



**EULYNX Initiative**



**Europe's Rail Joint Undertaking**


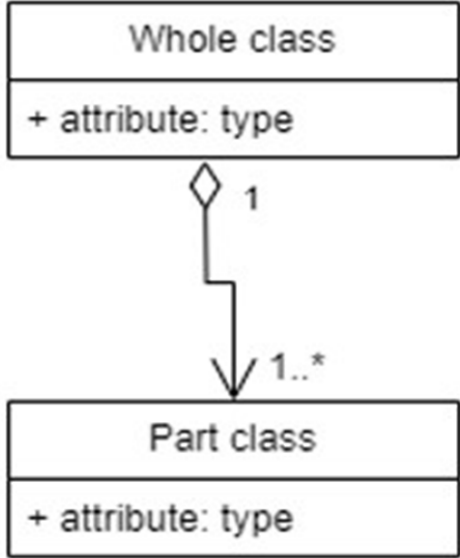
## **Interface specification SDI Generic**

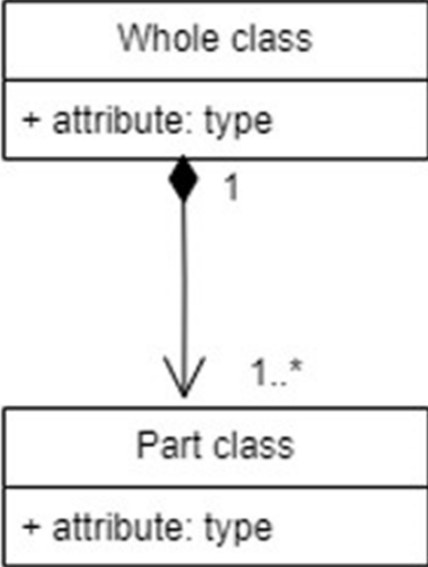
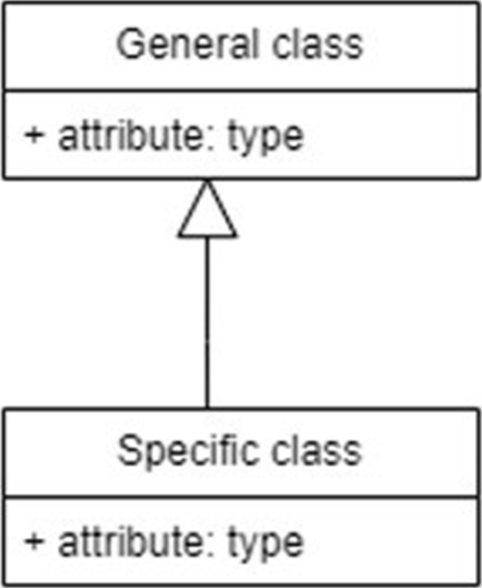
Contents

<b>1</b>	<b>Introduction</b>	<b>1</b>
1.1	Release information	1
1.2	Impressum	1
1.3	Purpose	2
1.4	Applicable standards and regulations	2
1.5	Applicable documents	2
1.6	Appendices	2
1.7	Terms and abbreviations	2
1.8	Variability management	2
1.9	Definition of object types	2
<b>2</b>	<b>Telegram SDI</b>	<b>2</b>
2.1	Definition of columns	2
2.2	Class diagram legend	3
2.3	Generic Telegrams	4
2.3.1	Generic.Subsystem	4
2.3.2	Generic.Equipment	7
2.3.3	Generic.Redundancy	11
2.3.4	Generic.Log	11
2.3.5	Generic.MotorTurnData	11
2.3.6	Generic.Enumeration	12
2.3.6.1	Enumeration.Equipment	12
2.3.6.2	Enumeration.Log	14
2.3.6.3	Enumeration.Subsystem	15
2.3.6.4	Enumeration.MotorTurnData	17
2.3.7	Generic.Class.Diagrams	17
2.3.7.1	Subsystem class diagram	17
2.3.7.2	Interface class diagram	18
2.3.7.3	Equipment class diagram	18
2.3.7.4	Redundancy class diagram	18
2.3.7.5	Log class diagram	18
2.3.7.6	Motor Turn Data class diagram	18

ID	Type	Requirement	Meaning	Model Type	Data Type	Trigger	Attribute type	Sampling	Optionality
Eu.SDI-XX.1	Head	<b>1 Introduction</b>							
Eu.SDI-XX.7	Head	<b>1.1 Release information</b>							
Eu.SDI-XX.2	Info	[Eu.Doc.94] Interface specification SDI Generic CENELEC Phase: 5 Version: 4.3 (1.A) Approval date: 02.06.2025							
Eu.SDI-XX.3	Info	<b>Version history</b>							
Eu.SDI-XX.230	Info	version number: 3.0 (0.A) date: 17.05.2022 author: Nico Huurman review: CCB changes: -							
Eu.SDI-XX.231	Info	version number: 3.1 (0.A) date: 08.06.2023 author: SDI task force review: changes: EUAR-430, EUAR-561, EUAR-589, EUAR-594							
Eu.SDI-XX.666	Info	version number: 4.0 (0.A) date: 28.06.2023 author: SDI task force review: TCCS+TACS Mirror Group changes: EUAR-613, EUAR-612, EUAR-616							
Eu.SDI-XX.1081	Info	version number: 4.1 (0.A) date: 03.05.2024 author: SDI task force review: cluster changes: EUAR-626, EUAR-628, EUAR-630, EUAR-632, EUAR-634, EUAR-646, EUAR-647, EUAR-648, EUAR-649, EUAR-650, EUAR-651, EUAR-655, EUAR-656, EUAR-661, EUAR-669, EUAR-670, EUAR-681, EUAR-717, EUAR-725, EUAR-726, EUAR-727, EUAR-732							
Eu.SDI-XX.1104	Info	version number: 4.2 (0.A) date: 20.06.2024 author: SDI task force review: TCCS+TACS Mirror Group changes: EUAR-730, EUAR-740, EUAR-748, EUAR-749							
Eu.SDI-XX.1110	Info	version number: 4.3 (0.A) date: 25.03.2025 author: SDI task force review: cluster changes: EUAR-731, EUAR-739, EUAR-756, EUAR-760, EUAR-764, EUAR-765, EUAR-768, EUAR-770, EUAR-771, EUAR-772							
Eu.SDI-XX.1146	Info	version number: 4.3 (1.A) date: 19.06.2025 author: SDI task force review: TCCS+TACS Mirror Group changes: EUAR-779, EUAR-787, EUAR-790, EUAR-791, EUAR-794, EUAR-795, EUAR-802, EUAR-803							
Eu.SDI-XX.5	Head	<b>1.2 Impressum</b>							
Eu.SDI-XX.8	Info	Publishers:  <b>Europe’s Rail Joint Undertaking</b> <a href="https://rail-research.europa.eu/">https://rail-research.europa.eu/</a>  <b>EULYNX Initiative</b> <a href="https://eulynx.eu/">https://eulynx.eu/</a>							
Eu.SDI-XX.9	Info	Responsible for this document: EU-Rail System Pillar Transversal CCS Components domain							
Eu.SDI-XX.10	Info	This document is drafted by and belongs to EU Rail.  EU Rail encourages the distribution and re-use of this document, the technical specifications and the information it contains. EU Rail holds several intellectual property rights, such as copyright and trade mark rights, which need to be considered when this document is used.  EU Rail authorizes you to re-publish, re-use, copy and store this document without changing it, provided that you indicate its source and include the following mention [EU Rail trade mark, title of the document, year of publication, version of document].  EU Rail makes no representation or warranty as to the accuracy or completeness of the information contained within these documents. EU Rail shall have no liability to any party as a result of the use of the information contained herein. EU Rail will have no liability whatsoever for any indirect or consequential loss or damage, and any such liability is expressly excluded.  You may study, research, implement, adapt, improve and otherwise use the information, the content and the models in this document for your own purposes. If you decide to publish or disclose any adapted, modified or improved version of this document, any amended implementation or derivative work, then you must indicate							

ID	Type	Requirement	Meaning	Model Type	Data Type	Trigger	Attribute type	Sampling	Optionality
		that you have modified this document, with a reference to the document name and the terms of use of this document. You may not use EU Rail’s trade marks or name in any way that may state or suggest, directly or indirectly, that EU Rail is the author of your adaptations. EU Rail cannot be held responsible for your product, even if you have used this document and its content. It is your responsibility to verify the quality, completeness and the accuracy of the information you use, for your own purposes.							
Eu.SDI-XX.11	Head	<b>1.3 Purpose</b>							
Eu.SDI-XX.13	Info	This document specifies the diagnostic messages (data point IDs and values) as parts of the telegram contents of the standardised diagnosis interface for a communication between the service function Diagnostics collector and connected system (SDI-XX).							
Eu.SDI-XX.172	Info	This document contains the general generic requirements for communication and the technical specification (e.g. telegrams) of all SDI-XX.							
Eu.SDI-XX.174	Info	Some items, referring to "interface-related" functionality of the communication partners, have been added to this specification as information, providing an overview only. In any case these are subject to appropriate systems (national) specification.							
Eu.SDI-XX.15	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>							
Eu.SDI-XX.232	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.SDI-XX.17	Head	<b>1.4 Applicable standards and regulations</b>							
Eu.SDI-XX.175	Info	The applicable standards and regulations used in EULYNX are listed in the EULYNX Reference Document List [Eu.Doc.12].							
Eu.SDI-XX.18	Info	The references listed in the EULYNX Reference Document List [Eu.Doc.12] shall be considered where they are indicated as being applicable to SDI in the “Applies to” column of the EULYNX Reference Document List [Eu.Doc.12].							
Eu.SDI-XX.20	Head	<b>1.5 Applicable documents</b>							
Eu.SDI-XX.21	Info	The current versions of documents used as input or related to this document are listed in the EULYNX Documentation Plan [Eu.Doc.11]. The relationships between the documents are displayed in the Appendix A1 Documentation plan and structure [Eu.Doc.11_A1].							
Eu.SDI-XX.22	Head	<b>1.6 Appendices</b>							
Eu.SDI-XX.23	Info	- <i>intentionally left blank</i> -							
Eu.SDI-XX.24	Head	<b>1.7 Terms and abbreviations</b>							
Eu.SDI-XX.25	Info	The terms and abbreviations are listed in the EULYNX Glossary [Eu.Doc.9].							
Eu.SDI-XX.26	Head	<b>1.8 Variability management</b>							
Eu.SDI-XX.27	Info	This document describes harmonised requirements. Variability management is not applicable.							
Eu.SDI-XX.28	Head	<b>1.9 Definition of object types</b>							
Eu.SDI-XX.29	Info	The following definition for object types is applied in this document:							
Eu.SDI-XX.30	Info	<ul style="list-style-type: none"><li>• "Req" - This denotes a mandatory requirement.</li></ul>							
Eu.SDI-XX.31	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>							
Eu.SDI-XX.32	Info	<ul style="list-style-type: none"><li>• "Head" - This denotes chapter headings.</li></ul>							
Eu.SDI-XX.34	Head	<b>2 Telegram SDI</b>							
Eu.SDI-XX.229	Info	All references to [Eu.Doc.77] refer to Interface definition SDI version 3.3.							
Eu.SDI-XX.1148	Req	The version number of the OPC UA Information model as described in this document is 1.1.0.							
Eu.SDI-XX.35	Info	This chapter defines the diagnostic messages - specifically the data points and values applied in the SDI-XX telegrams. The full telegram structure is defined in the document Interface definition SDI [Eu.Doc.77].							
Eu.SDI-XX.586	Head	<b>2.1 Definition of columns</b>							
Eu.SDI-XX.587	Info	<b>Model Type:</b> Column that marks whether an entry is a model class (Class), a diagnostic data point (Attribute), an enumeration header (ValueType (Enumeration)) or an enumeration value (Enumeration Literal).							
Eu.SDI-XX.588	Info	<b>Data Type:</b> Column that indicates the data type for the diagnostic data points. Enumeration values are defined in the section ‘Enumeration’.							
Eu.SDI-XX.589	Info	<b>Trigger:</b> Column that indicates the precision of data that shall be provided by the back-end to the OPC UA server [OPC] on a subsystem. It represents the minimum level of change of the measures or reported value that shall trigger an update of the data point on the OPC UA server. For discrete data types (Boolean, enumeration, string), any change shall trigger an update on the OPC UA server. This is expressed as ‘current value’ in the column. For data that is part of an event class, the value ‘on event’ is used.							

ID	Type	Requirement	Meaning	Model Type	Data Type	Trigger	Attribute type	Sampling	Optionality
Eu.SDI-XX.590	Info	<b>Attribute Type:</b> Column that indicates the type of diagnostic information contained in the data point. Values are: <b>raw data:</b> uninterpreted data that is measured. <b>diagnosis:</b> an attribute with discrete values (enumeration or Boolean) that interprets the status of a system. There must be a table that directly links diagnostic enumeration values to statusTechnical values of that system. <b>configuration:</b> data that is not measured but often set by the manufacturer or operator; it describes characteristics of the system. <b>counter:</b> diagnostic information that counts occurrences of a specific data measurement or event.							
Eu.SDI-XX.1101	Info	<b>Sampling:</b> Column that indicates the required sampling interval of the data point, that is how often the OPC UA Server determines the values for an attribute, provided by the back-end. Value in milliseconds.							
Eu.SDI-XX.591	Info	<b>Optionality:</b> Column that indicates whether a diagnostic data point is mandatory inside the model class, or optional. The diagnostic data of optional attributes may be required by national specifications. If an equipment or subsystem has the capability to collect and report the related diagnostic data, it must be reported in this data point. Note: In future phases of the System Pillar, national specifications will be replaced by harmonised specifications.							
Eu.SDI-XX.982	Head	<b>2.2 Class diagram legend</b>							
Eu.SDI-XX.983	Info	<b>Association</b> A structural relationship that represents a connection between two or more classes. It signifies that objects of one class are connected to objects of another class. The multiplicity of each end of the association can be specified, indicating the number of instances that can be related.  							
Eu.SDI-XX.984	Info	<b>Aggregation</b> A special form of association that represents a whole-part relationship. It indicates that a class (the whole) is composed of one or more classes (the parts) but does not strictly own them. Multiplicity at the part end indicates how many parts can be associated with one whole.  							

ID	Type	Requirement	Meaning	Model Type	Data Type	Trigger	Attribute type	Sampling	Optionality
Eu.SDI-XX.985	Info	<p><b>Composition</b> A stronger form of aggregation that implies ownership. In this relationship, the parts cannot exist independently from the whole. If the whole is broken, replaced or removed, the parts are too. The multiplicity at the part end indicates how many instances of the part class can exist for one instance of the whole class.</p> 							
Eu.SDI-XX.986	Info	<p><b>Generalisation</b> Represents an inheritance relationship between a general class and a more specific class. The general class can't be instantiated, only the specific class can. The specific class inherits the attributes of the general class, when instantiated. Multiplicity is not applicable to generalisation since it deals with type hierarchy rather than instance-level associations.</p> 							
Eu.SDI-XX.38	Head	<b>2.3 Generic Telegrams</b>							
Eu.SDI-XX.407	Head	<b>2.3.1 Generic.Subsystem</b>							
Eu.SDI-XX.408	Req	FieldElement	Represents an EULYNX Field Element Subsystem.	Class					
Eu.SDI-XX.409	Req	basicDataReadable	Indicates the status of the basic data required for the subsystem functionality.	Attribute	basicDataReadable : BasicDataReadable	Current value	diagnosis	1000	Mandatory
Eu.SDI-XX.410	Req	fieldElementSpecificationRevision	Indicates the version of the EULYNX field element subsystem Requirements specification for subsystem XX which was used for development and production of the EULYNX field element subsystem. For example the EULYNX field element subsystem is developed and produced based on Requirements specification for subsystem XX version 1.6 (1.A), the fieldElementSpecificationRevision has the value "1.6 (1.A)".	Attribute	fieldElementSpecific ationRevision : String	Current value	configuration	1000	Mandatory
Eu.SDI-XX.411	Req	operationStatus	Indicates the operations status of the logical EfeS according to the essential state machine (see Eu.Gen.3294 in [Eu.Doc.20]).	Attribute	operationStatus : FieldElementOperati onStatus	Current value	diagnosis	250	Mandatory
Eu.SDI-XX.421	Req	Interface	An interface between logical components	Class					
Eu.SDI-XX.422	Req	IsConnectionAvailable	TRUE if the interface is available at the subsystem.	Attribute	IsConnectionAvailabl e : Boolean	Current value	diagnosis	1000	Mandatory
Eu.SDI-XX.425	Req	statusTechnical	Technical Status of the system, that represents the aggregated status of all hierarchical lower systems. This allows to have a top level information on the status of the system which can be drilled down if the system is in any other state than "Ok".	Attribute	statusTechnical : StatusTechnical	Current value	diagnosis	1000	Mandatory

ID	Type	Requirement	Meaning	Model Type	Data Type	Trigger	Attribute type	Sampling	Optionality
Eu.SDI-XX.426	Req	statusTechnicalManufacturerSpecificMessage	Must be used by the supplier to describe the reasons for a StatusTechnical ! = OK, that cannot be explained by existing datapoints (NOT including IM and manufacturer specific diagnostic messages). This Information MUST be provided from the supplier. This should provide flexibility for future uses. Multiple states can be indicated at the same time if multiple diagnosis have not been included in the model during the design phase. The supplier specific reason may not overlap with reasons already covered in other attributes.	Attribute	statusTechnicalManu facturerSpecificMess age : MultiStateDiscreteTy peSupplier	Current value	diagnosis	1000	Optional
Eu.SDI-XX.1107	Req	communicationPartnerSubsystemIdentification	The technical identifier of the subsystem or adjacent systems (see Eu.SAS.77 in [Eu.Doc.16]) that is the communication partner on the interface.	Attribute	communicationPartn erSubsystemIdentifi cation : String	Current value	configuration	1000	Mandatory
Eu.SDI-XX.434	Req	OpcUaServer	A service that serves data according to the [OPC] standard using the information models defined (e.g. for diagnostic or maintenance data).	Class					
Eu.SDI-XX.435	Req	SCI_PDI	Standard Communication Interface implemented with Process Data Interface protocol.	Class					
Eu.SDI-XX.436	Req	connectionStatus	Indicates the connection status of the PDI connection.	Attribute	connectionStatus : PdiConnectionStatus	Current value	diagnosis	1000	Mandatory
Eu.SDI-XX.437	Req	version	Indicates the SCI Process Data Interface protocol version (PDIVer).	Attribute	version : String	Current value	configuration	1000	Mandatory
Eu.SDI-XX.663	Req	interfaceRevisionSCISpecific	Indicates the version of the Interface specification for the specific SCI-XX which was used for development and production of the connected system. For example the connected system is developed and produced based on specific Interface specification for SCI-XX version 1.6 (1.A), the interfaceRevisionSCISpecific has the value "1.6 (1.A)".	Attribute	interfaceRevisionSCI Specific : String	Current value	configuration	1000	Mandatory
Eu.SDI-XX.480	Req	transportLayer	Indicates the protocol type used on the transport layer.	Attribute	transportLayer : TransportLayer	Current value	configuration	1000	Mandatory
Eu.SDI-XX.1073	Req	interfaceRevisionSCIGeneric	Indicates the version of the Interface specification for SCI Generic which was used for development and production of the connected system. For example the connected system is developed and produced based on Interface specification for SCI Generic version 1.6 (1.A), the interfaceRevisionSCIGeneric has the value "1.6 (1.A)".	Attribute	interfaceRevisionSCI Generic : String	Current value	configuration	1000	Mandatory
Eu.SDI-XX.438	Req	SCP	Indicates the SCP connection status.	Class					
Eu.SDI-XX.439	Req	EC_address	Counts number of received messages with implausible sender or receiver identification, see [RaSTA]	Attribute	EC_address : Integer	Current value	counter	1000	Mandatory
Eu.SDI-XX.440	Req	EC_CS	Counts number of received messages with implausible confirmed sequence number, see [RaSTA].	Attribute	EC_CS : Integer	Current value	counter	1000	Mandatory
Eu.SDI-XX.441	Req	EC_safety	Counts number of received messages with faulty safety code, see [RaSTA].	Attribute	EC_safety : Integer	Current value	counter	1000	Mandatory
Eu.SDI-XX.442	Req	EC_SN	Counts number of received messages with implausible sequence number, see [RaSTA].	Attribute	EC_SN : Integer	Current value	counter	1000	Mandatory
Eu.SDI-XX.443	Req	EC_type	Counts number of received messages with undefined message type, see [RaSTA].	Attribute	EC_type : Integer	Current value	counter	1000	Mandatory
Eu.SDI-XX.445	Req	rastaId	Indicates the configured rastaId of the SCP endpoint, see [RaSTA].	Attribute	rastaId : String	Current value	configuration	1000	Mandatory
Eu.SDI-XX.446	Req	scpConnectionStatus	Status of the communication connection of the Safe Communication Protocol (RaSTA).	Attribute	scpConnectionStatus : ScpConnectionStatu s	Current value	diagnosis	1000	Mandatory
Eu.SDI-XX.447	Req	T_seq	Time period for which a message which was received outside the sequence is buffered, see [RaSTA].	Attribute	T_seq : Double	Current value	configuration	1000	Mandatory
Eu.SDI-XX.448	Req	SDI	Standard Diagnostic Interface	Class					
Eu.SDI-XX.664	Req	interfaceRevisionSDISpecific	Indicates the version of the Interface specification for the specific SDI-XX which was used for development and production of the connected system. For example the connected system is developed and produced based on specific Interface specification for SDI-XX version 1.6 (1.A), the interfaceRevisionSDISpecific has the value "1.6 (1.A)".	Attribute	interfaceRevisionSDI Specific : String	Current value	configuration	1000	Mandatory
Eu.SDI-XX.1074	Req	interfaceRevisionSDIGeneric	Indicates the version of the Interface specification for SDI Generic which was used for development and production of the connected system. For example the connected system is developed and produced based on Interface specification for SDI Generic version 1.6 (1.A), the interfaceRevisionSDIGeneric has the value "1.6 (1.A)".	Attribute	interfaceRevisionSDI Generic : String	Current value	configuration	1000	Mandatory
Eu.SDI-XX.451	Req	SSISharedCybersecurityServiceInterface	Standard Security Interface	Class					
Eu.SDI-XX.1079	Req	interfaceRevisionSSISpecification	Indicates the version of the Shared Cybersecurity Services Specification which was used for development and production of the shared cybersecurity service interface in the connected system. For Example the service interface in the connected system is developed and produced based on Shared Cybersecurity Services Specification version 1.6 (1.A), the interfaceRevisionSSISpecification has the value "1.6 (1.A)".	Attribute	interfaceRevisionSSI Specification : String	Current value	configuration	1000	Mandatory
Eu.SDI-XX.1128	Req	connectionLastTimeDate	Indicates the last time the connection with the Cybersecurity Service function was successfully established.	Attribute	connectionLastTime Date : DateTime	Current Value	diagnosis	1000	Mandatory

ID	Type	Requirement	Meaning	Model Type	Data Type	Trigger	Attribute type	Sampling	Optionality
Eu.SDI-XX.1129	Req	serviceConnectionStatus	Indicates the connection status of the Shared Cybersecurity service.	Attribute	serviceConnectionStatus : ServiceConnectionStatus	Current Value	diagnosis	1000	Mandatory
Eu.SDI-XX.452	Req	Subsystem	A subsystem for operational or service functions.	Class					
Eu.SDI-XX.454	Req	statusTechnical	Technical Status of the system, that represents the aggregated status of all hierarchical lower systems. This allows to have a top level information on the status of the system which can be drilled down if the system is in any other state than "Ok".	Attribute	statusTechnical : StatusTechnical	Current value	diagnosis	1000	Mandatory
Eu.SDI-XX.455	Req	statusTechnicalManufacturerSpecificMessage	Must be used by the supplier to describe the reasons for a StatusTechnical != OK, that cannot be explained by existing datapoints (NOT including IM and manufacturer specific diagnostic messages). This Information MUST be provided from the supplier. This should provide flexibility for future uses. Multiple states can be indicated at the same time if multiple diagnosis have not been included in the model during the design phase. The supplier specific reason may not overlap with reasons already covered in other attributes.	Attribute	statusTechnicalManufacturerSpecificMessage : MultiStateDiscreteTypeSupplier	Current value	diagnosis	1000	Optional
Eu.SDI-XX.456	Req	subsystemIdentification	The technical identifier of the subsystem or adjacent systems (see Eu.SAS.77 in [Eu.Doc.16]).	Attribute	subsystemIdentification : String	Current value	configuration	1000	Mandatory
Eu.SDI-XX.1106	Req	isTimeSynchronised	Indicates whether the last time synchronisation was successful or not. TRUE: Current time of this subsystem is synchronised.	Attribute	isTimeSynchronised : Boolean	Current value	diagnosis	1000	Optional
Eu.SDI-XX.469	Req	TlsCertificate	TLS (Transport Layer Security [TLS]) certificate	Class					
Eu.SDI-XX.470	Req	caName	Indicates the CA Name of the currently active certificate.	Attribute	caName : String	Current value	configuration	1000	Mandatory
Eu.SDI-XX.471	Req	errorMessage	Indicates the latest message about errors in relation with the certificate; string must be cleared if no error.	Attribute	errorMessage : String	Current value	diagnosis	1000	Mandatory
Eu.SDI-XX.472	Req	status	Status of the certificate	Attribute	status : TlsStatus	Current value	diagnosis	1000	Mandatory
Eu.SDI-XX.473	Req	validationMessage	Indicates the latest message about certificate validation.	Attribute	validationMessage : String	Current value	diagnosis	1000	Mandatory
Eu.SDI-XX.474	Req	TransportChannelOpcua	Placeholder Class for OPC UA transport channel related parameters	Class					
Eu.SDI-XX.1145	Req	status	Status of the OPC UA transport channel	Attribute	status : TransportChannelOpcuaStatus	Current value	diagnosis	1000	Mandatory
Eu.SDI-XX.475	Req	TransportChannelRasta	A transport channel of the RaSTA protocol	Class					
Eu.SDI-XX.476	Req	N_missed	Number of delayed or lost messages, see [RaSTA]	Attribute	N_missed : Integer	Current value	raw data	1000	Mandatory
Eu.SDI-XX.477	Req	status	Status of the RaSTA transport channel	Attribute	status : TransportChannelRastaStatus	Current value	diagnosis	1000	Mandatory
Eu.SDI-XX.478	Req	T_drift	Average delay-indicator, see [RaSTA].	Attribute	T_drift : Double	Current value	raw data	1000	Mandatory
Eu.SDI-XX.479	Req	T_drift2	Average delay-indicator squard, see [RaSTA].	Attribute	T_drift2 : Double	Current value	raw data	1000	Mandatory
Eu.SDI-XX.665	Req	TransportChannel	A transport channel (Layer 4)	Class					
Eu.SDI-XX.1072	Req	AuxillaryInput		Class					
Eu.SDI-XX.1075	Req	SMI	Standard Maintenance Interface	Class					
Eu.SDI-XX.1077	Req	interfaceRevisionSMIGeneric	Indicates the version of the Interface specification for SMI Generic which was used for development and production of the connected system. For example the connected system is developed and produced based on Interface specification for SMI Generic version 1.6 (1.A), the interfaceRevisionSMIGeneric has the value "1.6 (1.A)".	Attribute	interfaceRevisionSMIGeneric : String	Current value	configuration	1000	Mandatory
Eu.SDI-XX.1086	Req	NetworkConfiguration	Network configuration of the connected system.	Class					
Eu.SDI-XX.1087	Req	ipv4DefaultGateway	Address of the default gateway server in IPv4 format.	Attribute	ipv4DefaultGateway : String	Current value	configuration	1000	Optional
Eu.SDI-XX.1088	Req	hostName	Hostname of the module	Attribute	hostName : String	Current value	configuration	1000	Optional
Eu.SDI-XX.1089	Req	ipv4Address	Address in IPv4 format	Attribute	ipv4Address : String	Current value	configuration	1000	Mandatory
Eu.SDI-XX.1090	Req	ipv4SubnetMask	IPv4 subnet mask	Attribute	ipv4SubnetMask : String	Current value	configuration	1000	Mandatory
Eu.SDI-XX.1091	Req	ipv6Address	Address in IPv6 format	Attribute	ipv6Address : String	Current value	configuration	1000	Optional
Eu.SDI-XX.1092	Req	ipv6SubnetMask	IPv6 subnet mask	Attribute	ipv6SubnetMask : String	Current value	configuration	1000	Optional
Eu.SDI-XX.1094	Req	description	The formal description of an endpoint like 'RaSTA Endpoint xxx' or 'OPC Server Endpoint xyz'.	Attribute	description : String	Current value	configuration	1000	Optional
Eu.SDI-XX.1105	Req	ipv6DefaultGateway	Address of the default gateway server in IPv6 format.	Attribute	ipv6DefaultGateway : String	Current value	configuration	1000	Optional



ID	Type	Requirement	Meaning	Model Type	Data Type	Trigger	Attribute type	Sampling	Optionality
Eu.SDI-XX.1096	Req	ConfigurationItem		Class					
Eu.SDI-XX.1097	Req	activationState	Indicates the SMI activation state of the configuration item in the connected system according to the state machine (see Eu.Gen-SMI.111 in [Eu.Doc.120]).	Attribute	activationState : ActivationState	Current value	diagnosis	1000	Mandatory
Eu.SDI-XX.1098	Req	preloadState	Indicates the SMI preload state of the configuration item in the connected system according to the state machine (see Eu.Gen-SMI.111 in [Eu.Doc.120]).	Attribute	preloadState : PreloadState	Current value	diagnosis	1000	Mandatory
Eu.SDI-XX.1109	Req	IsDataInstallationTimeExceeded	TRUE if the last try to activate and install a new version of the configuration item was not completed within the configured time period.	Attribute	IsDataInstallationTimeExceeded : Boolean	Current value	diagnosis	1000	Mandatory
Eu.SDI-XX.1108	Req	TransportChannelOther	Placeholder class for other transport channel related parameters	Class					
Eu.SDI-XX.1124	Req	IdentityAndAccessManagement	Interface for the Identity and Access Management service	Class					
Eu.SDI-XX.1125	Req	PublicKeyInfrastructure	Interface for the Public Key Infrastructure service	Class					
Eu.SDI-XX.1126	Req	SecureTimeSynchronisation	Interface for the Secure Time Synchronisation service	Class					
Eu.SDI-XX.1127	Req	SecurityLogging	Interface for the Security Logging service	Class					
Eu.SDI-XX.247	Head	<b>2.3.2 Generic.Equipment</b>							
Eu.SDI-XX.248	Req	Controller	The controller class is used to represent any controller that an equipment might have.	Class					
Eu.SDI-XX.249	Req	coolingFanStatus	Indicates the current status of the cooling fan.	Attribute	coolingFanStatus : CoolingFanStatus	Current value	diagnosis	1000	Optional
Eu.SDI-XX.253	Req	cpuHealthStatus	Indicates the health status of the CPU.	Attribute	cpuHealthStatus : CpuHealthStatus	Current value	diagnosis	1000	Mandatory
Eu.SDI-XX.254	Req	cpuLoadStatus	Indicates the load status of the CPU.	Attribute	cpuLoadStatus : CpuLoadStatus	Current value	diagnosis	1000	Mandatory
Eu.SDI-XX.256	Req	temperatureStatus	Indicates the temperature status of the CPU.	Attribute	temperatureStatus : TemperatureStatus	Current value	diagnosis	1000	Mandatory
Eu.SDI-XX.258	Req	operatingSystem	Operating system of controller unit. It contains the information needed to identify the specific version of the OS (example: distribution, main version and kernel version).	Attribute	operatingSystem : String	Current value	configuration	1000	Optional
Eu.SDI-XX.259	Req	operationStatus	Indicates the operation status of the controller.	Attribute	operationStatus : ControllerOperationStatus	Current value	diagnosis	1000	Mandatory
Eu.SDI-XX.260	Req	ramHealthStatus	Indicates the health status of the RAM.	Attribute	ramHealthStatus : RamHealthStatus	Current value	diagnosis	1000	Mandatory
Eu.SDI-XX.262	Req	ramSize	Indicates the total available RAM in megabytes (MB).	Attribute	ramSize : Integer	Current value	configuration	1000	Mandatory
Eu.SDI-XX.264	Req	bootingLastDateTime	Indicates the date and time on which the last booting of the controller happened.	Attribute	bootingLastDateTime : DateTime	Current value	raw data	1000	Mandatory
Eu.SDI-XX.265	Req	bootingLastReason	Indicates the type of the latest reset (The reason for the reset).	Attribute	bootingLastReason : ControllerResetReason	Current value	diagnosis	1000	Optional
Eu.SDI-XX.266	Req	statusTechnical	Technical Status of the system, that represents the aggregated status of all hierarchical lower systems. This allows to have a top level information on the status of the system which can be drilled down if the system is in any other state than "Ok".	Attribute	statusTechnical : StatusTechnical	Current value	diagnosis	1000	Mandatory
Eu.SDI-XX.267	Req	statusTechnicalManufacturerSpecificMessage	Must be used by the supplier to describe the reasons for a StatusTechnical != OK, that cannot be explained by existing datapoints (NOT including IM and manufacturer specific diagnostic messages). This Information MUST be provided from the supplier. This should provide flexibility for future uses. Multiple states can be indicated at the same time if multiple diagnosis have not been included in the model during the design phase. The supplier specific reason may not overlap with reasons already covered in other attributes.	Attribute	statusTechnicalManufacturerSpecificMessage : MultiStateDiscreteTypeSupplier	Current value	diagnosis	1000	Optional
Eu.SDI-XX.268	Req	systemDescription	Controller Type and Version Number (manufacturer defined)	Attribute	systemDescription : String	Current value	configuration	1000	Optional
Eu.SDI-XX.1019	Req	label	It is assigned to all classes representing physically identifiable entities. This string, corresponding to a physically identifiable label, facilitates consistent reference between the physical entities in the field and their digital representations within the model.	Attribute	label : String	Current value	configuration	1000	Optional
Eu.SDI-XX.269	Req	Equipment	The equipment class is used to represent the physical view of the system. Equipment classes represent unique instances down to at least the line replaceable units (hierarchical structure of equipment classes, parent-child). Linking multiple equipment classes allows manufacturers to represent their specific system.	Class					

ID	Type	Requirement	Meaning	Model Type	Data Type	Trigger	Attribute type	Sampling	Optionality
Eu.SDI-XX.270	Req	hardwareRevision	The data point hardwareRevision indicates the hardware revision level of the equipment. Hardware can only be changed by replacing an instance of Equipment.	Attribute	hardwareRevision : String	Current value	configuration	1000	Mandatory
Eu.SDI-XX.272	Req	manufacturer	The name of the manufacturer of the equipment.	Attribute	manufacturer : String	Current value	configuration	1000	Mandatory
Eu.SDI-XX.273	Req	manufacturerModel	The name of the equipment model.	Attribute	manufacturerModel : String	Current value	configuration	1000	Mandatory
Eu.SDI-XX.274	Req	manufacturingDateTime	Indicates the production date of the equipment.	Attribute	manufacturingDateT ime : DateTime	Current value	configuration	1000	Mandatory
Eu.SDI-XX.275	Req	replacementIndication	Indicates when the equipment requests a replacement. The decision to act on this indication is up to the operator, in accordance with the equipment manual.	Attribute	replacementIndicati on : EquipmentReplac eabilityStatus	Current value	diagnosis	1000	Mandatory
Eu.SDI-XX.276	Req	serialNumber	Number defined and provided by the manufacturer. The serial number combined with the manufacturer information must be unique. Every replaceable component must be represented by a class 'Equipment', which must be visually marked with its serial number.	Attribute	serialNumber : String	Current value	configuration	1000	Mandatory
Eu.SDI-XX.277	Req	softwareRevision	The data point softwareRevision (not interface revision) indicates the software revision level of the equipment. It contains the information to identify all software components, including firmware. It does not include changes in the configuration data. The format and semantics are defined by the manufacturer.	Attribute	softwareRevision : String	Current value	configuration	1000	Mandatory
Eu.SDI-XX.278	Req	statusTechnical	Technical Status of the system, that represents the aggregated status of all hierarchical lower systems. This allows to have a top level information on the status of the system which can be drilled down if the system is in any other state than "Ok".	Attribute	statusTechnical : StatusTechnical	Current value	diagnosis	1000	Mandatory
Eu.SDI-XX.279	Req	statusTechnicalManufacturerSpecificMessage	Must be used by the supplier to describe the reasons for a StatusTechnical != OK, that cannot be explained by existing datapoints (NOT including IM and manufacturer specific diagnostic messages). This Information MUST be provided from the supplier. This should provide flexibility for future uses. Multiple states can be indicated at the same time if multiple diagnosis have not been included in the model during the design phase. The supplier specific reason may not overlap with reasons already covered in other attributes.	Attribute	statusTechnicalManu facturerSpecificMess age : MultiStateDiscre teTypeSupplier	Current value	diagnosis	1000	Optional
Eu.SDI-XX.1020	Req	label	It is assigned to all classes representing physically identifiable entities. This string, corresponding to a physically identifiable label, facilitates consistent reference between the physical entities in the field and their digital representations within the model.	Attribute	label : String	Current value	configuration	1000	Optional
Eu.SDI-XX.257	Req	isTimeSynchronised	Indicates whether the last time synchronisation was successful or not. TRUE: Current time of this subsystem is synchronised.	Attribute	isTimeSynchronised : Boolean	Current value	diagnosis	1000	Optional
Eu.SDI-XX.292	Req	PhysicalAnalogInput	Contains attributes of a physical analog input.	Class					
Eu.SDI-XX.293	Req	current	Indicates the measured current at the analog input.  Note: The sampling rate of 250 ms is applicable when this attribute is present in a class that is associated with a class of a specific field element diagnostic model. When this is not the case, a sampling rate of 1000 ms applies.	Attribute	current : Real	>= 0.1A	raw data	250	Mandatory
Eu.SDI-XX.294	Req	voltage	Indicates the measured voltage at the analog input.  Note: The sampling rate of 250 ms is applicable when this attribute is present in a class that is associated with a class of a specific field element diagnostic model. When this is not the case, a sampling rate of 1000 ms applies.	Attribute	voltage : Real	>= 0.1V	raw data	250	Mandatory
Eu.SDI-XX.295	Req	PhysicalAnalogOutput	Contains attributes of a physical analog output.	Class					
Eu.SDI-XX.296	Req	current	Indicates the measured current at the analog output.  Note: The sampling rate of 250 ms is applicable when this attribute is present in a class that is associated with a class of a specific field element diagnostic model. When this is not the case, a sampling rate of 1000 ms applies.	Attribute	current : Real	>= 0.1A	raw data	250	Mandatory
Eu.SDI-XX.297	Req	voltage	Indicates the generated voltage of the analog output.  Note: The sampling rate of 250 ms is applicable when this attribute is present in a class that is associated with a class of a specific field element diagnostic model. When this is not the case, a sampling rate of 1000 ms applies.	Attribute	voltage : Real	>= 0.1V	raw data	250	Mandatory
Eu.SDI-XX.298	Req	PhysicalDigitalInput	Contains attributes of a physical digital input.	Class					
Eu.SDI-XX.299	Req	inputVoltage	Input voltage (analog value), Physical unit : Volt  Note: The sampling rate of 250 ms is applicable when this attribute is present in a class that is associated with a class of a specific field element diagnostic model. When this is not the case, a sampling rate of 1000 ms applies.	Attribute	inputVoltage : Real	>= 0.1V	raw data	250	Optional

ID	Type	Requirement	Meaning	Model Type	Data Type	Trigger	Attribute type	Sampling	Optionality
Eu.SDI-XX.300	Req	physicalInputValue	Indicates whether the physical channel is 'on' (high) or 'off' (low).  Note: The sampling rate of 250 ms is applicable when this attribute is present in a class that is associated with a class of a specific field element diagnostic model. When this is not the case, a sampling rate of 1000 ms applies.	Attribute	physicalInputValue : HighLow	Current value	diagnosis	250	Mandatory
Eu.SDI-XX.1027	Req	inputCurrent	Input current (analog value), Physical unit : Ampère  Note: The sampling rate of 250 ms is applicable when this attribute is present in a class that is associated with a class of a specific field element diagnostic model. When this is not the case, a sampling rate of 1000 ms applies.	Attribute	inputCurrent : Real	>= 0.1A	raw data	250	Optional
Eu.SDI-XX.301	Req	PhysicalDigitalOutput	Contains attributes of a physical digital output.	Class					
Eu.SDI-XX.302	Req	outputVoltage	Output voltage (analog value), Physical unit : Volt  Note: The sampling rate of 250 ms is applicable when this attribute is present in a class that is associated with a class of a specific field element diagnostic model. When this is not the case, a sampling rate of 1000 ms applies.	Attribute	outputVoltage : Real	>= 0.1V	raw data	250	Optional
Eu.SDI-XX.303	Req	physicalOutputValue	Indicates whether the physical channel is 'on' (high) or 'off' (low).  Note: The sampling rate of 250 ms is applicable when this attribute is present in a class that is associated with a class of a specific field element diagnostic model. When this is not the case, a sampling rate of 1000 ms applies.	Attribute	physicalOutputValue : HighLow	Current value	diagnosis	250	Mandatory
Eu.SDI-XX.1028	Req	outputCurrent	Output current (analog value), Physical unit : Ampère  Note: The sampling rate of 250 ms is applicable when this attribute is present in a class that is associated with a class of a specific field element diagnostic model. When this is not the case, a sampling rate of 1000 ms applies.	Attribute	outputCurrent : Real	>= 0.1A	raw data	250	Optional
Eu.SDI-XX.304	Req	PhysicalInput	Contains general purpose attributes of a physical input.	Class					
Eu.SDI-XX.305	Req	statusTechnical	Technical Status of the system, that represents the aggregated status of all hierarchical lower systems. This allows to have a top level information on the status of the system which can be drilled down if the system is in any other state than "Ok".	Attribute	statusTechnical : StatusTechnical	Current value	diagnosis	1000	Mandatory
Eu.SDI-XX.306	Req	statusTechnicalManufacturerSpecificMessage	Must be used by the supplier to describe the reasons for a StatusTechnical ! = OK, that cannot be explained by existing datapoints (NOT including IM and manufacturer specific diagnostic messages). This Information MUST be provided from the supplier. This should provide flexibility for future uses. Multiple states can be indicated at the same time if multiple diagnosis have not been included in the model during the design phase. The supplier specific reason may not overlap with reasons already covered in other attributes.	Attribute	statusTechnicalManufacturerSpecificMessage : MultiStateDiscreteTypeSupplier	Current value	diagnosis	1000	Optional
Eu.SDI-XX.1029	Req	label	It is assigned to all classes representing physically identifiable entities. This string, corresponding to a physically identifiable label, facilitates consistent reference between the physical entities in the field and their digital representations within the model.	Attribute	label : String	Current value	configuration	1000	Optional
Eu.SDI-XX.307	Req	PhysicalNetworkInterface	Represents 1 instance of 1 networking interface talking to 1 PoS-Signalling interface.	Class					
Eu.SDI-XX.308	Req	nominalBandwidth	States the nominal bandwidth in Mbits of physical network interface.	Attribute	nominalBandwidth : Long	Current value	configuration	1000	Mandatory
Eu.SDI-XX.309	Req	macAddress	MAC Address of the interface in the FieldElement	Attribute	macAddress : String	Current value	configuration	1000	Mandatory
Eu.SDI-XX.310	Req	operationStatus	Indicates the operation status of the PhysicalNetworkInterface.	Attribute	operationStatus : PhysicalNetworkInterfaceOperationalStatus	Current value	diagnosis	1000	Mandatory
Eu.SDI-XX.312	Req	statusTechnical	Technical Status of the system, that represents the aggregated status of all hierarchical lower systems. This allows to have a top level information on the status of the system which can be drilled down if the system is in any other state than "Ok".	Attribute	statusTechnical : StatusTechnical	Current value	diagnosis	1000	Mandatory
Eu.SDI-XX.313	Req	statusTechnicalManufacturerSpecificMessage	Must be used by the supplier to describe the reasons for a StatusTechnical ! = OK, that cannot be explained by existing datapoints (NOT including IM and manufacturer specific diagnostic messages). This Information MUST be provided from the supplier. This should provide flexibility for future uses. Multiple states can be indicated at the same time if multiple diagnosis have not been included in the model during the design phase. The supplier specific reason may not overlap with reasons already covered in other attributes.	Attribute	statusTechnicalManufacturerSpecificMessage : MultiStateDiscreteTypeSupplier	Current value	diagnosis	1000	Optional
Eu.SDI-XX.1030	Req	label	It is assigned to all classes representing physically identifiable entities. This string, corresponding to a physically identifiable label, facilitates consistent reference between the physical entities in the field and their digital representations within the model.	Attribute	label : String	Current value	configuration	1000	Optional

ID	Type	Requirement	Meaning	Model Type	Data Type	Trigger	Attribute type	Sampling	Optionality
Eu.SDI-XX.322	Req	PhysicalOutput	Contains general purpose attributes of a physical output.	Class					
Eu.SDI-XX.323	Req	statusTechnical	Technical Status of the system, that represents the aggregated status of all hierarchical lower systems. This allows to have a top level information on the status of the system which can be drilled down if the system is in any other state than "Ok".	Attribute	statusTechnical : StatusTechnical	Current value	diagnosis	1000	Mandatory
Eu.SDI-XX.324	Req	statusTechnicalManufacturerSpecificMessage	Must be used by the supplier to describe the reasons for a StatusTechnical != OK, that cannot be explained by existing datapoints (NOT including IM and manufacturer specific diagnostic messages). This Information MUST be provided from the supplier. This should provide flexibility for future uses. Multiple states can be indicated at the same time if multiple diagnosis have not been included in the model during the design phase. The supplier specific reason may not overlap with reasons already covered in other attributes.	Attribute	statusTechnicalManufacturerSpecificMessage : MultiStateDiscreteTypeSupplier	Current value	diagnosis	1000	Optional
Eu.SDI-XX.1031	Req	label	It is assigned to all classes representing physically identifiable entities. This string, corresponding to a physically identifiable label, facilitates consistent reference between the physical entities in the field and their digital representations within the model.	Attribute	label : String	Current value	configuration	1000	Optional
Eu.SDI-XX.325	Req	StorageMedium	Contains general purpose attributes of persistent storage.	Class					
Eu.SDI-XX.326	Req	memorySize	Indicates memory of the storage medium in megabytes (MB).	Attribute	memorySize : Integer	Current value	configuration	1000	Mandatory
Eu.SDI-XX.328	Req	statusTechnical	Technical Status of the system, that represents the aggregated status of all hierarchical lower systems. This allows to have a top level information on the status of the system which can be drilled down if the system is in any other state than "Ok".	Attribute	statusTechnical : StatusTechnical	Current value	diagnosis	1000	Mandatory
Eu.SDI-XX.329	Req	statusTechnicalManufacturerSpecificMessage	Must be used by the supplier to describe the reasons for a StatusTechnical != OK, that cannot be explained by existing datapoints (NOT including IM and manufacturer specific diagnostic messages). This Information MUST be provided from the supplier. This should provide flexibility for future uses. Multiple states can be indicated at the same time if multiple diagnosis have not been included in the model during the design phase. The supplier specific reason may not overlap with reasons already covered in other attributes.	Attribute	statusTechnicalManufacturerSpecificMessage : MultiStateDiscreteTypeSupplier	Current value	diagnosis	1000	Optional
Eu.SDI-XX.331	Req	temperatureStatus	Indicates the temperature status of the storage medium.	Attribute	temperatureStatus : TemperatureStatus	Current value	diagnosis	1000	Optional
Eu.SDI-XX.1039	Req	label	It is assigned to all classes representing physically identifiable entities. This string, corresponding to a physically identifiable label, facilitates consistent reference between the physical entities in the field and their digital representations within the model.	Attribute	label : String	Current value	configuration	1000	Optional
Eu.SDI-XX.332	Req	StorageMediumFlashMemory	Contains attributes of flash memory storage.	Class					
Eu.SDI-XX.335	Req	wearStatus	Wear status of the flash memory in the storage medium	Attribute	wearStatus : WearStatus	Current value	diagnosis	1000	Mandatory
Eu.SDI-XX.760	Req	PowerSupply	Contains general purpose attributes of the power supply within the connected system.	Class					
Eu.SDI-XX.761	Req	inputVoltageStatus	Indicates the input voltage status.	Attribute	inputVoltageStatus : VoltageStatus	Current value	diagnosis	1000	Mandatory
Eu.SDI-XX.762	Req	outputPower	Indicates the output power.	Attribute	outputPower : Integer	Current value	diagnosis	1000	Mandatory
Eu.SDI-XX.763	Req	outputPowerLimit	Indicates the maximally supported output power.	Attribute	outputPowerLimit : Integer	Current value	configuration	1000	Mandatory
Eu.SDI-XX.764	Req	outputVoltageNominal	Indicates the nominal design output voltage.	Attribute	outputVoltageNominal : Integer	Current value	configuration	1000	Mandatory
Eu.SDI-XX.765	Req	outputVoltageStatus	Indicates the output voltage status.	Attribute	outputVoltageStatus : VoltageStatus	Current value	diagnosis	1000	Mandatory
Eu.SDI-XX.766	Req	statusTechnical	Technical Status of the system, that represents the aggregated status of all hierarchical lower systems. This allows to have a top level information on the status of the system which can be drilled down if the system is in any other state than "Ok".	Attribute	statusTechnical : StatusTechnical	Current value	diagnosis	1000	Mandatory
Eu.SDI-XX.767	Req	statusTechnicalManufacturerSpecificMessage	Must be used by the supplier to describe the reasons for a StatusTechnical != OK, that cannot be explained by existing datapoints (NOT including IM and manufacturer specific diagnostic messages). This Information MUST be provided from the supplier. This should provide flexibility for future uses. Multiple states can be indicated at the same time if multiple diagnosis have not been included in the model during the design phase. The supplier specific reason may not overlap with reasons already covered in other attributes.	Attribute	statusTechnicalManufacturerSpecificMessage : MultiStateDiscreteTypeSupplier	Current value	diagnosis	1000	Optional
Eu.SDI-XX.769	Req	temperatureStatus	Indicates the temperature status of the power supply.	Attribute	temperatureStatus : TemperatureStatus	Current value	diagnosis	1000	Optional
Eu.SDI-XX.1036	Req	inputCurrent		Attribute	inputCurrent : Real	>= 0.1A	raw data	1000	Mandatory

ID	Type	Requirement	Meaning	Model Type	Data Type	Trigger	Attribute type	Sampling	Optionality
Eu.SDI-XX.1037	Req	inputVoltage		Attribute	inputVoltage : Real	>= 0.1V	raw data	1000	Mandatory
Eu.SDI-XX.1038	Req	label	It is assigned to all classes representing physically identifiable entities. This string, corresponding to a physically identifiable label, facilitates consistent reference between the physical entities in the field and their digital representations within the model.	Attribute	label : String	Current value	configuration	1000	Optional
Eu.SDI-XX.1021	Req	InputButton		Class					
Eu.SDI-XX.1022	Req	isPressed	Note: The sampling rate of 250 ms is applicable when this attribute is present in a class that is associated with a class of a specific field element diagnostic model. When this is not the case, a sampling rate of 1000 ms applies.	Attribute	isPressed : Boolean	Current value	diagnosis	250	Mandatory
Eu.SDI-XX.1023	Req	InputDevice		Class					
Eu.SDI-XX.1095	Req	label	It is assigned to all classes representing physically identifiable entities. This string, corresponding to a physically identifiable label, facilitates consistent reference between the physical entities in the field and their digital representations within the model.	Attribute	label : String	Current value	configuration	1000	Optional
Eu.SDI-XX.1024	Req	InputSwitch		Class					
Eu.SDI-XX.1025	Req	inputSwitchPosition	Note: The sampling rate of 250 ms is applicable when this attribute is present in a class that is associated with a class of a specific field element diagnostic model. When this is not the case, a sampling rate of 1000 ms applies.	Attribute	inputSwitchPosition : InputSwitchPosition	Current value	diagnosis	250	Mandatory
Eu.SDI-XX.1032	Req	PhysicalSeparatedInput		Class					
Eu.SDI-XX.1033	Req	inputValue	Note: The sampling rate of 250 ms is applicable when this attribute is present in a class that is associated with a class of a specific field element diagnostic model. When this is not the case, a sampling rate of 1000 ms applies.	Attribute	inputValue : InputValue	Current value	raw data	250	Mandatory
Eu.SDI-XX.1034	Req	PhysicalSeparatedOutput		Class					
Eu.SDI-XX.1035	Req	outputValue	Note: The sampling rate of 250 ms is applicable when this attribute is present in a class that is associated with a class of a specific field element diagnostic model. When this is not the case, a sampling rate of 1000 ms applies.	Attribute	outputValue : OutputValue	Current value	raw data	250	Mandatory
Eu.SDI-XX.397	Head	<b>2.3.3 Generic.Redundancy</b>							
Eu.SDI-XX.399	Req	RedundancyGroup	Watches the combined status of the instances that perform redundancy.	Class					
Eu.SDI-XX.400	Req	isAvailable	TRUE if available instances >= minimumAvailable.	Attribute	isAvailable : Boolean	Current value	diagnosis		Mandatory
Eu.SDI-XX.401	Req	label	Name of redundancy group, used to identify the specific group.	Attribute	label : String	Current value	configuration		Mandatory
Eu.SDI-XX.402	Req	minimumAvailable	Indicates the minimal number of available units to operate "normally" (for a Zoo3 system this would indicate 2).	Attribute	minimumAvailable : Integer	Current value	configuration		Mandatory
Eu.SDI-XX.403	Req	RedundancyStatus	This object is added as a child object to the item (Equipment, Controller or other class) that is part of a redundancy.	Class					
Eu.SDI-XX.404	Req	isActive	TRUE if the item is part of hot redundancy.	Attribute	isActive : Boolean	Current value	diagnosis		Mandatory
Eu.SDI-XX.405	Req	isAvailable	TRUE if at least all the primary functions of the redundant element are available (observed on the level of the RedundancyGroup).	Attribute	isAvailable : Boolean	Current value	diagnosis		Mandatory
Eu.SDI-XX.406	Req	isExcludedFromRedundancyGroup	TRUE if the redundant element is turned off.	Attribute	isExcludedFromRedundancyGroup : Boolean	Current value	diagnosis		Mandatory
Eu.SDI-XX.649	Head	<b>2.3.4 Generic.Log</b>							
Eu.SDI-XX.650	Req	LogEvent	Logging the events.	Class					
Eu.SDI-XX.651	Req	messageId	Unique ID linked to a localized Text, available in the service function Diagnostics collector.	Attribute	messageId : Long	Current value		1000	Optional
Eu.SDI-XX.652	Req	LogEventInterface	An event related to an interface.	Class					
Eu.SDI-XX.655	Req	LogEventSubsystem	An event related to a subsystem.	Class					
Eu.SDI-XX.667	Req	BaseEvent	Log events are derived from the OPC UA 'BaseEventType'.	Class					
Eu.SDI-XX.431	Req	LogEventInterfacePdiEvent	An event on the application layer of the SCP.	Class					
Eu.SDI-XX.432	Req	error	Indicates the type of PDI error, if the communication error is detected by the reporting communication partner.	Attribute	error : PdiError	Current value	diagnosis	1000	Optional
Eu.SDI-XX.433	Req	eventNotification	Indicates the PDI event notification.	Attribute	eventNotification : PdiEventNotification	Current value	diagnosis	1000	Mandatory
Eu.SDI-XX.1040	Head	<b>2.3.5 Generic.MotorTurnData</b>							
Eu.SDI-XX.1041	Req	MotorTurnData	To be implemented by one of the alternative underlying classes, depending on the implementation of the point machine.	Class					

ID	Type	Requirement	Meaning	Model Type	Data Type	Trigger	Attribute type	Sampling	Optionality
Eu.SDI-XX.1042	Req	index	Index of the motor. Must be identical to the index in the logical class representing the motor (e.g. PointMachine).	Attribute	index : String	On event	configuration	1000	Mandatory
Eu.SDI-XX.1043	Req	MotorTurnData_1AC	One of the alternative implementations to collect turn data from a point machine.	Class					
Eu.SDI-XX.1044	Req	cosPhi	One-dimensional array of power factor cos phi values in [°].	Attribute	cosPhi : Real [*]	On event	raw data	50	Mandatory
Eu.SDI-XX.1045	Req	current	One-dimensional array of current values in [A].	Attribute	current : Real [*]	On event	raw data	50	Mandatory
Eu.SDI-XX.1046	Req	voltage	One-dimensional array of voltage values in [V].	Attribute	voltage : Real [*]	On event	raw data	50	Mandatory
Eu.SDI-XX.1047	Req	MotorTurnData_1AC_ActiveCurrentInductiveCompensation	One of the alternative implementations to collect turn data from a point machine.	Class					
Eu.SDI-XX.1048	Req	activeCurrent	One-dimensional array of active current values in [A].	Attribute	activeCurrent : Real [*]	On event	raw data	50	Mandatory
Eu.SDI-XX.1049	Req	MotorTurnData_1AC_ActiveCurrentPhaseAngleCompensation	One of the alternative implementations to collect turn data from a point machine.	Class					
Eu.SDI-XX.1050	Req	activeCurrent	One-dimensional array of active current values in [A].	Attribute	activeCurrent : Real [*]	On event	raw data	50	Mandatory
Eu.SDI-XX.1051	Req	MotorTurnData_1AC_Power	One of the alternative implementations to collect turn data from a point machine.	Class					
Eu.SDI-XX.1052	Req	power	One-dimensional array of power values in [W].	Attribute	power : Real [*]	On event	raw data	50	Mandatory
Eu.SDI-XX.1053	Req	MotorTurnData_3AC	One of the alternative implementations to collect turn data from a point machine.	Class					
Eu.SDI-XX.1054	Req	cosPhi_L1	One-dimensional array of power factor cos phi values L1 in [°].	Attribute	cosPhi_L1 : Real [*]	On event	raw data	50	Mandatory
Eu.SDI-XX.1055	Req	cosPhi_L2	One-dimensional array of power factor cos phi values L2 in [°].	Attribute	cosPhi_L2 : Real [*]	On event	raw data	50	Mandatory
Eu.SDI-XX.1056	Req	cosPhi_L3	One-dimensional array of power factor cos phi values L3 in [°].	Attribute	cosPhi_L3 : Real [*]	On event	raw data	50	Mandatory
Eu.SDI-XX.1057	Req	current_L1	One-dimensional array of current values L1 in [A].	Attribute	current_L1 : Real [*]	On event	raw data	50	Mandatory
Eu.SDI-XX.1058	Req	current_L2	One-dimensional array of current values L2 in [A].	Attribute	current_L2 : Real [*]	On event	raw data	50	Mandatory
Eu.SDI-XX.1059	Req	current_L3	One-dimensional array of current values L3 in [A].	Attribute	current_L3 : Real [*]	On event	raw data	50	Mandatory
Eu.SDI-XX.1060	Req	voltage_L1	One-dimensional array of voltage values L1 in [V].	Attribute	voltage_L1 : Real [*]	On event	raw data	50	Mandatory
Eu.SDI-XX.1061	Req	voltage_L2	One-dimensional array of voltage values L2 in [V].	Attribute	voltage_L2 : Real [*]	On event	raw data	50	Mandatory
Eu.SDI-XX.1062	Req	voltage_L3	One-dimensional array of voltage values L3 in [V].	Attribute	voltage_L3 : Real [*]	On event	raw data	50	Mandatory
Eu.SDI-XX.1063	Req	MotorTurnData_3AC_Power	One of the alternative implementations to collect turn data from a point machine.	Class					
Eu.SDI-XX.1064	Req	power_L1	One-dimensional array of power values in [W] for L1.	Attribute	power_L1 : Real [*]	On event	raw data	50	Mandatory
Eu.SDI-XX.1065	Req	power_L2	One-dimensional array of power values in [W] for L2.	Attribute	power_L2 : Real [*]	On event	raw data	50	Mandatory
Eu.SDI-XX.1066	Req	power_L3	One-dimensional array of power values in [W] for L3.	Attribute	power_L3 : Real [*]	On event	raw data	50	Mandatory
Eu.SDI-XX.1067	Req	MotorTurnData_Hydraulic	One of the alternative implementations to collect turn data from a point machine.	Class					
Eu.SDI-XX.1068	Req	fluidLevelStatus	The status of the fluid level.	Attribute	fluidLevelStatus : FluidLevelStatus	On event	diagnosis	1000	Mandatory
Eu.SDI-XX.1069	Req	fluidPressure_left	One-dimensional array of pressure values in [bar] at the left side.	Attribute	fluidPressure_left : Real [*]	On event	raw data	50	Mandatory
Eu.SDI-XX.1070	Req	fluidPressure_right	One-dimensional array of pressure values in [bar] at the right side.	Attribute	fluidPressure_right : Real [*]	On event	raw data	50	Mandatory
Eu.SDI-XX.1071	Req	voltageOnEndposition	Reports the voltage in [V] to measure point detection contact conditions.	Attribute	voltageOnEndposition : Real	On event	raw data	1000	Mandatory
Eu.SDI-XX.759	Head	<b>2.3.6 Generic.Enumeration</b>							
Eu.SDI-XX.336	Head	<b>2.3.6.1 Enumeration.Equipment</b>							
Eu.SDI-XX.337	Req	ControllerOperationStatus	Enumeration: Indicates the general operation status of the controller	ValueType (Enumeration)					
Eu.SDI-XX.342	Req	Unknown	0: The status unknown is used when the state is not yet established e.g. if connection to the system is lost	Enumeration Literal					
Eu.SDI-XX.338	Req	Booting	1: Controller is booting up and is not ready	Enumeration Literal					
Eu.SDI-XX.341	Req	InOperation	2: Controller is in regular operation	Enumeration Literal					

ID	Type	Requirement	Meaning	Model Type	Data Type	Trigger	Attribute type	Sampling	Optionality
Eu.SDI-XX.339	Req	Fallback	3: Controller is in the fallback mode	Enumeration Literal					
Eu.SDI-XX.343	Req	ControllerResetReason	Enumeration: Indicates the type of the latest reset (The reason for the reset)	ValueType (Enumeration)					
Eu.SDI-XX.349	Req	Unknown	0: The status unknown is used when the state is not yet established e.g. if connection to the system is lost	Enumeration Literal					
Eu.SDI-XX.347	Req	OnSite	1: A reset by someone on-site	Enumeration Literal					
Eu.SDI-XX.348	Req	RemoteMdm	2: A remote reset by the MDM	Enumeration Literal					
Eu.SDI-XX.346	Req	InternalMaintenanceOk	3: A reset during successful activation of configuration or device software	Enumeration Literal					
Eu.SDI-XX.345	Req	InternalMaintenanceFailure	4: A reset during failed activation of configuration or device software	Enumeration Literal					
Eu.SDI-XX.344	Req	InternalFailure	5: A reset caused by an internal failure	Enumeration Literal					
Eu.SDI-XX.350	Req	CoolingFanStatus	Enumeration: Indicates the current status of the cooling fan	ValueType (Enumeration)					
Eu.SDI-XX.353	Req	Unknown	0: The status unknown is used when the state is not yet established e.g. if connection to the system is lost	Enumeration Literal					
Eu.SDI-XX.352	Req	Normal	1: Functioning according to specifications	Enumeration Literal					
Eu.SDI-XX.351	Req	Failure	2: Not functioning	Enumeration Literal					
Eu.SDI-XX.354	Req	CpuHealthStatus	Enumeration: Indicates the health status of the CPU	ValueType (Enumeration)					
Eu.SDI-XX.358	Req	Unknown	0: The status unknown is used when the state is not yet established e.g. if connection to the system is lost	Enumeration Literal					
Eu.SDI-XX.357	Req	Normal	1: Functioning according to specifications	Enumeration Literal					
Eu.SDI-XX.355	Req	Degraded	2: Functioning with reduced performance	Enumeration Literal					
Eu.SDI-XX.356	Req	Failure	3: Not functioning	Enumeration Literal					
Eu.SDI-XX.359	Req	CpuLoadStatus	Enumeration: Indicates the load status of the CPU	ValueType (Enumeration)					
Eu.SDI-XX.363	Req	Unknown	0: The status unknown is used when the state is not yet established e.g. if connection to the system is lost	Enumeration Literal					
Eu.SDI-XX.362	Req	Normal	1: CPU load is normal	Enumeration Literal					
Eu.SDI-XX.361	Req	High	2: CPU load is high	Enumeration Literal					
Eu.SDI-XX.360	Req	Critical	3: CPU load is critical	Enumeration Literal					
Eu.SDI-XX.364	Req	EquipmentReplaceabilityStatus	Enumeration: Indicates when the equipment requests a replacement. The decision to act on this indication is up to the operator, in accordance with the equipment manual.	ValueType (Enumeration)					
Eu.SDI-XX.369	Req	Unknown	0: The status unknown is used when the state is not yet established e.g. if connection to the system is lost	Enumeration Literal					
Eu.SDI-XX.365	Req	ReplacementNotNeeded	1: Equipment does not need to be replaced	Enumeration Literal					
Eu.SDI-XX.366	Req	ReplaceableAtOperation	2: Equipment could be replaced during operation	Enumeration Literal					
Eu.SDI-XX.367	Req	ReplaceableMaintenance	3: Equipment should be replaced during maintenance	Enumeration Literal					
Eu.SDI-XX.370	Req	PhysicalNetworkInterfaceOperationalStatus	Enumeration	ValueType (Enumeration)					
Eu.SDI-XX.375	Req	Unknown	0: The status unknown is used when the state is not yet established e.g. if connection to the system is lost	Enumeration Literal					
Eu.SDI-XX.373	Req	NotAvailableNotConnected	1: Physical network interface is neither available nor connected	Enumeration Literal					
Eu.SDI-XX.371	Req	AvailableNotConnected	2: The physical hardware for the connection is not disabled.	Enumeration Literal					
Eu.SDI-XX.372	Req	Connected	3: The first 2 layers of PoS-Signalling are running.	Enumeration Literal					
Eu.SDI-XX.374	Req	NotConnectedDisturbed	4: Physical network interface is disturbed and not connected	Enumeration Literal					
Eu.SDI-XX.376	Req	RamHealthStatus	Enumeration: Indicates the health status of the RAM	ValueType (Enumeration)					
Eu.SDI-XX.380	Req	Unknown	0: The status unknown is used when the state is not yet established e.g. if connection to the system is lost	Enumeration Literal					
Eu.SDI-XX.379	Req	Normal	1: Functioning according to specifications	Enumeration Literal					
Eu.SDI-XX.377	Req	Degraded	2: Functioning with reduced performance	Enumeration Literal					
Eu.SDI-XX.378	Req	Failure	3: Not functioning	Enumeration Literal					
Eu.SDI-XX.387	Req	TemperatureStatus	Enumeration: Indicates the temperature status of the CPU	ValueType (Enumeration)					

ID	Type	Requirement	Meaning	Model Type	Data Type	Trigger	Attribute type	Sampling	Optionality
Eu.SDI-XX.390	Req	Unknown	0: The status unknown is used when the state is not yet established e.g. if connection to the system is lost	Enumeration Literal					
Eu.SDI-XX.388	Req	Normal	1: Temperature of the CPU is normal	Enumeration Literal					
Eu.SDI-XX.389	Req	TooHigh	2: Temperature of the CPU is too high	Enumeration Literal					
Eu.SDI-XX.391	Req	VoltageStatus	Enumeration: Voltage status of the CPU	ValueType (Enumeration)					
Eu.SDI-XX.396	Req	Unknown	0: The status unknown is used when the state is not yet established e.g. if connection to the system is lost	Enumeration Literal					
Eu.SDI-XX.393	Req	NotUsed	1: Voltage is not used	Enumeration Literal					
Eu.SDI-XX.395	Req	Undervoltage	2: Voltage is under nominal threshold	Enumeration Literal					
Eu.SDI-XX.392	Req	Nominal	3: Voltage is nominal	Enumeration Literal					
Eu.SDI-XX.394	Req	Overvoltage	4: Voltage is over nominal threshold	Enumeration Literal					
Eu.SDI-XX.234	Req	HighLow	Enumeration: Digital value of the physical channel	ValueType (Enumeration)					
Eu.SDI-XX.596	Req	Unknown	0: The status unknown is used when the state is not yet established e.g. if connection to the system is lost	Enumeration Literal					
Eu.SDI-XX.235	Req	High	1: Physical channel is digital high	Enumeration Literal					
Eu.SDI-XX.236	Req	Low	2: Physical channel is digital low	Enumeration Literal					
Eu.SDI-XX.990	Req	InputSwitchPosition	Enumeration	ValueType (Enumeration)					
Eu.SDI-XX.994	Req	Unknown	0: The status unknown is used when the state is not yet established e.g. if connection to the system is lost	Enumeration Literal					
Eu.SDI-XX.991	Req	Position1	1	Enumeration Literal					
Eu.SDI-XX.992	Req	Position2	2	Enumeration Literal					
Eu.SDI-XX.993	Req	Position3	3	Enumeration Literal					
Eu.SDI-XX.995	Req	InputValue	Enumeration	ValueType (Enumeration)					
Eu.SDI-XX.998	Req	Unknown	0: The status unknown is used when the state is not yet established e.g. if connection to the system is lost	Enumeration Literal					
Eu.SDI-XX.997	Req	On	1	Enumeration Literal					
Eu.SDI-XX.996	Req	Off	2	Enumeration Literal					
Eu.SDI-XX.999	Req	OutputValue	Enumeration	ValueType (Enumeration)					
Eu.SDI-XX.1002	Req	Unknown	0: The status unknown is used when the state is not yet established e.g. if connection to the system is lost	Enumeration Literal					
Eu.SDI-XX.1001	Req	On	1	Enumeration Literal					
Eu.SDI-XX.1000	Req	Off	2	Enumeration Literal					
Eu.SDI-XX.1082	Req	WearStatus	Enumeration: Wear status of the flash memory	ValueType (Enumeration)					
Eu.SDI-XX.1085	Req	Unknown	0: The status unknown is used when the state is not yet established e.g. if connection to the system is lost	Enumeration Literal					
Eu.SDI-XX.1084	Req	Ok	1: Wear status of the flash memory is okay	Enumeration Literal					
Eu.SDI-XX.1093	Req	Warning	2: Wear status of the flash memory is at a warning level	Enumeration Literal					
Eu.SDI-XX.1083	Req	Nok	3: Wear status of the flash memory is not okay	Enumeration Literal					
Eu.SDI-XX.615	Head	2.3.6.2 Enumeration.Log							
Eu.SDI-XX.616	Req	LogSeverityLevel	Enumeration: Level of logging of event	ValueType (Enumeration)					
Eu.SDI-XX.617	Req	DEBUG	1: Logs used for interactive analysis during development. These logs should mainly contain useful information for debugging. They hold no long-term use.	Enumeration Literal					
Eu.SDI-XX.620	Req	INFO	2: Logs that track the general course of the application. These logs should hold a long-term benefit.	Enumeration Literal					
Eu.SDI-XX.621	Req	WARN	3: Logs that indicate an unusual or unexpected event in the application flow. They do not cause an abort of the execution of the application.	Enumeration Literal					
Eu.SDI-XX.618	Req	ERROR	4: Logs that point to the termination of the current execution flow due to an error. They specify an error in the current activity not an error of the whole application.	Enumeration Literal					



ID	Type	Requirement	Meaning	Model Type	Data Type	Trigger	Attribute type	Sampling	Optionality
Eu.SDI-XX.619	Req	FATAL	5: Logs that describe an unrecoverable application or system crash or a serious error that requires immediate attention.	Enumeration Literal					
Eu.SDI-XX.534	Req	PdiError	Enumeration: Error in the application layer (Process Data Interface protocol)	ValueType (Enumeration)					
Eu.SDI-XX.546	Req	Unknown	0: The status unknown is used when the state is not yet established e.g. if connection to the system is lost	Enumeration Literal					
Eu.SDI-XX.540	Req	IncompleteActivation1	1	Enumeration Literal					
Eu.SDI-XX.541	Req	IncompleteActivation2	2	Enumeration Literal					
Eu.SDI-XX.538	Req	ImproperMessageSequence	3	Enumeration Literal					
Eu.SDI-XX.543	Req	MessageAtImproperInstantCase1	4	Enumeration Literal					
Eu.SDI-XX.544	Req	MessageAtImproperInstantCase2	5	Enumeration Literal					
Eu.SDI-XX.535	Req	DeviatingMessageType	6	Enumeration Literal					
Eu.SDI-XX.536	Req	DeviatingProtocolType	7	Enumeration Literal					
Eu.SDI-XX.545	Req	MessageLength	8	Enumeration Literal					
Eu.SDI-XX.547	Req	UnknownSenderOrReceiver	9	Enumeration Literal					
Eu.SDI-XX.539	Req	ImproperValue	10	Enumeration Literal					
Eu.SDI-XX.542	Req	LocallyImproperValue	11	Enumeration Literal					
Eu.SDI-XX.537	Req	ImproperCombinationOfValues	12	Enumeration Literal					
Eu.SDI-XX.548	Req	PdiEventNotification	Enumeration: SCI PDI actions	ValueType (Enumeration)					
Eu.SDI-XX.555	Req	NormalClose	0: PDI  is normally closed	Enumeration Literal					
Eu.SDI-XX.556	Req	OtherPdiRequested	1: Other PDI is requested	Enumeration Literal					
Eu.SDI-XX.558	Req	PdiTimeout	2: PDI has timed out	Enumeration Literal					
Eu.SDI-XX.554	Req	EilProtocolError	3: Protocol error from EIL	Enumeration Literal					
Eu.SDI-XX.553	Req	EilFormalTelegramError	4: Formal telegram error from EIL	Enumeration Literal					
Eu.SDI-XX.552	Req	EilContentTelegramError	5: Content telegram error from EIL	Enumeration Literal					
Eu.SDI-XX.551	Req	EfesProtocolError	6: Protocol error from EfeS	Enumeration Literal					
Eu.SDI-XX.550	Req	EfesFormalTelegramError	7: Formal telegram error from EfeS	Enumeration Literal					
Eu.SDI-XX.549	Req	EfesContentTelegramError	8: Content telegram error from EfeS	Enumeration Literal					
Eu.SDI-XX.559	Req	ReleaseForMaintenance	9: PDI is released for maintenance	Enumeration Literal					
Eu.SDI-XX.557	Req	pdiEstablishingError	10: Error in establishing PDI	Enumeration Literal					
Eu.SDI-XX.1119	Req	pdiRepetition	11.  pdiRepetition	Enumeration Literal					
Eu.SDI-XX.481	Head	<b>2.3.6.3 Enumeration.Subsystem</b>							
Eu.SDI-XX.482	Req	BasicDataReadable	Enumeration: Readability of basic data	ValueType (Enumeration)					
Eu.SDI-XX.486	Req	Unknown	0: The status unknown is used when the state is not yet established e.g. if connection to the system is lost	Enumeration Literal					
Eu.SDI-XX.485	Req	NotReadable	1: The data cannot be read	Enumeration Literal					
Eu.SDI-XX.484	Req	Incomplete	2: The data is not complete	Enumeration Literal					
Eu.SDI-XX.483	Req	FormallyCorrect	3: The data is formally correct	Enumeration Literal					
Eu.SDI-XX.501	Req	ConnectionStatus	Enumeration: Connection status of the subsystem	ValueType (Enumeration)					
Eu.SDI-XX.506	Req	Unknown	0: The status unknown is used when the state is not yet established e.g. if connection to the system is lost	Enumeration Literal					
Eu.SDI-XX.504	Req	NotAvailableNotConnected	1: The subsystem is neither available nor connected	Enumeration Literal					
Eu.SDI-XX.502	Req	AvailableNotConnected	2: The subsystem is available but not connected	Enumeration Literal					
Eu.SDI-XX.503	Req	Connected	3: The subsystem is connected	Enumeration Literal					
Eu.SDI-XX.505	Req	NotConnectedDisturbed	4: The subsystem is not connected and disturbed	Enumeration Literal					
Eu.SDI-XX.507	Req	FieldElementOperationStatus	Enumeration: SCI states (represents essential state machine)	ValueType (Enumeration)					
Eu.SDI-XX.511	Req	Unknown	0: The status unknown is used when the state is not yet established e.g. if connection to the system is lost	Enumeration Literal					

ID	Type	Requirement	Meaning	Model Type	Data Type	Trigger	Attribute type	Sampling	Optionality
Eu.SDI-XX.508	Req	Booting	1: Field element is booting	Enumeration Literal					
Eu.SDI-XX.515	Req	InitialisingWaitingForPdiOrMaintenance	2: Field element is initialising and waiting for PDI or maintenance	Enumeration Literal					
Eu.SDI-XX.514	Req	InitialisingWaitingForPdi	3: Field element is initialising and waiting for PDI	Enumeration Literal					
Eu.SDI-XX.512	Req	InitialisingWaitingForDataUpdate	4: Field element is initialising and waiting for data update	Enumeration Literal					
Eu.SDI-XX.513	Req	InitialisingWaitingForNoMaintenanceTimeout	5: Field element is initialising and waiting for no maintenance timeout	Enumeration Literal					
Eu.SDI-XX.510	Req	Operational	6: Field element is operational	Enumeration Literal					
Eu.SDI-XX.509	Req	FallbackMode	7: Field element is in fallback mode	Enumeration Literal					
Eu.SDI-XX.526	Req	PdiConnectionStatus	Enumeration: Status of the PDI connection	ValueType (Enumeration)					
Eu.SDI-XX.533	Req	Unknown	0: The status unknown is used when the state is not yet established e.g. if connection to the system is lost	Enumeration Literal					
Eu.SDI-XX.530	Req	NotReadyForPdi	1: Subsystem is not ready for PDI	Enumeration Literal					
Eu.SDI-XX.531	Req	ReadyForPdi	2: Subsystem is ready for PDI	Enumeration Literal					
Eu.SDI-XX.528	Req	ActiveEstablishing	3: PDI connection is active and establishing	Enumeration Literal					
Eu.SDI-XX.529	Req	ActiveEstablishingVersionUnequal	4: PDI connection is active and establishing but version is unequal	Enumeration Literal					
Eu.SDI-XX.527	Req	ActiveEstablished	5: PDI connection is active and established	Enumeration Literal					
Eu.SDI-XX.532	Req	Suspended	6: PDI connection is suspended	Enumeration Literal					
Eu.SDI-XX.563	Req	ScpConnectionStatus	Enumeration: Connection status of safe communication protocol (RaSTA)	ValueType (Enumeration)					
Eu.SDI-XX.568	Req	Unknown	0: The status Unknown is used when the state is not yet established e.g. if connection to the system is lost	Enumeration Literal					
Eu.SDI-XX.566	Req	Closed	1: The connection is terminated	Enumeration Literal					
Eu.SDI-XX.564	Req	Down	2: The service "Open Connection" has been invoked; the connection is ready to be established	Enumeration Literal					
Eu.SDI-XX.565	Req	Start	3: Client: A connection request has been sent and a connection response is expected. Server: A connection response has been sent and a heartbeat is expected.	Enumeration Literal					
Eu.SDI-XX.567	Req	Up	4: The connection is established; messages can be received and sent	Enumeration Literal					
Eu.SDI-XX.1138	Req	RetrReq	5: A retransmission request has been sent and a retransmission response is expected	Enumeration Literal					
Eu.SDI-XX.1139	Req	RetrRun	6: After the retransmission response is received, retransmitted data are accepted until a heartbeat or regular data is/are received	Enumeration Literal					
Eu.SDI-XX.569	Req	TlsStatus	Enumeration: Status of TLS (Transport Layer Security) certificate	ValueType (Enumeration)					
Eu.SDI-XX.574	Req	Unknown	0: The status unknown is used when the state is not yet established e.g. if connection to the system is lost	Enumeration Literal					
Eu.SDI-XX.572	Req	CertificateInvalid	1: TLS certificate is not valid	Enumeration Literal					
Eu.SDI-XX.570	Req	CertificateError	2: Error in the TLS certificate	Enumeration Literal					
Eu.SDI-XX.575	Req	UnknownError	3: TLS certificate is not known	Enumeration Literal					
Eu.SDI-XX.573	Req	CertificateOk	4: TLS certificate is okay	Enumeration Literal					
Eu.SDI-XX.571	Req	CertificateGracePeriod	5: TLS certificate has grace period	Enumeration Literal					
Eu.SDI-XX.576	Req	TransportChannelRastaStatus	Enumeration: Status of the RaSTA (Rail Safe Transport Application) transport channel	ValueType (Enumeration)					
Eu.SDI-XX.577	Req	Unknown	0: The status unknown is used when the state is not yet established	Enumeration Literal					
Eu.SDI-XX.578	Req	Closed	1: TCP: The connection is terminated UDP: Port is closed and no data exchange is possible	Enumeration Literal					
Eu.SDI-XX.581	Req	Established	2: TCP: The connection is established and data exchange is possible UDP: Port is open and data exchange is possible	Enumeration Literal					
Eu.SDI-XX.583	Req	TransportLayer	Enumeration: Type of transport layer protocol	ValueType (Enumeration)					
Eu.SDI-XX.585	Req	UDP	1: UDP (User Datagram Protocol, [UDP])	Enumeration Literal					
Eu.SDI-XX.584	Req	TLS over TCP	2: TLS (Transfer Layer Security, [TLS]) over TCP (Transmission Control Protocol, [TCP])	Enumeration Literal					
Eu.SDI-XX.237	Req	MultiStateDiscreteTypeSupplier	Enumeration: Allows to provide additional information when "StatusTechnical" != OK	ValueType (Enumeration)					

ID	Type	Requirement	Meaning	Model Type	Data Type	Trigger	Attribute type	Sampling	Optionality
Eu.SDI-XX.636	Info	AdditionalErrorState1	1	Enumeration Literal					
Eu.SDI-XX.637	Info	AdditionalErrorState2	2	Enumeration Literal					
Eu.SDI-XX.638	Info	AdditionalFailureState1	3	Enumeration Literal					
Eu.SDI-XX.241	Req	StatusTechnical	Enumeration: Technical Status of the system, that represents the aggregated status of all hierarchical lower systems. This allows to have a top level information on the status of the system which can be drilled down if the system is in any other state than "Ok".	ValueType (Enumeration)					
Eu.SDI-XX.245	Req	Unknown	0: The status unknown is used when the state is not yet established e.g. if connection to the system is lost	Enumeration Literal					
Eu.SDI-XX.244	Req	Ok	1: System serves all primary functions and has no deviations, errors or failures	Enumeration Literal					
Eu.SDI-XX.246	Req	Warning	2: All subsystems are working as intended, but the system detects unexpected behaviour (e.g. deviation from expected values).	Enumeration Literal					
Eu.SDI-XX.242	Req	FailureNonCritical	3: At least one error in one of the (sub)systems, but on this system level all functions are available	Enumeration Literal					
Eu.SDI-XX.243	Req	FailureCritical	4: At least one function is not available; operational consequences possible	Enumeration Literal					
Eu.SDI-XX.1011	Req	PreloadState	Enumeration: SMI preload states (according to essential state machine (see Eu.Gen-SMI.111 in [Eu.Doc.120])	ValueType (Enumeration)					
Eu.SDI-XX.1013	Req	NotYetPreloadable	1	Enumeration Literal					
Eu.SDI-XX.1014	Req	ReadyForPreload	2	Enumeration Literal					
Eu.SDI-XX.1012	Req	Preloading	3	Enumeration Literal					
Eu.SDI-XX.1103	Req	PreloadingAborted	4	Enumeration Literal					
Eu.SDI-XX.1015	Req	ActivationState	Enumeration: SMI activation states (according to essential state machine (see Eu.Gen-SMI.111 in [Eu.Doc.120])	ValueType (Enumeration)					
Eu.SDI-XX.1016	Req	NotYetActivatable	1	Enumeration Literal					
Eu.SDI-XX.1017	Req	ReadyForActivation	2	Enumeration Literal					
Eu.SDI-XX.1018	Req	Activating	3	Enumeration Literal					
Eu.SDI-XX.1102	Req	ActivationAborted	4	Enumeration Literal					
Eu.SDI-XX.1120	Req	ServiceConnectionStatus		ValueType (Enumeration)					
Eu.SDI-XX.1123	Req	Unknown	0: The status unknown is used when the state is not yet established e.g. if connection to the system is lost	Enumeration Literal					
Eu.SDI-XX.1121	Req	IntentionallyNotConnected	1: The service function interface is intentionally not connected.	Enumeration Literal					
Eu.SDI-XX.1122	Req	NotConnectedDisturbed	2: The service function interface is not connected and disturbed	Enumeration Literal					
Eu.SDI-XX.1140	Req	Connected	3: The service function interface is connected	Enumeration Literal					
Eu.SDI-XX.1141	Req	TransportChannelOpcuaStatus		ValueType (Enumeration)					
Eu.SDI-XX.1144	Req	Unknown	0: The status Unknown is used when the state is not yet established e.g. if connection to the system is lost	Enumeration Literal					
Eu.SDI-XX.1142	Req	Connected	1: The channel is connected	Enumeration Literal					
Eu.SDI-XX.1143	Req	NotConnected	2: The channel is not connected	Enumeration Literal					
Eu.SDI-XX.1003	Head	<b>2.3.6.4 Enumeration.MotorTurnData</b>							
Eu.SDI-XX.1004	Req	FluidLevelStatus	Enumeration: Status of the fluid level in the motor	ValueType (Enumeration)					
Eu.SDI-XX.1010	Req	Unknown	0: The status unknown is used when the state is not yet established e.g. if connection to the system is lost	Enumeration Literal					
Eu.SDI-XX.1005	Req	HighAlarm	1	Enumeration Literal					
Eu.SDI-XX.1006	Req	HighWarning	2	Enumeration Literal					
Eu.SDI-XX.1009	Req	Normal	3	Enumeration Literal					
Eu.SDI-XX.1008	Req	LowWarning	4	Enumeration Literal					
Eu.SDI-XX.1007	Req	LowAlarm	5	Enumeration Literal					
Eu.SDI-XX.611	Head	<b>2.3.7 Generic.Class.Diagrams</b>							
Eu.SDI-XX.594	Head	<b>2.3.7.1 Subsystem class diagram</b>							

ID	Type	Requirement	Meaning	Model Type	Data Type	Trigger	Attribute type	Sampling	Optionality
Eu.SDI-XX.457	Info	Subsystem class diagram See Figure 1 on page 19.	The class diagram represents the static structure of generic subsystems from the point of view of diagnostics.	Class Diagram					
Eu.SDI-XX.593	Head	<b>2.3.7.2 Interface class diagram</b>							
Eu.SDI-XX.427	Info	Interface class diagram See Figure 2 on page 20.	The class diagram represents the static structure of generic interfaces from the point of view of diagnostics.	Class Diagram					
Eu.SDI-XX.592	Head	<b>2.3.7.3 Equipment class diagram</b>							
Eu.SDI-XX.280	Info	Materials and Equipments class diagram See Figure 3 on page 21.	The class diagram represents the equipment model which describes physical, manufacturer-specific standard components that can be monitored with the diagnostics. The manufacturer uses these generic standard components to model its specific structure.	Class Diagram					
Eu.SDI-XX.595	Head	<b>2.3.7.4 Redundancy class diagram</b>							
Eu.SDI-XX.398	Info	Redundancy class diagram <pre>classDiagram     class RedundancyGroup {         label : String         isAvailable : Boolean         minimumAvailable : Integer     }     class RedundancyStatus {         isAvailable : Boolean         isExcludedFromRedundancyGroup : Boolean         isActive : Boolean     }     RedundancyGroup "1" *-- "2..*" RedundancyStatus</pre>	The class diagram represents the static structure of generic redundancies from the point of view of diagnostics. Redundant equipment must be modeled using RedundancyStatus and RedundancyGroup and the information provided via the interfaces.	Class Diagram					
Eu.SDI-XX.612	Head	<b>2.3.7.5 Log class diagram</b>							
Eu.SDI-XX.613	Info	Log class diagram See Figure 4 on page 22.	The class diagram represents the static structure of generic logs from the point of view of diagnostics.	Class Diagram					
Eu.SDI-XX.988	Head	<b>2.3.7.6 Motor Turn Data class diagram</b>							
Eu.SDI-XX.989	Info	Motor Turn Data class diagram See Figure 5 on page 23.	The class diagram represents the static structure of generic motor turning data from the point of view of diagnostics.	Class Diagram					

Figure 1: From object 457 on page 17.

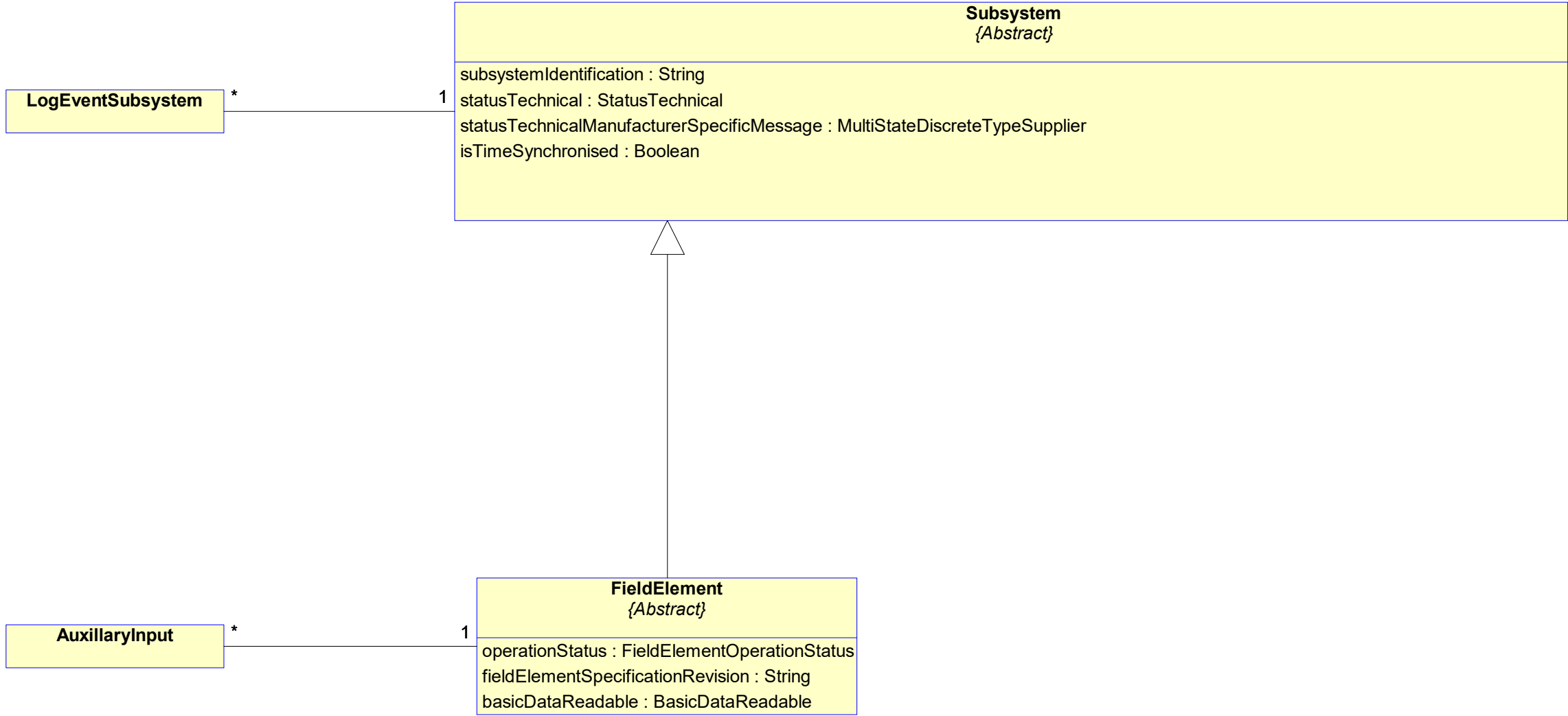


Figure 2: From object 427 on page 18.

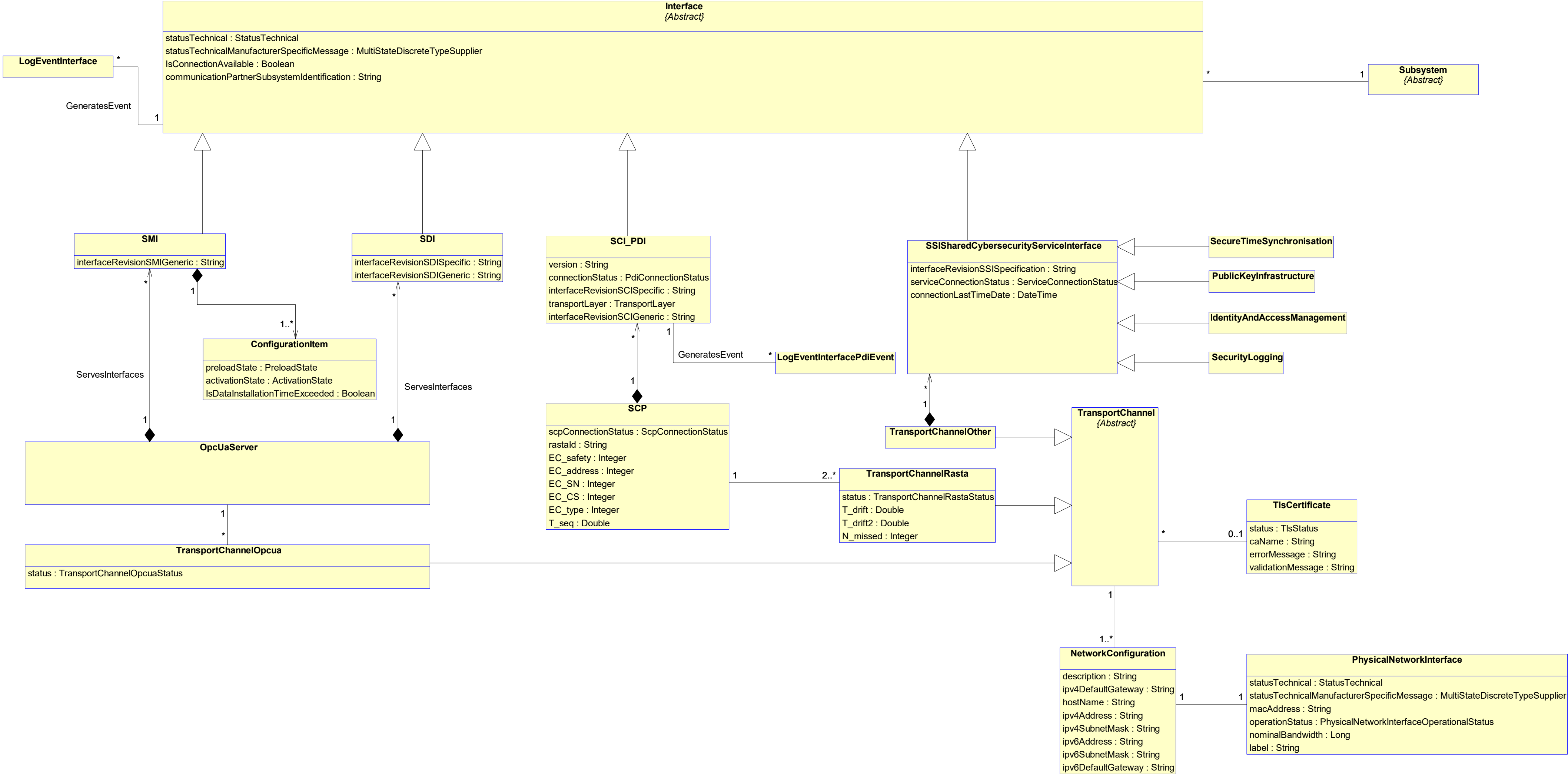


Figure 3: From object 280 on page 18.

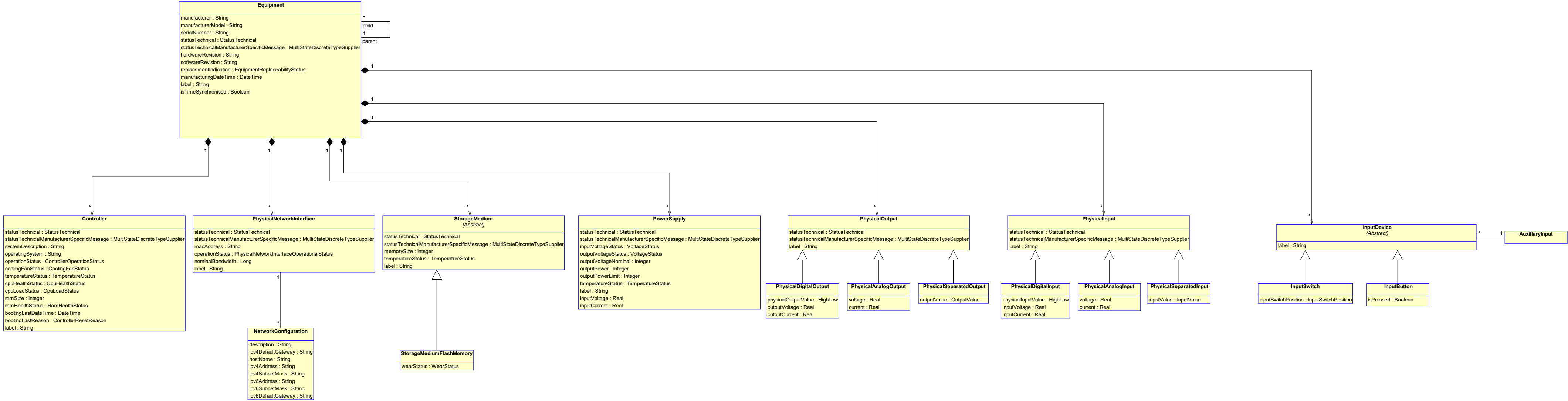


Figure 4: From object 613 on page 18.

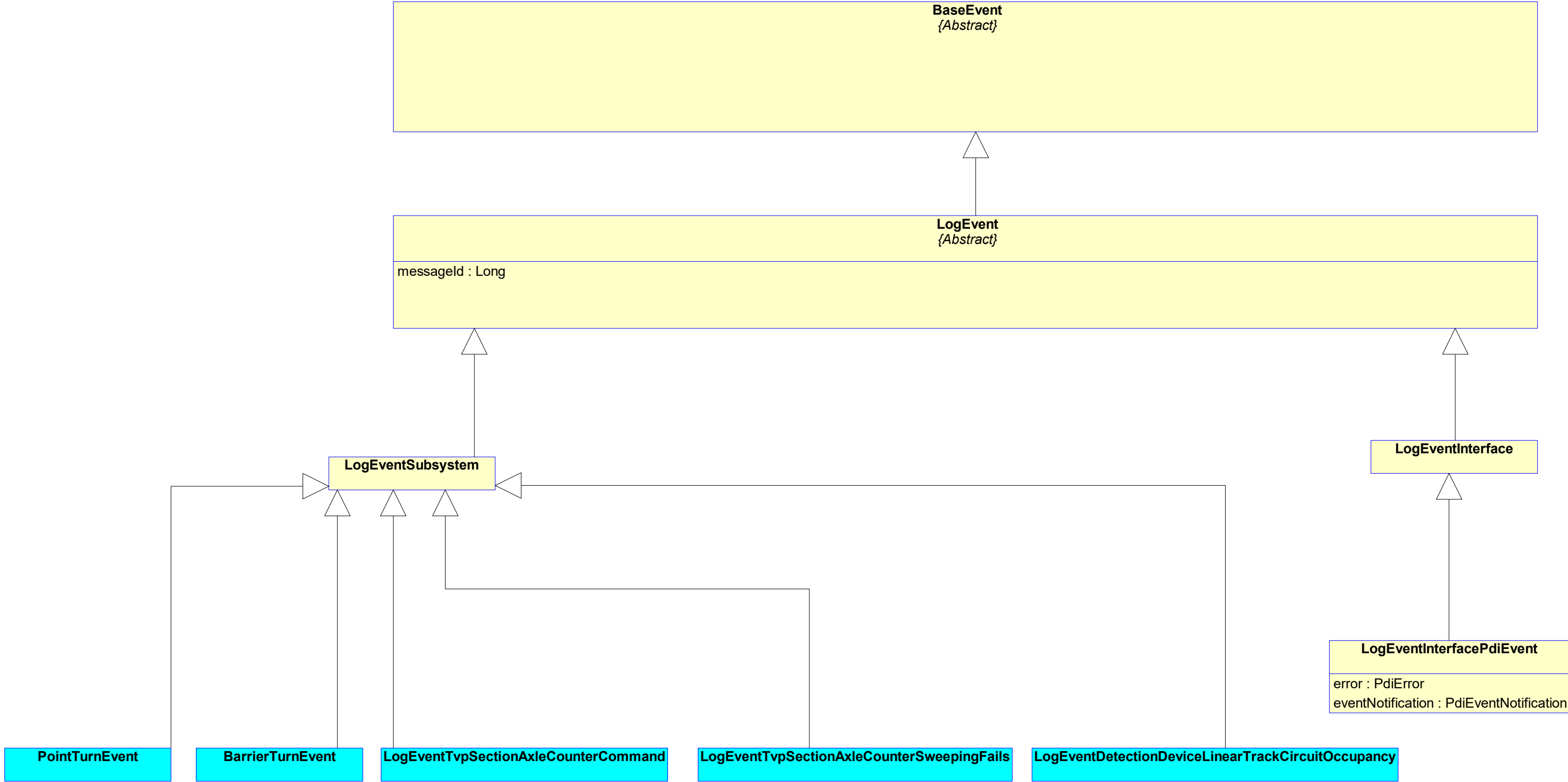




Figure 5: From object 989 on page 18.

