



EULYNX Initiative

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Requirements specification for subsystem Point

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Baseline: 2.7 (0.A)

EULYNX Baseline Set: 3



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ID	Type	Requirement Part 1	Requirement Part 2	Appl.
Eu.P.1	Head	1 Introduction		Default
Eu.P.2	Head	1.1 Release information		Default
Eu.P.3	Info	[Eu.Doc.36] Requirements specification for subsystem Point CENELEC Phase: 4 Version: 2.5 (0.A) EULYNX Baseline Set: 3 Approval date: 29.11.2018		Default
Eu.P.3032	Info	Version history		Default
Eu.P.3033	Info	version number: 1.0 date: 22.12.16 author: Charlotte Gäbel model version: 2.2.7 generic profile version: 2 review: - changes: EUP-29, EUP-30, EUP-31, EUP-32, EUP-33, EUP-34, EUP-35, EUP-36, EUP-37, EUP-38, EUP-39, EUP-40, EUP-41, EUP-42, EUP-43, EUP-44, EUP-45, EUP-47, EUP-48, EUP-49		Default
Eu.P.3034	Info	version number: 1.1 date: 16.01.17 author: Charlotte Gäbel model version: 2.2.12 generic profile version: 2 review: - changes: chapter "Technical requirements" and JIRA-Tickets EUP-54, EUP-55, EUP-56		Default
Eu.P.3043	Info	version number: 1.2 date: 22.02.17		Default
Eu.P.3044	Info	version number: 1.3 date: 22.02.17		Default
Eu.P.3045	Info	version number: 1.4 date: 22.02.17		Default
Eu.P.3035	Info	version number: 1.5 date: 22.02.17 author: Charlotte Gäbel model version: 2.2.19 generic profile version: 5 review: Axel Schneider (DB), Patrick Demuth (CFL), Thierry Jung (CFL), Thomas Harrison (NR), Mirko Blazic changes: EUP-21, EUP-58, EUP-61, EUP-66, EUP-69, EUP-70, EUP-71, EUP-73, EUP-75, EUP-76, EUP-77, EUP-78, EUP-79, EUP-81, EUP-83, EUP-84, EUP-85, EUP-86, EUP-87, EUP-89, EUP-91, EUP-93, EUP-94, EUP-95, EUP-96, EUP-97, EUP-98, EUP-99, EUP-100, EUP-101, EUP-102, EUP-103, EUP-105, EUP-108, EUP-109, EUP-110, EUP-111, EUP-112, EUP-113, EUP-114, EUP-115, EUP-116, EUP-117, EUP-118, EUP-119		Default
Eu.P.3046	Info	version number: 1.6 (0.A) date: 22.03.17 author: Charlotte Gäbel model version: 2.2.20 generic profile version: 5 review: CCB changes: EUP-123, EUP-124, EUP-125, EUP-126, EUP-127, EUP-128, EUP-130, EUP-131, EUP-132, EUP-133, EUP-135, EUP-136, EUP-138		Default
Eu.P.3049	Info	version number: 1.7 (0.A) date: 25.10.2017 author: Filip Giering and Jorge Block model version: 4.4.3 generic profile version: 21 Generic interface and subsystem requirements version: 1.4 (1.B) review: - changes: EUP-137, EUP-141, EUP-151, EUP-152, EUP-172, EUP-176, EUP-177, EUP-178, EUP-162, EUP-161, EUP-159, EUP-157, EUP-163, EUP-82, EUP-175, EUP-143, EUP-158, EUP-181, EUP-134, EUP-168, EUP-184, EUP-174, EUP-185, EUP-186, EUP-144, EUP-153, EUP-187, EUP-154, EUP-155, EUP-146, EUP-166, EUP-149		Default
Eu.P.3047	Info	version number: 1.8 (0.A) date: 03.11.2017 author: Jorge Block model version: 4.4.4 generic profile version: 22 Generic interface and subsystem requirements version: 1.4 (1.B) review: - changes: EUP-149, EUP-188, EUP-190, EUP-191, EUP-193, EUP-194		Default

ID	Type	Requirement Part 1	Requirement Part 2	Appl.
Eu.P.3149	Info	version number: 1.8 (0.B) date: 08.11.2017 author: Jorge Block model version: 4.4.4 generic profile version: 22 Generic interface and subsystem requirements version: 1.4 (3.B) review: - changes: EUP-148		Default
Eu.P.3150	Info	version number: 1.8 (1.B) date: 08.11.2017 author: Jorge Block model version: 4.4.4 generic profile version: 22 Generic interface and subsystem requirements version: 1.4 (3.B) review: - changes: EUP-197		Default
Eu.P.3152	Info	version number: 2.0 (0.A) date: 08.12.2017 author: Darren Witts model version: 4.4.8 generic profile version: 25 Generic interface and subsystem requirements version: 2.0 (0.A) review: - CCB changes: EUP-198, EUP-199, EUP-200		Default
Eu.P.3156	Info	version number: 2.1 (0.A) date: 07.03.2018 author: James Towers / Darren Witts model version: 15.6.1 generic profile version: 25 Generic interface and subsystem requirements version: 2.0 (0.A) review: - cluster changes: EUP-155, EUP-202, EUP-209, EUP-211, EUP-213, EUP-215		Default
Eu.P.3164	Info	version number: 2.2 (0.A) date: 22.03.2018 author: James Towers / Darren Witts model version: 15.6.1 generic profile version: 26 Generic interface and subsystem requirements version: 2.0 (0.A) review: - CCB changes: EUP-210, EUP-214, EUP-217		Default
Eu.P.3166	Info	version number: 2.2 (1.A) date: 24.04.2018 author: Darren Witts model version: 15.6.1 generic profile version: 26 Generic interface and subsystem requirements version: 2.0 (0.A) review: - CCB changes: EUP-218, EUP-219, EUP-220, EUP-222, EUP-224		Default
Eu.P.3169	Info	version number: 2.3 (0.A) date: 19.10.2018 author: Darren Witts model version: 15.6.8 generic profile version: 30 Generic interface and subsystem requirements version: 2.1 (0.A) review: - Cluster changes: EUP-224, EUP-225, EUP-226, EUP-227, EUP-228, EUP-229, EUP-230, EUP-231, EUP-232, EUP-233, EUP-234, EUP-235, EUP-238, EUP-239		Default
Eu.P.3243	Info	version number: 2.4 (0.A) date: 06.11.2018 author: Darren Witts model version: 15.6.8 generic profile version: 30 Generic interface and subsystem requirements version: 2.1 (0.A) review: - CCB changes: EUP-242, EUP-244, EUP-245, EUP-247		Default
Eu.P.3270	Info	version number: 2.5 (0.A) date: 11.12.2018 author: Darren Witts model version: 15.6.8 generic profile version: 30 Generic interface and subsystem requirements version: 3.0 (0.A) review: - CCB changes: EUP-251, EUP-252, EUP-254		Default

ID	Type	Requirement Part 1	Requirement Part 2	Appl.
Eu.P.3272	Info	version number: 2.6 (0.A) date: 09.08.2019 author: Philipp Wolber model version: 15.6.11 generic profile version: 33 Generic interface and subsystem requirements version: 3.0 (0.A) review: Marie Gehrmann changes: EUP-250, EUP-260, EUP-262, EUP-263, EUP-264, EUP-267, EUP-270, EUP-272, EUP-273, EUP-277, EUP-278 ,EUP-279, EUP-281		Default
Eu.P.4542	Info	version number: 2.7 (0.A) date: 30.09.2019 author: Philipp Wolber model version: 15.6.13 generic profile version: 33 Generic interface and subsystem requirements version: 3.0 (0.A) review: Marie Gehrmann changes: EUP-240, EUP-249, EUP-250, EUP-256, EUP-258, EUP-272, EUP-280, EUP-287, EUP-288		Default
Eu.P.7	Head	1.2 Impressum		Default
Eu.P.8	Info	Publisher: EULYNX Initiative EULYNX Partners: Bane NOR Société Nationale des Chemins de Fer Luxembourgeois (CFL) DB Netz AG (DB) S.A. Infrabel Väylä (FTIA) Network Rail ProRail B.V. Rete Ferroviaria Italiana (RFI) SBB AG Société Nationale des Chemins de Fer Français (SNCF) SŽ-Infrastruktura, d.o.o. (SŽ) Trafikverket		Default
Eu.P.9	Info	Responsible for this document: EULYNX Project Management Office www.eulynx.eu		Default
Eu.P.3038	Info	Copyright EULYNX Partners All information included or disclosed in this document is licensed under the European Union Public Licence EUPL, Version 1.1.		Default
Eu.P.10	Head	1.3 Purpose		Default
Eu.P.11	Info	The purpose of the document is the specification of requirements for the Subsystem - Point for the development of the EULYNX System.		Default
Eu.P.12	Info	This document describes functional, non-functional and technical requirements for the Subsystem - Point and functional requirements for interface SCI-P.		Default
Eu.P.13	Info	This document is intended for the following users: <ul style="list-style-type: none">• safety authorities• infrastructure managers• safety assessors• signalling system suppliers• validators		Default
Eu.P.14	Info	This document is the basis for the implementation by the supplier and for approval by the infrastructure manager.		Default
Eu.P.15	Head	1.4 Applicable standards and regulations		Default
Eu.P.314	Info	The applicable standards and regulations used in EULYNX are listed in the EULYNX Reference Document List [Eu.Doc.12].		Default
Eu.P.35	Head	1.5 Applicable documents		Default
Eu.P.36	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].		Default
Eu.P.51	Head	1.6 Terms and abbreviations		Default
Eu.P.52	Info	The terms and abbreviations are listed in the EULYNX Glossary [Eu.Doc.9].		Default
Eu.P.1350	Head	1.7 Variability management		Default
Eu.P.1351	Info	The Applicability column indicates the applicability of the requirement or information object per EULYNX partner. Value "Default" means the object applies to all EULYNX partners. Value "IM code" means the object applies specifically to the stated EULYNX partner. Value "-" indicates, that this requirement is part of the chapters of the state machine modelling. The state machine itself defines the applicability of each transition. If there are no FlowPorts which describe the different applicabilities, the whole state machine is default. IM codes follow the pattern "abcdyz", where abcd is the UIC numeric code for railway companies and yz is by default "00".		Default
Eu.P.3024	Head	1.8 Definition of object types		Default
Eu.P.3025	Info	The following definition for object types is applied in this document:		Default
Eu.P.3026	Info	• "Req" - This denotes a mandatory requirement.		Default
Eu.P.3027	Info	• "Info" - This denotes additional information to help understand the specification. These objects do not specify any additional requirements.		Default
Eu.P.3028	Info	• "Head" - This denotes chapter headings.		Default
Eu.P.53	Head	1.9 Modelling		Default

ID	Type	Requirement Part 1	Requirement Part 2	Appl.
Eu.P.54	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 - Point operational in stimulus-response form. Furthermore the information objects (stimuli and responses) exchanged over the interfaces of the Subsystem - Point are defined.		Default
Eu.P.55	Info	The diagrams presented in this document are modelled in SysML [SysML].		Default
Eu.P.3050	Info	The rules for the interpretation of the model based parts of specification are defined in [Eu.Doc.29].		Default
Eu.P.3051	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.		Default
Eu.P.3052	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.		Default
Eu.P.3053	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".		Default
Eu.P.3054	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".		Default
Eu.P.57	Head	2 Conditions of use		Default
Eu.P.58	Req	The specifications defined in this document shall follow the requirements of the EULYNX System Architecture Specification [Eu.Doc.16].		Default
Eu.P.884	Head	3 Functional requirements specification		Default
Eu.P.888	Head	3.1 Subsystem definition	Defines the subsystem according to phase 2 of life cycle model from EN 50126.	Default
Eu.P.937	Head	3.1.1 Subsystem context		Default
Eu.P.948	Head	3.1.1.1 Technical subsystem context		Default
Eu.P.950	Req	<div>Subsystem - Point - Technical Subsystem Context [SubSP BDD 1] <div>bdd Subsystem - Point - Technical Subsystem Context [SubSP BDD 1] </div></div>	<p>The Subsystem - Point shall provide the technical interfaces shown in "Subsystem - Point - Technical Subsystem Context [SubSP BDD 1]". Each interface shall allow the connection to the corresponding actors shown in the quantities defined in the multiplicities.</p> <p>The Subsystem - Point has to be able to manage and control more than one connected Point machine. It does not send each status input from the n-fold (n = 1...*) Point machine to the Subsystem - Electronic Interlocking, but instead sends one collective message.</p>	Default
Eu.P.938	Head	3.1.1.2 Functional subsystem context		Default
Eu.P.939	Info	Subsystem - Point	The Subsystem - Point integrates the moveable elements, that may be moved to a different position by a request from the Subsystem - Electronic Interlocking.	Default

ID	Type	Requirement Part 1	Requirement Part 2	Appl.
Eu.P.947	Req	<div>Subsystem - Point - Functional Subsystem Context [SubSP IBD 1]</div> <div><div>ibd Subsystem - Point - Functional Subsystem Context [SubSP IBD 1]</div><pre>graph LR subgraph "Subsystem - Point" direction TB SCI_P["SCI-P : Subsystem_Electronic_Interlocking"] SMI_P["SMI-P : Subsystem_MDM_M"] SDI_P["SDI-P : Subsystem_MDM_D"] P4["P4 : Basic_Data_Identifier"] P1["P1 : Maintainer"] end SEI["Subsystem - Electronic Interlocking"] --- SCI_P SMDM["Subsystem - Maintenance and Data Management"] --- SMI_P SMDM --- SDI_P BDI["Basic Data identifier"] --- P4 M["Maintainer"] --- P1 P3["P3 : Point_machine"] --- PM["Point machine"] P3 --- "Subsystem - Point"</pre></div>	The Subsystem - Point shall provide the functional interfaces shown in "Subsystem - Point - Functional Subsystem Context [SubSP IBD 1]", typed by FlowSpecifications. Each FlowSpecification is defined by a set of FlowProperties that specify the possible exchange of information through the particular interface.	Default
Eu.P.944	Info	SCI-P	The functional Process Data Interface to the Subsystem - Electronic Interlocking (SCI: Standard Communication Interface). The InformationFlow through the Interface is defined by the FlowSpecification "Subsystem_Electronic_Interlocking".	Default
Eu.P.946	Info	SMI-P	The functional System Maintenance Interface to the Subsystem - Maintenance and Data Management f for the InformationFlow through the Interface, which is defined by the FlowSpecification "Subsystem_MDM_M".	Default
Eu.P.945	Info	SDI-P	The functional Diagnostic Interface to the Subsystem - Maintenance and Data Management. The InformationFlow through the Interface is defined by the FlowSpecification "Subsystem_MDM_D".	Default
Eu.P.943	Info	P4	The functional System Data Interface to the Basic_Data_Identifier. The InformationFlow through the Interface is defined by the FlowSpecification "Basic_Data_Identifier".	Default
Eu.P.941	Info	P1	The functional Local Control and Display Interface to the Maintainer. The InformationFlow through the Interface is defined by the FlowSpecification "Maintainer".	Default
Eu.P.942	Info	P3	The functional control interface to Point machines for the information flow through the interface, which is defined by the FlowSpecification "Point machine".	Default
Eu.P.889	Head	3.1.2 InformationFlow at the subsystem interfaces		Default
Eu.P.913	Head	3.1.2.1 Interface SCI-P (Subsystem - Electronic Interlocking)		Default
Eu.P.3064	Info	The generic commands and messages through the SCI-P are specified in Eu.Doc.20.		Default
Eu.P.914	Info	Subsystem_Electronic_Interlocking	Definition of the InformationFlow (by FlowSpecification) for Process Data Interface SCI-P (Subsystem - Electronic Interlocking).	Default
Eu.P.916	Req	Cd_Move_Point	Command (Cd) from Subsystem - Electronic Interlocking to Subsystem - Point to move the Point into the commanded position.	Default
Eu.P.922	Req	Msg_Point_Position	Message (Msg) from Subsystem - Point to Subsystem - Electronic Interlocking about the current Point Position.	Default
Eu.P.924	Req	Msg_Timeout	Message (Msg) from Subsystem - Point to Subsystem - Electronic Interlocking that the maximum acceptable time for moving the Point "Con_tmax_Point_Operation" has expired. The Subsystem - Point has stopped the Point machine moving the points.	007600 007900 008000 008200 008400

ID	Type	Requirement Part 1	Requirement Part 2	Appl.
Eu.P.929	Head	3.1.2.2 Interface SMI-P (Subsystem - Maintenance and Data Management)		Default
Eu.P.3066	Info	The generic FlowSpecification and the related FlowProperties through SMI-P are specified in Eu.Doc.20.		Default
Eu.P.925	Head	3.1.2.3 Interface SDI-P (Subsystem - Maintenance and Data Management)		Default
Eu.P.3065	Info	The generic data points through the SDI-P are specified in Eu.Doc.20.		Default
Eu.P.926	Info	Subsystem_MDM_D	Definition of the InformationFlow (by FlowSpecification) for the diagnostic data at the interface to Subsystem - Maintenance and Data Management.	Default
Eu.P.1397	Req	DriveVoltageFault	Type: Boolean Parameter = {yes, no} Electricity is not switchable. The message shall be transmitted as event triggered. Note: The electricity is not detected.	Default
Eu.P.1404	Req	PointTurnEvent.MotorTurnData[i].CurrentL1Phase	Type: Array of Float Unit: A The course of active current from L1-Phase during the Point Movement is indicated (not the apparent current, which is included in the blind current component). The measured values of the Point Movement shall be given in a continous domain. The time interval between to measured values is defined as PointTurnEvent.SamplingInterval. i is the number of the Point machine (1 = first Point machine). The message shall be transmitted as event triggered after completion of point movement.	Default
Eu.P.1405	Req	PointTurnEvent.MotorTurnData[i].CurrentL2Phase	Type: Array of Float Unit: A The course of active current from L2-Phase during the Point Movement is indicated (not the apparent current, which is included in the blind current component). The measured values of the Point Movement shall be given in a continous domain. The time interval between to measured values is defined as PointTurnEvent.SamplingInterval. i is the number of the Point machine (1 = first Point machine). The message shall be transmitted as event triggered after completion of point movement.	Default
Eu.P.1406	Req	PointTurnEvent.MotorTurnData[i].CurrentL3Phase	Type: Array of Float Unit: A The course of active current from L3-Phase during the Point Movement is indicated (not the apparent current, which is included in the blind current component). The measured values of the Point Movement shall be given in a continous domain. The time interval between to measured values is defined as PointTurnEvent.SamplingInterval. i is the number of the Point machine (1 = first Point machine). The message shall be transmitted as event triggered after completion of point movement.	Default
Eu.P.1407	Req	PointTurnEvent.MotorTurnData[i].DelayStartTime	Type: Float Unit: Seconds Delay of time between the first started Point machine and the considered Point machine. i is the number of the Point machine (1 = first Point machine). The message shall be transmitted as event triggered.	Default
Eu.P.1408	Req	PointTurnEvent.MotorTurnData[i].idSub1	Type: String Functional location of Subsystem - Point (e.g. DB Netz AG TP 1-3 from SAP R/3). If this attribute is not defined, it needs to be filled with Underscore (0x5F). The attribute shall be changeable by updating of Configuration Data. i is the number of the Point machine (1 = first Point machine). The message shall be transmitted as event triggered.	Default
Eu.P.1409	Req	PointTurnEvent.MotorTurnData[i].MotorType	Type: Enumeration Type of Point machine`s motor. i is the number of the Point machine (1 = first Point machine). The message shall be transmitted as event trigerred.	Default
Eu.P.1410	Req	PointTurnEvent.MotorTurnData[i].Power	Type: Array of Float Unit: W The course of active power during the Point Movement is indicated. The	Default

ID	Type	Requirement Part 1	Requirement Part 2	Appl.
			<p>measured values of the Point Movement shall be given in a continuous domain. The time interval between measured values is defined as PointTurnEvent.SamplingInterval. i is the number of the Point machine (1 = first Point machine).</p> <p>The message shall be transmitted as event triggered after completion of point movement.</p> <p>Note: This requirement is an alternative realisation for the requirements of Eu.P.1404, Eu.P.1405 and Eu.P.1406 (current measurement of the 3 phases).</p>	
Eu.P.1411	Req	PointTurnEvent.Position	Type: Enumeration Direction of Moving Point. The message shall be transmitted as event triggered.	Default
Eu.P.1412	Req	PointTurnEvent.TurnTime	Type: Float Unit: Seconds Time of Moving Point resulting from start of the first moved Point machine until the last switched off Point machine. The message shall be transmitted as event triggerred.	Default
Eu.P.1413	Req	PrincipleOfMeasurement	Type: Enumeration Description how the data of the measurement from electricity (current) or performance (power) are collected. The message shall be transmitted with the establishing connection SDI-P.	Default
Eu.P.1416	Req	PointTurnEvent.SamplingInterval	Type: Float Unit: Seconds Information of time between two measure points for values of electricity or performance from the Moving point curve. The message shall be transmitted with the establishing connection SDI-P. Note: The value shall be between 20ms and 50ms.	Default
Eu.P.1419	Req	StatusPositionLeft	Type: Enumeration Status from detector of the left hand end position. The message shall be transmitted as event triggered.	Default
Eu.P.1420	Req	StatusPositionLeft_PM[i]	Type: Enumeration Information from the additional detector of the left hand end position (producer specific). i is the number of the Point machine or detectors (1 = first Point machine or detector). The message shall be transmitted as event triggered.	Default
Eu.P.1421	Req	StatusPositionRight	Type: Enumeration Status from detector of the right hand end position. The message shall be transmitted as event triggered.	Default
Eu.P.1422	Req	StatusPositionRight_PM[i]	Type: Enumeration Information from the additional detector of the right hand end position (producer specific). i is the number of the Point machine or detectors (1 = first Point machine or detector). The message shall be transmitted as event triggered.	Default
Eu.P.1423	Req	PointTurnEvent.Timeout	Type: Enumeration Status of Timeout from Moving Point. The message shall be transmitted as event triggered.	Default
Eu.P.1424	Req	TrailingStatus_PM[i]	Type: Boolean Information from the Point machine of a trailed point. i is the number of the Point machine (1 = first Point machine). The message shall be transmitted as event triggered.	Default
Eu.P.1425	Req	TurnCounter	Type: Long Counter of Moving point (right and left hand position are counted). The message shall be transmitted as event triggered.	Default

ID	Type	Requirement Part 1	Requirement Part 2	Appl.
Eu.P.2127	Info	A Point Movement starts with the Point machine starting up first (Trigger). The measuring of all Point machines starts when exceeding an appropriate starting value (Electricity). The delay from start of the first starting Point machine is to be specified for each Point machine in the variable PointTurnEvent.MotorTurnData[i].DelayStartTime. The recording of the data ends for each Point machine by stating a continuing undercut of an appropriate minimum value (Electricity). Start and End of the particular measuring procedure of the particular Point machine need to be detected.		Default
Eu.P.2126	Req	All the Data belonging to PointTurnEvent.[XXX] are sent when detecting a Point Movement. As those Datapoints belong together, all of them get the identical time stamp, indicating the beginning of the Point Movement.		Default
Eu.P.910	Head	3.1.2.4 Interface P4 (Basic Data Identifier)		Default
Eu.P.3063	Info	The generic FlowSpecification and the related FlowProperties through P4 are specified in Eu.Doc.20.		Default
Eu.P.890	Head	3.1.2.5 Interface P1 (Maintainer)		Default
Eu.P.891	Info	Maintainer	Definition of the InformationFlow (by FlowSpecification) for Maintenance/Operation/Display Interface P1 (Maintainer).	Default
Eu.P.896	Req	Point_Moving	Displays the moving of the point at the local status display.	Default
Eu.P.1377	Req	End_Position_R	Displays the status of the detection of point end position on the right hand.	Default
Eu.P.894	Req	End_Position_L	Displays the status of the detection of point end position on the left hand.	Default
Eu.P.3037	Req	Point_Trailed	Displays the trailing of the point at the local status display (point trailed or not trailed).	007600 007900 008000 008200
Eu.P.3173	Info	The generic FlowProperties through P1 are specified in Eu.Doc.20.		Default
Eu.P.902	Head	3.1.2.6 Interface P3 (Point machine)		Default
Eu.P.903	Info	Point_machine	Definition of the InformationFlow (by FlowSpecification) for the Control Interfaces P3 (Point machine). Note: The behaviour of the interfaces P3 is described generically. The Subsystem - Point needs to be able to write and to read the generic information objects of the statuses from the Point machine.	Default
Eu.P.904	Req	Information_End_Position_Arrived	Information object from Point machine to Subsystem - Point that the Point has an end position (left hand position or right hand position).	Default
Eu.P.905	Req	Information_No_End_Position	Information object from Point machine to Subsystem - Point that the Point has no end position.	Default
Eu.P.906	Req	Information_Trailed_Point	Information object from Point machine to Subsystem - Point that the "Point is trailed from left hand position" or "Point is trailed from right hand position".	007600 007900 008000 008200
Eu.P.907	Req	Moving	Information object from Subsystem - Point to Point machine to move the Point.	Default
Eu.P.909	Req	Stop_Moving	Information object from Subsystem - Point to Point machine to stop Moving the Point.	Default
Eu.P.959	Head	3.1.3 Subsystem functions		Default
Eu.P.2286	Head	3.1.3.1 Definition of time values		Default
Eu.P.3068	Info	The generic time values are specified in Eu.Doc.20.		Default
Eu.P.2439	Info	Con_tmax_Point_Operation	The Operation for Moving of Point takes more than the configured time value of monitoring "Con_tmax_Point_Operation" allows. The standardized time value is configured: Con_tmax_Point_Operation := 12 s (008000, 007600, 007000) Con_tmax_Point_Operation := 10 s (008200) Con_tmax_Point_Operation := 7 s (007000) - additional value selectable by dataprep	Default
Eu.P.960	Head	3.1.3.2 Essential subsystem states		Default
Eu.P.3069	Info	The essential subsystem states are specified in Eu.Doc.20.		Default
Eu.P.986	Head	3.1.3.3 Subsystem-UseCases "Initialisation"		Default

ID	Type	Requirement Part 1	Requirement Part 2	Appl.
Eu.P.1467	Info	<div>Subsystem - Point - UseCase Definition - Initialisation [SubSP UCD 1]</div> <div>uc Subsystem - Point - UseCase Definition - Initialisation [SubSP UCD 1]</div> <pre>graph LR subgraph "Subsystem - Point" UCD1[EfeSUC1.1: Updating Configuration and Engineering Data] UCD2[EfeSUC1.2: Establish PDI connection] UCD3[SubSUC1.3: Report status] UCD4[SubSUC1.4: Set Initial State of Outputs] end SM[Subsystem - Maintenance and Data Management] --- UCD1 SEI[Subsystem - Electronic Interlocking] --- UCD2 SEI --- UCD3 UCD2 -.-> «include» UCD3 UCD4 --- PM[Point machine]</pre>		Default
Eu.P.3070	Info	The generic UseCases EfsSUC 1.1 and EfeSUC 1.2 are specified in Eu.Doc.20.		Default
Eu.P.1465	Info	SubSUC1.3: Report status	The Subsystem-UseCase "SubSUC1.3: Report status" defines a scenario for the transmission of status data of Subsystem - Point to Subsystem - Electronic Interlocking, while Process Data Interface protocol connection is establishing.	Default
Eu.P.1110	Info	<div>SubSP SD 1.3.1</div> <div>SubSUC1.3: Report status</div> <div>Main Success Scenario: Report status [SubSP SD 1.3.1]</div> <div>alt [The Point is in an End position]</div> <div>1.a1 - The Point machine sends a Message to the Subsystem - Point indicating that the Point is in an End position "Y".</div> <div>else alt [The Point is in No end position]</div> <div>1.b1 - The Point machine sends a Message to the Subsystem - Point indicating that the Point is in No end position.</div> <div>else alt [The Point is in a Trailed position]</div> <div>1.c1 - The Point machine sends a Message to the Subsystem - Point indicating that the Point is in a Trailed position.</div> <div>end alt</div> <div>2. The Subsystem - Point sends a Message to the Subsystem - Electronic Interlocking indicating the Point position.</div> <pre>sequenceDiagram participant SEI as Subsystem - Electronic Interlocking participant PM as Point machine participant SP as :Subsystem - Point alt [The Point is in an End position] PM->>SP: Information_End_Position_Arrived else alt [The Point is in No end position] PM->>SP: Information_No_End_Position else alt [The Point is in a Trailed position] PM->>SP: «IM 007600» PM->>SP: «IM 007900» PM->>SP: «IM 008000» PM->>SP: «IM 008200» PM->>SP: Information_Trailed_Point end SP->>SEI: Msg_Point_Position</pre>	If a state change happens while establishing the PDI connection and the status report Msg_Point_Position has already been sent, a new status report Msg_Point_Position has to be sent to Subsystem - Electronic Interlocking immediately after completion of the establishment of the connection.	Default
Eu.P.1109	Info	SubSUC1.4: Set Initial State of Outputs	The Subsystem-UseCase "SubSUC1.4: Set Initial State of Outputs" specifies the main success scenario of establishing the basic state of Subsystem - Point when changing to the state BOOTING or to the state INITIALISING without moving the Point.	Default

ID	Type	Requirement Part 1	Requirement Part 2	Appl.
Eu.P.1466	Info	<div><div>SubSP SD 1.4.1</div><div>SubSUC1.4: Set Initial State of Outputs</div><div><p>Main Success Scenario: Set Initial State of Outputs [SubSP SD 1.4.1]</p><p>Precondition:</p><p>The Subsystem - Point is in the state BOOTING.</p><p>Interaction 1.4.1.A:</p><p>1. - The Subsystem - Point enters the state INITIALISING.</p><p>2. The Subsystem - Point sends a Command to the Point machine to Stop Moving.</p><p>Postconditions:</p><p>The Subsystem - Point is in the state INITIALISING.</p><p>The Initial State Of Outputs of the Subsystem - Point has been set.</p></div><div><pre>sequenceDiagram actor PM as Point machine participant SP as :Subsystem - Point PM->>SP: Stop_Moving</pre></div></div>		Default
Eu.P.1128	Head	3.1.3.4 Subsystem-UseCases "Operation"		Default
Eu.P.1320	Info	<div><div>Subsystem - Point - UseCase Definition - Operation [SubSP UCD 2]</div><div><div>uc Subsystem - Point - UseCase Definition - Operation [SubSP UCD 2]</div><div><pre>graph LR subgraph "Subsystem - Point" UC1([SubSUC2.1: Command Point]) UC2([SubSUC2.2: Handle Irregularities]) UC1 --- UC2 end IE[Subsystem - Electronic Interlocking] --- UC1 IE --- UC2 UC1 --- PM[Point machine]</pre></div></div></div>		Default
Eu.P.1129	Info	SubSUC2.1: Command Point	The Subsystem-UseCase "SubSUC2.1: Command Point" defines Main Success Scenario and Alternative Scenarios (e.g. Reversing Point) for Moving of the Point through Subsystem - Point after the command from Subsystem - Electronic Interlocking.	Default

ID	Type	Requirement Part 1	Requirement Part 2	Appl.
Eu.P.1237	Info	<div><div><div>SubSP SD 2.1.1</div><div>SubSUC2.1: Command Point</div><div><p>Main Success Scenario: Moving of the Point [SubSP SD 2.1.1]</p><p>Precondition:</p><p>The Subsystem - Point is in the state OPERATIONAL. The Subsystem - Point is in:</p><ul style="list-style-type: none">- an End position "Y",- No end position, or- a Trailed position.<p>Interaction 2.1.1.A:</p><p>1. - The Subsystem - Electronic Interlocking sends a Command to the Subsystem - Point to move the Point to an End position "X".</p><p>2. The Subsystem - Point sends a Command to the Point machine to move the Point to an End position "X". At this moment the Subsystem - Point starts the timer Con_tmax_Point_Operation.</p><p>Interaction 2.1.1.B:</p><p>alt [The Subsystem - Point is in an End position or a Trailed position]</p><p>3. - The Point machine sends a Message to the Subsystem - Point indicating that the Point is in No end position.</p><p>4. The Subsystem - Point sends a Message to the Subsystem - Electronic Interlocking indicating that the Point is in No end position.</p><p>end alt</p><p>Interaction 2.1.1.C:</p><p>5. - The Point machine sends a Message to the Subsystem - Point indicating that the Point is in an End position "X".</p><p>6. The Subsystem - Point sends a Command to the Point machine to stop moving the Point. The timer Con_tmax_Point_Operation is reset.</p><p>7. The Subsystem - Point sends a Message to the Subsystem - Electronic Interlocking indicating that the Point is in an End position "X".</p><p>Postcondition:</p><p>The Subsystem - Point is in an End position "X".</p></div></div><div><pre>sequenceDiagram actor EI as Subsystem - Electronic Interlocking actor PM as Point machine participant SP as :Subsystem - Point EI->>SP: Cd_Move_Point activate SP SP->>PM: Moving activate PM PM-->>SP: {< Con_tmax_Point_Operation} deactivate PM alt [The Subsystem - Point is in an End position or a Trailed position] PM->>SP: Information_No_End_Position activate SP SP->>EI: Msg_Point_Position deactivate SP else PM->>SP: Information_End_Position_Arrived activate SP SP->>PM: Stop_Moving deactivate SP SP->>EI: Msg_Point_Position deactivate SP end deactivate SP</pre></div></div>		Default

ID	Type	Requirement Part 1	Requirement Part 2	Appl.
Eu.P.1175	Info	<div><div><div>SubSP SD 2.1.2</div><div>SubSUC2.1: Command Point</div><div>Alternative Scenario: Reversing Point [SubSP SD 2.1.2]</div><div>Precondition: The Subsystem - Point is in the state OPERATIONAL. The Subsystem - Point is in: - an End position "Y", - No end position, or - a Trailed position. Interaction 2.1.2.A: 1. - The Subsystem - Electronic Interlocking sends a Command to the Subsystem - Point to move the Point to an End position "X". 2. The Subsystem - Point sends a Command to the Point machine to move the Point to an End position "X". At this moment the Subsystem - Point starts the timer Con_tmax_Point_Operation. Interaction 2.1.2.B: alt [The Subsystem - Point is in an End position or a Trailed position] 3. - The Point machine sends a Message to the Subsystem - Point indicating that Point is in No end position. 4. The Subsystem - Point sends a Message to the Subsystem - Electronic Interlocking indicating that Point is in No end position. end alt Interaction 2.1.2.C: 5. - The Subsystem - Electronic Interlocking sends a Command to the Subsystem - Point to move the Point to an End position "Y". Interaction 2.1.2.D: 6. - The Subsystem - Point sends a Command to the Point machine to move the Point to an End position "Y". At this moment the Subsystem - Point re-starts the timer Con_tmax_Point_Operation. 7. The Point machine sends a Message to the Subsystem - Point indicating that the Point is in an End position "Y". 8. The Subsystem - Point sends a Command to the Point machine to stop moving the Point. The timer Con_tmax_Point_Operation is reset. 9. The Subsystem - Point sends a Message to the Subsystem - Electronic Interlocking indicating that the Point is in an End position "Y". Postcondition: The Subsystem - Point is in an End position "Y".</div></div><div><pre>sequenceDiagram participant IE as Subsystem - Electronic Interlocking participant PM as Point machine participant SP as Subsystem - Point IE->>SP: Cd_Move_Point activate SP SP->>PM: Moving activate PM PM-->>SP: {< Con_tmax_Point_Operation} deactivate PM alt [The Subsystem - Point is in an End position or a Trailed position] PM->>SP: Information_No_End_Position activate SP SP->>IE: Msg_Point_Position deactivate SP else [The Subsystem - Point is in an End position or a Trailed position] IE->>SP: Cd_Move_Point activate SP SP->>PM: Moving activate PM PM-->>SP: {< Con_tmax_Point_Operation} deactivate PM PM->>SP: Information_End_Position_Arrived activate SP SP->>PM: Stop_Moving deactivate SP PM->>IE: Msg_Point_Position deactivate PM end deactivate SP</pre></div></div>		Default

ID	Type	Requirement Part 1	Requirement Part 2	Appl.
Eu.P.1193	Info	<div><div><div>SubSP SD 2.1.3</div><div>SubSUC2.1: Command Point</div><div><p>Alternative Scenario: Reversing Point directly after the position has been commanded [SubSP SD 2.1.3]</p><p>Precondition:</p><p>The Subsystem - Point is in the state OPERATIONAL. The Subsystem - Point is in:</p><ul style="list-style-type: none">- an End position "Y",- No end position, or- a Trailed position.<p>Interaction 2.1.3.A:</p><p>1. - The Subsystem - Electronic Interlocking sends a Command to the Subsystem - Point to move the Point to an End position "X".</p><p>2. The Subsystem - Point sends a Command to the Point machine to move the Point to an End position "X". At this moment the Subsystem - Point starts the timer Con_tmax_Point_Operation.</p><p>Interaction 2.1.3.B:</p><p>par</p><div><p>alt [The Subsystem - Point is in an End position or a Trailed position]</p><p>3.a1 - The Point machine sends a Message to the Subsystem - Point indicating that Point is in No end position.</p><p>end alt</p></div><p>also par</p><p>3.b1 The Subsystem - Electronic Interlocking sends a Command to the Subsystem - Point to move the Point to the oposite End position "Y".</p><p>end par</p><p>4. The Subsystem - Point sends a Command to the Point machine to move the Point to an End position "Y". At this moment the Subsystem - Point re-starts the timer Con_tmax_Point_Operation.</p><p>Interaction 2.1.3.C:</p><p>5. - The Subsystem - Point sends a Message to the Subsystem - Electronic Interlocking indicating that Point is in No end position.</p><p>Interaction 2.1.3.D:</p><p>6. - The Point machine sends a Message to the Subsystem - Point indicating that the Point is in an End position "Y".</p><p>7. The Subsystem - Point sends a Command to the Point machine to stop moving the Point. The timer Con_tmax_Point_Operation is reset.</p><p>8. The Subsystem - Point sends a Message to the Subsystem - Electronic Interlocking indicating that the Point is in an End position "Y".</p><p>Postcondition:</p><p>The Subsystem - Point is in an End position "Y".</p></div></div><div><pre>sequenceDiagram participant IE as Subsystem - Electronic Interlocking participant PM as Point machine participant SP as Subsystem - Point IE->>SP: Cd_Move_Point activate SP SP->>PM: Moving activate PM Note over PM: {< Con_tmax_Point_Operation} alt [The Subsystem - Point is in an End position or a Trailed position] PM->>SP: Information_No_End_Position deactivate PM else [The Subsystem - Point is in an End position or a Trailed position] IE->>SP: Cd_Move_Point deactivate IE end SP->>PM: Moving activate PM Note over PM: {< Con_tmax_Point_Operation} PM->>SP: Information_End_Position_Arrived deactivate PM SP->>IE: Stop_Moving deactivate SP SP->>IE: Msg_Point_Position deactivate SP</pre></div></div> <td></td> <td>Default</td>		Default

ID	Type	Requirement Part 1	Requirement Part 2	Appl.
Eu.P.1210	Info	<div><div><div>SubSP SD 2.1.4</div><div><div><div>SubSUC2.1: Command Point</div><div><div>Alternative Scenario: Reversing Point after end position is arrived [SubSP SD 2.1.4]</div><div><div>Precondition:</div><div>The Subsystem - Point is in the state OPERATIONAL.</div><div>The Subsystem - Point is in:</div><div><div>- an End position "Y",</div><div>- No end position, or</div><div>- a Trailed position.</div></div></div></div><div><div>Interaction 2.1.4.A:</div><div><div>1. - The Subsystem - Electronic Interlocking sends a Command to the Subsystem - Point to move the Point to an End position "X".</div><div>2. The Subsystem - Point sends a Command to the Point machine to move the Point to an End position "X". At this moment the Subsystem - Point starts the timer Con_tmax_Point_Operation.</div></div></div><div><div>Interaction 2.1.4.B:</div><div><div>alt [The Subsystem - Point is in an End position or a Trailed position]</div><div><div>3. - The Point machine sends a Message to the Subsystem - Point indicating that the Point is in No end position.</div><div>4. The Subsystem - Point sends a Message to the Subsystem - Electronic Interlocking indicating that the Point is in No end position.</div></div></div></div><div><div>end alt</div><div><div>par</div><div><div><div>Interaction 2.1.4.C:</div><div><div>5.a1 - The Point machine sends a Message to the Subsystem - Point indicating that the Point is in an End position "X".</div><div>5.a2 The Subsystem - Point sends a Command to the Point machine to stop moving the Point. The timer Con_tmax_Point_Operation is reset.</div><div>5.a3 The Subsystem - Point reports to the Subsystem - Electronic Interlocking that the point is in End position "X".</div></div></div><div><div>also par</div><div><div><div>Interaction 2.1.4.D:</div><div><div>5.b1 - The Subsystem - Electronic Interlocking sends a Command to the Subsystem - Point to move the Point to the opposite End position "Y".</div><div>5.b2 The Subsystem - Point sends a Command to the Point machine to move the Point to an End position "Y". At this moment the Subsystem - Point starts the timer Con_tmax_Point_Operation.</div></div></div></div></div><div><div>end par</div><div><div>Interaction 2.1.4.E:</div><div><div>6. - The Point machine sends a Message to the Subsystem - Point indicating that Point is in No end position.</div><div>7. The Subsystem - Point sends a Message to the Subsystem - Electronic Interlocking indicating that the Point is in No end position.</div></div></div><div><div>Interaction 2.1.4.F:</div><div><div>8. - The Point machine sends a Message to the Subsystem - Point indicating that the Point is in an End position "Y".</div><div>9. The Subsystem - Point sends a Command to the Point machine to stop moving the Point. The timer Con_tmax_Point_Operation is reseted.</div><div>10. The Subsystem - Point sends a Message to the Subsystem - Electronic Interlocking indicating that the Point is in an End position "Y".</div></div></div><div><div>Postcondition:</div><div>The Subsystem - Point is in an End position "Y".</div></div></div></div><div><pre>sequenceDiagram participant IE as Subsystem - Electronic Interlocking participant PM as Point machine participant SP as Subsystem - Point IE->>SP: Cd_Move_Point activate SP SP->>PM: Moving activate PM PM-->>SP: {< Con_tmax_Point_Operation} deactivate PM alt [The Subsystem - Point is in an End position or a Trailed position] PM->>SP: Information_No_End_Position deactivate PM SP->>IE: Msg_Point_Position else [] PM->>SP: Information_End_Position_Arrived deactivate PM SP->>PM: Stop_Moving activate PM SP->>IE: Msg_Point_Position deactivate PM end IE->>SP: Cd_Move_Point activate SP SP->>PM: Moving activate PM PM-->>SP: {< Con_tmax_Point_Operation} deactivate PM PM->>SP: Information_No_End_Position deactivate PM SP->>IE: Msg_Point_Position deactivate SP PM->>SP: Information_End_Position_Arrived deactivate PM SP->>PM: Stop_Moving activate PM SP->>IE: Msg_Point_Position deactivate PM deactivate SP</pre></div></div><div><div>Note:</div><div>From the perspective of the Subsystem - Point the sequence between the notification of the original target position and the receipt of the reversal command must be freely selectable, because the command might have been sent from the Subsystem - Electronic Interlocking before receiving the message.</div></div></div></div></div></div></div>	Default	

ID	Type	Requirement Part 1	Requirement Part 2	Appl.
Eu.P.1471	Info	<div><p>SubSUC2.1: Command Point</p><p>Alternative Scenario: Moving of the Point with n-th Point machine [SubSP SD 2.1.5]</p><p>Precondition:</p><p>The Subsystem - Point is in the state OPERATIONAL. The Subsystem - Point is in: - an End position "Y", - No end position, or - a Trailed position.</p><p>Interaction 2.1.5.A:</p><p>1. - The Subsystem - Electronic Interlocking sends a Command to the Subsystem - Point to move the Point to an End position "X".</p><p>par</p><p style="margin-left: 20px;">par</p><p style="margin-left: 40px;">2.a1 The Subsystem - Point sends a Command to the 1st Point machine to move the Point to an End position "X". At this moment the Subsystem - Point starts the timer Con_tmax_Point_Operation.</p><p style="margin-left: 60px;">also par</p><p style="margin-left: 80px;">2.b1 The Subsystem - Point sends a Command to the n-th Point machine to move the Point to an End position "X".</p><p style="margin-left: 80px;">also par</p><p style="margin-left: 100px;">2.c1 The Subsystem - Point starts the timer Con_tmax_Point_Operation.</p><p style="margin-left: 60px;">end par</p><p style="margin-left: 20px;">also par</p><p style="margin-left: 40px;">Interaction 2.1.5.B:</p><p style="margin-left: 60px;">alt [The 1st Point machine is in an End position or a Trailed position]</p><p style="margin-left: 80px;">3.a1 - The 1st Point machine sends a Message to the Subsystem - Point indicating that the Point is in No end position.</p><p style="margin-left: 80px;">else alt [The n-th Point machine is in an End position or a Trailed position]</p><p style="margin-left: 100px;">3.b1 - The n-th Point machine sends a Message to the Subsystem - Point indicating that the Point is in No end position.</p><p style="margin-left: 80px;">end alt</p><p style="margin-left: 60px;">alt [One of the Point machine is in No end position]</p><p style="margin-left: 80px;">4. - On receipt of the 1st Message, the Subsystem - Point sends a Message to the Subsystem - Electronic Interlocking indicating that the Point is in No end position.</p><p style="margin-left: 80px;">end alt</p><p style="margin-left: 40px;">end alt</p><p style="margin-left: 20px;">end par</p><p>Interaction 2.1.5.C:</p><p>par</p><p style="margin-left: 20px;">5.a1 - The 1st Point machine sends a Message to the Subsystem - Point indicating that the Point is in an End position "X".</p><p style="margin-left: 20px;">5.a2 The Subsystem - Point sends a Command to the 1st Point machine to stop moving the Point.</p><p style="margin-left: 20px;">also par</p><p style="margin-left: 40px;">5.b1 The n-th Point machine sends a Message to the Subsystem - Point indicating that the Point is in an End position "X".</p><p style="margin-left: 40px;">5.b2 The Subsystem - Point sends a Command to the n-th Point machine to stop moving the Point. The timer Con_tmax_Point_Operation is reseted.</p><p style="margin-left: 20px;">end par</p><p>6. When Information_End_Position_Arrived has been received from all Point machines, the Subsystem - Point sends a Message to the Subsystem - Electronic Interlocking indicating that the Point is in an End position "X".</p><p>Postcondition:</p><p>The Subsystem - Point is in an End position "X".</p></div>		Default

ID	Type	Requirement Part 1	Requirement Part 2	Appl.
Eu.P.1469	Info	<div><p>SubSP SD 2.1.6</p><p>SubSUC2.1: Command Point</p><p>Alternative Scenario: Moving of the Point to the current End position [SubSP SD 2.1.6]</p><p>Precondition:</p><p>The Subsystem - Point is in the state OPERATIONAL. The Subsystem - Point is in an End position "Y".</p><p>Interaction 2.1.6.A:</p><p>1. - The Subsystem - Electronic Interlocking sends a Command to the Subsystem - Point to move the Point to an End position "Y".</p><p>2. The Subsystem - Point sends a Message to the Subsystem - Electronic Interlocking indicating that the Point is in an End position "Y".</p><p>Postcondition:</p><p>---</p></div> <pre>sequenceDiagram actor User participant Interlocking as Subsystem - Electronic Interlocking participant Point as :Subsystem - Point Interlocking->>Point: Cd_Move_Point activate Point Point-->>Interlocking: Msg_Point_Position deactivate Point</pre>		Default
Eu.P.1472	Info	<div><p>SubSP SD 2.1.7</p><p>SubSUC2.1: Command Point</p><p>Alternative Scenario: Moving of the Point with repeated command of moving #1 [SubSP SD 2.1.7]</p><p>Precondition:</p><p>The Subsystem - Point is in the state OPERATIONAL. The Subsystem - Point is in: - an End position "Y", - No end position, or - a Trailed position.</p><p>Interaction 2.1.7.A:</p><p>1. - The Subsystem - Electronic Interlocking sends a Command to the Subsystem - Point to move the Point to an End position "X".</p><p>2. The Subsystem - Point sends a Command to the Point machine to move the Point to an End position "X". At this moment the Subsystem - Point starts the timer Con_tmax_Point_Operation.</p><p>Interaction 2.1.7.B:</p><p>alt [The Subsystem - Point is in an End position or a Trailed position]</p><p>3. - The Point machine sends a Message to the Subsystem - Point indicating that the Point is in No end position.</p><p>4. The Subsystem - Point sends a Message to the Subsystem - Electronic Interlocking indicating that the Point is in No end position.</p><p>end alt</p><p>Interaction 2.1.7.C:</p><p>5. - The Subsystem - Electronic Interlocking sends a Command to the Subsystem - Point to move the Point to an End position "X".</p><p>6. The Subsystem - Point ignores the command from the Subsystem - Electronic Interlocking.</p><p>Interaction 2.1.7.D:</p><p>7. - The Point machine sends a Message to the Subsystem - Point indicating that the Point is in an End position "X".</p><p>8. The Subsystem - Point sends a Command to the Point machine to stop moving the Point. The timer Con_tmax_Point_Operation is reseted.</p><p>9. The Subsystem - Point sends a Message to the Subsystem - Electronic Interlocking indicating that the Point is in an End position "X".</p><p>Postcondition:</p><p>The Subsystem - Point is in an End position "X".</p></div> <pre>sequenceDiagram actor User participant Interlocking as Subsystem - Electronic Interlocking participant PM as Point machine participant Point as :Subsystem - Point Interlocking->>Point: Cd_Move_Point activate Point Point->>PM: Moving activate PM PM-->>Point: {< Con_tmax_Point_Operation} deactivate PM alt [The Subsystem - Point is in an End position or a Trailed position] PM->>Point: Information_No_End_Position activate PM Point-->>Interlocking: Msg_Point_Position deactivate PM else [] Interlocking->>Point: Cd_Move_Point activate Point PM->>Point: Information_End_Position_Arrived activate PM Point->>PM: Stop_Moving deactivate PM Point-->>Interlocking: Msg_Point_Position deactivate Point end</pre>		Default

ID	Type	Requirement Part 1	Requirement Part 2	Appl.	
Eu.P.1299	Info	<div><div>SubSP SD 2.2.2</div><div>SubSUC2.2: Handle Irregularities</div><div></div><div>Alternative Scenario: Handling of interrupted safe communication protocol-connection [SubSP SD 2.2.2]</div><div>Precondition: The Subsystem - Point is in the state INITIALISING or OPERATIONAL. The Subsystem - Point is in: - an End position "Y", - No end position, or - a Trailed position. Interaction 2.2.2.A: 1. - The Event T10_SCP_Connection_Terminated occurs. Postcondition: The Subsystem - Point is in the state INITIALISING.</div></div>		Default	
Eu.P.1284	Info	<div><div>SubSP SD 2.2.3</div><div>SubSUC2.2: Handle Irregularities</div><div></div><div>Alternative Scenario: Handle and report Timeout with position change [SubSP SD 2.2.3]</div><div>Precondition: The Subsystem - Point is in the state OPERATIONAL. The Subsystem - Point is in: - an End position "Y", - No end position, or - a Trailed position. Interaction 2.2.3.A: 1. - The Subsystem - Electronic Interlocking sends a Command to the Subsystem - Point to move the Point to an End position "X". 2. The Subsystem - Point sends a Command to the Point machine to move the Point to an End position "X". At this moment the Subsystem - Point starts the timer Con_tmax_Point_Operation. Interaction 2.2.3.B: alt [The Subsystem - Point is in an End position or a Trailed position] 3. - The Point machine sends a Message to the Subsystem - Point indicating that the Point is in No end position. 4. The Subsystem - Point sends a Message to the Subsystem - Electronic Interlocking indicating that the Point is in No end position. end alt Interaction 2.2.3.C: 5. - The timer Con_tmax_Point_Operation expires resulting in a Timeout. 6. The Subsystem - Point sends a Command to the Point machine to stop moving the Point. The timer Con_tmax_Point_Operation is reseted. 7. The Subsystem - Point sends a Message to the Subsystem - Electronic Interlocking to indicate that a Timeout has occurred. Postcondition: The Subsystem - Point is in No end position..</div></div>			Default

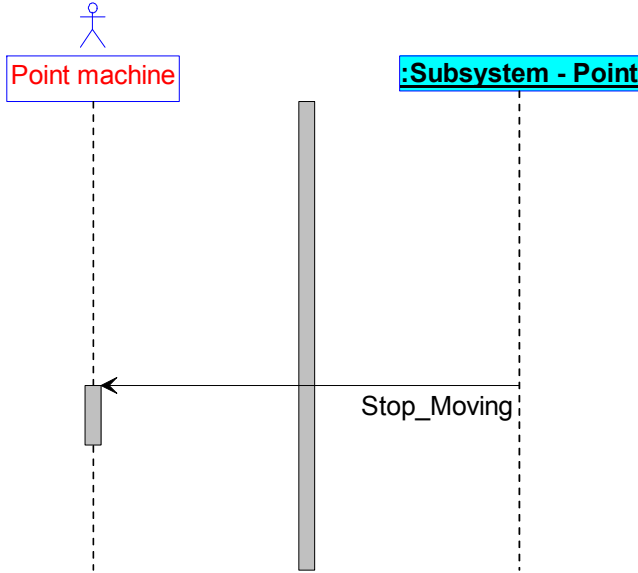
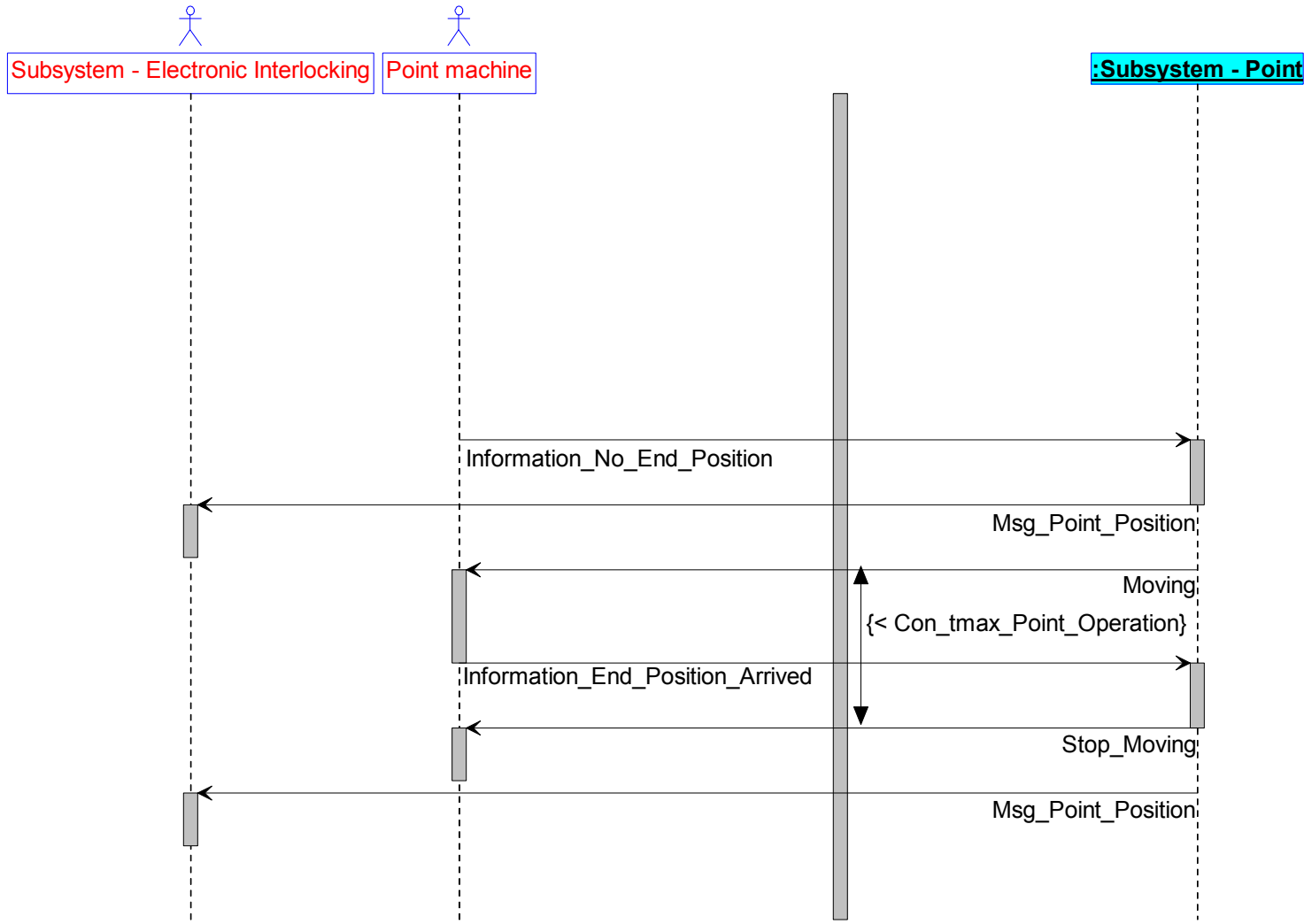
ID	Type	Requirement Part 1	Requirement Part 2	Appl.
Eu.P.1476	Info	<div><p>SubSP SD 2.2.4</p><p>SubSUC2.2: Handle Irregularities</p><p>Alternative Scenario: Handle and report Timeout without position change [SubSP SD 2.2.4]</p><p>Precondition:</p><p>The Subsystem - Point is in the state OPERATIONAL. The Subsystem - Point is in:</p><ul style="list-style-type: none">- an End position "Y",- No end position, or- a Trailed position.<p>Interaction 2.2.4.A:</p><ol style="list-style-type: none">- The Subsystem - Electronic Interlocking sends a Command to the Subsystem - Point to move the Point to an End position "X".The Subsystem - Point sends a Command to the Point machine to move the Point to an End position "X". At this moment the Subsystem - Point starts the timer Con_tmax_Point_Operation.<p>Interaction 2.2.4.B:</p><ol style="list-style-type: none">- The timer Con_tmax_Point_Operation expires resulting in a Timeout.The Subsystem - Point sends a Command to the Point machine to stop moving the Point. The timer Con_tmax_Point_Operation is reseted.The Subsystem - Point sends a Message to the Subsystem - Electronic Interlocking to indicate that a Timeout has occurred.<p>Postcondition:</p><p>---</p></div> <pre>sequenceDiagram participant Interlocking as Subsystem - Electronic Interlocking participant machine as Point machine participant Point as :Subsystem - Point Interlocking->>Point: Cd_Move_Point activate Point Point->>machine: Moving activate machine machine->>Point: after {Con_tmax_Point_Operation} deactivate machine Point->>machine: Stop_Moving deactivate Point machine->>Interlocking: «IM 007600»\n«IM 007900»\n«IM 008000»\n«IM 008200»\n«IM 008400»\nMsg_Timeout deactivate machine</pre>		Default
Eu.P.1474	Info	<div><p>SubSP SD 2.2.5</p><p>SubSUC2.2: Handle Irregularities</p><p>Alternative Scenario: Handle and report No end position [SubSP SD 2.2.5]</p><p>Precondition:</p><p>The Subsystem - Point is in the state OPERATIONAL. The Subsystem - Point is in:</p><ul style="list-style-type: none">- an End position "Y", or- a Trailed position<p>Interaction 2.2.5.A:</p><ol style="list-style-type: none">- The Point machine sends a Message to the Subsystem - Point indicating that the Point is in No end position.The Subsystem - Point sends a Message to the Subsystem - Electronic Interlocking indicating that the Point is in No end position.<p>Postcondition:</p><p>The Subsystem - Point is in No end position.</p></div> <pre>sequenceDiagram participant Interlocking as Subsystem - Electronic Interlocking participant machine as Point machine participant Point as :Subsystem - Point machine->>Point: Information_No_End_Position activate Point Point->>Interlocking: Msg_Point_Position deactivate Point</pre>		Default

ID	Type	Requirement Part 1	Requirement Part 2	Appl.
Eu.P.1273	Info	<div><div><div>SubSP SD 2.2.6</div><div>SubSUC2.2: Handle Irregularities</div><div>Alternative Scenario: Handle and report Trailed Position [SubSP SD 2.2.6]</div><div>Precondition: The Subsystem - Point is in the state OPERATIONAL. The Subsystem - Point is in an End position "Y".</div><div>Interaction 2.2.6.A: 1. - The Point machine sends a Message to the Subsystem - Point indicating that the Point is in a Trailed position. 2. The Subsystem - Point sends a Message to the Subsystem - Electronic Interlocking indicating that the Point is in a Trailed position.</div><div>Postcondition: The Subsystem - Point is in a Trailed position.</div></div></div> <div><pre>sequenceDiagram actor User participant IE as Subsystem - Electronic Interlocking participant PM as Point machine participant SP as :Subsystem - Point Note over PM: «IM 007600» Note over PM: «IM 007900» Note over PM: «IM 008000» Note over PM: «IM 008200» PM->>SP: Information_Trailed_Point activate SP SP->>IE: Msg_Point_Position deactivate SP</pre></div>		007600 007900 008000 008200
Eu.P.3207	Info	<div><div><div>SubSP SD 2.2.7</div><div>SubSUC2.2: Handle Irregularities</div><div>Alternative Scenario: Handle and report End Position [SubSP SD 2.2.7]</div><div>Precondition: The Subsystem - Point is in the state OPERATIONAL. The Subsystem - Point is in: - an No end position, or - a Trailed position.</div><div>Interaction 2.2.7.A: 1. - The Point machine sends a Message to the Subsystem - Point indicating that the Point is in an End position. 2. The Subsystem - Point sends a Message to the Subsystem - Electronic Interlocking indicating that the Point is in an End position.</div><div>Postcondition: The Subsystem - Point is in an End position "Y".</div></div></div> <div><pre>sequenceDiagram actor User participant IE as Subsystem - Electronic Interlocking participant PM as Point machine participant SP as :Subsystem - Point PM->>SP: Information_End_Position_Arrived activate SP SP->>IE: Msg_Point_Position deactivate SP</pre></div>		Default

ID	Type	Requirement Part 1	Requirement Part 2	Appl.
Eu.P.1475	Info	<div><p>SubSP SD 2.2.8</p><p>SubSUC2.2: Handle Irregularities</p><p>Alternative Scenario: Handle and report Timeout with n-th Point machines with position change [SubSP SD 2.2.8]</p><p>Precondition:</p><p>The Subsystem - Point is in the state OPERATIONAL. The Subsystem - Point is in:</p><ul style="list-style-type: none">- an End position "Y",- No end position, or- a Trailed position.<p>Interaction 2.2.8.A:</p><p>1. - The Subsystem - Electronic Interlocking sends a Command to the Subsystem - Point to move the Point to an End position "X".</p><p>par</p><p>par</p><p>2.a1 - The Subsystem - Point sends a Command to the 1st Point machine to move the Point to an End position "X".</p><p>also par</p><p>2.b1 - The Subsystem - Point sends a Command to the n-th Point machine to move the Point to an End position "X".</p><p>also par</p><p>2.c1 - The Subsystem - Point starts the Timer for Moving Con_tmax_Point_Operation.</p><p>end par</p><p>also par</p><p>Interaction 2.2.8.B:</p><p>alt [The 1st Point machine is in an End position or a Trailed position]</p><p>3.a1 - The 1st Point machine sends a Message to the Subsystem - Point indicating that the Point is in No end position.</p><p>else alt [The n-th Point machine is in an End position or a Trailed position]</p><p>3.b1 - The n-th Point machine sends a Message to the Subsystem - Point indicating that the Point is in No end position.</p><p>end alt</p><p>alt [One of the Point machine is in No end position]</p><p>4. - On receipt of the first Message, The Subsystem - Point sends a Message to the Subsystem - Electronic Interlocking indicating that the Point is in No end position.</p><p>end alt</p><p>end par</p><p>Interaction 2.2.8.C:</p><p>5. - The timer Con_tmax_Point_Operation expires resulting in a Timeout.</p><p>par</p><p>6.a1 The Subsystem - Point sends a Command to the 1st Point machine to stop moving the Point. The timer Con_tmax_Point_Operation is reset.</p><p>also par</p><p>6.b1 The Subsystem - Point sends a Command to the n-th Point machine to stop moving the Point.</p><p>end par</p><p>7. The Subsystem - Point sends a Message to the Subsystem - Electronic Interlocking to indicate that a Timeout has occurred.</p><p>Postcondition:</p><p>The Subsystem - Point is in No end position.</p></div>		Default

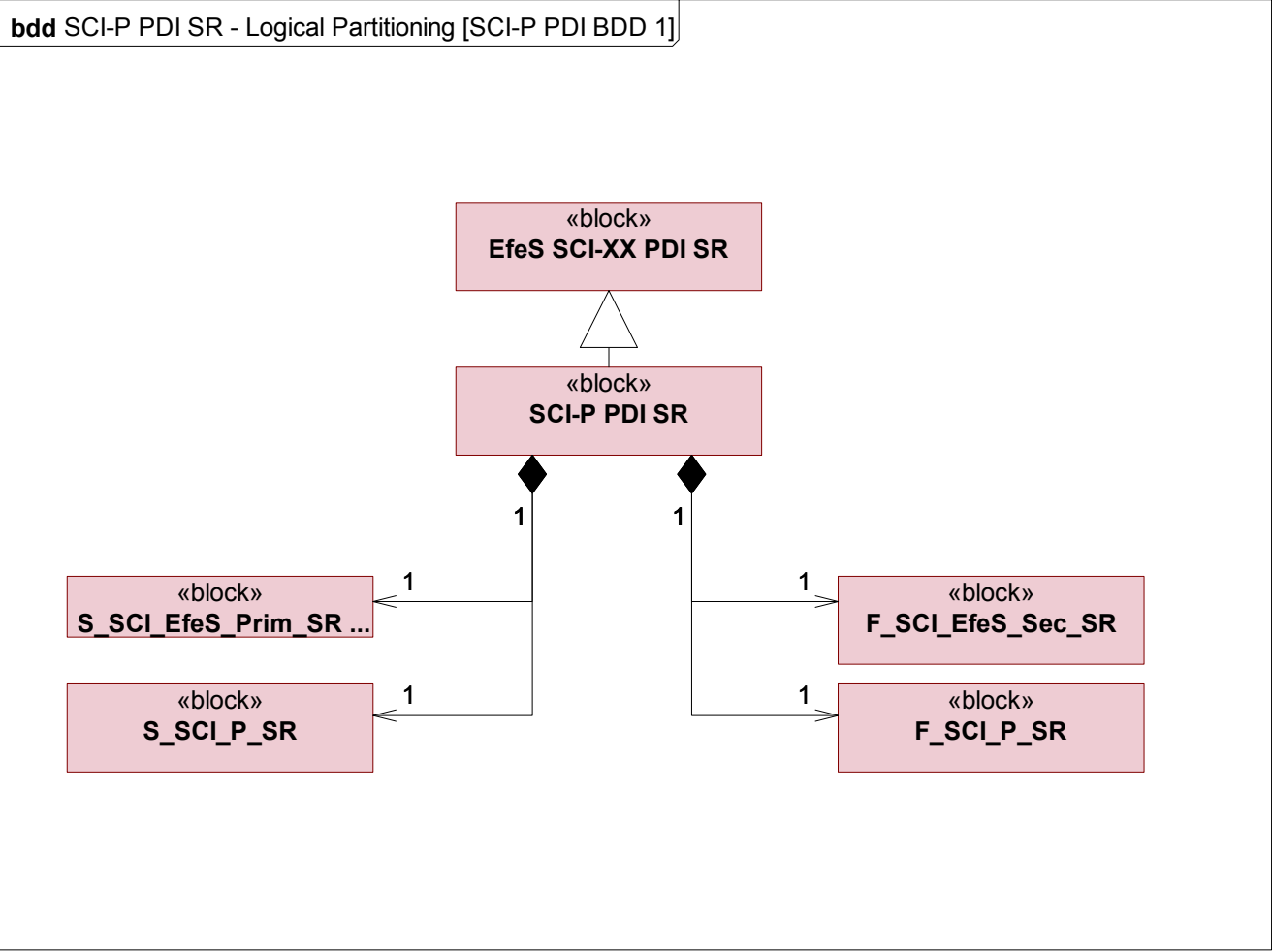


ID	Type	Requirement Part 1	Requirement Part 2	Appl.
Eu.P.1477	Info	<div><div>SubSP SD 2.2.9</div><div><div><div>SubSUC2.2: Handle Irregularities</div><div><div>Alternative Scenario: Handle and report Timeout with n-th Point machines without position change [SubSP SD 2.2.9]</div><div>Precondition: The Subsystem - Point is in the state OPERATIONAL. The Subsystem - Point is in: <div>- an End position Y", - No end position, or - a Trailed position.</div></div><div>Interaction 2.2.9.A:</div><div><div>1. - The Subsystem - Electronic Interlocking sends a Command to the Subsystem - Point to move the Point to an End position "X".</div><div>par<div><div>2.a1 The Subsystem - Point sends a Command to the 1st Point machine to move the Point to an End position "X".</div><div>also par<div><div>2.b1 The Subsystem - Point sends a Command to the n-th Point machine to move the Point to an End position "X".</div><div>also par<div><div>2.c1 The Subsystem - Point starts the Timer for Moving Con_tmax_Point_Operation.</div></div></div></div></div><div>end par</div><div>Interaction 2.2.9.B:</div><div><div>3. - The timer Con_tmax_Point_Operation expires resulting in a Timeout.</div><div>par<div><div>4.a1 - The Subsystem - Point sends a Command to the 1st Point machine to stop moving the Point. The timer Con_tmax_Point_Operation is reset.</div><div>also par<div><div>4.b1 The Subsystem - Point sends a Command to the n-th Point machine to stop moving the Point. The timer Con_tmax_Point_Operation is reset.</div></div></div></div><div>end par</div><div>5. The Subsystem - Point sends a Message to the Subsystem - Electronic Interlocking to indicate that a Timeout has occurred.</div><div>Postcondition: ---</div></div></div></div></div><div><div><div><div>Subsystem - Electronic Interlocking</div><div>Point machine</div><div>Point machine</div></div><div><div>:Subsystem - Point</div></div><div>Cd_Move_Point</div><div>Moving</div><div>Moving</div><div>after {Con_tmax_Point_Operation}</div><div>Stop_Moving</div><div>Stop_Moving</div><div>«IM 007600» «IM 007900» «IM 008000» «IM 008200» «IM 008400» Msg_Timeout</div></div></div></div></div></div></div></div>		Default
Eu.P.3093	Info	<div><div>SubSP SD 2.2.10</div><div><div>SubSUC2.2: Handle Irregularities</div><div><div>Alternative Scenario: Supply voltage of the Subsystem has gone outside of the required range for operation [SubSP SD 2.2.10]</div><div>Precondition: The Subsystem - Point is in the state OPERATING_VOLTAGE_SUPPLIED.</div><div>Interaction 2.2.10.A:</div><div><div>1. - The Subsystem - Point enters the state NO_OPERATING_VOLTAGE.</div><div>2. The Subsystem - Point sends a Command to the Point machine to stop moving the Point. The timer Con_tmax_Point_Operation is reseted.</div></div><div>Postcondition: The Subsystem - Point is in the state NO_OPERATING_VOLTAGE.</div></div></div></div> <div><div><div>Point machine</div><div>:Subsystem - Point</div><div>Stop_Moving</div></div></div>		Default

ID	Type	Requirement Part 1	Requirement Part 2	Appl.
Eu.P.3104	Info	<div><p>SubSP SD 2.2.11</p><p>SubSUC2.2: Handle Irregularities</p><p>Alternative Scenario: Reset Occures [SubSP SD 2.2.11]</p><p>Precondition:</p><p>The Subsystem - Point is in the state INITIALISING or OPERATIONAL.</p><p>Interaction 2.2.11.A:</p><ol style="list-style-type: none">- The event T3_Reset occurs.The event T12_Terminate_SCP_Connection is triggered.The Subsystem - Point sends a Command to the Point machine to stop moving the Point. The timer Con_tmax_Point_Operation is reseted.The Subsystem - Point enters the state BOOTING.<p>Postcondition:</p><p>The Subsystem - Point is in the state BOOTING.</p></div> 		Default
Eu.P.3136	Info	<div><p>SubSP SD 2.2.12</p><p>SubSUC2.2: Handle Irregularities</p><p>Alternative Scenario: Redrive Point after lost end position [SubSP SD 2.2.12]</p><p>Precondition:</p><p>The Subsystem - Point is in the state OPERATIONAL. The Subsystem - Point is in an End position "X". The last Cd_Move_Point Command received was also for End position "X". The last Cd_Move_Point Command received occured since exiting the state BOOTING.</p><p>Interaction 2.2.12.A:</p><ol style="list-style-type: none">- The Point machine sends a Message to the Subsystem - Point indicating that the Point is in No end position.The Subsystem - Point sends a Message to the Subsystem - Electronic Interlocking indicating that the Point is in No end position.The Subsystem - Point sends a Command to the Point machine to move the Point back to an End position "X". At this moment the Subsystem - Point starts the timer Con_tmax_Point_Operation.The Point machine sends a Message to the Subsystem - Point indicating that the Point is in an End position "X".The Subsystem - Point sends a Command to the Point machine to stop moving the Point. The timer Con_tmax_Point_Operation is reseted.The Subsystem - Point sends a Message to the Subsystem - Electronic Interlocking indicating that the Point is in an End position "X".<p>Postcondition:</p><p>The Subsystem - Point is in an End position "X".</p></div> 		007000

ID	Type	Requirement Part 1	Requirement Part 2	Appl.
Eu.P.3226	Info	<div><p>SubSP SD 2.2.13</p><p>SubSUC2.2: Handle Irregularities</p><p>Alternative Scenario: Handle Timeout during Redrive [SubSP SD 2.2.13]</p><p>Precondition:</p><p>The Subsystem - Point is in the state OPERATIONAL. The Subsystem - Point is in an End position "X" The last Cd_Move_Point Command received was also for End position "X" The last Cd_Move_Point Command received occurred since exiting the state BOOTING.</p><p>Interaction 2.2.13.A:</p><ol style="list-style-type: none">- The Point machine sends a Message to the Subsystem - Point indicating that the Point is in No end position.The Subsystem - Point sends a Message to the Subsystem - Electronic Interlocking indicating that the Point is in No end position.The Subsystem - Point sends a Command to the Point machine to move the Point back to an End position "X". At this moment the Subsystem - Point starts the timer Con_tmax_Point_Operation.The timer Con_tmax_Point_Operation expires resulting in a Timeout.The Subsystem - Point stops Moving of the Point at the Point machine.<p>Postcondition:</p><p>The Subsystem - Point is in No end position.</p></div>		007000
Eu.P.1157	Info	<div><p>SubSP SD 2.2.14</p><p>SubSUC2.2: Handle Irregularities</p><p>Alternative Scenario: Moving Point when safe communication protocol-connection is interrupted directly after the position has been commanded [SubSP SD 2.2.14]</p><p>Precondition:</p><p>The Subsystem - Point is in the state OPERATIONAL. The Subsystem - Point is in: - an End position "Y", - No end position, or - a Trailed position.</p><p>Interaction 2.2.14.A:</p><ol style="list-style-type: none">- The Subsystem - Electronic Interlocking sends a Command to the Subsystem - Point to move the Point to an End position "X".<p>Interaction 2.2.14.B:</p><ol style="list-style-type: none">- The Subsystem - Point enters the state INITIALISING.<p>Interaction 2.2.14.C:</p><ol style="list-style-type: none">- The Subsystem - Point sends a Command to the Point machine to move the Point to an End position "X". At this moment the Subsystem - Point starts the timer Con_tmax_Point_Operation.<p>alt [The Subsystem - Point is in an End position or a Trailed position]</p><ol style="list-style-type: none">The Point machine sends a Message to the Subsystem - Point indicating that the Point is in No end position.<p>end alt</p><p>5. The Subsystem - Point cannot send a Message to the Subsystem - Electronic Interlocking indicating that the Point is in No end position.</p><p>Interaction 2.2.14.D:</p><ol style="list-style-type: none">- The Point machine sends a Message to the Subsystem - Point indicating that the Point is in an End position "X".The Subsystem - Point sends a Command to the Point machine to stop moving the Point. The timer Con_tmax_Point_Operation is reseted.<p>Postcondition:</p><p>The Subsystem - Point is in the state INITIALISING. The Subsystem - Point is in an End position "X".</p></div>		Default

ID	Type	Requirement Part 1	Requirement Part 2	Appl.
Eu.P.1140	Info	<div><p>SubSP SD 2.2.15</p><p>SubSUC2.2: Handle Irregularities</p><p>Alternative Scenario: Moving Point when safe communication protocol-connection is interrupted [SubSP SD 2.2.15]</p><p>Precondition:</p><p>The Subsystem - Point is in the state OPERATIONAL. The Subsystem - Point is in:</p><ul style="list-style-type: none">- an End position "Y",- No end position, or- a Trailed position.<p>Interaction 2.2.15.A:</p><p>1. - The Subsystem - Electronic Interlocking sends a Command to the Subsystem - Point to move the Point to an End position "X".</p><p>2. The Subsystem - Point sends a Command to the Point machine to move the Point to an End position "X". At this moment the Subsystem - Point starts the timer Con_tmax_Point_Operation.</p><p>Interaction 2.2.15.B:</p><p>alt [The Subsystem - Point is in an End position or a Trailed position]</p><p>3. - The Point machine sends a Message to the Subsystem - Point indicating that the Point is in No end position.</p><p>4. The Subsystem - Point sends a Message to the Subsystem - Electronic Interlocking indicating that the Point is in No end position.</p><p>end alt</p><p>Interaction 2.2.15.C:</p><p>5. - The Subsystem - Point enters the state INITIALISING.</p><p>Interaction 2.2.15.D:</p><p>6. - The Point machine sends a Message to the Subsystem - Point indicating that the Point is in an End position "X".</p><p>7. The Subsystem - Point sends a Command to the Point machine to stop moving the Point. The timer Con_tmax_Point_Operation is reset.</p><p>8. The Subsystem - Point is unable to send a Message to the Subsystem - Electronic Interlocking.</p><p>Postcondition:</p><p>The Subsystem - Point is in the state INITIALISING. The Subsystem - Point is in an End position "X".</p></div> <pre>sequenceDiagram participant IE as Subsystem - Electronic Interlocking participant PM as Point machine participant SP as Subsystem - Point IE->>SP: Cd_Move_Point activate SP SP->>PM: Moving activate PM Note over PM: {< Con_tmax_Point_Operation} PM->>SP: Information_No_End_Position deactivate PM alt [The Subsystem - Point is in an End position or a Trailed position] SP->>IE: Msg_Point_Position else [] PM->>SP: Information_End_Position_Arrived deactivate PM SP->>PM: Stop_Moving end deactivate SP</pre>		Default
Eu.P.1123	Head	3.1.3.5 Subsystem-UseCases "Maintenance"		Default
Eu.P.1127	Info	<div><p>Subsystem - Point - UseCase Definition - Maintenance [SubSP UCD 3]</p><p>uc Subsystem - Point - UseCase Definition - Maintenance [SubSP UCD 3]</p><pre>graph TD subgraph "Subsystem - Point" U1([SubSUC3.1: Display status of Subsystem - Point locally]) U2([SubSUC3.2: Collect and provide event driven diagnostic data]) U3([SubSUC3.3: Collect and provide preventive diagnostic data]) U4([SubSUC3.4: Updating specific software]) end M[Maintainer] --- U1 M --- U2 M --- U3 M --- U4 SMDM[Subsystem - Maintenance and Data Management] --- U2 SMDM --- U3 SMDM --- U4</pre></div>		Default

ID	Type	Requirement Part 1	Requirement Part 2	Appl.
Eu.P.1124	Req	SubSUC3.1: Display status of Subsystem - Point locally	Information: The Subsystem-UseCase "SubSUC3.1: Display status of Subsystem - Point locally" defines the local display of the EULYNX field element Subsystem. See ID Eu.P.890.	Default
Eu.P.1125	Req	SubSUC3.2: Collect and provide event driven diagnostic data	Information: The Subsystem-UseCase "SubSUC3.2: Collect and provide event driven diagnostic data" defines the event driven collection and provision of diagnostic data in case of irregularities. See ID Eu.P.925.	Default
Eu.P.1126	Req	SubSUC3.3: Collect and provide preventive diagnostic data	Information: The Subsystem-UseCase "SubSUC3.3: Collect and provide preventive diagnostic data" defines the continuous collection and provision of diagnostic data for preventive maintenance. See ID Eu.P.925.	Default
Eu.P.1468	Info	SubSUC3.4: Updating specific software	Information: The Subsystem-UseCase "SubSUC3.4: Updating specific software" defines the process of updating the specific software between Subsystem - Maintenance and Data Management and the Subsystem.	Default
Eu.P.3275	Head	3.2 Subsystem requirements		-
Eu.P.4760	Info	The defined model elements represent the Subsystem - Point in a general way. This refers to: - The logical architectures shown in the internal block diagrams. - The defined number of Point machines in the state diagrams and internal block diagrams.		-
Eu.P.3276	Head	3.2.1 Connection context		-
Eu.P.4759	Info	The connection context is defined in Eu.Doc.20.		-
Eu.P.3277	Head	3.2.2 Logical architectures		-
Eu.P.3278	Head	3.2.2.1 Process Data Interface protocol SCI-P		-
Eu.P.3287	Req	SCI-P PDI SR - Logical Partitioning [SCI-P PDI BDD 1] <div>bdd SCI-P PDI SR - Logical Partitioning [SCI-P PDI BDD 1] </div>		-
Eu.P.3279	Req	SCI-P PDI SR		-

ID	Type	Requirement Part 1	Requirement Part 2	Appl.
Eu.P.3286	Req	<div>SCI-P PDI SR - Logical Architecture [SCI-P PDI IBD 1]</div> <div><div><div><div><div><div>«block»</div><div>SCI-P PDI SR</div></div><div><div><div><div><div>D50_PDI_Connection_State : S_SCI_EfeS_Prim_SR</div><div>D21_S_SCI_EfeS_Gen_SR_State</div></div><div><div><div><div>D50_PDI_Connection_State : F_SCI_EfeS_Sec_SR</div><div>D21_F_SCI_EfeS_Gen_SR_State</div></div><div><div><div><div>T6_Start_Status_Report</div><div>T9_Status_Report_Completed</div></div><div><div><div><div>T23_Sending_Status_Report_Completed</div><div>T18_Start_Status_Report</div></div></div></div></div><div><div><div><div>DT1_Move_Point_Target</div><div>T1_Cd_Move_Point</div><div>T2_Msg_Point_Position</div><div>DT2_Point_Position</div><div>T3_Msg_Timeout</div></div><div><div><div><div>T1_Cd_Move_Point</div><div>DT1_Move_Point_Target</div><div>T2_Msg_Point_Position</div><div>DT2_Point_Position</div><div>T3_Msg_Timeout</div></div><div><div><div><div>T10_Move_Point</div><div>DT10_Move_Point</div><div>T20_Point_Position</div><div>DT20_Point_Position</div><div>T30_Timeout</div></div><div><div><div><div>T10_Move</div><div>DT10_Move_Target</div><div>T11_Stop_Operation</div><div>T20_Point_Position</div><div>DT20_Point_Position</div><div>T40_Send_Status_Report</div><div>T30_Report_Timeout</div></div></div></div></div><div><div><div><div>SAP_SubS_EIL</div><div>SAP_SubS_P</div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div>		-
Eu.P.3284	Req	SAP_SubS_EIL	The FlowPort SAP_SubS_EIL represents the interface to the interlocking core.	-
Eu.P.3285	Req	SAP_SubS_P	The FlowPort SAP_SubS_P represents the interface to the SubS P SR core.	-
Eu.P.3288	Head	3.2.2.2 Subsystem - Point		-
Eu.P.3297	Req	<div>Subsystem - Point SR - Logical Partitioning [SubS P BDD 2]</div> <div><div><div><div><div>«block»</div><div>EULYNX field element Subsystem SR</div></div><div><div><div><div><div>«block»</div><div>F_SCI_P_SR</div></div><div><div><div><div>«block»</div><div>SubS P SR</div></div><div><div><div><div>«block»</div><div>F_P3_SR</div></div><div><div><div><div>«block»</div><div>F_SCI_EfeS_Sec_SR</div></div><div><div><div><div>«block»</div><div>F_EST_EfeS_SR</div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div>		-
Eu.P.3289	Req	SubS P SR		-

ID	Type	Requirement Part 1	Requirement Part 2	Appl.
Eu.P.3296	Req	<div>Subsystem - Point SR - Logical Architecture [SubS P IBD 2]</div> <div><div>ibd Subsystem - Point SR - Logical Architecture [SubS P IBD 2]</div><div><div>«block» SubS P SR</div><div><div><div><div>T9_Status_Report_Completed</div><div>T6_Start_Status_Report : F_SCI_EfeS_Sec_SR</div><div>D50_PDI_Connection_State</div></div><div><div>D21_F_SCI_EfeS_Gen_SR_State</div><div>T18_Start_Status_Report</div><div>T23_Sending_Status_Report_Completed</div></div><div><div>SCI_P</div><div>T1_Cd_Move_Point</div><div>DT1_Move_Point_Target</div><div>T2_Msg_Point_Position</div><div>DT2_Point_Position</div><div>T3_Msg_Timeout</div></div><div><div>: F_SCI_P_SR</div></div></div><div><div><div>D51_EST_EfeS_State</div><div>: F_EST_EfeS_SR</div></div><div><div>D20_F_EST_EfeS_Gen_SR_State</div><div>T10_Move</div><div>DT10_Move_Target</div><div>T11_Stop_Operation</div><div>T20_Point_Position</div><div>DT20_Point_Position</div><div>T40_Send_Status_Report</div><div>T30_Report_Timeout</div><div>D30_Con_007000</div><div>D32_Con_007600</div><div>D33_Con_007900</div><div>D34_Con_008000</div><div>D35_Con_008200</div><div>D36_Con_008300</div><div>D37_Con_008400</div><div>D38_Con_008500</div><div>D25_Redrive</div></div><div><div>: F_P3_SR</div><div>D21_PM1_Position</div><div>D13_PM2_Activation</div><div>D22_PM2_Position</div><div>D10_Move_Left</div><div>D11_Move_Right</div><div>D4_Con_tmax_Point_Operation</div><div>D5_Drive_State</div><div>D6_Detection_State</div><div>T5_Info_End_Position_Arrived</div><div>T4_Information_No_End_Position</div><div>T6_Information_Trailed_Point</div><div>T7_Information_Out_Of_Sequence</div></div><div><div>P3</div></div></div></div></div></div>		-
Eu.P.3295	Req	SCI_P	The FlowPort SCI_P represents the interface SCI_P presented in the Subsystem context.	-
Eu.P.4543	Req	P3	The FlowPort P3 represents the interface P3 presented in the Subsystem context.	-
Eu.P.4547	Head	3.2.3 Logical components		-
Eu.P.4704	Info	S_SCI_P_SR		-

ID	Type	Requirement Part 1	Requirement Part 2	Appl.
Eu.P.4711	Req	<div><div>S_SCI_P_SR - Events [SCI_P IBD 1]</div><div><div>ibdd S_SCI_P_SR - Events [SCI_P IBD 1]</div><div><div><div>«block» S_SCI_P_SR Operation</div><div>«Operation» cOp1_Init ()</div><div><div><div>T2_Msg_Point_Position : PulsedIn</div><div>DT2_Point_Position : String</div><div>T3_Msg_Timeout : PulsedIn</div><div>T10_Move_Point : PulsedIn</div><div>DT10_Move_Point : String</div><div>D21_S_SCI_EfeS_Gen_SR_State : String</div></div><div><div>T1_Cd_Move_Point : PulsedOut</div><div>DT1_Move_Point_Target : String</div><div>T20_Point_Position : PulsedOut</div><div>DT20_Point_Position : String</div><div>T30_Timeout : PulsedOut</div></div></div></div></div></div></div>		-
Eu.P.4705	Req	cOp1_Init	T1_Cd_Move_Point := FALSE; DT1_Move_Point_Target := ""; T20_Point_Position := FALSE; DT20_Point_Position := ""; T30_Timeout := FALSE; Mem_Move_Point := ""; Mem_Point_Position := "";	-
Eu.P.4733	Req	T2_Msg_Point_Position		-
Eu.P.4710	Req	DT2_Point_Position		-
Eu.P.4735	Req	T3_Msg_Timeout		-
Eu.P.4730	Req	T10_Move_Point		-
Eu.P.4707	Req	DT10_Move_Point		-
Eu.P.4706	Req	D21_S_SCI_EfeS_Gen_SR_State		-
Eu.P.4731	Req	T1_Cd_Move_Point		-
Eu.P.4708	Req	DT1_Move_Point_Target		-
Eu.P.4732	Req	T20_Point_Position		-
Eu.P.4709	Req	DT20_Point_Position		-
Eu.P.4734	Req	T30_Timeout		-
Eu.P.4712	Req	S_SCI_P_SR - Behaviour [SCI_P STD 1]		-

ID	Type	Requirement Part 1	Requirement Part 2	Appl.
Eu.P.4719	Req	when(D21_S_SCI_EfeS_Gen_SR_State <> "ESTABLISHED")/({PDI_CONNECTION_ESTABLISHED - RECEIVING_STATUS_REPORT})		-
Eu.P.4666	Info	F_SCI_P_SR		-
Eu.P.4673	Req	<div><div>F_SCI_P_SR - Events [SCI_P IBD 2]</div><div><div><div><div>ibd F_SCI_P_SR - Events [SCI_P IBD 2]</div></div><div><div><div><div>«block» F_SCI_P_SR</div><div>Operation</div></div><div>«Operation» cOp1_Init ()</div><div><div><div><div>T1_Cd_Move_Point : PulsedIn</div><div>T2_Msg_Point_Position : PulsedOut</div></div><div><div><div>DT1_Move_Point_Target : String</div><div>DT2_Point_Position : String</div></div><div><div><div>T20_Point_Position : PulsedIn</div><div>T3_Msg_Timeout : PulsedOut</div></div><div><div><div>DT20_Point_Position : String</div><div>T10_Move : PulsedOut</div></div><div><div><div>T18_Start_Status_Report : PulsedIn</div><div>DT10_Move_Target : String</div></div><div><div><div>T30_Report_Timeout : PulsedIn</div><div>T11_Stop_Operation : PulsedOut</div></div><div><div><div>D21_F_SCI_EfeS_Gen_SR_State : String</div><div>T40_Send_Status_Report : PulsedOut</div></div><div><div><div>T23_Sending_Status_Report_Completed : PulsedOut</div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div>		-
Eu.P.4667	Req	cOp1_Init	T2_Msg_Point_Position := FALSE; DT2_Point_Position := ""; T3_Msg_Timeout := FALSE; T10_Move := FALSE; DT10_Move_Target := ""; T11_Stop_Operation := FALSE; T23_Sending_Status_Report_Completed := FALSE; T40_Send_Status_Report := FALSE; Mem_Move_Point := ""; Mem_Point_Position := "";	-
Eu.P.4697	Req	T1_Cd_Move_Point	The FlowPort T1_Cd_Move_Point refines the Flow Property Cd_Move_Point.	-
Eu.P.4670	Req	DT1_Move_Point_Target	The FlowPort DT1_Move_Point_Target belongs to T1_Cd_Move_Point.	-
Eu.P.4698	Req	T20_Point_Position		-
Eu.P.4671	Req	DT20_Point_Position		-
Eu.P.4696	Req	T18_Start_Status_Report		-
Eu.P.4701	Req	T30_Report_Timeout		-
Eu.P.4668	Req	D21_F_SCI_EfeS_Gen_SR_State		-
Eu.P.4700	Req	T2_Msg_Point_Position	The FlowPortT2_Msg_Point_Position refines the Flow Property Msg_Point_Position.	-
Eu.P.4672	Req	DT2_Point_Position	The FlowPort DT2_Point_Position belongs to T2_Msg_Point_Position.	-
Eu.P.4702	Req	T3_Msg_Timeout	The FlowPort T3_Msg_Timeout refines the Flow Property Msg_Timeout.	-
Eu.P.4694	Req	T10_Move		-
Eu.P.4669	Req	DT10_Move_Target		-
Eu.P.4695	Req	T11_Stop_Operation		-
Eu.P.4703	Req	T40_Send_Status_Report		-
Eu.P.4699	Req	T23_Sending_Status_Report_Completed		-
Eu.P.4674	Req	F_SCI_P_SR - Behaviour [SCI_P STD 2]		-

ID	Type	Requirement Part 1	Requirement Part 2	Appl.
Eu.P.4693	Req	<div>SCI_P STD 2</div> <div>F_SCI_P_SR - Behaviour [SCI_P STD 2]</div> <div><p>The diagram is a UML State Machine Diagram for the requirement F_SCI_P_SR - Behaviour. It starts with an initial state 'Initial0'. A transition labeled '/cOp1_init();' leads to a state named 'ESTABLISHING_PDI_CONNECTION'. This state contains an internal state machine starting at 'Initial1', which leads to a state 'WATING'. From 'WATING', a transition 'when(T18_Start_Status_Report)/' leads to 'REPORT_STATUS'. From 'REPORT_STATUS', a transition 'when(T20_Point_Position)/' leads to 'STATUS_REPORTED'. From 'STATUS_REPORTED', two transitions lead to 'PDI_CONNECTION_ESTABLISHED': one labeled 'when(D21_F_SCI_EfeS_Gen_SR_State = "ESTABLISHED")[' and another labeled 'when(D21_F_SCI_EfeS_Gen_SR_State = "ESTABLISHED"){ Mem_Point_Position <> DT20_Point_Position]/'. The 'PDI_CONNECTION_ESTABLISHED' state contains several internal transitions: 'when(T1_Cd_Move_Point)/DT10_Move_Target := DT1_Move_Point_Target; T10_Move := TRUE;', 'when(T20_Point_Position)/DT2_Point_Position := DT20_Point_Position; T2_Msg_Point_Position := TRUE;', and 'when(T30_Report_Timeout)/T3_Msg_Timeout := TRUE;'. There are also feedback loops: one from 'STATUS_REPORTED' back to 'WATING' labeled 'when(D21_F_SCI_EfeS_Gen_SR_State = "CLOSED")/', and another from 'PDI_CONNECTION_ESTABLISHED' back to 'ESTABLISHING_PDI_CONNECTION' labeled 'when(D21_F_SCI_EfeS_Gen_SR_State <> "ESTABLISHED")/'.</p></div>		-
Eu.P.4686	Info	Initial0		-
Eu.P.4687	Req	/cOp1_init();{Initial0 - ESTABLISHING_PDI_CONNECTION}		-
Eu.P.4675	Info	ESTABLISHING_PDI_CONNECTION		-
Eu.P.4676	Info	Initial1		-
Eu.P.4677	Req	/[{Initial1 - WATING}		-
Eu.P.4683	Info	WATING		-
Eu.P.4684	Req	when(T18_Start_Status_Report)/ T40_Send_Status_Report := TRUE;{WATING - REPORT_STATUS}		-
Eu.P.4678	Info	REPORT_STATUS		-
Eu.P.4679	Req	when(T20_Point_Position)/ DT2_Point_Position := DT20_Point_Position; T2_Msg_Point_Position := TRUE; Mem_Point_Position := DT20_Point_Position; T23_Sending_Status_Report_Completed := TRUE;{REPORT_STATUS - STATUS_REPORTED}		-
Eu.P.4680	Info	STATUS_REPORTED		-
Eu.P.4681	Req	when(D21_F_SCI_EfeS_Gen_SR_State = "ESTABLISHED") [Mem_Point_Position = DT20_Point_Position]/{STATUS_REPORTED - PDI_CONNECTION_ESTABLISHED}		-

ID	Type	Requirement Part 1	Requirement Part 2	Appl.
Eu.P.4682	Req	when(D21_F_SCI_EfeS_Gen_SR_State = "ESTABLISHED")[Mem_Point_Position <> DT20_Point_Position]/ Mem_Point_Position := DT20_Point_Position; DT2_Point_Position := DT20_Point_Position; T2_Msg_Point_Position := TRUE;{STATUS_REPORTED - PDI_CONNECTION_ESTABLISHED}		-
Eu.P.4685	Req	when(D21_F_SCI_EfeS_Gen_SR_State = "CLOSED")/{ESTABLISHING_PDI_CONNECTION - ESTABLISHING_PDI_CONNECTION}		-
Eu.P.4691	Info	PDI_CONNECTION_ESTABLISHED		-
Eu.P.4692	Req	when(D21_F_SCI_EfeS_Gen_SR_State <> "ESTABLISHED")/{PDI_CONNECTION_ESTABLISHED - ESTABLISHING_PDI_CONNECTION}		-
Eu.P.4548	Info	F_P3_SR		-
Eu.P.4549	Req	<div><div>F_P3_SR -Events [P IBD 1]</div><div><div>ibd F_P3_SR -Events [P IBD 1]</div><div><div><div>«block» F_P3_SR</div><div>Operation</div><div>«Operation» cOp1_Init () «Operation» cOp2_All_Left () : Boolean «Operation» cOp3_No_End_Position () : Boolean «Operation» cOp4_All_Right () : Boolean «Operation» cOp5_Trailed () : Boolean «Operation» cOp6_Error () : Boolean «Operation» cOp7_Is_Traailable () : Boolean «Operation» cOp8_Supports_Multiple_PMs () : Boolean «Operation» cOp9_Redrive_Enabled () : Boolean «Operation» cOp10_Redrive_Right () : Boolean «Operation» cOp11_Redrive_Left () : Boolean «Operation» cOp12_Timeout () «Operation» cOp13_Not_Initialised () : Boolean</div></div></div><div><div>T1_Move : PulsedIn</div><div>DT1_Move_Target : String</div><div>T2_Stop_Operation : PulsedIn</div><div>D20_F_EST_EfeS_Gen_SR_State : String</div><div>D21_PM1_Position : String</div><div>D22_PM2_Position : String</div><div>D4_Con_tmax_Point_Operation : Integer</div><div>T40_Report_Status : PulsedIn</div><div>D13_PM2_Activation : String</div><div>D30_Con_007000 : Boolean</div><div>D32_Con_007600 : Boolean</div><div>D33_Con_007900 : Boolean</div><div>D34_Con_008000 : Boolean</div><div>D35_Con_008200 : Boolean</div><div>D36_Con_008300 : Boolean</div><div>D37_Con_008400 : Boolean</div><div>D38_Con_008500 : Boolean</div><div>D10_Move_Left : Boolean</div><div>D11_Move_Right : Boolean</div><div>T4_Information_No_End_Position : PulsedOut</div><div>T5_Info_End_Position_Arrived : PulsedOut</div><div>DT20_Point_Position : String</div><div>D5_Drive_State : String</div><div>T6_Information_Trailed_Point : PulsedOut</div><div>T7_Information_Out_Of_Sequence : PulsedOut</div><div>T20_Point_Position : PulsedOut</div><div>T30_Report_Timeout : PulsedOut</div><div>D25_Redrive : Boolean</div><div>D6_Detection_State : String</div></div></div></div>		-
Eu.P.4554	Req	cOp1_Init	T4_Information_No_End_Position := FALSE; T5_Info_End_Position_Arrived := FALSE; D5_Drive_State := "STOPPED"; D6_Detection_State := FALSE; T6_Information_Trailed_Point := FALSE; T7_Information_Out_Of_Sequence := FALSE; D10_Move_Left := FALSE; D11_Move_Right := FALSE; T20_Point_Position := FALSE; DT20_Point_Position := "UNKNOWN"; D25_Redrive := FALSE; T30_Report_Timeout := FALSE; Mem_last_Target_Requested := ""; Mem_Current_Point_Position := "";	-

ID	Type	Requirement Part 1	Requirement Part 2	Appl.
Eu.P.4555	Req	cOp2_All_Left	if cOp8_Supports_Multiple_PMs() then return ((D21_PM1_Position = "LEFT") and (D22_PM2_Position = "LEFT" or D13_PM2_Activation= "INACTIVE")); else return D21_PM1_Position = "LEFT"; end if	-
Eu.P.4556	Req	cOp3_No_End_Position	return ((Not cOp6_Error()) and (Not cOp5_Trailed()) and (Not cOp2_All_Left()) and (Not cOp4_All_Right()));	-
Eu.P.4557	Req	cOp4_All_Right	if cOp8_Supports_Multiple_PMs() then return ((D21_PM1_Position = "RIGHT") and (D22_PM2_Position = "RIGHT" or D13_PM2_Activation = "INACTIVE")); else return D21_PM1_Position = "RIGHT"; end if	-
Eu.P.4558	Req	cOp5_Trailed	if not cOp6_Error() then if cOp8_Supports_Multiple_PMs() then return ((D21_PM1_Position = "TRAILED") or (D22_PM2_Position = "TRAILED")); else return D21_PM1_Position = "TRAILED"; end if else return FALSE; end if	-
Eu.P.4559	Req	cOp6_Error	if cOp8_Supports_Multiple_PMs() then return ((D21_PM1_Position = "ERROR") or (D22_PM2_Position = "ERROR")); else return D21_PM1_Position = "ERROR"; end if	-
Eu.P.4560	Req	cOp7_Is_Trailable	return (D32_Con_007600 Or D33_Con_007900 Or D34_Con_008000 Or D35_Con_008200);	-
Eu.P.4561	Req	cOp8_Supports_Multiple_PMs	return (D30_Con_007000 Or D32_Con_007600 Or D33_Con_007900 Or D34_Con_008000 Or D35_Con_008200 Or D37_Con_008400);	-
Eu.P.4562	Req	cOp9_Redrive_Enabled	return D30_Con_007000;	-
Eu.P.4550	Req	cOp10_Redrive_Right	return (cOp3_No_End_Position and (Mem_Last_Target_Requested = "RIGHT") and (Mem_Current_Point_Position = "RIGHT"));	-
Eu.P.4551	Req	cOp11_Redrive_Left	return (cOp3_No_End_Position and (Mem_Last_Target_Requested = "LEFT") and (Mem_Current_Point_Position = "LEFT"));	-
Eu.P.4552	Req	cOp12_Timeout	D5_Drive_State := "STOPPED"; if (D32_Con_007600 or D33_Con_007900 or D34_Con_008000 or D35_Con_008200 or D37_Con_008400) then T30_Report_Timeout := TRUE; end if	-
Eu.P.4553	Req	cOp13_Not_Initialised	return D20_F_EST_EfeS_Gen_SR_State = "NO_OPERATING_VOLTAGE" or D20_F_EST_EfeS_Gen_SR_State = "BOOTING" or D20_F_EST_EfeS_Gen_SR_State = "FALLBACK_MODE";	-
Eu.P.4657	Req	T1_Move		-
Eu.P.4585	Req	DT1_Move_Target		-
Eu.P.4659	Req	T2_Stop_Operation		-
Eu.P.4566	Req	D20_F_EST_EfeS_Gen_SR_State		-
Eu.P.4567	Req	D21_PM1_Position		-
Eu.P.4568	Req	D22_PM2_Position		-
Eu.P.4582	Req	D4_Con_tmax_Point_Operation	The FlowPort D4_Con_tmax_Point_Operation refines the time value for Con_tmax_Point_Operation. The standardized time value is configured: Con_tmax_Point_Operation := 12 s (008000, 007600, 007000) Con_tmax_Point_Operation := 10 s (008200) Con_tmax_Point_Operation := 7 s (007000) - additional value selectable by dataprep	-
Eu.P.4661	Req	T40_Report_Status		-

ID	Type	Requirement Part 1	Requirement Part 2	Appl.
Eu.P.4565	Req	D13_PM2_Activation		-
Eu.P.4570	Req	D30_Con_007000	The FlowPort D30_Con_007000 provides the configuration value whether the Subsystem - Point is configured for the infrastructure manager 007000.	-
Eu.P.4572	Req	D32_Con_007600	The FlowPort D32_Con_007600 provides the configuration value whether the Subsystem - Point is configured for the infrastructure manager 007600.	-
Eu.P.4573	Req	D33_Con_007900	The FlowPort D33_Con_007900 provides the configuration value whether the Subsystem - Point is configured for the infrastructure manager 007900.	-
Eu.P.4574	Req	D34_Con_008000	The FlowPort D34_Con_008000 provides the configuration value whether the Subsystem - Point is configured for the infrastructure manager 008000.	-
Eu.P.4575	Req	D35_Con_008200	The FlowPort D34_Con_008000 provides the configuration value whether the Subsystem - Point is configured for the infrastructure manager 008200.	-
Eu.P.4576	Req	D36_Con_008300	The FlowPort D36_Con_008300 provides the configuration value whether the Subsystem - Point is configured for the infrastructure manager 008300.	-
Eu.P.4577	Req	D37_Con_008400	The FlowPort D37_Con_008400 provides the configuration value whether the Subsystem - Point is configured for the infrastructure manager 008400.	-
Eu.P.4578	Req	D38_Con_008500	The FlowPort D38_Con_008500 provides the configuration value whether the Subsystem - Point is configured for the infrastructure manager 008500.	-
Eu.P.4563	Req	D10_Move_Left		-
Eu.P.4564	Req	D11_Move_Right		-
Eu.P.4662	Req	T4_Information_No_End_Position	The FlowPort T4_Information_No_End_Position refines the Flow Property Information_No_End_Position.	-
Eu.P.4663	Req	T5_Info_End_Position_Arrived	The FlowPort T5_Info_End_Position_Arrived refines the Flow Property Information_End_Position_Arrived.	-
Eu.P.4586	Req	DT20_Point_Position		-
Eu.P.4583	Req	D5_Drive_State		-
Eu.P.4664	Req	T6_Information_Trailed_Point	The FlowPort T6_Information_Trailed_Point refines the Flow Property Information_Trailed_Point.	-
Eu.P.4665	Req	T7_Information_Out_Of_Sequence		-
Eu.P.4658	Req	T20_Point_Position		-
Eu.P.4660	Req	T30_Report_Timeout		-
Eu.P.4569	Req	D25_Redrive		-
Eu.P.4584	Req	D6_Detection_State		-
Eu.P.4587	Req	F_P_SR - Behaviour [SCI_P STD 1]		-

ID	Type	Requirement Part 1	Requirement Part 2	Appl.
Eu.P.4588	Req	<div><div>F_P3_SR STD 1</div><div>F_P_SR - Behaviour [SCL_P STD 1]</div><div><div><div><div>Initial0</div><div>/cOp1_Init();</div></div><div><div>OPERATING</div><div><div>DETECTION</div><div><div>Initial1</div><div>when(cOp13_Not_Initialised)//</div><div>when(cOp13_Not_Initialised)//</div><div>[D20_F_EST_EfeS_Gen_SR_State = "INITIALISING"]//</div><div>when(D20_F_EST_EfeS_Gen_SR_State = "INITIALISING")//</div><div>Junction0</div><div>[cOp2_All_Left]//</div><div>[cOp3_No_End_Position]//</div><div>[cOp4_All_Right]//</div><div><div>ALL_LEFT</div><div>Entry/DT20_Point_Position := "LEFT"; T20_Point_Position := TRUE; Mem_Current_Point_Position := "LEFT"; T5_Info_End_Position_Arrived := TRUE; D6_Detection_State := "END_POSITION"; Exit/T5_Info_End_Position_Arrived := FALSE; when(T40_Report_Status)/ DT20_Point_Position := "LEFT"; T20_Point_Position := TRUE;</div><div>when(cOp2_All_Left)//</div><div>when(cOp3_No_End_Position)//</div><div>when(cOp5_Trailed) [cOp7_Is_Trailed]//</div><div>when(cOp2_All_Left)//</div><div><div>NO_END_POSITION</div><div>Entry/DT20_Point_Position := "NO_END_POSITION"; T20_Point_Position := TRUE; Mem_Current_Point_Position := "NO_END_POSITION"; T4_Information_No_End_Position := TRUE; D6_Detection_State := "NO_END_POSITION"; Exit/T4_Information_No_End_Position := FALSE; when(T40_Report_Status)/ DT20_Point_Position := "NO_END_POSITION"; T20_Point_Position := TRUE;</div><div>when(cOp4_All_Right)//</div><div>when(cOp3_No_End_Position)//</div><div>when(cOp3_No_End_Position)//</div><div><div>ALL_RIGHT</div><div>Entry/DT20_Point_Position := "RIGHT"; T20_Point_Position := TRUE; Mem_Current_Point_Position := "RIGHT"; T5_Info_End_Position_Arrived := TRUE; D6_Detection_State := "END_POSITION"; Exit/T5_Info_End_Position_Arrived := FALSE; when(T40_Report_Status)/ DT20_Point_Position := "RIGHT"; T20_Point_Position := TRUE;</div><div>when(cOp5_Trailed) [cOp7_Is_Trailed]//</div><div>when(cOp4_All_Right)//</div><div><div>TRAILED</div><div>Entry/DT20_Point_Position := "TRAILED"; T20_Point_Position := TRUE; Mem_Current_Point_Position := "TRAILED"; T6_Information_Trailed_Point := TRUE; D6_Detection_State := "TRAILED"; Exit/T6_Information_Trailed_Point := TRUE; when(T40_Report_Status)/DT20_Point_Position := "TRAILED"; T20_Point_Position := TRUE;</div><div>when(cOp4_All_Right)//</div><div>when(cOp2_All_Left)//</div></div><div>when(cOp4_All_Right)//</div><div>when(cOp2_All_Left)//</div></div><div>DRIVE</div><div><div>Initial2</div><div>/</div><div>when(cOp11_Redrive_Left) [cOp9_Redrive_Enabled]/D25_Redrive := TRUE;</div><div>after(D4_Con_tmax_Point_Operation)/cOp12_Timeout();</div><div>when(cOp2_All_Left) [cOp13_Not_Initialised]//</div><div>[DT1_Move_Target = Mem_Current_Point_Position]/T20_Point_Position := "TRUE";</div><div>when(T1_Move) [DT1_Move_Target = "LEFT"]//</div><div>Junction1</div><div>[DT1_Move_Target <> Mem_Current_Point_Position]//</div><div>when(T1_Move) [DT1_Move_Target = "RIGHT"]//</div><div>when(T1_Move) [DT1_Move_Target = "LEFT"]//</div><div><div>MOVING_LEFT</div><div>Entry/D10_Move_Left := TRUE; D5_Drive_State := "MOVING"; Mem_last_Target_Requested := "LEFT"; Exit/D10_Move_Left := FALSE;</div><div><div>STOPPED</div><div>Entry/D25_Redrive := FALSE; D5_Drive_State := "STOPPED";</div><div>after(D4_Con_tmax_Point_Operation)/cOp12_Timeout();</div><div>when(cOp4_All_Right) [cOp13_Not_Initialised]//</div><div>[DT1_Move_Target = Mem_Current_Point_Position]/T20_Point_Position := "TRUE";</div><div>when(T1_Move) [DT1_Move_Target = "RIGHT"]//</div><div>[DT1_Move_Target <> Mem_Current_Point_Position]//</div><div><div>MOVING_RIGHT</div><div>Entry/D11_Move_Right := TRUE; D5_Drive_State := "MOVING"; Mem_last_Target_Requested = "RIGHT"; Exit/D11_Move_Right := FALSE;</div></div></div></div></div></div></div></div></div></div></div></div></div>		
Eu.P.4589	Info	Initial0		-
Eu.P.4590	Req	/cOp1_Init();{Initial0 - OPERATING}		-

ID	Type	Requirement Part 1	Requirement Part 2	Appl.
Eu.P.4592	Info	OPERATING		-
Eu.P.4593	Info	DETECTION		-
Eu.P.4604	Info	Initial1		-
Eu.P.4605	Req	/({Initial1 - WAITING_FOR_INITIALISING})		-
Eu.P.4622	Info	WAITING_FOR_INITIALISING		-
Eu.P.4623	Req	[D20_F_EST_EfeS_Gen_SR_State = "INITIALISING"/]{WAITING_FOR_INITIALISING - Junction0}		-
Eu.P.4624	Req	when(D20_F_EST_EfeS_Gen_SR_State = "INITIALISING"/){WAITING_FOR_INITIALISING - Junction0}		-
Eu.P.4608	Info	Junction0		-
Eu.P.4609	Req	[cOp2_All_Left]/{Junction0 - ALL_LEFT}		-
Eu.P.4610	Req	[cOp4_All_Right]/{Junction0 - ALL_RIGHT}		-
Eu.P.4611	Req	[cOp3_No_End_Position]/{Junction0 - NO_END_POSITION}		-
Eu.P.4612	Req	[cOp5_Trailed and cOp7_Is_Trailable]/{Junction0 - TRAILED}		-
Eu.P.4594	Info	ALL_LEFT		-
Eu.P.4595	Req	when(cOp13_Not_Initialised)/{ALL_LEFT - WAITING_FOR_INITIALISING}		-
Eu.P.4596	Req	when(cOp3_No_End_Position)/{ALL_LEFT - NO_END_POSITION}		-
Eu.P.4597	Req	when(cOp4_All_Right)/{ALL_LEFT - ALL_RIGHT}		-
Eu.P.4598	Req	when(cOp5_Trailed)[cOp7_Is_Trailable]/{ALL_LEFT - TRAILED}		-
Eu.P.4599	Info	ALL_RIGHT		-
Eu.P.4600	Req	when(cOp13_Not_Initialised)/{ALL_RIGHT - WAITING_FOR_INITIALISING}		-
Eu.P.4601	Req	when(cOp2_All_Left)/{ALL_RIGHT - ALL_LEFT}		-
Eu.P.4602	Req	when(cOp3_No_End_Position)/{ALL_RIGHT - NO_END_POSITION}		-
Eu.P.4603	Req	when(cOp5_Trailed)[cOp7_Is_Trailable]/{ALL_RIGHT - TRAILED}		-
Eu.P.4613	Info	NO_END_POSITION		-
Eu.P.4614	Req	when(cOp13_Not_Initialised)/{NO_END_POSITION - WAITING_FOR_INITIALISING}		-
Eu.P.4615	Req	when(cOp2_All_Left)/{NO_END_POSITION - ALL_LEFT}		-
Eu.P.4616	Req	when(cOp4_All_Right)/{NO_END_POSITION - ALL_RIGHT}		-
Eu.P.4617	Info	TRAILED		-
Eu.P.4618	Req	when(cOp13_Not_Initialised)/{TRAILED - WAITING_FOR_INITIALISING}		-
Eu.P.4619	Req	when(cOp2_All_Left)/{TRAILED - ALL_LEFT}		-
Eu.P.4620	Req	when(cOp3_No_End_Position)/{TRAILED - NO_END_POSITION}		-
Eu.P.4621	Req	when(cOp4_All_Right)/{TRAILED - ALL_RIGHT}		-
Eu.P.4626	Info	DRIVE		-
Eu.P.4627	Info	Initial2		-
Eu.P.4628	Req	/({Initial2 - STOPPED})		-
Eu.P.4652	Info	STOPPED		-
Eu.P.4653	Req	when(cOp10_Redrive_Right)[cOp9_Redrive_Enabled]/D25_Redrive := TRUE;{STOPPED - MOVING_RIGHT}		-
Eu.P.4654	Req	when(cOp11_Redrive_Left)[cOp9_Redrive_Enabled]/D25_Redrive := TRUE;{STOPPED - MOVING_LEFT}		-
Eu.P.4655	Req	when(T1_Move)[DT1_Move_Target = "LEFT"/]{STOPPED - Junction1}		-
Eu.P.4656	Req	when(T1_Move)[DT1_Move_Target = "RIGHT"/]{STOPPED - Junction2}		-
Eu.P.4630	Info	Junction1		-
Eu.P.4631	Req	[DT1_Move_Target <> Mem_Current_Point_Position]/{Junction1 - MOVING_LEFT}		-
Eu.P.4632	Req	[DT1_Move_Target = Mem_Current_Point_Position]/T20_Point_Position := "TRUE";{Junction1 - STOPPED}		-
Eu.P.4633	Info	Junction2		-
Eu.P.4634	Req	[DT1_Move_Target <> Mem_Current_Point_Position]/{Junction2 - MOVING_RIGHT}		-
Eu.P.4635	Req	[DT1_Move_Target = Mem_Current_Point_Position]/T20_Point_Position := "TRUE";{Junction2 - STOPPED}		-
Eu.P.4646	Info	MOVING_RIGHT		-
Eu.P.4647	Req	[cOp13_Not_Initialised]/{MOVING_RIGHT - STOPPED}		-

ID	Type	Requirement Part 1	Requirement Part 2	Appl.
Eu.P.4648	Req	after(D4_Con_tmax_Point_Operation)/cOp12_Timeout();{MOVING_RIGHT - STOPPED}		-
Eu.P.4650	Req	when(cOp4_All_Right)/{MOVING_RIGHT - STOPPED}		-
Eu.P.4651	Req	when(T1_Move)[DT1_Move_Target = "LEFT"]/{MOVING_RIGHT - MOVING_LEFT}		-
Eu.P.4640	Info	MOVING_LEFT		-
Eu.P.4641	Req	[cOp13_Not_Initialised]/{MOVING_LEFT - STOPPED}		-
Eu.P.4642	Req	after(D4_Con_tmax_Point_Operation)/cOp12_Timeout();{MOVING_LEFT - STOPPED}		-
Eu.P.4644	Req	when(cOp2_All_Left)/{MOVING_LEFT - STOPPED}		-
Eu.P.4645	Req	when(T1_Move)[DT1_Move_Target = "RIGHT"]/{MOVING_LEFT - MOVING_RIGHT}		-
Eu.P.233	Head	4 RAMSS requirements		Default
Eu.P.2987	Info	The requirements for reliability, availability, maintainability, safety and security are specified in [Eu.Doc.20]		Default
Eu.P.3244	Head	5 Technical Requirements		Default
Eu.P.3245	Info	The generic technical requirements are specified in [Eu.Doc.20]		Default
Eu.P.3246	Head	5.1 Specific technical interface requirements		Default
Eu.P.3247	Head	5.1.1 Interface to the Point of Service Signalling (PoS-Signalling)		Default
Eu.P.3248	Req	Via the technical interface PoS-Signalling , the data of the functional interface "SCI-P" shall be exchanged with the Subsystem - Electronic Interlocking as specified in [Eu.Doc.92].		Default
Eu.P.3249	Req	Via the technical interface PoS-Signalling , the data of the functional interface "SMI-P" shall be exchanged with the Subsystem - Maintenance and Data Management as specified in [Eu.Doc.76].		Default
Eu.P.3250	Req	Via the technical interface PoS-Signalling , the data of the functional interface "SDI-P" shall be exchanged with the Subsystem - Maintenance and Data Management as specified in [Eu.Doc.77].		Default
Eu.P.3251	Head	5.1.2 Interface to the point machine		Default
Eu.P.3252	Info	These requirements shall be defined by national specifications.		Default
Eu.P.3253	Head	5.2 Time behaviour		Default
Eu.P.3254	Req	The time values defined in the chapter Functional requirements specification (Eu.P.2286) shall be configured for the operation of the Subsystem - Point.		Default
Eu.P.3262	Head	5.2.1 Response times		Default
Eu.P.3263	Req	The Subsystem - Point shall send the corresponding message telegram to the Subsystem - Electronic Interlocking within 250 ms after successful change of state, according to specific use cases.		Default
Eu.P.3264	Req	The Subsystem - Point shall start the reversal operation within 500 ms after receiving a command telegram.		Default
Eu.P.3265	Req	The Subsystem - Point shall start the redrive operation within 500 ms after detecting No end position.		007000
Eu.P.3255	Head	5.3 Configuration and engineering data		Default
Eu.P.3256	Head	5.3.1 Specific data		Default
Eu.P.3257	Req	The engineering and configuration data for the Subsystem - Point shall include as a minimum the following information:		Default
Eu.P.3258	Req	<ul style="list-style-type: none">the duration, starting from the moment a point machine is powered to begin a point movement, after which the power has to be switched of, even if the point hasn't reached an End position. (point movement monitoring time)		Default
Eu.P.3259	Info	Two different data sections can be loaded which are identified as PR_ID1 or PR_ID2. The section identified via PR_ID1 covers the safety-relevant data and the section identified via PR_ID2 the non safety-relevant data. The following definitions apply to the assignment of the sections PR_ID1 or PR_ID2:		Default
Eu.P.3260	Req	<ul style="list-style-type: none">configuration data, such as the IP addresses of the Subsystem - Electronic Interlocking (or the corresponding RaSTA concentrators), the value of the attribute "Identification" (data point of the SDI-P) and the value of the attribute "InterfaceRevision" (data point of the SDI-P) and the value of the attribute "PointTurnEvent.MotorTurnData[i].idSub1" (data point of the SDI-P) are non safety-relevant and belongs to the section identified via PR_ID2. This data shall be used to calculate the CSNS.		Default
Eu.P.3261	Req	<ul style="list-style-type: none">The remaining configuration data is currently categorised as safety-relevant and belongs to the section identified via PR_ID1. This data shall be used to calculate the CSS.		Default
Eu.P.4546	Req	<ul style="list-style-type: none">The engineering data is safety-relevant and belongs to the section identified via PR_ID1. This data shall be used to calculate the CSS.		Default