



**EULYNX Initiative**

## **Requirements specification for External Level Crossing System**

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Version: 2.2 (2.A)

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ID	Type	Requirement Part 1	Requirement Part 2	Appl.	JIRA	V 2.2 (2.A) > V 2.2 (1.A)
Eu.LX.1	Head	1 Introduction		Default		
Eu.LX.2	Head	1.1 Release information		Default		
Eu.LX.3	Info	[Eu.Doc.111] Requirements specification for External Level Crossing System CENELEC Phase: 4 Version: 2.2 (2.A) Approval date: 02.06.2025		Default		<b>Object Text:</b> [Eu.Doc.111] Requirements specification for External Level Crossing System CENELEC Phase: 4 Version: 2.2 ( <del>1</del> 2.A) Approval date: <a href="#">02.06.2025</a>
Eu.LX.4	Info	Version history		Default		
Eu.LX.1763	Info	version number: 2.0 (0.A) date: 16.05.2022 author: Philipp Wolber model version: 18 Generic interface and subsystem requirements for SCI version: 1.0 (0.A) review: CCB changes: EULX-479, EULX-492, EULX-493, EULX-495, EULX-506		Default		
Eu.LX.1771	Info	version number: 2.1 (0.A) date: 30.03.2023 author: Marie Gehrmann, Dominik Smajgl, Filip Giering, Philipp Wolber model version: 21 Generic interface and subsystem requirements version: 4.0 (0.A) Generic interface and subsystem requirements for SCI version: 1.0 (0.A) review: - changes: EULX-522, EULX-523, EULX-534		Default		
Eu.LX.1849	Info	version number: 2.1 (1.A) date: 11.05.2023 author: Philipp Wolber model version: 22 Generic interface and subsystem requirements version: 4.0 (1.A) Generic interface and subsystem requirements for SCI version: 1.0 (1.A) review: cluster changes: EULX-539, EULX-541, EULX-542, EULX-547		Default		
Eu.LX.1856	Info	version number: 2.2 (0.A) date: 28.06.2023 author: Philipp Wolber model version: 22 Generic interface and subsystem requirements version: 4.0 (3.A) Generic interface and subsystem requirements for SCI version: 1.0 (3.A) review: CCB changes: EULX-552, EULX-553, EULX-558, EULX-560, EULX-561		Default		
Eu.LX.1864	Info	version number: 2.2 (1.A) date: 15.12.2023 author: Philipp Wolber model version: 25 Generic interface and subsystem requirements version: 4.0 (4.A) Generic interface and subsystem requirements for SCI version: 1.0 (4.A) review: M&T changes: EULX-521, EULX-578, EULX-584, EULX-586, EULX-587, EULX-588, EULX-590, EULX-598		Default		
Eu.LX.1903	Info	version number: 2.2 (2.A) date: 19.06.2025 author: Philipp Wolber model version: 29 Generic interface and subsystem requirements version: 4.0 (7.A) Generic interface and subsystem requirements for SCI version: 1.1 (2.A) review: CCB changes: EULX-612, EULX-620, EULX-629, EULX-630, EULX-646, EULX-648		Default		object created after baseline 2.2 (1.A)
Eu.LX.32	Head	1.2 Impressum		Default		
Eu.LX.33	Info	Publisher: <b>EULYNX Initiative</b>  A full list of the <b>EULYNX Partners</b> can be found on <a href="https://eulynx.eu/">https://eulynx.eu/</a> .		Default	EULX-620	<b>Object Text:</b> Publisher: EULYNX Initiative  A full list of the EULYNX Partners can be found on <a href="http://www-https://eulynx.eu/index.php/member-s-a_JIRA_B14R4:EULX-620">www-https://eulynx.eu/index.php/member-s-a_JIRA_B14R4:EULX-620</a>
Eu.LX.34	Info	Responsible for this document: EULYNX Project Management Office <a href="http://www.eulynx.eu">www.eulynx.eu</a>		Default		

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Eu.LX.35	Info	Copyright EULYNX Partners All information included or disclosed in this document is licensed under the European Union Public Licence EUPL, Version 1.2 or later.		Default		
Eu.LX.36	Head	<b>1.3 Purpose</b>		Default		
Eu.LX.37	Info	The purpose of the document is the specification of requirements for the interface SCI-LX for the development of the EULYNX System.		Default		
Eu.LX.38	Info	This document describes functional requirements for the interface SCI-LX.		Default		
Eu.LX.39	Info	This document is intended for the following users: <ul style="list-style-type: none"><li>• safety authorities</li><li>• infrastructure managers</li><li>• safety assessors</li><li>• signalling system suppliers</li><li>• validators</li></ul>		Default		
Eu.LX.40	Info	This document is the basis for the implementation by the supplier and for approval by the infrastructure manager.		Default		
Eu.LX.41	Head	<b>1.4 Applicable standards and regulations</b>		Default		
Eu.LX.42	Info	A list of applicable standards and regulations used in EULYNX is listed in the EULYNX Reference Document List [Eu.Doc.12].		Default		
Eu.LX.43	Head	<b>1.5 Applicable documents</b>		Default		
Eu.LX.44	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.LX.45	Head	<b>1.6 Terms and abbreviations</b>		Default		
Eu.LX.46	Info	The terms and abbreviations are listed in the EULYNX Glossary [Eu.Doc.9].		Default		
Eu.LX.47	Head	<b>1.7 Variability management</b>		Default		
Eu.LX.48	Info	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. IM codes follow the pattern "abcdyz", where abcd is the UIC numeric code for railway companies and yz is by default "00".		Default		
Eu.LX.49	Head	<b>1.8 Definition of object types</b>		Default		
Eu.LX.50	Info	The following definition for object types is applied in this document:		Default		
Eu.LX.51	Info	<ul style="list-style-type: none"><li>• "Req" - This denotes a mandatory requirement.</li></ul>		Default		
Eu.LX.1865	Info	<ul style="list-style-type: none"><li>• "Def" - This denotes referenceable model elements that are used in the model-based creation of requirements</li></ul>		Default		
Eu.LX.53	Info	<ul style="list-style-type: none"><li>• "Info" - This denotes additional information to help understand the specification. These objects do not specify any additional requirements.</li></ul>		Default		
Eu.LX.54	Info	<ul style="list-style-type: none"><li>• "Head" - This denotes chapter headings.</li></ul>		Default		
Eu.LX.55	Head	<b>1.9 Modelling</b>		Default		
Eu.LX.56	Info	The section "Functional requirements specification" follows a model based systems engineering process using Systems Modelling Language (SysML) and defines the information objects (stimuli and responses) exchanged over the SCI-LX interface.		Default		
Eu.LX.57	Info	The diagrams presented in this document are modelled in SysML [SysML].		Default		
Eu.LX.58	Info	The rules for the interpretation of the model based parts of specification are defined in [Eu.Doc.29].		Default		
Eu.LX.59	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.LX.60	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.LX.61	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.LX.62	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.LX.1866	Info	State machines or several state machines linked together in a Functional Architecture define the totality of all functional requirements of an SUS or an SIUS in a coherent and consistent manner. State diagrams of a corresponding state machine are marked with the object type "Req". For the later design and implementation, it is not the description language SysML that is binding, but the domain-specific meaning expressed by it. The specified behaviour can be converted into a vendor specific language but must retain the domain specific meaning describing the functional requirements. The specific model elements are additionally specified and defined by object type "Def" to allow for traceability to supplier designs or test cases. The compliance of products to the specifications must be demonstrated by testing against EULYNX test cases, which are derived from the functionality specified by the models.		Default	EULX-630	<b>Object Text:</b> State machines or several state machines linked together in a Functional Architecture define the totality of all functional requirements of an SUS or an SIUS in a coherent and consistent manner. State diagrams of a corresponding state machine are marked with the object type "Req". For the later design and implementation, it is not the description language SysML that is binding, but the domain-specific

ID	Type	Requirement Part 1	Requirement Part 2	Appl.	JIRA	V 2.2 (2.A) > V 2.2 (1.A)
						meaning expressed by it. The specified <del>behavior</del> behaviour can be converted into a vendor specific language but must retain the domain specific meaning describing the functional requirements. The specific model elements are additionally specified and defined by object type "Def" to allow for traceability to supplier designs or test cases. The compliance of products to the specifications must be demonstrated by testing against EULYNX test cases, which are derived from the functionality specified by the models. <b>a_JIRA_BL4R4:</b> <a href="#">EULX-630</a>
Eu.LX.63	Head	<b>2 Conditions of use</b>		Default		
Eu.LX.1772	Req	All references to [Eu.Doc.20] refer to version 4.0 of that document.		Default	EULX-612 EULX-648	<b>Object Text:</b> All references to <a href="#">[Eu.Doc.20]</a> refer to version 4.0 <del>(4.A)</del> of that document. <b>a_JIRA_BL4R4:</b> <a href="#">EULX-612</a> <a href="#">EULX-648</a>
Eu.LX.1629	Req	All references to [Eu.Doc.119] refer to version 1.1 of that document.		Default	EULX-612 EULX-629 EULX-648	<b>Object Text:</b> All references to <a href="#">[Eu.Doc.119]</a> refer to version 1. <del>0</del> <del>(4.A)</del> <u>1</u> of that document. <b>a_JIRA_BL4R4:</b> <a href="#">EULX-612</a> <a href="#">EULX-629</a> <a href="#">EULX-648</a>
Eu.LX.1773	Req	References to [Eu.Doc.120] do not refer to a concrete version of that document. The applicable version shall be defined by national specifications.		Default	EULX-612	<b>Object Text:</b> References to <a href="#">[Eu.Doc.120]</a> do not refer to a concrete version of that document. The applicable version shall be defined by national specifications. <b>a_JIRA_BL4R4:</b> <a href="#">EULX-612</a>
Eu.LX.64	Info	The specifications defined in this document shall follow the requirements of the EULYNX System Architecture Specification [Eu.Doc.16].		Default		
Eu.LX.65	Req	The specifications defined in this document shall be complemented by the generic requirements specified in Generic interface and subsystem requirements for SCI [Eu.Doc.119].		Default		
Eu.LX.1226	Head	<b>3 Functional requirements specification</b>		Default		
Eu.LX.1810	Head	<b>3.1 External Level Crossing System - General Infos and Assumptions</b>		Default		
Eu.LX.1833	Head	<b>3.2 External Level Crossing System - Logical Viewpoint</b>		Default		
Eu.LX.1834	Head	<b>3.2.1 External Level Crossing System - Logical Context</b>		Default		

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Eu.LX.1835	Def	<div><div>[Package] External Level Crossing System - Logical Viewpoint [Logical Viewpoint - System Definition]</div><div><div><b>bdd</b> [Package] External Level Crossing System - Logical Viewpoint [Logical Viewpoint - System Definition]</div><div><div><div><div>«logical structural entity» Subsystem Electronic Interlocking</div><div>1</div></div><div>SCI-LX</div><div>1</div><div>«logical structural entity» External Level Crossing System</div></div><div><div><div>«logical structural entity» Subsystem Maintenance and Data Management</div><div>1</div></div><div>SMI-LX</div><div>1</div><div>SDI-LX</div><div><div><div>«logical structural entity» Subsystem Security Services Platform</div><div>1</div></div><div>SSI-LX</div><div>1</div></div><div><div><div>«environmental structural entity» Basic Data Identifier</div><div>1</div></div><div>LX1</div><div>1</div><div>LX1</div></div><div><div><div>«environmental structural entity» Maintainer</div><div>1</div></div><div>LX2</div><div>1</div><div>LX2</div></div></div></div></div></div>		Default		
Eu.LX.1795	Head	3.3 External Level Crossing System - Functional Viewpoint		Default		
Eu.LX.1796	Head	3.3.1 Definition of time values		Default		
Eu.LX.1797	Info	The generic time values for SCI are specified in Eu.Doc.119.		Default	EULX-612	a_JIRA_BL4R4: <a href="#">EULX-612</a>
Eu.LX.1798	Info	The generic time values for SMI are specified in Eu.Doc.120.		Default	EULX-612	a_JIRA_BL4R4: <a href="#">EULX-612</a>
Eu.LX.1690	Head	3.3.2 External Level Crossing System - Functional Context		Default		
Eu.LX.1274	Info	<div><div>[Package] External Level Crossing System - Functional Context [Functional Viewpoint - System Definition - Initialisation]</div><div><div><b>uc</b> [Package] External Level Crossing System - Functional Context [Functional Viewpoint - System Definition - Initialisation]</div><div><div><div>External Level Crossing System</div><div><div><div>Subsystem - Electronic Interlocking</div><div>SCI-XX EfeS IFUC1.1: Establish PDI connection</div><div>«include»</div><div>LX_UC1.3: Report status</div><div>SCI-XX EfeS IFUC1.2: Close PDI connection</div></div></div></div></div></div></div>		Default		
Eu.LX.1275	Info	The generic UseCases SCI-XX EfeS IFUC1.1: Establish PDI connection and SCI-XX EfeS IFUC1.2: Close PDI connection are specified in Eu.Doc.119. The generic UseCases SMI-XX IFUC 1.1: Establish SMI connection, SMI-XX IFUC 1.2: Synchronous loading and activation of data, SMI-XX IFUC 1.3: Asynchronous preloading of data, SMI-XX IFUC 1.4: Reset EfeS and SMI-XX IFUC 1.5: Initiate maintenance are specified in Eu.Doc.120.		Default	EULX-612	a_JIRA_BL4R4: <a href="#">EULX-612</a>
Eu.LX.1276	Info	LX_UC1.3: Report status	The Connection Domain-UseCase "LX_UC1.3: Report status" defines the process of transmitting the status data between the External Level Crossing System and the Subsystem - Electronic Interlocking during the establishment of the PDI connection.	Default		





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Eu.LX.1279	Info	<div><div>[Package] External Level Crossing System - Functional Context [Functional Viewpoint - System Definition - Operation]</div><div><div>uc [Package] External Level Crossing System - Functional Context [Functional Viewpoint - System Definition - Operation]</div><div><div>External Level Crossing System:</div><div><div><div><div>LX_UC2.1: Handle Activation</div><div>LX_UC2.2: Handle Deactivation</div><div>LX_UC2.3: Transmit LX status</div><div>LX_UC2.4: Handle an Activation point</div><div>LX_UC2.5: Handle auxiliary commands</div><div>LX_UC2.5.2: Handle isolation of LX</div><div>LX_UC2.5.1: Block or unblock LX for commands</div><div>LX_UC2.6: Handle irregularities</div></div></div></div></div></div></div>		Default		
Eu.LX.1280	Info	LX_UC2.1: Handle Activation	The Connection Domain-UseCase "LX_UC2.1: Handle Activation" defines the process of activating the LX.	Default		
Eu.LX.1281	Info	<div><div>Alternative Scenario: Handle Activation of LX [LX SD 2.1.1]</div><div><div>sd Alternative Scenario: Handle Activation of LX [LX SD 2.1.1]</div><div><div><div>Subsystem - Electronic Interlocking</div><div><div><div><div>Alternative Scenario: Handle Activation of LX [LX SD 2.1.1]</div><div><b>Precondition:</b> The PDI connection is established.</div><div><b>Interaction 2.1.1.A:</b> <div><div>1. - The Subsystem - Electronic Interlocking detects, that an activation of a LX is requested.</div><div>2. The Subsystem - Electronic Interlocking sends the command to activate LX.</div><div>3. The External Level Crossing System provides the LX functional status.</div><div>4. The External Level Crossing System notifies the Subsystem - Electronic Interlocking of the LX functional status.</div><div>5. The Subsystem - Electronic Interlocking received the current LX functional status of the External Level Crossing System.</div></div></div></div><div><b>Postcondition:</b> ---</div></div></div><div><div><div><div>Req_Activation_LX</div><div>Cd_LX_Activation</div><div>Msg_LX_Functional_Status</div><div>Rec_LX_Functional_Status</div></div><div><div>Prov_LX_Functional_Status</div></div></div></div></div></div></div></div>		007600 007900 008200		

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Eu.LX.1294	Info	<div><div><div>sd Alternative Scenario: Report track related admissible commands [LX SD 2.3.6]</div><div><div>Subsystem - Electronic Interlocking</div><div><div>:External Level Crossing System</div></div></div><div><div>Alternative Scenario: Report track related admissible commands [LX SD 2.3.6]</div><div><div>Precondition:</div><div>The PDI connection is established.</div><div>Interaction 2.3.6.A:</div><div><div>1. - The External Level Crossing System provides the admissible track related commands.</div><div>2. The External Level Crossing System notifies the Subsystem - Electronic Interlocking of the admissible track related commands.</div><div>3. The Subsystem - Electronic Interlocking received the admissible track related commands of the External Level Crossing System.</div></div><div><div>Postcondition:</div><div>---</div></div></div><div><div><div></div><div></div><div></div></div><div><div>Prov_TR_Command_Admissibility</div><div>Msg_Track_Related_Command_Admissibility</div><div>Rec_TR_Command_Admissibility</div></div></div></div></div></div>		008000 008200		
Eu.LX.1295	Info	<div><div><div>sd Alternative Scenario: Report Detection element Status [LX SD 2.3.7]</div><div><div>Subsystem - Electronic Interlocking</div><div><div>:External Level Crossing System</div></div></div><div><div>Alternative Scenario: Report Detection element Status [LX SD 2.3.7]</div><div><div>Precondition:</div><div>The PDI connection is established.</div><div>Interaction 2.3.7.A:</div><div><div>1. - The External Level Crossing System provides the status of the Detection element.</div><div>2. The External Level Crossing System notifies the Subsystem - Electronic Interlocking of the status of the Detection element.</div><div>3. The Subsystem - Electronic Interlocking received the status of the Detection element of the External Level Crossing System.</div></div><div><div>Postcondition:</div><div>---</div></div></div><div><div><div></div><div></div><div></div></div><div><div>Prov_DE_Status</div><div>Msg_Detection_Element_Status</div><div>Rec_DE_Status</div></div></div></div></div></div>		007600 007900		
Eu.LX.1296	Info	<div><div><div>sd Alternative Scenario: Report Obstacle detector Status [LX SD 2.3.8]</div><div><div>Subsystem - Electronic Interlocking</div><div><div>:External Level Crossing System</div></div></div><div><div>Alternative Scenario: Report Obstacle detector Status [LX SD 2.3.8]</div><div><div>Precondition:</div><div>The PDI connection is established.</div><div>Interaction 2.3.8.A:</div><div><div>1. - The External Level Crossing System provides the current status of the Obstacle detector.</div><div>2. The External Level Crossing System notifies the Subsystem - Electronic Interlocking of the status of the Obstacle detector.</div><div>3. The Subsystem - Electronic Interlocking received the status of the Obstacle detector of the External Level Crossing System.</div></div><div><div>Postcondition:</div><div>---</div></div></div><div><div><div></div><div></div><div></div></div><div><div>Prov_OD_Status</div><div>Msg_Obstacle_Detection_Status</div><div>Rec_OD_Status</div></div></div></div></div></div>		008000		
Eu.LX.1298	Info	LX_UC2.4: Handle an Activation point	The Connection Domain-UseCase "LX_UC2.4: Handle an Activation point" defines the control of an Activation point.	Default		





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Eu.LX.1312	Info	<div><div>sd Alternative Scenario: Handle an isolate LX command [LX SD 2.5.2.1]</div><div><div>Subsystem - Electronic Interlocking</div><div><div>:External Level Crossing System</div></div></div><div><p>Alternative Scenario: Handle an isolate LX command [LX SD 2.5.2.1]</p><p><b>Precondition:</b></p><p>The PDI connection is established.</p><p><b>Interaction 2.5.2.1.A:</b></p><ol style="list-style-type: none"><li>- The <b>Subsystem - Electronic Interlocking</b> detects, that a track related activation or deactivation of the isolation of a LX is requested.</li><li>The <b>Subsystem - Electronic Interlocking</b> sends the command to activate or deactivate the isolation of the LX track related.</li><li>The <b>External Level Crossing System</b> provides the track related functional status.</li><li>The <b>External Level Crossing System</b> notifies the <b>Subsystem - Electronic Interlocking</b> of the track related functional status.</li><li>The <b>Subsystem - Electronic Interlocking</b> received the current track related functional status of the <b>External Level Crossing System</b>.</li></ol><p><b>Postcondition:</b></p><p>---</p></div><div><pre>sequenceDiagram     actor User     participant S as Subsystem - Electronic Interlocking     participant E as :External Level Crossing System      S-&gt;&gt;S: Req_TR_Isolation     S-&gt;&gt;E: Cd_Track_Related_Isolation     E-&gt;&gt;E: Prov_TR_Functional_Status     E-&gt;&gt;S: Msg_Track_Related_Functional_Status     S-&gt;&gt;S: Rec_TR_Functional_Status</pre></div></div>		007900		
Eu.LX.1483	Info	LX_UC2.6: Handle irregularities	The Connection Domain-UseCase "LX_UC2.6: Handle irregularities" defines the behaviour of the External Level Crossing System when an irregularity occurs.	Default		
Eu.LX.1484	Info	<div><div>sd Alternative Scenario: Report Track related Failure Status [LX SD 2.6.1]</div><div><div>Subsystem - Electronic Interlocking</div><div><div>:External Level Crossing System</div></div></div><div><p>Alternative Scenario: Report Track related Failure Status [LX SD 2.6.1]</p><p><b>Precondition:</b></p><p>The PDI connection is established.</p><p><b>Interaction 2.6.1.A:</b></p><ol style="list-style-type: none"><li>- The <b>External Level Crossing System</b> provides the track related failure status.</li><li>The <b>External Level Crossing System</b> notifies the <b>Subsystem - Electronic Interlocking</b> of the track related failure status.</li><li>The <b>Subsystem - Electronic Interlocking</b> received the current track related failure status of the <b>External Level Crossing System</b>.</li></ol><p><b>Postcondition:</b></p><p>---</p></div><div><pre>sequenceDiagram     actor User     participant S as Subsystem - Electronic Interlocking     participant E as :External Level Crossing System      E-&gt;&gt;E: Prov_TR_Failure_Status     E-&gt;&gt;S: Msg_Track_Related_Failure_Status     S-&gt;&gt;S: Rec_TR_Failure_Status</pre></div></div>		007900 008000 008200		



ID	Type	Requirement Part 1	Requirement Part 2	Appl.	JIRA	V 2.2 (2.A) > V 2.2 (1.A)
Eu.LX.1801	Def	<div><div>[Block] External Level Crossing System [Functional Viewpoint - System Requirements - Functional Architecture]</div><div><div><div>ibd [Block] External Level Crossing System [Functional Viewpoint - System Requirements - Functional Architecture]</div><div><div>«logical structural entity» External Level Crossing System</div></div><div>SCI-LX : SCI_LX_Subsystem_LX</div><div><div><div><div><div></div><div>p3inout</div><div>«functional entity» : F_SCI_EfeS_Sec</div><div>d50out_PDI_Connection_State</div></div><div><div>d50in_PDI_Connection_State</div><div>D1001in_Con_IM_007900</div><div></div></div><div><div>p3inout</div><div>D1002in_Con_IM_008000</div><div></div></div><div><div>P101inout</div><div>D1003in_Con_IM_008200</div><div></div></div><div><div></div><div>D1004in_Con_IM_007600</div><div></div></div></div><div><div><div>t21in_Internal_Input</div><div>«functional entity» : F_SCI_LX</div><div>d22in_Type</div><div>t28out_Start_Status_Report</div><div>t23out_Internal_Output</div><div>t37in_Own_Status_Report_Completed</div><div>d24out_Type</div></div><div><div><div>d24in_Type</div><div>t37out_Status_Report_Completed</div><div>t23in_Internal_Input</div><div>«functional entity» : F_SCI_LX_National</div><div>d22out_Type</div><div>t28in_Start_Status_Report</div><div>t21out_Internal_Output</div></div></div></div><div><div>LX1 : Basic_Data_Identifier</div><div>LX2 : Maintainer</div><div>SDI-LX : Subsystem_MDM_M</div><div>SMI-LX : Subsystem_MDM_M</div><div>SSI-LX : Subsystem Security Services Platform</div></div></div></div></div></div></div>		Default		
Eu.LX.1802	Def	LX1		Default		
Eu.LX.1803	Def	LX2	The functional Maintenance/Operation/Display interface to the Maintainer. The InformationFlow through the interface is defined by "Maintainer".	Default		
Eu.LX.1804	Def	SCI-LX		Default		
Eu.LX.1805	Def	SDI-LX	The functional Diagnostic interface to the Subsystem - Maintenance and Data Management for the InformationFlow through the interface, which is defined by "Subsystem_MDM_D".	Default		

ID	Type	Requirement Part 1	Requirement Part 2	Appl.	JIRA	V 2.2 (2.A) > V 2.2 (1.A)
Eu.LX.1806	Def	SMI-LX	The functional Maintenance Interface to the Subsystem - Maintenance and Data Management for the InformationFlow through the interface, which is defined by "Subsystem_MDM_M".	Default		
Eu.LX.1807	Def	SSI-LX	The Security Service Interface to the Subsystem Security Services Platform. The InformationFlow through the interface is further defined in SSI-LX (Subsystem - Security Services Platform).	Default		
Eu.LX.1811	Head	3.4 External Level Crossing System - Interfaces		Default		
Eu.LX.1816	Head	3.4.1 SCI-LX (Subsystem - Electronic Interlocking)		Default		
Eu.LX.1691	Head	3.4.1.1 SCI-LX - Logical Viewpoint		Default		
Eu.LX.1752	Head	3.4.1.1.1 SCI-LX - Logical Context		Default		
Eu.LX.1230	Def	<div><div>[Package] SCI-LX - Logical Context [Logical Viewpoint - Interface Definition - Logical Context]</div><div><div><div><div><div>«logical structural entity» SCI-LX</div></div><div><div>Subsystem Electronic Interlocking</div><div><div>«logical structural entity» Subsystem Electronic Interlocking</div><div>1SCI-LX</div></div></div><div><div>Adjacent Systems and System Actors</div><div><div>«environmental structural entity» External Level Crossing System</div><div>1SCI-LX</div></div></div></div></div></div></div>		Default		
Eu.LX.1631	Head	3.4.1.2 SCI-LX - Information Flows		Default		
Eu.LX.1767	Info	The generic commands and messages through the SCI-LX are specified in [Eu.Doc.119].		Default		
Eu.LX.1632	Def	<div><div>[Package] SCI-LX - Information Flows [Interface Requirements - Directions Of Exchanged Information Objects]</div><div><div><div><div><div>«information flow» SCI_LX</div><div>prov «signal» Cd_Block_LX prov «signal» Cd_Control_Activation_Point prov «signal» Cd_Crossing_Clear prov «signal» Cd_LX_Activation prov «signal» Cd_LX_Deactivation prov «signal» Cd_Track_Related_Activation prov «signal» Cd_Track_Related_Deactivation prov «signal» Cd_Track_Related_Isolation prov «signal» Cd_Track_Related_Prolong_Activation reqd «signal» Msg_Detection_Element_Status reqd «signal» Msg_LX_Command_Admissibility reqd «signal» Msg_LX_Failure_Status reqd «signal» Msg_LX_Functional_Status reqd «signal» Msg_LX_Monitoring_Status reqd «signal» Msg_Obstacle_Detection_Status reqd «signal» Msg_Status_Of_Activation_Point reqd «signal» Msg_Track_Related_Command_Admissibility reqd «signal» Msg_Track_Related_Failure_Status reqd «signal» Msg_Track_Related_Functional_Status reqd «signal» Msg_Track_Related_Monitoring_Status</div></div><div><div>«information flow» SCI_LX_Subsystem_EIL</div><div>proxyPorts «ProxyPort» P101inout : SCI_LX «ProxyPort» P1inout : SCI_GEN</div></div><div><div>«information flow» SCI_LX_Subsystem_LX</div><div>proxyPorts «ProxyPort» P101inout : SCI_LX «ProxyPort» P1inout : SCI_GEN</div></div><div><div>«information flow» SCI_GEN</div><div>prov «signal» : Cd_PDI_Version_Check reqd «signal» : Msg_PDI_Version_Check prov «signal» : Cd_Close_PDI prov «signal» : Cd_Initialisation_Request reqd «signal» : Msg_Start_Initialisation reqd «signal» : Msg_Initialisation_Completed prov «signal» : Cd_Release_PDI_for_Maintenance reqd «signal» : Msg_PDI_Available reqd «signal» : Msg_PDI_Not_Available reqd «signal» : Msg_Reset_PDI</div></div></div></div></div></div>		Default		

ID	Type	Requirement Part 1	Requirement Part 2	Appl.	JIRA	V 2.2 (2.A) > V 2.2 (1.A)
Eu.LX.1732	Def	Cd_Block_LX	Command (Cd) from Subsystem - Electronic Interlocking to External Level Crossing System to block or unblock the LX for commands.	008000		
Eu.LX.1733	Def	Cd_Control_Activation_Point	Command (Cd) from Subsystem - Electronic Interlocking to External Level Crossing System to request to enable or to disable a determined Activation point.	007900 008000		
Eu.LX.1734	Def	Cd_Crossing_Clear	Command (Cd) from Subsystem - Electronic Interlocking to External Level Crossing System that the Level Crossing protection area is free of obstacles.	008000		
Eu.LX.1735	Def	Cd_LX_Activation	Command (Cd) from Subsystem - Electronic Interlocking to External Level Crossing System to activate LX related.	007600 007900 008200		
Eu.LX.1736	Def	Cd_LX_Deactivation	Command (Cd) from Subsystem - Electronic Interlocking to External Level Crossing System to deactivate LX related.	007600 007900 008200		
Eu.LX.1737	Def	Cd_Track_Related_Activation	Command (Cd) from Subsystem - Electronic Interlocking to External Level Crossing System to activate track or route related.	007900 008000 008200		
Eu.LX.1738	Def	Cd_Track_Related_Deactivation	Command (Cd) from Subsystem - Electronic Interlocking to External Level Crossing System to deactivate the LX track related.	007900 008000 008200		
Eu.LX.1739	Def	Cd_Track_Related_Isolation	Command (Cd) from Subsystem - Electronic Interlocking to External Level Crossing System to isolate the LX track related.	007900		
Eu.LX.1740	Def	Cd_Track_Related_Prolong_Activation	Command (Cd) from Subsystem - Electronic Interlocking to External Level Crossing System to either prolong an activated LX track related or to cancel the prolongation of the activated LX track related.	007900 008000		
Eu.LX.1741	Def	Msg_Detection_Element_Status	Message (Msg) from External Level Crossing System to Subsystem - Electronic Interlocking about a changed Detection element status.	007600 007900		
Eu.LX.1742	Def	Msg_LX_Command_Admissibility	Message (Msg) from External Level Crossing System to Subsystem - Electronic Interlocking to inform about LX related admissible commands.	008000 008200		
Eu.LX.1743	Def	Msg_LX_Failure_Status	Message (Msg) from External Level Crossing System to Subsystem - Electronic Interlocking that the LX failure status has been changed.	Default		

ID	Type	Requirement Part 1	Requirement Part 2	Appl.	JIRA	V 2.2 (2.A) > V 2.2 (1.A)
Eu.LX.1744	Def	Msg_LX_Functional_Status	Message (Msg) from External Level Crossing System to Subsystem - Electronic Interlocking that the LX functional status has been changed.	Default		
Eu.LX.1745	Def	Msg_LX_Monitoring_Status	Message (Msg) from External Level Crossing System to Subsystem - Electronic Interlocking that the LX monitoring status has been changed.	007900 008000 008200		
Eu.LX.1746	Def	Msg_Obstacle_Detection_Status	Message (Msg) from External Level Crossing System to Subsystem - Electronic Interlocking about a changed Obstacle detector status.	008000		
Eu.LX.1747	Def	Msg_Status_Of_Activation_Point	Message (Msg) from External Level Crossing System to Subsystem - Electronic Interlocking to report the status of determined Activation Point(s).	008000		
Eu.LX.1748	Def	Msg_Track_Related_Command_Admissibility	Message (Msg) from External Level Crossing System to Subsystem - Electronic Interlocking to inform about track related admissible commands.	008000 008200		
Eu.LX.1749	Def	Msg_Track_Related_Failure_Status	Message (Msg) from External Level Crossing System to Subsystem - Electronic Interlocking that the Track related failure status has been changed.	007900 008000 008200		
Eu.LX.1750	Def	Msg_Track_Related_Functional_Status	Message (Msg) from External Level Crossing System to Subsystem - Electronic Interlocking that a Track related functional status has been changed.	007900 008000 008200		
Eu.LX.1751	Def	Msg_Track_Related_Monitoring_Status	Message (Msg) from External Level Crossing System to Subsystem - Electronic Interlocking that a Track related monitoring status has been changed.	007900 008000 008200		
Eu.LX.1658	Head	3.4.1.3 SCI-LX - Functional Viewpoint		Default		
Eu.LX.1730	Head	3.4.1.3.1 SCI-LX - Functional Partitioning		Default		

ID	Type	Requirement Part 1	Requirement Part 2	Appl.	JIRA	V 2.2 (2.A) > V 2.2 (1.A)
Eu.LX.1493	Def	<div><div>[Package] SCI-LX - Functional Partitioning [Functional Viewpoint - Interface Requirements - Functional Entities]</div><div><div>bdd [Package] SCI-LX - Functional Partitioning [Functional Viewpoint - Interface Requirements - Functional Entities]</div><div><div><div><div>Subsystem Electronic Interlocking</div><div><div>«logical structural entity» Subsystem Electronic Interlocking</div><div>SCI-LX</div></div><div><div>1</div><div>1</div><div>1</div></div></div><div><div>SCI-XX EfeS - Functional Entities</div><div><div>«functional entity» S_SCI_EfeS_Prim</div></div><div><div>1</div></div></div><div><div>SCI-LX - Functional Viewpoint</div><div><div>«functional entity» S_SCI_LX</div><div>«functional entity» S_SCI_LX_National</div></div><div><div>1</div><div>1</div></div></div></div><div><div>Adjacent Systems and System Actors</div><div><div>«environmental structural entity» External Level Crossing System</div><div>SCI-LX</div></div><div><div>1</div><div>1</div><div>1</div></div></div></div><div><div>SCI-LX</div><div>«logical structural entity» SCI-LX</div></div><div><div>SCI-LX</div><div>«functional entity» F_SCI_EfeS_Sec</div><div>1</div></div><div><div>SCI-LX</div><div>«functional entity» F_SCI_LX</div><div>1</div></div><div><div>SCI-LX</div><div>«functional entity» F_SCI_LX_National</div><div>1</div></div></div></div>		Default		
Eu.LX.1272	Info	The generic requirements are specified in [Eu.Doc.119].		Default		
Eu.LX.1728	Head	3.4.1.3.2 SCI-LX - Functional Architecture		Default		
Eu.LX.1491	Info	SCI-LX		Default		



ID	Type	Requirement Part 1	Requirement Part 2	Appl.	JIRA	V 2.2 (2.A) > V 2.2 (1.A)
Eu.LX.1492	Def	<div><div>[Block] SCI-LX [Functional Viewpoint - Interface Requirements - Functional Architecture]</div><div><div>ibd [Block] SCI-LX [Functional Viewpoint - Interface Requirements - Functional Architecture]</div><div><div>«logical structural entity» SCI-LX</div><div><div><div><div>«participant» {end = SCI-LX} «logical structural entity» InLink : Subsystem Electronic Interlocking</div><div><div><div><div>P1inout : ~SCI_GEN «functional entity» SCI-LX Gen EIL : S_SCI_EfeS_Prim</div><div><div>d50out_PDI_Connection_State</div><div>d50_PDI_Connection_State : String</div></div><div><div>d32in_Type</div><div>t31in_Internal_Input</div><div>d34out_Type</div><div>t33out_Internal_Output</div></div><div><div>d32out_Type</div><div>t31out_Internal_Output P101inout : ~SCI_LX</div><div>d34in_Type</div><div>t33in_Internal_Input</div></div><div>«functional entity» SCI-LX EIL National : S_SCI_LX_National</div></div><div><div>EIL3 : SCI_LX_Subsystem_EIL</div><div><div>P101inout : ~SCI_LX</div><div>P101inout : SCI_LX</div></div><div><div>«participant» {end = SCI-LX} «environmental structural entity» InLink : External Level Crossing System</div><div><div><div><div>P1inout : SCI_GEN «functional entity» SCI-LX Gen LX : F_SCI_EfeS_Sec p3inout : ~F_SCI_Specific</div><div><div>d50out_PDI_Connection_State</div><div>d50in_PDI_Connection_State</div><div>t28out_Start_Status_Report</div><div>t37in_Own_Status_Report_Completed P101inout : SCI_LX</div><div>t21in_Internal_Input</div><div>d22in_Type</div><div>t23out_Internal_Output</div><div>d24out_Type</div></div><div><div>D1001in_Con_IM_007900</div><div>D1002in_Con_IM_008000</div><div>D1003in_Con_IM_008200</div><div>D1004in_Con_IM_007600</div></div><div><div>LX1 : SCI_LX_Subsystem_LX</div><div><div>P1inout : SCI_GEN</div><div>P101inout : SCI_LX</div></div><div><div>t28in_Start_Status_Report</div><div>t37out_Status_Report_Completed</div><div>t21out_Internal_Output</div><div>d22out_Type</div><div>t23in_Internal_Input</div><div>d24in_Type</div></div><div>«functional entity» SCI-LX LX National : F_SCI_LX_National</div></div></div></div></div></div></div></div></div></div></div></div></div></div></div>		Default		
Eu.LX.1729	Head	3.4.1.3.3 SCI-LX - Functional Entities		Default		
Eu.LX.1495	Info	F_SCI_LX		-		
Eu.LX.1507	Req	<div><div>[Block] F_SCI_LX [Functional Viewpoint - Interface Requirements - Functional Entity]</div><div><div>ibd [Block] F_SCI_LX [Functional Viewpoint - Interface Requirements - Functional Entity]</div><div><div>«functional entity» F_SCI_LX</div><div><div>Operation «Operation» cOp1_Internal_GenerateMessage (in ExternalInputType)</div><div><div><div>P101inout : SCI_LX</div><div>D1001in_Con_IM_007900 : Boolean</div><div>D1002in_Con_IM_008000 : Boolean</div><div>D1003in_Con_IM_008200 : Boolean</div><div>D1004in_Con_IM_007600 : Boolean</div><div>t21in_Internal_Input : PulsedIn</div><div>d22in_Type : String</div><div>t37in_Own_Status_Report_Completed : PulsedIn</div><div>d50in_PDI_Connection_State : String</div><div>p3inout : F_SCI_Specific</div><div>t23out_Internal_Output : PulsedOut</div><div>d24out_Type : String</div><div>t28out_Start_Status_Report : PulsedOut</div></div></div></div></div></div></div>		-		
Eu.LX.1498	Def	<div>/* cOp1_Internal_GenerateMessage */  if (ExternalInputType = "Msg_LX_Failure_Status") then</div>	cOp1 _Internal_GenerateMessag	-		

ID	Type	Requirement Part 1	Requirement Part 2	Appl.	JIRA	V 2.2 (2.A) > V 2.2 (1.A)
		<pre>send Msg_LX_Failure_Status to P101inout; elseif (ExternalInputType = "Msg_LX_Functional_Status") then   send Msg_LX_Functional_Status to P101inout; elseif (ExternalInputType = "Msg_LX_Monitoring_Status" AND (D1001in_Con_IM_007900 OR D1002in_Con_IM_008000 OR D1003in_Con_IM_008200)) then   send Msg_LX_Monitoring_Status to P101inout; elseif (ExternalInputType = "Msg_Track_related_Failure_Status" AND(D1001in_Con_IM_007900 OR D1002in_Con_IM_008000 OR D1003in_Con_IM_008200)) then   send Msg_Track_Related_Failure_Status to P101inout; elseif (ExternalInputType = "Msg_Track_related_Functional_Status" AND (D1001in_Con_IM_007900 OR D1002in_Con_IM_008000 OR D1003in_Con_IM_008200)) then   send Msg_Track_Related_Functional_Status to P101inout; elseif (ExternalInputType = "Msg_Track_related_Monitoring_Status" AND (D1001in_Con_IM_007900 OR D1002in_Con_IM_008000 OR D1003in_Con_IM_008200)) then   send Msg_Track_Related_Monitoring_Status to P101inout; elseif (ExternalInputType = "Msg_Detection_Element_Status" AND (D1004in_Con_IM_007600 OR D1001in_Con_IM_007900)) then   send Msg_Detection_Element_Status to P101inout; elseif (ExternalInputType = "Msg_LX_Command_Admissibility" AND (D1002in_Con_IM_008000 OR D1003in_Con_IM_008200)) then   send Msg_LX_Command_Admissibility to P101inout; elseif (ExternalInputType = "Msg_Obstacle_Detection_Status" AND D1002in_Con_IM_008000) then   send Msg_Obstacle_Detection_Status to P101inout; elseif (ExternalInputType = "Msg_Status_Of_Activation_Point" AND D1002in_Con_IM_008000) then   send Msg_Status_Of_Activation_Point to P101inout; elseif (ExternalInputType = "Msg_Track_related_Command_Admissibility" AND (D1002in_Con_IM_008000 or D1003in_Con_IM_008200)) then   send Msg_Track_Related_Command_Admissibility to P101inout; end if</pre>	e			
Eu.LX.1500	Def	D1001in_Con_IM_007900	The port D1001in_Con_007900 provides the configuration value whether an interlocking is configured for the infrastructure manager 007900.	-		
Eu.LX.1501	Def	D1002in_Con_IM_008000	The port D1002in_Con_008000 provides the configuration value whether an interlocking is configured for the infrastructure manager 008000.	-		
Eu.LX.1502	Def	D1003in_Con_IM_008200	The port D1003in_Con_008200 provides the configuration value whether an interlocking is configured for the infrastructure manager 008200.	-		
Eu.LX.1770	Def	D1004in_Con_IM_007600	The port D1004in_Con_IM_007600 provides the configuration value whether an interlocking is configured for the infrastructure manager 007600.	-		
Eu.LX.1534	Def	t21in_Internal_Input		-		
Eu.LX.1505	Def	d22in_Type		-		
Eu.LX.1539	Def	t37in_Own_Status_Report_Completed		-		
Eu.LX.1597	Def	t28out_Start_Status_Report		-		
Eu.LX.1535	Def	t23out_Internal_Output		-		
Eu.LX.1506	Def	d24out_Type		-		
Eu.LX.1660	Def	P101inout	The port P101inout exchanges information objects according to SCI_LX_Subsystem_LX.	-		
Eu.LX.1508	Info	F_SCI_LX - Behaviour		-		

ID	Type	Requirement Part 1	Requirement Part 2	Appl.	JIRA	V 2.2 (2.A) > V 2.2 (1.A)
Eu.LX.1529	Req	<div>Functional Viewpoint - Interface Requirements - Functional Entity STD 1</div> <div>stm [State Machine] F_SCI_LX - Behaviour [Functional Viewpoint - Interface Requirements - Functional Entity STD 1]</div> <div><div><div><div><div><div>Initial0</div><div></div></div><div></div><div><div>when( d50in_PDI_Connection_State = "READY_FOR_PDI_NO_SCP" OR d50in_PDI_Connection_State = "READY_FOR_PDI" OR d50in_PDI_Connection_State = "SUSPENDED" )/</div></div></div><div>SENDING_REPORTS_AND_RECEIVING_COMMANDS</div><div><div><div><div>Initial1</div><div>WAITING</div></div><div>Start_Status_Report/t28in_Start_Status_Report := TRUE;</div><div><div>SENDING_STATUS_REPORT</div><div><div>when( t21in_Internal_Input )/ cOp1_Internal_GenerateMessage (d22in_Type) ; when( t37in_Own_Status_Report_Completed )/send Status_Report_Completed to p3inout;</div></div></div><div><div>PDI_CONNECTION_ESTABLISHED</div><div><div>when( t21in_Internal_Input )/cOp1_Internal_GenerateMessage (d22in_Type) ; Cd_Track_Related_Activation[D1001in_Con_IM_007900 OR D1002in_Con_IM_008000 OR D1003in_Con_IM_008200]/d24out_Type := "Cd_Track_related_Activation"; t23out_Internal_Output := TRUE; Cd_Track_Related_Deactivation[D1001in_Con_IM_007900 OR D1002in_Con_IM_008000 OR D1003in_Con_IM_008200]/d24out_Type := "Cd_Track_related_Deactivation"; t23out_Internal_Output := TRUE; Cd_Control_Activation_Point[D1001in_Con_IM_007900 OR D1002in_Con_IM_008000]/d24out_Type := "Cd_Control_Activation_Point"; t23out_Internal_Output := TRUE; Cd_LX_Activation[D1004in_Con_IM_007600 OR D1001in_Con_IM_007900 OR D1003in_Con_IM_008200]/d24out_Type := "Cd_LX_Activation"; t23out_Internal_Output := TRUE; Cd_LX_Deactivation[D1004in_Con_IM_007600 OR D1001in_Con_IM_007900 OR D1003in_Con_IM_008200]/d24out_Type := "Cd_LX_Deactivation"; t23out_Internal_Output := TRUE; Cd_Block_LX[D1002in_Con_IM_008000]/d24out_Type := "Cd_Block_LX"; t23out_Internal_Output := TRUE; Cd_Track_Related_Isolation[D1001in_Con_IM_007900]/d24out_Type := "Cd_Track_Related_Isolation"; t23out_Internal_Output := TRUE; Cd_Track_Related_Prolong_Activation[D1001in_Con_IM_007900 OR D1002in_Con_IM_008000]/d24out_Type := "Cd_Track_related_Prolong_Activation"; t23out_Internal_Output := TRUE; Cd_Crossing_Clear[D1002in_Con_IM_008000]/d24out_Type := "Cd_Crossing_Clear"; t23out_Internal_Output := TRUE;</div></div></div></div></div></div></div></div>	<div>This state machine diagram describes the requirements for the following functionalities:</div> <div>- receives the observed track related activation status from internal logic and reports this to the Subsystem - Electronic Interlocking</div> <div>- receives the observed track related deactivation status from internal logic and reports this to the Subsystem - Electronic Interlocking</div> <div>- receives the observed control activation point status from internal logic and reports this to the Subsystem - Electronic Interlocking</div> <div>- receives the observed LX activation status from internal logic and reports this to the Subsystem - Electronic Interlocking</div> <div>- receives the observed LX deactivation status from internal logic and reports this to the Subsystem - Electronic Interlocking</div> <div>- receives the observed Block LX status from internal logic and reports this to the Subsystem - Electronic Interlocking</div> <div>- receives the observed track related isolation status from internal logic and reports this to the Subsystem - Electronic Interlocking</div> <div>- receives the observed track related prolong activation status from internal logic and reports this to the Subsystem - Electronic Interlocking</div> <div>- receives the observed crossing clear status from internal logic and reports this to the Subsystem - Electronic Interlocking</div>	-		

ID	Type	Requirement Part 1	Requirement Part 2	Appl.	JIRA	V 2.2 (2.A) > V 2.2 (1.A)
Eu.LX.1509	Def	Initial0		-		
Eu.LX.1510	Def	/{Initial0 - SENDING_REPORTS_AND_RECEIVING_COMMANDS}		-		
Eu.LX.1515	Def	SENDING_REPORTS_AND_RECEIVING_COMMANDS		-		
Eu.LX.1518	Def	Initial1		-		
Eu.LX.1519	Def	/{Initial1 - WAITING}		-		
Eu.LX.1522	Def	SENDING_STATUS_REPORT		-		
Eu.LX.1618	Def	when(t21in_Internal_Input)/ cOp1_Internal_GenerateMessage(d22in_Type);{State-internal in SENDING_STATUS_REPORT}		-		
Eu.LX.1818	Def	when(t37in_Own_Status_Report_Completed)/send Status_Report_Completed to p3inout;{State-internal in SENDING_STATUS_REPORT}		-		
Eu.LX.1528	Def	when(d50in_PDI_Connection_State = "ESTABLISHED")/{SENDING_STATUS_REPORT - PDI_CONNECTION_ESTABLISHED}		-		
Eu.LX.1527	Def	when(d50in_PDI_Connection_State = "READY_FOR_PDI_NO_SCP" OR d50in_PDI_Connection_State = "READY_FOR_PDI" OR d50in_PDI_Connection_State = "SUSPENDED")/{SENDING_REPORTS_AND_RECEIVING_COMMANDS - SENDING_REPORTS_AND_RECEIVING_COMMANDS}		-		
Eu.LX.1513	Def	PDI_CONNECTION_ESTABLISHED		-		
Eu.LX.1614	Def	Cd_Track_Related_Activation[D1001in_Con_IM_007900 OR D1002in_Con_IM_008000 OR D1003in_Con_IM_008200]/d24out_Type := "Cd_Track_related_Activation"; t23out_Internal_Output := TRUE;{State-internal in PDI_CONNECTION_ESTABLISHED}		-		
Eu.LX.1615	Def	when(t21in_Internal_Input)/cOp1_Internal_GenerateMessage(d22in_Type);{State-internal in PDI_CONNECTION_ESTABLISHED}		-		
Eu.LX.1661	Def	Cd_Track_Related_Prolong_Activation[D1001in_Con_IM_007900 OR D1002in_Con_IM_008000]/d24out_Type := "Cd_Track_related_Prolong_Activation"; t23out_Internal_Output := TRUE;{State-internal in PDI_CONNECTION_ESTABLISHED}		-		
Eu.LX.1662	Def	Cd_Block_LX[D1002in_Con_IM_008000]/d24out_Type := "Cd_Block_LX"; t23out_Internal_Output := TRUE;{State-internal in PDI_CONNECTION_ESTABLISHED}		-		
Eu.LX.1663	Def	Cd_Control_Activation_Point[D1001in_Con_IM_007900 OR D1002in_Con_IM_008000]/d24out_Type := "Cd_Control_Activation_Point"; t23out_Internal_Output := TRUE;{State-internal in PDI_CONNECTION_ESTABLISHED}		-		
Eu.LX.1664	Def	Cd_Crossing_Clear[D1002in_Con_IM_008000]/d24out_Type := "Cd_Crossing_Clear"; t23out_Internal_Output := TRUE;{State-internal in PDI_CONNECTION_ESTABLISHED}		-		
Eu.LX.1665	Def	Cd_LX_Activation[D1004in_Con_IM_007600 OR D1001in_Con_IM_007900 OR D1003in_Con_IM_008200]/d24out_Type := "Cd_LX_Activation"; t23out_Internal_Output := TRUE;{State-internal in PDI_CONNECTION_ESTABLISHED}		-		
Eu.LX.1666	Def	Cd_LX_Deactivation[D1004in_Con_IM_007600 OR D1001in_Con_IM_007900 OR D1003in_Con_IM_008200]/d24out_Type := "Cd_LX_Deactivation"; t23out_Internal_Output := TRUE;{State-internal in PDI_CONNECTION_ESTABLISHED}		-		
Eu.LX.1667	Def	Cd_Track_Related_Deactivation[D1001in_Con_IM_007900 OR D1002in_Con_IM_008000 OR D1003in_Con_IM_008200]/d24out_Type := "Cd_Track_related_Deactivation"; t23out_Internal_Output := TRUE;{State-internal in PDI_CONNECTION_ESTABLISHED}		-		
Eu.LX.1668	Def	Cd_Track_Related_Isolation[D1001in_Con_IM_007900]/d24out_Type := "Cd_Track_Related_Isolation"; t23out_Internal_Output := TRUE;{State-internal in PDI_CONNECTION_ESTABLISHED}		-		
Eu.LX.1511	Def	WAITING		-		
Eu.LX.1512	Def	Start_Status_Report/t28in_Start_Status_Report := TRUE;{WAITING - SENDING_STATUS_REPORT}		-		
Eu.LX.1817	Def	d50in_PDI_Connection_State		-		
Eu.LX.1819	Def	p3inout		-		
Eu.LX.1587	Info	F_SCI_LX_National		-		
Eu.LX.1590	Req	<div><div>[Block] F_SCI_LX_National [Functional Viewpoint - Interface Requirements - Functional Entity]</div><div><div><div><div>ibd [Block] F_SCI_LX_National [Functional Viewpoint - Interface Requirements - Functional Entity]</div><div><div>«functional entity» F_SCI_LX_National</div><div><div><div>t23in_Internal_Input : PulsedInt21out_Internal_Output : PulsedOut</div><div><div>d24in_Type : Stringd22out_Type : String</div><div><div>t28in_Start_Status_Report : PulsedInt37out_Status_Report_Completed : PulsedOut</div></div></div></div></div></div></div></div></div></div>		-		
Eu.LX.1591	Def	t23in_Internal_Input		-		
Eu.LX.1588	Def	d24in_Type		-		
Eu.LX.1596	Def	t28in_Start_Status_Report		-		
Eu.LX.1592	Def	t21out_Internal_Output		-		
Eu.LX.1589	Def	d22out_Type		-		
Eu.LX.1593	Def	t37out_Status_Report_Completed		-		
Eu.LX.1541	Info	S_SCI_LX		-		

ID	Type	Requirement Part 1	Requirement Part 2	Appl.	JIRA	V 2.2 (2.A) > V 2.2 (1.A)
Eu.LX.1550	Req	<div>[Block] S_SCI_LX [Functional Viewpoint - Interface Requirements - Functional Entity]</div> <div><div>ibd [Block] S_SCI_LX [Functional Viewpoint - Interface Requirements - Functional Entity]</div><div><div>«functional entity» S_SCI_LX</div><div>Operation «Operation» cOp1_SCI_LX_GenerateCommand (in ExternalInputType)</div><div><div>P101inout : ~SCI_LX</div><div>t31out_Internal_Output : PulsedOut</div><div>t33in_Internal_Input : PulsedIn</div><div>d32out_Type : String</div><div>d34in_Type : String</div><div>d50_PDI_Connection_State : String</div></div></div></div>		-		
Eu.LX.1543	Def	<pre>/* cOp1_SCI_LX_GenerateCommand */  if ExternalInputType = "Cd_Track_related_Activation" then     send Cd_Track_Related_Activation to P101inout; elseif ExternalInputType = "Cd_Track_related_Deactivation" then     send Cd_Track_Related_Deactivation to P101inout; elseif ExternalInputType = "Cd_Control_Activation_Point" then     send Cd_Control_Activation_Point to P101inout; elseif ExternalInputType = "Cd_LX_Activation" then     send Cd_LX_Activation to P101inout; elseif ExternalInputType = "Cd_LX_Deactivation" then     send Cd_LX_Deactivation to P101inout; elseif ExternalInputType = "Cd_Block_LX" then     send Cd_Block_LX to P101inout; elseif ExternalInputType = "Cd_Track_Related_Isolation" then     send Cd_Track_Related_Isolation to P101inout; elseif ExternalInputType = "Cd_Track_related_Prolong_Activation" then     send Cd_Track_Related_Prolong_Activation to P101inout; elseif ExternalInputType = "Cd_Crossing_Clear" then     send Cd_Crossing_Clear to P101inout; end if</pre>	cOp1_SCI_LX_GenerateCommand	-		
Eu.LX.1583	Def	t33in_Internal_Input		-		
Eu.LX.1548	Def	d34in_Type		-		
Eu.LX.1584	Def	t31out_Internal_Output		-		
Eu.LX.1549	Def	d32out_Type		-		
Eu.LX.1669	Def	P101inout	The port P101inout exchanges information objects according to SCI_LX_Subsystem_EIL.	-		
Eu.LX.1551	Info	S_SCI_LX - Behaviour		-		
Eu.LX.1572	Req	<div>Functional Viewpoint - Interface Requirements - Functional Entity STD 2</div> <div><div>stm [State Machine] S_SCI_LX - Behaviour [Functional Viewpoint - Interface Requirements - Functional Entity STD 2]</div><div><div>Initial0</div><div>SENDING_COMMANDS_AND_RECEIVING_MESSAGES</div><div>when( t33in_Internal_Input ) [d50_PDI_Connection_State == "ESTABLISHED"] / cOp1_SCI_LX_GenerateCommand (d34in_Type) ; Msg_LX_Failure_Status/d32out_Type := "Msg_LX_Failure_Status"; t31out_Internal_Output := TRUE; Msg_LX_Functional_Status/d32out_Type := "Msg_LX_Functional_Status"; t31out_Internal_Output := TRUE; Msg_LX_Monitoring_Status/d32out_Type := "Msg_LX_Monitoring_Status"; t31out_Internal_Output := TRUE; Msg_Track_Related_Failure_Status/d32out_Type := "Msg_Track_related_Failure_Status"; t31out_Internal_Output := TRUE; Msg_Track_Related_Functional_Status/d32out_Type := "Msg_Track_related_Functional_Status"; t31out_Internal_Output := TRUE; Msg_Track_Related_Monitoring_Status/d32out_Type := "Msg_Track_related_Monitoring_Status"; t31out_Internal_Output := TRUE; Msg_Detection_Element_Status/d32out_Type := "Msg_Detection_Element_Status"; t31out_Internal_Output := TRUE; Msg_LX_Command_Admissibility/d32out_Type := "Msg_LX_Command_Admissibility"; t31out_Internal_Output := TRUE; Msg_Obstacle_Detection_Status/d32out_Type := "Msg_Obstacle_Detection_Status"; t31out_Internal_Output := TRUE; Msg_Status_Of_Activation_Point/d32out_Type := "Msg_Status_Of_Activation_Point"; t31out_Internal_Output := TRUE; Msg_Track_Related_Command_Admissibility/d32out_Type := "Msg_Track_related_Command_Admissibility"; t31out_Internal_Output := TRUE;</div></div></div>	<div>This state machine diagram describes the requirements for the following functionalities:</div> <div>- receives the observed track related activation status from internal logic and reports this to the Subsystem - Electronic Interlocking</div> <div>- receives the observed track related deactivation status from internal logic and reports this to the Subsystem - Electronic Interlocking</div> <div>- receives the observed control activation point status from internal logic and reports this to the Subsystem - Electronic Interlocking</div> <div>- receives the observed LX activation status from internal logic and reports this to the Subsystem - Electronic Interlocking</div> <div>- receives the observed LX deactivation status from internal logic and reports this to the Subsystem - Electronic Interlocking</div> <div>- receives the observed Block LX status from internal logic and reports</div>	-		



ID	Type	Requirement Part 1	Requirement Part 2	Appl.	JIRA	V 2.2 (2.A) > V 2.2 (1.A)
			this to the Subsystem - Electronic Interlocking - receives the observed track related isolation status from internal logic and reports this to the Subsystem - Electronic Interlocking - receives the observed track related prolong activation status from internal logic and reports this to the Subsystem - Electronic Interlocking - receives the observed crossing clear status from internal logic and reports this to the Subsystem - Electronic Interlocking			
Eu.LX.1552	Def	Initial0		-		
Eu.LX.1553	Def	/ {Initial0 - SENDING_COMMANDS_AND_RECEIVING_MESSAGES}		-		
Eu.LX.1556	Def	SENDING_COMMANDS_AND_RECEIVING_MESSAGES		-		
Eu.LX.1620	Def	Msg_LX_Failure_Status/d32out_Type := "Msg_LX_Failure_Status"; t31out_Internal_Output := TRUE; {State-internal in SENDING_COMMANDS_AND_RECEIVING_MESSAGES}		-		
Eu.LX.1621	Def	when(t33in_Internal_Input)[d50_PDI_Connection_State = = "ESTABLISHED"]/cOp1_SCI_LX_GenerateCommand(d34in_Type); {State-internal in SENDING_COMMANDS_AND_RECEIVING_MESSAGES}		-		
Eu.LX.1670	Def	Msg_Track_Related_Failure_Status/d32out_Type := "Msg_Track_related_Failure_Status"; t31out_Internal_Output := TRUE; {State-internal in SENDING_COMMANDS_AND_RECEIVING_MESSAGES}		-		
Eu.LX.1671	Def	Msg_Track_Related_Functional_Status/d32out_Type := "Msg_Track_related_Functional_Status"; t31out_Internal_Output := TRUE; {State-internal in SENDING_COMMANDS_AND_RECEIVING_MESSAGES}		-		
Eu.LX.1672	Def	Msg_Track_Related_Monitoring_Status/d32out_Type := "Msg_Track_related_Monitoring_Status"; t31out_Internal_Output := TRUE; {State-internal in SENDING_COMMANDS_AND_RECEIVING_MESSAGES}		-		
Eu.LX.1673	Def	Msg_Detection_Element_Status/d32out_Type := "Msg_Detection_Element_Status"; t31out_Internal_Output := TRUE; {State-internal in SENDING_COMMANDS_AND_RECEIVING_MESSAGES}		-		
Eu.LX.1674	Def	Msg_LX_Command_Admissibility/d32out_Type := "Msg_LX_Command_Admissibility"; t31out_Internal_Output := TRUE; {State-internal in SENDING_COMMANDS_AND_RECEIVING_MESSAGES}		-		
Eu.LX.1675	Def	Msg_LX_Functional_Status/d32out_Type := "Msg_LX_Functional_Status"; t31out_Internal_Output := TRUE; {State-internal in SENDING_COMMANDS_AND_RECEIVING_MESSAGES}		-		
Eu.LX.1676	Def	Msg_LX_Monitoring_Status/d32out_Type := "Msg_LX_Monitoring_Status"; t31out_Internal_Output := TRUE; {State-internal in SENDING_COMMANDS_AND_RECEIVING_MESSAGES}		-		
Eu.LX.1677	Def	Msg_Obstacle_Detection_Status/d32out_Type := "Msg_Obstacle_Detection_Status"; t31out_Internal_Output := TRUE; {State-internal in SENDING_COMMANDS_AND_RECEIVING_MESSAGES}		-		
Eu.LX.1678	Def	Msg_Status_Of_Activation_Point/d32out_Type := "Msg_Status_Of_Activation_Point"; t31out_Internal_Output := TRUE; {State-internal in SENDING_COMMANDS_AND_RECEIVING_MESSAGES}		-		
Eu.LX.1679	Def	Msg_Track_Related_Command_Admissibility/d32out_Type := "Msg_Track_related_Command_Admissibility"; t31out_Internal_Output := TRUE; {State-internal in SENDING_COMMANDS_AND_RECEIVING_MESSAGES}		-		
Eu.LX.1820	Def	d50_PDI_Connection_State		-		
Eu.LX.1601	Info	S_SCI_LX_National		-		
Eu.LX.1604	Req	<div>[Block] S_SCI_LX_National [Functional Viewpoint - Interface Requirements - Functional Entity] <div><div>ibd [Block] S_SCI_LX_National [Functional Viewpoint - Interface Requirements - Functional Entity]</div><div><div>«functional entity» S_SCI_LX_National</div><div><div>t31in_Internal_Input : PulsedInt33out_Internal_Output : PulsedOut</div><div>d32in_Type : Stringd34out_Type : String</div></div></div></div></div>		-		
Eu.LX.1605	Def	t31in_Internal_Input		-		
Eu.LX.1602	Def	d32in_Type		-		
Eu.LX.1606	Def	t33out_Internal_Output		-		
Eu.LX.1603	Def	d34out_Type		-		
Eu.LX.1827	Head	3.4.2 SDI-LX (Subsystem - Maintenance and Data Management)		Default		
Eu.LX.1828	Info	The generic data points through the SDI-LX are specified in Eu.Doc.94.		Default	EULX-612	a_JIRA_BL4R4: EULX-612
Eu.LX.1829	Head	3.4.3 SMI-LX (Subsystem - Maintenance and Data Management)		Default		
Eu.LX.1830	Info	The generic InformationFlows and the related FlowProperties through the SMI-LX are specified in Eu.Doc.120.		Default	EULX-612	a_JIRA_BL4R4: EULX-612
Eu.LX.1831	Head	3.4.4 SSI-LX (Subsystem - Security Services Platform)		Default		
Eu.LX.1832	Info	The generic content through SSI-LX is specified in [SP-SEC-ServSpec]		Default	EULX-612 EULX-646	Object Text: The generic content through SSI-LX is specified in Eu.Doc.117.[SP-SEC-

ID	Type	Requirement Part 1	Requirement Part 2	Appl.	JIRA	V 2.2 (2.A) > V 2.2 (1.A)
						<a href="#">ServSpec]</a> <b>a_JIRA_BL4R4:</b> <a href="#">EULX-612</a> <a href="#">EULX-646</a>
Eu.LX.1812	Head	<b>3.4.5 LX1 (Basic Data identifier)</b>		Default		
Eu.LX.1813	Info	The generic FlowSpecification and the related FlowProperties through LX1 are specified in Eu.Doc.20.		Default	EULX-612	<b>a_JIRA_BL4R4:</b> <a href="#">EULX-612</a>
Eu.LX.1814	Head	<b>3.4.6 LX2 (Maintainer)</b>		Default		
Eu.LX.1815	Info	The generic FlowProperties through LX2 are specified in Eu.Doc.20.		Default	EULX-612	<b>a_JIRA_BL4R4:</b> <a href="#">EULX-612</a>
Eu.LX.1774	Head	<b>4 RAMSS requirements</b>		Default		
Eu.LX.1775	Info	The requirements for reliability, availability, maintainability, safety and security are specified in [Eu.Doc.20].		Default		
Eu.LX.1776	Head	<b>5 Technical requirements</b>		Default		
Eu.LX.1777	Info	The generic technical requirements are specified in [Eu.Doc.20].		Default		
Eu.LX.1780	Head	<b>5.1 Specific technical interface requirements</b>		Default		
Eu.LX.1781	Head	<b>5.1.1 Interface to the Point of Service - Signalling (PoS - Signalling)</b>		Default		
Eu.LX.1782	Req	Via the technical interface <b>PoS-Signalling</b> the data of the functional interface "SCI-LX" shall be exchanged with the Subsystem - Electronic Interlocking as specified in [Eu.Doc.92].		Default		
Eu.LX.1783	Req	Via the technical interface <b>PoS-Signalling</b> the data of the functional interface "SMI-LX" shall be exchanged with the Subsystem - Maintenance and Data Management as specified in [Eu.Doc.76].		Default		
Eu.LX.1784	Req	Via the technical interface <b>PoS-Signalling</b> the data of the functional interface "SDI-LX" shall be exchanged with the Subsystem - Maintenance and Data Management as specified in [Eu.Doc.77].		Default		
Eu.LX.1785	Req	Via the technical interface <b>PoS-Signalling</b> the data of the functional interface "SSI-LX" shall be exchanged with the Subsystem - Security Services Platform as specified in [SP-SEC-ServSpec].		Default	EULX-646	<b>Object Text:</b> Via the technical interface PoS-Signalling the data of the functional interface "SSI-LX" shall be exchanged with the Subsystem - Security Services Platform as specified in [ <del>Eu.Doc.117</del> <a href="#">SP-SEC-ServSpec</a> ]. <b>a_JIRA_BL4R4:</b> <a href="#">EULX-646</a>
Eu.LX.1786	Head	<b>5.2 Time behaviour</b>		Default		
Eu.LX.1787	Info	The time values defined in the chapter Functional requirements specification (Eu.LX.1796) shall be configured for the operation of the External Level Crossing System.		Default		
Eu.LX.1788	Head	<b>5.3 Configuration and engineering data</b>		Default		
Eu.LX.1789	Head	<b>5.3.1 Specific data</b>		Default		
Eu.LX.1790	Req	The specific configuration and engineering data for the External Level Crossing System shall be defined by national specifications.		Default		
Eu.LX.1791	Req	Two different data sections can be loaded which are the safety-relevant data and the non safety-relevant data. The following definitions apply to the assignment of the sections:		Default		
Eu.LX.1792	Req	<ul style="list-style-type: none"><li>The non-safety-relevant configuration data shall be defined by national specifications. This data shall be used to calculate the CSNS.</li></ul>		Default		
Eu.LX.1793	Req	<ul style="list-style-type: none"><li>The remaining configuration data is currently categorised as safety-relevant. This data shall be used to calculate the CSS.</li></ul>		Default		
Eu.LX.1794	Req	<ul style="list-style-type: none"><li>The engineering data is safety-relevant. This data shall be used to calculate the CSS.</li></ul>		Default		