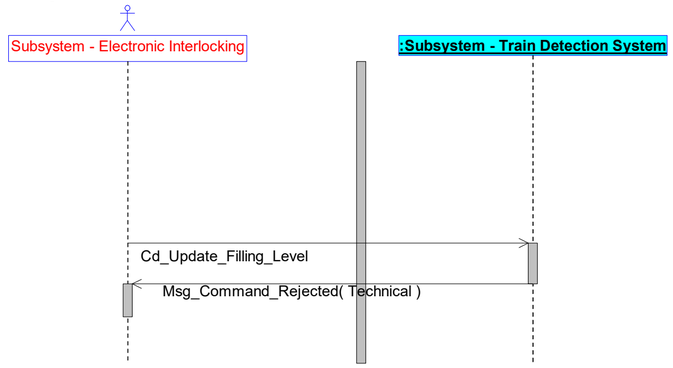
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6003	Info	Alternative Scenario: Unsuccessful execution of FC-C (operational reason) [TDS SD 2.1.2.3.2] **TDS_UC2.1.2.3: FC-C command** Alternative Scenario: Unsuccessful execution of FC-C (operational reason) [TDS SD 2.1.2.3.2] **Precondition:** 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	Alternative Scenario: Unsuccessful execution of FC-C (technical reason) [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

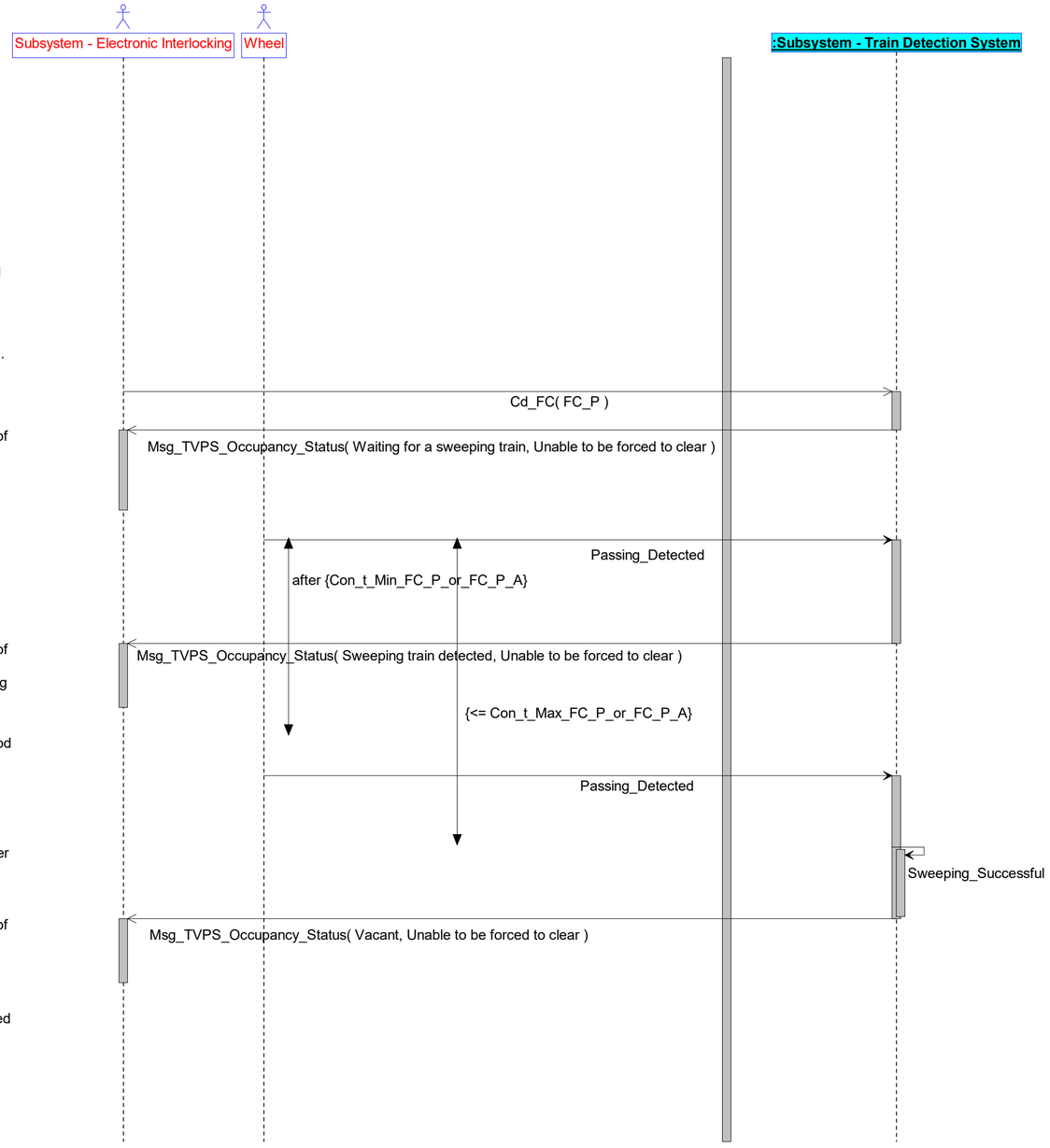
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6006	Info	TDS_UC2.1.2.4: DRFC command	The Subsystem-UseCase "TDS_UC2.1.2.4: DRFC command" defines the behaviour of the Subsystem - Train Detection System after receiving a DRFC-command from the Subsystem - Electronic Interlocking or from the Maintainer.	Basic TDS AC
Eu.TDS.6010	Info	Main Success Scenario: DRFC command received and accepted (to state Occupied Able FC) [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 time period Con_t_Inhibition_Time is currently not monitored. For the relevant TVPS the time period Con_t_Delay_Of_Notification_Of_Availability is currently not monitored. **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

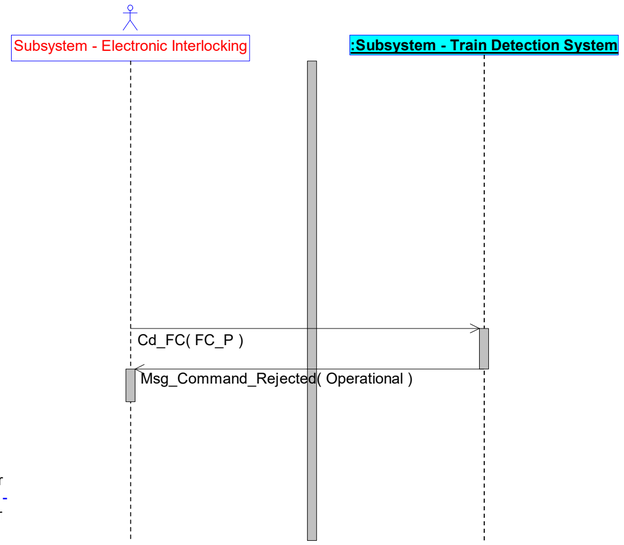
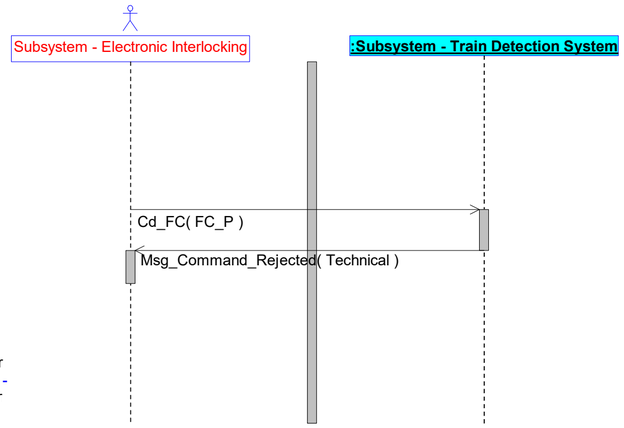


ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6009	Info	Alternative Scenario: DRFC command received and accepted (to state Disturbed Able FC, reason operational Variant B) [TDS SD 2.1.2.4.2] **TDS_UC2.1.2.4: DRFC command** Alternative Scenario: DRFC command received and accepted (to 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 time period Con_t_Inhibition_Time is currently not monitored. For the relevant TVPS the time period Con_t_Delay_Of_Notification_Of_Availability is currently not monitored. **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	Alternative Scenario: DRFC command rejected (operational reason) [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 currently monitored Con_t_Inhibition_Time or Con_t_Delay_Of_Notification_Of_Availability, - "TVPS disturbed and unable to be forced to clear with an operational reason" for Variant B with a currently monitored Con_t_Inhibition_Time. **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	Alternative Scenario: DRFC command rejected (technical reason) [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	Main Success Scenario: Update Filling Level command received [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 time period Con_t_Inhibition_Time is currently not monitored. For the relevant TVPS the time period Con_t_Delay_Of_Notification_Of_Availability is currently not monitored. **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	Alternative Scenario: Update Filling Level command rejected (operational reason) [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 currently monitored Con_t_Inhibition_Time or Con_t_Delay_Of_Notification_Of_Availability, - ""TVPS disturbed and unable to be forced to clear with an operational reason" with a currently monitored Con_t_Inhibition_Time, - "TVPS is waiting for an acknowledgment after FC-P-A command and unable to be forced to clear" with a currently monitored Con_t_Inhibition_Time, - "TVPS is in state sweeping train detected and unable to be forced to clear" with a currently monitored Con_t_Inhibition_Time. **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	Alternative Scenario: Update Filling Level command rejected (technical reason) [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, timing conditions and command events (for sweeping train process)	The Subsystem-UseCase "TDS_UC2.1.3: Single passing, timing conditions and command events (for sweeping train process)" defines the behaviour of single passing, timing conditions 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: Time 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	Main Success Scenario: Successful execution of FC-P [TDS SD 2.1.3.1.1] **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 time period Con_t_Inhibition_Time is currently not monitored. For the relevant TVPS the time period Con_t_Delay_Of_Notification_Of_Availability is currently not monitored. **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. The Subsystem - Train Detection System starts to monitor the time periods Con_t_Min_FC_P_or_FC_P_A and Con_t_Max_FC_P_or_FC_P_A. **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.** The Subsystem - Train Detection System detects that the time period Con_t_Min_FC_P_or_FC_P_A has expired. **6.** - 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. **7.** The Subsystem - Train Detection System receives the internal trigger that the sweeping was successful. The Subsystem - Train Detection System stops to monitor the time period Con_t_Max_FC_P_or_FC_P_A. **8.** 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 time and delay of notification time 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.7000	Info	Alternative Scenario: Unsuccessful execution of FC-P (operational reason) [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 currently monitored Con_t_Inhibition_Time or Con_t_Delay_Of_Notification_Of_Availability, - "TVPS disturbed and unable to be forced to clear with an operational reason" with a currently monitored Con_t_Inhibition_Time, - "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	Alternative Scenario: Unsuccessful execution of FC-P (technical reason) [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	Main Success Scenario: Successful execution of FC-P-A [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 time period Con_t_Inhibition_Time is currently not monitored.
For the relevant TVPS the time period Con_t_Delay_Of_Notification_Of_Availability is currently not monitored.

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. The Subsystem - Train Detection System starts to monitor the time periods Con_t_Min_FC_P_or_FC_P_A and Con_t_Max_FC_P_or_FC_P_A .

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. The Subsystem - Train Detection System detects that the time period Con_t_Min_FC_P_or_FC_P_A has expired.

6. - 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.

7. The Subsystem - Train Detection System receives the internal trigger that the sweeping was successful. The Subsystem - Train Detection System stops to monitor the time period Con_t_Max_FC_P_or_FC_P_A.

8. 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:

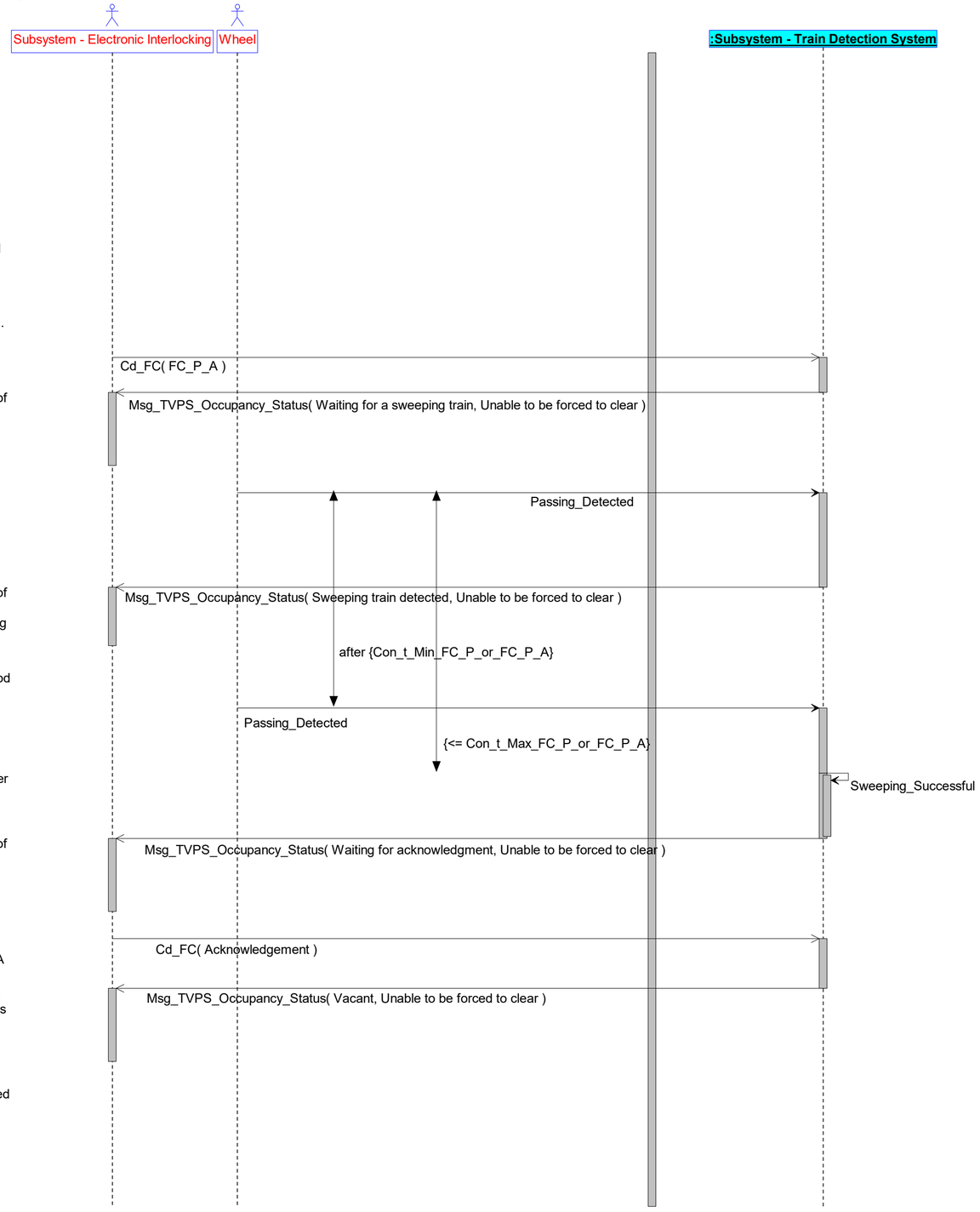
9. - The Subsystem - Train Detection System receives from the Subsystem - Electronic Interlocking an Acknowledgement after FC-P-A command.

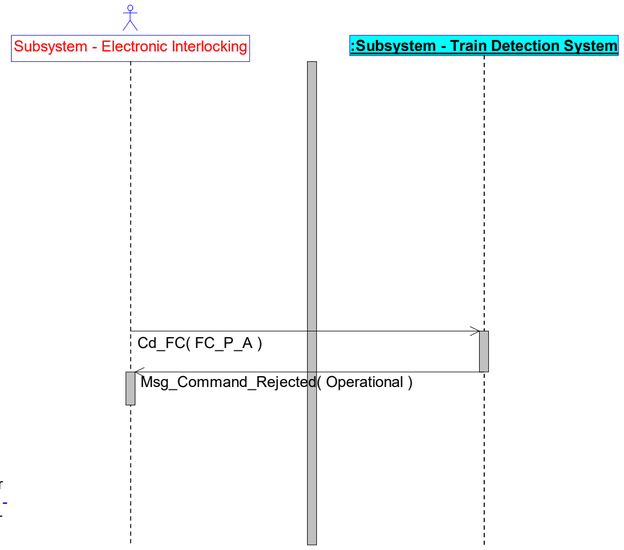
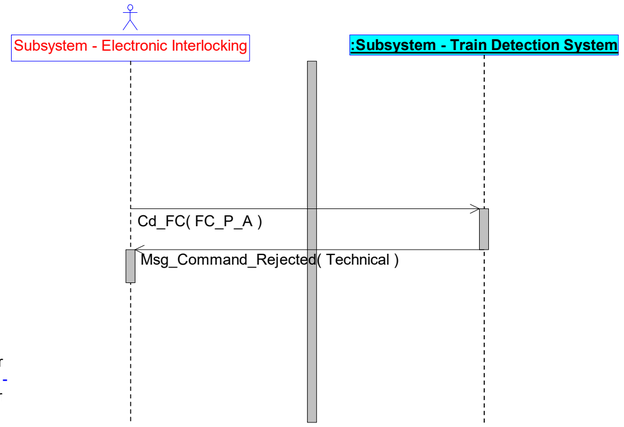
10. The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS vacant and unable to be forced to clear". The filling level of the relevant TVPS is set to zero.

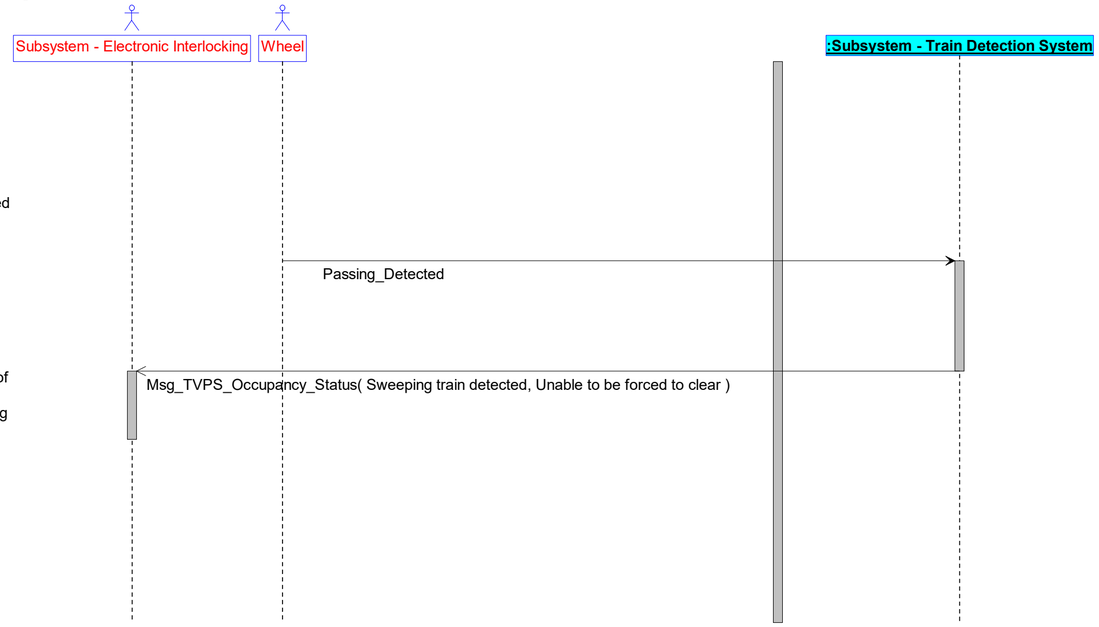
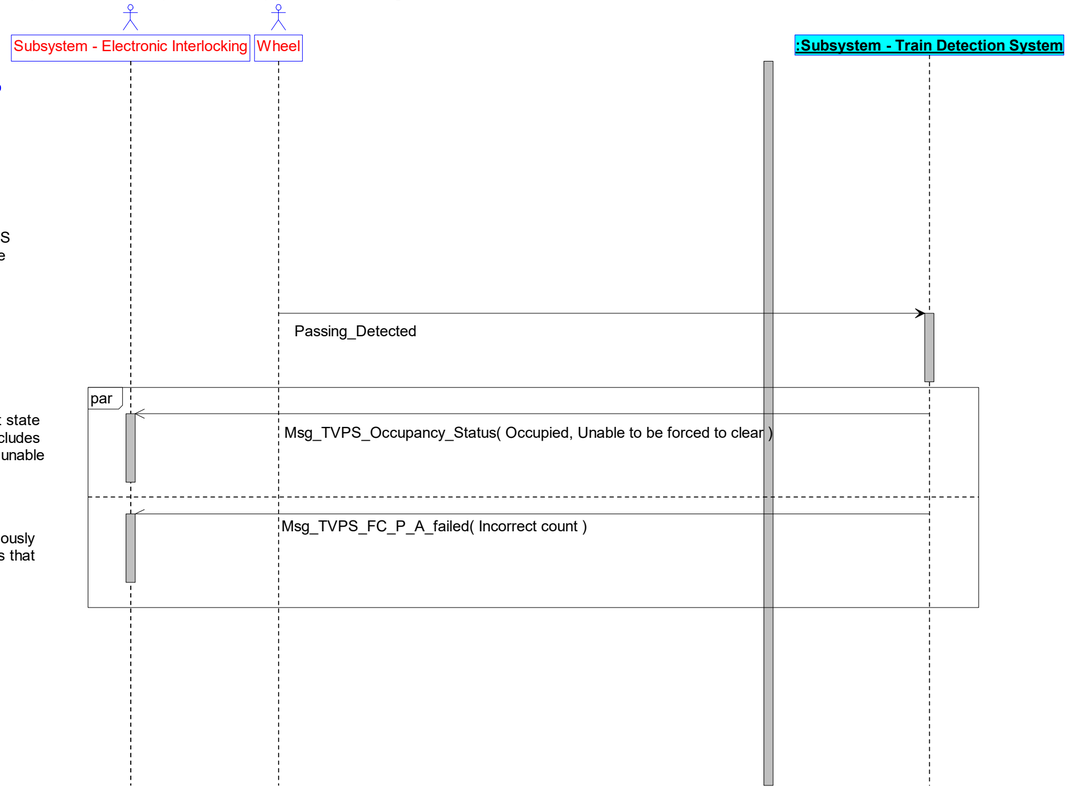
Postcondition:

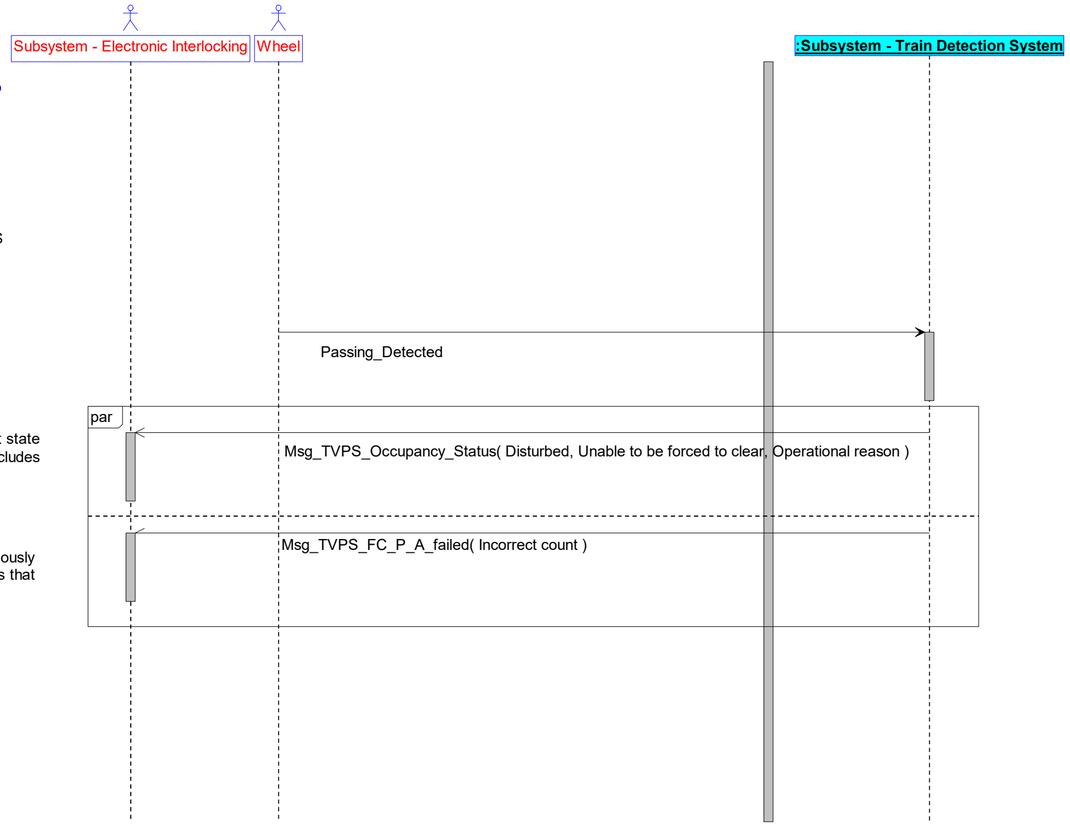
The relevant TVPS is in the state "TVPS vacant and unable to be forced to clear".

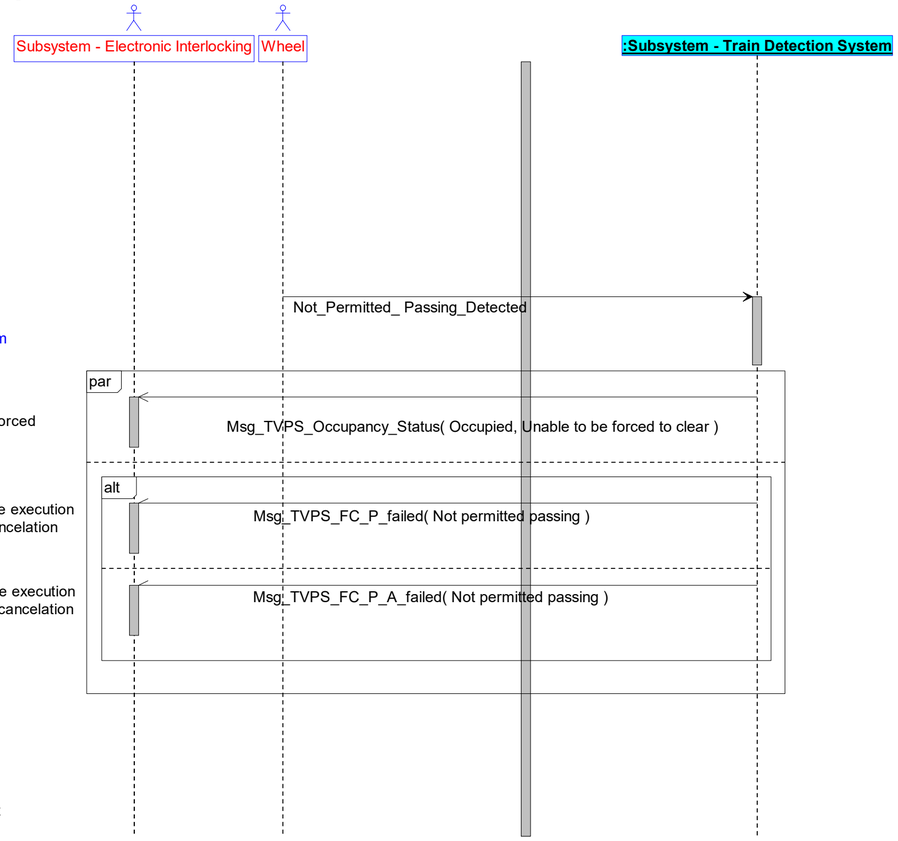
Note: The detection and the behaviour of the detection of incoming/outgoing wheels, the resulting state changes as well as the inhibition time and delay of notification time in UC 2.1.1. and UC 2.1.2 are still valid and work in parallel but are not shown in this Sequence diagram.

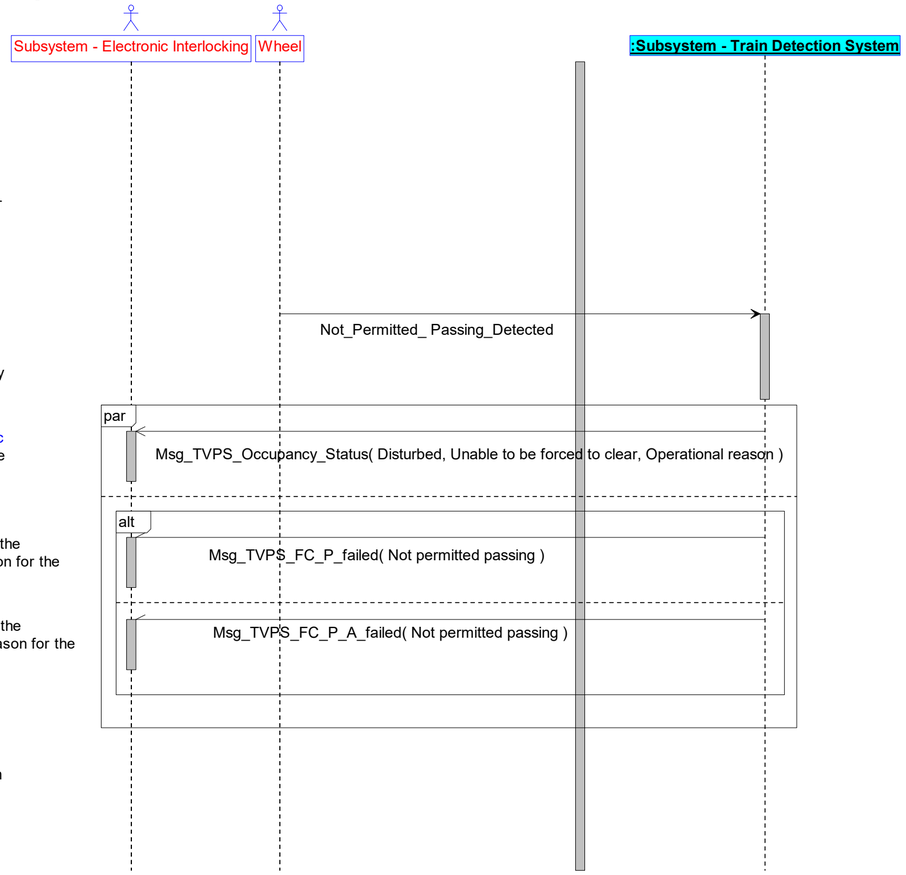


ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.7002	Info	Alternative Scenario: Unsuccessful execution of FC-P-A (operational reason) [TDS SD 2.1.3.2.2] **TDS_UC2.1.3.2: FC-P-A command**  Alternative Scenario: Unsuccessful execution of FC-P-A (operational reason) [TDS SD 2.1.3.2.2] **Precondition:** 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 currently monitored Con_t_Inhibition_Time or Con_t_Delay_Of_Notification_Of_Availability, - "TVPS disturbed and unable to be forced to clear with an operational reason" with a currently monitored Con_t_Inhibition_Time, - "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	Alternative Scenario: Unsuccessful execution of FC-P-A (technical reason) [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	Main Success Scenario: Correct incoming axle detected [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. The Subsystem - Train Detection System starts to monitor the time periods Con_t_Min_FC_P_or_FC_P_A and Con_t_Max_FC_P_or_FC_P_A. **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 time and delay of notification time 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	Alternative Scenario: Incoming axle detected while waiting for ackn. (to no process state, Occupied Unable FC) [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.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 par** **Postcondition:** The relevant TVPS is in the state "TVPS occupied and unable to be forced to clear" with a currently monitored Con_t_Inhibition_Time. **Note:** The detection and the behaviour of the detection of incoming/outgoing wheels, the resulting state changes as well as the inhibition time and delay of notification time 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	Alternative Scenario: Incoming axle detected while waiting for ackn. (to no process state, Disturbed Unable FC) [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.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 par** **Postcondition:** The relevant TVPS is in the state "TVPS disturbed and unable to be forced to clear with an operational reason" with a currently monitored Con_t_Inhibition_Time. **Note:** The detection and the behaviour of the detection of incoming/outgoing wheels, the resulting state changes as well as the inhibition time and delay of notification time 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	Alternative Scenario: Not-permitted incoming axle detected (to no process state, Occupied Unable FC) [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. The Subsystem - Train Detection System starts to monitor the time periods Con_t_Min_FC_P_or_FC_P_A and Con_t_Max_FC_P_or_FC_P_A. **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 currently monitored Con_t_Inhibition_Time. **Note:** The detection and the behaviour of the detection of incoming/outgoing wheels, the resulting state changes as well as the inhibition time and delay of notification time 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	Alternative Scenario: Not-permitted incoming axle detected (to no process state, Disturbed Unable FC) [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. The Subsystem - Train Detection System stops to monitor the time periods Con_t_Min_FC_P_or_FC_P_A and Con_t_Max_FC_P_or_FC_P_A if they are currently monitored. **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.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 disturbed and unable to be forced to clear with an operational reason" with a currently monitored Con_t_Inhibition_Time. **Note:** The detection and the behaviour of the detection of incoming/outgoing wheels, the resulting state changes as well as the inhibition time and delay of notification time 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	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]		Option FC-P/-A

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.

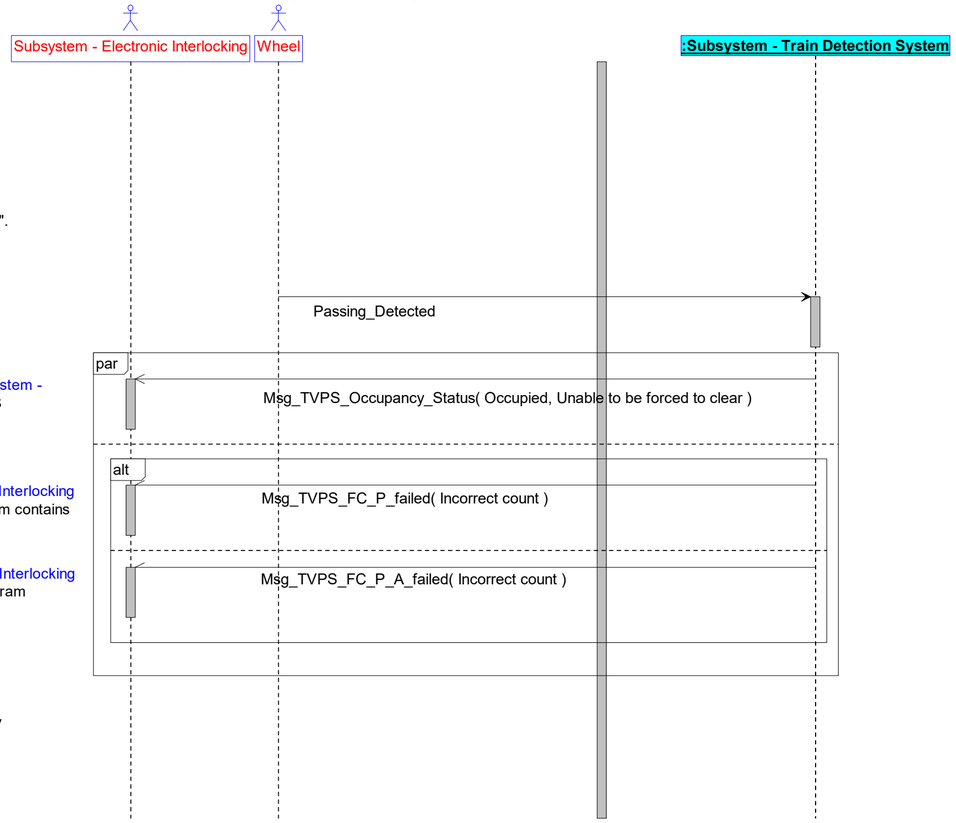
end alt

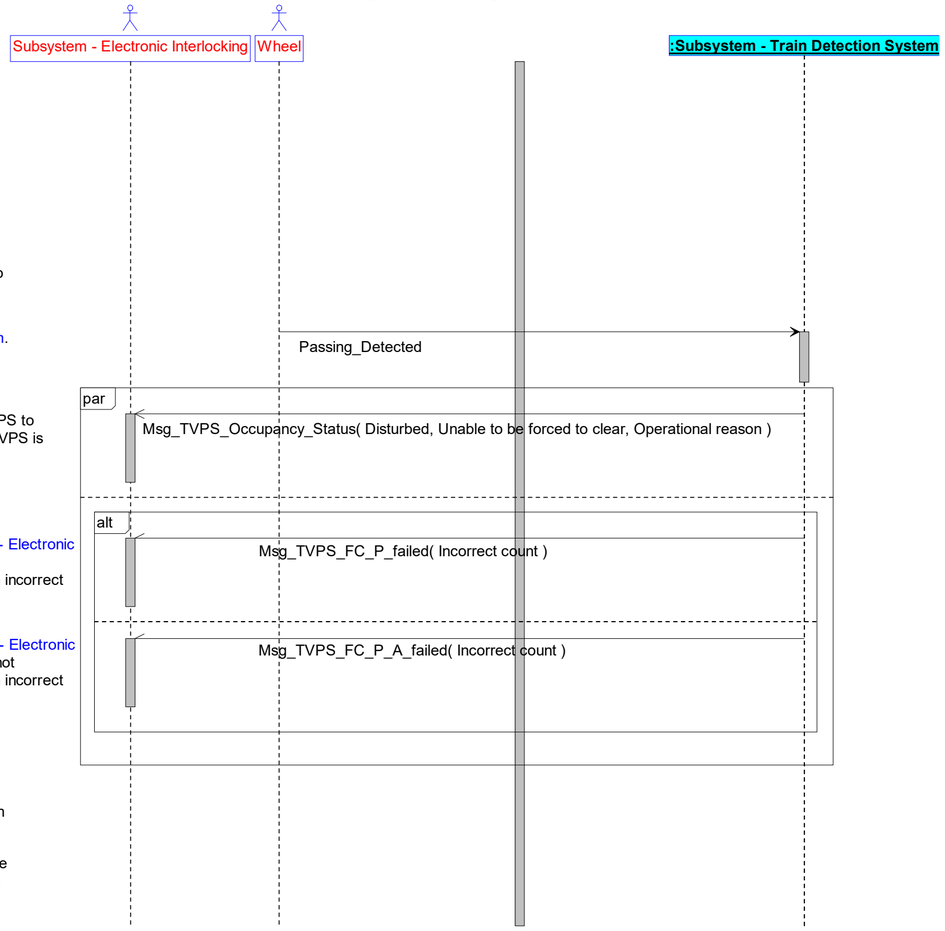
end par

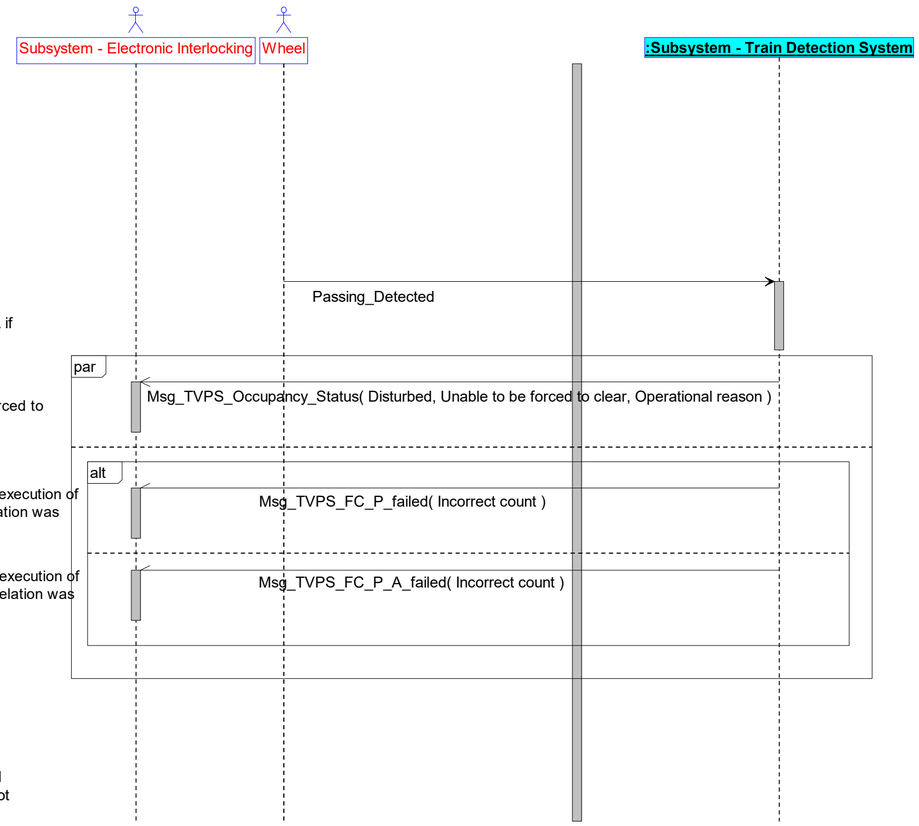
Postcondition:

The relevant TVPS is in the state "TVPS occupied and unable to be forced to clear" with a currently monitored Con_t_Inhibition_Time.

Note: The detection and the behaviour of the detection of incoming/outgoing wheels, the resulting state changes as well as the inhibition time and delay of notification time 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.6028	Info	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] **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 currently monitored Con_t_Inhibition_Time. **Note:** The detection and the behaviour of the detection of incoming/outgoing wheels, the resulting state changes as well as the inhibition time and delay of notification time 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	Alternative Scenario: Undefined pattern detected (to state Disturbed Unable FC) [TDS SD 2.1.3.3.8] **TDS_UC2.1.3.3: Axle passing during sweeping train process** Alternative Scenario: Undefined 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 undefined pattern. The Subsystem - Train Detection System stops to monitor the time periods Con_t_Min_FC_P_or_FC_P_A and Con_t_Max_FC_P_or_FC_P_A if they are currently monitored. **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 currently monitored Con_t_Inhibition_Time. **Note:** The detection and the behaviour of the detection of incoming/outgoing wheels, the resulting state changes as well as the inhibition time and delay of notification time 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	Alternative Scenario: Too early outgoing axle detected (to no process state, Disturbed Unable FC) [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. The Subsystem - Train Detection System stops to monitor the time periods Con_t_Min_FC_P_or_FC_P_A and Con_t_Max_FC_P_or_FC_P_A if they are currently monitored.

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. The Subsystem - Train Detection System detects an outgoing Wheel before the time period Con_t_Min_FC_P_or_FC_P_A has expired. The Subsystem - Train Detection System stops to monitor the time periods Con_t_Min_FC_P_or_FC_P_A and Con_t_Max_FC_P_or_FC_P_A.

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.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 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]

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 outgoing Wheel before Con_t_Min_FC_P_or_FC_P_A was expired..

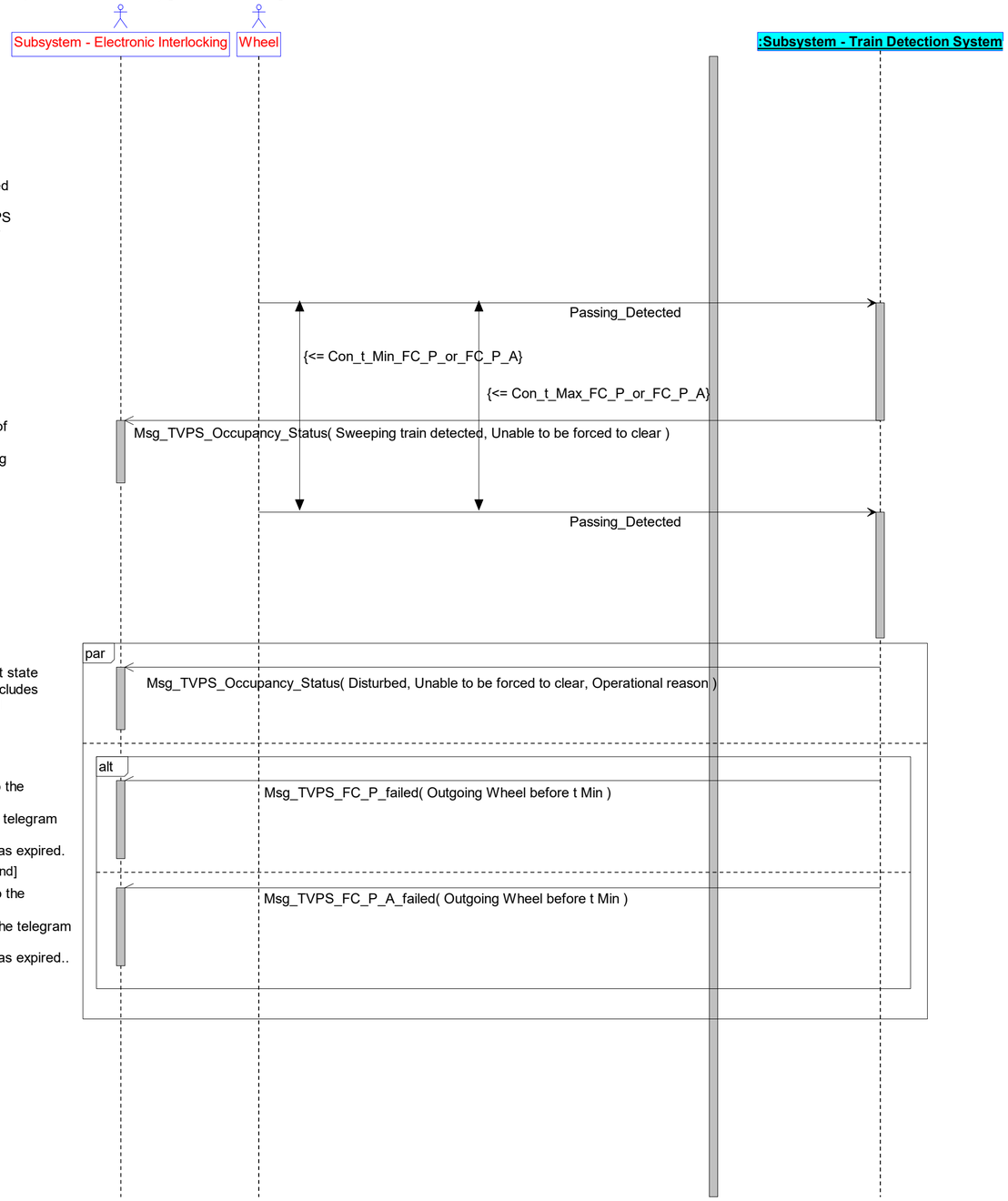
end alt

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 currently monitored Con_t_Inhibition_Time.

Note: The detection and the behaviour of the detection of incoming/outgoing wheels, the resulting state changes as well as the inhibition time and delay of notification time 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	Alternative Scenario: Too early outgoing axle detected (to no process state, Occupied Unable FC [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. The Subsystem - Train Detection System starts to monitor the time periods Con_t_Min_FC_P_or_FC_P_A and Con_t_Max_FC_P_or_FC_P_A.

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.
The Subsystem - Train Detection System detects an outgoing Wheel before the time period Con_t_Min_FC_P_or_FC_P_A has expired. The Subsystem - Train Detection System stops to monitor the time periods Con_t_Min_FC_P_or_FC_P_A and Con_t_Max_FC_P_or_FC_P_A.

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.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 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.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 outgoing Wheel before Con_t_Min_FC_P_or_FC_P_A was expired..

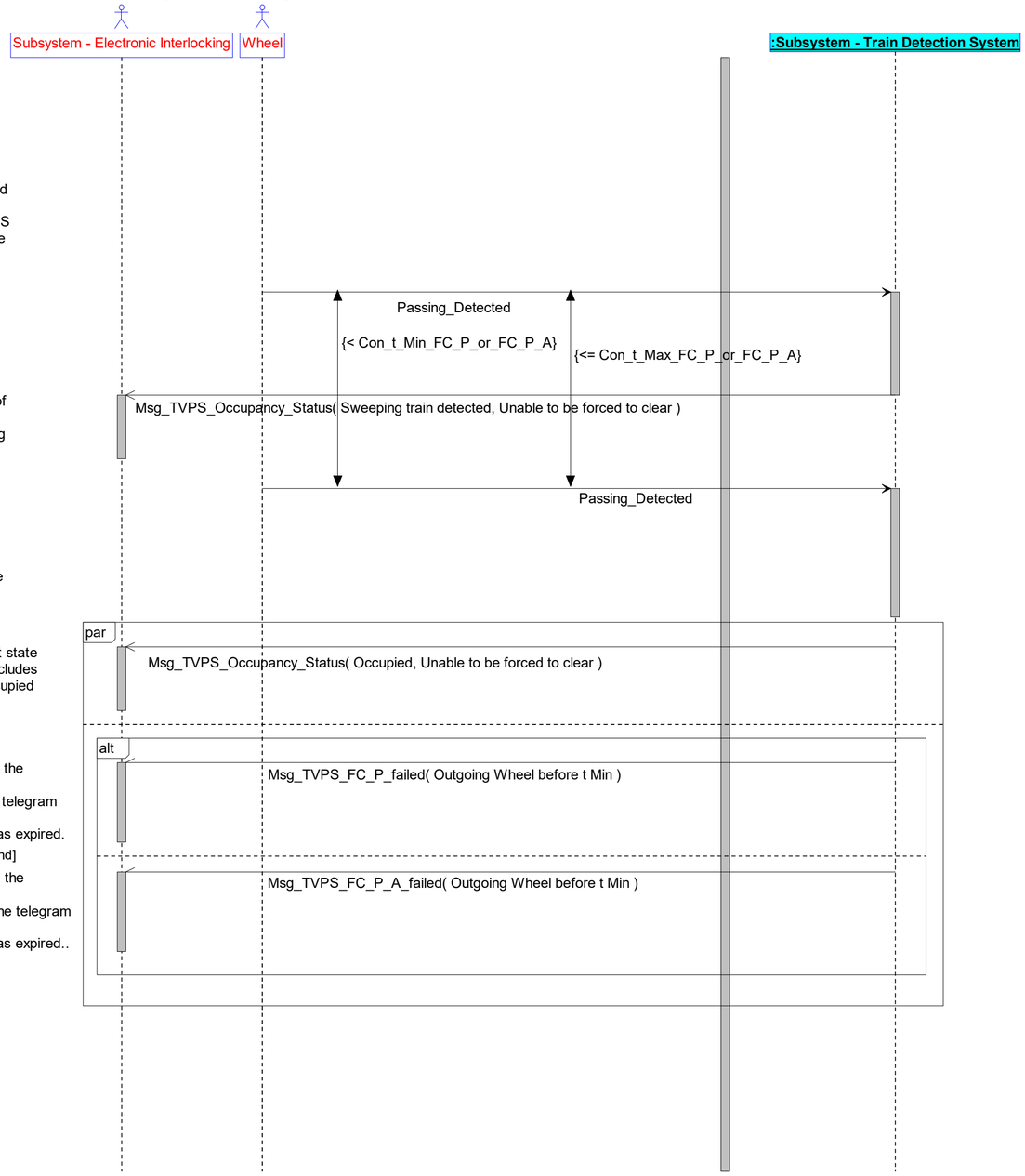
end alt

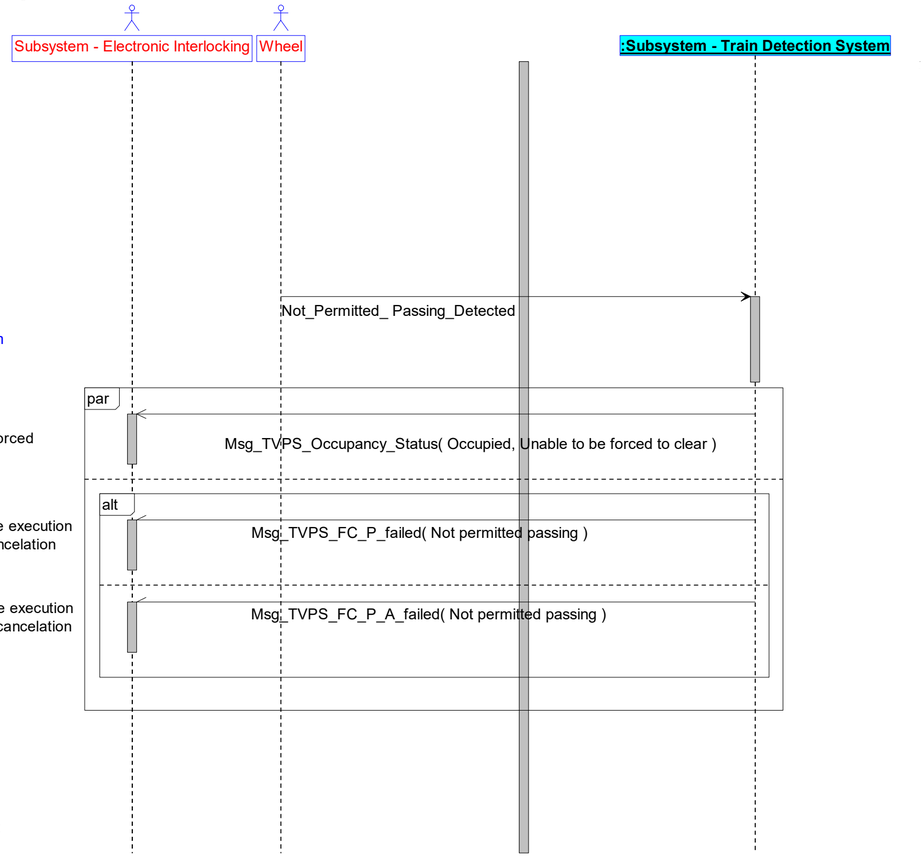
end par

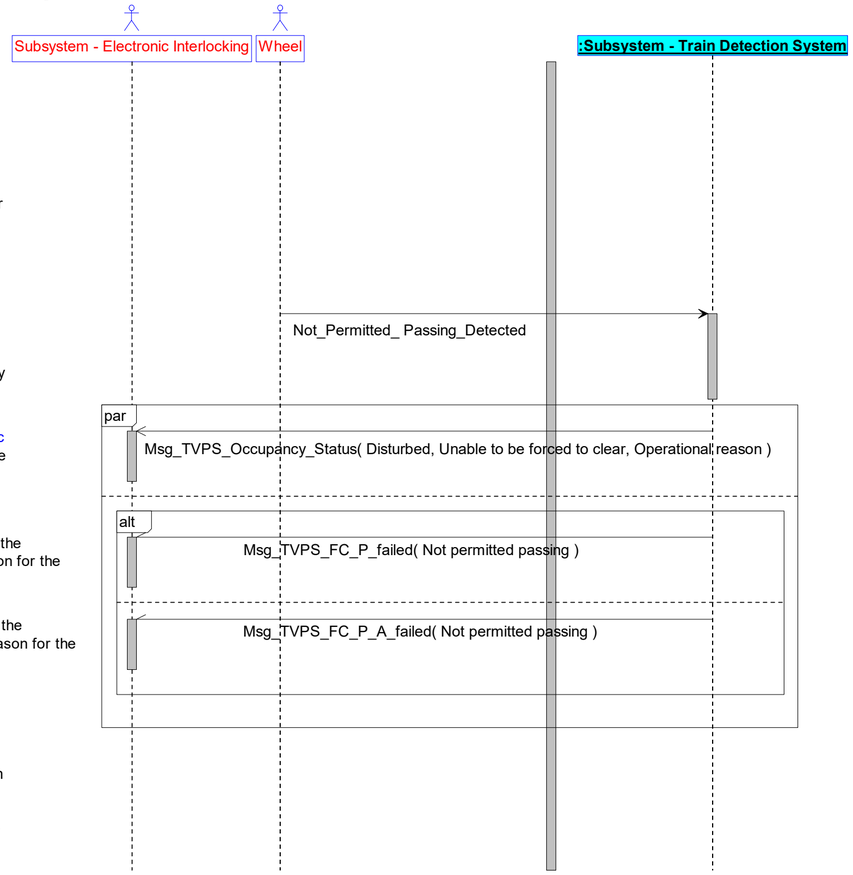
Postcondition:

The relevant TVPS is in the state "TVPS occupied and unable to be forced to clear" with a currently monitored Con_t_Inhibition_Time.

Note: The detection and the behaviour of the detection of incoming/outgoing wheels, the resulting state changes as well as the inhibition time and delay of notification time 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	Alternative Scenario: Not-permitted outgoing axle detected (to no process state, Occupied Unable FC) [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. The Subsystem - Train Detection System stops to monitor the time periods Con_t_Min_FC_P_or_FC_P_A and Con_t_Max_FC_P_or_FC_P_A if they are currently monitored. **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 currently monitored Con_t_Inhibition_Time. **Note:** The detection and the behaviour of the detection of incoming/outgoing wheels, the resulting state changes as well as the inhibition time and delay of notification time 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	Alternative Scenario: Not-permitted outgoing axle detected (to no process state, Disturbed Unable FC) [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. The Subsystem - Train Detection System stops to monitor the time periods Con_t_Min_FC_P_or_FC_P_A and Con_t_Max_FC_P_or_FC_P_A if they are currently monitored. **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.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 disturbed and unable to be forced to clear with an operational reason" with a currently monitored Con_t_Inhibition_Time. **Note:** The detection and the behaviour of the detection of incoming/outgoing wheels, the resulting state changes as well as the inhibition time and delay of notification time 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: Time expiration during sweeping train process	The Subsystem-UseCase "TDS_UC2.1.3.4: Time expiration during sweeping train process" defines the behaviour of the Subsystem - Train Detection System while Time expiration during sweeping train process.	Option FC-P/-A

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.7004	Info	Alternative Scenario: Maximum sweeping time expires (to no process state, Occupied Able FC) [TDS SD 2.1.3.4.1]		Option FC-P/-A

TDS_UC2.1.3.4: Time expiration during sweeping train process

Alternative Scenario: Maximum sweeping time 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. The Subsystem - Train Detection System starts to monitor the time periods Con_t_Min_FC_P_or_FC_P_A and Con_t_Max_FC_P_or_FC_P_A.

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. The Subsystem - Train Detection System detects that the time period Con_t_Min_FC_P_or_FC_P_A has expired.

4. - 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 Subsystem - Train Detection System starts to monitor the time period Con_t_Inhibition_Time.

5. The Subsystem - Train Detection System detects that the time period Con_t_Inhibition_Time has expired.

Interaction 2.1.3.4.1.B:

6. - The Subsystem - Train Detection System detects that the time period Con_t_Max_FC_P_or_FC_P_A has expired.

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.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
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.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
the expiration of Con_t_Max_FC_P_or_FC_P_A.

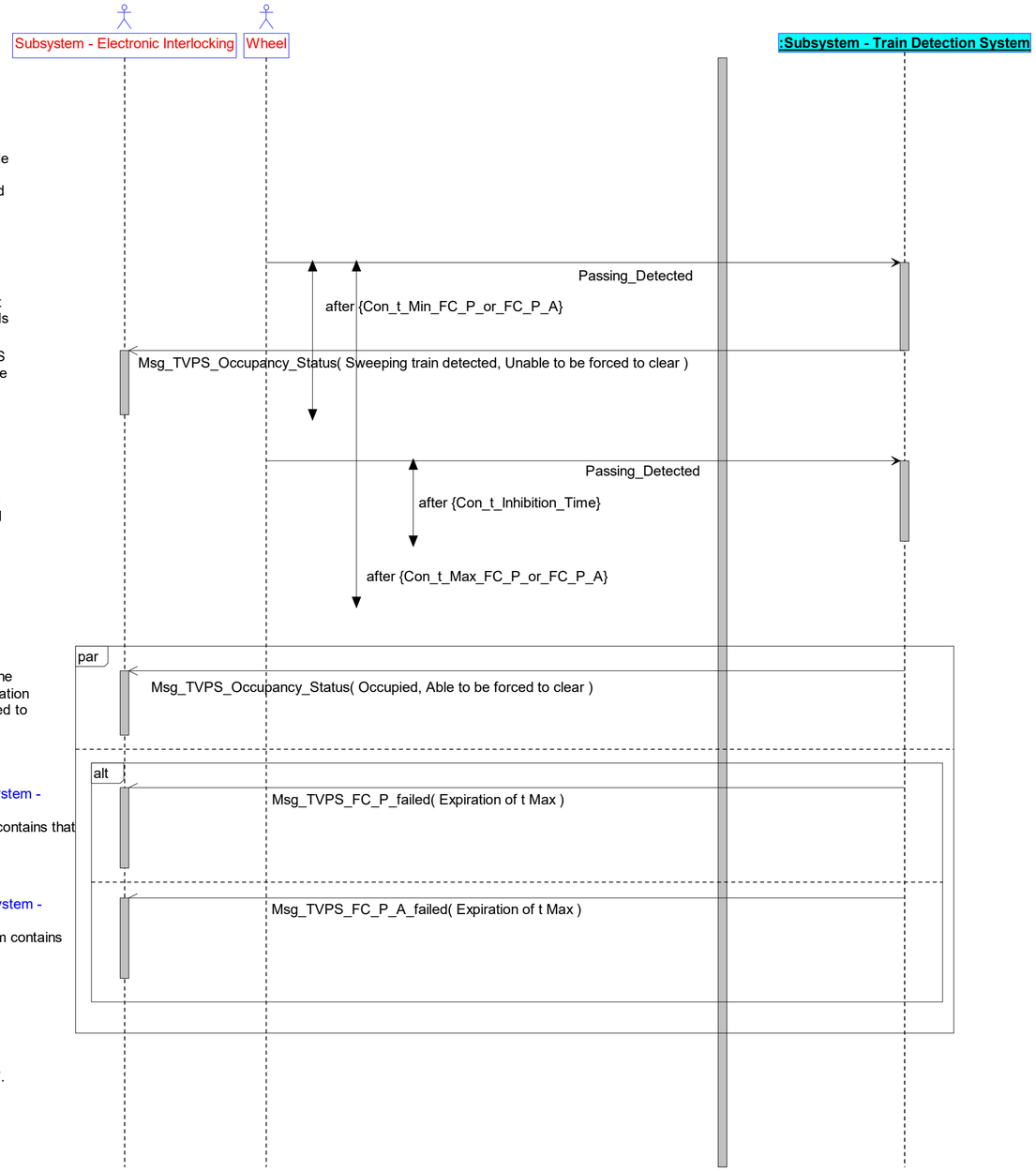
end alt

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 time and delay of notification time 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	Alternative Scenario: Maximum sweeping time expires with additional Wheel (to no process state, Occupied Unable FC) [TDS SD 2.1.3.4.2]		Option FC-P/-A

TDS_UC2.1.3.4: Time expiration during sweeping train process

Alternative Scenario: Maximum sweeping time expires with additional Wheel (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. The Subsystem - Train Detection System starts to monitor the time periods Con_t_Min_FC_P_or_FC_P_A and Con_t_Max_FC_P_or_FC_P_A.

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. - The Subsystem - Train Detection System detects that the time period Con_t_Min_FC_P_or_FC_P_A has expired.

4. - 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 Subsystem - Train Detection System starts to monitor the time period Con_t_Inhibition_Time.

Interaction 2.1.3.4.2.B:

5. - The Subsystem - Train Detection System detects that the time periods Con_t_Max_FC_P_or_FC_P_A and Con_t_Inhibition_Time have expired.

par

6.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]

6.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
the expiration of Con_t_Max_FC_P_or_FC_P_A.

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

6.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
the expiration of Con_t_Max_FC_P_or_FC_P_A.

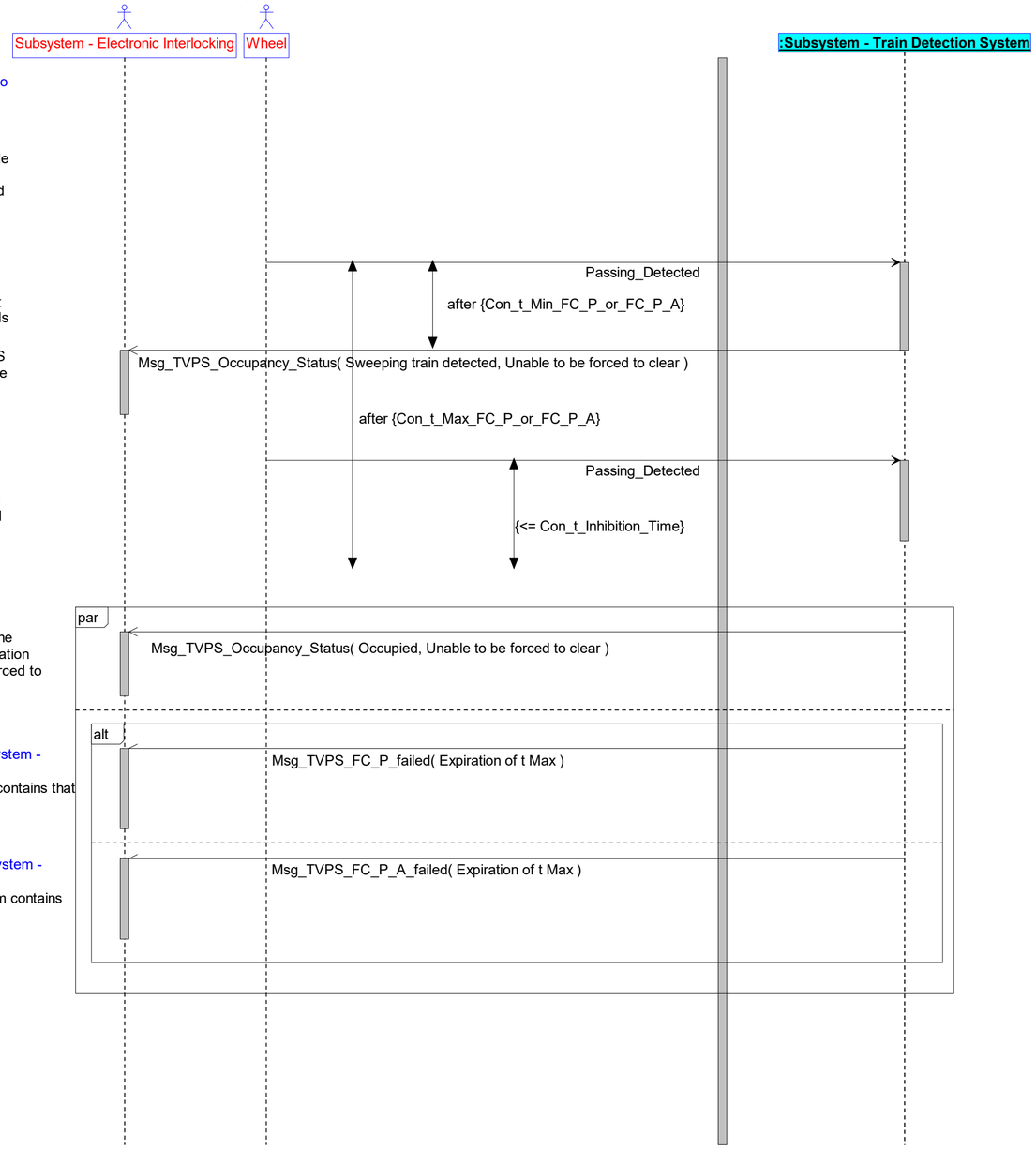
end alt

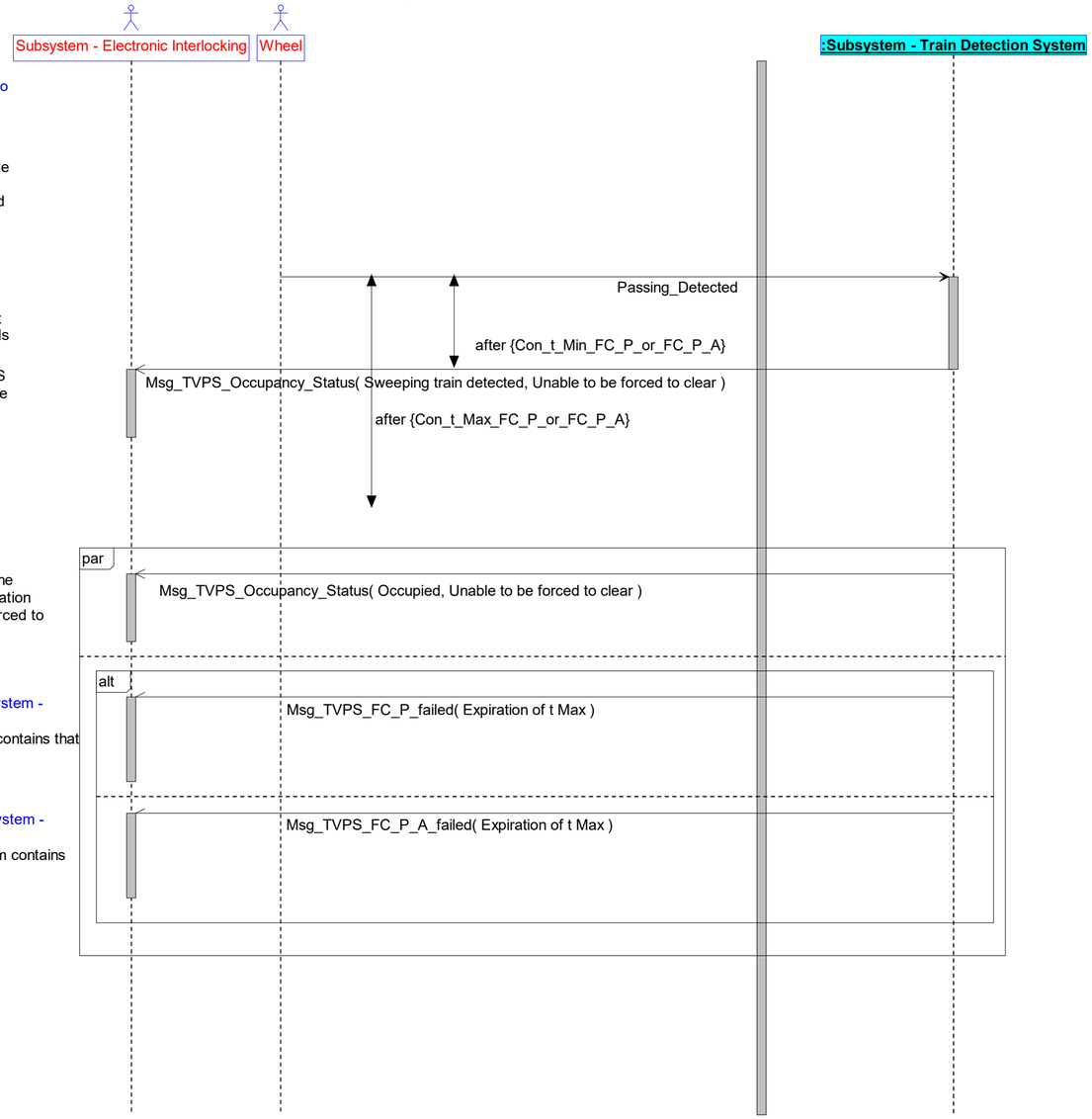
end par

Postcondition:

The relevant TVPS is in the state "TVPS occupied and unable to be forced to clear" with a currently monitored Con_t_Inhibition_Time.

Note: The detection and the behaviour of the detection of incoming/outgoing wheels, the resulting state changes as well as the inhibition time and delay of notification time 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.7249	Info	Alternative Scenario: Maximum sweeping time expires without additional Wheel (to no process state, Occupied Unable FC)I [TDS SD 2.1.3.4.3] **TDS_UC2.1.3.4: Time expiration during sweeping train process** Alternative Scenario: Maximum sweeping time expires without additional Wheel (to no process state, Occupied Unable FC)I [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 occupied and able to be forced to clear"or "TVPS occupied and unable to be forced to clear". **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. The Subsystem - Train Detection System starts to monitor the time periods Con_t_Min_FC_P_or_FC_P_A and Con_t_Max_FC_P_or_FC_P_A. **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.** The Subsystem - Train Detection System detects that the time period Con_t_Min_FC_P_or_FC_P_A has expired. **Interaction 2.1.3.4.3.B:** **4.** The Subsystem - Train Detection System detects that the time periods Con_t_Max_FC_P_or_FC_P_A and Con_t_Inhibition_Time have expired. **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.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 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.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 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". **Note:** The detection and the behaviour of the detection of incoming/outgoing wheels, the resulting state changes as well as the inhibition time and delay of notification time 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.7013	Info	Alternative Scenario: Maximum sweeping time expires (to no process state, Disturbed Able FC) [TDS SD 2.1.3.4.4]		Option FC-P/-A

TDS_UC2.1.3.4: Time expiration during sweeping train process

Alternative Scenario: Maximum sweeping time expires (to no process state, Disturbed Able FC) [TDS SD 2.1.3.4.4]

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 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. The Subsystem - Train Detection System starts to monitor the time periods Con_t_Min_FC_P_or_FC_P_A and Con_t_Max_FC_P_or_FC_P_A.

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. The Subsystem - Train Detection System detects that the time period Con_t_Min_FC_P_or_FC_P_A has expired.

4. - 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 Subsystem - Train Detection System starts to monitor the time period Con_t_Inhibition_Time

5. The Subsystem - Train Detection System detects that the time period Con_t_Inhibition_Time has expired.

Interaction 2.1.3.4.4.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.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
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.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
the expiration of Con_t_Max_FC_P_or_FC_P_A.

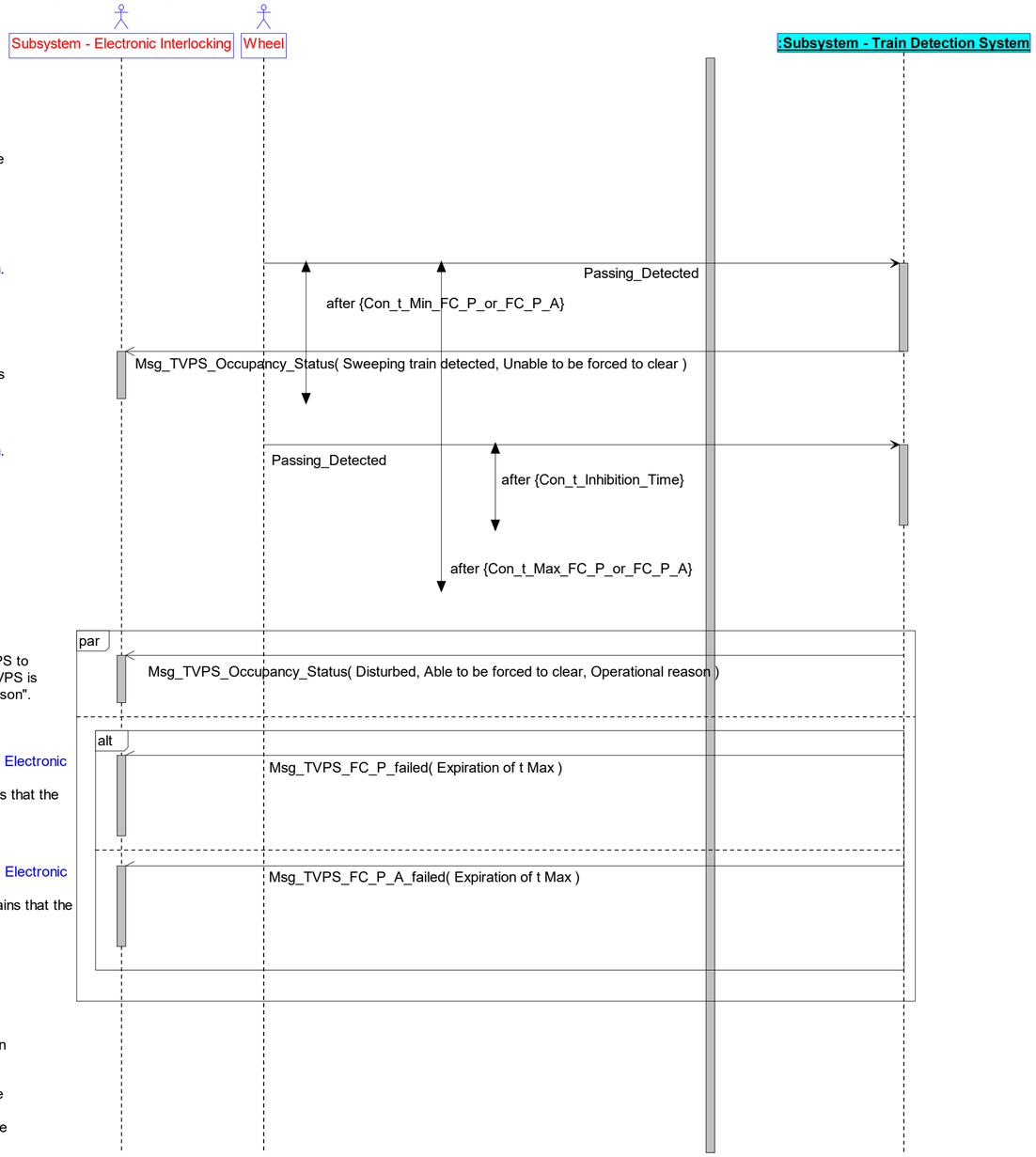
end alt

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 time and delay of notification time 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	Alternative Scenario: Maximum sweeping time expires with additional Wheel (to no process state, Disturbed Unable FC) [TDS SD 2.1.3.4.5]		Option FC-P/-A

TDS_UC2.1.3.4: Time expiration during sweeping train process

Alternative Scenario: Maximum sweeping time expires with additional Wheel (to no process state, Disturbed Unable FC) [TDS SD 2.1.3.4.5]

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 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 2.1.3.4.5.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 incoming Wheel for the relevant TVPS. The Subsystem - Train Detection System starts to monitor the time periods Con_t_Min_FC_P_or_FC_P_A and Con_t_Max_FC_P_or_FC_P_A.

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. - The Subsystem - Train Detection System detects that the time period Con_t_Min_FC_P_or_FC_P_A has expired.

4. - 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 Subsystem - Train Detection System starts to monitor the time period Con_t_Inhibition_Time.

Interaction 2.1.3.4.5.B:

5. - The Subsystem - Train Detection System detects that the time periods Con_t_Max_FC_P_or_FC_P_A and Con_t_Inhibition_Time have expired.

par

6.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]

6.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
the expiration of Con_t_Max_FC_P_or_FC_P_A.

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

6.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
the expiration of Con_t_Max_FC_P_or_FC_P_A.

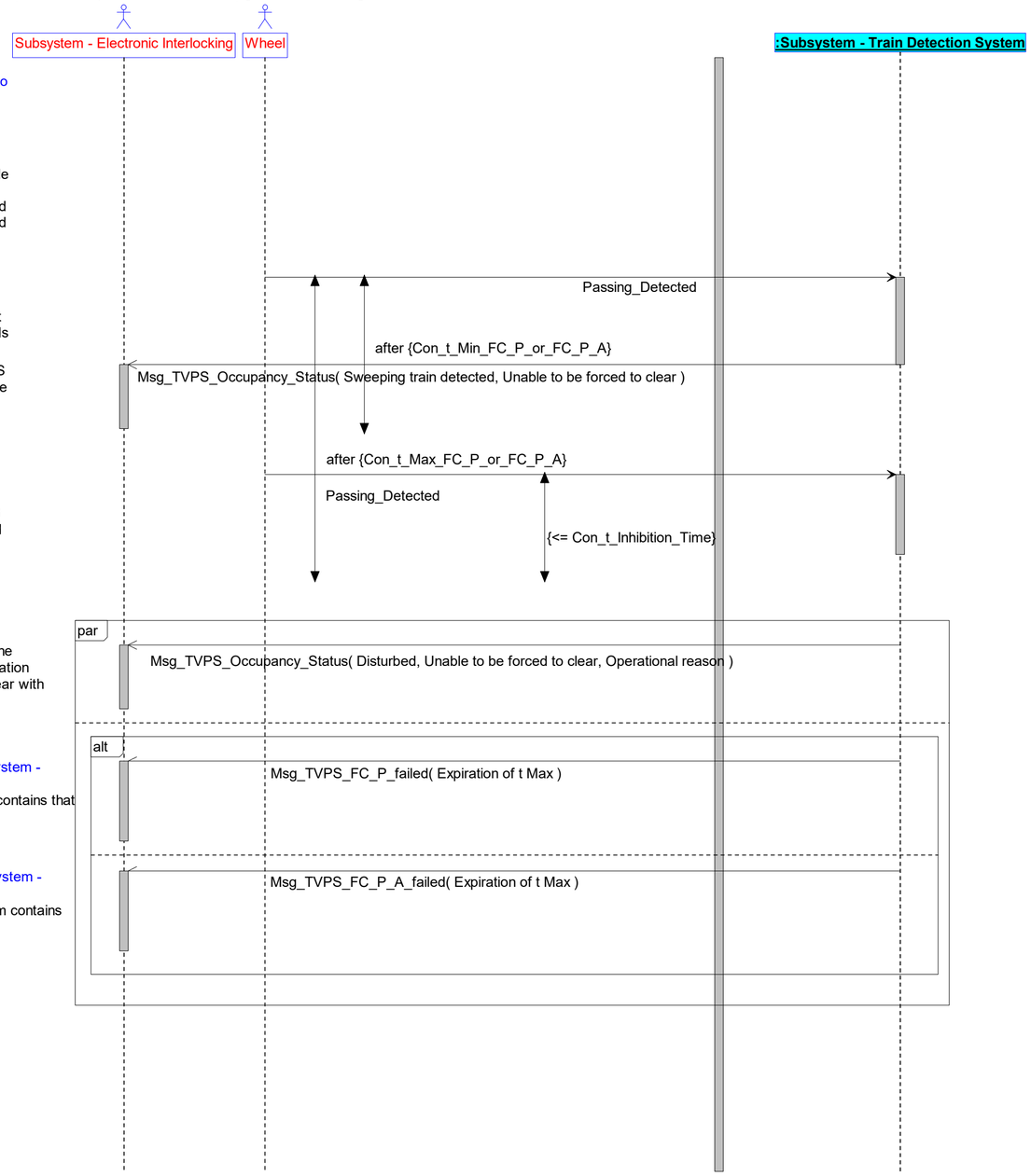
end alt

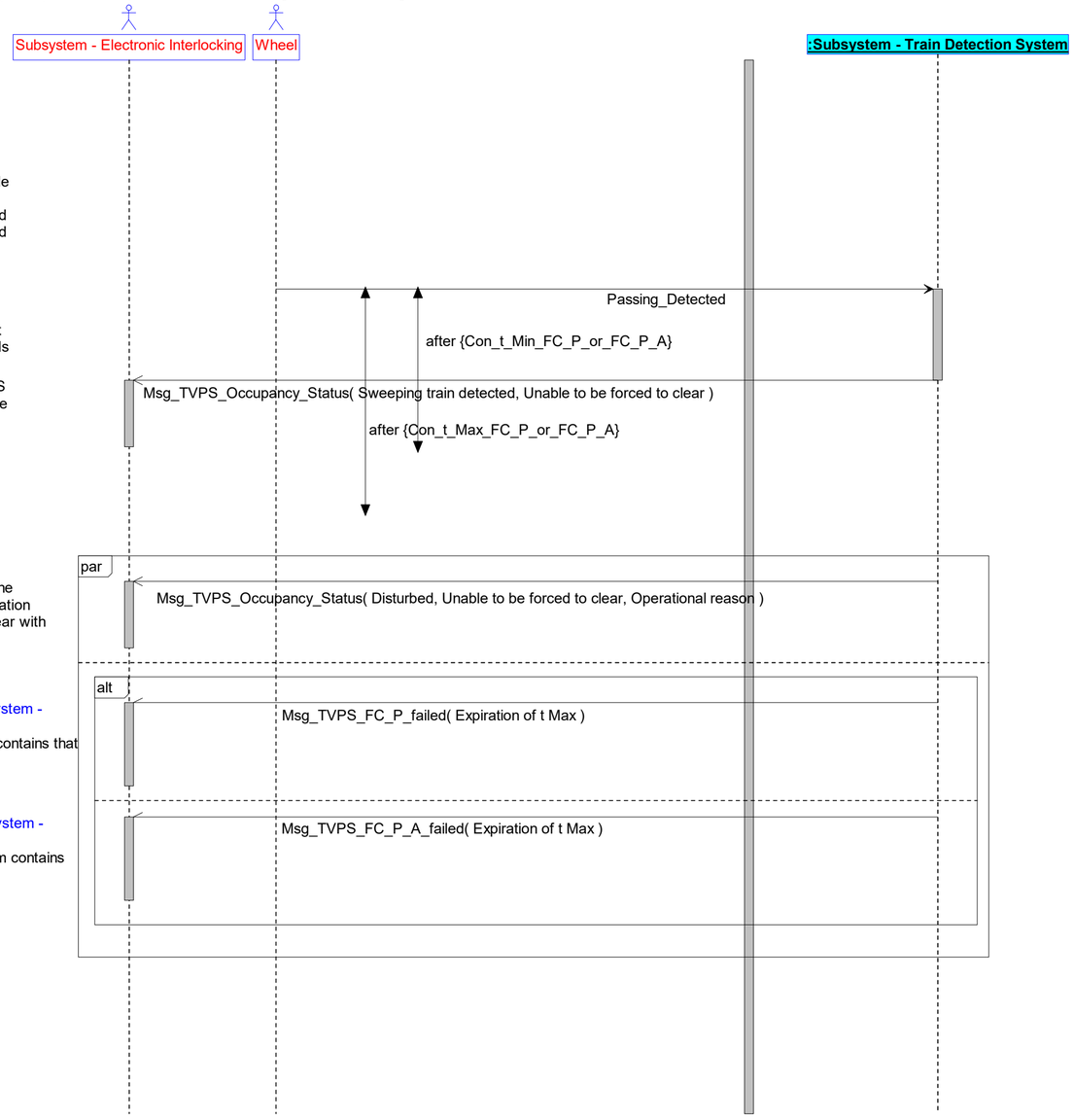
end par

Postcondition:

The relevant TVPS is in the state "TVPS disturbed and unable to be forced to clear with an operational reason" with a currently monitored Con_t_Inhibition_Time.

Note: The detection and the behaviour of the detection of incoming/outgoing wheels, the resulting state changes as well as the inhibition time and delay of notification time 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.7250	Info	Alternative Scenario: Maximum sweeping time expires without additional Wheel (to no process state, Disturbed Unable FC) [TDS SD 2.1.3.4.6] **TDS_UC2.1.3.4: Time expiration during sweeping train process** Alternative Scenario: Maximum sweeping time expires without additional Wheel (to no process state, Disturbed Unable FC) [TDS SD 2.1.3.4.6] **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 2.1.3.4.6.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 incoming Wheel for the relevant TVPS. The Subsystem - Train Detection System starts to monitor the time periods Con_t_Min_FC_P_or_FC_P_A and Con_t_Max_FC_P_or_FC_P_A. **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.** The Subsystem - Train Detection System detects that the time period Con_t_Min_FC_P_or_FC_P_A has expired. **Interaction 2.1.3.4.6.B:** **4.** The Subsystem - Train Detection System detects that the time periods Con_t_Max_FC_P_or_FC_P_A and Con_t_Inhibition_Time have expired. **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.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 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.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 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". **Note:** The detection and the behaviour of the detection of incoming/outgoing wheels, the resulting state changes as well as the inhibition time and delay of notification time 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	Alternative Scenario: Successful execution of Cancel-command (to no process state, Occupied Able FC) (case 1) [TDS SD 2.1.3.5.1]		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 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.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]

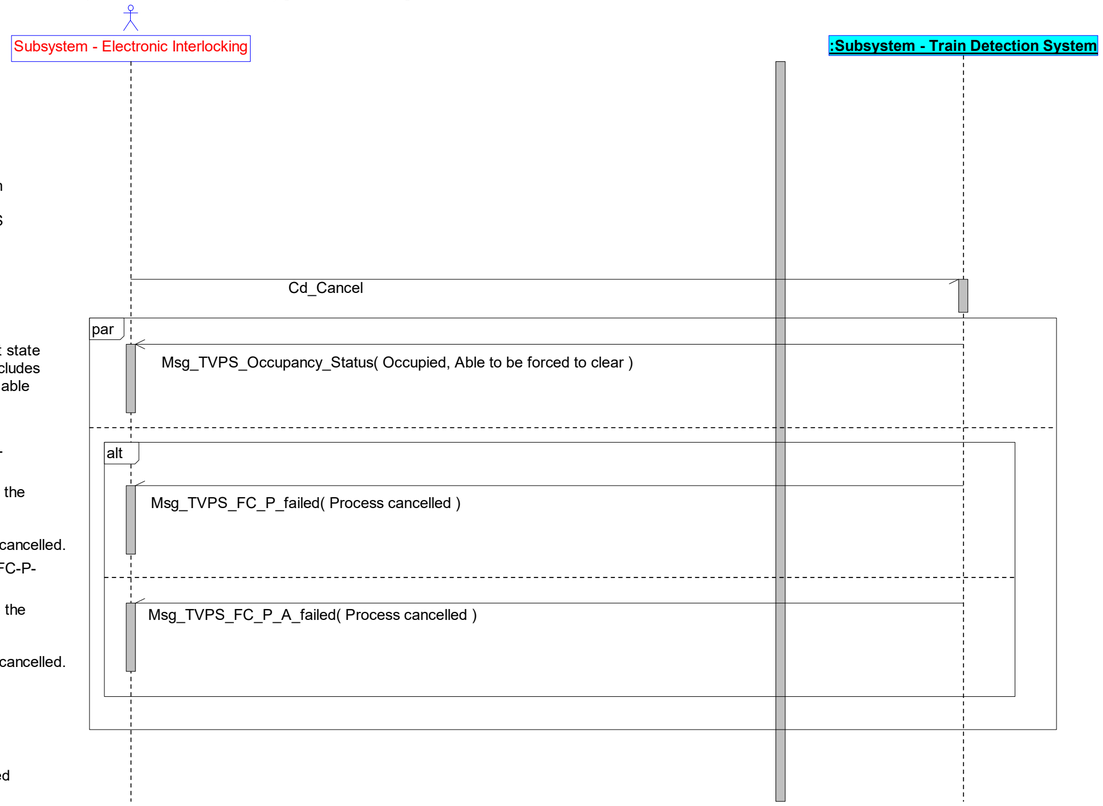
2.b1.b1 The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the execution of the previously sent FC-P-A command was not successful.
The telegram contains the information that the process was cancelled.

end alt

end par

Postcondition:

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



ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.7021	Info	Alternative Scenario: Successful execution of Cancel-command (to no process state, Occupied Able FC) (case 2) [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. The Subsystem - Train Detection System starts to monitor the time period Con_t_Inhibition_Time.

Interaction 2.1.3.5.2.B:

2. - The Subsystem - Train Detection System receives from the Subsystem - Electronic Interlocking a Cancel-command after the Subsystem - Train Detection System detects that the time period Con_t_Inhibition_Time has expired.

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 occupied and able to be forced to clear".

also par

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

3.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]

3.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.

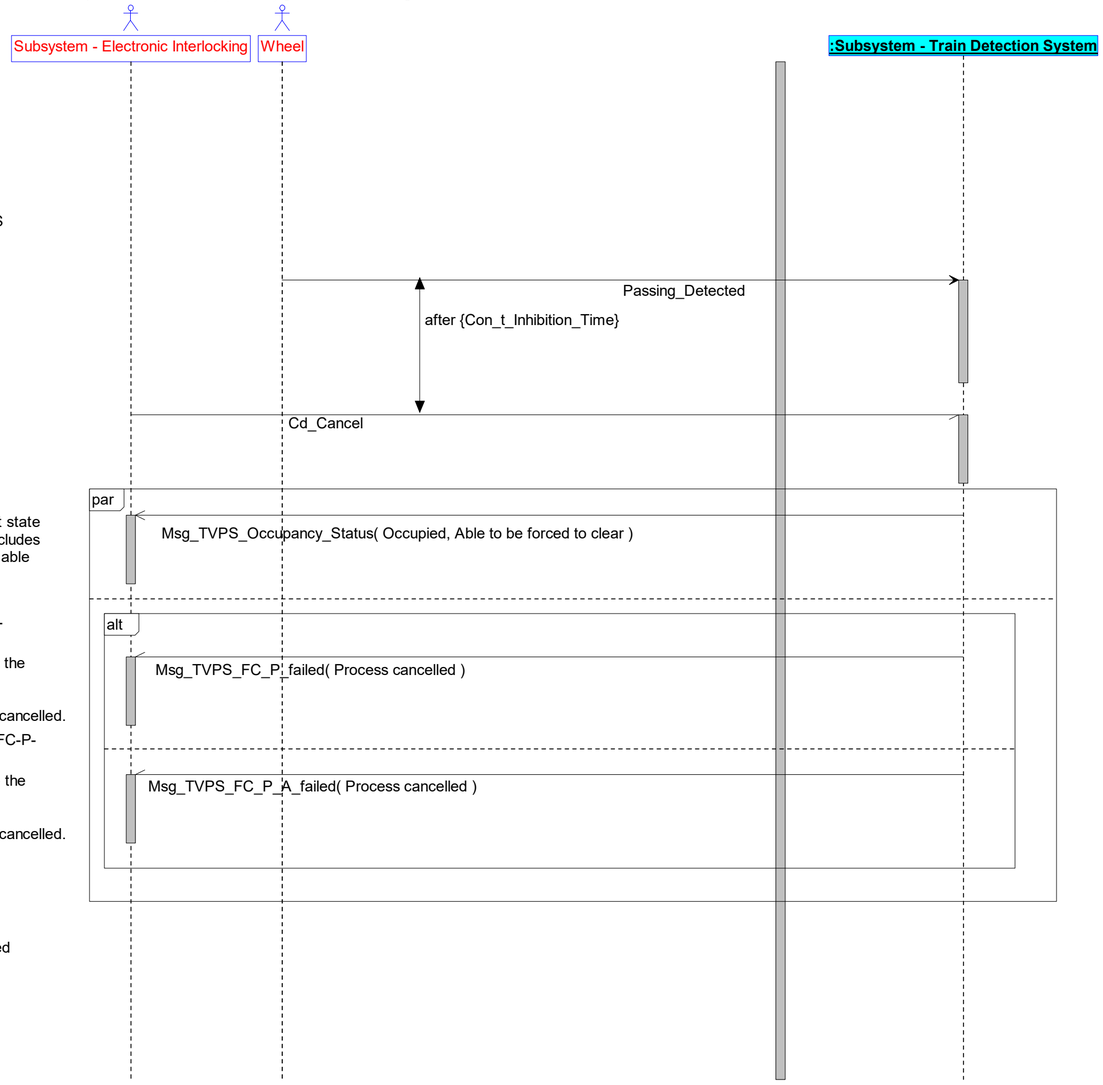
end alt

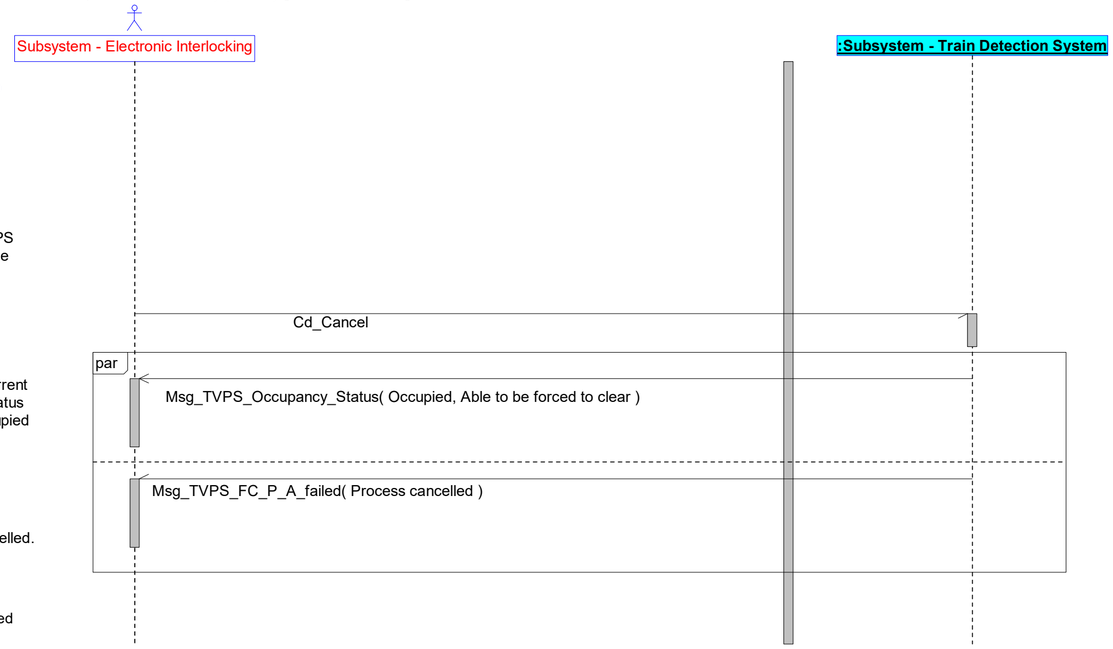
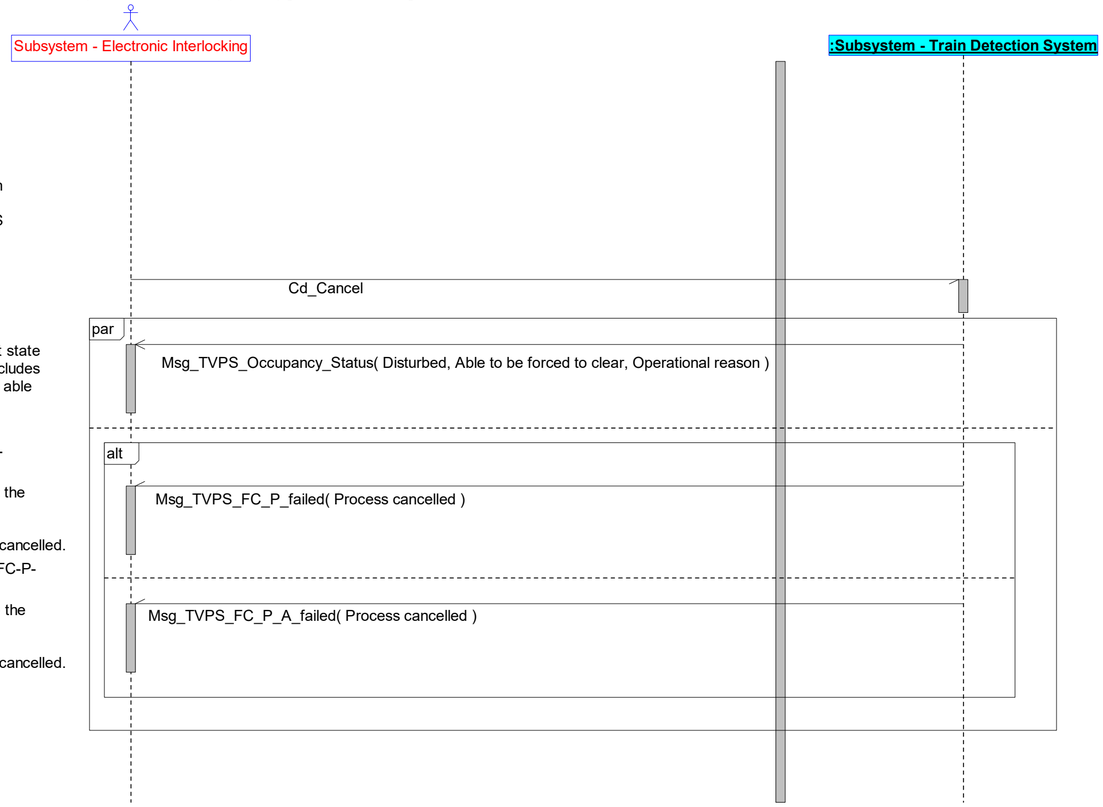
end par

Postcondition:

The relevant TVPS is in the state "TVPS occupied and 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 time and delay of notification time 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	Alternative Scenario: Successful execution of Cancel-command (to no process state, Occupied Able FC) (case 3) [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.b1.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.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	Alternative Scenario: Successful execution of Cancel-command (to no process state, Disturbed Able FC) (case 1) [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] **3.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 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	Alternative Scenario: Successful execution of Cancel-command (to no process state, Disturbed Able FC) (case 2) [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. The Subsystem - Train Detection System starts to monitor the time period Con_t_Inhibition_Time.

Interaction 2.1.3.5.5.B:

2. - The Subsystem - Train Detection System receives from the Subsystem - Electronic Interlocking a Cancel-command after the Subsystem - Train Detection System detects that the time period Con_t_Inhibition_Time has expired. ...

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 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]

3.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]

3.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.

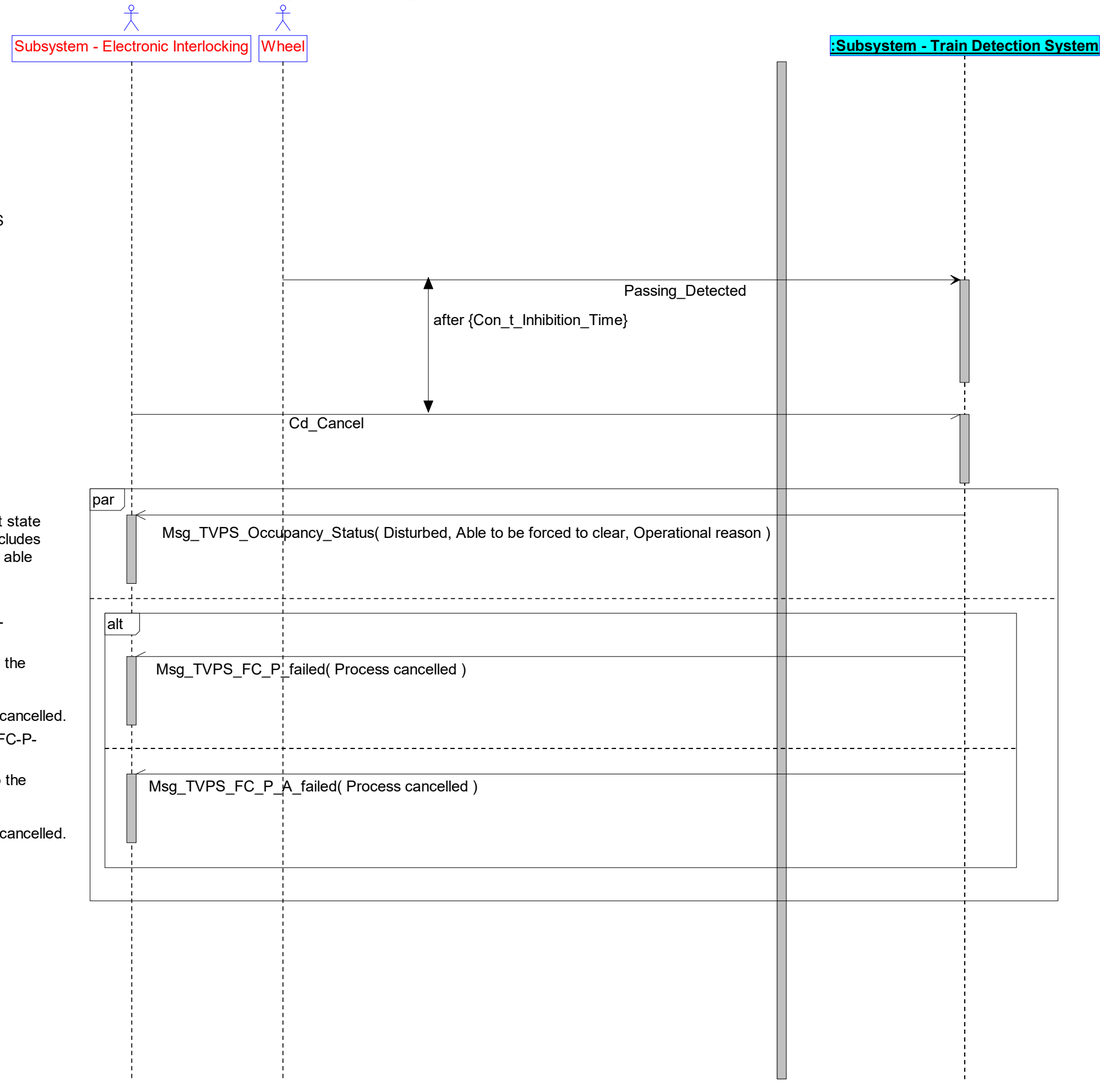
end alt

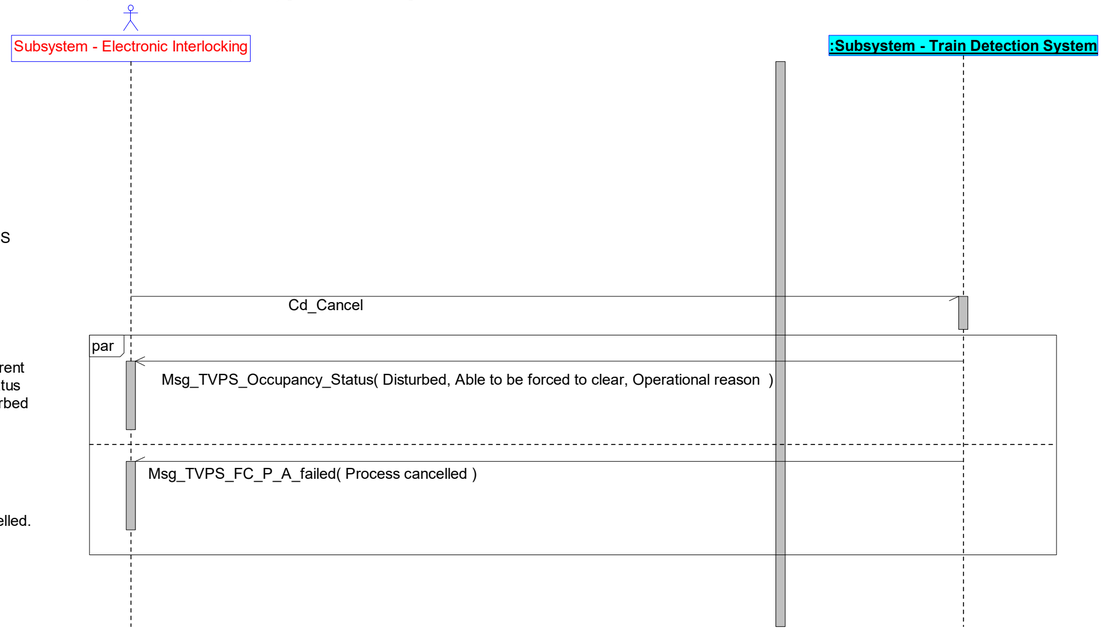
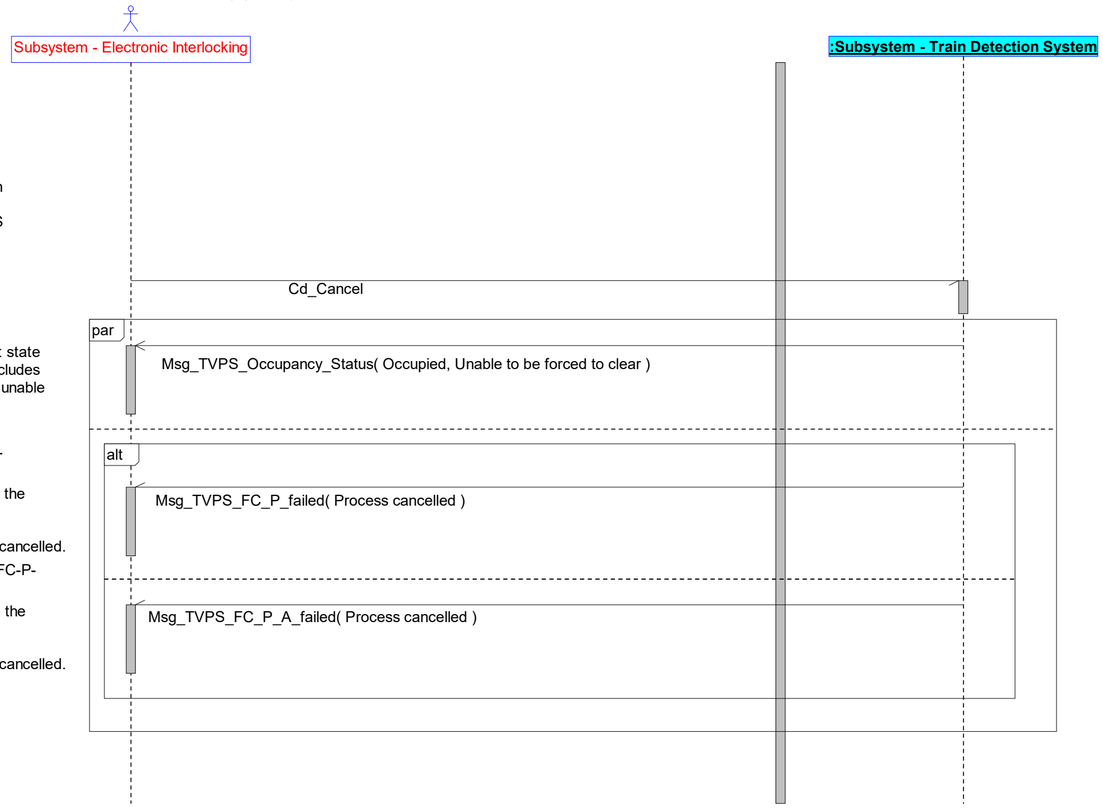
end par

Postcondition:

The relevant TVPS is in the state "TVPS disturbed and 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 time and delay of notification time 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	Alternative Scenario: Successful execution of Cancel-command (to no process state, Disturbed Able FC) (case 3) [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.b1.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.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	Alternative Scenario: Successful execution of Cancel-command (to no process state, Occupied Unable FC) (case 1) [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.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 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	Alternative Scenario: Successful execution of Cancel-command (to no process state, Occupied Unable FC) (case 2.1) [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 2.1) [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".

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. The Subsystem - Train Detection System starts to monitor the time period Con_t_Inhibition_Time.

Interaction 2.1.3.5.8.B:

4. - The Subsystem - Train Detection System receives from the Subsystem - Electronic Interlocking a Cancel-command before the time period Con_t_Inhibition_Time has expired.

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 occupied and unable to be forced to clear".

also par

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

5.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]

5.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.

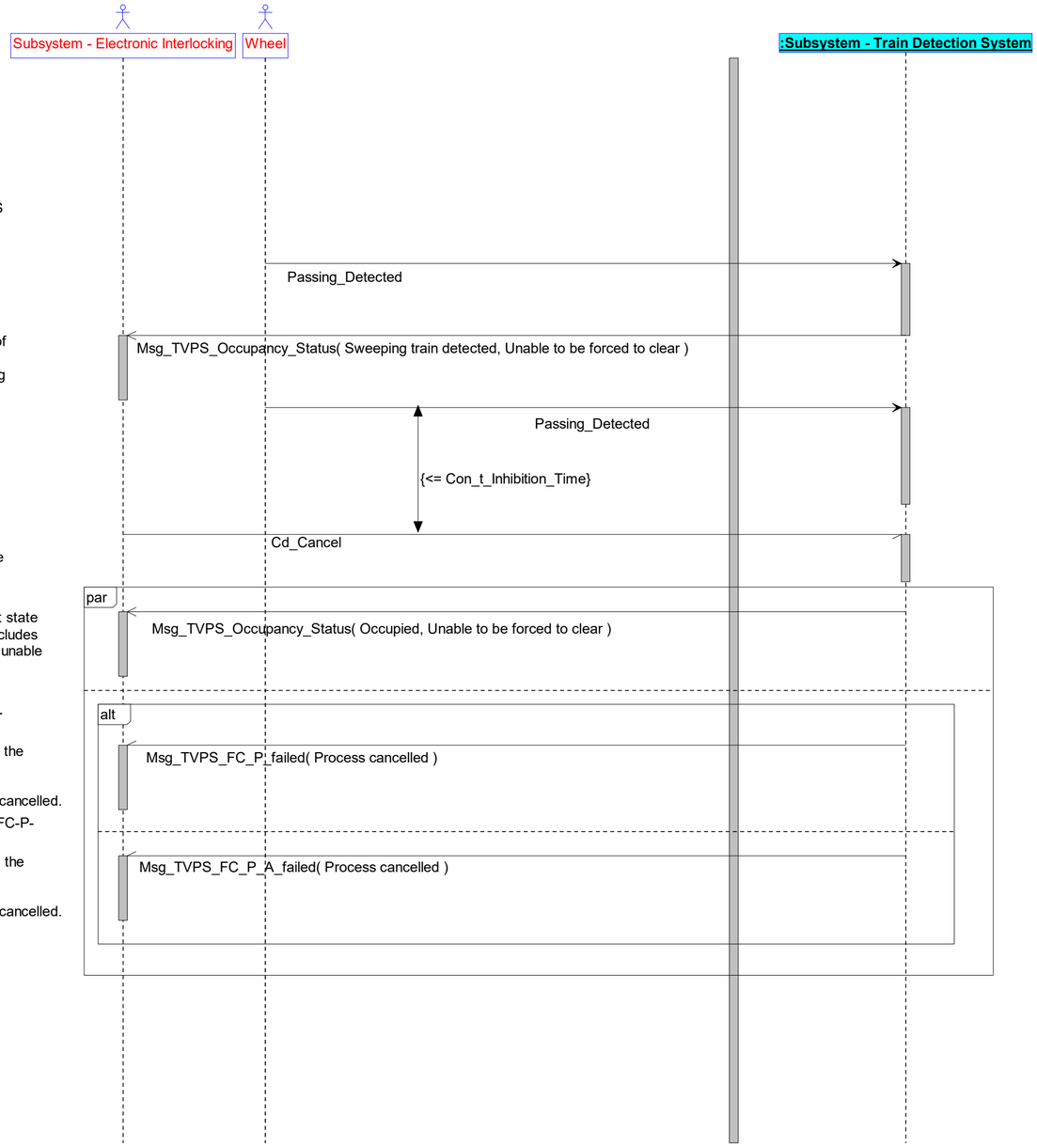
end alt

end par

Postcondition:

The relevant TVPS is in the state "TVPS occupied and unable to be forced to clear" with a currently monitored Con_t_Inhibition_Time.

Note: The detection and the behaviour of the detection of incoming/outgoing wheels, the resulting state changes as well as the inhibition time and delay of notification time 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.7252	Info	Alternative Scenario: Successful execution of Cancel-command (to no process state, Occupied Unable FC) (case 2.2) [TDS SD 2.1.3.5.9]		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 2.2) [TDS SD 2.1.3.5.9]

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 2.1.3.5.9.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".

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

Interaction 2.1.3.5.9.B:

par

also 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".

alt [The previous received 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 previous received 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.

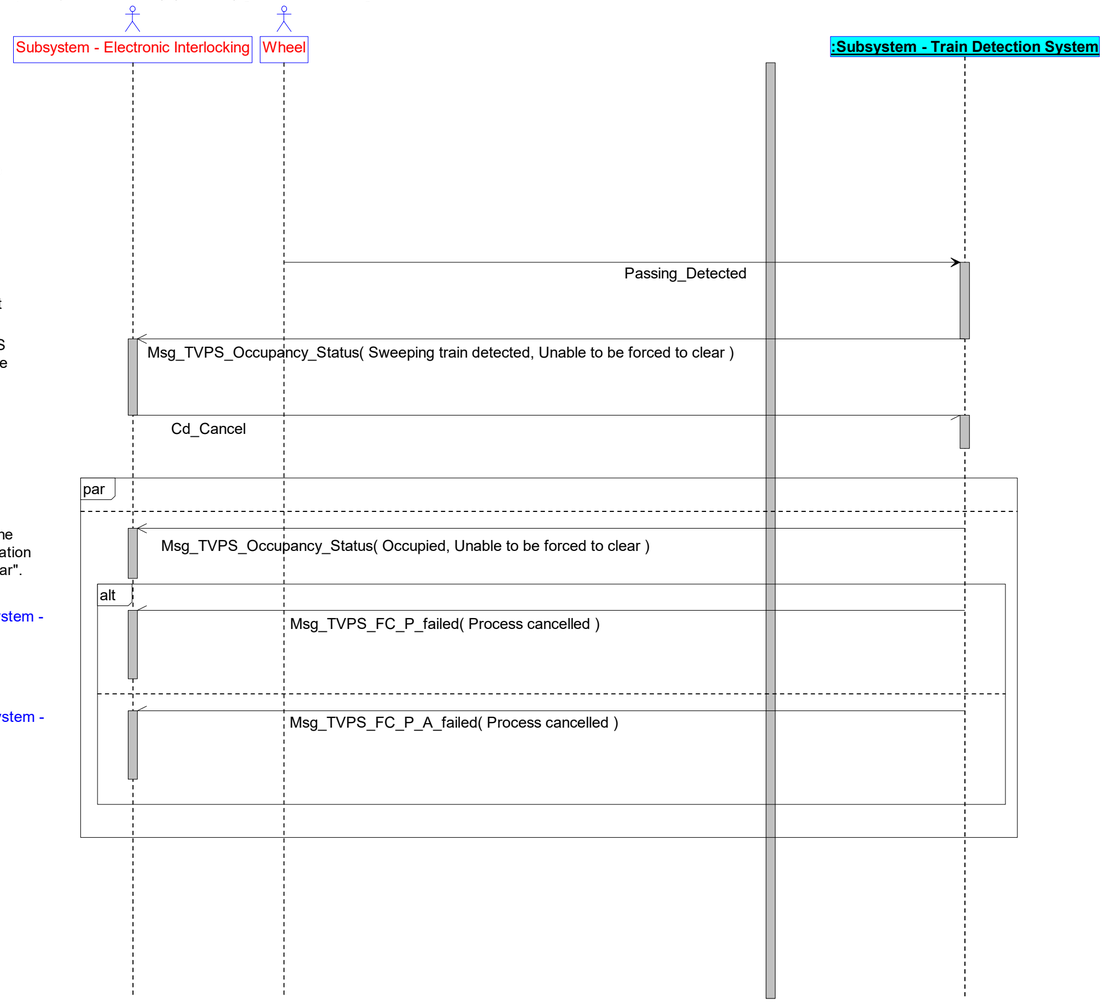
end alt

end par

Postcondition:

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

Note: The detection and the behaviour of the detection of incoming/outgoing wheels, the resulting state changes as well as the inhibition time and delay of notification time 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	Alternative Scenario: Successful execution of Cancel-command (to no process state, Disturbed Unable FC) (case 1) [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 1) [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. - 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]

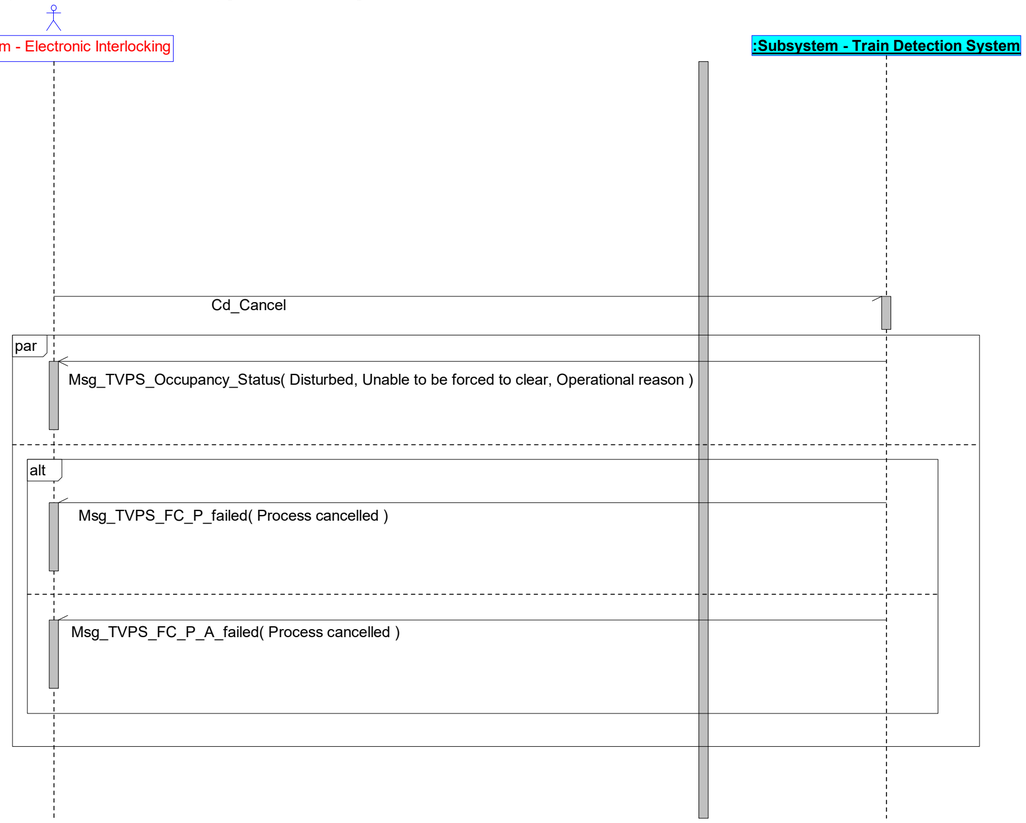
2.b1.b1 The Subsystem - Train Detection System reports to the Subsystem - Electronic Interlocking that the execution of the previously sent FC-P-A command was not successful.
The telegram contains the information that the process was cancelled.

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".



ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.7019	Info	Alternative Scenario: Successful execution of Cancel-command (to no process state, Disturbed Unable FC) (case 2.1) [TDS SD 2.1.3.5.11]		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 2.1) [TDS SD 2.1.3.5.11]

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 2.1.3.5.11.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. The Subsystem - Train Detection System starts to monitor the time period Con_t_Inhibition_Time.

Interaction 2.1.3.5.11.B:

4. - The Subsystem - Train Detection System receives from the Subsystem - Electronic Interlocking a Cancel-command before the time period Con_t_Inhibition_Time has expired.

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 Last command before the Cancel-command was a FC-P-command]

5.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]

5.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.

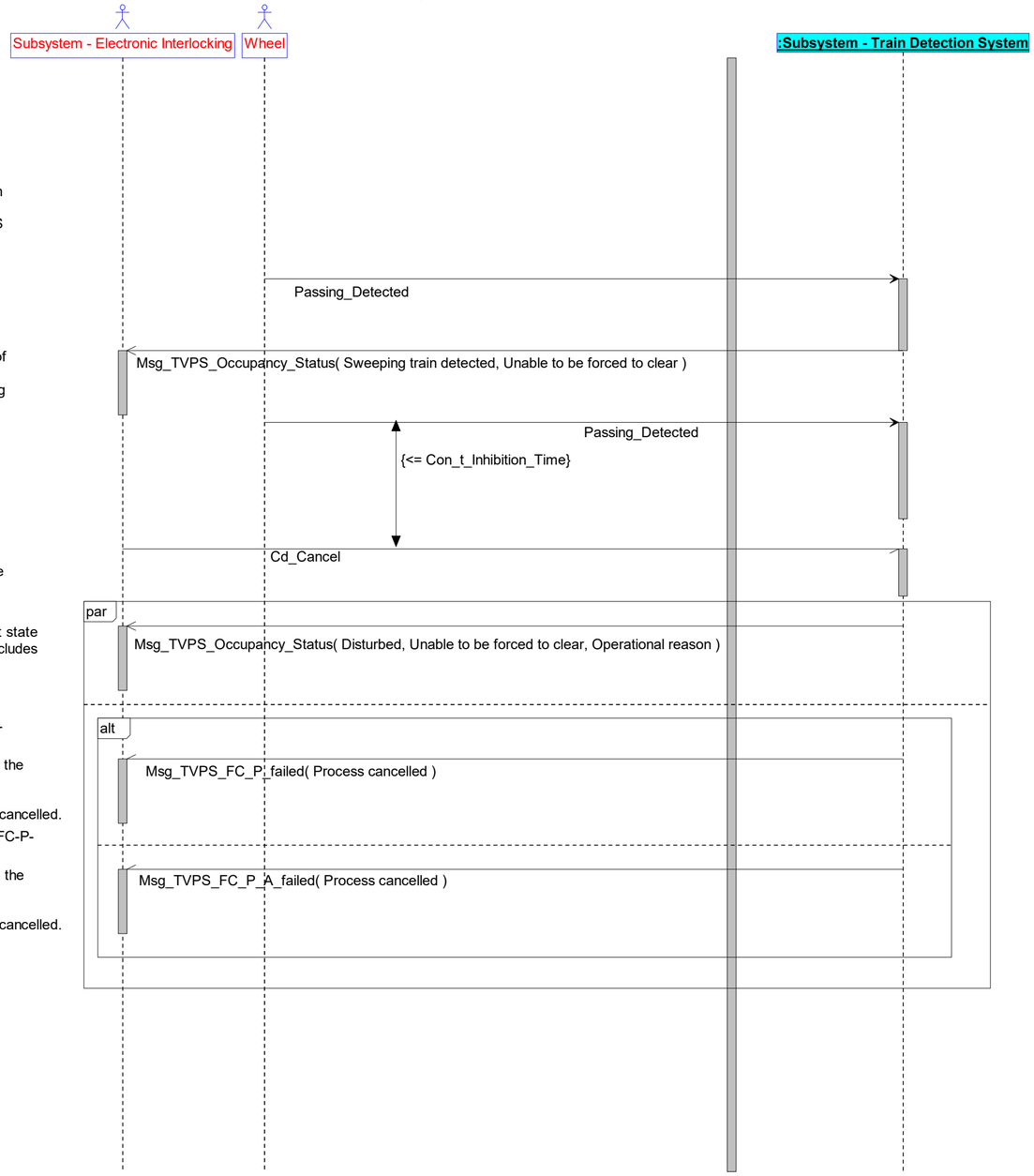
end alt

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 currently monitored Con_t_Inhibition_Time.

Note: The detection and the behaviour of the detection of incoming/outgoing wheels, the resulting state changes as well as the inhibition time and delay of notification time 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.7251	Info	Alternative Scenario: Successful execution of Cancel-command (to no process state, Disturbed Unable FC) (case 2.2) [TDS SD 2.1.3.5.12]		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 2.2) [TDS SD 2.1.3.5.12]

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

Interaction 2.1.3.5.12.B:

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.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 previous received 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.

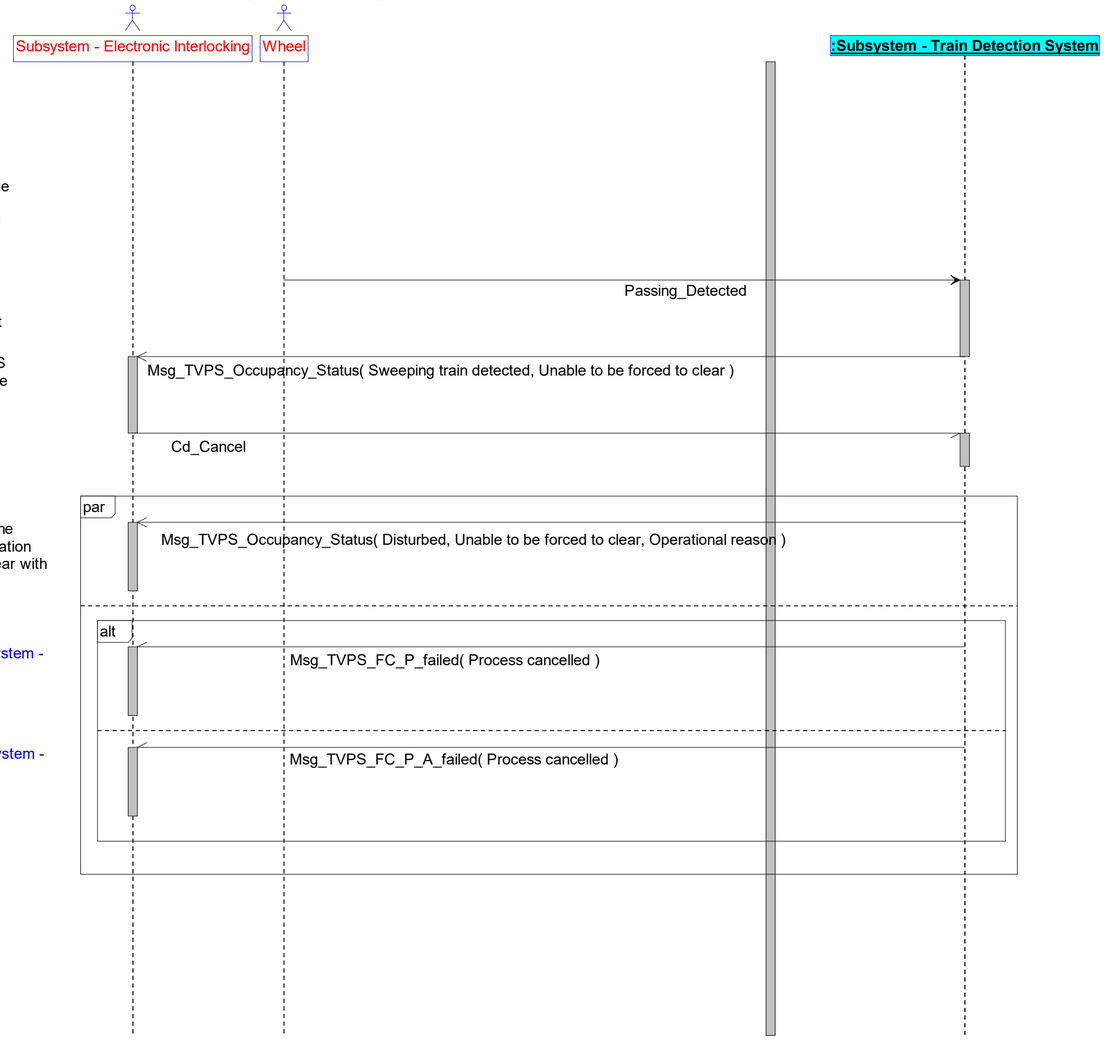
end alt

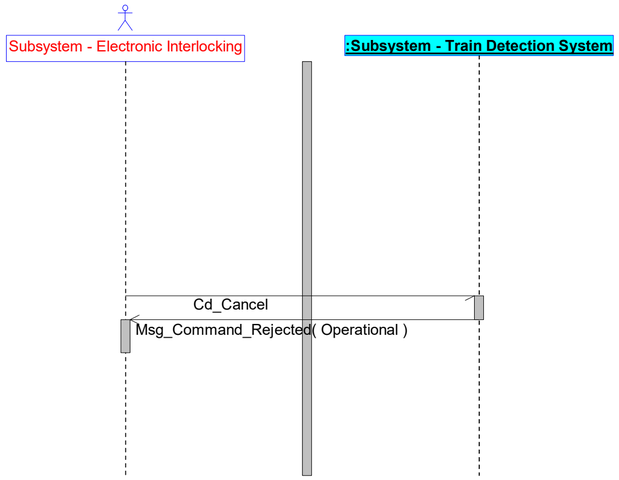
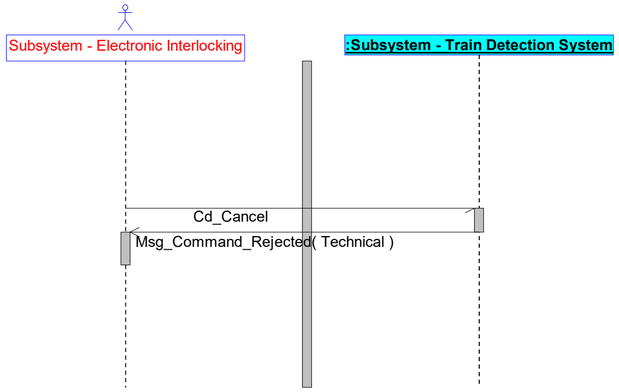
end par

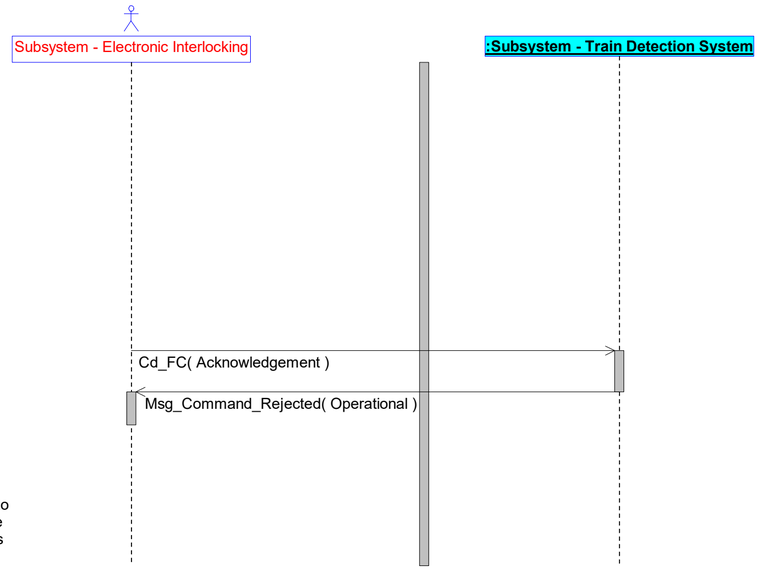
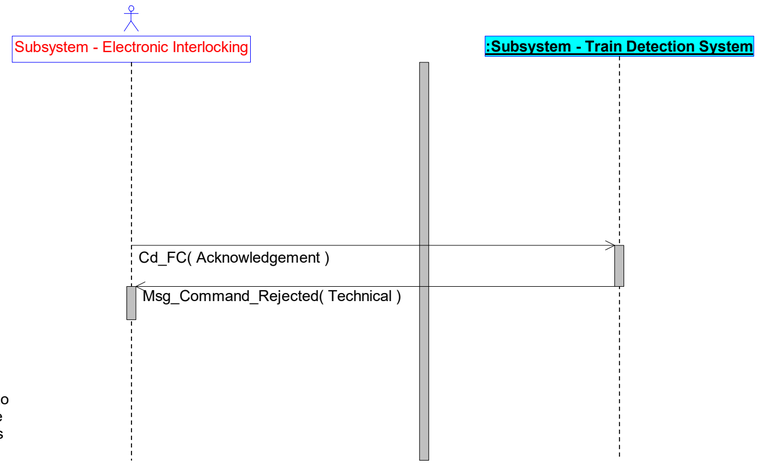
Postcondition:

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

Note: The detection and the behaviour of the detection of incoming/outgoing wheels, the resulting state changes as well as the inhibition time and delay of notification time 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	Alternative Scenario: Unsuccessful execution of Cancel-command (operational reason) [TDS SD 2.1.3.5.13] **TDS_UC2.1.3.5: Cancel-command** Alternative Scenario: Unsuccessful execution of Cancel-command (operational reason) [TDS SD 2.1.3.5.13] **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 2.1.3.5.13.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	Alternative Scenario: Unsuccessful execution of Cancel-command (technical reason) [TDS SD 2.1.3.5.14] **TDS_UC2.1.3.5: Cancel-command** Alternative Scenario: Unsuccessful execution of Cancel-command (technical reason) [TDS SD 2.1.3.5.14] **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 2.1.3.5.14.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	Alternative Scenario: Unsuccessful execution of FC-Acknowledgement (operational reason) [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	Alternative Scenario: Unsuccessful execution of FC-Acknowledgement (technical reason) [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	Alternative Scenario: Successful execution of FC-P with Visual Sweeping Confirmation from Maintainer [TDS SD 2.1.3.7.1]		Option FC-P/-A

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 time is not running.
For the relevant TVPS the delay of notification of availability time 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:

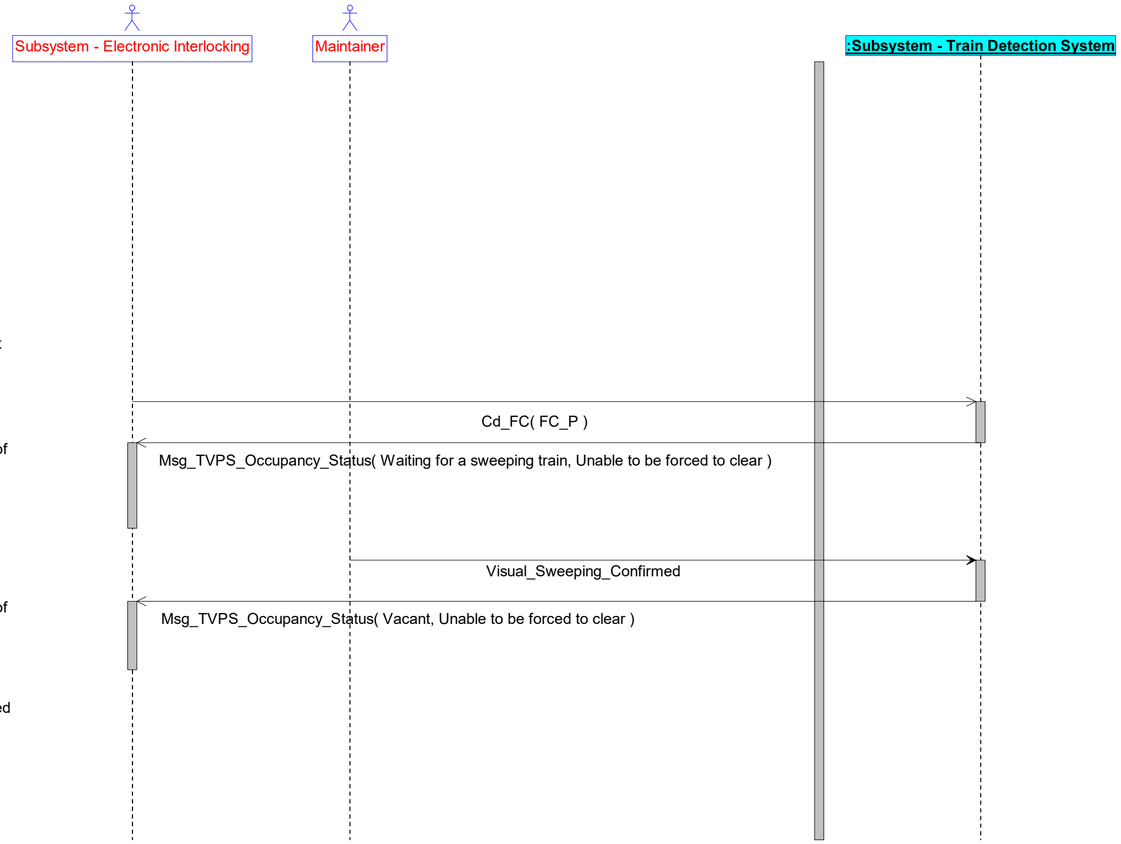
3. - The Subsystem - Train Detection System receives from the Maintainer a visual sweeping confirmation.

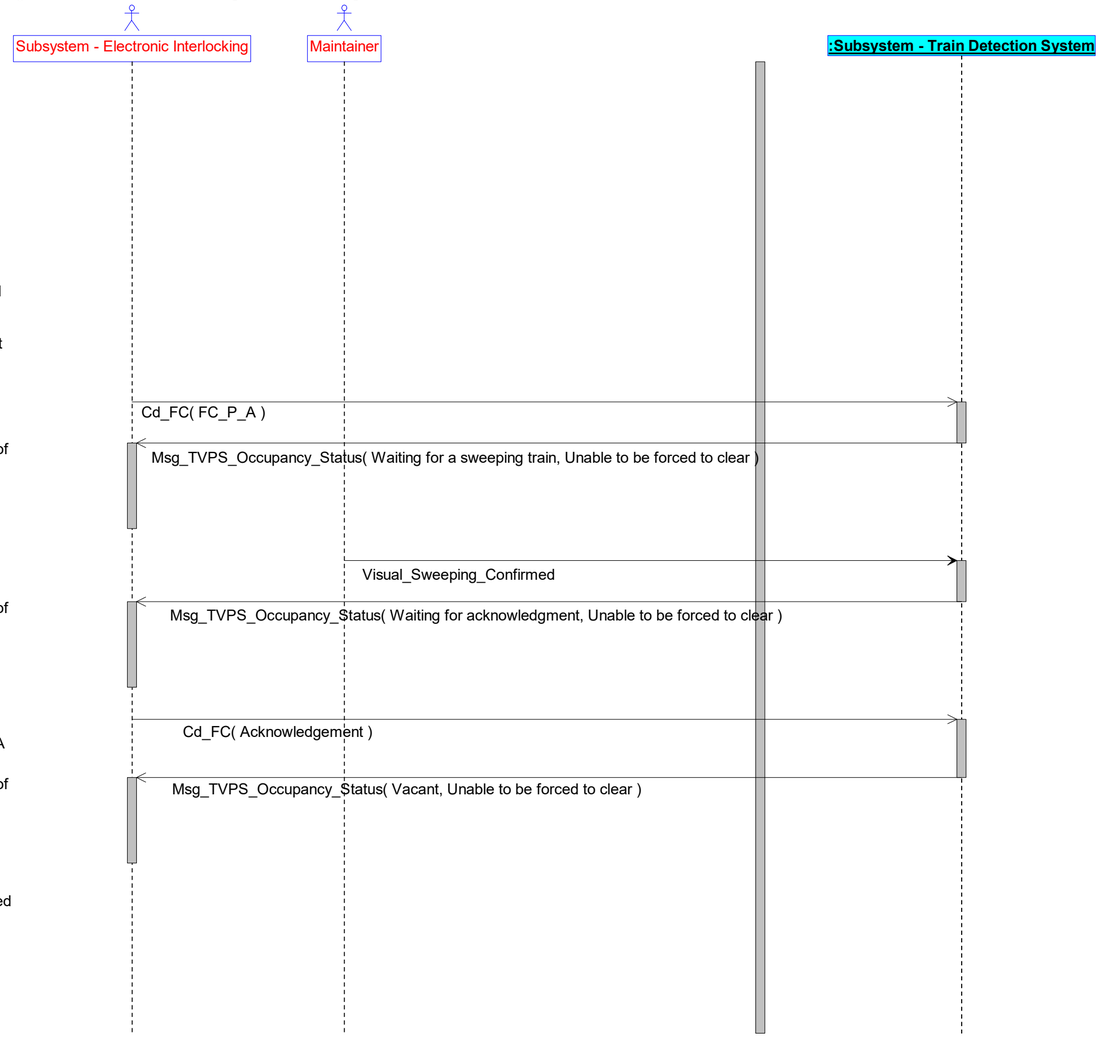
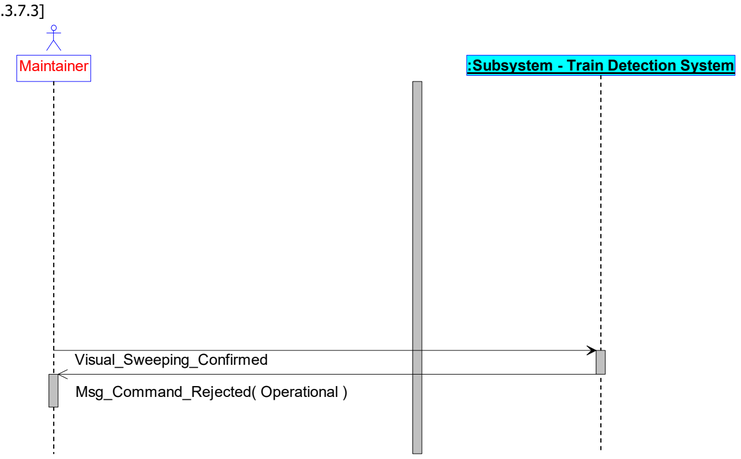
4. The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status includes the information that the TVPS is in the state "TVPS is in state vacant and unable to be forced to clear".

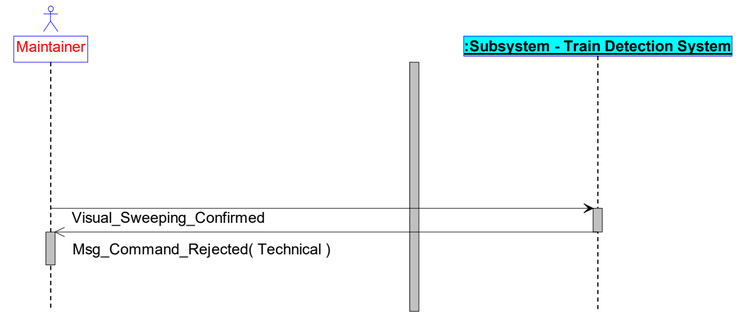
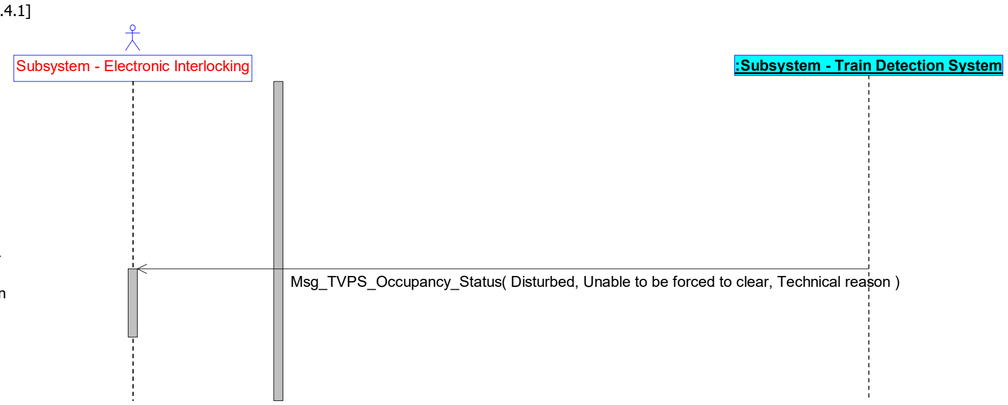
Postcondition:

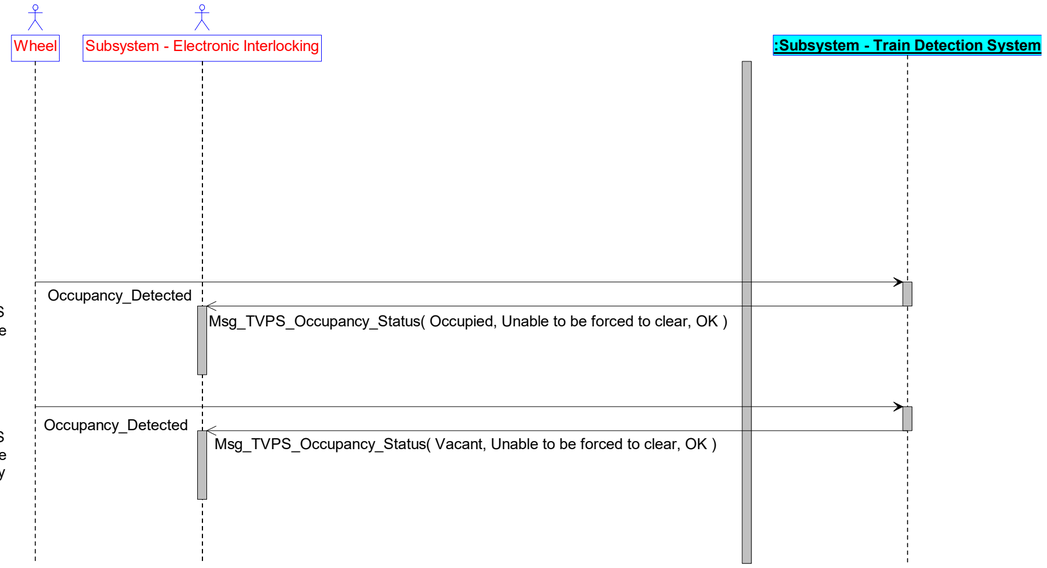
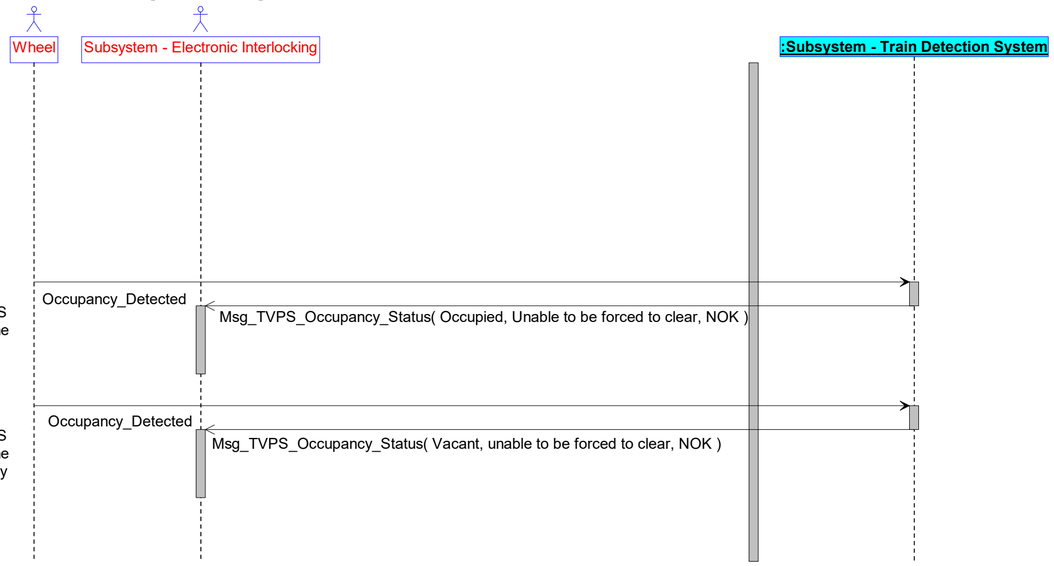
The relevant TVPS is in the state "TVPS vacant and unable to be forced to clear".

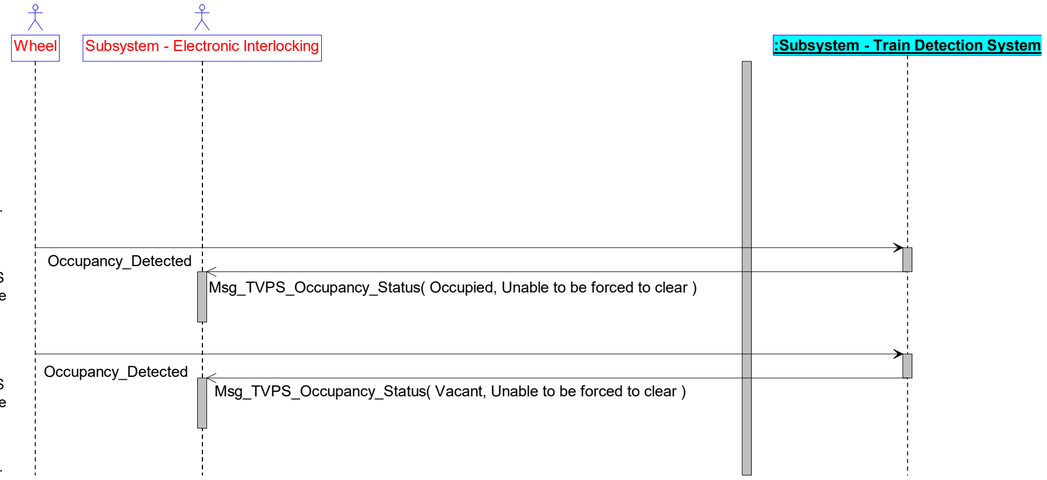
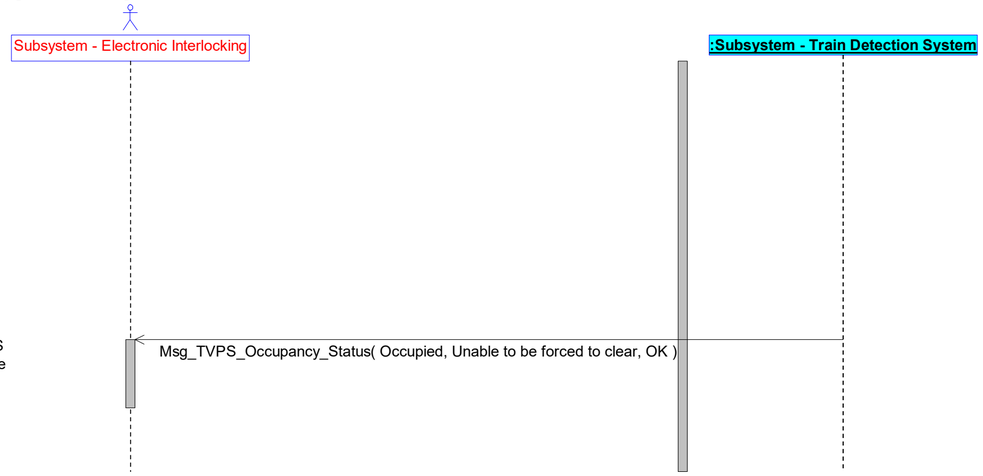
Note: The detection and the behaviour of the detection of incoming/outgoing wheels, the resulting state changes as well as the inhibition time and delay of notification time in UC 2.1.1. and UC 2.1.2 are still valid and work in parallel but are not shown in this Sequence diagram.

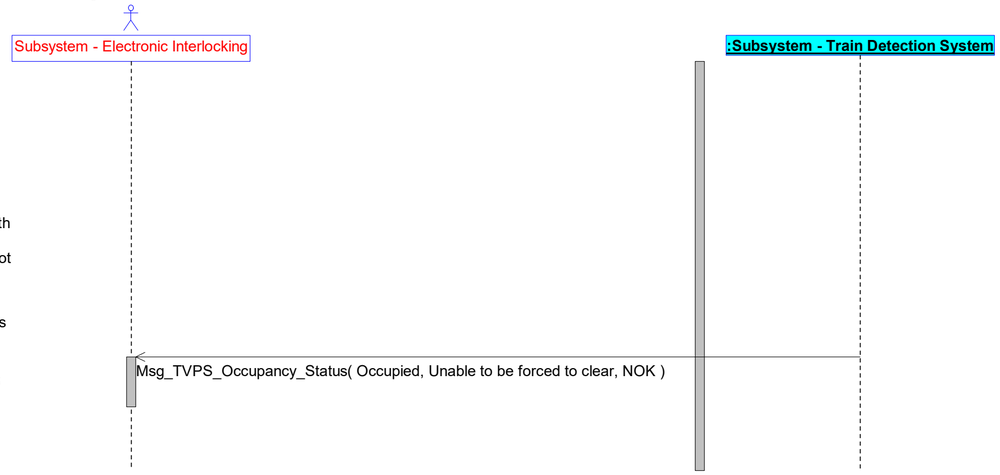
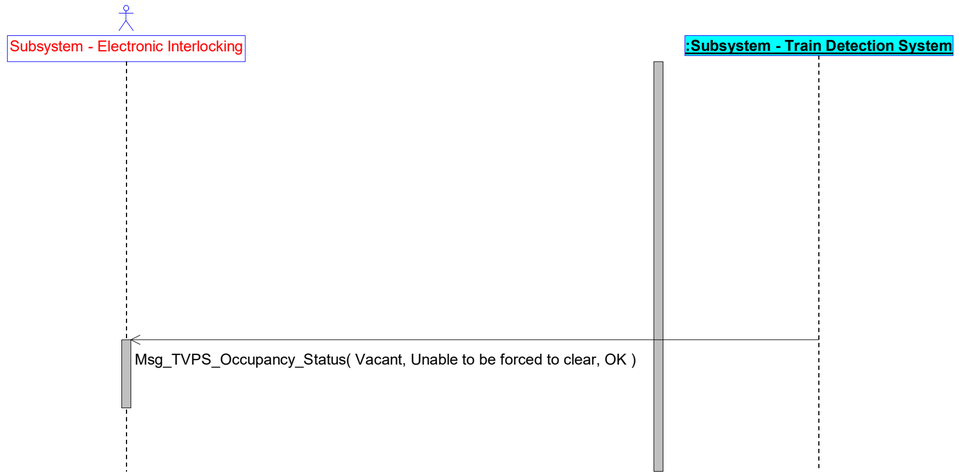


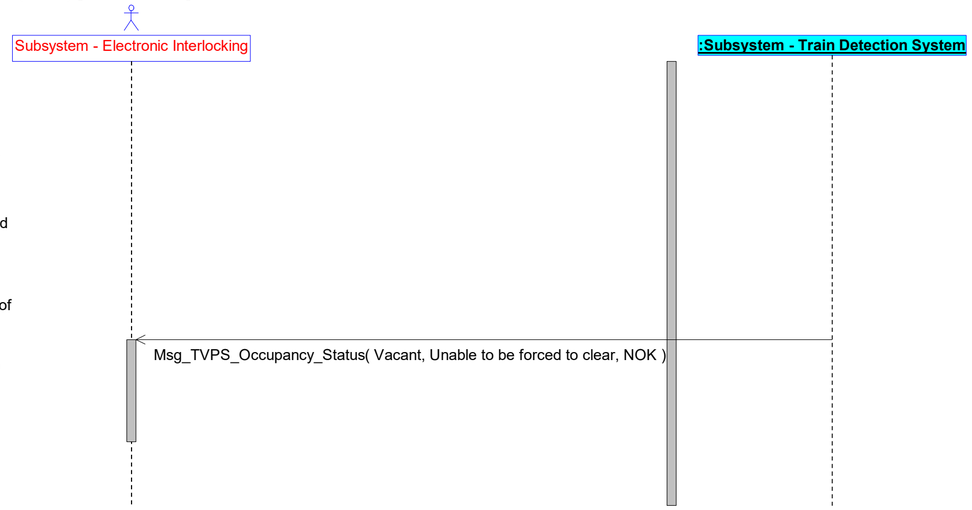
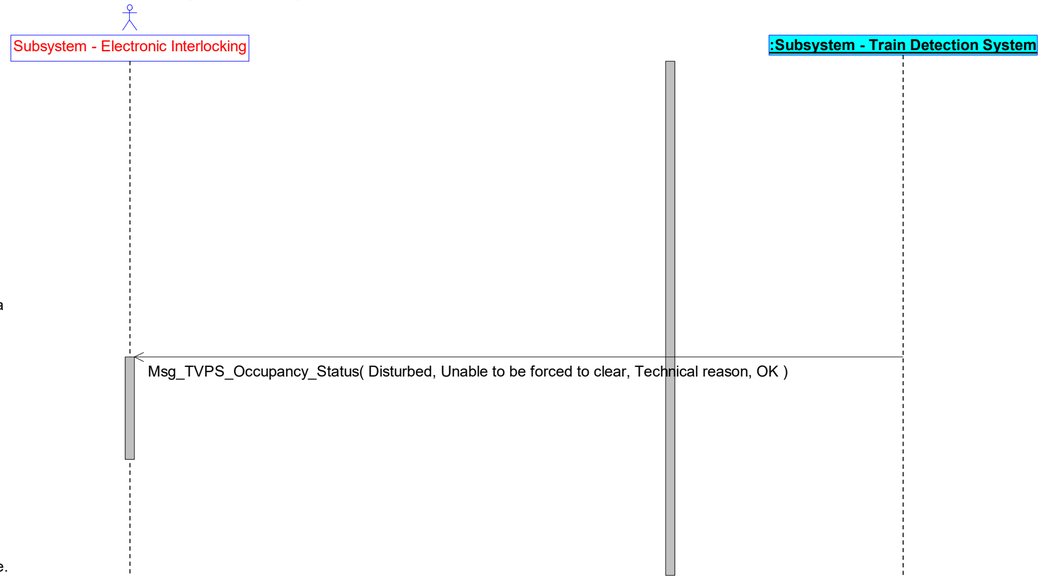
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.7041	Info	Alternative Scenario: Successful execution of FC-P-A with Visual Sweeping Confirmation from Maintainer [TDS SD 2.1.3.7.2] **TDS_UC2.1.3.7: Visual Sweeping Confirmation** Alternative Scenario: Successful execution of FC-P-A with 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 time is not running. For the relevant TVPS the delay of notification of availability time 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 time and delay of notification time 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	Alternative Scenario: Unsuccessful execution Sweeping Confirmation from Maintainer (operational reason) [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

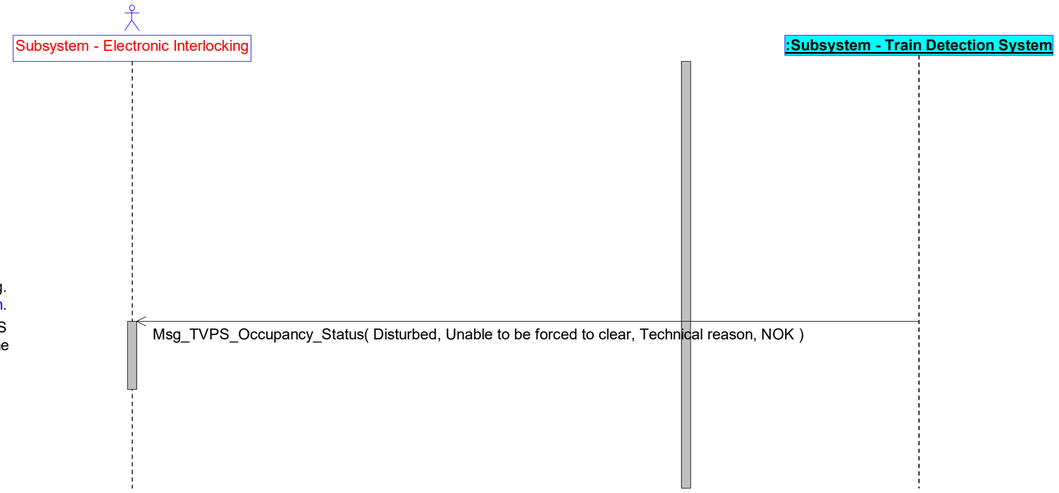
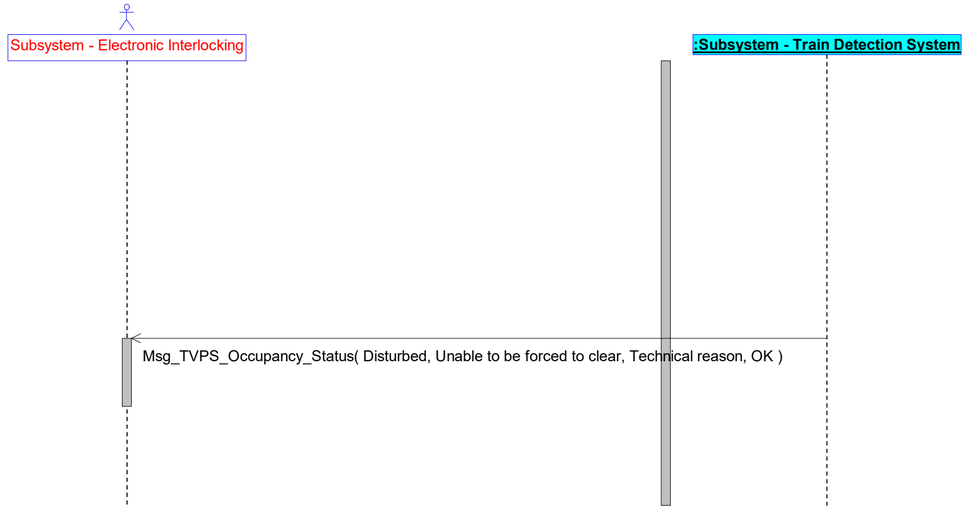
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.7063	Info	Alternative Scenario: Unsuccessful execution Sweeping Confirmation from Maintainer (technical reason) [TDS SD 2.1.3.7.4] **TDS_UC2.1.3.7: Visual Sweeping Confirmation** Alternative Scenario: Unsuccessful execution Sweeping Confirmation 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	Alternative Scenario: Handle and report of critical failure of a TVPS [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

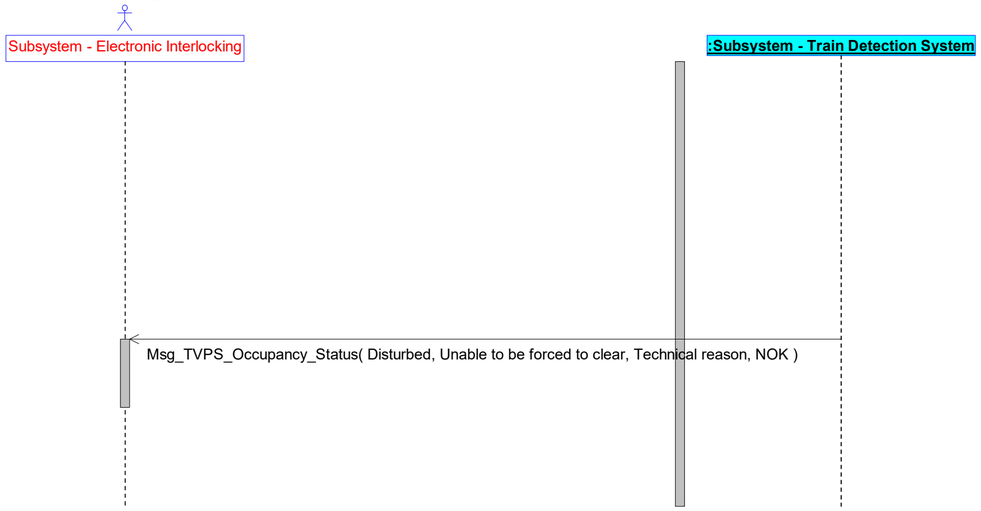
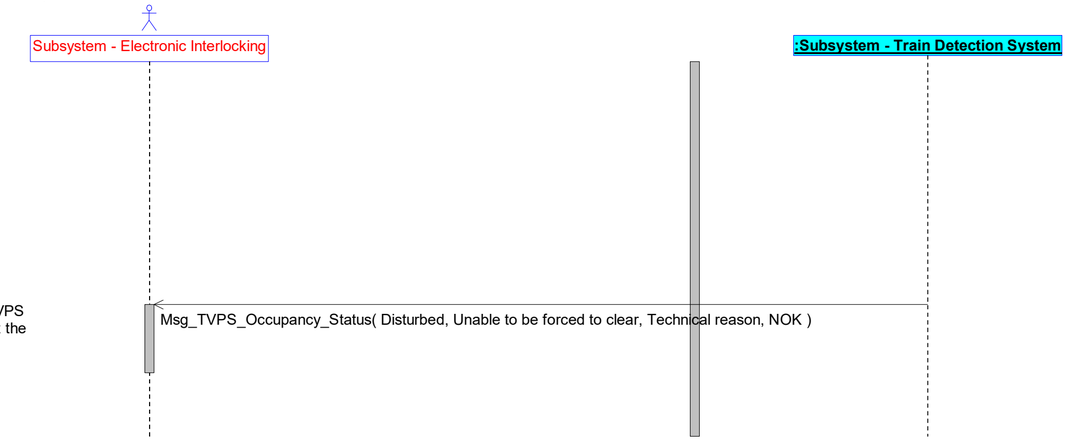
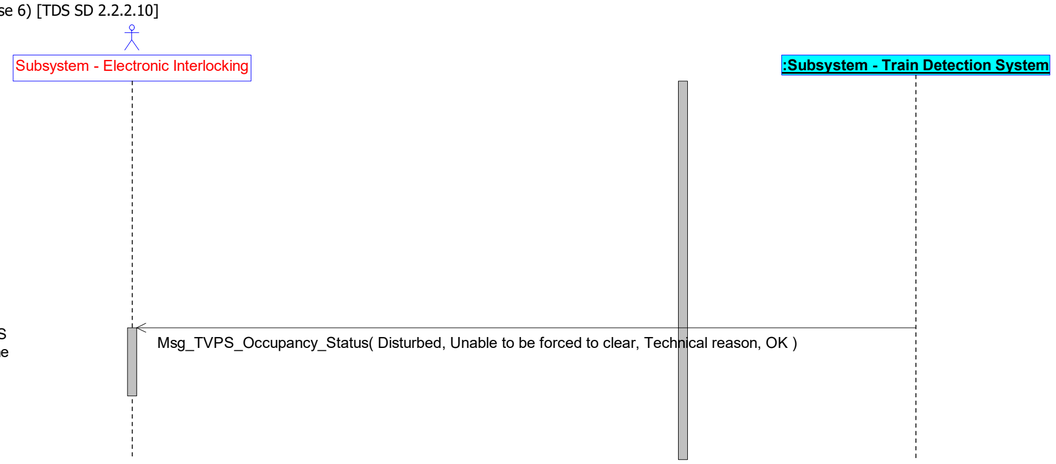
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.555	Info	Alternative Scenario: Handle and report of the TVPS occupancy status with track circuit with POM OK [TDS SD 2.2.1.1] **TDS_UC2.2.1: Normal operation** Alternative Scenario: Handle and report of the TVPS occupancy status with track circuit with POM OK [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 TVPS is configured with a POM. 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	Alternative Scenario: Handle and report of the TVPS occupancy status with track circuit with POM NOK [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 with POM NOK [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 TVPS is configured with a POM. The relevant POM is in the state “power supply NOK”. 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

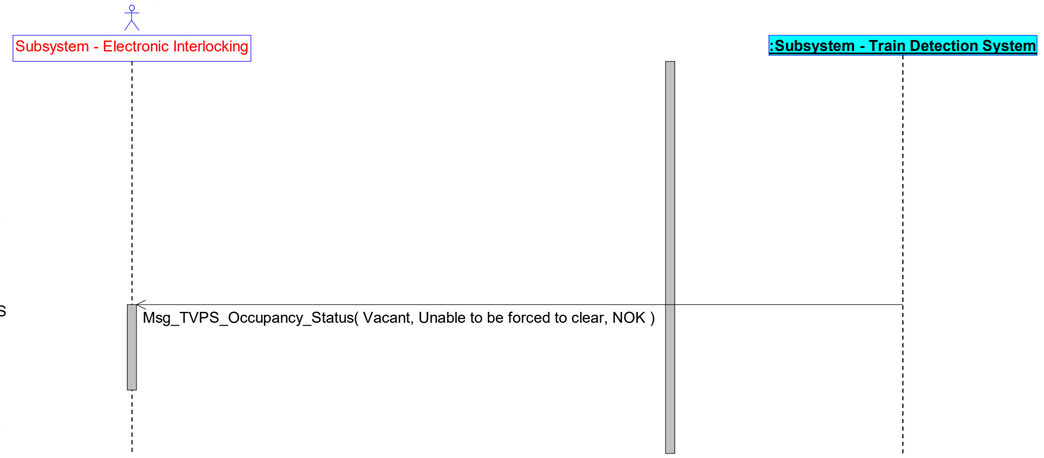
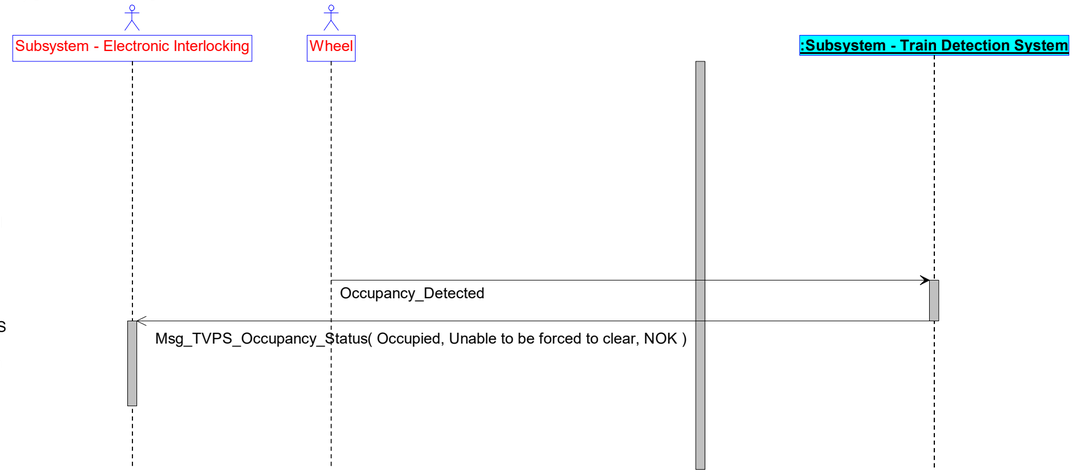
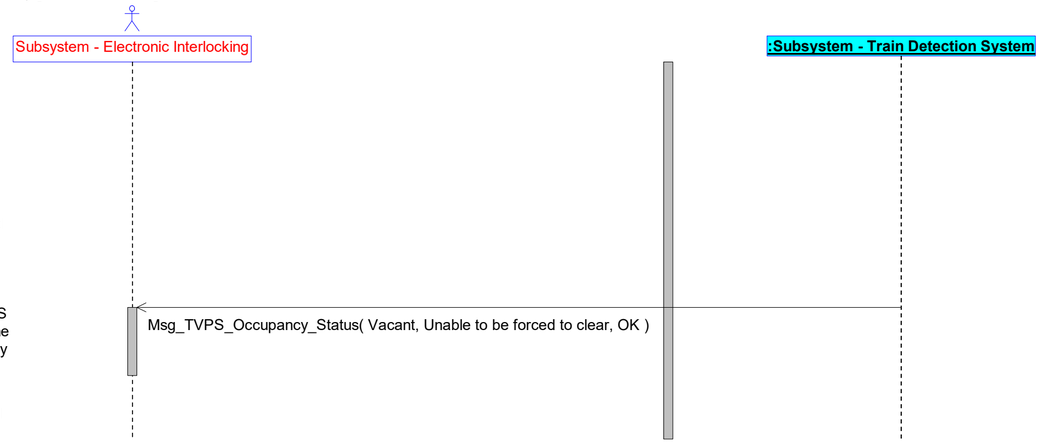
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.7318	Info	Alternative Scenario: Handle and report of the TVPS occupancy status with track circuit without POM [TDS SD 2.2.1.3] **TDS_UC2.2.1: Normal operation** Alternative Scenario: Handle and report of the TVPS occupancy status with track circuit without POM [TDS SD 2.2.1.3] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS works with track circuit. The relevant TVPS is configured without a POM. The relevant TVPS is in the state "TVPS vacant and unable to be forced to clear". **Interaction 2.2.1.3.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 and unable to be forced to clear". **Interaction 2.2.1.3.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 and unable to be forced to clear". **Postcondition:** The relevant TVPS is in the state "TVPS vacant and unable to be forced to clear".  		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
Eu.TDS.2574	Info	Alternative Scenario: Revoking a critical failure of a TVPS with track circuit (case 1) [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 TVPS is configured with a POM. 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

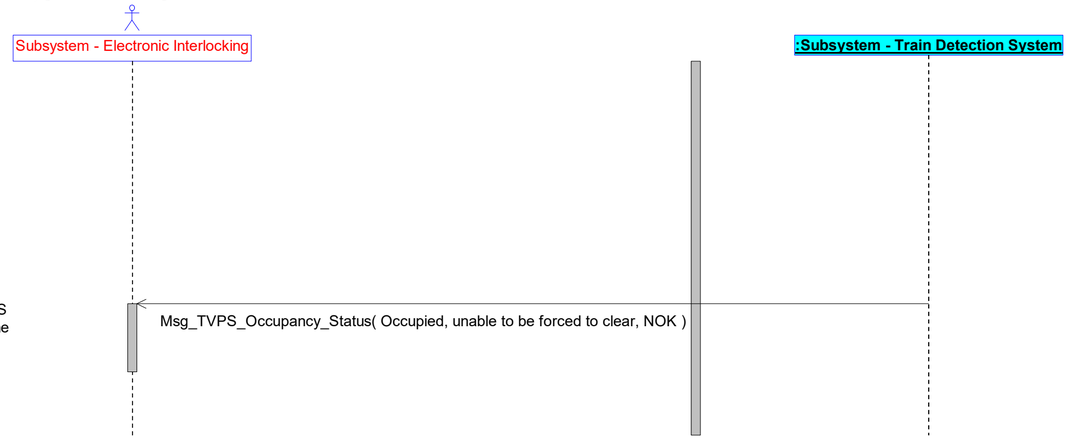
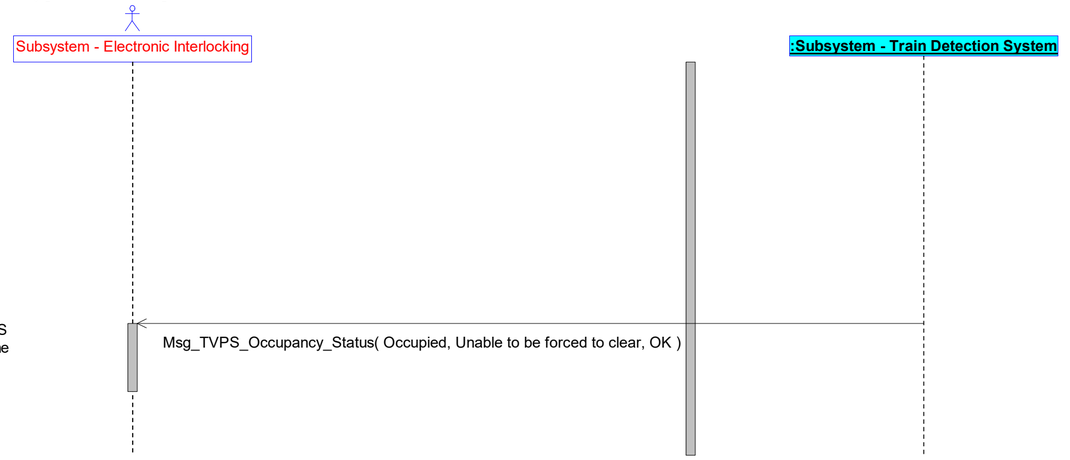
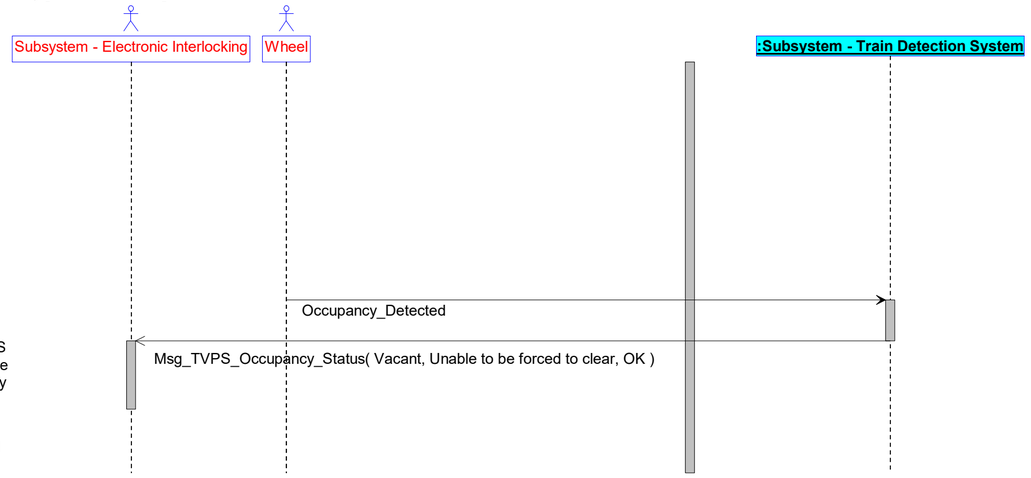
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.2583	Info	Alternative Scenario: Revoking a critical failure of a TVPS with track circuit (case 2) [TDS SD 2.2.2.2] **TDS_UC2.2.2: Handle Irregularities with track circuits** Alternative Scenario: Revoking a critical failure of a TVPS with 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 TVPS is configured with a POM. The relevant POM is in the state “power supply NOK”. 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 or the absence of a Wheel cannot be detected, due to a power supply failure of the relevant TVPS. **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".  		Basic TDS TC
Eu.TDS.3541	Info	Alternative Scenario: Revoking a critical failure of a TVPS with track circuit (case 3) [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 TVPS is configured with a POM. 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

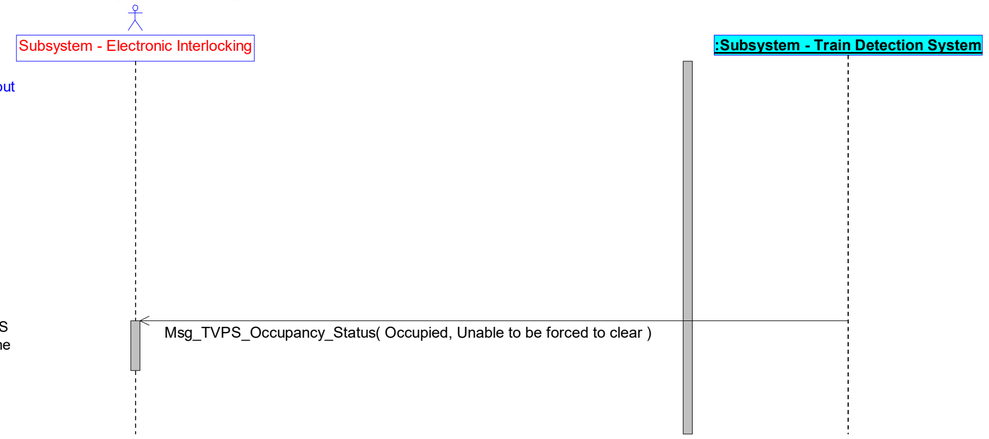
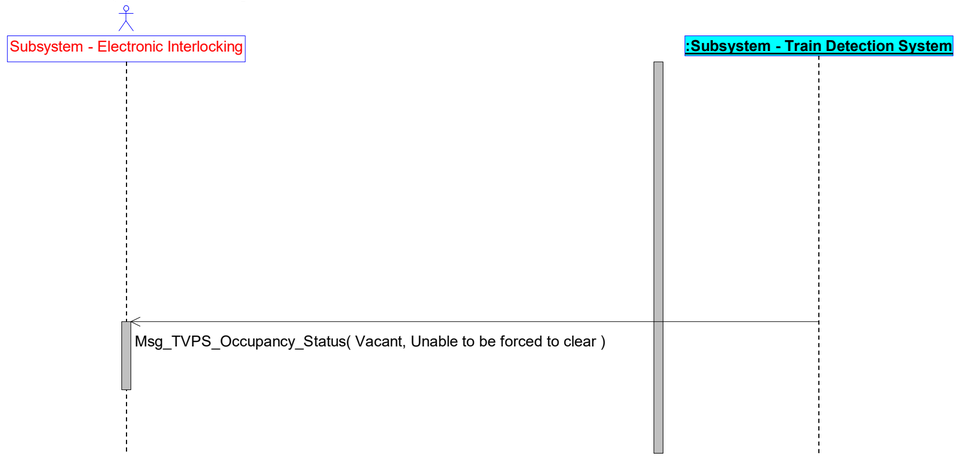
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.4169	Info	Alternative Scenario: Revoking a critical failure of a TVPS with track circuit (case 4) [TDS SD 2.2.2.4] **TDS_UC2.2.2: Handle Irregularities with track circuits** Alternative Scenario: Revoking a critical failure of a TVPS with 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 TVPS is configured with a POM. The relevant POM is in the state “power supply NOK”. 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 ability of the relevant TVPS to detect absence of a Wheel. If the absence of a Wheel can be detected, 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.3523	Info	Alternative Scenario: Handle and report of failure of a TVPS with track circuit (case 1) [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 TVPS is configured with a POM. 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

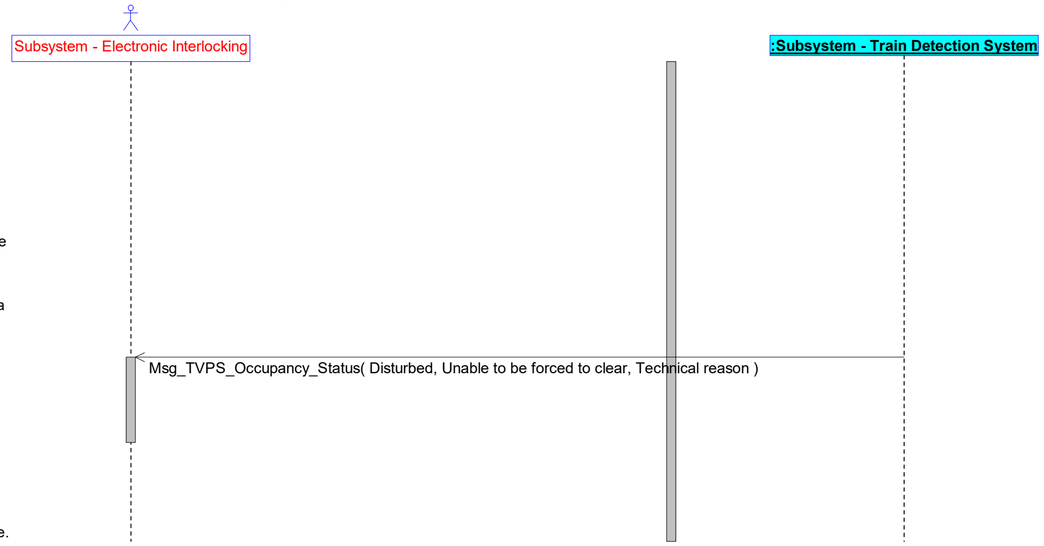
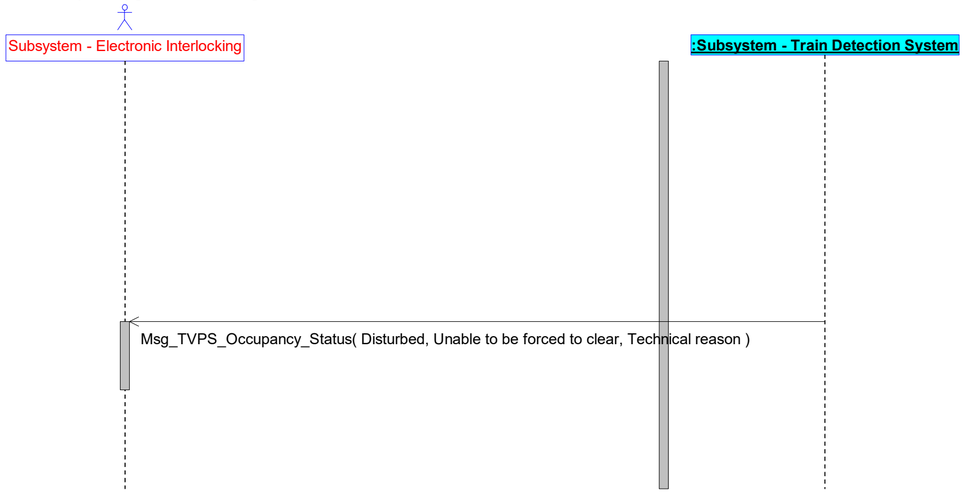
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.4208	Info	Alternative Scenario: Handle and report of failure of a TVPS with track circuit (case 2) [TDS SD 2.2.2.6] **TDS_UC2.2.2: Handle Irregularities with track circuits** Alternative Scenario: Handle and report of failure of a TVPS with 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 TVPS is configured with a POM. The relevant POM is in the state “power supply NOK”. 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
Eu.TDS.3532	Info	Alternative Scenario: Handle and report of failure of a TVPS with track circuit (case 3) [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 TVPS is configured with a POM. 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

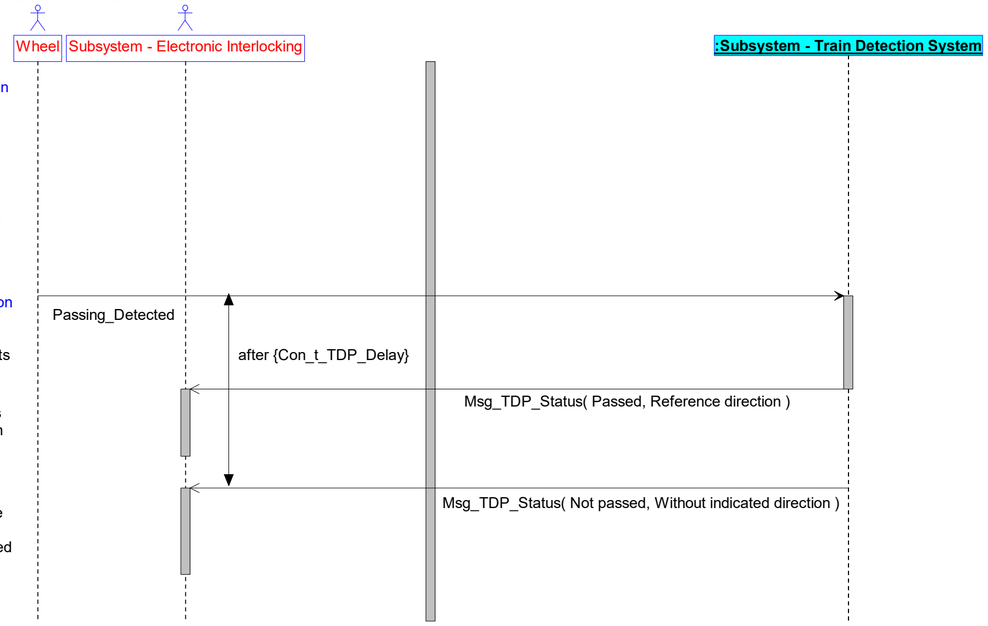
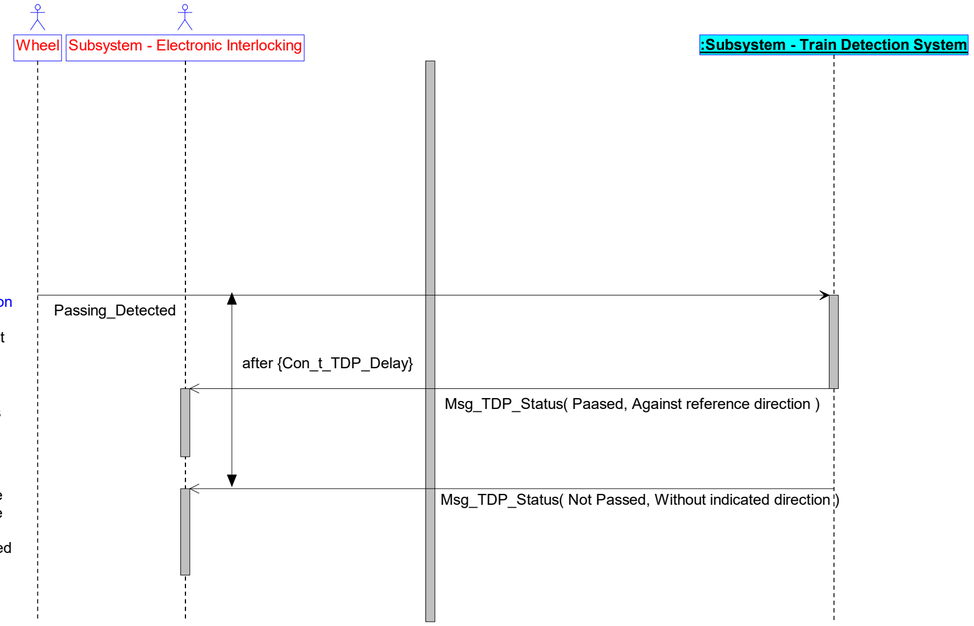
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.4217	Info	Alternative Scenario: Handle and report of failure of a TVPS with track circuit (case 4) [TDS SD 2.2.2.8] **TDS_UC2.2.2: Handle Irregularities with track circuits** Alternative Scenario: Handle and report of failure of a TVPS with 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 TVPS is configured with a POM. The relevant POM is in the state “power supply NOK”. 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
Eu.TDS.4226	Info	Alternative Scenario: Handle and report of failure of a TVPS with track circuit (case 5) [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 TVPS is configured with a POM. 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". **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".  		Basic TDS TC
Eu.TDS.4236	Info	Alternative Scenario: Handle and report of failure of a TVPS with track circuit (case 6) [TDS SD 2.2.2.10] **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 2.2.2.10] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS works with track circuit. The relevant TVPS is configured with a POM. The relevant POM is in the state “power supply NOK”. 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 2.2.2.10.A:** **1.** The POM reports “power supply OK”. **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".  		Basic TDS TC

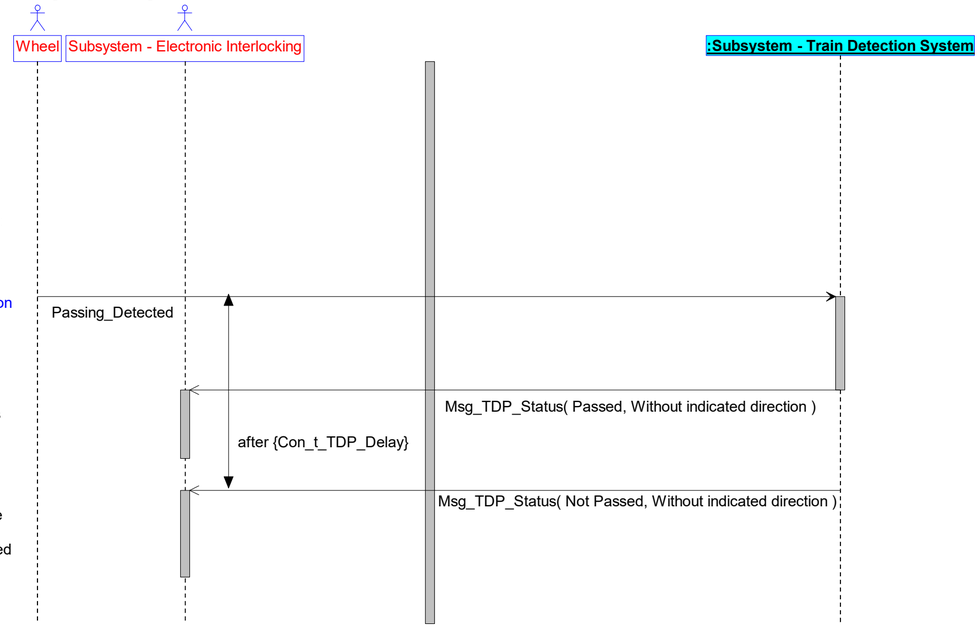
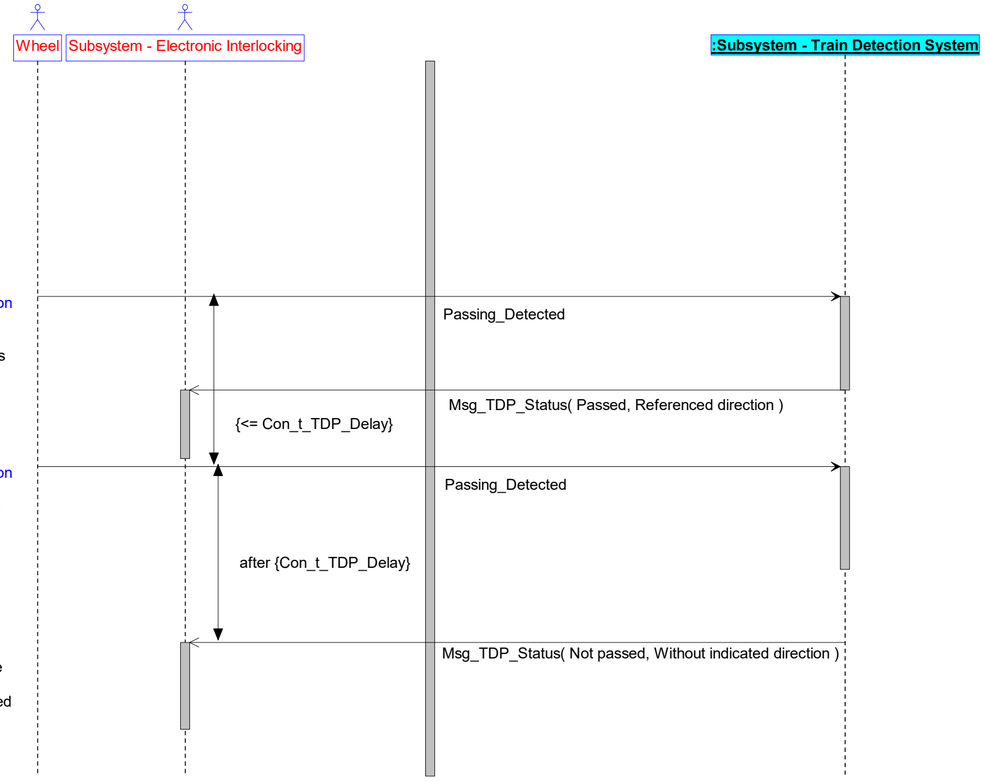
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.4246	Info	Alternative Scenario: Handle and report of failure of a TVPS with track circuit (case 7) [TDS SD 2.2.2.11] **TDS_UC2.2.2: Handle Irregularities with track circuits** Alternative Scenario: Handle and report of failure of a TVPS with track circuit (case 7) [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 TVPS is configured with a POM. 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 2.2.2.11.A:** **1.** The relevant POM reports “power supply NOK”. **2.** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking. The status depends on the ability of the relevant TVPS to detect absence of a Wheel. If the absence of a Wheel can be detected, 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.4255	Info	Alternative Scenario: Handle and report of failure of a TVPS with track circuit (case 8) [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 8) [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 TVPS is configured with a POM. 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” and the absence of a Wheel can no longer be detected. **2.** The Subsystem - Train Detection System reports the current state of the TVPS to Subsystem - Electronic Interlocking.The status depends on the ability of the relevant TVPS to detect absence of a Wheel. 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	Alternative Scenario: Handle and report of failure of a TVPS with track circuit (case 9) [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 9) [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 TVPS is configured with a POM. The relevant POM is in the state “power supply NOK”. The relevant TVPS is in the state "TVPS vacant, unable to be forced to clear and power supply NOK". **Interaction 2.2.2.13.A:** **1.** The relevant POM reports "power supply OK". **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

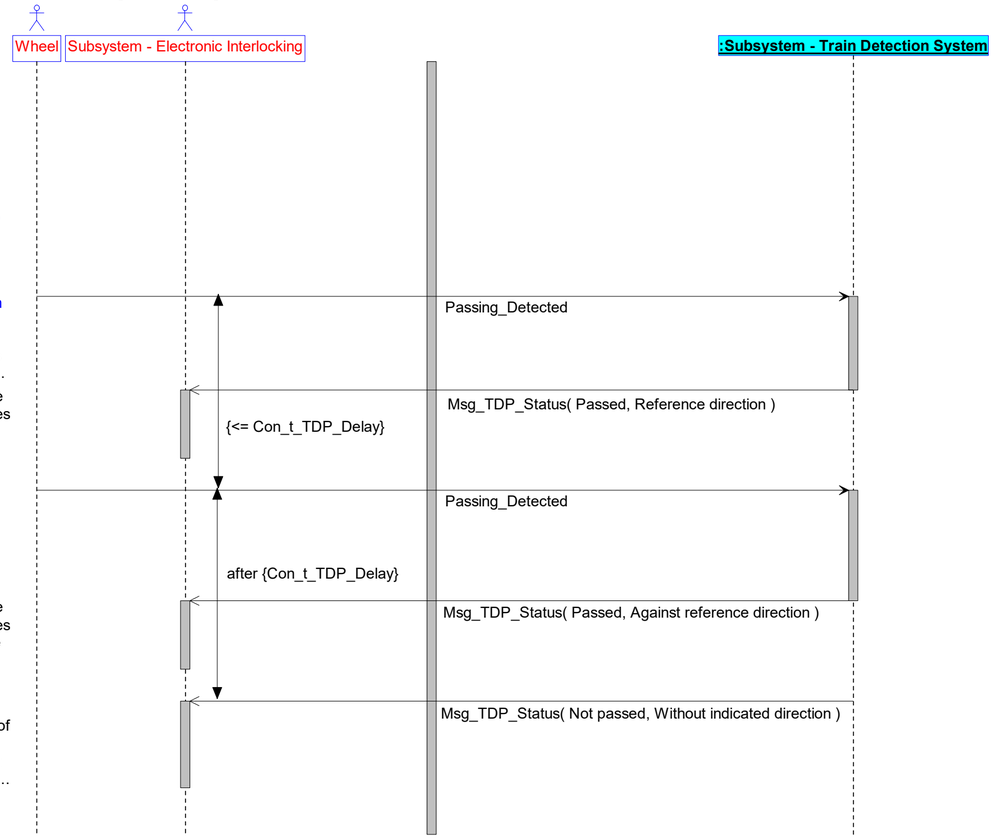
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.4178	Info	Alternative Scenario: Handle and report of failure of a TVPS with track circuit (case 10) [TDS SD 2.2.2.14] **TDS_UC2.2.2: Handle Irregularities with track circuits** Alternative Scenario: Handle and report of failure of a TVPS with track circuit (case 10) [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 TVPS is configured with a POM. 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 2.2.2.14.A:** **1.** The POM reports “power supply NOK”. **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".  		Basic TDS TC
Eu.TDS.4188	Info	Alternative Scenario: Handle and report of failure of a TVPS with track circuit (case 11) [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 11) [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 TVPS is configured with a POM. The relevant POM is in the state “power supply NOK”. 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 2.2.2.15.A:** **1.** The POM reports “power supply OK”. **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.4198	Info	Alternative Scenario: Handle and report of failure of a TVPS with track circuit (case 12) [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 12) [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 TVPS is configured with a POM. The relevant POM is in the state “power supply NOK”. 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 2.2.2.16.A:** **1.** The POM reports “power supply OK” and the absence of a Wheel can be detected again. **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

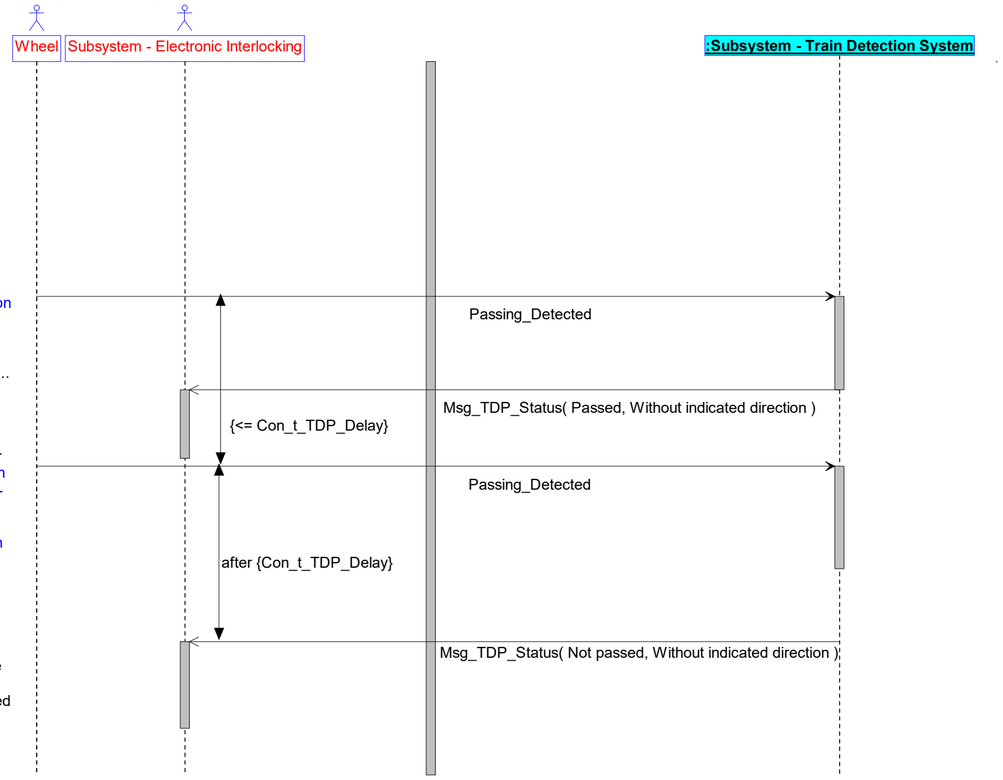
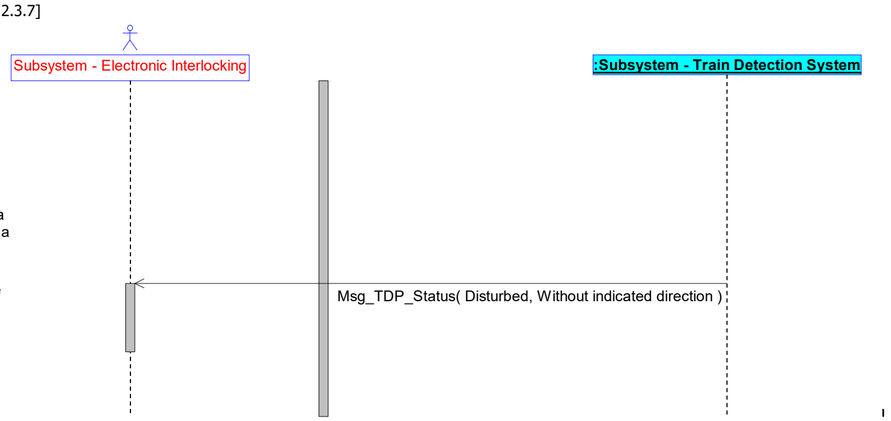
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.7319	Info	Alternative Scenario: Revoking a critical failure of a TVPS with track circuit without POM (case 1) [TDS SD 2.2.2.17] **TDS_UC2.2.2: Handle Irregularities with track circuits** Alternative Scenario: Revoking a critical failure of a TVPS with track circuit without POM (case 1) [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 TVPS is configured without a POM. The relevant TVPS is in the state “TVPS disturbed and unable to be forced to clear with a technical reason". The relevant TVPS is occupied by at least one Wheel. **Interaction 2.2.2.17.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 and unable to be forced to clear". **Postcondition:** The relevant TVPS is in the state "TVPS occupied and unable to be forced to clear".  		Basic TDS TC
Eu.TDS.7320	Info	Alternative Scenario: Revoking a critical failure of a TVPS with track circuit without POM (case 2) [TDS SD 2.2.2.18] **TDS_UC2.2.2: Handle Irregularities with track circuits** Alternative Scenario: Revoking a critical failure of a TVPS with track circuit without POM (case 2) [TDS SD 2.2.2.18] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS works with track circuit. The relevant TVPS is configured without a POM. The relevant TVPS is in the state “TVPS disturbed and unable to be forced to clear with a technical reason". The relevant TVPS is not occupied by a Wheel. **Interaction 2.2.2.18.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 and unable to be forced to clear". **Postcondition:** The relevant TVPS is in the state "TVPS vacant and unable to be forced to clear".  		Basic TDS TC

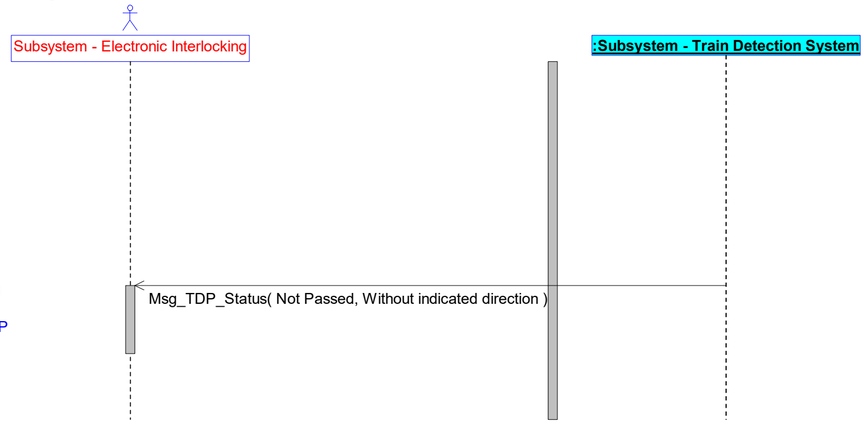
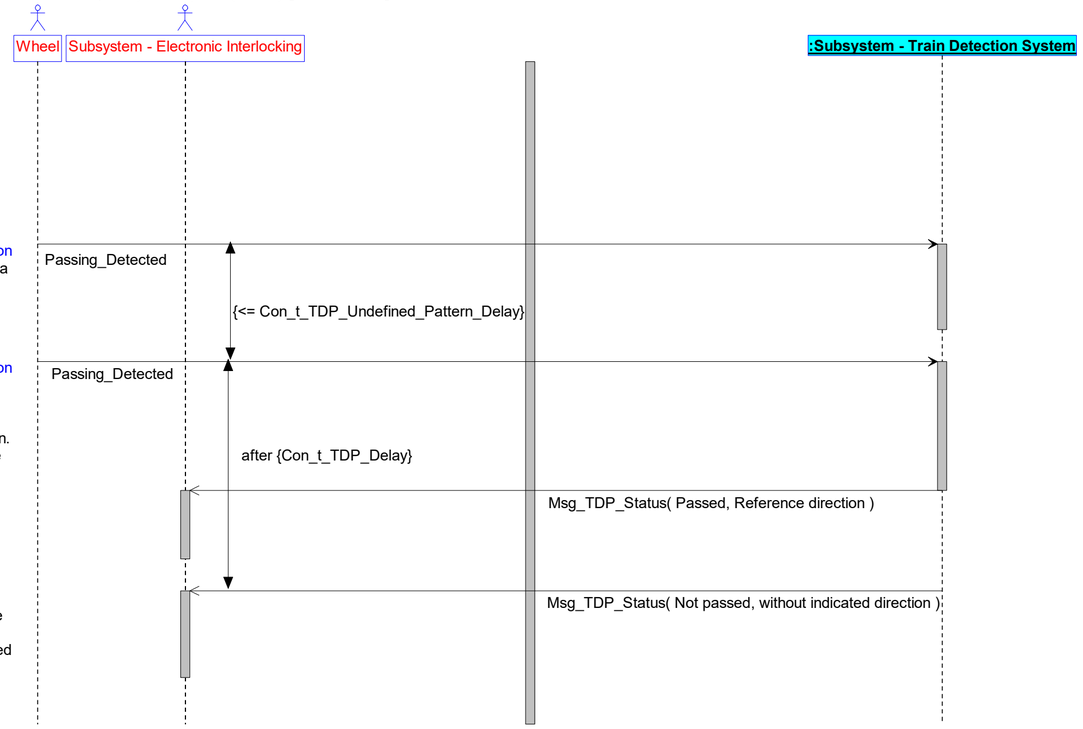
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.7321	Info	Alternative Scenario: Handle and report of failure of a TVPS with track circuit without POM (case 1) [TDS SD 2.2.2.19] **TDS_UC2.2.2: Handle Irregularities with track circuits** Alternative Scenario: Handle and report of failure of a TVPS with track circuit without POM (case 1) [TDS SD 2.2.2.19] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS works with track circuit. The relevant TVPS is configured without a POM. The relevant TVPS is in the state "TVPS vacant and unable to be forced to clear". **Interaction 2.2.2.19.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". **Postcondition:** The relevant TVPS is in the state "TVPS disturbed and unable to be forced to clear with a technical reason". The Subsystem - Train Detection System knows that the reason for the disturbance of the relevant TVPS is a failure.  		Basic TDS TC
Eu.TDS.7322	Info	Alternative Scenario: Handle and report of failure of a TVPS with track circuit without POM (case 2) [TDS SD 2.2.2.20] **TDS_UC2.2.2: Handle Irregularities with track circuits** Alternative Scenario: Handle and report of failure of a TVPS with track circuit without POM (case 2) [TDS SD 2.2.2.20] **Precondition:** The Subsystem - Train Detection System is in the state OPERATIONAL. The relevant TVPS works with track circuit. The relevant TVPS is configured without a POM. The relevant TVPS is in the state "TVPS occupied and unable to be forced to clear". **Interaction 2.2.2.20.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". **Postcondition:** The relevant TVPS is in the state "TVPS disturbed and unable to be forced to clear with a technical reason". The Subsystem - Train Detection System knows that the reason for the disturbance of the relevant TVPS is a failure.  		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

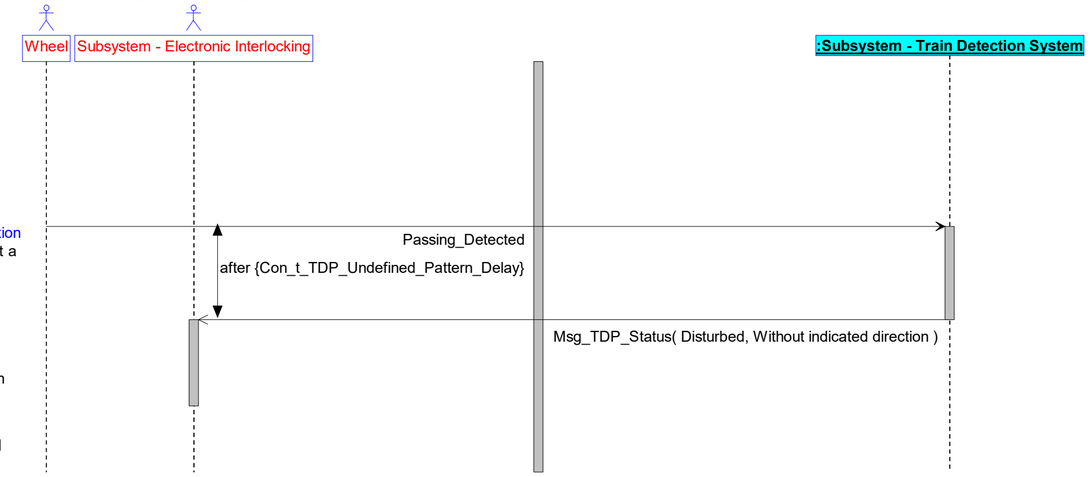
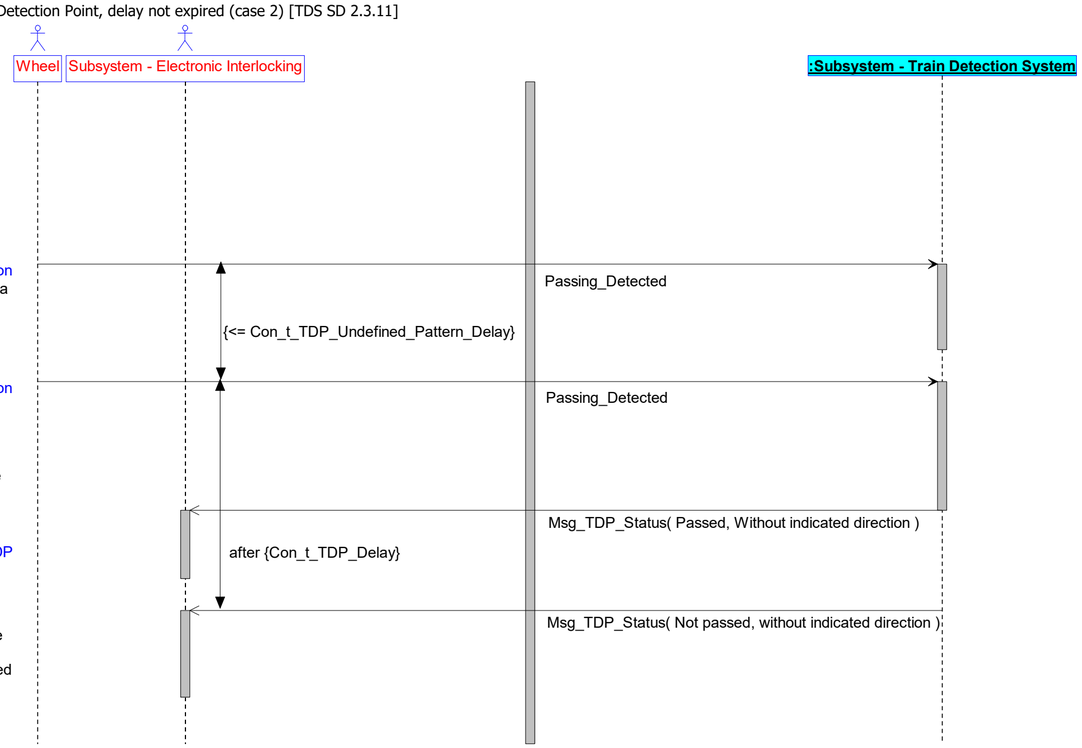
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6866	Info	Alternative Scenario: Detecting a Train running in reference direction [TDS SD 2.3.1] **TDS_UC2.3:Train Detection Points** Alternative Scenario: Detecting a Train running in reference direction [TDS SD 2.3.1] **Precondition:** 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. The Subsystem - Train Detection System starts to monitor the time period Con_t_TDP_Delay. 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 detects that the time period Con_t_TDP_Delay has expired and 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:** ---  		Basic TDS TDP
Eu.TDS.6865	Info	Alternative Scenario: Detecting a Train running against reference direction [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. The Subsystem - Train Detection System starts to monitor the time period Con_t_TDP_Delay. **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 detects that the time period Con_t_TDP_Delay has expired and 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:** ---  		Basic TDS TDP

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6867	Info	Alternative Scenario: Detecting a Train running without indicated direction [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. The Subsystem - Train Detection System starts to monitor the time period Con_t_TDP_Delay. **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 detects that the time period Con_t_TDP_Delay has expired and 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:** ---  		Basic TDS TDP
Eu.TDS.6863	Info	Alternative Scenario: Detecting a further passing in reference direction [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. The Subsystem - Train Detection System starts to monitor the time period Con_t_TDP_Delay. **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 undefined pattern. At this moment the Subsystem - Train Detection System restarts to monitor the time period Con_t_TDP_Delay. **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 detects that the time period Con_t_TDP_Delay has expired and 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:** ---  	Note: The same behaviour is valid for a further passing against reference direction.	Basic TDS TDP

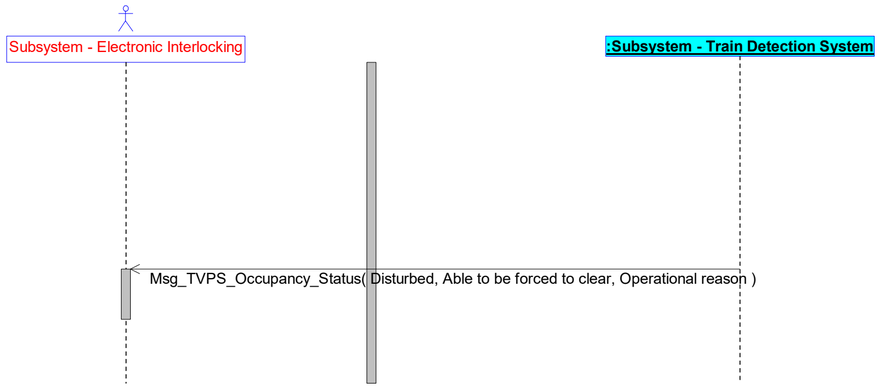
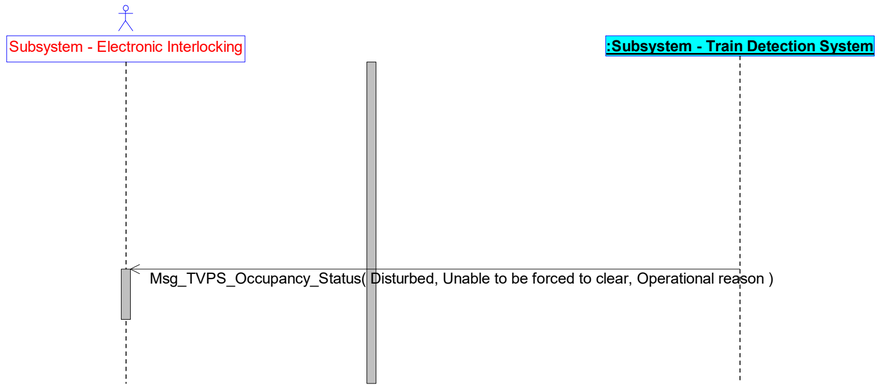
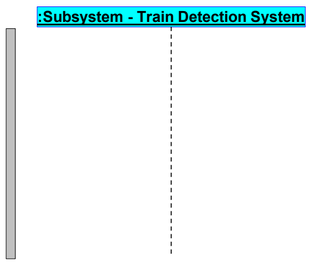
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6872	Info	Alternative Scenario: Sudden detection of a passing Wheel against reference direction [TDS SD 2.3.5] **TDS_UC2.3:Train Detection Points** Alternative Scenario: Sudden detection of a passing Wheel against reference direction [TDS 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. The Subsystem - Train Detection System starts to monitor the time period Con_t_TDP_Delay. ... **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. At this moment the Subsystem - Train Detection System restarts to monitor the time period Con_t_TDP_Delay. **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 detects that the time period Con_t_TDP_Delay has expired and 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 ... **Postcondition:** ---  	Note: The same behaviour is valid for the sudden detection of a passing wheel in reference direction.	Basic TDS TDP

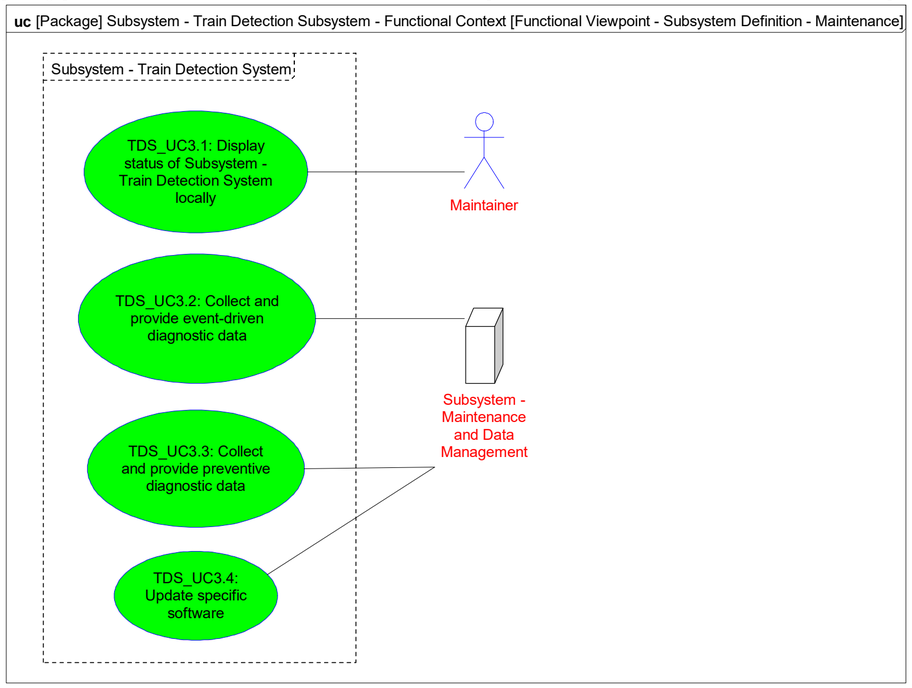
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6864	Info	Alternative Scenario: Detecting a further passing without indicated direction [TDS SD 2.3.6] **TDS_UC2.3:Train Detection Points** Alternative Scenario: Detecting a further passing without indicated direction [TDS SD 2.3.6] **Precondition:** 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. The Subsystem - Train Detection System starts to monitor the time period Con_t_TDP_Delay. ... **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 ... **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 undefined pattern. At this moment the Subsystem - Train Detection System restarts to monitor the time period Con_t_TDP_Delay. **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 detects that the time period Con_t_TDP_Delay has expired and 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:** ---  		Basic TDS TDP
Eu.TDS.6870	Info	Alternative Scenario: Handle and report of critical failure of a TDP [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

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6871	Info	Alternative Scenario: Revoking a critical failure of a TDP [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
Eu.TDS.6869	Info	Alternative Scenario: Handle and report an undefined pattern of a Detection Point, delay not expired (case 1) [TDS SD 2.3.9] **TDS_UC2.3:Train Detection Points** Alternative Scenario: Handle and report an 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 undefined pattern. The Subsystem - Train Detection System starts to monitor the time period Con_t_TDP_Undefinded_Pattern_Delay. **Interaction 2.3.9.B:** **2.** - One Wheel is passing a TDP of the Subsystem - Train Detection System before the time period Con_t_TDP_Undefinded_Pattern_Delay has expired. The Subsystem - Train Detection System recognises, by means of the direction of passing, that the passing Wheel is in reference direction. The Subsystem - Train Detection System starts to monitor the time period Con_t_TDP_Delay. **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 detects that the time period Con_t_TDP_Delay has expired and 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:** ---  	Note: The same behaviour is valid for a passing against reference direction in step 2.	Basic TDS TDP

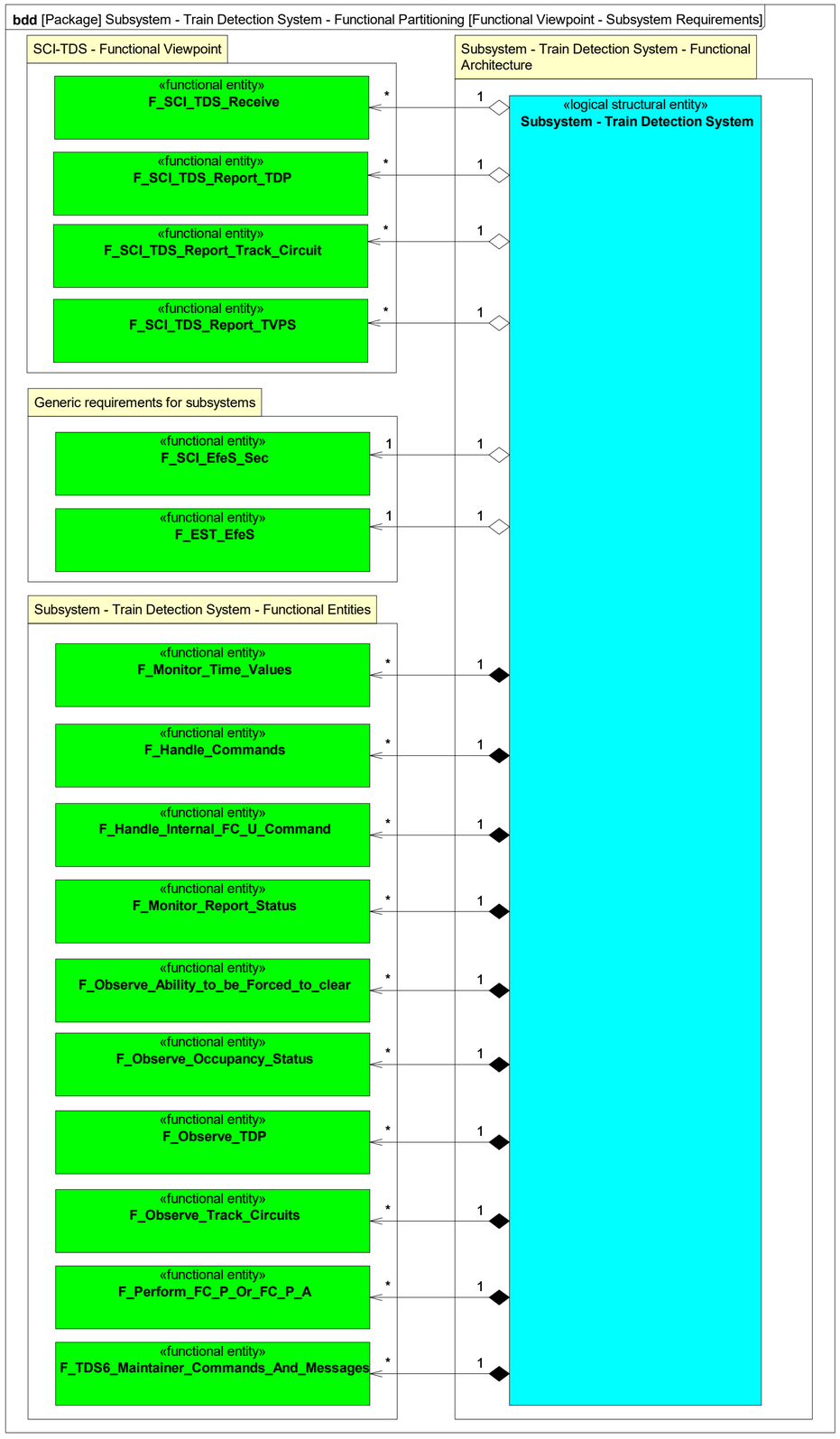
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6868	Info	Alternative Scenario: Handle an undefined pattern of a Detection Point, delay expired [TDS SD 2.3.10] **TDS_UC2.3:Train Detection Points** Alternative Scenario: Handle an undefined pattern of a Detection Point, delay expired [TDS 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 undefined pattern. The Subsystem - Train Detection System starts to monitor the time period Con_t_TDP_Undefinded_Pattern_Delay. **2.** The Subsystem - Train Detection System detects that the time period Con_t_TDP_Undefinded_Pattern_Delay has expired and 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.7124	Info	Alternative Scenario: Handle and report an undefined pattern of a Detection Point, delay not expired (case 2) [TDS SD 2.3.11] **TDS_UC2.3:Train Detection Points** Alternative Scenario: Handle and report an 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 undefined pattern. The Subsystem - Train Detection System starts to monitor the time period Con_t_TDP_Undefinded_Pattern_Delay. **Interaction 2.3.11.B:** **2.** - One Wheel is passing a TDP of the Subsystem - Train Detection System before the time period Con_t_TDP_Undefinded_Pattern_Delay has expired. The Subsystem - Train Detection System recognises that the passing Wheel is without indicated direction. The Subsystem - Train Detection System starts to monitor the time period Con_t_TDP_Delay. **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 detects that the time period Con_t_TDP_Delay has expired and 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:** ---  		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

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6874	Info	Alternative Scenario: Perform fallback operation [TDS SD 2.4.1] **TDS_UC2.4: Handle Irregularities** :Subsystem - Train Detection System Alternative Scenario: Perform fallback operation [TDS 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
Eu.TDS.6876	Info	Alternative Scenario: Handling of interrupted PDI connection [TDS SD 2.4.2] **TDS_UC2.4: Handle Irregularities** :Subsystem - Train Detection System Alternative Scenario: Handling of interrupted PDI connection [TDS 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.	The following functionality remains available within the state INITIALISING after the termination of the PDI connection: • All autonomous functions (for example as in all SDs in UC2, excluding those triggered by a command received from the Subsystem - Electronic Interlocking, but not excluding those triggered by a command received from the Maintainer) • All functionality related to the maintainer interface TDS6 (for example as in TDS_UC3.1: Display status of Subsystem - Train Detection System locally)	Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.6877	Info	Alternative Scenario: Reset occurs [TDS SD 2.4.3] **TDS_UC2.4: Handle Irregularities** :Subsystem - Train Detection System Alternative Scenario: Reset occurs [TDS 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

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6875	Info	Alternative Scenario: Revoking a critical failure of a TVPS for Variant A [TDS SD 2.4.4] **TDS_UC2.4: Handle Irregularities** Alternative Scenario: Revoking a critical failure of a TVPS for Variant A [TDS 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
Eu.TDS.7029	Info	Alternative Scenario: Revoking a critical failure of a TVPS for Variant B [TDS SD 2.4.5] **TDS_UC2.4: Handle Irregularities** Alternative Scenario: Revoking a critical failure of a TVPS for Variant B [TDS 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.7314	Info	Alternative Scenario: Supply voltage of the Subsystem has gone outside the required range for operation [TDS SD 2.4.6] **TDS_UC2.4: Handle Irregularities** Alternative Scenario: Supply voltage of the Subsystem has gone outside the required range for operation [TDS SD 2.4.6] **Precondition:** --- **Interaction 2.4.6.A:** **1.** - The Subsystem - Train Detection System enters the state NO_OPERATING_VOLTAGE. **Postcondition:** The Subsystem - Train Detection System is in the state NO_OPERATING_VOLTAGE.  		Basic TDS AC Basic TDS TDP Basic TDS TC

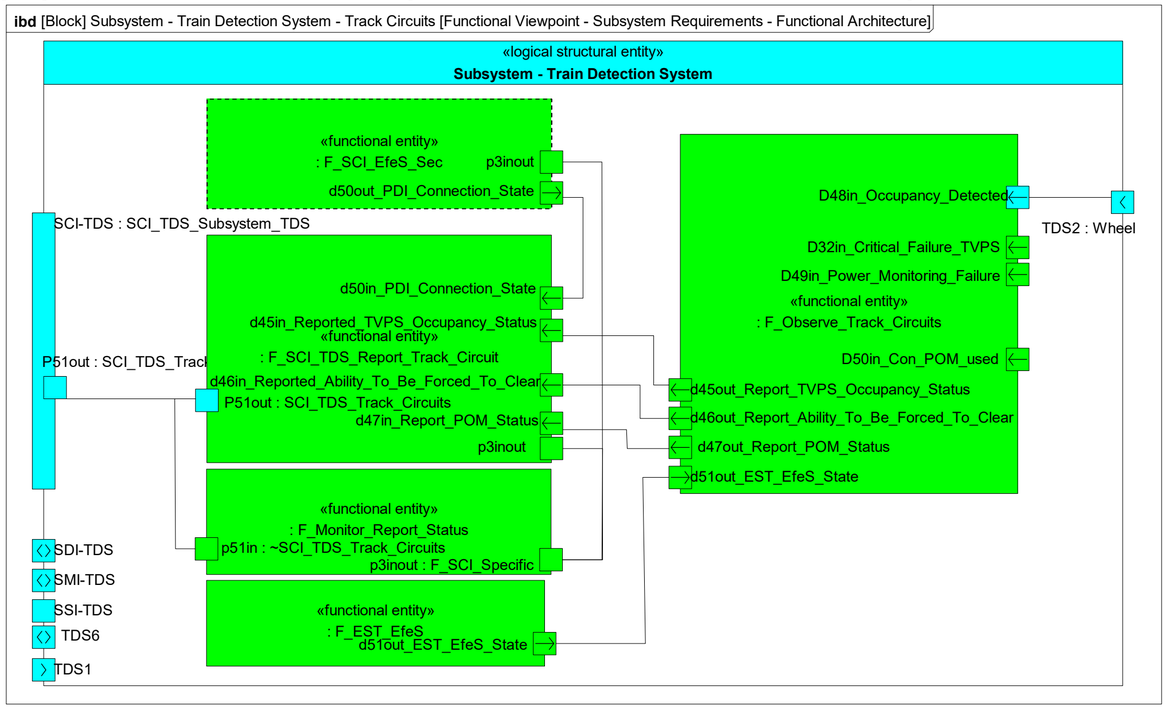
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.243	Info	[Package] Subsystem - Train Detection Subsystem - Functional Context [Functional Viewpoint - Subsystem Definition - Maintenance]  		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.2415	Info	TDS_UC3.1: Display status of Subsystem - 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
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**		

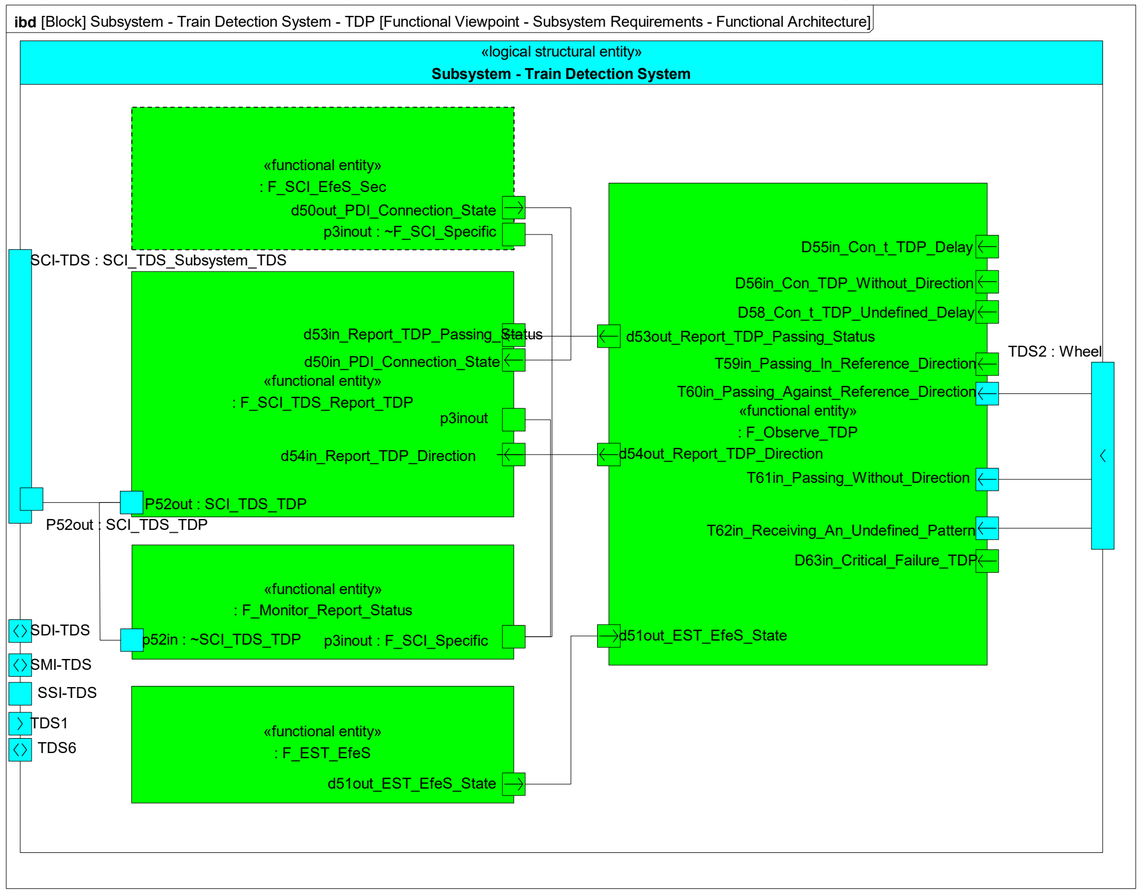
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6524	Def	[Package] Subsystem - Train Detection System - Functional Partitioning [Functional Viewpoint - Subsystem Requirements]		Basic TDS AC Basic TDS TDP Basic TDS TC

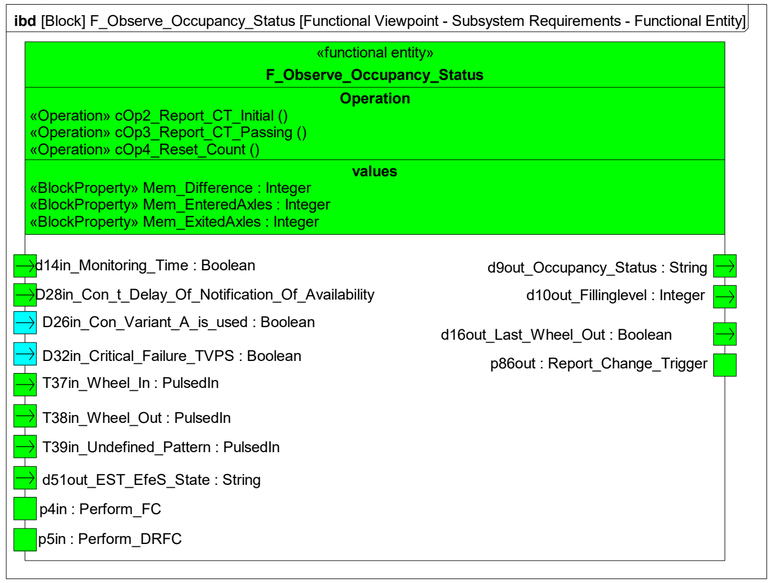


ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.2618	Head	**3.3.4 Subsystem - Train Detection System - Functional Architecture**		
Eu.TDS.2619	Info	Subsystem - Train Detection System		Basic TDS AC Basic TDS TDP Basic TDS TC

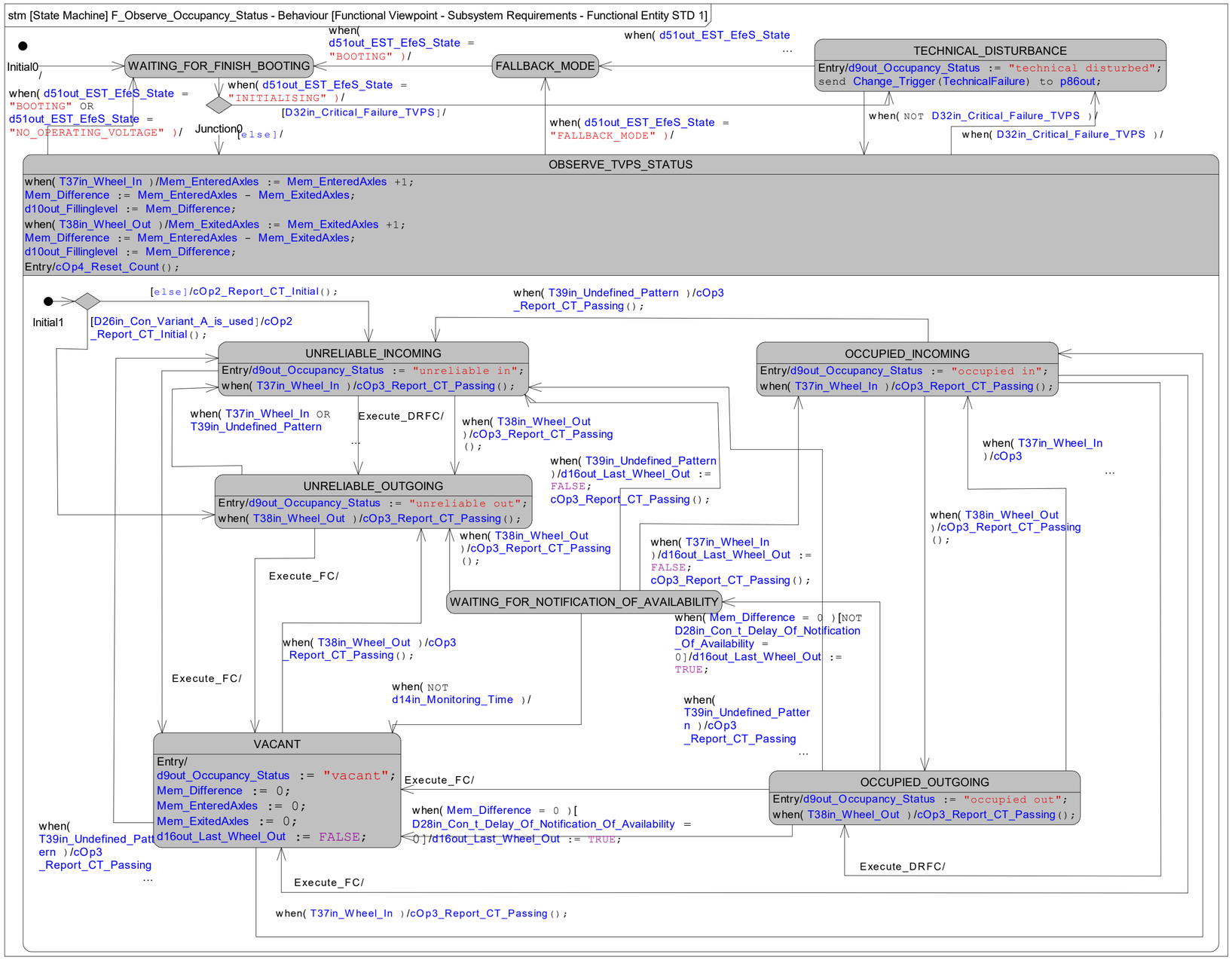
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.2627	Def	[Block] Subsystem - Train Detection System - Axle Counter [Functional Viewpoint - Subsystem Requirements - Functional Architecture]		Basic TDS AC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.5967	Def	[Block] Subsystem - Train 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	Def	[Block] Subsystem - Train Detection System - TDP [Functional Viewpoint - Subsystem Requirements - Functional Architecture]  		Basic TDS TDP
Eu.TDS.5969	Def	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	Def	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	Def	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	Def	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
Eu.TDS.5972	Def	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

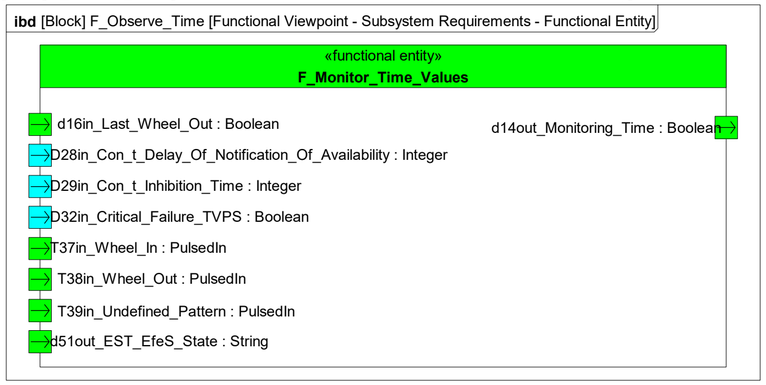
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.2628	Def	TDS2	The functional interface to the Wheel. The Information Flow through the interface is defined by "Wheel".	Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.2629	Def	TDS6	The functional Local Operate and Display interface to the 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	Req	[Block] F_Observe_Occupancy_Status [Functional Viewpoint - Subsystem Requirements - Functional Entity]  		Basic TDS AC
Eu.TDS.6255	Def	p4in		Basic TDS AC
Eu.TDS.6256	Def	p5in		Basic TDS AC
Eu.TDS.6257	Def	p86out		Basic TDS AC
Eu.TDS.5038	Def	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	Def	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	Def	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	Def	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
Eu.TDS.5324	Def	T39in_Undefined_Pattern	The port T39in_Undefined_Pattern refines the FlowProperty Passing_Detected and represents that a sensor of a detection point receives an undefined pattern.	Basic TDS AC

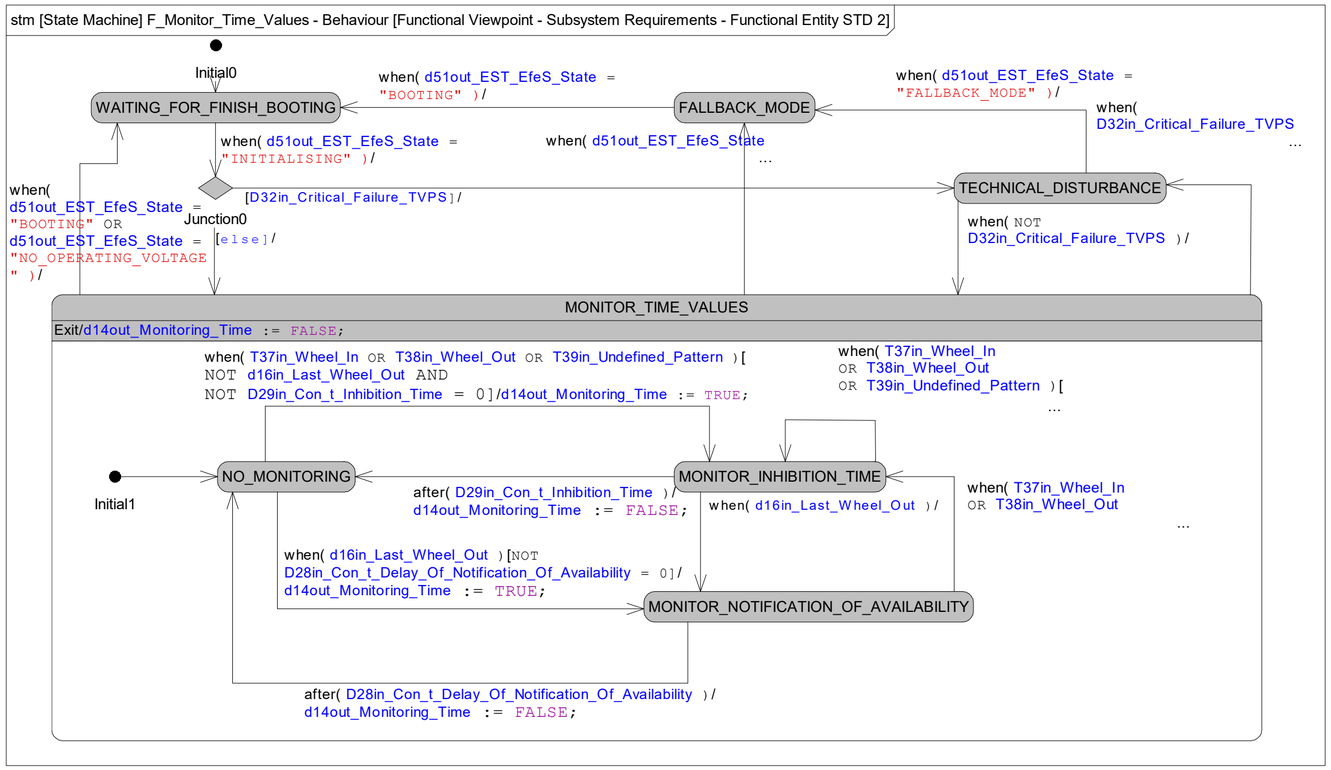
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.5036	Def	d51out_EST_EfeS_State		Basic TDS AC
Eu.TDS.7051	Def	D28in_Con_t_Delay_Of_Notification_Of_Availability	The port D28in_Con_t_Delay_Of_Notification_Of_Availability refines the time value for Con_t_Delay_Of_Notification_Of_Availability. This is a delay of reporting vacant from the Subsystem - Train Detection System to the Subsystem - Electronic Interlocking.	Basic TDS AC
Eu.TDS.5049	Def	d9out_Occupancy_Status		Basic TDS AC
Eu.TDS.6203	Def	d10out_Fillinglevel		Basic TDS AC
Eu.TDS.6204	Def	d14in_Monitoring_Time		Basic TDS AC
Eu.TDS.6205	Def	d16out_Last_Wheel_Out		Basic TDS AC
Eu.TDS.6201	Def	/* cOp2_Report_CT_Initial */ send Change_Trigger(ChangeTrigger.InitialSectionState) to p86out;	cOp2_Report_CT_Initial	Basic TDS AC
Eu.TDS.6202	Def	/* cOp3_Report_CT_Passing */ send Change_Trigger(ChangeTrigger.PassingDetected) to p86out;	cOp3_Report_CT_Passing	Basic TDS AC
Eu.TDS.7050	Def	/* cOp4_Reset_Count */ Mem_EnteredAxles := 0; Mem_ExitedAxles := 0; Mem_Difference := 0;	cOp4_Reset_Count	Basic TDS AC
Eu.TDS.6206	Info	F_Observe_Occupancy_Status - Behaviour	This state machine diagram describes the requirements for the following functionalities: - observe the occupancy status of a TVPS which works with axle counter	Basic TDS AC

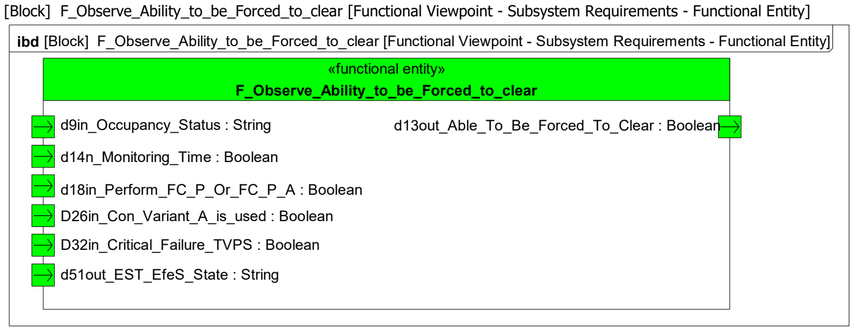
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6209	Req	Functional Viewpoint - Subsystem Requirements - Functional Entity STD 1  	This state machine diagram describes the requirements for the following functionalities: - observe the occupancy status of a TVPS which works with axle counter	Basic TDS AC
Eu.TDS.6207	Def	FALLBACK_MODE		Basic TDS AC
Eu.TDS.6208	Def	when(d51out_EST_EfeS_State = "BOOTING")/{FALLBACK_MODE - WAITING_FOR_FINISH_BOOTING}		Basic TDS AC
Eu.TDS.6210	Def	Initial0		Basic TDS AC
Eu.TDS.6211	Def	/{Initial0 - WAITING_FOR_FINISH_BOOTING}		Basic TDS AC

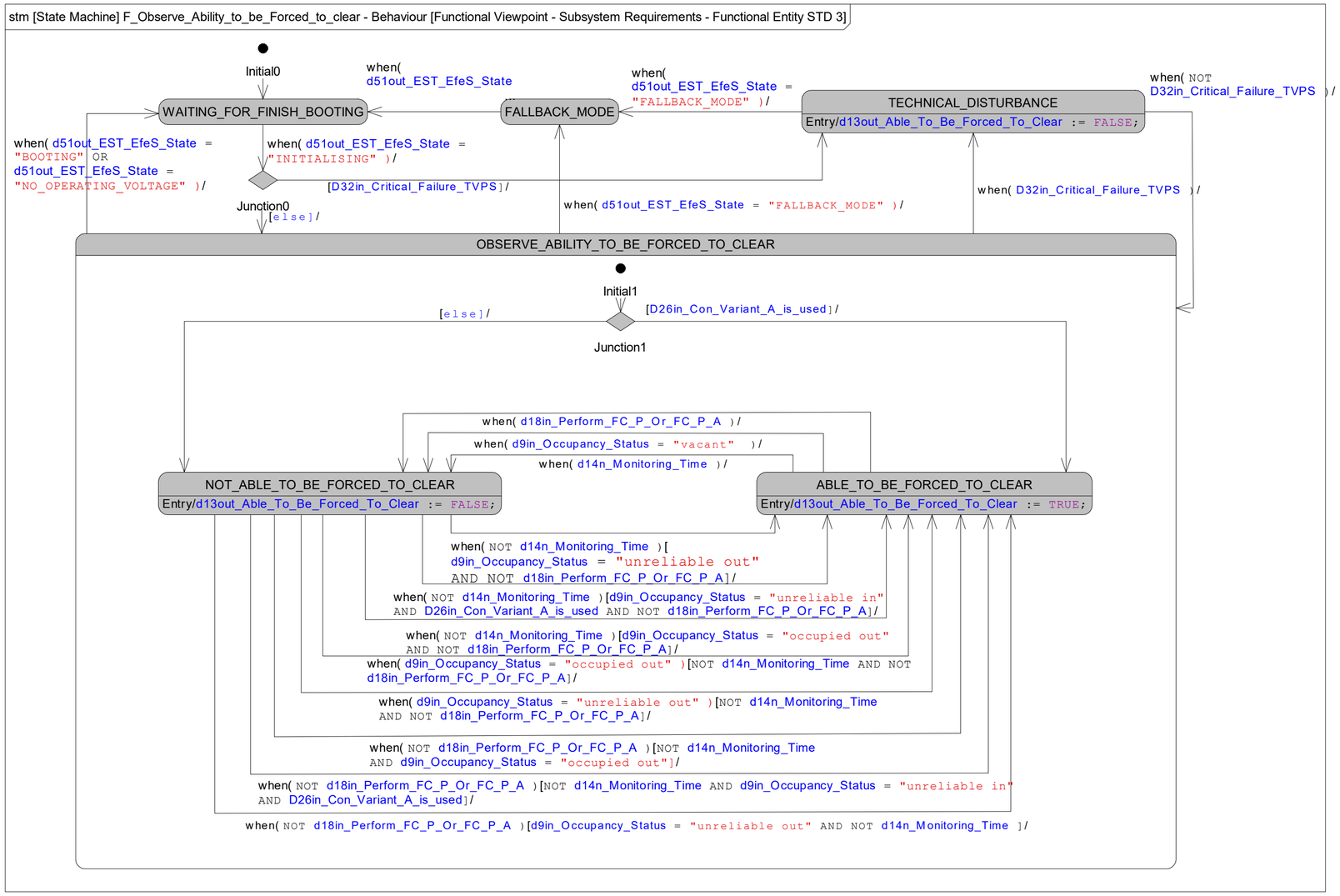
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6212	Def	Junction0		Basic TDS AC
Eu.TDS.6213	Def	[else]/{Junction0 - OBSERVE_TVPS_STATUS}		Basic TDS AC
Eu.TDS.6214	Def	[D32in_Critical_Failure_TVPS]/{Junction0 - TECHNICAL_DISTURBANCE}		Basic TDS AC
Eu.TDS.6215	Def	OBSERVE_TVPS_STATUS		Basic TDS AC
Eu.TDS.6216	Def	Initial1		Basic TDS AC
Eu.TDS.6217	Def	/{Initial1 - Junction}		Basic TDS AC
Eu.TDS.6218	Def	Junction		Basic TDS AC
Eu.TDS.6219	Def	[else]/cOp2_Report_CT_Initial();{Junction - UNRELIABLE_INCOMING}		Basic TDS AC
Eu.TDS.6220	Def	[D26in_Con_Variant_A_is_used]/cOp2_Report_CT_Initial();{Junction - UNRELIABLE_OUTGOING}		Basic TDS AC
Eu.TDS.6221	Def	OCCUPIED_INCOMING		Basic TDS AC
Eu.TDS.6222	Def	Execute_DRFC/{OCCUPIED_INCOMING - OCCUPIED_OUTGOING}		Basic TDS AC
Eu.TDS.6223	Def	Execute_FC/{OCCUPIED_INCOMING - VACANT}		Basic TDS AC
Eu.TDS.6225	Def	when(T38in_Wheel_Out)/cOp3_Report_CT_Passing();{OCCUPIED_INCOMING - OCCUPIED_OUTGOING}		Basic TDS AC
Eu.TDS.6226	Def	when(T39in_Undefined_Pattern)/cOp3_Report_CT_Passing();{OCCUPIED_INCOMING - UNRELIABLE_INCOMING}		Basic TDS AC
Eu.TDS.6900	Def	entry/d9out_Occupancy_Status := "occupied in";{State-internal in OCCUPIED_INCOMING}		Basic TDS AC
Eu.TDS.6901	Def	when(T37in_Wheel_In)/cOp3_Report_CT_Passing();{State-internal in OCCUPIED_INCOMING}		Basic TDS AC
Eu.TDS.6227	Def	OCCUPIED_OUTGOING		Basic TDS AC
Eu.TDS.6228	Def	Execute_FC/{OCCUPIED_OUTGOING - VACANT}		Basic TDS AC
Eu.TDS.6229	Def	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	Def	when(T37in_Wheel_In)/cOp3_Report_CT_Passing();{OCCUPIED_OUTGOING - OCCUPIED_INCOMING}		Basic TDS AC
Eu.TDS.6231	Def	when(T39in_Undefined_Pattern)/cOp3_Report_CT_Passing();{OCCUPIED_OUTGOING - UNRELIABLE_INCOMING}		Basic TDS AC
Eu.TDS.6902	Def	entry/d9out_Occupancy_Status := "occupied out";{State-internal in OCCUPIED_OUTGOING}		Basic TDS AC
Eu.TDS.7052	Def	when(T38in_Wheel_Out)/cOp3_Report_CT_Passing();{State-internal in OCCUPIED_OUTGOING}		Basic TDS AC
Eu.TDS.7053	Def	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	Def	UNRELIABLE_INCOMING		Basic TDS AC
Eu.TDS.6233	Def	Execute_DRFC/{UNRELIABLE_INCOMING - UNRELIABLE_OUTGOING}		Basic TDS AC
Eu.TDS.6234	Def	Execute_FC/{UNRELIABLE_INCOMING - VACANT}		Basic TDS AC
Eu.TDS.6235	Def	when(T38in_Wheel_Out)/cOp3_Report_CT_Passing();{UNRELIABLE_INCOMING - UNRELIABLE_OUTGOING}		Basic TDS AC
Eu.TDS.6906	Def	entry/d9out_Occupancy_Status := "unreliable in";{State-internal in UNRELIABLE_INCOMING}		Basic TDS AC
Eu.TDS.6907	Def	when(T37in_Wheel_In)/cOp3_Report_CT_Passing();{State-internal in UNRELIABLE_INCOMING}		Basic TDS AC
Eu.TDS.6236	Def	UNRELIABLE_OUTGOING		Basic TDS AC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6237	Def	Execute_FC/{UNRELIABLE_OUTGOING - VACANT}		Basic TDS AC
Eu.TDS.6238	Def	when(T37in_Wheel_In OR T39in_Undefined_Pattern)/cOp3_Report_CT_Passing();{UNRELIABLE_OUTGOING - UNRELIABLE_INCOMING}		Basic TDS AC
Eu.TDS.6908	Def	entry/d9out_Occupancy_Status := "unreliable out";{State-internal in UNRELIABLE_OUTGOING}		Basic TDS AC
Eu.TDS.6909	Def	when(T38in_Wheel_Out)/cOp3_Report_CT_Passing();{State-internal in UNRELIABLE_OUTGOING}		Basic TDS AC
Eu.TDS.6239	Def	VACANT		Basic TDS AC
Eu.TDS.6240	Def	when(T37in_Wheel_In)/cOp3_Report_CT_Passing();{VACANT - OCCUPIED_INCOMING}		Basic TDS AC
Eu.TDS.6241	Def	when(T38in_Wheel_Out)/cOp3_Report_CT_Passing();{VACANT - UNRELIABLE_OUTGOING}		Basic TDS AC
Eu.TDS.6242	Def	when(T39in_Undefined_Pattern)/cOp3_Report_CT_Passing();{VACANT - UNRELIABLE_INCOMING}		Basic TDS AC
Eu.TDS.6910	Def	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	Def	WAITING_FOR_NOTIFICATION_OF_AVAILABILITY		Basic TDS AC
Eu.TDS.6244	Def	when(NOT d14in_Monitoring_Time)/{WAITING_FOR_NOTIFICATION_OF_AVAILABILITY - VACANT}		Basic TDS AC
Eu.TDS.6245	Def	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	Def	when(T38in_Wheel_Out)/cOp3_Report_CT_Passing();{WAITING_FOR_NOTIFICATION_OF_AVAILABILITY - UNRELIABLE_OUTGOING}		Basic TDS AC
Eu.TDS.6247	Def	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	Def	when(D32in_Critical_Failure_TVPS)/{OBSERVE_TVPS_STATUS - TECHNICAL_DISTURBANCE}		Basic TDS AC
Eu.TDS.6249	Def	when(d51out_EST_EfeS_State = "FALLBACK_MODE")/{OBSERVE_TVPS_STATUS - FALLBACK_MODE}		Basic TDS AC
Eu.TDS.6904	Def	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	Def	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	Def	entry/cOp4_Reset_Count();{State-internal in OBSERVE_TVPS_STATUS}		Basic TDS AC
Eu.TDS.7055	Def	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	Def	TECHNICAL_DISTURBANCE		Basic TDS AC
Eu.TDS.6251	Def	when(d51out_EST_EfeS_State = "FALLBACK_MODE")/{TECHNICAL_DISTURBANCE - FALLBACK_MODE}		Basic TDS AC
Eu.TDS.6252	Def	when(NOT D32in_Critical_Failure_TVPS)/{TECHNICAL_DISTURBANCE - OBSERVE_TVPS_STATUS}		Basic TDS AC
Eu.TDS.6912	Def	entry/d9out_Occupancy_Status := "technical disturbed"; send Change_Trigger(TechnicalFailure) to p86out;{State-internal in TECHNICAL_DISTURBANCE}		Basic TDS AC
Eu.TDS.6253	Def	WAITING_FOR_FINISH_BOOTING		Basic TDS AC
Eu.TDS.6254	Def	when(d51out_EST_EfeS_State = "INITIALISING")/{WAITING_FOR_FINISH_BOOTING - Junction0}		Basic TDS AC
Eu.TDS.6047	Info	F_Monitor_Time_Values		Basic TDS AC

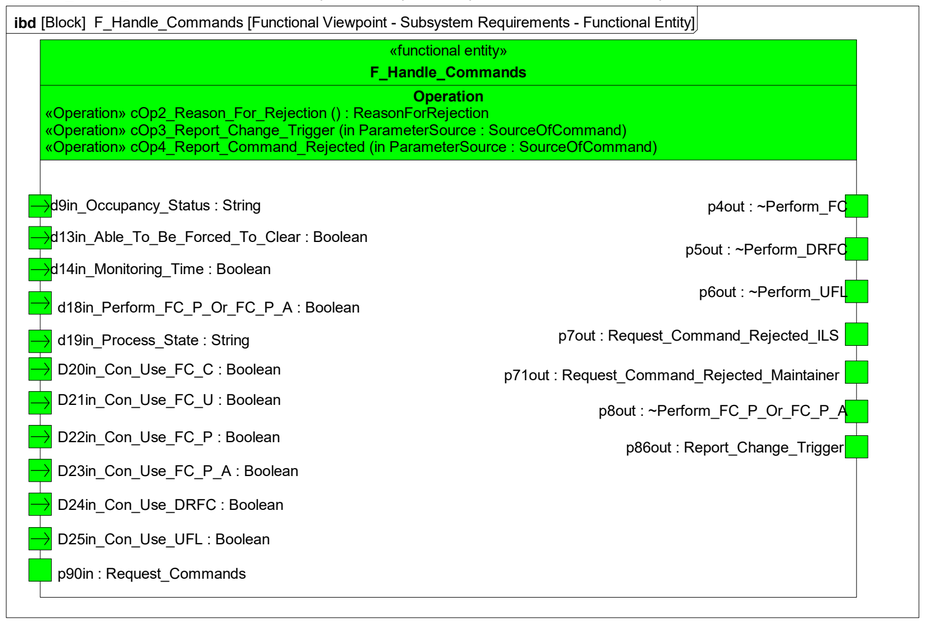
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6048	Req	[Block] F_Observe_Time [Functional Viewpoint - Subsystem Requirements - Functional Entity]  		Basic TDS AC
Eu.TDS.6083	Def	T37in_Wheel_In	The port T37in_Wheel_In refines the FlowProperty Passing_Detected and represents an incoming Wheel at a Detection Point of the relevant TVPS.	Basic TDS AC
Eu.TDS.6084	Def	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	Def	T39in_Undefined_Pattern	The port T39in_Undefined_Pattern refines the FlowProperty Passing_Detected and represents that a sensor of a detection point receives an undefined pattern.	Basic TDS AC
Eu.TDS.6049	Def	d14out_Monitoring_Time		Basic TDS AC
Eu.TDS.6050	Def	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.	Basic TDS AC
Eu.TDS.6051	Def	D29in_Con_t_Inhibition_Time	The port D29in_Con_t_Inhibition_Time refines the time value for Con_t_Inhibition_Time.	Basic TDS AC
Eu.TDS.6052	Def	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	Def	d51out_EST_EfeS_State		Basic TDS AC
Eu.TDS.6054	Def	d16in_Last_Wheel_Out		Basic TDS AC
Eu.TDS.6055	Info	F_Monitor_Time_Values - Behaviour		Basic TDS AC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6058	Req	Functional Viewpoint - Subsystem Requirements - Functional Entity STD 2  	This state machine diagram describes the requirements for the following functionalities: - monitores the Inhibition Time and the Delay of Notification of Availability of a TVPS which works with axle counter	Basic TDS AC
Eu.TDS.6056	Def	FALLBACK_MODE		Basic TDS AC
Eu.TDS.6057	Def	when(d51out_EST_EfeS_State = "BOOTING")/{FALLBACK_MODE - WAITING_FOR_FINISH_BOOTING}		Basic TDS AC
Eu.TDS.6059	Def	Initial0		Basic TDS AC
Eu.TDS.6060	Def	/{Initial0 - WAITING_FOR_FINISH_BOOTING}		Basic TDS AC
Eu.TDS.6061	Def	Junction0		Basic TDS AC
Eu.TDS.6062	Def	[else]/{Junction0 - MONITOR_TIME_VALUES}		Basic TDS AC
Eu.TDS.6063	Def	[D32in_Critical_Failure_TVPS]/{Junction0 - TECHNICAL_DISTURBANCE}		Basic TDS AC
Eu.TDS.6064	Def	MONITOR_TIME_VALUES		Basic TDS AC
Eu.TDS.6065	Def	MONITOR_INHIBITION_TIME		Basic TDS AC
Eu.TDS.6066	Def	after(D29in_Con_t_Inhibition_Time)/ d14out_Monitoring_Time := FALSE;{MONITOR_INHIBITION_TIME - NO_MONITORING}		Basic TDS AC
Eu.TDS.6067	Def	when(d16in_Last_Wheel_Out)/{MONITOR_INHIBITION_TIME - MONITOR_NOTIFICATION_OF_AVAILABILITY}		Basic TDS AC
Eu.TDS.6068	Def	when(T37in_Wheel_In OR T38in_Wheel_Out OR T39in_Undefined_Pattern)[NOT d16in_Last_Wheel_Out]/{MONITOR_INHIBITION_TIME - MONITOR_INHIBITION_TIME}		Basic TDS AC
Eu.TDS.6069	Def	Initial1		Basic TDS AC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6070	Def	/{Initial1 - NO_MONITORING}		Basic TDS AC
Eu.TDS.6071	Def	NO_MONITORING		Basic TDS AC
Eu.TDS.6072	Def	when(T37in_Wheel_In OR T38in_Wheel_Out OR T39in_Undefined_Pattern)[NOT d16in_Last_Wheel_Out AND NOT D29in_Con_t_Inhibition_Time = 0]/d14out_Monitoring_Time := TRUE;{NO_MONITORING - MONITOR_INHIBITION_TIME}		Basic TDS AC
Eu.TDS.7044	Def	when(d16in_Last_Wheel_Out)[NOT D28in_Con_t_Delay_Of_Notification_Of_Availability = 0]/ d14out_Monitoring_Time := TRUE;{NO_MONITORING - MONITOR_NOTIFICATION_OF_AVAILABILITY}		Basic TDS AC
Eu.TDS.6073	Def	MONITOR_NOTIFICATION_OF_AVAILABILITY		Basic TDS AC
Eu.TDS.6074	Def	after(D28in_Con_t_Delay_Of_Notification_Of_Availability)/ d14out_Monitoring_Time := FALSE;{MONITOR_NOTIFICATION_OF_AVAILABILITY - NO_MONITORING}		Basic TDS AC
Eu.TDS.6075	Def	when(T37in_Wheel_In OR T38in_Wheel_Out OR T39in_Undefined_Pattern)/{MONITOR_NOTIFICATION_OF_AVAILABILITY - MONITOR_INHIBITION_TIME}		Basic TDS AC
Eu.TDS.6076	Def	when(D32in_Critical_Failure_TVPS)/{MONITOR_TIME_VALUES - TECHNICAL_DISTURBANCE}		Basic TDS AC
Eu.TDS.6077	Def	when(d51out_EST_EfeS_State = "FALLBACK_MODE")/{MONITOR_TIME_VALUES - FALLBACK_MODE}		Basic TDS AC
Eu.TDS.7045	Def	exit/d14out_Monitoring_Time := FALSE;{State-internal in MONITOR_TIME_VALUES}		Basic TDS AC
Eu.TDS.7046	Def	when(d51out_EST_EfeS_State = "BOOTING" OR d51out_EST_EfeS_State = "NO_OPERATING_VOLTAGE")/{MONITOR_TIME_VALUES - WAITING_FOR_FINISH_BOOTING}		Basic TDS AC
Eu.TDS.6078	Def	TECHNICAL_DISTURBANCE		Basic TDS AC
Eu.TDS.6079	Def	when(d51out_EST_EfeS_State = "FALLBACK_MODE")/{TECHNICAL_DISTURBANCE - FALLBACK_MODE}		Basic TDS AC
Eu.TDS.6080	Def	when(NOT D32in_Critical_Failure_TVPS)/{TECHNICAL_DISTURBANCE - MONITOR_TIME_VALUES}		Basic TDS AC
Eu.TDS.6081	Def	WAITING_FOR_FINISH_BOOTING		Basic TDS AC
Eu.TDS.6082	Def	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	Req	[Block] F_Observe_Ability_to_be_Forced_to_clear [Functional Viewpoint - Subsystem Requirements - Functional Entity]  		Basic TDS AC
Eu.TDS.6159	Def	d13out_Able_To_Be_Forced_To_Clear		Basic TDS AC
Eu.TDS.6160	Def	d14n_Monitoring_Time		Basic TDS AC
Eu.TDS.6161	Def	d18in_Perform_FC_P_Or_FC_P_A		Basic TDS AC
Eu.TDS.6162	Def	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

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6163	Def	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	Def	d51out_EST_EfeS_State		Basic TDS AC
Eu.TDS.6165	Def	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	Req	Functional Viewpoint - Subsystem Requirements - Functional Entity STD 3  	This state machine diagram describes the requirements for the following functionalities: - observe the ability to be forced to clear of a TVPS which works with axle counter	Basic TDS AC
Eu.TDS.6167	Def	FALLBACK_MODE		Basic TDS AC
Eu.TDS.6168	Def	when(d51out_EST_EfeS_State = "BOOTING")/{FALLBACK_MODE - WAITING_FOR_FINISH_BOOTING}		Basic TDS AC
Eu.TDS.6170	Def	Initial0		Basic TDS AC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6171	Def	/{Initial0 - WAITING_FOR_FINISH_BOOTING}		Basic TDS AC
Eu.TDS.6172	Def	Junction0		Basic TDS AC
Eu.TDS.6173	Def	[else]/{Junction0 - OBSERVE_ABILITY_TO_BE_FORCED_TO_CLEAR}		Basic TDS AC
Eu.TDS.6174	Def	[D32in_Critical_Failure_TVPS]/{Junction0 - TECHNICAL_DISTURBANCE}		Basic TDS AC
Eu.TDS.6175	Def	OBSERVE_ABILITY_TO_BE_FORCED_TO_CLEAR		Basic TDS AC
Eu.TDS.6176	Def	ABLE_TO_BE_FORCED_TO_CLEAR		Basic TDS AC
Eu.TDS.6177	Def	when(d14n_Monitoring_Time)/{ABLE_TO_BE_FORCED_TO_CLEAR - NOT_ABLE_TO_BE_FORCED_TO_CLEAR}		Basic TDS AC
Eu.TDS.6178	Def	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	Def	when(d9in_Occupancy_Status = "vacant")/{ABLE_TO_BE_FORCED_TO_CLEAR - NOT_ABLE_TO_BE_FORCED_TO_CLEAR}		Basic TDS AC
Eu.TDS.6897	Def	entry/d13out_Able_To_Be_Forced_To_Clear := TRUE;{State-internal in ABLE_TO_BE_FORCED_TO_CLEAR}		Basic TDS AC
Eu.TDS.6180	Def	Initial1		Basic TDS AC
Eu.TDS.6181	Def	/{Initial1 - Junction1}		Basic TDS AC
Eu.TDS.6182	Def	Junction1		Basic TDS AC
Eu.TDS.6183	Def	[D26in_Con_Variant_A_is_used]/{Junction1 - ABLE_TO_BE_FORCED_TO_CLEAR}		Basic TDS AC
Eu.TDS.6184	Def	[else]/{Junction1 - NOT_ABLE_TO_BE_FORCED_TO_CLEAR}		Basic TDS AC
Eu.TDS.6185	Def	NOT_ABLE_TO_BE_FORCED_TO_CLEAR		Basic TDS AC
Eu.TDS.6186	Def	when(d9in_Occupancy_Status = "occupied out")[NOT d14n_Monitoring_Time 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	Def	when(d9in_Occupancy_Status = "unreliable out")[NOT d14n_Monitoring_Time 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	Def	when(NOT d14n_Monitoring_Time)[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	Def	when(NOT d14n_Monitoring_Time)[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	Def	when(NOT d14n_Monitoring_Time)[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	Def	when(NOT d18in_Perform_FC_P_Or_FC_P_A)[NOT d14n_Monitoring_Time 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	Def	when(NOT d18in_Perform_FC_P_Or_FC_P_A)[d9in_Occupancy_Status = "unreliable out" AND NOT d14n_Monitoring_Time]/{NOT_ABLE_TO_BE_FORCED_TO_CLEAR - ABLE_TO_BE_FORCED_TO_CLEAR}		Basic TDS AC
Eu.TDS.6193	Def	when(NOT d18in_Perform_FC_P_Or_FC_P_A)[NOT d14n_Monitoring_Time 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	Def	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	Def	when(D32in_Critical_Failure_TVPS)/{OBSERVE_ABILITY_TO_BE_FORCED_TO_CLEAR - TECHNICAL_DISTURBANCE}		Basic TDS AC
Eu.TDS.6195	Def	when(d51out_EST_EfeS_State = "FALLBACK_MODE")/{OBSERVE_ABILITY_TO_BE_FORCED_TO_CLEAR - FALLBACK_MODE}		Basic TDS AC
Eu.TDS.7049	Def	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	Def	TECHNICAL_DISTURBANCE		Basic TDS AC
Eu.TDS.6197	Def	when(d51out_EST_EfeS_State = "FALLBACK_MODE")/{TECHNICAL_DISTURBANCE - FALLBACK_MODE}		Basic TDS AC
Eu.TDS.6198	Def	when(NOT D32in_Critical_Failure_TVPS)/{TECHNICAL_DISTURBANCE - OBSERVE_ABILITY_TO_BE_FORCED_TO_CLEAR}		Basic TDS AC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6899	Def	entry/d13out_Able_To_Be_Forced_To_Clear := FALSE;{State-internal in TECHNICAL_DISTURBANCE}		Basic TDS AC
Eu.TDS.6199	Def	WAITING_FOR_FINISH_BOOTING		Basic TDS AC
Eu.TDS.6200	Def	when(d51out_EST_EfeS_State = "INITIALISING")/{WAITING_FOR_FINISH_BOOTING - Junction0}		Basic TDS AC
Eu.TDS.6086	Info	F_Handle_Commands		Basic TDS AC
Eu.TDS.6087	Req	[Block] F_Handle_Commands [Functional Viewpoint - Subsystem Requirements - Functional Entity]  		Basic TDS AC
Eu.TDS.6107	Def	p90in		Basic TDS AC
Eu.TDS.6108	Def	p4out		Basic TDS AC
Eu.TDS.6109	Def	p5out		Basic TDS AC
Eu.TDS.6110	Def	p6out		Basic TDS AC
Eu.TDS.6111	Def	p71out		Basic TDS AC
Eu.TDS.6112	Def	p7out		Basic TDS AC
Eu.TDS.6113	Def	p86out		Basic TDS AC
Eu.TDS.6114	Def	p8out		Basic TDS AC

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

Eu.TDS.6089	Def	/* 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
			cOp3_Report_Change_Trigger	Basic TDS AC

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

Eu.TDS.6090	Def	/* 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
			cOp4_Report_Command_Rejected	Basic TDS AC

Eu.TDS.6091	Def	d13in_Able_To_Be_Forced_To_Clear		Basic TDS AC
Eu.TDS.6092	Def	d14in_Monitoring_Time		Basic TDS AC
Eu.TDS.6093	Def	d18in_Perform_FC_P_Or_FC_P_A		Basic TDS AC Option FC-P/-A
Eu.TDS.6094	Def	d19in_Process_State		Basic TDS AC
Eu.TDS.6095	Def	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	Def	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	Def	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	Def	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	Def	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	Def	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	Def	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	Req	Functional Viewpoint - Subsystem Requirements - Functional Entity STD 4	This state machine diagram describes the requirements for the following functionalities: - receives the command to force the TVPS to clear (FC-C, FC-U, FC-P or FC-P-A), checks the condition for executing the command and forwards it to the internal logic of the Subsystem - Train Detection System or sends a request to reject the command - receives the command to confirm the execution of FC-P-A, checks the condition for executing the command and forwards it to the internal logic of the Subsystem - Train Detection System or sends a request to reject the command - receives the command to cancel the execution of FC-P or FC-P-A, checks the condition for executing the command and forwards it to the internal logic of the Subsystem - Train Detection System or sends a request to reject the command - receives the command to disable restriction to force section to clear, checks the condition for executing the command and forwards it to the internal logic of the Subsystem - Train Detection System or sends a request to reject the command - receives the command to update the fillinglevel, checks the condition for executing the command and forwards it to the internal logic of the Subsystem - Train Detection System or sends a request to reject the command - receives the command to confirm a sweeping (visual), checks the condition for executing the command and forwards it to the internal logic of the Subsystem - Train Detection System or sends a request to reject the command	Basic TDS AC Option FC-P/-A Option Update FL

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_Monitoring_Time)]/
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_Monitoring_Time)]/
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_Monitoring_Time)]/
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_Monitoring_Time)]/
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_Monitoring_Time)]/
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_Monitoring_Time)]/
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_Monitoring_Time) 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_Monitoring_Time 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_Monitoring_Time)]/
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_Monitoring_Time)]/
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;
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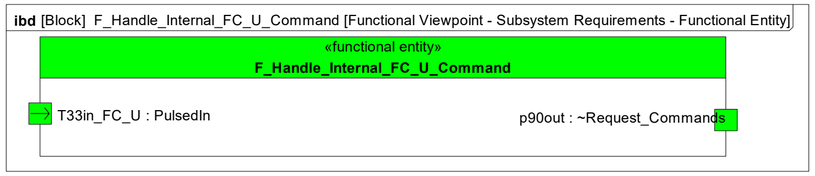
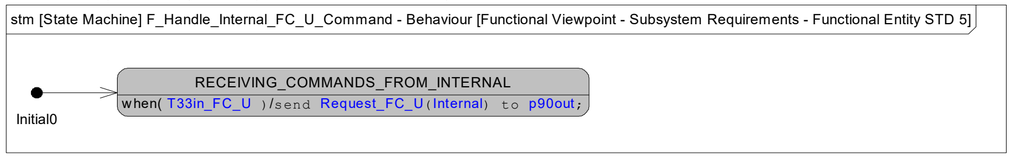
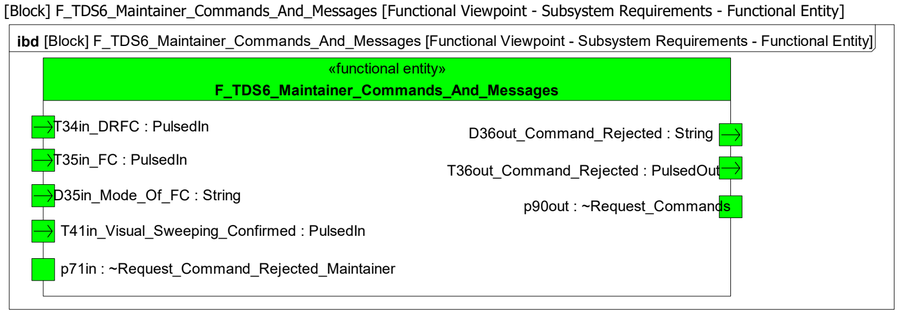
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6104	Def	Initial0		Basic TDS AC
Eu.TDS.6105	Def	/{Initial0 - RECEIVE_COMMANDS}		Basic TDS AC
Eu.TDS.6106	Def	RECEIVE_COMMANDS		Basic TDS AC
Eu.TDS.6878	Def	Request_Acknowledgement[D23in_Con_Use_FC_P_A AND d19in_Process_State = "Waiting for 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
Eu.TDS.6879	Def	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_Monitoring_Time)]/ 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	Def	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_Monitoring_Time)]/ 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	Def	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_Monitoring_Time)]/ 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	Def	Request_FC_U[D21in_Con_Use_FC_U AND (d9in_Occupancy_Status = "vacant" OR d9in_Occupancy_Status = "technical disturbed" OR d14in_Monitoring_Time)]/ cOp4_Report_Command_Rejected(ReportedSource);{State-internal in RECEIVE_COMMANDS}		Basic TDS AC

Eu.TDS.6883	Def	Request_FC_U[D21in_Con_Use_FC_U AND (NOT d9in_Occupancy_Status = "vacant" AND NOT d9in_Occupancy_Status = "technical disturbed" AND NOT d14in_Monitoring_Time)]/
		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

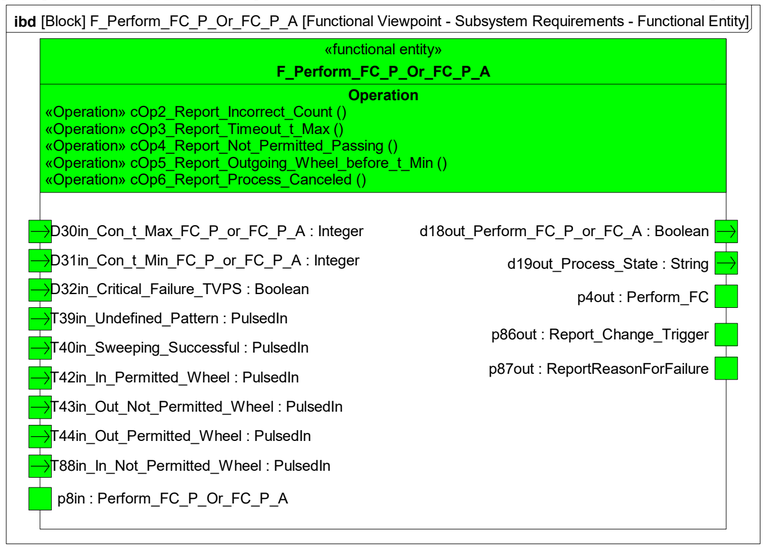
Eu.TDS.6884	Def	Request_UFL[D25in_Con_Use_UFL AND (d9in_Occupancy_Status = "vacant" OR d9in_Occupancy_Status = "technical disturbed" OR d14in_Monitoring_Time)]/ send Report_Command_Rejected(cOp2_Reason_For_Rejection()) to p7out;{State-internal in RECEIVE_COMMANDS}		Basic TDS AC Option Update FL
Eu.TDS.6885	Def	Request_UFL[D25in_Con_Use_UFL AND (NOT d9in_Occupancy_Status = "vacant" AND NOT d9in_Occupancy_Status = "technical disturbed" AND NOT d14in_Monitoring_Time)]/ 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	Def	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	Def	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	Def	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	Def	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	Def	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	Def	Request_DRFC[D24in_Con_Use_DRFC AND (NOT d13in_Able_To_Be_Forced_To_Clear AND NOT d14in_Monitoring_Time) 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	Def	Request_DRFC[D24in_Con_Use_DRFC AND (d13in_Able_To_Be_Forced_To_Clear OR d14in_Monitoring_Time 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	Def	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	Def	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

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6895	Def	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_Monitoring_Time)]/ 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
Eu.TDS.6116	Req	[Block] F_Handle_Internal_FC_U_Command [Functional Viewpoint - Subsystem Requirements - Functional Entity]  		Basic TDS AC
Eu.TDS.6122	Def	p90out		Basic TDS AC
Eu.TDS.6123	Def	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	Req	Functional Viewpoint - Subsystem Requirements - Functional Entity STD 5  	This state machine diagram describes the requirements for the following functionalities: - receives the command to force the TVPS to clear, unconditional from internal and forwards it to the internal logic of the Subsystem - Train Detection System	Basic TDS AC
Eu.TDS.6119	Def	Initial0		Basic TDS AC
Eu.TDS.6120	Def	/{Initial0 - RECEIVING_COMMANDS_FROM_INTERNAL}		Basic TDS AC
Eu.TDS.6121	Def	RECEIVING_COMMANDS_FROM_INTERNAL		Basic TDS AC
Eu.TDS.6896	Def	when(T33in_FC_U)/send Request_FC_U(Internal) to p90out;{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	Req	[Block] F_TDS6_Maintainer_Commands_And_Messages [Functional Viewpoint - Subsystem Requirements - Functional Entity]  		Basic TDS AC
Eu.TDS.6517	Def	p90out		Basic TDS AC
Eu.TDS.6518	Def	p71in		Basic TDS AC
Eu.TDS.6519	Def	T34in_DRFC	The port T34in_DRFC represents the receiving of the command Cd_DRFC via TDS6 from Maintainer.	Basic TDS AC
Eu.TDS.6520	Def	T35in_FC	The port T35in_FC represents the receiving of the command Cd_FC via TDS6 from Maintainer.	Basic TDS AC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6521	Def	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	Def	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	Def	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
Eu.TDS.6511	Def	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	Req	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 p90out;
		when(T35in_FC)[D35in_Mode_Of_FC = "FC-U"]/send Request_FC_U(Maintainer) to p90out;
		when(T34in_DRFC)/send Request_DRFC(Maintainer) to p90out;
		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 p90out;
			This state machine diagram describes the requirements for the following functionalities:
			
			- receives the command to force the TVPS to clear (FC-C or FC-U), checks the condition for executing the command and forwards it to the internal logic of the Subsystem - Train Detection System or sends a request to reject the command
			- receives the command to disable restriction to force section to clear, checks the condition for executing the command and forwards it to the internal logic of the Subsystem - Train Detection System or sends a request to reject the command
			- receives the command to confirm a sweeping (visual), checks the condition for executing the command and forwards it to the internal logic of the Subsystem - Train Detection System or sends a request to reject the command
				Basic TDS AC

Eu.TDS.6514	Def	Initial0		Basic TDS AC
Eu.TDS.6515	Def	/{Initial0 - RECEIVING_COMMANDS_AND_REPORT_MESSAGES}		Basic TDS AC
Eu.TDS.6516	Def	RECEIVING_COMMANDS_AND_REPORT_MESSAGES		Basic TDS AC
Eu.TDS.6932	Def	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	Def	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	Def	when(T34in_DRFC)/send Request_DRFC(Maintainer) to p90out;{State-internal in RECEIVING_COMMANDS_AND_REPORT_MESSAGES}		Basic TDS AC
Eu.TDS.6935	Def	when(T35in_FC)[D35in_Mode_Of_FC = "FC-U"]/send Request_FC_U(Maintainer) to p90out;{State-internal in RECEIVING_COMMANDS_AND_REPORT_MESSAGES}		Basic TDS AC
Eu.TDS.6936	Def	when(T35in_FC)[D35in_Mode_Of_FC = "FC-C"]/send Request_FC_C(Maintainer) to p90out;{State-internal in RECEIVING_COMMANDS_AND_REPORT_MESSAGES}		Basic TDS AC
Eu.TDS.6937	Def	when(T41in_Visual_Sweeping_Confirmed)/send Request_Visual_Sweeping_Confirmation to p90out;{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

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6444	Req	[Block] F_Perform_FC_P_Or_FC_P_A [Functional Viewpoint - Subsystem Requirements - Functional Entity]  		Option FC-P/-A

Eu.TDS.6445	Def	/* 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
			cOp2_Report_Incorrect_Count	Option FC-P/-A

Eu.TDS.6446	Def	/* 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
			cOp3_Report_Timeout_t_Max	Option FC-P/-A

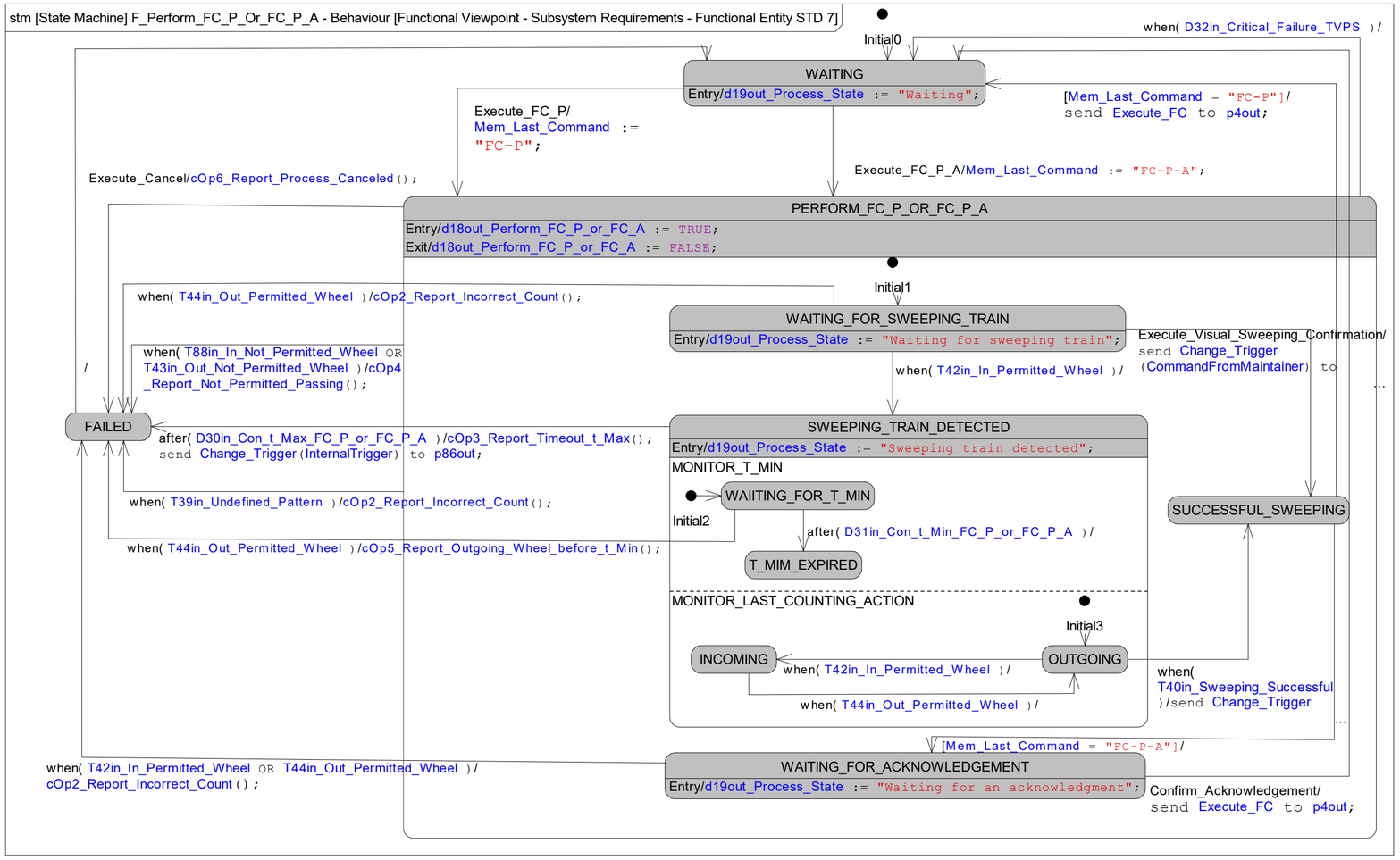
Eu.TDS.6447	Def	/* cOp4_Report_Not_Permitted_Passing */
		
		if Mem_Last_Command = "FC-P" then
		send Reason_FC_P_failed(ReasonForFailure.NotPermittedPassing) to p87out;
		elseif Mem_Last_Command = "FC-P-A" then
		send Reason_FC_P_A_failed(ReasonForFailure.NotPermittedPassing) to p87out;
		end if
		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

Eu.TDS.6448	Def	/* 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
			cOp5_Report_Outgoing_Wheel_before_t_Min	Option FC-P/-A

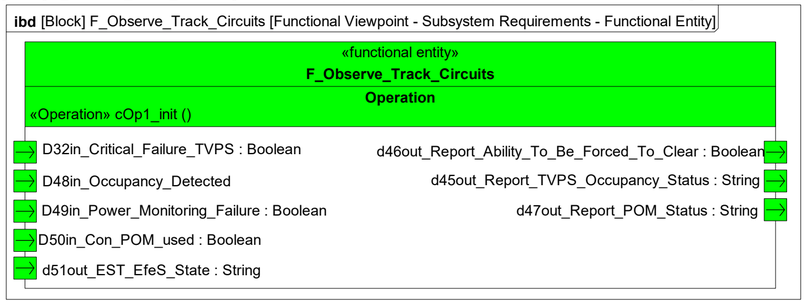
Eu.TDS.6449	Def	/* cOp6_Report_Process_Canceled */
		
		if Mem_Last_Command = "FC-P" then
		send Reason_FC_P_failed(ReasonForFailure.ProcessCanceled) to p87out;
		elseif Mem_Last_Command = "FC-P-A" then
		send Reason_FC_P_A_failed(ReasonForFailure.ProcessCanceled) to p87out;
		end if
			cOp6_Report_Process_Canceled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

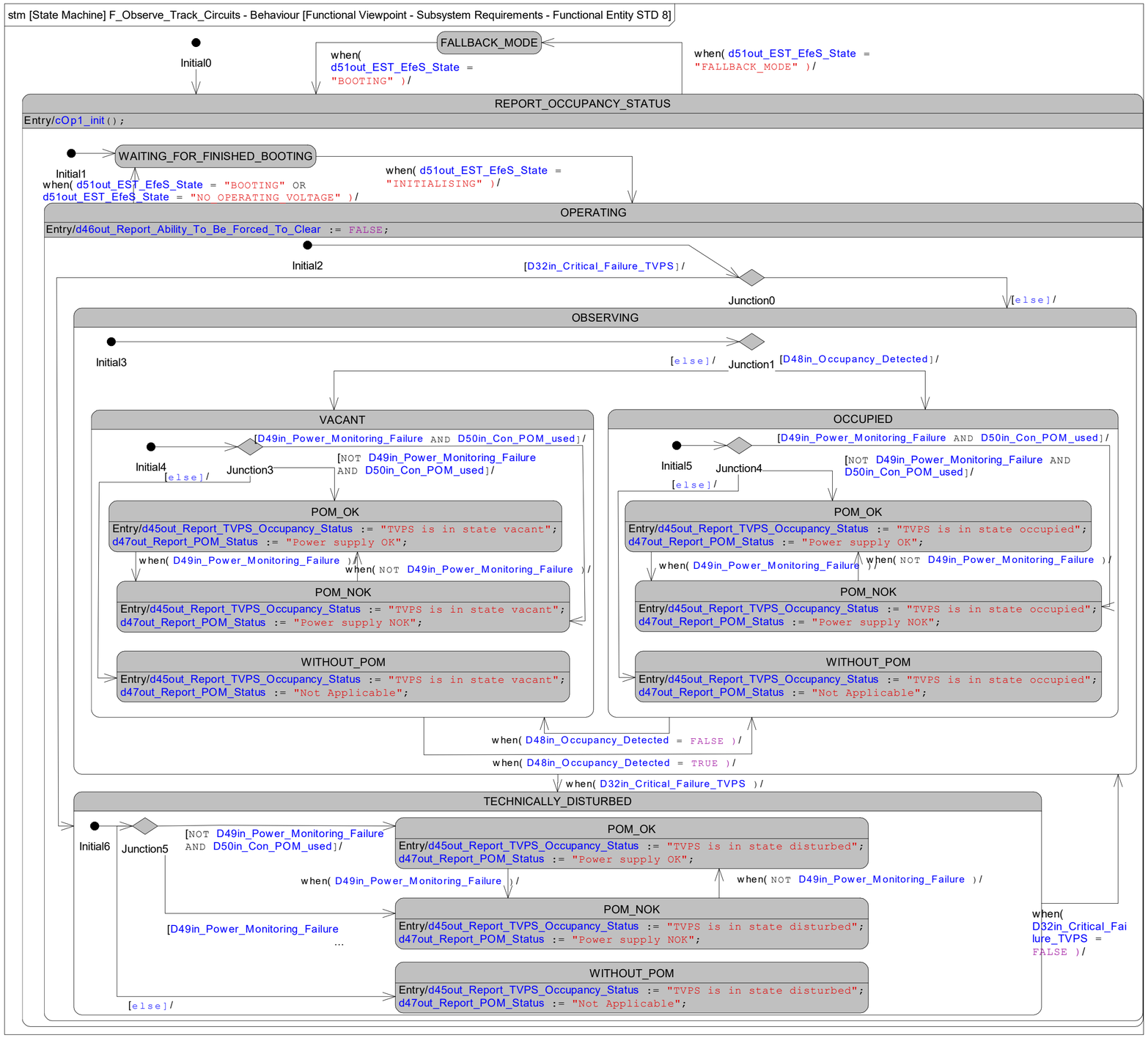
Eu.TDS.6498	Def	p4out		Option FC-P/-A
Eu.TDS.6499	Def	p86out		Option FC-P/-A
Eu.TDS.6500	Def	p87out		Option FC-P/-A
Eu.TDS.6501	Def	p8in		Option FC-P/-A
Eu.TDS.6502	Def	T39in_Undefined_Pattern	The port T39in_Undefined_Pattern refines the FlowProperty Passing_Detected and represents that a sensor of a detection point receives an undefined pattern.	Option FC-P/-A

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6503	Def	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	Def	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	Def	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
Eu.TDS.6506	Def	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	Def	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	Def	d18out_Perform_FC_P_or_FC_A		Option FC-P/-A
Eu.TDS.6451	Def	d19out_Process_State		Option FC-P/-A
Eu.TDS.6452	Def	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.	Option FC-P/-A
Eu.TDS.6453	Def	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.	Option FC-P/-A
Eu.TDS.6454	Def	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	Req	Functional Viewpoint - Subsystem Requirements - Functional Entity STD 7  	This state machine diagram describes the requirements for the following functionalities: - observe the passing of a TDP	Option FC-P/-A
Eu.TDS.6456	Def	FAILED		Option FC-P/-A
Eu.TDS.6457	Def	/{FAILED - WAITING}		Option FC-P/-A
Eu.TDS.6459	Def	Initial0		Option FC-P/-A
Eu.TDS.7005	Def	/{Initial0 - WAITING}		Option FC-P/-A
Eu.TDS.6461	Def	PERFORM_FC_P_OR_FC_P_A		Option FC-P/-A
Eu.TDS.6462	Def	Execute_Cancel/cOp6_Report_Process_Canceled();{PERFORM_FC_P_OR_FC_P_A - FAILED}		Option FC-P/-A
Eu.TDS.6463	Def	Initial1		Option FC-P/-A
Eu.TDS.7006	Def	/{Initial1 - WAITING_FOR_SWEEPING_TRAIN}		Option FC-P/-A
Eu.TDS.6465	Def	SUCCESSFUL_SWEEPING		Option FC-P/-A
Eu.TDS.6466	Def	[Mem_Last_Command = "FC-P"]/ send Execute_FC to p4out;{SUCCESSFUL_SWEEPING - WAITING}		Option FC-P/-A
Eu.TDS.6467	Def	[Mem_Last_Command = "FC-P-A"]/{SUCCESSFUL_SWEEPING - WAITING_FOR_ACKNOWLEDGEMENT}		Option FC-P/-A

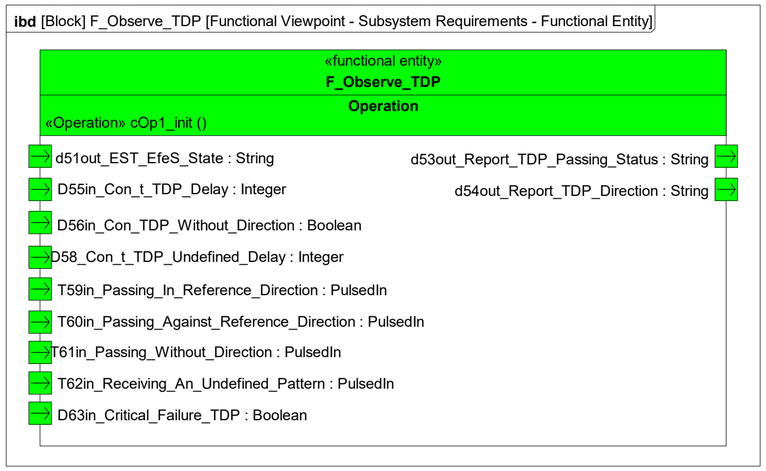
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6468	Def	SWEEPING_TRAIN_DETECTED		Option FC-P/-A
Eu.TDS.6469	Def	after(D30in_Con_t_Max_FC_P_or_FC_P_A)/cOp3_Report_Timeout_t_Max(); send Change_Trigger(InternalTrigger) to p86out;{SWEEPING_TRAIN_DETECTED - FAILED}		Option FC-P/-A
Eu.TDS.6470	Def	MONITOR_LAST_COUNTING_ACTION		Option FC-P/-A
Eu.TDS.6471	Def	INCOMING		Option FC-P/-A
Eu.TDS.6472	Def	when(T44in_Out_Permitted_Wheel)/{INCOMING - OUTGOING}		Option FC-P/-A
Eu.TDS.6473	Def	Initial3		Option FC-P/-A
Eu.TDS.7007	Def	/{Initial3 - OUTGOING}		Option FC-P/-A
Eu.TDS.6475	Def	OUTGOING		Option FC-P/-A
Eu.TDS.6476	Def	when(T40in_Sweeping_Successful)/send Change_Trigger(InternalTrigger) to p86out;{OUTGOING - SUCCESSFUL_SWEEPING}		Option FC-P/-A
Eu.TDS.6477	Def	when(T42in_In_Permitted_Wheel)/{OUTGOING - INCOMING}		Option FC-P/-A
Eu.TDS.6478	Def	MONITOR_T_MIN		Option FC-P/-A
Eu.TDS.6479	Def	Initial2		Option FC-P/-A
Eu.TDS.7008	Def	/{Initial2 - WAIITING_FOR_T_MIN}		Option FC-P/-A
Eu.TDS.6481	Def	T_MIM_EXPIRED		Option FC-P/-A
Eu.TDS.6482	Def	WAIITING_FOR_T_MIN		Option FC-P/-A
Eu.TDS.6483	Def	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	Def	when(T44in_Out_Permitted_Wheel)/cOp5_Report_Outgoing_Wheel_before_t_Min();{WAIITING_FOR_T_MIN - FAILED}		Option FC-P/-A
Eu.TDS.6926	Def	entry/d19out_Process_State := "Sweeping train detected";{State-internal in SWEEPING_TRAIN_DETECTED}		Option FC-P/-A
Eu.TDS.6485	Def	WAITING_FOR_ACKNOWLEDGEMENT		Option FC-P/-A
Eu.TDS.6486	Def	Confirm_Acknowledgement/ send Execute_FC to p4out;{WAITING_FOR_ACKNOWLEDGEMENT - WAITING}		Option FC-P/-A
Eu.TDS.6487	Def	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	Def	entry/d19out_Process_State := "Waiting for an acknowledgment";{State-internal in WAITING_FOR_ACKNOWLEDGEMENT}		Option FC-P/-A
Eu.TDS.6488	Def	WAITING_FOR_SWEEPING_TRAIN		Option FC-P/-A
Eu.TDS.6489	Def	Execute_Visual_Sweeping_Confirmation/send Change_Trigger(CommandFromMaintainer) to p86out;{WAITING_FOR_SWEEPING_TRAIN - SUCCESSFUL_SWEEPING}		Option FC-P/-A
Eu.TDS.6490	Def	when(T42in_In_Permitted_Wheel)/{WAITING_FOR_SWEEPING_TRAIN - SWEEPING_TRAIN_DETECTED}		Option FC-P/-A
Eu.TDS.6491	Def	when(T44in_Out_Permitted_Wheel)/cOp2_Report_Incorrect_Count();{WAITING_FOR_SWEEPING_TRAIN - FAILED}		Option FC-P/-A
Eu.TDS.6930	Def	entry/d19out_Process_State := "Waiting for sweeping train";{State-internal in WAITING_FOR_SWEEPING_TRAIN}		Option FC-P/-A
Eu.TDS.6492	Def	when(D32in_Critical_Failure_TVPS)/{PERFORM_FC_P_OR_FC_P_A - WAITING}		Option FC-P/-A
Eu.TDS.6493	Def	when(T39in_Undefined_Pattern)/cOp2_Report_Incorrect_Count();{PERFORM_FC_P_OR_FC_P_A - FAILED}		Option FC-P/-A
Eu.TDS.6494	Def	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	Def	entry/d18out_Perform_FC_P_or_FC_A := TRUE;{State-internal in PERFORM_FC_P_OR_FC_P_A}		Option FC-P/-A

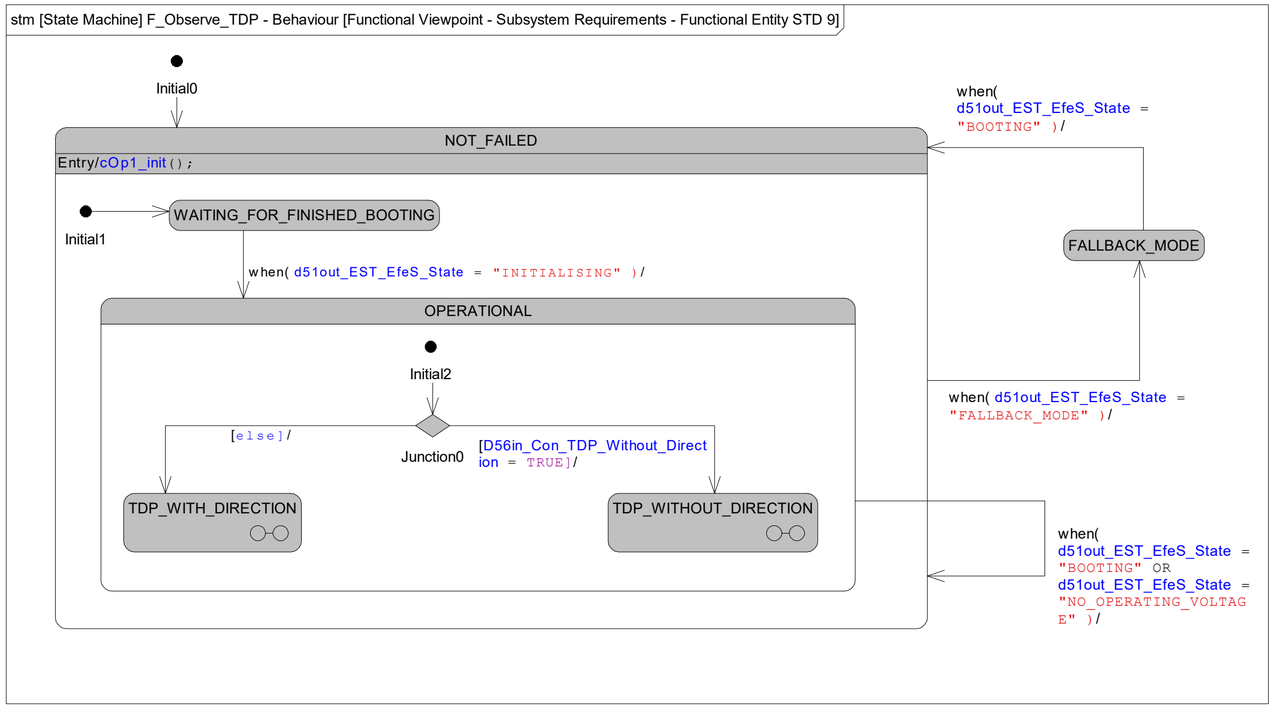
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6928	Def	exit/d18out_Perform_FC_P_or_FC_A := FALSE;{State-internal in PERFORM_FC_P_OR_FC_P_A}		Option FC-P/-A
Eu.TDS.6495	Def	WAITING		Option FC-P/-A
Eu.TDS.6496	Def	Execute_FC_P/ Mem_Last_Command := "FC-P";{WAITING - PERFORM_FC_P_OR_FC_P_A}		Option FC-P/-A
Eu.TDS.6497	Def	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	Def	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	Req	[Block] F_Observe_Track_Circuits [Functional Viewpoint - Subsystem Requirements - Functional Entity]  		Basic TDS TC
Eu.TDS.6359	Def	/* cOp1_init */ d46out_Report_Ability_To_Be_Forced_To_Clear := FALSE; d45out_Report_TVPS_Occupancy_Status := "undefined"; d47out_Report_POM_Status := "undefined";	cOp1_init	Basic TDS TC
Eu.TDS.6360	Def	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	Def	d45out_Report_TVPS_Occupancy_Status		Basic TDS TC
Eu.TDS.6362	Def	d46out_Report_Ability_To_Be_Forced_To_Clear		Basic TDS TC
Eu.TDS.6363	Def	d47out_Report_POM_Status		Basic TDS TC
Eu.TDS.6364	Def	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 or absence of power. - True: occupancy detected or occupancy cannot be detected - False: no occupancy detected	Basic TDS TC
Eu.TDS.6365	Def	D49in_Power_Monitoring_Failure	The port D49in_Power_Monitoring_Failure represents a failure detected by the Power Off Monitoring. The POM detects a failure in the power supply of the track circuit or detects a failure in its own functioning. The functionality of monitoring the power supply and reporting 'Power supply OK/NOK' is only needed in a TVPS if D50in_Con_POM_used = true. - True: failure of the power monitoring - False: no failure of the power monitoring	Basic TDS TC
Eu.TDS.6367	Def	d51out_EST_EfeS_State		Basic TDS TC
Eu.TDS.7323	Def	D50in_Con_POM_used	The port D50in_Con_POM_used provides the configuration whether a POM is used. Permitted value: - True: TVPS with a POM - False: TVPS without a POM	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	Req	Functional Viewpoint - Subsystem Requirements - Functional Entity STD 8  	This state machine diagram describes the requirements for the following functionalities: - observe the occupancy status of a TVPS which works with track circuits	Basic TDS TC
Eu.TDS.6369	Def	FALLBACK_MODE		Basic TDS TC
Eu.TDS.6370	Def	when(d51out_EST_EfeS_State = "BOOTING")/{FALLBACK_MODE - REPORT_OCCUPANCY_STATUS}		Basic TDS TC

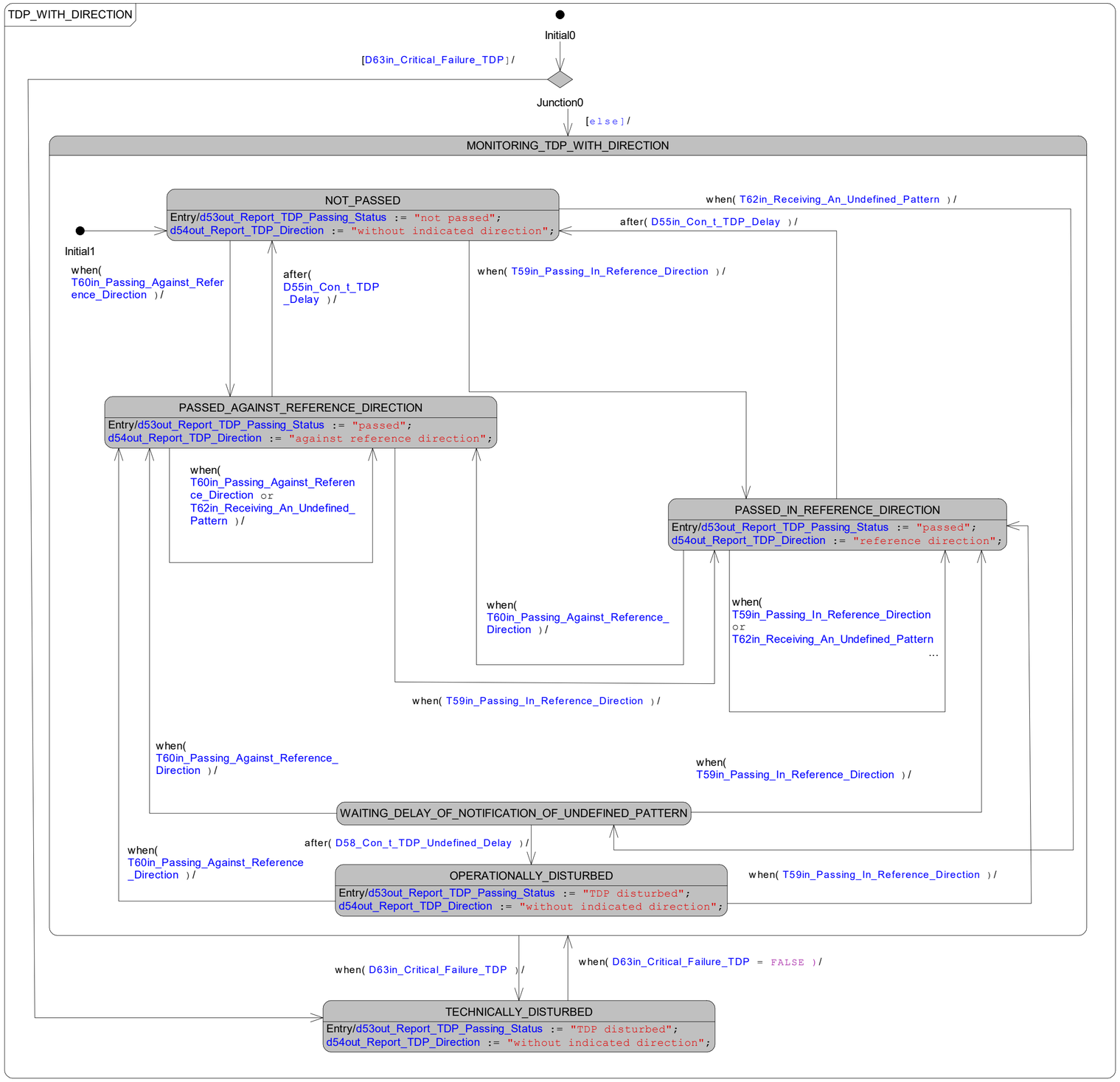
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6372	Def	Initial0		Basic TDS TC
Eu.TDS.6373	Def	/{Initial0 - REPORT_OCCUPANCY_STATUS}		Basic TDS TC
Eu.TDS.6374	Def	REPORT_OCCUPANCY_STATUS		Basic TDS TC
Eu.TDS.6375	Def	Initial1		Basic TDS TC
Eu.TDS.6376	Def	/{Initial1 - WAITING_FOR_FINISHED_BOOTING}		Basic TDS TC
Eu.TDS.6377	Def	OPERATING		Basic TDS TC
Eu.TDS.6380	Def	Initial2		Basic TDS TC
Eu.TDS.6381	Def	/{Initial2 - Junction0}		Basic TDS TC
Eu.TDS.6382	Def	Junction0		Basic TDS TC
Eu.TDS.6383	Def	[else]/{Junction0 - OBSERVING}		Basic TDS TC
Eu.TDS.6384	Def	[D32in_Critical_Failure_TVPS]/{Junction0 - TECHNICALLY_DISTURBED}		Basic TDS TC
Eu.TDS.6385	Def	OBSERVING		Basic TDS TC
Eu.TDS.6426	Def	when(D32in_Critical_Failure_TVPS)/{OBSERVING - TECHNICALLY_DISTURBED}		Basic TDS TC
Eu.TDS.6394	Def	Initial3		Basic TDS TC
Eu.TDS.6395	Def	/{Initial3 - Junction1}		Basic TDS TC
Eu.TDS.6396	Def	Junction1		Basic TDS TC
Eu.TDS.6397	Def	[D48in_Occupancy_Detected]/{Junction1 - OCCUPIED}		Basic TDS TC
Eu.TDS.6398	Def	[else]/{Junction1 - VACANT}		Basic TDS TC
Eu.TDS.6399	Def	OCCUPIED		Basic TDS TC
Eu.TDS.6400	Def	Initial5		Basic TDS TC
Eu.TDS.6401	Def	/{Initial5 - Junction4}		Basic TDS TC
Eu.TDS.6402	Def	Junction4		Basic TDS TC
Eu.TDS.6403	Def	[D49in_Power_Monitoring_Failure AND D50in_Con_POM_used]/{Junction4 - POM_NOK}		Basic TDS TC
Eu.TDS.6404	Def	[NOT D49in_Power_Monitoring_Failure AND D50in_Con_POM_used]/{Junction4 - POM_OK}		Basic TDS TC
Eu.TDS.7324	Def	[else]/{Junction4 - WITHOUT_POM}		Basic TDS TC
Eu.TDS.6405	Def	POM_NOK		Basic TDS TC
Eu.TDS.6406	Def	when(NOT D49in_Power_Monitoring_Failure)/{POM_NOK - POM_OK}		Basic TDS TC
Eu.TDS.6919	Def	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	Def	POM_OK		Basic TDS TC
Eu.TDS.6408	Def	when(D49in_Power_Monitoring_Failure)/{POM_OK - POM_NOK}		Basic TDS TC
Eu.TDS.6920	Def	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

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.7325	Def	WITHOUT_POM		Basic TDS TC
Eu.TDS.7348	Def	entry/d45out_Report_TVPS_Occupancy_Status := "TVPS is in state occupied"; d47out_Report_POM_Status := "Not Applicable";{State-internal in WITHOUT_POM}		Basic TDS TC
Eu.TDS.6411	Def	when(D48in_Occupancy_Detected = FALSE)/{OCCUPIED - VACANT}		Basic TDS TC
Eu.TDS.6412	Def	VACANT		Basic TDS TC
Eu.TDS.6413	Def	Initial4		Basic TDS TC
Eu.TDS.6414	Def	/{Initial4 - Junction3}		Basic TDS TC
Eu.TDS.6415	Def	Junction3		Basic TDS TC
Eu.TDS.6416	Def	[D49in_Power_Monitoring_Failure AND D50in_Con_POM_used]/{Junction3 - POM_NOK}		Basic TDS TC
Eu.TDS.6417	Def	[NOT D49in_Power_Monitoring_Failure AND D50in_Con_POM_used]/{Junction3 - POM_OK}		Basic TDS TC
Eu.TDS.7326	Def	[else]/{Junction3 - WITHOUT_POM}		Basic TDS TC
Eu.TDS.6418	Def	POM_NOK		Basic TDS TC
Eu.TDS.6419	Def	when(NOT D49in_Power_Monitoring_Failure)/{POM_NOK - POM_OK}		Basic TDS TC
Eu.TDS.6921	Def	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	Def	POM_OK		Basic TDS TC
Eu.TDS.6421	Def	when(D49in_Power_Monitoring_Failure)/{POM_OK - POM_NOK}		Basic TDS TC
Eu.TDS.6922	Def	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	Def	when(D48in_Occupancy_Detected = TRUE)/{VACANT - OCCUPIED}		Basic TDS TC
Eu.TDS.7327	Def	WITHOUT_POM		Basic TDS TC
Eu.TDS.7349	Def	entry/d45out_Report_TVPS_Occupancy_Status := "TVPS is in state vacant"; d47out_Report_POM_Status := "Not Applicable";{State-internal in WITHOUT_POM}		Basic TDS TC
Eu.TDS.6427	Def	TECHNICALLY_DISTURBED		Basic TDS TC
Eu.TDS.6428	Def	Initial6		Basic TDS TC
Eu.TDS.6429	Def	/{Initial6 - Junction5}		Basic TDS TC
Eu.TDS.6430	Def	Junction5		Basic TDS TC
Eu.TDS.6431	Def	[D49in_Power_Monitoring_Failure AND D50in_Con_POM_used]/{Junction5 - POM_NOK}		Basic TDS TC
Eu.TDS.6432	Def	[NOT D49in_Power_Monitoring_Failure AND D50in_Con_POM_used]/{Junction5 - POM_OK}		Basic TDS TC
Eu.TDS.7328	Def	[else]/{Junction5 - WITHOUT_POM}		Basic TDS TC
Eu.TDS.6433	Def	POM_NOK		Basic TDS TC
Eu.TDS.6923	Def	entry/d45out_Report_TVPS_Occupancy_Status := "TVPS is in state disturbed"; d47out_Report_POM_Status := "Power supply NOK";{State-internal in POM_NOK}		Basic TDS TC
Eu.TDS.7056	Def	when(NOT D49in_Power_Monitoring_Failure)/{POM_NOK - POM_OK}		Basic TDS TC
Eu.TDS.6435	Def	POM_OK		Basic TDS TC
Eu.TDS.6924	Def	entry/d45out_Report_TVPS_Occupancy_Status := "TVPS is in state disturbed"; d47out_Report_POM_Status := "Power supply OK";{State-internal in POM_OK}		Basic TDS TC

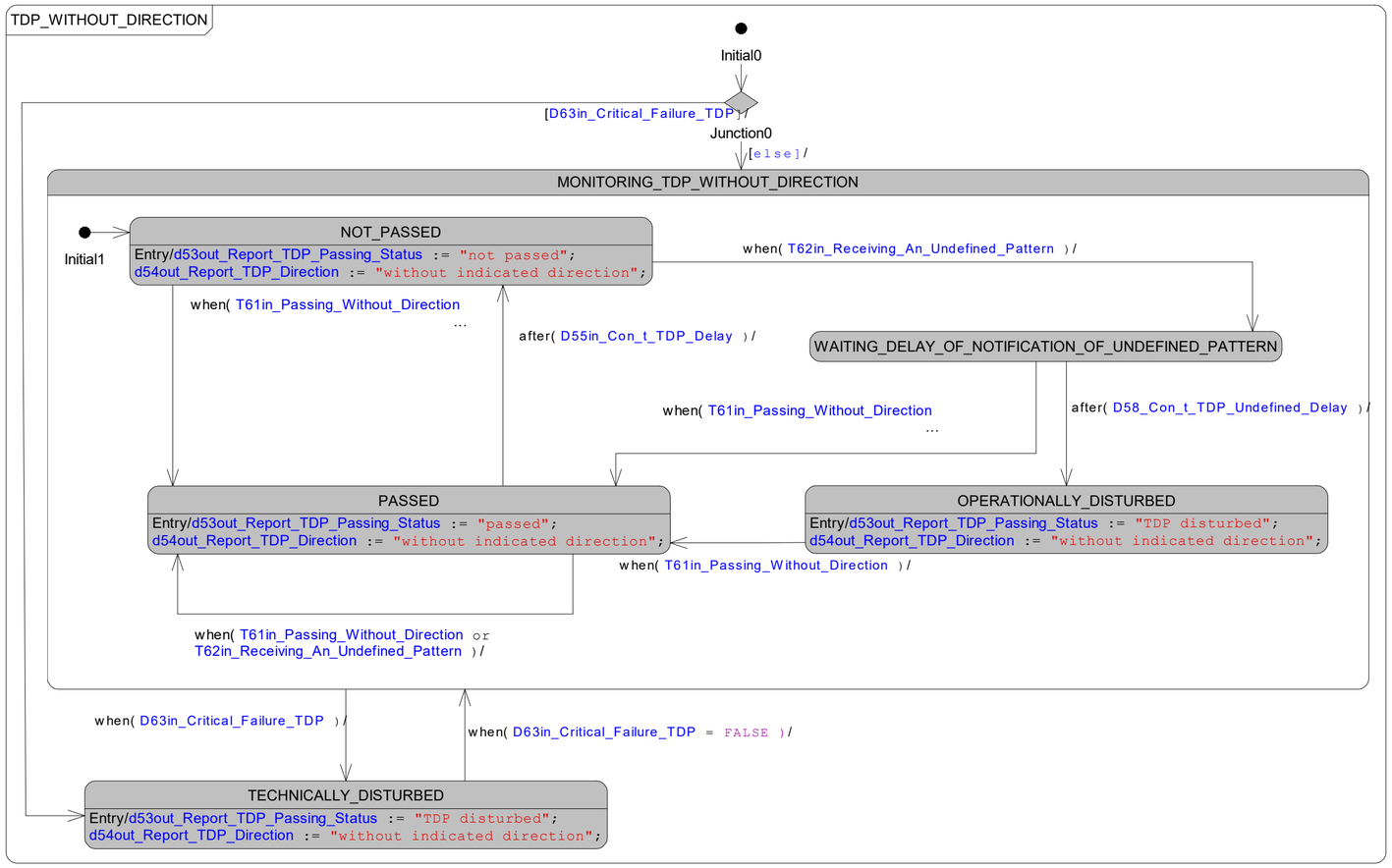
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.7057	Def	when(D49in_Power_Monitoring_Failure)/{POM_OK - POM_NOK}		Basic TDS TC
Eu.TDS.7329	Def	WITHOUT_POM		Basic TDS TC
Eu.TDS.7350	Def	entry/d45out_Report_TVPS_Occupancy_Status := "TVPS is in state disturbed"; d47out_Report_POM_Status := "Not Applicable";{State-internal in WITHOUT_POM}		Basic TDS TC
Eu.TDS.6437	Def	when(D32in_Critical_Failure_TVPS = FALSE)/{TECHNICALLY_DISTURBED - OBSERVING}		Basic TDS TC
Eu.TDS.6925	Def	entry/d46out_Report_Ability_To_Be_Forced_To_Clear := FALSE;{State-internal in OPERATING}		Basic TDS TC
Eu.TDS.7058	Def	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	Def	entry/cOp1_init();{State-internal in REPORT_OCCUPANCY_STATUS}		Basic TDS TC
Eu.TDS.6440	Def	WAITING_FOR_FINISHED_BOOTING		Basic TDS TC
Eu.TDS.6441	Def	when(d51out_EST_EfeS_State = "INITIALISING")/{WAITING_FOR_FINISHED_BOOTING - OPERATING}		Basic TDS TC
Eu.TDS.6442	Def	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	Req	[Block] F_Observe_TDP [Functional Viewpoint - Subsystem Requirements - Functional Entity]  		Basic TDS TDP
Eu.TDS.6353	Def	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	Def	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	Def	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	Def	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 undefined pattern.	Basic TDS TDP
Eu.TDS.6260	Def	/* cOp1_init */ d53out_Report_TDP_Passing_Status := "undefined"; d54out_Report_TDP_Direction := "undefined";	cOp1_init	Basic TDS TDP
Eu.TDS.6261	Def	d51out_EST_EfeS_State		Basic TDS TDP
Eu.TDS.6262	Def	d53out_Report_TDP_Passing_Status		Basic TDS TDP

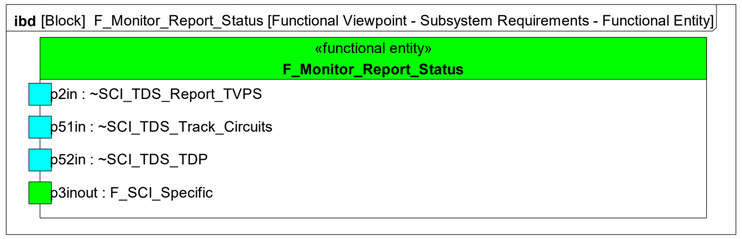
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6263	Def	d54out_Report_TDP_Direction		Basic TDS TDP
Eu.TDS.6264	Def	D55in_Con_t_TDP_Delay	The port D55in_Con_t_TDP_Delay refines the time value for Con_t_TDP_Delay.	Basic TDS TDP
Eu.TDS.6265	Def	D56in_Con_TDP_Without_Direction	The port D56in_Con_TDP_Without_Direction 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	Def	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.	Basic TDS TDP
Eu.TDS.6267	Def	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	Req	Functional Viewpoint - Subsystem Requirements - Functional Entity STD 9  	This state machine diagram describes the requirements for the following functionalities: - performes and monitores the excecution of FC-P or FC-P-A command	Basic TDS TDP
Eu.TDS.6269	Def	FALLBACK_MODE		Basic TDS TDP
Eu.TDS.6270	Def	when(d51out_EST_EfeS_State = "BOOTING")/{FALLBACK_MODE - NOT_FAILED}		Basic TDS TDP
Eu.TDS.6272	Def	Initial0		Basic TDS TDP
Eu.TDS.6273	Def	/{Initial0 - NOT_FAILED}		Basic TDS TDP
Eu.TDS.6274	Def	NOT_FAILED		Basic TDS TDP
Eu.TDS.6275	Def	Initial1		Basic TDS TDP

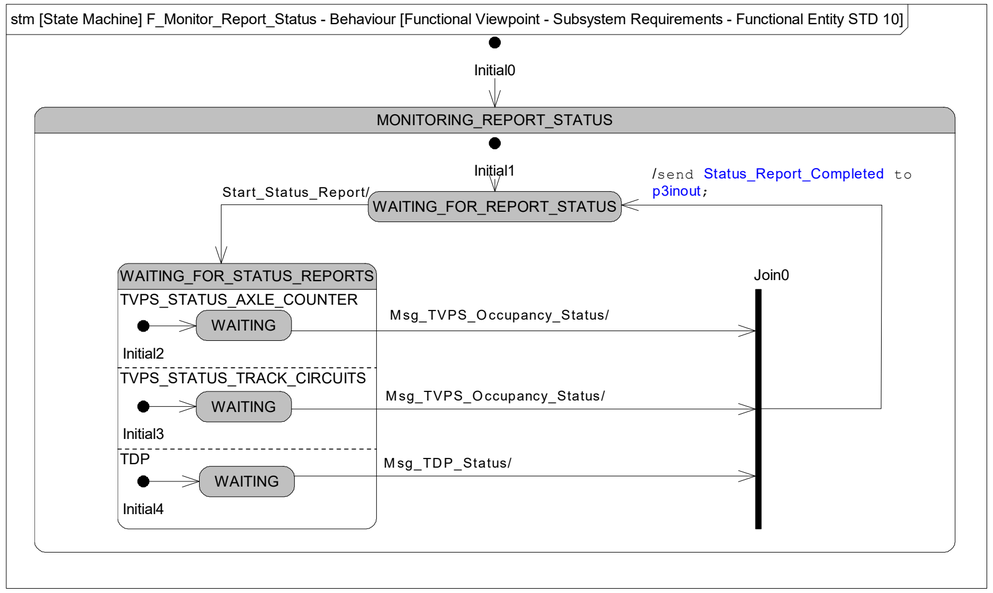
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6276	Def	/{Initial1 - WAITING_FOR_FINISHED_BOOTING}		Basic TDS TDP
Eu.TDS.6277	Def	OPERATIONAL		Basic TDS TDP
Eu.TDS.6278	Def	Initial2		Basic TDS TDP
Eu.TDS.6279	Def	/{Initial2 - Junction0}		Basic TDS TDP
Eu.TDS.6280	Def	Junction0		Basic TDS TDP
Eu.TDS.6281	Def	[else]/{Junction0 - TDP_WITH_DIRECTION}		Basic TDS TDP
Eu.TDS.6282	Def	[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	Req	Functional Viewpoint - Subsystem Requirements - Functional Entity STD 9.1  		Basic TDS TDP
Eu.TDS.6284	Def	Initial0		Basic TDS TDP
Eu.TDS.6285	Def	/{Initial0 - Junction0}		Basic TDS TDP

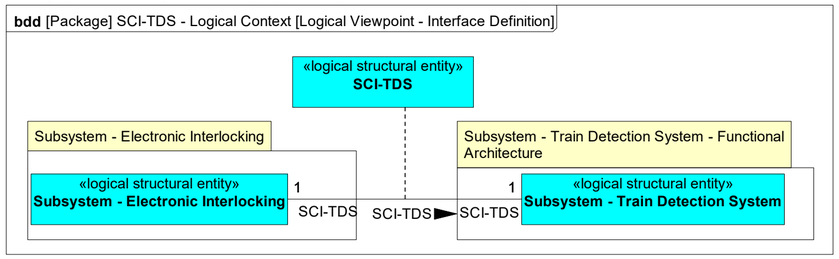
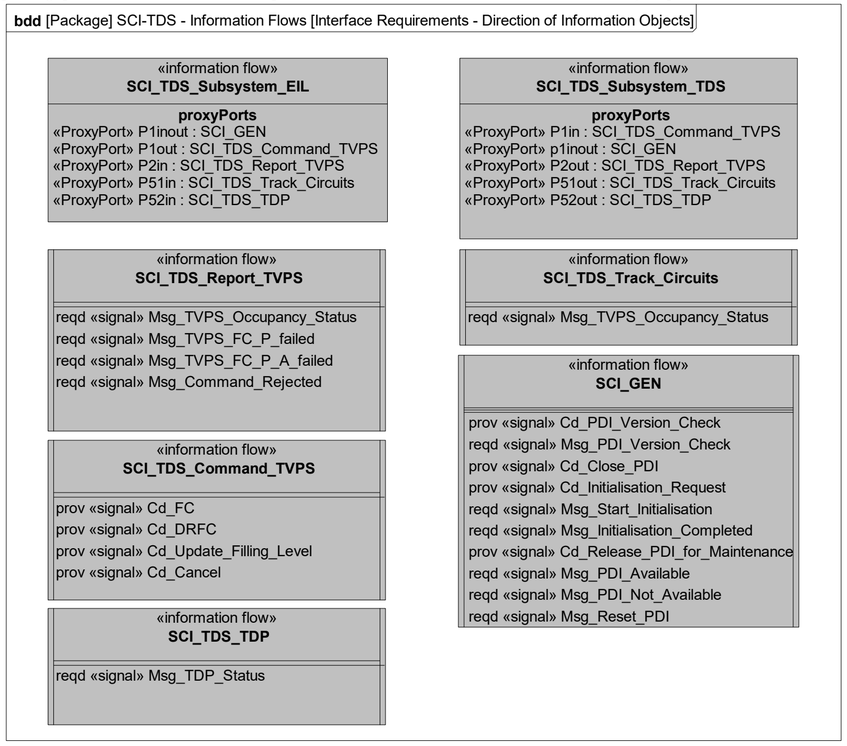
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6286	Def	Junction0		Basic TDS TDP
Eu.TDS.6287	Def	[else]/{Junction0 - MONITORING_TDP_WITH_DIRECTION}		Basic TDS TDP
Eu.TDS.6288	Def	[D63in_Critical_Failure_TDP]/{Junction0 - TECHNICALLY_DISTURBED}		Basic TDS TDP
Eu.TDS.6289	Def	MONITORING_TDP_WITH_DIRECTION		Basic TDS TDP
Eu.TDS.6290	Def	Initial1		Basic TDS TDP
Eu.TDS.6291	Def	/{Initial1 - NOT_PASSED}		Basic TDS TDP
Eu.TDS.6292	Def	NOT_PASSED		Basic TDS TDP
Eu.TDS.6294	Def	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	Def	when(T59in_Passing_In_Reference_Direction)/{NOT_PASSED - PASSED_IN_REFERENCE_DIRECTION}		Basic TDS TDP
Eu.TDS.6296	Def	when(T60in_Passing_Against_Reference_Direction)/{NOT_PASSED - PASSED_AGAINST_REFERENCE_DIRECTION}		Basic TDS TDP
Eu.TDS.6297	Def	when(T62in_Receiving_An_Undefined_Pattern)/{NOT_PASSED - WAITING_DELAY_OF_NOTIFICATION_OF_UNDEFINED_PATTERN}		Basic TDS TDP
Eu.TDS.6298	Def	OPERATIONALLY_DISTURBED		Basic TDS TDP
Eu.TDS.6299	Def	when(T59in_Passing_In_Reference_Direction)/{OPERATIONALLY_DISTURBED - PASSED_IN_REFERENCE_DIRECTION}		Basic TDS TDP
Eu.TDS.6300	Def	when(T60in_Passing_Against_Reference_Direction)/{OPERATIONALLY_DISTURBED - PASSED_AGAINST_REFERENCE_DIRECTION}		Basic TDS TDP
Eu.TDS.6913	Def	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	Def	PASSED_AGAINST_REFERENCE_DIRECTION		Basic TDS TDP
Eu.TDS.6302	Def	after(D55in_Con_t_TDP_Delay)/{PASSED_AGAINST_REFERENCE_DIRECTION - NOT_PASSED}		Basic TDS TDP
Eu.TDS.6304	Def	when(T59in_Passing_In_Reference_Direction)/{PASSED_AGAINST_REFERENCE_DIRECTION - PASSED_IN_REFERENCE_DIRECTION}		Basic TDS TDP
Eu.TDS.6305	Def	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	Def	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	Def	PASSED_IN_REFERENCE_DIRECTION		Basic TDS TDP
Eu.TDS.6307	Def	after(D55in_Con_t_TDP_Delay)/{PASSED_IN_REFERENCE_DIRECTION - NOT_PASSED}		Basic TDS TDP
Eu.TDS.6309	Def	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	Def	when(T60in_Passing_Against_Reference_Direction)/{PASSED_IN_REFERENCE_DIRECTION - PASSED_AGAINST_REFERENCE_DIRECTION}		Basic TDS TDP
Eu.TDS.6915	Def	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	Def	WAITING_DELAY_OF_NOTIFICATION_OF_UNDEFINED_PATTERN		Basic TDS TDP
Eu.TDS.6312	Def	after(D58_Con_t_TDP_Undefined_Delay)/{WAITING_DELAY_OF_NOTIFICATION_OF_UNDEFINED_PATTERN - OPERATIONALLY_DISTURBED}		Basic TDS TDP
Eu.TDS.6313	Def	when(T59in_Passing_In_Reference_Direction)/{WAITING_DELAY_OF_NOTIFICATION_OF_UNDEFINED_PATTERN - PASSED_IN_REFERENCE_DIRECTION}		Basic TDS TDP
Eu.TDS.6314	Def	when(T60in_Passing_Against_Reference_Direction)/{WAITING_DELAY_OF_NOTIFICATION_OF_UNDEFINED_PATTERN - PASSED_AGAINST_REFERENCE_DIRECTION}		Basic TDS TDP
Eu.TDS.6315	Def	when(D63in_Critical_Failure_TDP)/{MONITORING_TDP_WITH_DIRECTION - TECHNICALLY_DISTURBED}		Basic TDS TDP
Eu.TDS.6317	Def	TECHNICALLY_DISTURBED		Basic TDS TDP

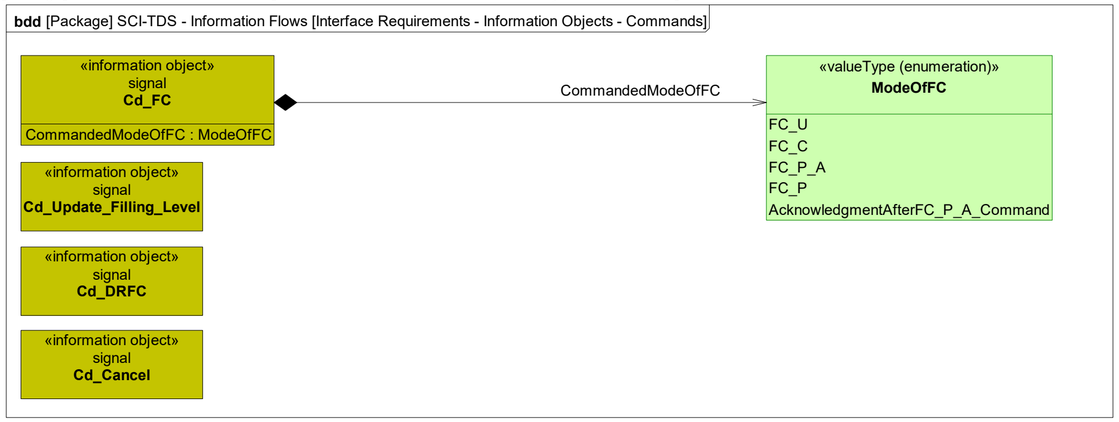
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6318	Def	entry/d53out_Report_TDP_Passing_Status := "TDP disturbed"; d54out_Report_TDP_Direction := "without indicated direction";{State-internal in TECHNICALLY_DISTURBED}		Basic TDS TDP
Eu.TDS.6320	Def	when(D63in_Critical_Failure_TDP = FALSE)/{TECHNICALLY_DISTURBED - MONITORING_TDP_WITH_DIRECTION}		Basic TDS TDP
Eu.TDS.6321	Info	TDP_WITHOUT_DIRECTION		Basic TDS TDP
Eu.TDS.6343	Req	Functional Viewpoint - Subsystem Requirements - Functional Entity STD 9.2  		Basic TDS TDP
Eu.TDS.6322	Def	Initial0		Basic TDS TDP
Eu.TDS.6323	Def	/{Initial0 - Junction0}		Basic TDS TDP
Eu.TDS.6324	Def	Junction0		Basic TDS TDP
Eu.TDS.6325	Def	[else]/{Junction0 - MONITORING_TDP_WITHOUT_DIRECTION}		Basic TDS TDP
Eu.TDS.6326	Def	[D63in_Critical_Failure_TDP]/{Junction0 - TECHNICALLY_DISTURBED}		Basic TDS TDP
Eu.TDS.6327	Def	MONITORING_TDP_WITHOUT_DIRECTION		Basic TDS TDP
Eu.TDS.6328	Def	Initial1		Basic TDS TDP
Eu.TDS.6329	Def	/{Initial1 - NOT_PASSED}		Basic TDS TDP
Eu.TDS.6330	Def	NOT_PASSED		Basic TDS TDP
Eu.TDS.6331	Def	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	Def	when(T61in_Passing_Without_Direction)/{NOT_PASSED - PASSED}		Basic TDS TDP
Eu.TDS.6333	Def	when(T62in_Receiving_An_Undefined_Pattern)/{NOT_PASSED - WAITING_DELAY_OF_NOTIFICATION_OF_UNDEFINED_PATTERN}		Basic TDS TDP
Eu.TDS.6334	Def	OPERATIONALLY_DISTURBED		Basic TDS TDP
Eu.TDS.6335	Def	when(T61in_Passing_Without_Direction)/{OPERATIONALLY_DISTURBED - PASSED}		Basic TDS TDP
Eu.TDS.6916	Def	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	Def	PASSED		Basic TDS TDP
Eu.TDS.6337	Def	after(D55in_Con_t_TDP_Delay)/{PASSED - NOT_PASSED}		Basic TDS TDP
Eu.TDS.6338	Def	when(T61in_Passing_Without_Direction or T62in_Receiving_An_Undefined_Pattern)/{PASSED - PASSED}		Basic TDS TDP
Eu.TDS.6917	Def	entry/d53out_Report_TDP_Passing_Status := "passed"; d54out_Report_TDP_Direction := "without indicated direction";{State-internal in PASSED}		Basic TDS TDP
Eu.TDS.6339	Def	WAITING_DELAY_OF_NOTIFICATION_OF_UNDEFINED_PATTERN		Basic TDS TDP
Eu.TDS.6340	Def	after(D58_Con_t_TDP_Undefined_Delay)/{WAITING_DELAY_OF_NOTIFICATION_OF_UNDEFINED_PATTERN - OPERATIONALLY_DISTURBED}		Basic TDS TDP
Eu.TDS.6341	Def	when(T61in_Passing_Without_Direction)/{WAITING_DELAY_OF_NOTIFICATION_OF_UNDEFINED_PATTERN - PASSED}		Basic TDS TDP
Eu.TDS.6342	Def	when(D63in_Critical_Failure_TDP)/{MONITORING_TDP_WITHOUT_DIRECTION - TECHNICALLY_DISTURBED}		Basic TDS TDP
Eu.TDS.6344	Def	TECHNICALLY_DISTURBED		Basic TDS TDP
Eu.TDS.6345	Def	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	Def	when(D63in_Critical_Failure_TDP = FALSE)/{TECHNICALLY_DISTURBED - MONITORING_TDP_WITHOUT_DIRECTION}		Basic TDS TDP
Eu.TDS.6348	Def	when(d51out_EST_EfeS_State = "BOOTING" OR d51out_EST_EfeS_State = "NO_OPERATING_VOLTAGE")/{OPERATIONAL - NOT_FAILED}		Basic TDS TDP
Eu.TDS.6349	Def	entry/cOp1_init();{State-internal in NOT_FAILED}		Basic TDS TDP
Eu.TDS.6350	Def	WAITING_FOR_FINISHED_BOOTING		Basic TDS TDP
Eu.TDS.6351	Def	when(d51out_EST_EfeS_State = "INITIALISING")/{WAITING_FOR_FINISHED_BOOTING - OPERATIONAL}		Basic TDS TDP
Eu.TDS.6352	Def	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	Req	[Block] F_Monitor_Report_Status [Functional Viewpoint - Subsystem Requirements - Functional Entity]  		Basic TDS AC Basic TDS TDP Basic TDS TC

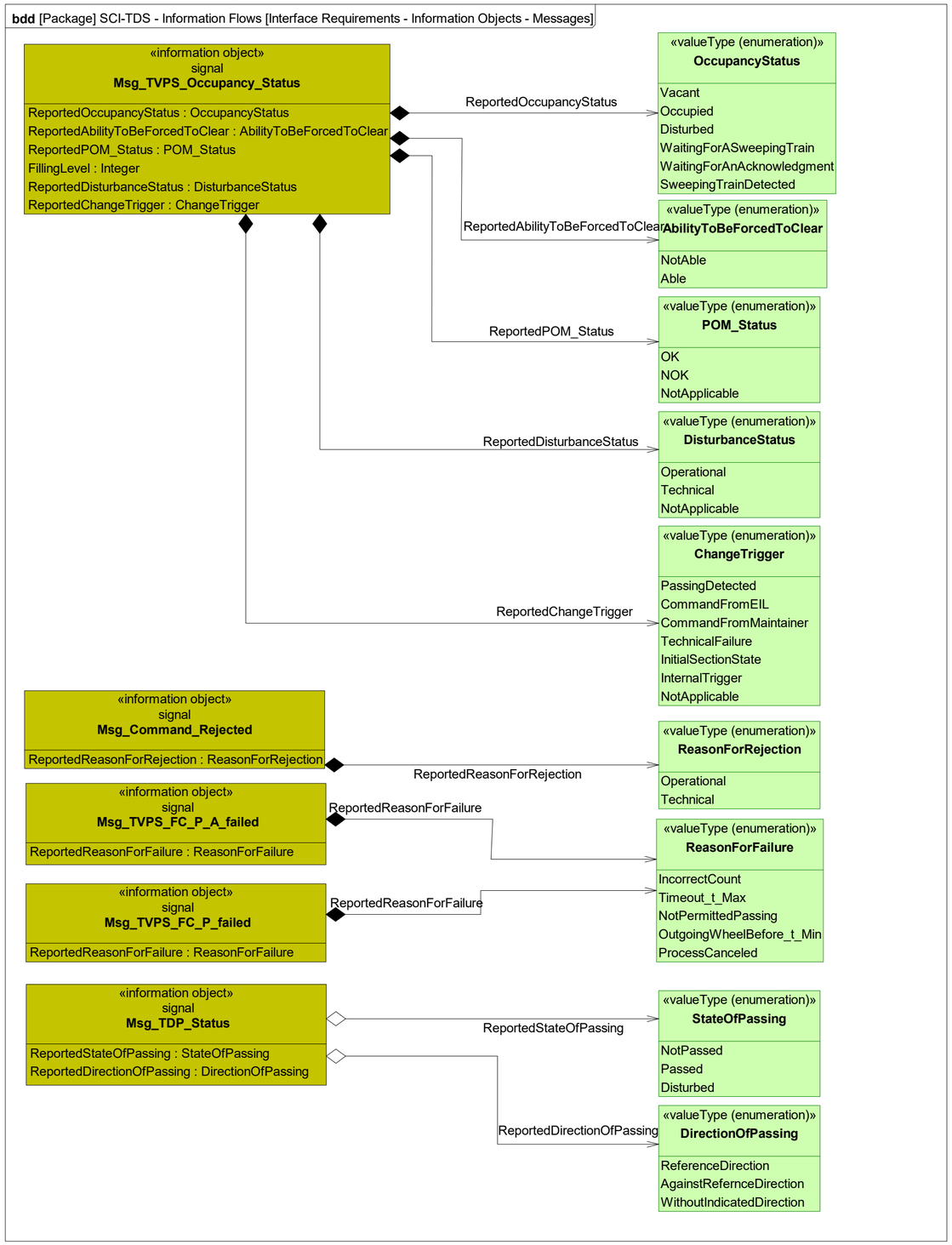
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6153	Def	p2in		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.6154	Def	p51in		Basic TDS TC
Eu.TDS.6155	Def	p52in		Basic TDS TDP
Eu.TDS.6156	Def	p3inout		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.6126	Info	F_Monitor_Report_Status - Behaviour		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.6127	Req	Functional Viewpoint - Subsystem Requirements - Functional Entity STD 10  	This state machine diagram describes the requirements for the following functionalities: - observe the sending of all status messages (per each TVPS and TDP) while initialisation	Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.6128	Def	Initial0		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.6129	Def	/{Initial0 - MONITORING_REPORT_STATUS}		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.6130	Def	MONITORING_REPORT_STATUS		Basic TDS AC Basic TDS TDP Basic TDS TC

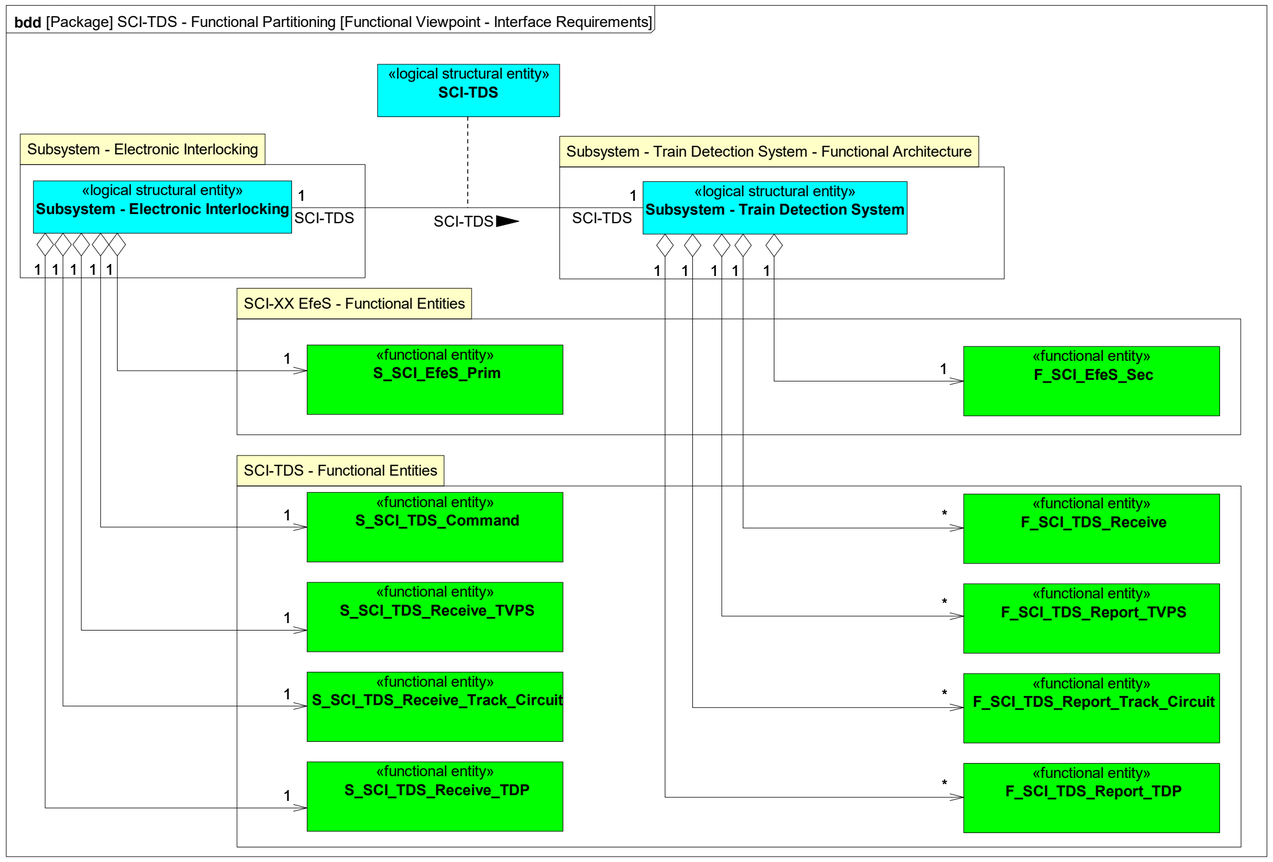
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6131	Def	Initial1		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.6132	Def	/{Initial1 - WAITING_FOR_REPORT_STATUS}		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.6133	Def	Join0		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.6134	Def	/send Status_Report_Completed to p3inout;{Join0 - WAITING_FOR_REPORT_STATUS}		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.6135	Def	WAITING_FOR_REPORT_STATUS		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.6136	Def	Start_Status_Report/{WAITING_FOR_REPORT_STATUS - WAITING_FOR_STATUS_REPORTS}		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.6137	Def	WAITING_FOR_STATUS_REPORTS		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.6143	Def	TVPS_STATUS_AXLE_COUNTER		Basic TDS AC
Eu.TDS.6144	Def	Initial2		Basic TDS AC
Eu.TDS.6145	Def	/{Initial2 - WAITING}		Basic TDS AC
Eu.TDS.6146	Def	WAITING		Basic TDS AC
Eu.TDS.6147	Def	Msg_TVPS_Occupancy_Status/{WAITING - Join0}		Basic TDS AC
Eu.TDS.6148	Def	TVPS_STATUS_TRACK_CIRCUITS		Basic TDS TC
Eu.TDS.6149	Def	Initial3		Basic TDS TC
Eu.TDS.6150	Def	/{Initial3 - WAITING}		Basic TDS TC
Eu.TDS.6151	Def	WAITING		Basic TDS TC
Eu.TDS.6152	Def	Msg_TVPS_Occupancy_Status/{WAITING - Join0}		Basic TDS TC
Eu.TDS.6138	Def	TDP		Basic TDS TDP
Eu.TDS.6139	Def	Initial4		Basic TDS TDP
Eu.TDS.6140	Def	/{Initial4 - WAITING}		Basic TDS TDP
Eu.TDS.6141	Def	WAITING		Basic TDS TDP

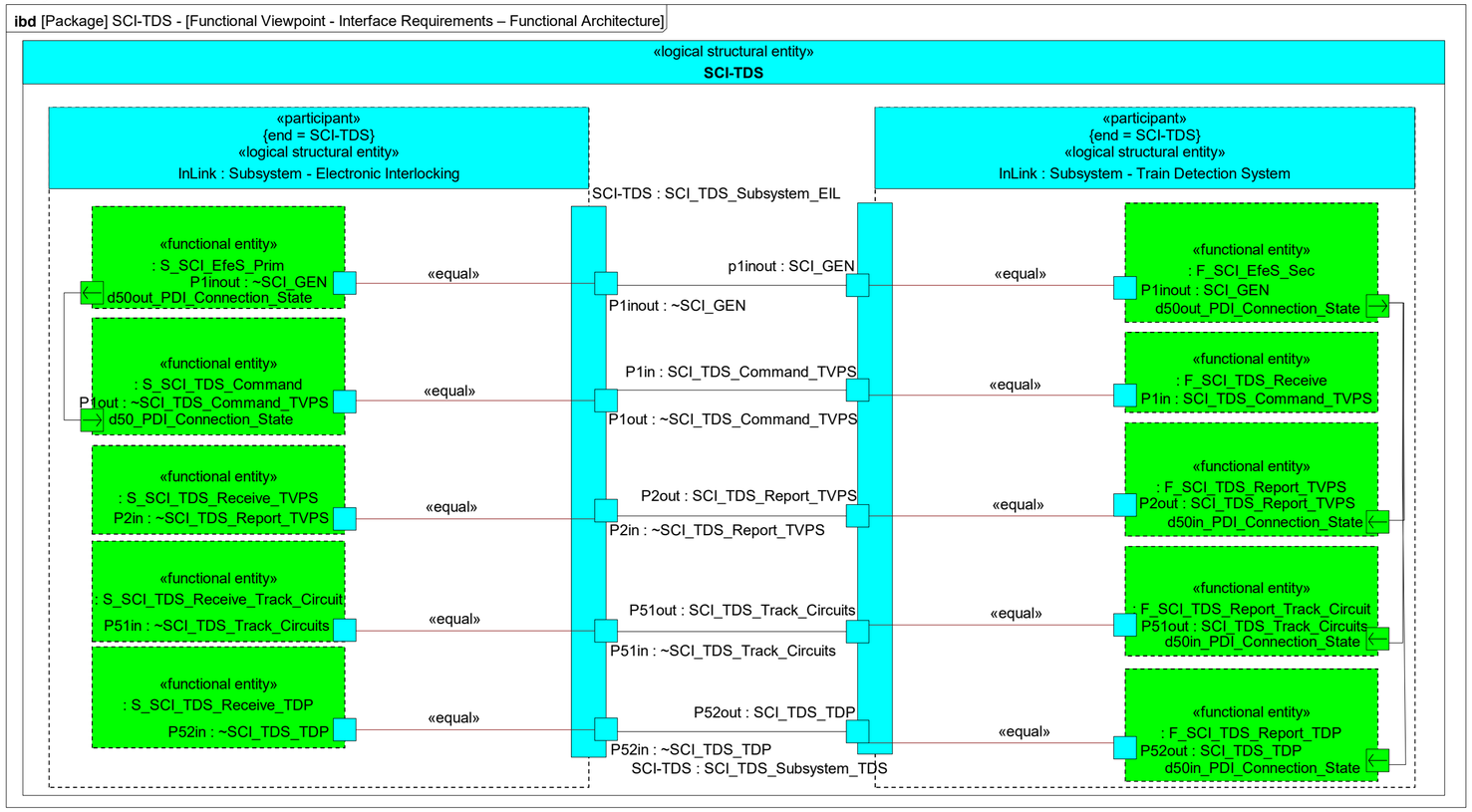
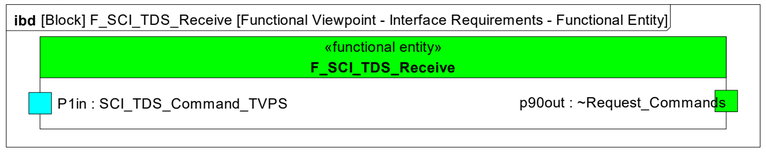
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6142	Def	Msg_TDP_Status/{WAITING - Join0}		Basic TDS TDP
Eu.TDS.202	Head	**3.4 Subsystem - Train Detection System - Interfaces**		
Eu.TDS.217	Head	**3.4.1 SCI-TDS (Subsystem – Electronic Interlocking)**		
Eu.TDS.6852	Head	**3.4.1.1 SCI-TDS - Logical Viewpoint**		
Eu.TDS.6853	Head	**3.4.1.1.1 SCI-TDS - Logical Context**		
Eu.TDS.6854	Def	[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	Def	[Package] SCI-TDS - Information Flows [Interface Requirements - Direction of Information Objects]  		Basic TDS AC Basic TDS TDP Basic TDS TC

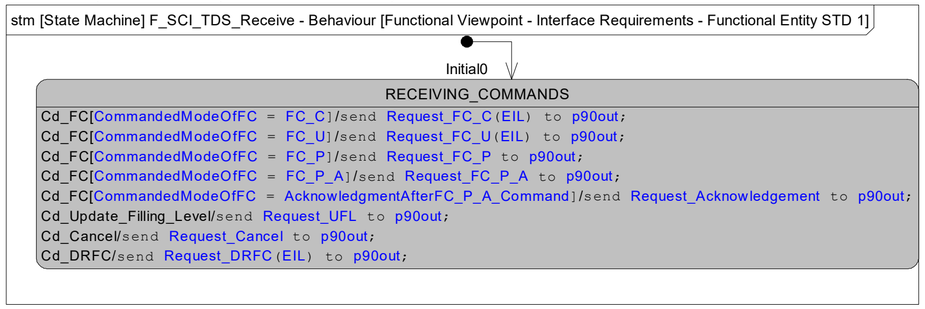
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6799	Def	[Package] SCI-TDS - Information Flows [Interface Requirements - Information Objects - Commands]  		Basic TDS AC

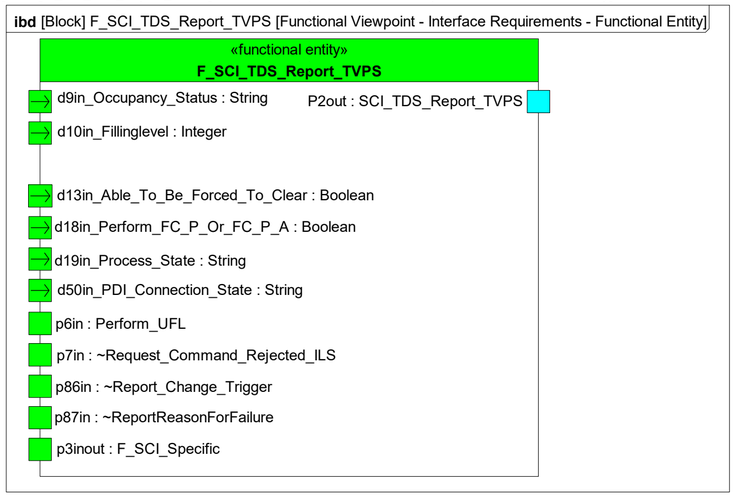
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6800	Def	[Package] SCI-TDS - Information Flows [Interface Requirements - Information Objects - Messages]		Basic TDS AC Basic TDS TDP Basic TDS TC



ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6803	Def	Cd_FC		Basic TDS AC
Eu.TDS.6806	Def	Cd_Update_Filling_Level		Option Update FL
Eu.TDS.6802	Def	Cd_DRFC		Basic TDS AC
Eu.TDS.6801	Def	Cd_Cancel		Option FC-P/-A
Eu.TDS.6824	Def	Msg_TVPS_Occupancy_Status		Basic TDS AC
Eu.TDS.6817	Def	Msg_Command_Rejected		Basic TDS AC
Eu.TDS.6822	Def	Msg_TVPS_FC_P_A_failed		Option FC-P/-A
Eu.TDS.6823	Def	Msg_TVPS_FC_P_failed		Option FC-P/-A
Eu.TDS.6832	Def	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	Def	[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**		

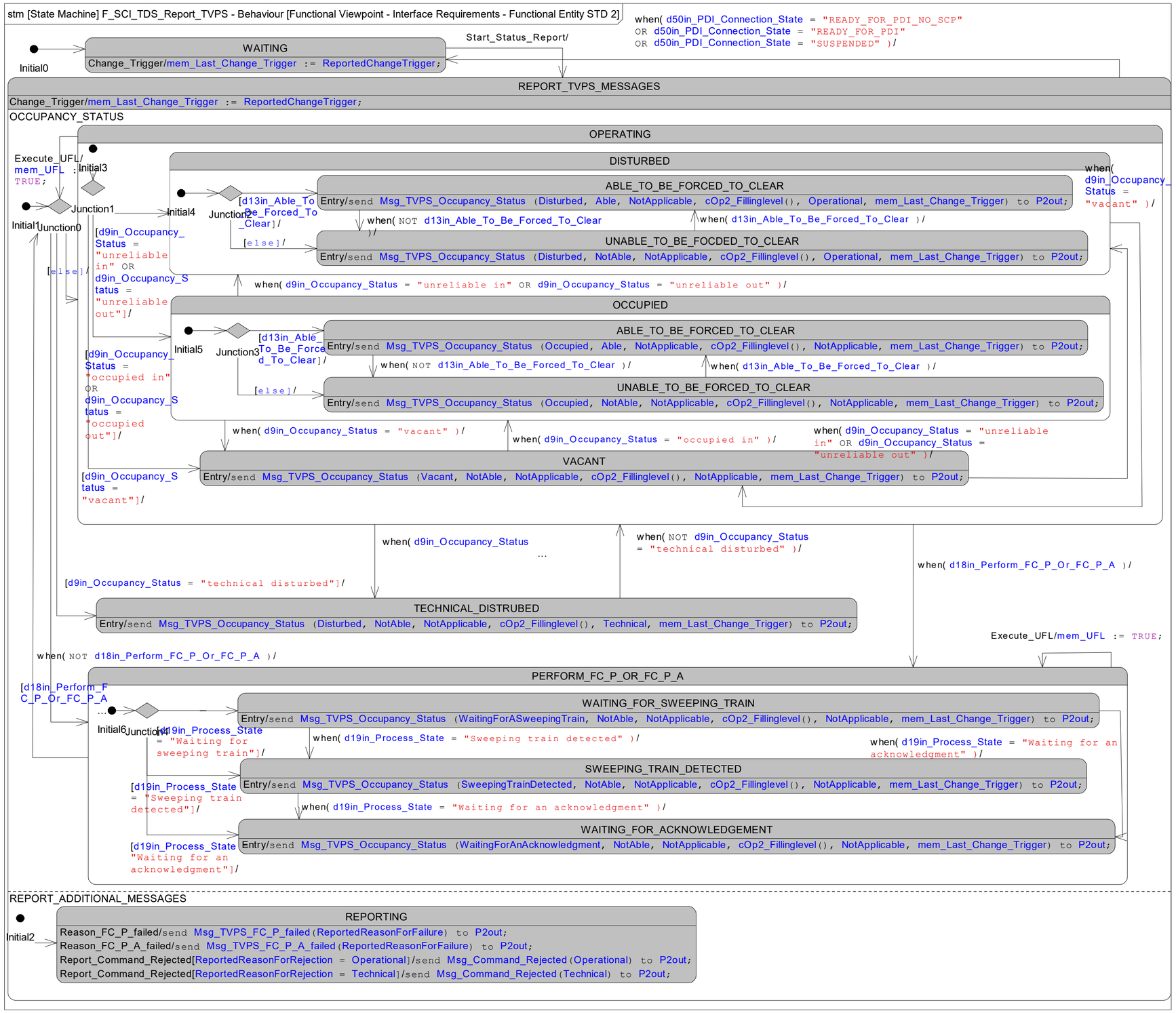
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6530	Info	SCI-TDS		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.6531	Def	[Package] SCI-TDS - [Functional Viewpoint - Interface Requirements – Functional Architecture]  		Basic TDS AC Basic TDS TDP Basic TDS TC
Eu.TDS.6532	Head	**3.4.1.3.3 SCI-TDS - Functional Entities**		
Eu.TDS.6533	Info	F_SCI_TDS_Receive		Basic TDS AC
Eu.TDS.6534	Req	[Block] F_SCI_TDS_Receive [Functional Viewpoint - Interface Requirements - Functional Entity]  		Basic TDS AC
Eu.TDS.6540	Def	P1in	The port P1in exchanges information objects according to SCI_TDS_Command_TVPS.	Basic TDS AC
Eu.TDS.6541	Def	p90out		Basic TDS AC
Eu.TDS.6535	Info	F_SCI_TDS_Receive - Behaviour		Basic TDS AC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6536	Req	Functional Viewpoint - Interface Requirements - Functional Entity STD 1  	This state machine diagram describes the requirements for the following functionalities: - receives the command to force the TVPS to clear (FC-C, FC-U, FC-P or FC-P-A) and forwards it to the internal logic of the Subsystem - Train Detection System - receives the command to update the Filling Level and forwards it to the internal logic of the Subsystem - Train Detection System - receives the command to cancel the execution of FC-P or FC-P-A and forwards it to the internal logic of the Subsystem - Train Detection System - receives the command to disable restriction to force section to clear and forwards it to the internal logic of the Subsystem - Train Detection System	Basic TDS AC Option FC-P/-A
Eu.TDS.6537	Def	Initial0		Basic TDS AC
Eu.TDS.6538	Def	/{Initial0 - RECEIVING_COMMANDS}		Basic TDS AC
Eu.TDS.6539	Def	RECEIVING_COMMANDS		Basic TDS AC
Eu.TDS.6938	Def	Cd_Cancel/send Request_Cancel to p90out;{State-internal in RECEIVING_COMMANDS}		Option FC-P/-A
Eu.TDS.6939	Def	Cd_DRFC/send Request_DRFC(EIL) to p90out;{State-internal in RECEIVING_COMMANDS}		Basic TDS AC
Eu.TDS.6940	Def	Cd_FC[CommandedModeOfFC = FC_P_A]/send Request_FC_P_A to p90out;{State-internal in RECEIVING_COMMANDS}		Option FC-P/-A
Eu.TDS.6941	Def	Cd_FC[CommandedModeOfFC = AcknowledgmentAfterFC_P_A_Command]/send Request_Acknowledgement to p90out;{State-internal in RECEIVING_COMMANDS}		Option FC-P/-A
Eu.TDS.6942	Def	Cd_FC[CommandedModeOfFC = FC_P]/send Request_FC_P to p90out;{State-internal in RECEIVING_COMMANDS}		Option FC-P/-A
Eu.TDS.6943	Def	Cd_FC[CommandedModeOfFC = FC_U]/send Request_FC_U(EIL) to p90out;{State-internal in RECEIVING_COMMANDS}		Basic TDS AC
Eu.TDS.6944	Def	Cd_FC[CommandedModeOfFC = FC_C]/send Request_FC_C(EIL) to p90out;{State-internal in RECEIVING_COMMANDS}		Basic TDS AC
Eu.TDS.6945	Def	Cd_Update_Filling_Level/send Request_UFL to p90out;{State-internal in RECEIVING_COMMANDS}		Option Update FL
Eu.TDS.6644	Info	F_SCI_TDS_Report_TVPS		Basic TDS AC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6645	Req	[Block] F_SCI_TDS_Report_TVPS [Functional Viewpoint - Interface Requirements - Functional Entity]  		Basic TDS AC
Eu.TDS.6726	Def	P2out	The port P2out exchanges information objects according to SCI_TDS_Report_TVPS.	Basic TDS AC
Eu.TDS.6727	Def	p6in		Basic TDS AC
Eu.TDS.6728	Def	p7in		Basic TDS AC
Eu.TDS.6729	Def	p86in		Basic TDS AC
Eu.TDS.6730	Def	p87in		Basic TDS AC
Eu.TDS.6731	Def	p3inout		Basic TDS AC
Eu.TDS.6647	Def	d10in_Fillinglevel		Option Update FL
Eu.TDS.6648	Def	d13in_Able_To_Be_Forced_To_Clear		Basic TDS AC
Eu.TDS.6649	Def	d18in_Perform_FC_P_Or_FC_P_A		Option FC-P/-A
Eu.TDS.6650	Def	d19in_Process_State		Basic TDS AC
Eu.TDS.6651	Def	d50in_PDI_Connection_State		Basic TDS AC

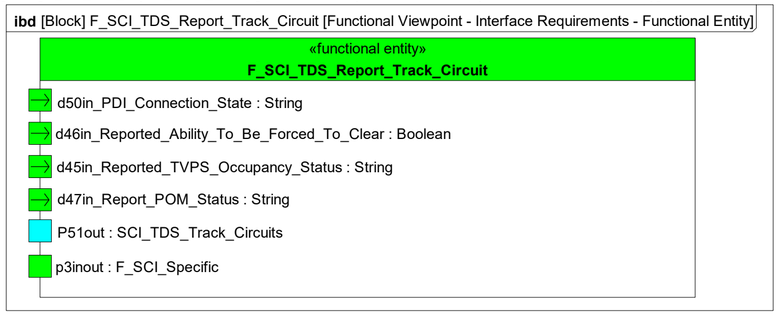
Eu.TDS.6646	Def	/* cOp2_Fillinglevel */
		
		if mem_UFL then
		mem_UFL := FALSE;
		return d10in_Fillinglevel;
		elseif mem_UFL = FALSE then
		return 65535;
		end if
			cOp2_Fillinglevel	Option Update FL

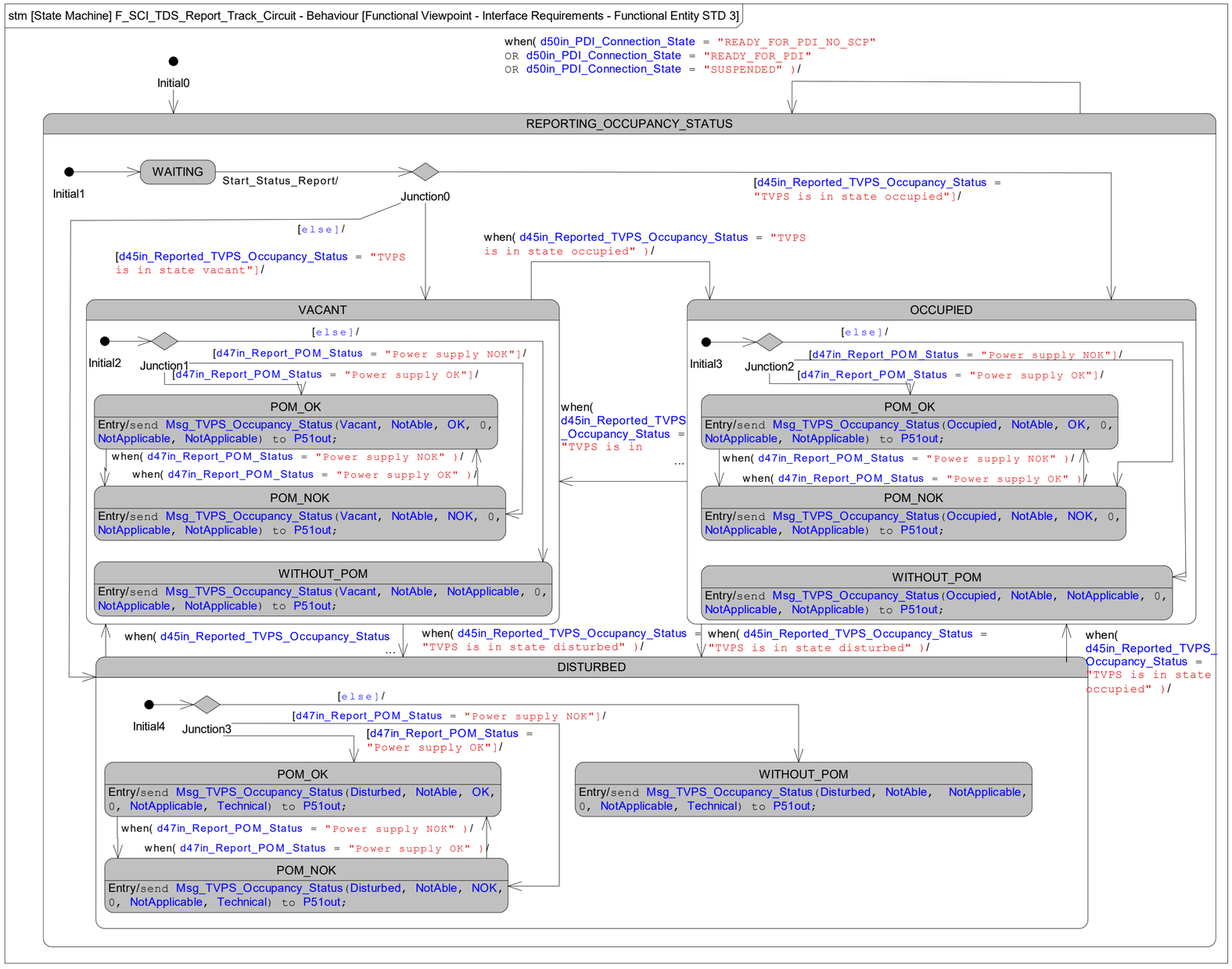
Eu.TDS.6653	Def	d9in_Occupancy_Status		Basic TDS AC
Eu.TDS.6654	Info	F_SCI_TDS_Report_TVPS - Behaviour	The telegram Msg_TVPS_Occupancy_Status will also be send in parallel to the Maintainer via TDS6 (Maintainer).	Basic TDS AC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6655	Req	Functional Viewpoint - Interface Requirements - Functional Entity STD 2  	The telegram Msg_TVPS_Occupancy_Status will also be send in parallel to the Maintainer via TDS6 (Maintainer). This state machine diagram describes the requirements for the following functionalities: - receives the observed occupancy status including all additional parameters for a TVPS which works with axle counter and reports this to the Subsystem - Electronic Interlocking - receives the reported failing of the the execution of FC-P and reports this to the Subsystem - Electronic Interlocking - receives the reported failing of the the execution of FC-P-A and reports this to the Subsystem - Electronic Interlocking - receives the request to rejection the previous recieved command and reports this to the Subsystem - Electronic Interlocking	Basic TDS AC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6656	Def	Initial0		Basic TDS AC
Eu.TDS.6657	Def	/{Initial0 - WAITING}		Basic TDS AC
Eu.TDS.6658	Def	REPORT_TVPS_MESSAGES		Basic TDS AC
Eu.TDS.6659	Def	OCCUPANCY_STATUS		Basic TDS AC
Eu.TDS.6660	Def	Initial1		Basic TDS AC
Eu.TDS.6661	Def	/{Initial1 - Junction0}		Basic TDS AC
Eu.TDS.6662	Def	Junction0		Basic TDS AC
Eu.TDS.6663	Def	[else]/{Junction0 - OPERATING}		Basic TDS AC
Eu.TDS.6664	Def	[d18in_Perform_FC_P_Or_FC_P_A]/{Junction0 - PERFORM_FC_P_OR_FC_P_A}		Option FC-P/-A
Eu.TDS.6665	Def	[d9in_Occupancy_Status = "technical disturbed"]/{Junction0 - TECHNICAL_DISTRUBED}		Basic TDS AC
Eu.TDS.6666	Def	OPERATING		Basic TDS AC
Eu.TDS.6667	Def	DISTURBED		Basic TDS AC
Eu.TDS.6668	Def	ABLE_TO_BE_FORCED_TO_CLEAR		Basic TDS AC
Eu.TDS.6669	Def	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	Def	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	Def	Initial4		Basic TDS AC
Eu.TDS.6671	Def	/{Initial4 - Junction2}		Basic TDS AC
Eu.TDS.6672	Def	Junction2		Basic TDS AC
Eu.TDS.6673	Def	[d13in_Able_To_Be_Forced_To_Clear]/{Junction2 - ABLE_TO_BE_FORCED_TO_CLEAR}		Basic TDS AC
Eu.TDS.6674	Def	[else]/{Junction2 - UNABLE_TO_BE_FOCDED_TO_CLEAR}		Basic TDS AC
Eu.TDS.6675	Def	UNABLE_TO_BE_FOCDED_TO_CLEAR		Basic TDS AC
Eu.TDS.6676	Def	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	Def	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	Def	when(d9in_Occupancy_Status = "vacant")/{DISTURBED - VACANT}		Basic TDS AC
Eu.TDS.6678	Def	Execute_UFL/mem_UFL := TRUE;{OPERATING - Junction0}		Option Update FL
Eu.TDS.6679	Def	Initial3		Basic TDS AC
Eu.TDS.6680	Def	/{Initial3 - Junction1}		Basic TDS AC
Eu.TDS.6681	Def	Junction1		Basic TDS AC
Eu.TDS.6682	Def	[d9in_Occupancy_Status = "unreliable in" OR d9in_Occupancy_Status = "unreliable out"]/{Junction1 - DISTURBED}		Basic TDS AC
Eu.TDS.6683	Def	[d9in_Occupancy_Status = "occupied in" OR d9in_Occupancy_Status = "occupied out"]/{Junction1 - OCCUPIED}		Basic TDS AC
Eu.TDS.6684	Def	[d9in_Occupancy_Status = "vacant"]/{Junction1 - VACANT}		Basic TDS AC

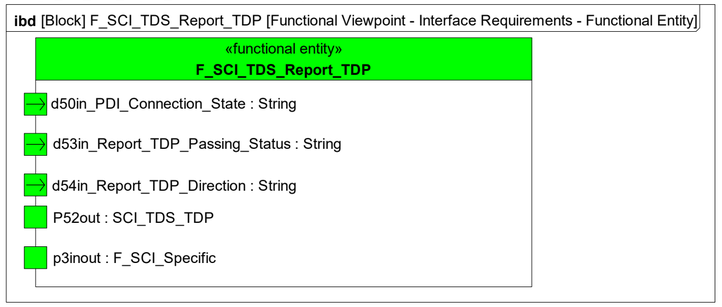
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6685	Def	OCCUPIED		Basic TDS AC
Eu.TDS.6686	Def	ABLE_TO_BE_FORCED_TO_CLEAR		Basic TDS AC
Eu.TDS.6687	Def	when(NOT d13in_Able_To_Be_Forced_To_Clear)/{ABLE_TO_BE_FORCED_TO_CLEAR - UNABLE_TO_BE_FORCED_TO_CLEAR}		Basic TDS AC
Eu.TDS.6959	Def	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	Def	Initial5		Basic TDS AC
Eu.TDS.6689	Def	/{Initial5 - Junction3}		Basic TDS AC
Eu.TDS.6690	Def	Junction3		Basic TDS AC
Eu.TDS.6691	Def	[d13in_Able_To_Be_Forced_To_Clear]/{Junction3 - ABLE_TO_BE_FORCED_TO_CLEAR}		Basic TDS AC
Eu.TDS.6692	Def	[else]/{Junction3 - UNABLE_TO_BE_FORCED_TO_CLEAR}		Basic TDS AC
Eu.TDS.6693	Def	UNABLE_TO_BE_FORCED_TO_CLEAR		Basic TDS AC
Eu.TDS.6694	Def	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	Def	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	Def	when(d9in_Occupancy_Status = "unreliable in" OR d9in_Occupancy_Status = "unreliable out")/{OCCUPIED - DISTURBED}		Basic TDS AC
Eu.TDS.6696	Def	when(d9in_Occupancy_Status = "vacant")/{OCCUPIED - VACANT}		Basic TDS AC
Eu.TDS.6697	Def	VACANT		Basic TDS AC
Eu.TDS.6698	Def	when(d9in_Occupancy_Status = "occupied in")/{VACANT - OCCUPIED}		Basic TDS AC
Eu.TDS.6699	Def	when(d9in_Occupancy_Status = "unreliable in" OR d9in_Occupancy_Status = "unreliable out")/{VACANT - DISTURBED}		Basic TDS AC
Eu.TDS.6961	Def	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	Def	when(d18in_Perform_FC_P_Or_FC_P_A)/{OPERATING - PERFORM_FC_P_OR_FC_P_A}		Option FC-P/-A
Eu.TDS.6701	Def	when(d9in_Occupancy_Status = "technical disturbed")/{OPERATING - TECHNICAL_DISTRUBED}		Basic TDS AC
Eu.TDS.6702	Def	PERFORM_FC_P_OR_FC_P_A		Option FC-P/-A
Eu.TDS.6703	Def	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	Def	Initial6		Option FC-P/-A
Eu.TDS.6705	Def	/{Initial6 - Junction4}		Option FC-P/-A
Eu.TDS.6706	Def	Junction4		Option FC-P/-A
Eu.TDS.6707	Def	[d19in_Process_State = "Sweeping train detected"]/{Junction4 - SWEEPING_TRAIN_DETECTED}		Option FC-P/-A
Eu.TDS.6708	Def	[d19in_Process_State = "Waiting for an acknowledgment"]/{Junction4 - WAITING_FOR_ACKNOWLEDGEMENT}		Option FC-P/-A
Eu.TDS.6709	Def	[d19in_Process_State = "Waiting for sweeping train"]/{Junction4 - WAITING_FOR_SWEEPING_TRAIN}		Option FC-P/-A
Eu.TDS.6710	Def	SWEEPING_TRAIN_DETECTED		Option FC-P/-A
Eu.TDS.6711	Def	when(d19in_Process_State = "Waiting for an acknowledgment")/{SWEEPING_TRAIN_DETECTED - WAITING_FOR_ACKNOWLEDGEMENT}		Option FC-P/-A
Eu.TDS.6962	Def	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

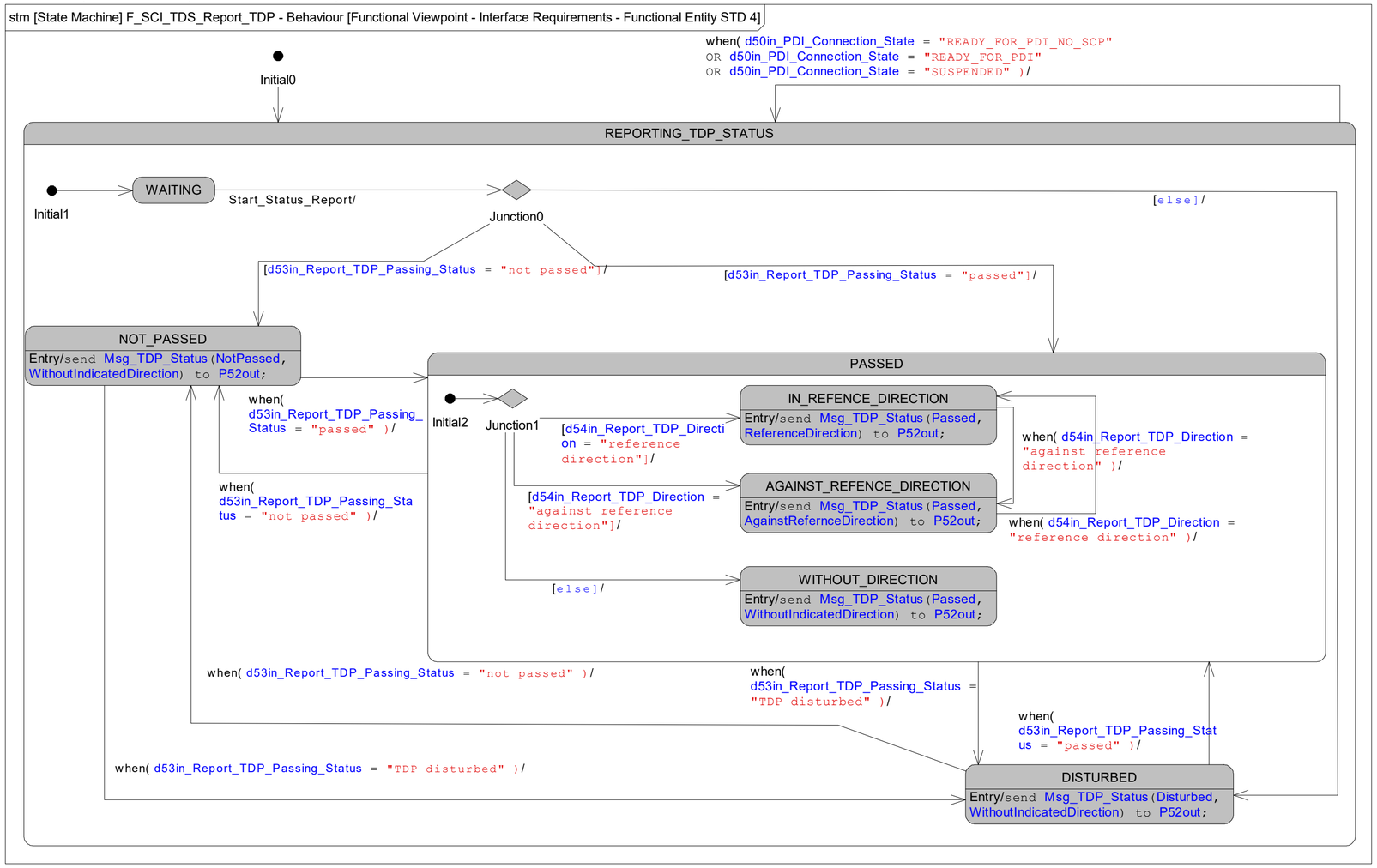
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6712	Def	WAITING_FOR_ACKNOWLEDGEMENT		Option FC-P/-A
Eu.TDS.6963	Def	entry/send Msg_TVPS_Occupancy_Status (WaitingForAnAcknowledgment, NotAble, NotApplicable, cOp2_Fillinglevel(), NotApplicable, mem_Last_Change_Trigger) to P2out;{State-internal in WAITING_FOR_ACKNOWLEDGEMENT}		Option FC-P/-A
Eu.TDS.6713	Def	WAITING_FOR_SWEEPING_TRAIN		Option FC-P/-A
Eu.TDS.6714	Def	when(d19in_Process_State = "Sweeping train detected")/{WAITING_FOR_SWEEPING_TRAIN - SWEEPING_TRAIN_DETECTED}		Option FC-P/-A
Eu.TDS.6715	Def	when(d19in_Process_State = "Waiting for an acknowledgment")/{WAITING_FOR_SWEEPING_TRAIN - WAITING_FOR_ACKNOWLEDGEMENT}		Option FC-P/-A
Eu.TDS.6964	Def	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	Def	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	Def	TECHNICAL_DISTRUBED		Basic TDS AC
Eu.TDS.6718	Def	when(NOT d9in_Occupancy_Status = "technical disturbed")/{TECHNICAL_DISTRUBED - OPERATING}		Basic TDS AC
Eu.TDS.6965	Def	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	Def	REPORT_ADDITIONAL_MESSAGES		Basic TDS AC
Eu.TDS.6720	Def	Initial2		Basic TDS AC
Eu.TDS.6721	Def	/{Initial2 - REPORTING}		Basic TDS AC
Eu.TDS.6722	Def	REPORTING		Basic TDS AC
Eu.TDS.6966	Def	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	Def	Reason_FC_P_failed/send Msg_TVPS_FC_P_failed(ReportedReasonForFailure) to P2out;{State-internal in REPORTING}		Option FC-P/-A
Eu.TDS.6968	Def	Report_Command_Rejected[ReportedReasonForRejection = Operational]/send Msg_Command_Rejected(Operational) to P2out;{State-internal in REPORTING}		Basic TDS AC
Eu.TDS.6969	Def	Report_Command_Rejected[ReportedReasonForRejection = Technical]/send Msg_Command_Rejected(Technical) to P2out;{State-internal in REPORTING}		Basic TDS AC
Eu.TDS.6723	Def	when(d50in_PDI_Connection_State = "READY_FOR_PDI_NO_SCP" OR d50in_PDI_Connection_State = "READY_FOR_PDI" OR d50in_PDI_Connection_State = "SUSPENDED")/{REPORT_TVPS_MESSAGES - WAITING}		Basic TDS AC
Eu.TDS.6971	Def	Change_Trigger/mem_Last_Change_Trigger := ReportedChangeTrigger;{State-internal in REPORT_TVPS_MESSAGES}		Basic TDS AC
Eu.TDS.6724	Def	WAITING		Basic TDS AC
Eu.TDS.6725	Def	Start_Status_Report/{WAITING - REPORT_TVPS_MESSAGES}		Basic TDS AC
Eu.TDS.6972	Def	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	Req	[Block] F_SCI_TDS_Report_Track_Circuit [Functional Viewpoint - Interface Requirements - Functional Entity]  		Basic TDS TC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6642	Def	P51out	The port P51out exchanges information objects according to SCI_TDS_Track_Circuits.	Basic TDS TC
Eu.TDS.6643	Def	p3inout		Basic TDS TC
Eu.TDS.6585	Def	d45in_Reported_TVPS_Occupancy_Status		Basic TDS TC
Eu.TDS.6586	Def	d46in_Reported_Ability_To_Be_Forced_To_Clear		Basic TDS TC
Eu.TDS.6587	Def	d47in_Report_POM_Status		Basic TDS TC
Eu.TDS.6588	Def	d50in_PDI_Connection_State		Basic TDS TC
Eu.TDS.6589	Info	F_SCI_TDS_Report_Track_Circuit - Behaviour		Basic TDS TC
Eu.TDS.6590	Req	Functional Viewpoint - Interface Requirements - Functional Entity STD 3 	This state machine diagram describes the requirements for the following functionalities: - receives the observed occupancy status including all additional parameters for a TVPS which works with track circuits and reports this to the Subsystem - Electronic Interlocking	Basic TDS TC

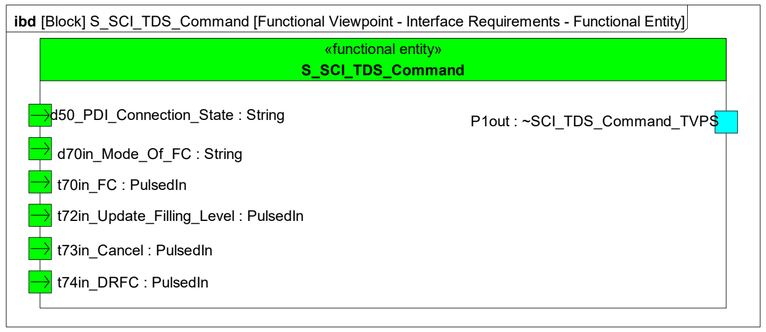
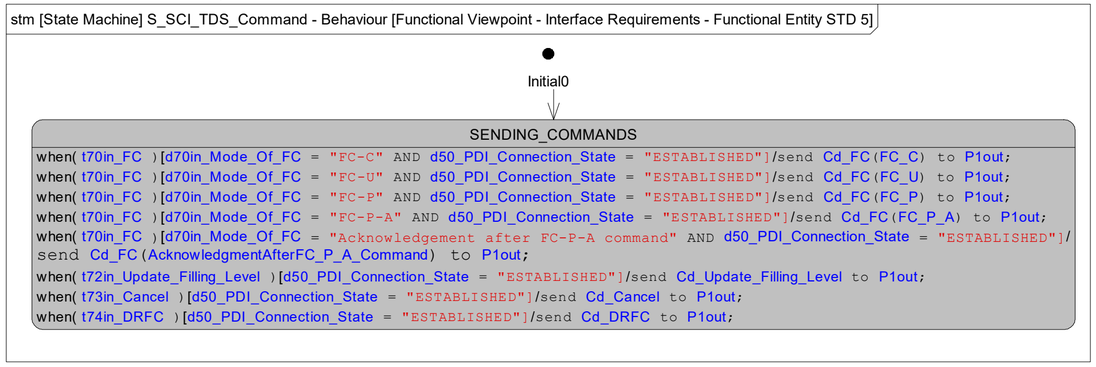
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6591	Def	Initial0		Basic TDS TC
Eu.TDS.6592	Def	/{Initial0 - REPORTING_OCCUPANCY_STATUS}		Basic TDS TC
Eu.TDS.6593	Def	REPORTING_OCCUPANCY_STATUS		Basic TDS TC
Eu.TDS.6594	Def	DISTURBED		Basic TDS TC
Eu.TDS.6595	Def	Initial4		Basic TDS TC
Eu.TDS.6596	Def	/{Initial4 - Junction3}		Basic TDS TC
Eu.TDS.6597	Def	Junction3		Basic TDS TC
Eu.TDS.6598	Def	[d47in_Report_POM_Status = "Power supply NOK"]/{Junction3 - POM_NOK}		Basic TDS TC
Eu.TDS.6599	Def	[d47in_Report_POM_Status = "Power supply OK"]/{Junction3 - POM_OK}		Basic TDS TC
Eu.TDS.7330	Def	[else]/{Junction3 - WITHOUT_POM}		Basic TDS TC
Eu.TDS.6600	Def	POM_NOK		Basic TDS TC
Eu.TDS.6601	Def	when(d47in_Report_POM_Status = "Power supply OK")/{POM_NOK - POM_OK}		Basic TDS TC
Eu.TDS.6951	Def	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	Def	POM_OK		Basic TDS TC
Eu.TDS.6603	Def	when(d47in_Report_POM_Status = "Power supply NOK")/{POM_OK - POM_NOK}		Basic TDS TC
Eu.TDS.6952	Def	entry/send Msg_TVPS_Occupancy_Status(Disturbed, NotAble, OK, 0, NotApplicable, Technical) to P51out;{State-internal in POM_OK}		Basic TDS TC
Eu.TDS.7331	Def	WITHOUT_POM		Basic TDS TC
Eu.TDS.7351	Def	entry/send Msg_TVPS_Occupancy_Status(Disturbed, NotAble, NotApplicable, 0, NotApplicable, Technical) to P51out;{State-internal in WITHOUT_POM}		Basic TDS TC
Eu.TDS.6605	Def	when(d45in_Reported_TVPS_Occupancy_Status = "TVPS is in state vacant")/{DISTURBED - VACANT}		Basic TDS TC
Eu.TDS.6604	Def	when(d45in_Reported_TVPS_Occupancy_Status = "TVPS is in state occupied")/{DISTURBED - OCCUPIED}		Basic TDS TC
Eu.TDS.6607	Def	Initial1		Basic TDS TC
Eu.TDS.6608	Def	/{Initial1 - WAITING}		Basic TDS TC
Eu.TDS.6609	Def	Junction0		Basic TDS TC
Eu.TDS.6610	Def	[else]/{Junction0 - DISTURBED}		Basic TDS TC
Eu.TDS.6611	Def	[d45in_Reported_TVPS_Occupancy_Status = "TVPS is in state occupied"]/{Junction0 - OCCUPIED}		Basic TDS TC
Eu.TDS.6612	Def	[d45in_Reported_TVPS_Occupancy_Status = "TVPS is in state vacant"]/{Junction0 - VACANT}		Basic TDS TC
Eu.TDS.6613	Def	OCCUPIED		Basic TDS TC
Eu.TDS.6614	Def	Initial3		Basic TDS TC
Eu.TDS.6615	Def	/{Initial3 - Junction2}		Basic TDS TC
Eu.TDS.6616	Def	Junction2		Basic TDS TC
Eu.TDS.6617	Def	[d47in_Report_POM_Status = "Power supply NOK"]/{Junction2 - POM_NOK}		Basic TDS TC

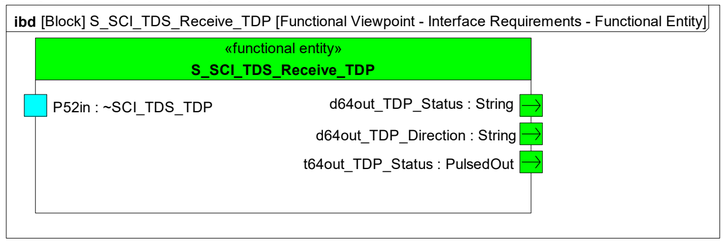
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6618	Def	[d47in_Report_POM_Status = "Power supply OK"]/{Junction2 - POM_OK}		Basic TDS TC
Eu.TDS.7332	Def	[else]/{Junction2 - WITHOUT_POM}		Basic TDS TC
Eu.TDS.6619	Def	POM_NOK		Basic TDS TC
Eu.TDS.6620	Def	when(d47in_Report_POM_Status = "Power supply OK")/{POM_NOK - POM_OK}		Basic TDS TC
Eu.TDS.6953	Def	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	Def	POM_OK		Basic TDS TC
Eu.TDS.6622	Def	when(d47in_Report_POM_Status = "Power supply NOK")/{POM_OK - POM_NOK}		Basic TDS TC
Eu.TDS.6954	Def	entry/send Msg_TVPS_Occupancy_Status(Occupied, NotAble, OK, 0, NotApplicable, NotApplicable) to P51out;{State-internal in POM_OK}		Basic TDS TC
Eu.TDS.7333	Def	WITHOUT_POM		Basic TDS TC
Eu.TDS.7352	Def	entry/send Msg_TVPS_Occupancy_Status(Occupied, NotAble, NotApplicable, 0, NotApplicable, NotApplicable) to P51out;{State-internal in WITHOUT_POM}		Basic TDS TC
Eu.TDS.6624	Def	when(d45in_Reported_TVPS_Occupancy_Status = "TVPS is in state vacant")/{OCCUPIED - VACANT}		Basic TDS TC
Eu.TDS.6623	Def	when(d45in_Reported_TVPS_Occupancy_Status = "TVPS is in state disturbed")/{OCCUPIED - DISTURBED}		Basic TDS TC
Eu.TDS.6626	Def	VACANT		Basic TDS TC
Eu.TDS.6627	Def	Initial2		Basic TDS TC
Eu.TDS.6628	Def	/{Initial2 - Junction1}		Basic TDS TC
Eu.TDS.6629	Def	Junction1		Basic TDS TC
Eu.TDS.6630	Def	[d47in_Report_POM_Status = "Power supply NOK"]/{Junction1 - POM_NOK}		Basic TDS TC
Eu.TDS.6631	Def	[d47in_Report_POM_Status = "Power supply OK"]/{Junction1 - POM_OK}		Basic TDS TC
Eu.TDS.7334	Def	[else]/{Junction1 - WITHOUT_POM}		Basic TDS TC
Eu.TDS.6632	Def	POM_NOK		Basic TDS TC
Eu.TDS.6633	Def	when(d47in_Report_POM_Status = "Power supply OK")/{POM_NOK - POM_OK}		Basic TDS TC
Eu.TDS.6955	Def	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	Def	POM_OK		Basic TDS TC
Eu.TDS.6635	Def	when(d47in_Report_POM_Status = "Power supply NOK")/{POM_OK - POM_NOK}		Basic TDS TC
Eu.TDS.6956	Def	entry/send Msg_TVPS_Occupancy_Status(Vacant, NotAble, OK, 0, NotApplicable, NotApplicable) to P51out;{State-internal in POM_OK}		Basic TDS TC
Eu.TDS.7335	Def	WITHOUT_POM		Basic TDS TC
Eu.TDS.7353	Def	entry/send Msg_TVPS_Occupancy_Status(Vacant, NotAble, NotApplicable, 0, NotApplicable, NotApplicable) to P51out;{State-internal in WITHOUT_POM}		Basic TDS TC
Eu.TDS.6637	Def	when(d45in_Reported_TVPS_Occupancy_Status = "TVPS is in state disturbed")/{VACANT - DISTURBED}		Basic TDS TC
Eu.TDS.6636	Def	when(d45in_Reported_TVPS_Occupancy_Status = "TVPS is in state occupied")/{VACANT - OCCUPIED}		Basic TDS TC
Eu.TDS.6639	Def	WAITING		Basic TDS TC
Eu.TDS.6640	Def	Start_Status_Report/{WAITING - Junction0}		Basic TDS TC

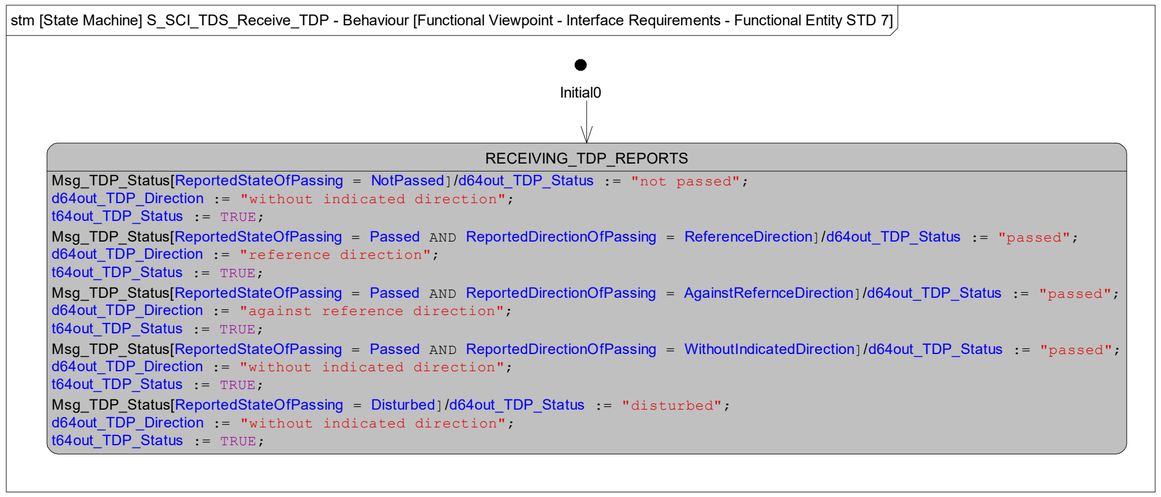
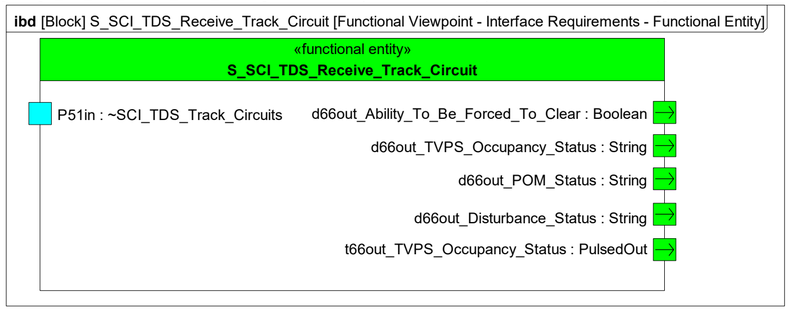
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6641	Def	when(d50in_PDI_Connection_State = "READY_FOR_PDI_NO_SCP" OR d50in_PDI_Connection_State = "READY_FOR_PDI" OR d50in_PDI_Connection_State = "SUSPENDED")/{REPORTING_OCCUPANCY_STATUS - REPORTING_OCCUPANCY_STATUS}		Basic TDS TC
Eu.TDS.6542	Info	F_SCI_TDS_Report_TDP		Basic TDS TDP
Eu.TDS.6543	Req	[Block] F_SCI_TDS_Report_TDP [Functional Viewpoint - Interface Requirements - Functional Entity]  		Basic TDS TDP
Eu.TDS.6581	Def	P52out	The port P52out exchanges information objects according to SCI_TDS_TDP.	Basic TDS TDP
Eu.TDS.6582	Def	p3inout		Basic TDS TDP
Eu.TDS.6544	Def	d50in_PDI_Connection_State		Basic TDS TDP
Eu.TDS.6545	Def	d53in_Report_TDP_Passing_Status		Basic TDS TDP
Eu.TDS.6546	Def	d54in_Report_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

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6548	Req	Functional Viewpoint - Interface Requirements - Functional Entity STD 4  	This state machine diagram describes the requirements for the following functionalities: - receives the observed TDP status and reports this to the Subsystem - Electronic Interlocking	Basic TDS TDP
Eu.TDS.6549	Def	Initial0		Basic TDS TDP
Eu.TDS.6550	Def	/{Initial0 - REPORTING_TDP_STATUS}		Basic TDS TDP
Eu.TDS.6551	Def	REPORTING_TDP_STATUS		Basic TDS TDP
Eu.TDS.6552	Def	DISTURBED		Basic TDS TDP
Eu.TDS.6553	Def	when(d53in_Report_TDP_Passing_Status = "not passed")/{DISTURBED - NOT_PASSED}		Basic TDS TDP
Eu.TDS.6554	Def	when(d53in_Report_TDP_Passing_Status = "passed")/{DISTURBED - PASSED}		Basic TDS TDP
Eu.TDS.6946	Def	entry/send Msg_TDP_Status(Disturbed, WithoutIndicatedDirection) to P52out;{State-internal in DISTURBED}		Basic TDS TDP
Eu.TDS.6555	Def	Initial1		Basic TDS TDP
Eu.TDS.6556	Def	/{Initial1 - WAITING}		Basic TDS TDP
Eu.TDS.6557	Def	Junction0		Basic TDS TDP

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6558	Def	[else]/{Junction0 - DISTURBED}		Basic TDS TDP
Eu.TDS.6559	Def	[d53in_Report_TDP_Passing_Status = "not passed"]/{Junction0 - NOT_PASSED}		Basic TDS TDP
Eu.TDS.6560	Def	[d53in_Report_TDP_Passing_Status = "passed"]/{Junction0 - PASSED}		Basic TDS TDP
Eu.TDS.6561	Def	NOT_PASSED		Basic TDS TDP
Eu.TDS.6562	Def	when(d53in_Report_TDP_Passing_Status = "passed")/{NOT_PASSED - PASSED}		Basic TDS TDP
Eu.TDS.6563	Def	when(d53in_Report_TDP_Passing_Status = "TDP disturbed")/{NOT_PASSED - DISTURBED}		Basic TDS TDP
Eu.TDS.6947	Def	entry/send Msg_TDP_Status(NotPassed, WithoutIndicatedDirection) to P52out;{State-internal in NOT_PASSED}		Basic TDS TDP
Eu.TDS.6564	Def	PASSED		Basic TDS TDP
Eu.TDS.6565	Def	AGAINST_REFENCE_DIRECTION		Basic TDS TDP
Eu.TDS.6566	Def	when(d54in_Report_TDP_Direction = "reference direction")/{AGAINST_REFENCE_DIRECTION - IN_REFENCE_DIRECTION}		Basic TDS TDP
Eu.TDS.6948	Def	entry/send Msg_TDP_Status(Passed, AgainstRefernceDirection) to P52out;{State-internal in AGAINST_REFENCE_DIRECTION}		Basic TDS TDP
Eu.TDS.6567	Def	IN_REFENCE_DIRECTION		Basic TDS TDP
Eu.TDS.6568	Def	when(d54in_Report_TDP_Direction = "against reference direction")/{IN_REFENCE_DIRECTION - AGAINST_REFENCE_DIRECTION}		Basic TDS TDP
Eu.TDS.6949	Def	entry/send Msg_TDP_Status(Passed, ReferenceDirection) to P52out;{State-internal in IN_REFENCE_DIRECTION}		Basic TDS TDP
Eu.TDS.6569	Def	Initial2		Basic TDS TDP
Eu.TDS.6570	Def	/{Initial2 - Junction1}		Basic TDS TDP
Eu.TDS.6571	Def	Junction1		Basic TDS TDP
Eu.TDS.6572	Def	[d54in_Report_TDP_Direction = "against reference direction"]/{Junction1 - AGAINST_REFENCE_DIRECTION}		Basic TDS TDP
Eu.TDS.6573	Def	[d54in_Report_TDP_Direction = "reference direction"]/{Junction1 - IN_REFENCE_DIRECTION}		Basic TDS TDP
Eu.TDS.6574	Def	[else]/{Junction1 - WITHOUT_DIRECTION}		Basic TDS TDP
Eu.TDS.6575	Def	when(d53in_Report_TDP_Passing_Status = "not passed")/{PASSED - NOT_PASSED}		Basic TDS TDP
Eu.TDS.6576	Def	when(d53in_Report_TDP_Passing_Status = "TDP disturbed")/{PASSED - DISTURBED}		Basic TDS TDP
Eu.TDS.6577	Def	WITHOUT_DIRECTION		Basic TDS TDP
Eu.TDS.6950	Def	entry/send Msg_TDP_Status(Passed, WithoutIndicatedDirection) to P52out;{State-internal in WITHOUT_DIRECTION}		Basic TDS TDP
Eu.TDS.6578	Def	WAITING		Basic TDS TDP
Eu.TDS.6579	Def	Start_Status_Report/{WAITING - Junction0}		Basic TDS TDP
Eu.TDS.6580	Def	when(d50in_PDI_Connection_State = "READY_FOR_PDI_NO_SCP" 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.6733	Info	S_SCI_TDS_Command		Basic TDS AC

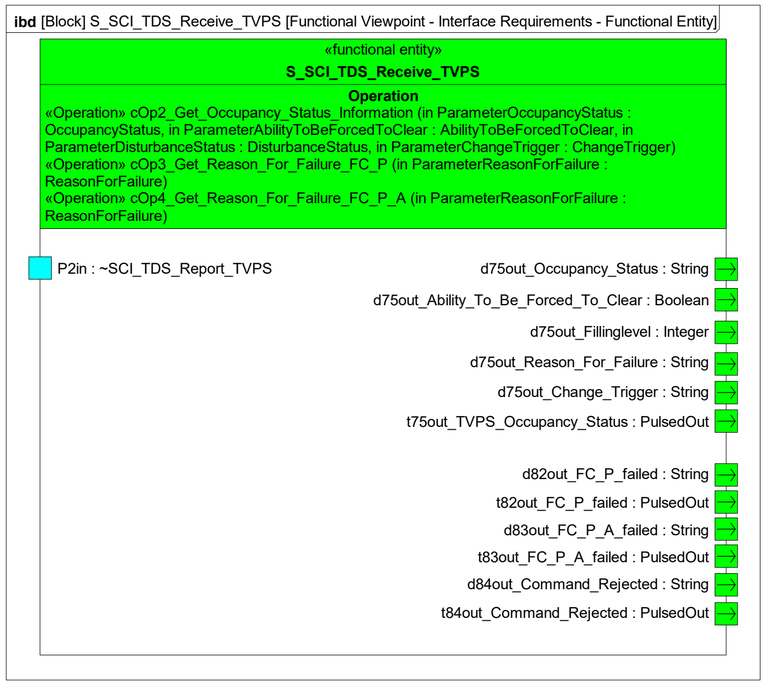
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6734	Req	[Block] S_SCI_TDS_Command [Functional Viewpoint - Interface Requirements - Functional Entity]  		Basic TDS AC
Eu.TDS.6743	Def	t70in_FC		Basic TDS AC Option FC-P/-A
Eu.TDS.6744	Def	t72in_Update_Filling_Level		Option Update FL
Eu.TDS.6745	Def	t73in_Cancel		Option FC-P/-A
Eu.TDS.6746	Def	t74in_DRFC		Basic TDS AC
Eu.TDS.6735	Def	d50_PDI_Connection_State		Basic TDS AC
Eu.TDS.6736	Def	d70in_Mode_Of_FC		Basic TDS AC
Eu.TDS.6737	Def	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	Req	Functional Viewpoint - Interface Requirements - Functional Entity STD 5  	This state machine diagram describes the requirements for the following functionalities: - receives the request to force the TVPS to clear (FC-C, FC-U, FC-P or FC-P-A) from internal logic and commands this to the Subsystem - Train Detection System - receives the request to update the Filling Level from internal logic and commands this to the Subsystem - Train Detection System - receives the request to cancel the execution of FC-P or FC-P-A from internal logic and commands this to the Subsystem - Train Detection System - receives the request to disable restriction to force section to clear from internal logic and commands this to the Subsystem - Train Detection System	Basic TDS AC
Eu.TDS.6740	Def	Initial0		Basic TDS AC
Eu.TDS.6741	Def	/{Initial0 - SENDING_COMMANDS}		Basic TDS AC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6742	Def	SENDING_COMMANDS		Basic TDS AC
Eu.TDS.6973	Def	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	Def	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	Def	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	Def	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	Def	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	Def	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	Def	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	Def	when(t74in_DRFC)[d50_PDI_Connection_State = "ESTABLISHED"]/send Cd_DRFC to P1out;{State-internal in SENDING_COMMANDS}		Basic TDS AC
Eu.TDS.6747	Info	S_SCI_TDS_Receive_TDP		Basic TDS TDP
Eu.TDS.6748	Req	[Block] S_SCI_TDS_Receive_TDP [Functional Viewpoint - Interface Requirements - Functional Entity]  		Basic TDS TDP
Eu.TDS.6757	Def	t64out_TDP_Status		Basic TDS TDP
Eu.TDS.6749	Def	d64out_TDP_Direction		Basic TDS TDP
Eu.TDS.6750	Def	d64out_TDP_Status		Basic TDS TDP
Eu.TDS.6751	Def	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

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6753	Req	Functional Viewpoint - Interface Requirements - Functional Entity STD 7  	This state machine diagram describes the requirements for the following functionalities: - receives the reported TDP Status and forwards it to the internal logic	Basic TDS TDP
Eu.TDS.6754	Def	Initial0		Basic TDS TDP
Eu.TDS.6755	Def	/{Initial0 - RECEIVING_TDP_REPORTS}		Basic TDS TDP
Eu.TDS.6756	Def	RECEIVING_TDP_REPORTS		Basic TDS TDP
Eu.TDS.6981	Def	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	Def	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	Def	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	Def	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	Def	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
Eu.TDS.6759	Req	[Block] S_SCI_TDS_Receive_Track_Circuit [Functional Viewpoint - Interface Requirements - Functional Entity]  		Basic TDS TC
Eu.TDS.6770	Def	t66out_TVPS_Occupancy_Status		Basic TDS TC
Eu.TDS.6760	Def	d66out_Ability_To_Be_Forced_To_Clear		Basic TDS TC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6761	Def	d66out_Disturbance_Status		Basic TDS TC
Eu.TDS.6762	Def	d66out_POM_Status		Basic TDS TC
Eu.TDS.6763	Def	d66out_TVPS_Occupancy_Status		Basic TDS TC
Eu.TDS.6764	Def	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	Req	Functional Viewpoint - Interface Requirements - Functional Entity STD 8 stm [State Machine] S_SCI_TDS_Receive_Track_Circuit - Behaviour [Functional Viewpoint - Interface Requirements - Functional Entity STD 8] 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; Msg_TVPS_Occupancy_Status[ReportedOccupancyStatus = Vacant AND ReportedPOM_Status = NotApplicable]/d66out_Ability_To_Be_Forced_To_Clear := FALSE; d66out_TVPS_Occupancy_Status := "TVPS is in state vacant"; d66out_POM_Status := "Not Applicable"; d66out_Disturbance_Status := "Not Applicable"; t66out_TVPS_Occupancy_Status := TRUE; Msg_TVPS_Occupancy_Status[ReportedOccupancyStatus = Occupied AND ReportedPOM_Status = NotApplicable]/d66out_Ability_To_Be_Forced_To_Clear := FALSE; d66out_TVPS_Occupancy_Status := "TVPS is in state occupied"; d66out_POM_Status := "Not Applicable"; d66out_Disturbance_Status := "Not Applicable"; t66out_TVPS_Occupancy_Status := TRUE; Msg_TVPS_Occupancy_Status[ReportedOccupancyStatus = Disturbed AND ReportedPOM_Status = NotApplicable]/d66out_Ability_To_Be_Forced_To_Clear := FALSE; d66out_TVPS_Occupancy_Status := "TVPS is in state disturbed"; d66out_POM_Status := "Not Applicable"; d66out_Disturbance_Status := "Technical"; t66out_TVPS_Occupancy_Status := TRUE;	This state machine diagram describes the requirements for the following functionalities: - receives the reported Occupancy Status and forwards it to the internal logic	Basic TDS TC
Eu.TDS.6767	Def	Initial0		Basic TDS TC
Eu.TDS.6768	Def	/{Initial0 - REPOPRTING_OCCUPANCY_STATUS}		Basic TDS TC
Eu.TDS.6769	Def	REPOPRTING_OCCUPANCY_STATUS		Basic TDS TC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6986	Def	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	Def	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	Def	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	Def	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	Def	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	Def	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.7354	Def	Msg_TVPS_Occupancy_Status[ReportedOccupancyStatus = Vacant AND ReportedPOM_Status = NotApplicable]/d66out_Ability_To_Be_Forced_To_Clear := FALSE; d66out_TVPS_Occupancy_Status := "TVPS is in state vacant"; d66out_POM_Status := "Not Applicable"; d66out_Disturbance_Status := "Not Applicable"; t66out_TVPS_Occupancy_Status := TRUE;{State-internal in REPOPRTING_OCCUPANCY_STATUS}		Basic TDS TC
Eu.TDS.7355	Def	Msg_TVPS_Occupancy_Status[ReportedOccupancyStatus = Occupied AND ReportedPOM_Status = NotApplicable]/d66out_Ability_To_Be_Forced_To_Clear := FALSE; d66out_TVPS_Occupancy_Status := "TVPS is in state occupied"; d66out_POM_Status := "Not Applicable"; d66out_Disturbance_Status := "Not Applicable"; t66out_TVPS_Occupancy_Status := TRUE;{State-internal in REPOPRTING_OCCUPANCY_STATUS}		Basic TDS TC
Eu.TDS.7356	Def	Msg_TVPS_Occupancy_Status[ReportedOccupancyStatus = Disturbed AND ReportedPOM_Status = NotApplicable]/d66out_Ability_To_Be_Forced_To_Clear := FALSE; d66out_TVPS_Occupancy_Status := "TVPS is in state disturbed"; d66out_POM_Status := "Not Applicable"; d66out_Disturbance_Status := "Technical"; t66out_TVPS_Occupancy_Status := TRUE;{State-internal in REPOPRTING_OCCUPANCY_STATUS}		Basic TDS TC
Eu.TDS.6771	Info	S_SCI_TDS_Receive_TVPS		Basic TDS AC

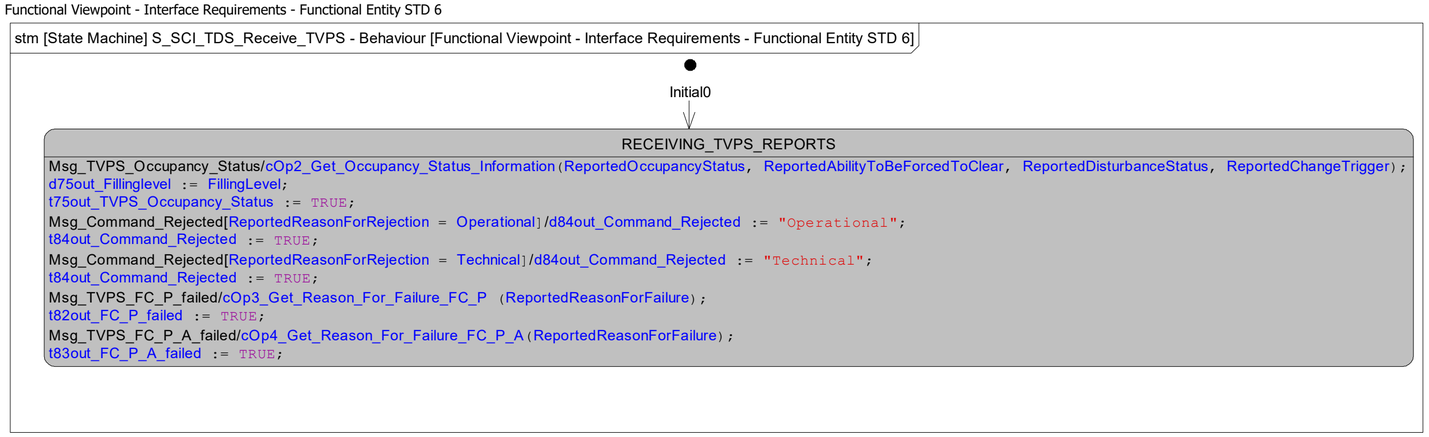
ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6772	Req	[Block] S_SCI_TDS_Receive_TVPS [Functional Viewpoint - Interface Requirements - Functional Entity]  		Basic TDS AC
Eu.TDS.6790	Def	t75out_TVPS_Occupancy_Status		Basic TDS AC
Eu.TDS.6792	Def	t82out_FC_P_failed		Option FC-P/-A
Eu.TDS.6793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

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

		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		

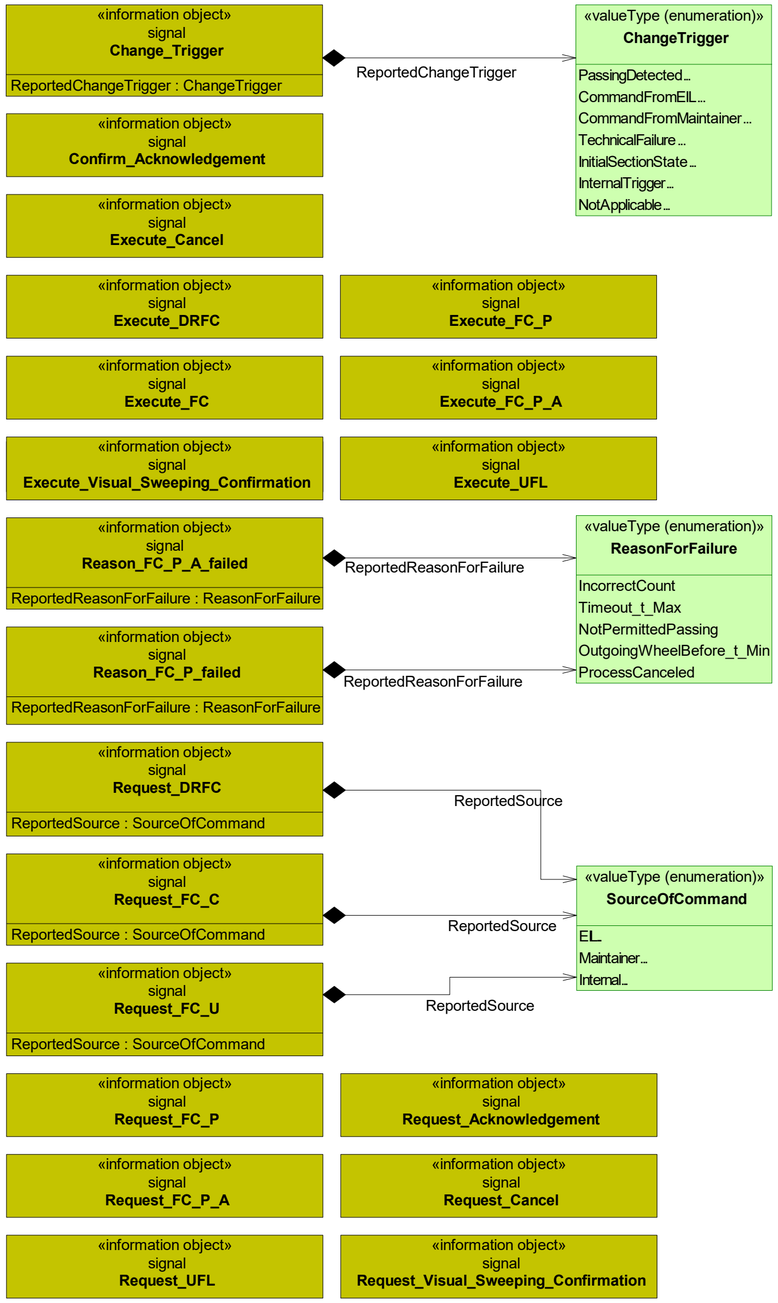
Eu.TDS.6774	Def	/* cOp3_Get_Reason_For_Failure_FC_P */
		
		if ParameterReasonForFailure = ReasonForFailure.IncorrectCount then
		d82out_FC_P_failed := "Incorrect count";
		elseif ParameterReasonForFailure = ReasonForFailure.Timeout_t_Max then
		d82out_FC_P_failed := "Timeout t_Max";
		elseif ParameterReasonForFailure = 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
			cOp3_Get_Reason_For_Failure_FC_P	Option FC-P/-A

Eu.TDS.6775	Def	/* 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
			cOp4_Get_Reason_For_Failure_FC_P_A	Option FC-P/-A

Eu.TDS.6785	Info	S_SCI_TDS_Receive_TVPS - Behaviour		Basic TDS AC
Eu.TDS.6786	Req	Functional Viewpoint - Interface Requirements - Functional Entity STD 6  	This state machine diagram describes the requirements for the following functionalities: - receives the reported occupancy status and forwards it to the internal logic - receives the rejection of the previous send command and forwards it to the internal logic - receives the reported failing of the the execution of FC-P and forwards it to the internal logic - receives the reported failing of the the execution of FC-P-A and forwards it to the internal logic	Basic TDS AC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6787	Def	Initial0		Basic TDS AC
Eu.TDS.6788	Def	/{Initial0 - RECEIVING_TVPS_REPORTS}		Basic TDS AC
Eu.TDS.6789	Def	RECEIVING_TVPS_REPORTS		Basic TDS AC
Eu.TDS.6993	Def	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	Def	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	Def	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	Def	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	Def	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.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 [SP-SEC-ServSpec].		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	Def	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	Def	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

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.7059	Def	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	Def	Msg_Command_Rejected	Message (Msg) from Subsystem - Train Detection System, that the previously sent command was rejected.	Basic TDS AC
Eu.TDS.6858	Def	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	Def	Msg_TDP_Status	Message (Msg) from Subsystem - Train Detection System with the current status of the TDP.	Basic TDS TDP
Eu.TDS.210	Head	**3.4.7 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	Def	Passing_Detected	Recognising of a passing of a Detection Point by a Wheel.	Basic TDS AC Basic TDS TDP
Eu.TDS.1202	Def	Occupancy_Detected	Recognising a changing occupancy of a track circuit by a Wheel.	Basic TDS TC
Eu.TDS.2486	Def	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	Def	[Package] Subsystem - Train Detection System - Internal Information Flows [Interface Requirements - Information Objects] **bdd** [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	Def	[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] «information flow» **Perform_DRFC** prov «signal» : Execute_DRFC «information flow» **Perform_UFL** prov «signal» : Execute_UFL «information flow» **ReportReasonForFailure** reqd «signal» : Reason_FC_P_failed reqd «signal» : Reason_FC_P_A_failed «information flow» **Request_Command_Rejected_Maintainer** reqd «signal» : Report_Command_Rejected «information flow» **Request_Commands** prov «signal» : Request_FC_C prov «signal» : Request_FC_U prov «signal» : Request_FC_P prov «signal» : Request_FC_P_A prov «signal» : Request_DRFC prov «signal» : Request_UFL prov «signal» : Request_Acknowledgement prov «signal» : Request_Cancel prov «signal» : Request_Visual_Sweeping_Confirmation «information flow» **Perform_FC_P_Or_FC_P_A** prov «signal» : Execute_FC_P prov «signal» : Execute_FC_P_A prov «signal» : Execute_Cancel prov «signal» : Confirm_Acknowledgement prov «signal» : Execute_Visual_Sweeping_Confirmation «information flow» **Report_Change_Trigger** reqd «signal» : Change_Trigger «information flow» **Perform_FC** prov «signal» : Execute_FC «information flow» **Request_Command_Rejected_ILS** reqd «signal» : Report_Command_Rejected		Basic TDS AC Option FC-P/-A Option Update FL
Eu.TDS.6809	Def	Execute_Cancel		Option FC-P/-A
Eu.TDS.6810	Def	Execute_DRFC		Basic TDS AC
Eu.TDS.6811	Def	Execute_FC		Basic TDS AC
Eu.TDS.6812	Def	Execute_FC_P		Option FC-P/-A
Eu.TDS.6813	Def	Execute_FC_P_A		Option FC-P/-A
Eu.TDS.6814	Def	Execute_UFL		Option Update FL
Eu.TDS.6815	Def	Execute_Visual_Sweeping_Confirmation		Option FC-P/-A
Eu.TDS.6827	Def	Reason_FC_P_A_failed		Option FC-P/-A
Eu.TDS.6826	Def	Report_Command_Rejected		Basic TDS AC
Eu.TDS.6829	Def	Request_Acknowledgement		Option FC-P/-A
Eu.TDS.6833	Def	Request_DRFC		Basic TDS AC
Eu.TDS.6834	Def	Request_FC_C		Basic TDS AC

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
Eu.TDS.6835	Def	Request_FC_P		Option FC-P/-A
Eu.TDS.6836	Def	Request_FC_P_A		Option FC-P/-A
Eu.TDS.6837	Def	Request_FC_U		Basic TDS AC
Eu.TDS.6838	Def	Request_UFL		Option Update FL
Eu.TDS.6839	Def	Request_Visual_Sweeping_Confirmation		Option FC-P/-A
Eu.TDS.6807	Def	Change_Trigger		Basic TDS AC
Eu.TDS.6808	Def	Confirm_Acknowledgement		Option FC-P/-A
Eu.TDS.6830	Def	Request_Cancel		Option FC-P/-A
Eu.TDS.6828	Def	Reason_FC_P_failed		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 - Security Services Platform as specified in [SP-SEC-ServSpec].		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	The time values defined in the chapter Functional requirements specification (Eu.TDS.1211) shall be configured for the operation of the Subsystem - Train Detection System.		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 time values 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.7369	Req	• The usage of a POM per each TVPS.		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

ID	Type	Requirement Part 1	Requirement Part 2	Func. Pkg.
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
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
Eu.TDS.7209	Head	**5.3.2 Value configuration**		
Eu.TDS.7210	Req	**Con_t_Inhibition_Time** The time value shall be configured in accordance with: Configurable resolution: steps of 100 ms Configurable range: from 100 ms up to 10 s Con_t_Inhibition_Time is defined in Eu.TDS.1212		Basic TDS AC
Eu.TDS.7212	Req	**Con_t_Delay_Of_Notification_Of_Availability** The time value shall be configured in accordance with: Configurable resolution: steps of 100 ms Configurable range: from 0 s up to 10 s Con_t_Delay_Of_Notification_Of_Availability is defined in Eu.TDS.1213		Basic TDS AC
Eu.TDS.7213	Req	**Con_t_Max_FC_P_or_FC_P_A** The time value shall be configured in accordance with: Configurable resolution: steps of 1 s Configurable range: from 0 s up to 7200 s Con_t_Max_FC_P_or_FC_P_A is defined in Eu.TDS.1214		Option FC-P/-A
Eu.TDS.7214	Req	**Con_t_Min_FC_P_or_FC_P_A** The time value shall be configured in accordance with: Configurable resolution: steps of 0,5 s Configurable range: from 0 s up to 3600 s Con_t_Min_FC_P_or_FC_P_A is defined in Eu.TDS.1215		Option FC-P/-A
Eu.TDS.7215	Req	**Con_t_TDP_Delay** The time value shall be configured in accordance with: Configurable resolution: steps of 100 ms Configurable range: from 0 s up to 10 s Con_t_TDP_Delay is defined in Eu.TDS.5452		Basic TDS TDP
Eu.TDS.7216	Req	**Con_t_TDP_Undefinded_Pattern_Delay** The time value shall be configured in accordance with: Configurable resolution: steps of 100 ms Configurable range: from 0 s up to 10 s Con_t_TDP_Undefinded_Pattern_Delay is defined in Eu.TDS.5965		Basic TDS TDP