EULYNX Initiative

Europe's Rail Joint Undertaking

Interface specification SCI Generic

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Contents

ID	Type	Requirement
Eu.SCI-XX.PDI.6	Head	# 1 Introduction
Eu.SCI-XX.PDI.7	Head	## 1.1 Release information
Eu.SCI-XX.PDI.8	Info	[Eu.Doc.93] Interface specification SCI Generic CENELEC Phase: 5 Version: 3.2 (0.A) Approval date: 15.06.2023
Eu.SCI-XX.PDI.9	Info	**Version history**
Eu.SCI-XX.PDI.214	Info	version number: 3.0 (0.A) date: 16.05.2022 author: Filip Giering review: CCB changes: EUAR-508, EUAR-511, EUAR-513, EUAR-526
Eu.SCI-XX.PDI.216	Info	version number: 3.1 (0.A) date: 31.03.2023 author: Filip Giering review: changes: EUAR-558, EUAR-564, EUAR-578
Eu.SCI-XX.PDI.217	Info	version number: 3.2 (0.A) date: 28.06.2023 author: Filip Giering review: TACS Mirror Group changes: EUAR-586, EUAR-587, EUAR-589, EUAR-594, EUAR-612, EUAR-613
Eu.SCI-XX.PDI.11	Head	## 1.2 Impressum
Eu.SCI-XX.PDI.12	Info	Publishers: **Europe's Rail Joint Undertaking** https://rail-research.europa.eu/ **EULYNX Initiative** A full list of the EULYNX Partners can be found on www.eulynx.eu/index.php/members

ID	Type	Requirement
Eu.SCI-XX.PDI.13	Info	Responsible for this document: EU-Rail System Pillar Trackside Assets Control and Supervision domain
Eu.SCI-XX.PDI.14	Info	Copyright EULYNX Partners All information included or disclosed in this document is licensed under the European Union Public Licence EUPL, Version 1.2 or later.
Eu.SCI-XX.PDI.15	Head	**1.3 Purpose**
Eu.SCI-XX.PDI.16	Info	This document specifies the application layer of the standardised interface for safe communication between the interfacing partners.
Eu.SCI-XX.PDI.17	Info	This application layer is designated as SCI-XX.PDI.
Eu.SCI-XX.PDI.18	Info	This document contains the general requirements for communication and the technical specification (e.g. telegrams).
Eu.SCI-XX.PDI.19	Info	This specification does not define the detailed behaviour of the interfacing partners, nor the situations in which the defined telegrams are sent. This behaviour is the subject of the individual system specifications.
Eu.SCI-XX.PDI.21	Info	This document is intended for the following users: • safety authorities • infrastructure managers • safety assessors • signalling system suppliers • validators
Eu.SCI-XX.PDI.219	Info	This document is applicable for both the EU-Rail System Pillar target architecture and the EULYNX architecture. The document is delivered as a single specification fitting both the System Pillar documentation sets and the EULYNX documentation sets. EU-Rail System Pillar is the technical authority for this document.
Eu.SCI-XX.PDI.22	Head	**1.4 Applicable standards and regulations**
Eu.SCI-XX.PDI.23	Info	The applicable standards and regulations used in EULYNX are listed in the EULYNX Reference Document List [Eu.Doc.12].
Eu.SCI-XX.PDI.24	Info	The applicability of each reference of this specification is provided by the column "applicability" in the EULYNX Reference Document [Eu.Doc.12], when the value "SCI" is stated.
Eu.SCI-XX.PDI.25	Head	**1.5 Applicable documents**
Eu.SCI-XX.PDI.26	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].

ID	Type	Requirement
Eu.SCI-XX.PDI.27	Head	**1.6 Appendices**
Eu.SCI-XX.PDI.28	Info	*- intentionally left blank -*
Eu.SCI-XX.PDI.29	Head	**1.7 Terms and abbreviations**
Eu.SCI-XX.PDI.30	Info	The terms and abbreviations are listed in the EULYNX Glossary [Eu.Doc.9].
Eu.SCI-XX.PDI.31	Head	**1.8 Variability management**
Eu.SCI-XX.PDI.32	Info	This document describes harmonised requirements. Variability management is not applicable.
Eu.SCI-XX.PDI.33	Head	**1.9 Definition of object types**
Eu.SCI-XX.PDI.34	Info	The following definition for object types is applied in this document:
Eu.SCI-XX.PDI.35	Info	• "Req" - This denotes a mandatory requirement.
Eu.SCI-XX.PDI.36	Info	• "Info" - This denotes additional information to help understand the specification. These objects do not specify any additional requirements.
Eu.SCI-XX.PDI.37	Info	• "Head" - This denotes chapter headings.
Eu.SCI-XX.PDI.38	Head	**2 General requirements**
Eu.SCI-XX.PDI.220	Req	All references to Eu.Doc.16 refer to EULYNX System architecture specification version 2.2 (0.A)
Eu.SCI-XX.PDI.215	Req	All references to Eu.Doc.119 refer to Generic interface and subsystem requirements for SCI version 1.0 (3.A).
Eu.SCI-XX.PDI.211	Req	All references to Eu.Doc.92 refer to Interface Definition SCI version 4.2 (0.A).
Eu.SCI-XX.PDI.39	Head	**2.1 Version handling**
Eu.SCI-XX.PDI.40	Info	The communication partners shall check for a matching PDI-Version, whenever they attempt to establish the PDI connection.
Eu.SCI-XX.PDI.41	Info	Establishing the PDI connection is permitted only if the PDI-Versions of both communication partners are equal.
Eu.SCI-XX.PDI.42	Info	The PDI-Version 0xXX is defined in each baseline of the Interface specifications of SCI-XX.
Eu.SCI-XX.PDI.154	Info	The telegrams and other requirements defined in this document are valid for any PDI-Version of SCI-XX, as defined in the Interface specifications of SCI-XX.

<table>
<tr><th>ID</th><th>Type</th><th>Requirement</th></tr>
<tr><td>Eu.SCI-XX.PDI.43</td><td>Info</td><td>The PDI-Version is not directly corresponding to the baseline of the Interface specifications of SCI-XX. A PDI-Version change will not be required when the document version is updated due to minor changes without impact on PDI functionality (e.g. changes in terminology).</td></tr>
<tr><td>Eu.SCI-XX.PDI.44</td><td>Head</td><td><h2>2.2 Communication requirements</h2></td></tr>
<tr><td>Eu.SCI-XX.PDI.130</td><td>Req</td><td>A communication partner shall not be permitted to repeat the sending of a command or a message which is identical in its content to a command or message already sent before, as specified in Eu.SAS.119 see [Eu.Doc.16].</td></tr>
<tr><td>Eu.SCI-XX.PDI.48</td><td>Req</td><td>All transmitted telegrams shall comply with the telegram definition, in particular the sender of the telegram may only send the specified number of bytes and may not use any telegram definitions not specified here.</td></tr>
<tr><td>Eu.SCI-XX.PDI.212</td><td>Head</td><td><h2>2.3 Interface definition</h2></td></tr>
<tr><td>Eu.SCI-XX.PDI.213</td><td>Info</td><td>The definition of the interface SCI-XX is described in Eu.Doc.92.</td></tr>
<tr><td>Eu.SCI-XX.PDI.49</td><td>Head</td><td><h1>3 Telegrams SCI-XX.PDI</h1></td></tr>
<tr><td>Eu.SCI-XX.PDI.50</td><td>Info</td><td>This chapter defines the SCI-XX.PDI telegrams.</td></tr>
<tr><td>Eu.SCI-XX.PDI.51</td><td>Head</td><td><h2>3.1 Telegram structure</h2></td></tr>
<tr><td>Eu.SCI-XX.PDI.52</td><td>Info</td><td>SCI-XX.PDI telegram structure

<table>
<tr><th>Byte-Nr.</th><th>Content</th></tr>
<tr><td>00</td><td>Specific Protocol Type (1 Byte binary)</td></tr>
<tr><td>01..02</td><td>Message Type (2 Bytes binary)</td></tr>
<tr><td>03..22</td><td>Sender Identifier (20 Bytes ISO IEC 8859-1:1998)</td></tr>
<tr><td>23..42</td><td>Receiver Identifier (20 Bytes ISO IEC 8859-1:1998)</td></tr>
<tr><td>43..1023</td><td>Payload (max. 981 Bytes)</td></tr>
</table></td></tr>
<tr><td>Eu.SCI-XX.PDI.54</td><td>Info</td><td>Protocol Type
Protocol Type defines the applicability of the telegram to a specific interface.</td></tr>
<tr><td>Eu.SCI-XX.PDI.53</td><td>Req</td><td>The value of byte 0 in SCI-XX.PDI shall be as followed:
value meaning
-------- ----------</td></tr>
</table>

ID	Type	Requirement
		0x01 Electronic Interlocking - Adjacent Interlocking System 0x20 Electronic Interlocking - Train Detection System 0x30 Electronic Interlocking - Light Signal 0x40 Electronic Interlocking - Point 0x50 Electronic Interlocking - Radio Block Centre 0x60 Electronic Interlocking - Subsystem Level Crossing 0x70 Electronic Interlocking - Traffic Control System 0x90 Electronic Interlocking - Generic IO 0xC0 Electronic Interlocking - External Level Crossing System
Eu.SCI-XX.PDI.55	Info	**Message Type** The identification of a telegram of a protocol type is defined by message type.
Eu.SCI-XX.PDI.56	Info	**Sender Identifier** Identifier of the sender as in chapter 3.2.
Eu.SCI-XX.PDI.57	Info	**Receiver Identifier** Identifier of the receiver as in chapter 3.2.
Eu.SCI-XX.PDI.58	Info	**Payload** Payload contains the information objects to be exchanged among communication partners.
Eu.SCI-XX.PDI.59	Head	**3.2 Sender and Receiver Identifier**
Eu.SCI-XX.PDI.60	Req	All communication partners at the SCI-XX interface shall be identified either by an operational or technical identifier. For each message type it is specified, which identifier is to be used. The identifiers shall be structured according to Eu.SAS.1764 see [Eu.Doc.16].
Eu.SCI-XX.PDI.61	Req	In case of an operational identifier, the designator given by configuration shall be used.
Eu.SCI-XX.PDI.62	Req	In case of a technical identifier, the technical identifier (SubS_ID) given by configuration shall be used.
Eu.SCI-XX.PDI.65	Head	**3.3 Message and command type overview**
Eu.SCI-XX.PDI.66	Info	The following table shows permitted message types for the SCI-XX.PDI.

<table>
<tr><th>ID</th><th>Type</th><th>Requirement</th></tr>
<tr><td></td><td></td><td>
<table>
<tr><th>Message Type</th><th>Value</th><th>Purpose</th></tr>
<tr><td>command
PDI-Version check</td><td>0x0024</td><td>Request to check PDI-Version</td></tr>
<tr><td>message
PDI-Version check</td><td>0x0025</td><td>Answer to „PDI-Version check“ request</td></tr>
<tr><td>command
Initialisation Request</td><td>0x0021</td><td>Request for status information</td></tr>
<tr><td>message
Start Initialisation</td><td>0x0022</td><td>Beginning of status message transmission</td></tr>
<tr><td>message
Status Report Completed</td><td>0x0026</td><td>Status message transmission of one partner is completed</td></tr>
<tr><td>message
Initialisation Completed</td><td>0x0023</td><td>Status message transmission completed</td></tr>
<tr><td>command
Close PDI</td><td>0x0027</td><td>Request to close PDI connection</td></tr>
<tr><td>command
Release PDI for Maintenance</td><td>0x0028</td><td>Request to release PDI connection for Maintenance</td></tr>
<tr><td>message
PDI Available</td><td>0x0029</td><td>Status message transmission that PDI connection is available</td></tr>
<tr><td>message
PDI Not Available</td><td>0x002A</td><td>Status message transmission that PDI connection is not available</td></tr>
<tr><td>message
Reset PDI</td><td>0x002B</td><td>Status message transmission to reset PDI connection</td></tr>
</table>
</td></tr>
<tr><td>Eu.SCI-XX.PDI.67</td><td>Head</td><td>3.4 Telegram definitions</td></tr>
<tr><td>Eu.SCI-XX.PDI.68</td><td>Info</td><td>In this chapter, telegrams for SCI-XX.PDI are defined.</td></tr>
<tr><td>Eu.SCI-XX.PDI.69</td><td>Head</td><td>3.4.1 Command "PDI-Version check"</td></tr>
</table>

<table>
<tr><th>ID</th><th>Type</th><th>Requirement</th></tr>
<tr><td>Eu.SCI-XX.PDI.70</td><td>Info</td><td>The Sender of this telegram requests the Receiver to check PDI-Version.
This telegram refines the InformationFlow "Cd_PDI_Version_Check" specified in the requirements specification (ID Eu.Gen-SCI.481).</td></tr>
<tr><td>Eu.SCI-XX.PDI.71</td><td>Info</td><td>Telegram definition for command "PDI-Version check"

<table><tr><th>Byte-Nr.</th><th>Content</th></tr><tr><td>00</td><td>Specific Protocol Type (1 Byte binary)</td></tr><tr><td>01..02</td><td>Message Type: 0x0024 (2 Bytes binary)</td></tr><tr><td>03..22</td><td>Sender Identifier (20 Bytes ISO IEC 8859-1:1998)</td></tr><tr><td>23..42</td><td>Receiver Identifier (20 Bytes ISO IEC 8859-1:1998)</td></tr><tr><td>43</td><td>PDI-Version of Sender (1 Byte binary)</td></tr></table></td></tr>
<tr><td>Eu.SCI-XX.PDI.72</td><td>Req</td><td>Permitted values for command "PDI-Version check":</td></tr>
<tr><td>Eu.SCI-XX.PDI.73</td><td>Req</td><td>Message Type
The message bytes 1 and 2 shall be set to 0x0024.</td></tr>
<tr><td>Eu.SCI-XX.PDI.124</td><td>Req</td><td>Interfacing partners for command "PDI-Version check"

<table><tr><th>Sender</th><th>Receiver</th></tr><tr><td>Traffic Control System</td><td>Subsystem – Electronic Interlocking</td></tr><tr><td>Radio Block Centre</td><td>Subsystem – Electronic Interlocking</td></tr><tr><td>Subsystem – Electronic Interlocking</td><td>Adjacent Interlocking System</td></tr><tr><td>Adjacent Interlocking System</td><td>Subsystem – Electronic Interlocking</td></tr><tr><td>Centralised ETCS L1 Controller</td><td>Subsystem – Electronic Interlocking</td></tr><tr><td>Trackworker Safety System</td><td>Subsystem – Electronic Interlocking</td></tr><tr><td>Subsystem – Electronic Interlocking</td><td>External Level Crossing System</td></tr><tr><td>Subsystem – Electronic Interlocking</td><td>EULYNX field element subsystem</td></tr></table></td></tr>
<tr><td>Eu.SCI-XX.PDI.74</td><td>Req</td><td>Sender Identifier
The message bytes 3-22 shall contain the technical identifier of the Sender according to ID Eu.SCI-XX.PDI.60 in ISO IEC 8859-1:1998 format.</td></tr>
</table>

<table>
<tr><th>ID</th><th>Type</th><th>Requirement</th></tr>
<tr><td>Eu.SCI-XX.PDI.75</td><td>Req</td><td>Receiver Identifier
The message bytes 23-42 shall contain the technical identifier of the Receiver according to ID Eu.SCI-XX.PDI.60 in ISO IEC 8859-1:1998 format.</td></tr>
<tr><td>Eu.SCI-XX.PDI.76</td><td>Req</td><td>PDI-Version of Sender
The message byte 43 shall contain the interface version, configured to the Sender. Values from 0x01 to 0xFE are valid.</td></tr>
<tr><td>Eu.SCI-XX.PDI.77</td><td>Head</td><td><h2>3.4.2 Message "PDI-Version check"</h2></td></tr>
<tr><td>Eu.SCI-XX.PDI.78</td><td>Info</td><td>With this telegram the Sender tells the Receiver the result of the version check.
This telegram refines the InformationFlow "Msg_PDI_Version_Check" specified in the requirements specification (ID Eu.Gen-SCI.486).</td></tr>
<tr><td>Eu.SCI-XX.PDI.79</td><td>Info</td><td>Telegram definition for message "PDI-Version check"
<table>
<tr><th>Byte-Nr.</th><th>Content</th></tr>
<tr><td>00</td><td>Specific Protocol Type (1 Byte binary)</td></tr>
<tr><td>01..02</td><td>Message Type: 0x0025 (2 Bytes binary)</td></tr>
<tr><td>03..22</td><td>Sender Identifier (20 Bytes ISO IEC 8859-1:1998)</td></tr>
<tr><td>23..42</td><td>Receiver Identifier (20 Bytes ISO IEC 8859-1:1998)</td></tr>
<tr><td>43</td><td>Result PDI-Version check (1 Byte binary)</td></tr>
<tr><td>44</td><td>Sender PDI-Version (1 Byte binary)</td></tr>
<tr><td>45</td><td>Checksum length (1 Byte binary)</td></tr>
<tr><td>46..46+n-1</td><td>Checksum data (n Bytes binary)</td></tr>
</table></td></tr>
<tr><td>Eu.SCI-XX.PDI.80</td><td>Req</td><td>Permitted values for message "PDI-Version check":</td></tr>
<tr><td>Eu.SCI-XX.PDI.81</td><td>Req</td><td>Message Type
The message bytes 1 and 2 shall be set to 0x0025.</td></tr>
<tr><td>Eu.SCI-XX.PDI.125</td><td>Req</td><td>Interfacing partners for message "PDI-Version check"</td></tr>
</table>

<table>
<tr><th>ID</th><th>Type</th><th>Requirement</th></tr>
<tr><td></td><td></td><td>
<table>
<tr><th>Sender</th><th>Receiver</th></tr>
<tr><td>Subsystem – Electronic Interlocking</td><td>Traffic Control System</td></tr>
<tr><td>Subsystem – Electronic Interlocking</td><td>Radio Block Centre</td></tr>
<tr><td>Adjacent Interlocking System</td><td>Subsystem – Electronic Interlocking</td></tr>
<tr><td>Subsystem – Electronic Interlocking</td><td>Adjacent Interlocking System</td></tr>
<tr><td>Subsystem – Electronic Interlocking</td><td>Centralised ETCS L1 Controller</td></tr>
<tr><td>Subsystem – Electronic Interlocking</td><td>Trackworker Safety System</td></tr>
<tr><td>External Level Crossing System</td><td>Subsystem – Electronic Interlocking</td></tr>
<tr><td>EULYNX field element subsystem</td><td>Subsystem – Electronic Interlocking</td></tr>
</table>
</td></tr>
<tr><td>Eu.SCI-XX.PDI.82</td><td>Req</td><td>Sender Identifier
The message bytes 3-22 shall contain the technical identifier of the Sender according to ID Eu.SCI-XX.PDI.60 in ISO IEC 8859-1:1998 format.</td></tr>
<tr><td>Eu.SCI-XX.PDI.83</td><td>Req</td><td>Receiver Identifier
The message bytes 23-42 shall contain the technical identifier of the Receiver according to ID Eu.SCI-XX.PDI.60 in ISO IEC 8859-1:1998 format.</td></tr>
<tr><td>Eu.SCI-XX.PDI.84</td><td>Req</td><td>Result PDI-Version check
The message byte 43 shall contain the result of version matching. Permitted values:

value meaning
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<tr><td>Eu.SCI-XX.PDI.86</td><td>Req</td><td>0x01 PDI-Versions from Receiver and Sender do not match.</td></tr>
<tr><td>Eu.SCI-XX.PDI.87</td><td>Req</td><td>0x02 PDI-Versions from Receiver and Sender do match.</td></tr>
<tr><td>Eu.SCI-XX.PDI.88</td><td>Req</td><td>Sender PDI-Version
The message byte 44 shall contain the PDI-Version of the Sender. Permitted values:
value meaning
---------- ----------</td></tr>
<tr><td>Eu.SCI-XX.PDI.90</td><td>Req</td><td>0x01..0xFE PDI-Version configured in the Sender.</td></tr>
</table>

<table>
<tr><th>ID</th><th>Type</th><th>Requirement</th></tr>
<tr><td>Eu.SCI-XX.PDI.91</td><td>Req</td><td>Checksum length
Byte 45 contains the amount n of following bytes, used for checksum information.</td></tr>
<tr><td>Eu.SCI-XX.PDI.92</td><td>Req</td><td>If byte 43 is set to 0x01, byte 45 shall be set to zero.</td></tr>
<tr><td>Eu.SCI-XX.PDI.93</td><td>Req</td><td>Checksum data
The bytes 46 … 46+n-1 shall contain checksum information in binary form, least significant byte first.</td></tr>
<tr><td>Eu.SCI-XX.PDI.94</td><td>Req</td><td>The bytes 46 … 46+n-1 shall not be allocated, if PDI-Version from Receiver and Sender does not match.</td></tr>
<tr><td>Eu.SCI-XX.PDI.95</td><td>Head</td><td>3.4.3 Command "Initialisation Request"</td></tr>
<tr><td>Eu.SCI-XX.PDI.96</td><td>Info</td><td>With this telegram the Sender requests status information from the Receiver.
This telegram refines the InformationFlow "Cd_Initialisation_Request" specified in the requirements specification (ID Eu.Gen-SCI.480).</td></tr>
<tr><td>Eu.SCI-XX.PDI.97</td><td>Info</td><td>Telegram definition for command "Initialisation Request"
<table><tr><th>Byte-Nr.</th><th>Content</th></tr><tr><td>00</td><td>Specific Protocol Type (1 Byte binary)</td></tr><tr><td>01..02</td><td>Message Type: 0x0021 (2 Bytes binary)</td></tr><tr><td>03..22</td><td>Sender Identifier (20 Bytes ISO IEC 8859-1:1998)</td></tr><tr><td>23..42</td><td>Receiver Identifier (20 Bytes ISO IEC 8859-1:1998)</td></tr></table></td></tr>
<tr><td>Eu.SCI-XX.PDI.98</td><td>Req</td><td>Permitted values for command "Initialisation Request":</td></tr>
<tr><td>Eu.SCI-XX.PDI.99</td><td>Req</td><td>Message Type
The message bytes 1 and 2 shall be set to 0x0021.</td></tr>
<tr><td>Eu.SCI-XX.PDI.126</td><td>Req</td><td>Interfacing partners for command "Initialisation Request"</td></tr>
</table>

<table>
<tr><th>ID</th><th>Type</th><th>Requirement</th></tr>
<tr><td></td><td></td><td>
<table>
<tr><th>Sender</th><th>Receiver</th></tr>
<tr><td>Subsystem – Electronic Interlocking</td><td>Adjacent Interlocking System</td></tr>
<tr><td>Adjacent Interlocking System</td><td>Subsystem – Electronic Interlocking</td></tr>
<tr><td>Traffic Control System</td><td>Subsystem – Electronic Interlocking</td></tr>
<tr><td>Radio Block Centre</td><td>Subsystem – Electronic Interlocking</td></tr>
<tr><td>Centralised ETCS L1 Controller</td><td>Subsystem – Electronic Interlocking</td></tr>
<tr><td>Trackworker Safety System</td><td>Subsystem – Electronic Interlocking</td></tr>
<tr><td>Subsystem – Electronic Interlocking</td><td>External Level Crossing System</td></tr>
<tr><td>Subsystem – Electronic Interlocking</td><td>EULYNX field element subsystem</td></tr>
</table>
</td></tr>
<tr><td>Eu.SCI-XX.PDI.100</td><td>Req</td><td>Sender Identifier
The message bytes 3 - 22 shall contain the technical identifier of the Sender according to ID Eu.SCI-XX.PDI.60 in ISO IEC 8859-1:1998 format.</td></tr>
<tr><td>Eu.SCI-XX.PDI.101</td><td>Req</td><td>Receiver Identifier
The message bytes 23 - 42 shall contain the technical identifier of the Receiver according to ID Eu.SCI-XX.PDI.60 in ISO IEC 8859-1:1998 format.</td></tr>
<tr><td>Eu.SCI-XX.PDI.102</td><td>Head</td><td><h3>3.4.4 Message "Start Initialisation"</h3></td></tr>
<tr><td>Eu.SCI-XX.PDI.103</td><td>Info</td><td>With this telegram the Sender announces the beginning of status message transmission to the Receiver.
This telegram refines the InformationFlow "Msg_Start_Initialisation" specified in the requirements specification (ID Eu.Gen-SCI.488).</td></tr>
<tr><td>Eu.SCI-XX.PDI.104</td><td>Info</td><td>Telegram definition for message "Start Initialisation"
<table>
<tr><th>Byte-Nr.</th><th>Content</th></tr>
<tr><td>00</td><td>Specific Protocol Type (1 Byte binary)</td></tr>
<tr><td>01..02</td><td>Message Type: 0x0022 (2 Bytes binary)</td></tr>
<tr><td>03..22</td><td>Sender Identifier (20 Bytes ISO IEC 8859-1:1998)</td></tr>
<tr><td>23..42</td><td>Receiver Identifier (20 Bytes ISO IEC 8859-1:1998)</td></tr>
</table>
</td></tr>
<tr><td>Eu.SCI-XX.PDI.105</td><td>Req</td><td>Permitted values for message "Start Initialisation":</td></tr>
</table>

<table>
<tr><th>ID</th><th>Type</th><th>Requirement</th></tr>
<tr><td>Eu.SCI-XX.PDI.106</td><td>Req</td><td>Message Type
The message bytes 1-2 shall be set to 0x0022.</td></tr>
<tr><td>Eu.SCI-XX.PDI.127</td><td>Req</td><td>Interfacing partners for message "Start Initialisation"

<table>
<tr><th>Sender</th><th>Receiver</th></tr>
<tr><td>Subsystem – Electronic Interlocking</td><td>Traffic Control System</td></tr>
<tr><td>Subsystem – Electronic Interlocking</td><td>Radio Block Centre</td></tr>
<tr><td>Adjacent Interlocking System</td><td>Subsystem – Electronic Interlocking</td></tr>
<tr><td>Subsystem – Electronic Interlocking</td><td>Adjacent Interlocking System</td></tr>
<tr><td>Subsystem – Electronic Interlocking</td><td>Centralised ETCS L1 Controller</td></tr>
<tr><td>Subsystem – Electronic Interlocking</td><td>Trackworker Safety System</td></tr>
<tr><td>External Level Crossing System</td><td>Subsystem – Electronic Interlocking</td></tr>
<tr><td>EULYNX field element subsystem</td><td>Subsystem – Electronic Interlocking</td></tr>
</table></td></tr>
<tr><td>Eu.SCI-XX.PDI.107</td><td>Req</td><td>Sender Identifier
The message bytes 3 - 22 shall contain the technical identifier of the Sender according to ID Eu.SCI-XX.PDI.60 in ISO IEC 8859-1:1998 format.</td></tr>
<tr><td>Eu.SCI-XX.PDI.108</td><td>Req</td><td>Receiver Identifier
The message bytes 23 - 42 shall contain the technical identifier of the Receiver according to ID Eu.SCI-XX.PDI.60 in ISO IEC 8859-1:1998 format.</td></tr>
<tr><td>Eu.SCI-XX.PDI.135</td><td>Head</td><td><h3>3.4.5 Message "Status Report Completed"</h3></td></tr>
<tr><td>Eu.SCI-XX.PDI.136</td><td>Info</td><td>With this telegram the Sender announces, that status message transmission of one partner is now completed.
This telegram refines the InformationFlow "Msg_Status_Report_Completed" specified in the requirements specification (ID Eu.Gen-SCI.489).</td></tr>
</table>

<table>
<tr><th>ID</th><th>Type</th><th>Requirement</th></tr>
<tr><td>Eu.SCI-XX.PDI.137</td><td>Info</td><td>Telegram definition for message "Status Report Completed"

<table>
<tr><th>Byte-Nr.</th><th>Content</th></tr>
<tr><td>00</td><td>Specific Protocol Type (1 Byte binary)</td></tr>
<tr><td>01..02</td><td>Message Type: 0x0026 (2 Bytes binary)</td></tr>
<tr><td>03..22</td><td>Sender Identifier (20 Bytes ISO IEC 8859-1:1998)</td></tr>
<tr><td>23..42</td><td>Receiver Identifier (20 Bytes ISO IEC 8859-1:1998)</td></tr>
</table></td></tr>
<tr><td>Eu.SCI-XX.PDI.138</td><td>Req</td><td>Permitted values for message "Status Report Completed":</td></tr>
<tr><td>Eu.SCI-XX.PDI.139</td><td>Req</td><td>Message Type
The message bytes 1 - 2 shall be set to 0x0026.</td></tr>
<tr><td>Eu.SCI-XX.PDI.140</td><td>Req</td><td>Interfacing partners for message "Status Report Completed"

<table>
<tr><th>Sender</th><th>Receiver</th></tr>
<tr><td>Subsystem – Electronic Interlocking</td><td>Traffic Control System</td></tr>
<tr><td>Traffic Control System</td><td>Subsystem – Electronic Interlocking</td></tr>
<tr><td>Subsystem – Electronic Interlocking</td><td>Radio Block Centre</td></tr>
<tr><td>Radio Block Centre</td><td>Subsystem – Electronic Interlocking</td></tr>
<tr><td>Adjacent Interlocking System</td><td>Subsystem – Electronic Interlocking</td></tr>
<tr><td>Subsystem – Electronic Interlocking</td><td>Adjacent Interlocking System</td></tr>
<tr><td>Subsystem – Electronic Interlocking</td><td>Centralised ETCS L1 Controller</td></tr>
<tr><td>Subsystem – Electronic Interlocking</td><td>Trackworker Safety System</td></tr>
<tr><td>Trackworker Safety System</td><td>Subsystem – Electronic Interlocking</td></tr>
<tr><td>External Level Crossing System</td><td>Subsystem – Electronic Interlocking</td></tr>
<tr><td>EULYNX field element subsystem</td><td>Subsystem – Electronic Interlocking</td></tr>
</table></td></tr>
<tr><td>Eu.SCI-XX.PDI.141</td><td>Req</td><td>Sender Identifier
The message bytes 3 - 22 shall contain the technical identifier of the Sender according to ID Eu.SCI-XX.PDI.60 in ISO IEC 8859-1:1998 format.</td></tr>
</table>

<table>
<tr><th>ID</th><th>Type</th><th>Requirement</th></tr>
<tr><td>Eu.SCI-XX.PDI.142</td><td>Req</td><td>Receiver Identifier
The message bytes 23 - 42 shall contain the technical identifier of the Receiver according to ID Eu.SCI-XX.PDI.60 in ISO IEC 8859-1:1998 format.</td></tr>
<tr><td>Eu.SCI-XX.PDI.109</td><td>Head</td><td>3.4.6 Message "Initialisation Completed"</td></tr>
<tr><td>Eu.SCI-XX.PDI.110</td><td>Info</td><td>With this telegram the Sender announces, that status message transmission is now completed.
This telegram refines the InformationFlow "Msg_Initialisation_Completed" specified in the requirements specification (ID Eu.Gen-SCI.483).</td></tr>
<tr><td>Eu.SCI-XX.PDI.111</td><td>Info</td><td>Telegram definition for message "Initialisation Completed"

<table>
<tr><th>Byte-Nr.</th><th>Content</th></tr>
<tr><td>00</td><td>Specific Protocol Type (1 Byte binary)</td></tr>
<tr><td>01..02</td><td>Message Type: 0x0023 (2 Bytes binary)</td></tr>
<tr><td>03..22</td><td>Sender Identifier (20 Bytes ISO IEC 8859-1:1998)</td></tr>
<tr><td>23..42</td><td>Receiver Identifier (20 Bytes ISO IEC 8859-1:1998)</td></tr>
</table>
</td></tr>
<tr><td>Eu.SCI-XX.PDI.112</td><td>Req</td><td>Permitted values for message "Initialisation Completed":</td></tr>
<tr><td>Eu.SCI-XX.PDI.113</td><td>Req</td><td>Message Type
The message bytes 1 - 2 shall be set to 0x0023.</td></tr>
<tr><td>Eu.SCI-XX.PDI.128</td><td>Req</td><td>Interfacing partners for message "Initialisation Complete"

<table>
<tr><th>Sender</th><th>Receiver</th></tr>
<tr><td>Subsystem – Electronic Interlocking</td><td>Traffic Control System</td></tr>
<tr><td>Subsystem – Electronic Interlocking</td><td>Radio Block Centre</td></tr>
<tr><td>Adjacent Interlocking System</td><td>Subsystem – Electronic Interlocking</td></tr>
<tr><td>Subsystem – Electronic Interlocking</td><td>Adjacent Interlocking System</td></tr>
<tr><td>Subsystem – Electronic Interlocking</td><td>Centralised ETCS L1 Controller</td></tr>
<tr><td>Subsystem – Electronic Interlocking</td><td>Trackworker Safety System</td></tr>
<tr><td>External Level Crossing System</td><td>Subsystem – Electronic Interlocking</td></tr>
<tr><td>EULYNX field element subsystem</td><td>Subsystem – Electronic Interlocking</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>ID</th><th>Type</th><th>Requirement</th></tr>
<tr><td>Eu.SCI-XX.PDI.114</td><td>Req</td><td>Sender Identifier
The message bytes 3 - 22 shall contain the technical identifier of the Sender according to ID Eu.SCI-XX.PDI.60 in ISO IEC 8859-1:1998 format.</td></tr>
<tr><td>Eu.SCI-XX.PDI.115</td><td>Req</td><td>Receiver Identifier
The message bytes 23 - 42 shall contain the technical identifier of the Receiver according to ID Eu.SCI-XX.PDI.60 in ISO IEC 8859-1:1998 format.</td></tr>
<tr><td>Eu.SCI-XX.PDI.157</td><td>Head</td><td><h2>3.4.7 Command "Close PDI"</h2></td></tr>
<tr><td>Eu.SCI-XX.PDI.158</td><td>Info</td><td>With this telegram the Sender requests the Receiver to close the PDI connection.
This telegram refines the InformationFlow "Cd_Close_PDI" specified in the requirements specification (ID Eu.Gen-SCI.479).</td></tr>
<tr><td>Eu.SCI-XX.PDI.159</td><td>Info</td><td>Telegram definition for command "Close PDI"
<table><tr><th>Byte-Nr.</th><th>Content</th></tr><tr><td>00</td><td>Specific Protocol Type (1 Byte binary)</td></tr><tr><td>01..02</td><td>Message Type: 0x0027 (2 Bytes binary)</td></tr><tr><td>03..22</td><td>Sender Identifier (20 Bytes ISO IEC 8859-1:1998)</td></tr><tr><td>23..42</td><td>Receiver Identifier (20 Bytes ISO IEC 8859-1:1998)</td></tr><tr><td>43</td><td>Close Reason (1 Byte binary)</td></tr></table></td></tr>
<tr><td>Eu.SCI-XX.PDI.160</td><td>Req</td><td>Permitted values for command "Close PDI":</td></tr>
<tr><td>Eu.SCI-XX.PDI.161</td><td>Req</td><td>Message Type
The message bytes 1 and 2 shall be set to 0x0027.</td></tr>
<tr><td>Eu.SCI-XX.PDI.162</td><td>Req</td><td>Interfacing partners for command "Close PDI"</td></tr>
</table>

<table>
<tr><th>ID</th><th>Type</th><th>Requirement</th></tr>
<tr><td></td><td></td><td>
<table>
<tr><th>Sender</th><th>Receiver</th></tr>
<tr><td>Adjacent Interlocking System</td><td>Subsystem – Electronic Interlocking</td></tr>
<tr><td>Subsystem – Electronic Interlocking</td><td>Adjacent Interlocking System</td></tr>
<tr><td>Traffic Control System</td><td>Subsystem – Electronic Interlocking</td></tr>
<tr><td>Radio Block Centre</td><td>Subsystem – Electronic Interlocking</td></tr>
<tr><td>Centralised ETCS L1 Controller</td><td>Subsystem – Electronic Interlocking</td></tr>
<tr><td>Trackworker Safety System</td><td>Subsystem – Electronic Interlocking</td></tr>
<tr><td>Subsystem – Electronic Interlocking</td><td>External Level Crossing System</td></tr>
<tr><td>Subsystem – Electronic Interlocking</td><td>EULYNX field element subsystem</td></tr>
</table>
</td></tr>
<tr><td>Eu.SCI-XX.PDI.163</td><td>Req</td><td>Sender Identifier
The message bytes 3 - 22 shall contain the technical identifier of the Sender according to ID Eu.SCI-XX.PDI.60 in ISO IEC 8859-1:1998 format.</td></tr>
<tr><td>Eu.SCI-XX.PDI.164</td><td>Req</td><td>Receiver Identifier
The message bytes 23 - 42 shall contain the technical identifier of the Receiver according to ID Eu.SCI-XX.PDI.60 in ISO IEC 8859-1:1998 format.</td></tr>
<tr><td>Eu.SCI-XX.PDI.202</td><td>Req</td><td>Close Reason
The message byte 43 shall contain the close reason.
Permitted values:

value ---------- meaning ----------</td></tr>
<tr><td>Eu.SCI-XX.PDI.203</td><td>Req</td><td>0x01 Protocol error</td></tr>
<tr><td>Eu.SCI-XX.PDI.204</td><td>Req</td><td>0x02 Formal telegram error</td></tr>
<tr><td>Eu.SCI-XX.PDI.205</td><td>Req</td><td>0x03 Content telegram error</td></tr>
<tr><td>Eu.SCI-XX.PDI.206</td><td>Req</td><td>0x04 Normal close</td></tr>
<tr><td>Eu.SCI-XX.PDI.207</td><td>Req</td><td>0x05 Other version required</td></tr>
<tr><td>Eu.SCI-XX.PDI.208</td><td>Req</td><td>0x06 Timeout</td></tr>
</table>

<table>
<tr><th>ID</th><th>Type</th><th>Requirement</th></tr>
<tr><td>Eu.SCI-XX.PDI.209</td><td>Req</td><td>0x07 Checksum mismatch</td></tr>
<tr><td>Eu.SCI-XX.PDI.165</td><td>Head</td><td>3.4.8 Command "Release PDI for Maintenance"</td></tr>
<tr><td>Eu.SCI-XX.PDI.166</td><td>Info</td><td>With this telegram the Sender requests the Receiver to release the PDI connection for Maintenance.
This telegram refines the InformationFlow "Cd_Release_PDI_for_Maintenance" specified in the requirements specification (ID Eu.Gen-SCI.482).</td></tr>
<tr><td>Eu.SCI-XX.PDI.167</td><td>Info</td><td>Telegram definition for command "Release PDI for Maintenance"
<table>
<tr><th>Byte-Nr.</th><th>Content</th></tr>
<tr><td>00</td><td>Specific Protocol Type (1 Byte binary)</td></tr>
<tr><td>01..02</td><td>Message Type: 0x0028 (2 Bytes binary)</td></tr>
<tr><td>03..22</td><td>Sender Identifier (20 Bytes ISO IEC 8859-1:1998)</td></tr>
<tr><td>23..42</td><td>Receiver Identifier (20 Bytes ISO IEC 8859-1:1998)</td></tr>
</table></td></tr>
<tr><td>Eu.SCI-XX.PDI.168</td><td>Req</td><td>Permitted values for command "Release PDI for Maintenance":</td></tr>
<tr><td>Eu.SCI-XX.PDI.169</td><td>Req</td><td>Message Type
The message bytes 1 and 2 shall be set to 0x0028.</td></tr>
<tr><td>Eu.SCI-XX.PDI.170</td><td>Req</td><td>Interfacing partners for command "Release PDI for Maintenance"
<table>
<tr><th>Sender</th><th>Receiver</th></tr>
<tr><td>Subsystem – Electronic Interlocking</td><td>EULYNX field element subsystem</td></tr>
<tr><td>Subsystem – Electronic Interlocking</td><td>External Level Crossing System</td></tr>
</table></td></tr>
<tr><td>Eu.SCI-XX.PDI.171</td><td>Req</td><td>Sender Identifier
The message bytes 3 - 22 shall contain the technical identifier of the Sender according to ID Eu.SCI-XX.PDI.60 in ISO IEC 8859-1:1998 format.</td></tr>
<tr><td>Eu.SCI-XX.PDI.172</td><td>Req</td><td>Receiver Identifier
The message bytes 23 - 42 shall contain the technical identifier of the Receiver according to ID Eu.SCI-XX.PDI.60 in ISO IEC 8859-1:1998 format.</td></tr>
<tr><td>Eu.SCI-XX.PDI.173</td><td>Head</td><td>3.4.9 Message "PDI Available"</td></tr>
</table>

<table>
<tr><th>ID</th><th>Type</th><th>Requirement</th></tr>
<tr><td>Eu.SCI-XX.PDI.174</td><td>Info</td><td>With this telegram the Sender announces, that the PDI connection is available.
This telegram refines the InformationFlow "Msg_PDI_Available" specified in the requirements specification (ID Eu.Gen-SCI.484).</td></tr>
<tr><td>Eu.SCI-XX.PDI.175</td><td>Info</td><td>Telegram definition for message "PDI Available"
<table><tr><th>Byte-Nr.</th><th>Content</th></tr><tr><td>00</td><td>Specific Protocol Type (1 Byte binary)</td></tr><tr><td>01..02</td><td>Message Type: 0x0029 (2 Bytes binary)</td></tr><tr><td>03..22</td><td>Sender Identifier (20 Bytes ISO IEC 8859-1:1998)</td></tr><tr><td>23..42</td><td>Receiver Identifier (20 Bytes ISO IEC 8859-1:1998)</td></tr></table></td></tr>
<tr><td>Eu.SCI-XX.PDI.176</td><td>Req</td><td>Permitted values for message "PDI Available":</td></tr>
<tr><td>Eu.SCI-XX.PDI.177</td><td>Req</td><td>Message Type
The message bytes 1 - 2 shall be set to 0x0029.</td></tr>
<tr><td>Eu.SCI-XX.PDI.178</td><td>Req</td><td>Interfacing partners for message "PDI Available"
<table><tr><th>Sender</th><th>Receiver</th></tr><tr><td>EULYNX field element subsystem</td><td>Subsystem – Electronic Interlocking</td></tr><tr><td>External Level Crossing System</td><td>Subsystem – Electronic Interlocking</td></tr></table></td></tr>
<tr><td>Eu.SCI-XX.PDI.179</td><td>Req</td><td>Sender Identifier
The message bytes 3 - 22 shall contain the technical identifier of the Sender according to ID Eu.SCI-XX.PDI.60 in ISO IEC 8859-1:1998 format.</td></tr>
<tr><td>Eu.SCI-XX.PDI.180</td><td>Req</td><td>Receiver Identifier
The message bytes 23 - 42 shall contain the technical identifier of the Receiver according to ID Eu.SCI-XX.PDI.60 in ISO IEC 8859-1:1998 format.</td></tr>
<tr><td>Eu.SCI-XX.PDI.181</td><td>Head</td><td><h2>3.4.10 Message "PDI Not Available"</h2></td></tr>
<tr><td>Eu.SCI-XX.PDI.182</td><td>Info</td><td>With this telegram the Sender announces, that the PDI connection is not available.
This telegram refines the InformationFlow "Msg_PDI_Not_Available" specified in the requirements specification (ID Eu.Gen-SCI.485).</td></tr>
</table>

<table>
<tr><th>ID</th><th>Type</th><th>Requirement</th></tr>
<tr><td>Eu.SCI-XX.PDI.183</td><td>Info</td><td>Telegram definition for message "PDI Not Available"
<table>
<tr><th>Byte-Nr.</th><th>Content</th></tr>
<tr><td>00</td><td>Specific Protocol Type (1 Byte binary)</td></tr>
<tr><td>01..02</td><td>Message Type: 0x002A (2 Bytes binary)</td></tr>
<tr><td>03..22</td><td>Sender Identifier (20 Bytes ISO IEC 8859-1:1998)</td></tr>
<tr><td>23..42</td><td>Receiver Identifier (20 Bytes ISO IEC 8859-1:1998)</td></tr>
</table></td></tr>
<tr><td>Eu.SCI-XX.PDI.184</td><td>Req</td><td>Permitted values for message "PDI Not Available":</td></tr>
<tr><td>Eu.SCI-XX.PDI.185</td><td>Req</td><td>Message Type
The message bytes 1 - 2 shall be set to 0x002A.</td></tr>
<tr><td>Eu.SCI-XX.PDI.186</td><td>Req</td><td>Interfacing partners for message "PDI Not Available"
<table>
<tr><th>Sender</th><th>Receiver</th></tr>
<tr><td>EULYNX field element subsystem</td><td>Subsystem – Electronic Interlocking</td></tr>
<tr><td>External Level Crossing System</td><td>Subsystem – Electronic Interlocking</td></tr>
</table></td></tr>
<tr><td>Eu.SCI-XX.PDI.187</td><td>Req</td><td>Sender Identifier
The message bytes 3 - 22 shall contain the technical identifier of the Sender according to ID Eu.SCI-XX.PDI.60 in ISO IEC 8859-1:1998 format.</td></tr>
<tr><td>Eu.SCI-XX.PDI.188</td><td>Req</td><td>Receiver Identifier
The message bytes 23 - 42 shall contain the technical identifier of the Receiver according to ID Eu.SCI-XX.PDI.60 in ISO IEC 8859-1:1998 format.</td></tr>
<tr><td>Eu.SCI-XX.PDI.189</td><td>Head</td><td><h3>3.4.11 Message "Reset PDI"</h3></td></tr>
<tr><td>Eu.SCI-XX.PDI.190</td><td>Info</td><td>With this telegram the sender informs about an detected communication error to rest the PDI connection.
This telegram refines the InformationFlow "Msg_Reset_PDI" specified in the requirements specification (ID Eu.Gen-SCI.487).</td></tr>
<tr><td>Eu.SCI-XX.PDI.191</td><td>Info</td><td>Telegram definition for message "Reset PDI"</td></tr>
</table>

<table>
<tr><th>ID</th><th>Type</th><th>Requirement</th></tr>
<tr><td></td><td></td><td>
<table>
<tr><th>Byte-Nr.</th><th>Content</th></tr>
<tr><td>00</td><td>Specific Protocol Type (1 Byte binary)</td></tr>
<tr><td>01..02</td><td>Message Type: 0x002B (2 Bytes binary)</td></tr>
<tr><td>03..22</td><td>Sender Identifier (20 Bytes ISO IEC 8859-1:1998)</td></tr>
<tr><td>23..42</td><td>Receiver Identifier (20 Bytes ISO IEC 8859-1:1998)</td></tr>
<tr><td>43</td><td>Reset Reason (1 Byte binary)</td></tr>
</table>
</td></tr>
<tr><td>Eu.SCI-XX.PDI.192</td><td>Req</td><td>Permitted values for message "Reset PDI":</td></tr>
<tr><td>Eu.SCI-XX.PDI.193</td><td>Req</td><td>Message Type
The message bytes 1 - 2 shall be set to 0x002B.</td></tr>
<tr><td>Eu.SCI-XX.PDI.194</td><td>Req</td><td>Interfacing partners for message "Reset PDI"
<table>
<tr><th>Sender</th><th>Receiver</th></tr>
<tr><td>Subsystem – Electronic Interlocking</td><td>Traffic Control System</td></tr>
<tr><td>Subsystem – Electronic Interlocking</td><td>Radio Block Centre</td></tr>
<tr><td>Subsystem – Electronic Interlocking</td><td>Adjacent Interlocking System</td></tr>
<tr><td>Adjacent Interlocking System</td><td>Subsystem – Electronic Interlocking</td></tr>
<tr><td>Subsystem – Electronic Interlocking</td><td>Centralised ETCS L1 Controller</td></tr>
<tr><td>Subsystem – Electronic Interlocking</td><td>Trackworker Safety System</td></tr>
<tr><td>External Level Crossing System</td><td>Subsystem – Electronic Interlocking</td></tr>
<tr><td>EULYNX field element subsystem</td><td>Subsystem – Electronic Interlocking</td></tr>
</table>
</td></tr>
<tr><td>Eu.SCI-XX.PDI.195</td><td>Req</td><td>Sender Identifier
The message bytes 3 - 22 shall contain the technical identifier of the Sender according to ID Eu.SCI-XX.PDI.60 in ISO IEC 8859-1:1998 format.</td></tr>
<tr><td>Eu.SCI-XX.PDI.196</td><td>Req</td><td>Receiver Identifier
The message bytes 23 - 42 shall contain the technical identifier of the Receiver according to ID Eu.SCI-XX.PDI.60 in ISO IEC 8859-1:1998 format.</td></tr>
</table>

ID	Type	Requirement
Eu.SCI-XX.PDI.197	Req	**Reset Reason** The message byte 43 shall contain the reset reason. Permitted values: value ---------- meaning ---------- 0x01 Protocol error 0x02 Formal telegram error 0x03 Content telegram error