E2EXf User Manual

Document Change History				
Date (YYYY-MM-DD)	**Ver.**	**Editor**	**Chap**	**Change Description**
2020-03-25	1.0.0	DatDD3	All	Initial Version
2021-08-21	1.0.1	HiepVT1	4.3	Added change log in 4.3.2
2021-11-12	1.0.2	HiepVT1	4.3	- Added change log in 4.3.3 - Applying change of company name
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2023-12-21	1.1.0.0	Seungjin Noh	4.3	- Added change log in 4.3.8 - Remove Dem Dependency - Change module version in E2EXf_Version.h file

Table of Contents

1. Overview

This document provides caution or reference information for users when setting parameters or designing systems for E2E Transformer module in the Hyundai AutoEver AUTOSAR platform. It is written based on SRS/SWS AUTOSAR standard. More detailed information can be found in the reference document below.

The category characters are using for setting:

- Changeable (C): The items can be set by the user.
- Fixed (F) : The items cannot be set by the user
- Not Supported (N) : Unused items

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2. Reference

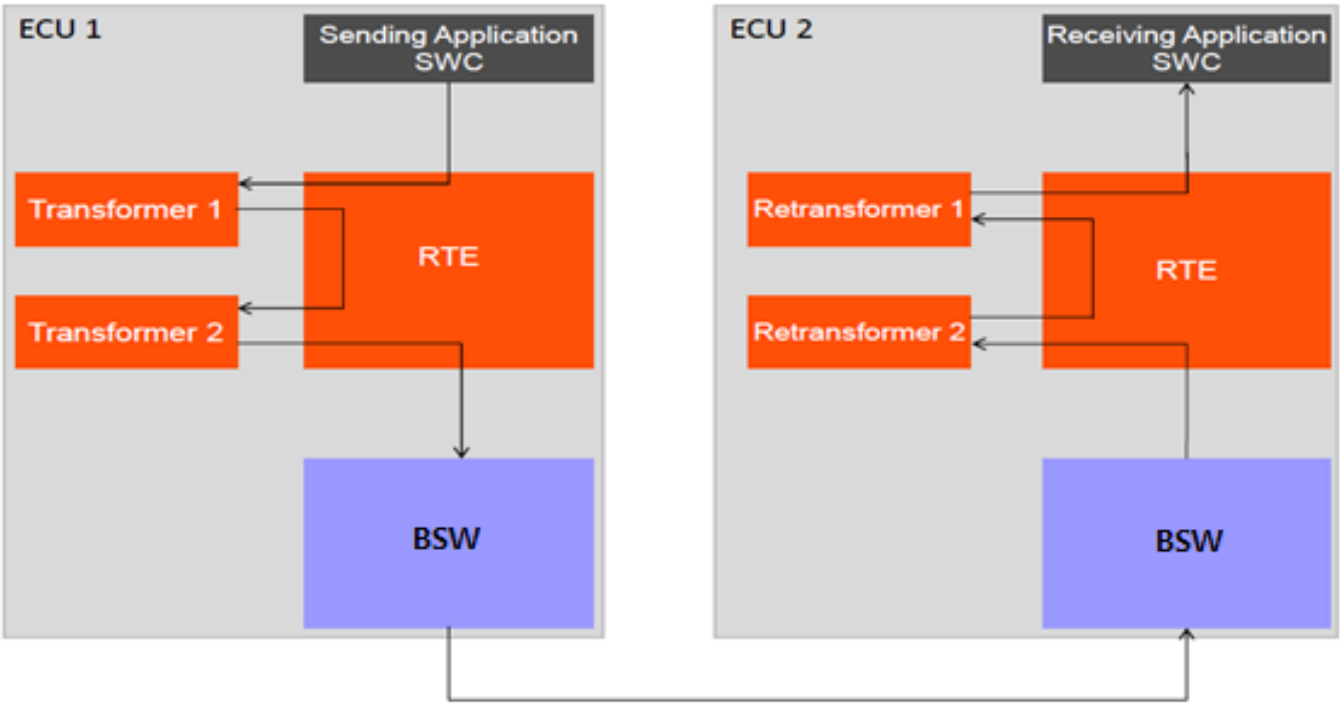
Sl. No.	Title	Version
1.	AUTOSAR_SWS_E2ETransformer (AUTOSAR_SWS_E2ETransformer.pdf)	4.4.0
2.	AUTOSAR_ASWS_TransformerGeneral (AUTOSAR_ASWS_TransformerGeneral.pdf)	4.4.0
3.	Software Component Template (AUTOSAR_TPS_SoftwareComponentTemplate.pdf)	4.4.0
4.	System Template (AUTOSAR_TPS_SystemTemplate.pdf)	4.4.0
5.	AUTOSAR_SWS_RTE (AUTOSAR_SWS_RTE.pdf)	4.4.0
6.	AUTOSAR_SWS_E2ELibrary (AUTOSAR_SWS_E2ELibrary.pdf)	4.4.0

3. AUTOSAR System

3.1 Overview of Transformer Module

A transformer is a BSW Module, which is using when AUTOSAR System need to use Data Transformation mechanism and has the following features:

- It is called by RTE Layer in AUTOSAR System.
- The RTE performs modification on the data received from the SW-C or BSW.
- Data type is transform on the sender side, and data get from communication is returned to the origin form (before the transformation) on the receiver side.
- Each Transformer Modules exist for each function(e.g. E2E Transformer, Com-Based Transformer)
- Transformer is divided into Serializer / Safety / Security / Custom class according to the role.
- Transformer Chain: The concept of the queue, which has the elements is the transformers.
- One Transformer Module belongs to a specific Transformer Chain and it is called in order by RTE
- Multiple Transformer Modules can be used in chain in one Transformer Chain.
- A data goes through a Transformer is always converted into a linear byte array.



3.2 E2E Transformer

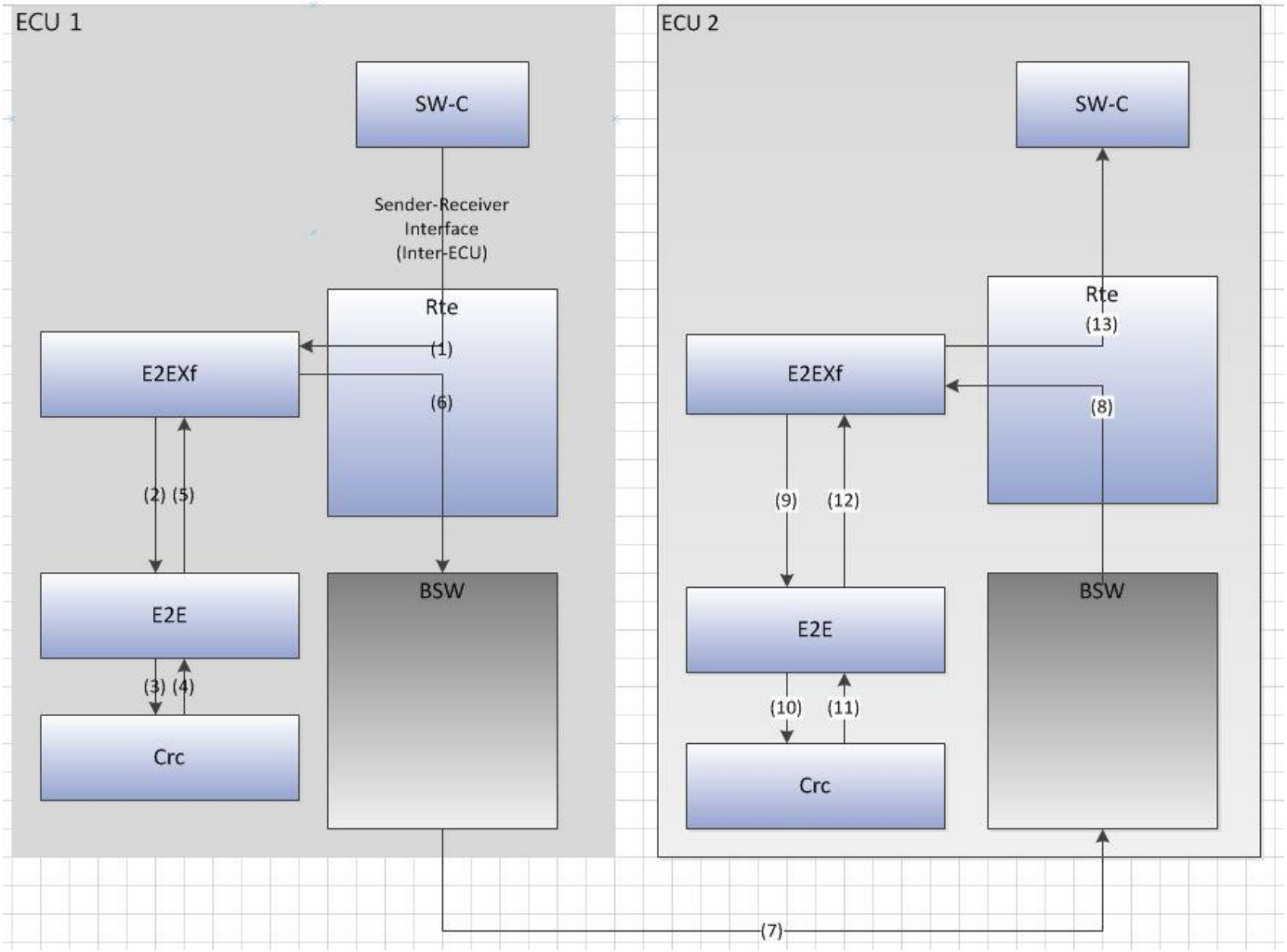
E2E Transformer adds / removes E2E Header into data get from RTE. In the data transformation

process, the E2E Transformer calls the E2E Library (refer to the E2E User Manual for the E2E Library detail).

3.2.1 E2E Transformer Using Context

E2E Transformer belonging to the Safety class and provides the following functions:

- Sender: E2EXf calls E2E Library to update E2E header for data of SW-C get from RTE
- Receiver: RTE calls E2E Library to checks E2E header, and removes E2E header for data of BSW get from RTE.



3.2.2 E2E Transformer main APIs

3.2.2.1 Sender: E2EXf_<transformerId>

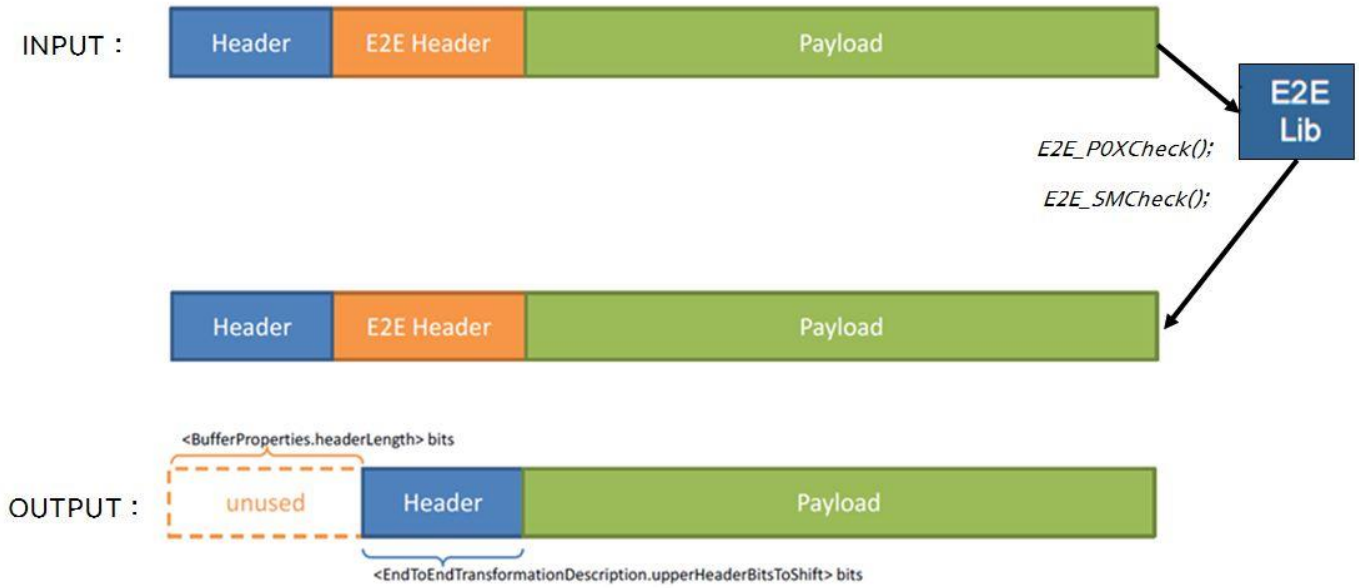
Sender: E2EXf_<transformerId>:

1) Move the header added by the previous transformers to front.
2) Call E2E Library (E2E_PXXProtect API)
3) Added E2E Header

※ Step 1 is omitted if only E2EXf exists in the Transformer Chain.

3.2.2.2 Receiver: E2EXf_Inv_<transformerId>

Receiver: E2EXf_Inv_<transformerId>:



1) Call E2E Library (E2E_PXXCheck, E2E_SMCheck APIs).
2) Remove E2E Header.
3) Move the header added by the previous transformers to the payload position.

※ Step 3 is omitted if only E2EXf exists in the Transformer Chain.

4. Product Release Notes

4.1 Overview

This chapter provides release related content for the Hyundai AutoEver E2EXf module and describes restrictions and specifics for the release versions of E2EXf Software product.

4.2 Scope of the release

All contents of this document are limited following Hyundai AutoEver E2EXf module in the table below.

Module	AUTOSAR version	Module version
E2EXf	4.4.0	1.1.0

※ Module version is the SwVersion of each BswModule Description (Bswmd) file.

4.3 Change Log

4.3.1 Version 1.0.0.0

- New version
  - New E2EXf module development

Cause	New development
Operation effect	None
Setting effect	None
ASW Action	None

4.3.2 Version 1.0.1.0

- Version 1.0.1.0

  - Update getMemcpyTail function in E2EXfAPIsSource.xtend to generate E2EXf_Memcpy_Tail function whenever E2EXf_Inv_Transformer or E2EXf_Transformer exist.

4.3.3 Version 1.0.2.0

- Version 1.0.2.0

  - Update file E2EXf_Version.h and E2EXf_Version.c to allow E2EXf run with DET, DEM R40.

- Update test to verify E2EXf_Memcpy Tail function is correctly generated.

- Update work products to improve for ASPICE.

4.3.4 Version 1.0.2.1

- Version 1.0.2.1

  - Clarify the copyright of code in E-Code, Geneated Code

  - Divide 'delivery' folder into 'delivery/src' and 'delivery/inc'

  - Apply the latest template of DeliveryBoxHistory

  - Remove E2EXf.bat file in generator folder

4.3.5 Version 1.0.3.0

- Version 1.0.3.0

  - Fix UNECE Polyspace violations

4.3.6 Version 1.1.0.0

- Version 1.1.0.0

  - Update PostBuild

4.3.7 Version 1.1.0.1

- Version 1.1.0.1

  - Update polyspace document(BugFinder)

4.3.8 Version 1.1.1.0

- Version 1.1.1.0

  - Remove Dem Dependency

  - Change module version in E2EXf_Version.h file

4.4 Limitations

None

4.5 Deviations

None

5. Configuration Guide

To use the E2E Transformer, you must complete all the settings described below.

5.1 Software Component Template

5.1.1 DataTransformationSet Container

The related configures can settings by adding a DataTransformationSet Container to ARPackage. The DataTransformationSet container includes DataTransformations Container and TransformationTechnologies Container.

- ※ DataTransformations Container ≒ Transformer Module Container
- ※ TransformationTechnologies Container ≒ Transformer Chain Container
- ※ You must setting both DataTransformations Container and TransformationTechnologies Container to be used in Sender side and DataTransformations Container and TransformationTechnologies Container to be used in Receiver side.

5.1.2 DataTransformations Container

Parameter Name	Value	Category
Execute Despite Data Unavailability	true	F
Transformer Chains[1)]	Transformation Technologies Container reference	C

1) Reference the TransformationTechnologies Container is configured in DataTransformations Container

5.1.3 TransformationTechnologies Container

TransformationTechnologies Container includes TransformationDescriptions Container and BufferProperties Container.

Parameter Name	Value	Category
Needs Original Data	false	F
Protocol	E2E	F
Transformer Class	SAFETY	F
Version	1.0.0	F

5.1.4 TransformationDescriptions Container

When creating a TransformationDescriptions Container, select EndtoEndTransformationDescription

and set the following values:

Parameter Name	Value	Category
counterOffset	User-specific	C
crcOffset	User-specific	C
dataIdMode	all16Bit alternating8Bit lower12Bit lower8Bit	C
dataIdNibbleOffset	User-specific	C
maxDeltaCounter[1)]	User-specific	C
maxErrorStateInit[2)]	User-specific	C
maxErrorStateInvalid[2)]	User-specific	C
maxErrorStateValid[2)]	User-specific	C
maxNoNewOrRepeatedData	User-specific	C
minOkStateInit[2)]	User-specific	C
minOkStateInvalid[2)]	User-specific	C
minOkStateValid[2)]	User-specific	C
offset	User-specific	C
profileBehavior	PRE_R4_2 R4_2	C
profileName[3)]	PROFILE_01 PROFILE_02 PROFILE_04 PROFILE_05 PROFILE_06 PROFILE_07 PROFILE_11 PROFILE_22	C
syncCounterInit	User-specific	C
upperHeaderBitsToShift[4)]	Transformer-Chain Specific	C
windowSize[2)]	User-specific	C

1) Related to E2E Library, refer to the E2E User Manual.
2) Related to E2E Library (State Machine) setting, refer to E2E User Manual
3) Set this value according to E2E Profile version to be used.
4) If Transformer Chain has not only E2EXf adds header in the buffer, this value is set to the length of the header added by the Transformers (set to 0 when only E2E Transformer is used).

5.1.5 BufferProperties Container

Parameter Name	Value	Category
Header Length[1)]	Profile name and Transformer-Chain Specific	C
In Place[2)]	true false	C

1) Value is set depending on the Transformer-Chain and value of the profileName.
2) Set true: using in-place buffering, false: using out-of-place buffering.

※ In-place: The API use the input buffer also as the output buffer
※ Out-of-place: The API shall works with two buffers: One for the input to transformer and one for its output.

5.2 Configuration - System - DB Import

Add the following container to ISignal use E2E Transformer.
(Applies to both ISignal used by Sender side and ISignal used by Receiver side)

5.2.1 DataTransformations Container

Parameter Name	Value	Category
Data Transformation[1)]	DataTransformations Container reference	C

1) Reference the container created in DataTransformationSet Container (5.1.1).

5.2.2 TransformationISignalProps Container

Select EndtoEndTransformationISignalProps to creating a TransformationISignalProps Container.

Parameter Name	Value	Category
Transformer[1)]	TransformationTechnology Container Reference	C
Data Ids[2)]	User-Specific	C
Data Length[3)]	User-Specific	C
Max Data Length[4)]	User-Specific	C
Min Data Length[4)]	User-Specific	C

1) Refer to the container created in 5.1.2 DataTransformations Container.
2) Enter the unique ID for transmission/receiving data (Profile 5, 6 use this data ID)
3) Only set when E2E Profile 5 is used (refer to E2E User Manual)
4) Only set when E2E Profile 6 is used (refer to E2E User Manual)

5.3 Configuration - System - Bswmd

Add BswModuleEntry in Bswmd_E2EXf (BswModuleEntry of Sender API or Receiver API)

5.3.1 BswModuleEntry

Parameter Name	Value	Category
Short Name[1)]	System-Design Specific	C
Service Id[2)]	3 4	F
Is Reentrant	true	F
Is Synchronous	true	F
Call Type	REGULAR	F
Execution Context	TASK	F
Sw Service Impl Policy	STANDARD	F

1) Sender: E2EXf_<Component name>_<PPort name>_<Data name>
   Receiver: E2EXf_Inv_<Component name>_<PPort name>_<Data name>
2) Sender : BswModuleEntry : 3
   Receiver: BswModuleEntry: 4

5.3.2 BswImplementation

Parameter Name	Value	Category
Short Name	BswImplemenation_E2EXf	C
Sw Version[1)]	X.X.X	C
Vendor Id	76	F
Ar Release Version	4.4.0	F
Behavior	BswInternalBehavior_E2EXf	F

1) Enter of E2EXf_R44 version being used

5.4 Configuration - ECU

Configure these container values below in Ecud_E2EXf.

5.4.1 XfrmGeneral Container

Parameter Name	Value	Category
DevErrorDetect[1)]	true false	C

1) When using the DET function, set to true, otherwise set to false.

5.4.2 XfrmImplementationMapping_Tx Container

Add XfrmImplementationMapping_Tx Container in ImplementationMapping Container. After that, follow the settings below:

Parameter Name	Value	Category
Transformation Technology Ref[1)]	Transformation Technology Container Reference	C
Transformer Bsw Module Entry Ref[2)]	BswModuleEntry Reference	C
Variable Data Prototype Instance Ref[3)]	User-Specific	C

1) Refer to the TransformationTechnology for transmission created in 5.1.2.
2) Refer to the BswModuleEntry for transmission created in 5.3.1.
3) Reference to a VariableDataPrototype for case a dedicated transformer BswModuleEntry is required per VariableDataPrototype access.

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Parameter Name	Value	Category
ISignalRef[1)]	ISignal Reference	C

1) Refer to ISignal is presented in 5.2.

5.4.3 XfrmImplementationMapping_Rx Container

Add XfrmImplementationMapping_Rx Container in ImplementationMapping Container. After that, follow the settings below:

Parameter Name	Value	Category
Transformation Technology Ref[1)]	Transformation Technology Container Reference	C
Inv Transformer Bsw Module Entry Ref[2)]	BswModuleEntry Reference	C
Variable Data Prototype Instance Ref[3)]	User-Specific	C

1) Refer to the TransformationTechnology for transmission created in 5.1.2.
2) Refer to the BswModuleEntry for transmission created in 5.3.1.

3) Reference to a VariableDataPrototype for case a dedicated transformer BswModuleEntry is required per VariableDataPrototype access.

Parameter Name	Value	Category
ISignalRef[1)]	ISignal Reference	C

1) Refer to ISignal is presented in 5.2.

5.5 Configuration – Rport

Add Queued ReceiverComSpec or NonqueuedReceiverComSpec in SW-C's RPort. After that, add EndToEndTransformationComSpecProps.

5.5.1 EndToEndTransformationComSpecProps Container

Parameter Name	Value	Category
DisableEndToEndCheck[1)]	true false	U

1) When set to true, data is received without performing E2E check.

6. Application Programming Interface (API)

6.1 Type Definitions

6.1.1 E2E Transformer Types

6.1.1.1 E2EXf_ConfigType

Type:	Structure		
Elements:	uint8	dummy	--
Description:	Implementation-specific structure		

6.2 Macro Constants

6.2.1 Error Flags by E2EXf

Error Name	Error Code	Error Type	Description
E_OK	0x00	-	E2E State Machine state: E2E_SM_VALID E2E_PXXMapStatusToSM result: E2E_P_OK
E_SAFETY_VALID_REP	0x01	Soft	E2E State Machine state: E2E_SM_VALID E2E_PXXMapStatusToSM result: E2E_P_REPEATED
E_SAFETY_VALID_SEQ	0x02	Soft	E2E State Machine state: E2E_SM_VALID E2E_PXXMapStatusToSM result: E2E_P_WRONGSEQUENCE
E_SAFETY_VALID_ERR	0x03	Soft	E2E State Machine state: E2E_SM_VALID E2E_PXXMapStatusToSM result: E2E_P_ERROR
E_SAFETY_VALID_NND	0x05	Soft	E2E State Machine state: E2E_SM_VALID E2E_PXXMapStatusToSM result: E2E_P_NONEWDATA
E_SAFETY_NODATA_OK	0x20	Soft	E2E State Machine state: E2E_SM_NODATA E2E_PXXMapStatusToSM result: E2E_P_OK
E_SAFETY_NODATA_REP	0x21	Soft	E2E State Machine state: E2E_SM_NODATA E2E_PXXMapStatusToSM result: E2E_P_ REPEATED
E_SAFETY_NODATA_SEQ	0x22	Soft	E2E State Machine state: E2E_SM_NODATA E2E_PXXMapStatusToSM result: E2E_P_WRONGSEQUENCE
E_SAFETY_NODATA_ERR	0x23	Soft	E2E State Machine state: E2E_SM_NODATA

			E2E_PXXMapStatusToSM result: E2E_P_ERROR
E_SAFETY_NODATA_NND	0x25	Soft	E2E State Machine state: E2E_SM_NODATA E2E_PXXMapStatusToSM result: E2E_P_NONEWDATA
E_SAFETY_INIT_OK	0x30	Soft	E2E State Machine state: E2E_SM_INIT E2E_PXXMapStatusToSM result: E2E_P_OK
E_SAFETY_INIT_REP	0x31	Soft	E2E State Machine state: E2E_SM_INIT E2E_PXXMapStatusToSM result: E2E_P_REPEATED
E_SAFETY_INIT_SEQ	0x32	Soft	E2E State Machine state: E2E_SM_INIT E2E_PXXMapStatusToSM result: E2E_P_WRONGSEQUENCE
E_SAFETY_INIT_ERR	0x33	Soft	E2E State Machine state: E2E_SM_INIT E2E_PXXMapStatusToSM result: E2E_P_ERROR
E_SAFETY_INIT_NND	0x35	Soft	E2E State Machine state: E2E_SM_INIT E2E_PXXMapStatusToSM result: E2E_P_NONEWDATA
E_SAFETY_INVALID_OK	0x40	Soft	E2E State Machine state: E2E_SM_INVALID E2E_PXXMapStatusToSM result: E2E_P_OK
E_SAFETY_INVALID_REP	0x41	Soft	E2E State Machine state: E2E_SM_INVALID E2E_PXXMapStatusToSM result: E2E_P_REPEATED
E_SAFETY_INVALID_SEQ	0x42	Soft	E2E State Machine state: E2E_SM_INVALID E2E_PXXMapStatusToSM result: E2E_P_WRONGSEQUENCE
E_SAFETY_INVALID_ERR	0x43	Soft	E2E State Machine state: E2E_SM_INVALID E2E_PXXMapStatusToSM result: E2E_P_ERROR
E_SAFETY_INVALID_NND	0x45	Soft	E2E State Machine state: E2E_SM_INVALID E2E_PXXMapStatusToSM result: E2E_P_NONEWDATA
E_SAFETY_SOFT_RUNTIMEERROR	0x77	Soft	Error when the result of E2E_SMCheck API is not E2E_E_OK
E_SAFETY_HARD_RUNTIMEERROR	0xFF	Hard	Error when the result of E2E_PXXProtect API is not E2E_E_OK Error when the result of E2EXf_DetCheck_Inplace or E2EXf_DetCheck_Outplace API is an error Error when the result of E2EXf_Inv_DetCheck_Inplace or E2EXf_Inv_DetCheck_Outplace API is an error Error when E2EXf is executed without E2EXf_Init API

6.3 Functions

6.3.1 E2E Transformer

6.3.1.1 E2EXf_<transformerId>

Function Name	E2EXf_<transformerId>
Syntax:	uint8 E2EXf_<transformerId>(uint8* buffer, uint32* bufferLength, const uint8* inputBuffer, uint32 inputBufferLength)
Service ID	0x03
Sync/Async	Synchronous
Re-entrancy	Reentrant
Parameters (In)	inputBuffer: This argument only exists for E2E transformers configured for out-of-place transformation. It holds the input data for the transformer.
	inputBufferLength: This argument holds the length of the E2E transformer's input data (in the inputBuffer argument).
Parameters (Inout)	buffer 1. In-Place: If the E2E transformer is configured for in-place transformation, it also contains its input data. If the E2E transformer uses in-place transformation and has a headerLength different from 0, the output data of the previous transformer begin at position headerLength. 2. Out-of-place: This argument is only an OUT argument for E2E transformers configured for out-of-place transformation. It is the buffer allocated by the RTE, where the transformed data has to be stored by the transformer.
Parameters (Out)	bufferLength: Used length of the buffer.
Return Value	uint8 : · E_OK: Function performed successfully. · E_SAFETY_SOFT RUNTIME ERROR: A runtime error occurred, safety properties could not be checked (state or status cannot be determined)

	but non-protected output data could be produced nonetheless. · E_SAFETY_HARD_RUNTIMEERROR: A runtime error occurred, safety properties could not be checked and no output data could be produced.
Description	Protects the array/buffer to be transmitted, using the in-place transformation.

6.3.1.2 E2EXf_Inv_<transformerId>

Function Name	E2EXf_Inv_<transformerId>
Syntax:	uint8 E2EXf_Inv_<transformerId>(uint8* buffer, uint32* bufferLength const uint8* inputBuffer, uint32 inputBufferLength)
Service ID	0x04
Sync/Async	Synchronous
Re-entrancy	Reentrant
Parameters (In)	inputBuffer: This argument only exists for E2E transformers configured for out-of-place transformation. It holds the input data for the transformer. If executeDespiteDataUnavailability is set to true and the RTE cannot provide data as input to the transformer, it will hand over a NULL pointer to the transformer.
	inputBufferLength: This argument holds the length of the transformer's input data (in the inputBuffer argument). If executeDespiteDataUnavailability is set to true and the RTE cannot provide data as input to the transformer, the length will be equal to 0.
Parameters (Inout)	buffer: 1. In-place: The API use the input buffer also as the output buffer 2. Out-of-place: The API shall works with two buffers: One for the input to transformer and one for its output.
Parameters (Out)	bufferLength: Used length of the output buffer.
Return Value	uint8: The high nibble represents the state of the E2E state machine, the low nibble represents the status of the last E2E check.

	(Refer to 6.2.1) ・ E_SAFETY_SOFT_RUNTIMEERROR A runtime error occurred, safety properties could not be checked (state or status cannot be determined) but non-protected output data could be produced nonetheless. ・ E_SAFETY_HARD_RUNTIMEERROR A runtime error occurred, safety properties could not be checked and no output data could be produced.
Description	Checks the received data. If the data can be used by the caller, then the function returns E_OK.

6.3.1.3 E2EXf_Init

Function Name	E2EXf_Init
Syntax:	void E2EXf_Init(const E2EXf_ConfigType* config)
Service ID	0x01
Sync/Async	Synchronous
Re-entrancy	Reentrant
Parameters (In)	config: Pointer to a selected configuration structure, in the post-build-selectable variant. NULL in link-time variant.
Parameters (Inout)	None
Parameters (Out)	None
Return Value	None
Description	Initializes the state of the E2E Transformer. The main part of it is the initialization of the E2E library state structures, which is done by calling all init-functions from E2E library.

6.3.1.4 E2EXf_DeInit

Function Name	E2EXf_DeInit

Syntax:	void E2EXf_DeInit(void)
Service ID	0x02
Sync/Async	Synchronous
Re-entrancy	Reentrant
Parameters (In)	None
Parameters (Inout)	None
Parameters (Out)	None
Return Value	None
Description	Deinitialize E2E transformer.

6.3.1.5 E2EXf_GetVersionInfo

Function Name	E2EXf_GetVersionInfo
Syntax:	void E2EXf_GetVersionInfo(Std_VersionInfoType* versionInfo)
Service ID	0x05
Sync/Async	Synchronous
Re-entrancy	Reentrant
Parameters (In)	None
Parameters (Inout)	None
Parameters (Out)	versionInfo: Pointer to where to store the version information of this module.
Return Value	None
Description	Returns E2E Transformer's version information.

7. Generator

7.1 Generator Option

Command Line Arguments	Command Line Value	Description
-B	--BASEDIR <B>	Specify base directory to be used for gentool application.
-G	--GENERATION <G>	Symbolic parameters to be used for fore generation (skip validation).
-H	--HELP <H>	Display the help message.
-I	--INPUT <I>	ECU description file path of the module for which generation tool need to run.
-L	--LOG <L>	Symbolic parameters to be used for generation error log.
-M	--MODULE <M>	Specify module name and version to be generated code for.
-O	--OUTPUT <O>	Project-relative path to location where the generated code is to be placed.
-T	--TOP_PATH <T>	Symbolic parameters to be used for set path of module.
-V	--VALIDATE <V>	Symbolic parameters to be used for invoking validation checks.

7.2 Generator Message

This section helps to analyze the errors or warnings displayed during the execution of the tool. It ensures conformance of input file(s) with syntax and semantics.

7.2.1 Error Messages

7.2.1.1 E2EXF_ERR_001

7.2.1.1.1 Message

The dataIdMode attribute is not set for profile <profileID>

7.2.1.1.2 Description

If the EndToEndTransformationDescription.profileName attribute is set to PROFILE_01 or PROFILE_11 then the multiplicity of the EndToEndTransformationDescription.dataIdMode attribute shall be 1.

7.2.1.2 E2EXF_ERR_002

7.2.1.2.1 Message

The dataIdMode attribute is not set to all16Bit or lower12Bit for profile <profileID>

7.2.1.2.2 Description

If the EndToEndTransformationDescription.profileName attribute has a value of PROFILE_11 then the value of the EndToEndTransformationDescription.dataIdMode attribute shall be set to all16Bit or lower12Bit.

7.2.1.3 E2EXF_ERR_003

7.2.1.3.1 Message

The counterOffset attribute is not set for profile <profileID>

7.2.1.3.2 Description

If the EndToEndTransformationDescription.profileName attribute is set to PROFILE_01 or PROFILE_11 then the multiplicity of the EndToEndTransformationDescription.counterOffset attribute shall be 1.

7.2.1.4 E2EXF_ERR_004

7.2.1.4.1 Message

The crcOffset attribute is not set for profile <profileID>

7.2.1.4.2 Description

If the EndToEndTransformationDescription.profileName attribute is set to PROFILE_01 or PROFILE_11 then the multiplicity of the EndToEndTransformationDescription.crcOffset attribute shall be 1.

7.2.1.5 E2EXF_ERR_005

7.2.1.5.1 Message

The offset attribute is not set for profile <profileID>

7.2.1.5.2 Description

If the EndToEndTransformationDescription.profileName attribute is set to a value PROFILE_02, PROFILE_04, PROFILE_05, PROFILE_06, PROFILE_07, or PROFILE_22 then the multiplicity of the

EndToEndTransformationDescription.offset attribute shall be 1.

7.2.1.6 E2EXF_ERR_006

7.2.1.6.1 Message

The offset attribute is not equal to upperHeaderBitsToShift for profile <profileID>

7.2.1.6.2 Description

If the EndToEndTransformationDescription.profileName attribute has a value of PROFILE_04, PROFILE_05, PROFILE_06, or PROFILE_07 the value of the EndToEndTransformationDescription.offset attribute shall be equal to the value of the EndToEndTransformationDescription.upperHeaderBitsToShift attribute.

7.2.1.7 E2EXF_ERR_007

7.2.1.7.1 Message

The offset attribute is not equal to 0 for profile <profileID>

7.2.1.7.2 Description

If the EndToEndTransformationDescription.profileName attribute has a value of PROFILE_02 or PROFILE_22 then the value of the EndToEndTransformationDescription.offset attribute shall be 0.

7.2.1.8 E2EXF_ERR_008

7.2.1.8.1 Message

The dataIdNibbleOffset attribute is not set for profile <profileID> when dataIdMode is lower12Bit

7.2.1.8.2 Description

If the EndToEndTransformationDescription.profileName attribute is set to PROFILE_01 or PROFILE_11 and the value of the EndToEndTransformationDescription.dataIdMode attribute is set to lower12Bit then the multiplicity of the EndToEndTransformationDescription.dataIdNibbleOffset attribute shall be 1.

7.2.1.9 E2EXF_ERR_009

7.2.1.9.1 Message

The attribute needsOriginalData of a TransformationTechnology element is not set to FALSE for

profile <profileID>

7.2.1.9.2 Description

The TransformationTechnology.needsOriginalData attribute of a TransformationTechnology element of an E2E transformer shall be set to FALSE.

7.2.1.10 E2EXF_ERR_010

7.2.1.10.1 Message

The dataId attribute is not set for profile <profileID>

7.2.1.10.2 Description

If the EndToEndTransformationDescription.profileName attribute has a value of PROFILE_01 or PROFILE_11 then the multiplicity of the EndToEndTransformationISignalProps.dataId attribute shall be 1.

7.2.1.11 E2EXF_ERR_011

7.2.1.11.1 Message

The dataId attribute is not set in the range of 0-65535 for profile <profileID>

7.2.1.11.2 Description

If the EndToEndTransformationDescription.profileName attribute has a value of PROFILE_01 or PROFILE_11 then the value of the EndToEndTransformationISignalProps.dataId attribute shall be in the range of 0-65535.

7.2.1.12 E2EXF_ERR_012

7.2.1.12.1 Message

The dataId attribute is not set in the range of 256-65535 for profile <profileID> when dataIdMode is lower12Bit

7.2.1.12.2 Description

If the EndToEndTransformationDescription.profileName attribute has a value of PROFILE_01 or PROFILE_11 and the value of EndToEndTransformationDescription.dataIdMode attribute has a value of lower12Bit then the value of the EndToEndTransformationISignalProps.dataId attribute shall be in the

range of 256-65535.

7.2.1.13 E2EXF_ERR_013

7.2.1.13.1 Message

The maxDeltaCounter attribute is not set in the range of 1-14 for profile <profileID>

7.2.1.13.2 Description

If the EndToEndTransformationDescription.profileName attribute has a value of PROFILE_01 or PROFILE_11 then the attribute maxDeltaCounter shall be in the range 1-14.

7.2.1.14 E2EXF_ERR_014

7.2.1.14.1 Message

The maxDeltaCounter attribute is not set in the range of 1-15 for profile <profileID>

7.2.1.14.2 Description

If the EndToEndTransformationDescription.profileName attribute has a value of PROFILE_02 or PROFILE_22 then the attribute maxDeltaCounter shall be in the range 1-15.

7.2.1.15 E2EXF_ERR_015

7.2.1.15.1 Message

The maxDeltaCounter attribute is not set in the range of 1-65535 for profile <profileID>

7.2.1.15.2 Description

If the EndToEndTransformationDescription.profileName attribute has a value of PROFILE_04 the value of maxDeltaCounter attribute shall be in the range 1-65535.

7.2.1.16 E2EXF_ERR_016

7.2.1.16.1 Message

The maxDeltaCounter attribute is not set in the range of 1-255 for profile <profileID>

7.2.1.16.2 Description

If the EndToEndTransformationDescription.profileName attribute has a value of PROFILE_05 or

PROFILE_06 then the attribute maxDeltaCounter shall be in the range 1-255.

7.2.1.17 E2EXF_ERR_017

7.2.1.17.1 Message

The maxDeltaCounter attribute is not set in the range of 1-4‘294‘967‘295 for profile <profileID>

7.2.1.17.2 Description

If the EndToEndTransformationDescription.profileName attribute has a value of PROFILE_07 the value of maxDeltaCounter attribute shall be in the range 1-4‘294‘967‘295.

7.2.1.18 E2EXF_ERR_018

7.2.1.18.1 Message

The dataId attribute is not set to 16 instances for profile <profileID>

7.2.1.18.2 Description

If the EndToEndTransformationDescription.profileName attribute has a value of PROFILE_02 or PROFILE_22 then the multiplicity of the dataId attribute shall be 16 and the value of each instance shall be in the range 0..255.

7.2.1.19 E2EXF_ERR_019

7.2.1.19.1 Message

The value of each instance in dataId attribute is not set in the range 0..255 for profile <profileID>

7.2.1.19.2 Description

If the EndToEndTransformationDescription.profileName attribute has a value of PROFILE_02 or PROFILE_22 then the multiplicity of the dataId attribute shall be 16 and the value of each instance shall be in the range 0..255.

7.2.1.20 E2EXF_ERR_020

7.2.1.20.1 Message

The dataLength attribute is not set for profile <profileID>

7.2.1.20.2 Description

If the EndToEndTransformationDescription.profileName attribute has a value of PROFILE_01, PROFILE_02, PROFILE_05, PROFILE_11, or PROFILE_22 then the multiplicity of the EndToEndTransformationISignalProps.dataLength attribute shall be 1.

7.2.1.21 E2EXF_ERR_021

7.2.1.21.1 Message

The minDataLength or maxDataLength attribute is not set for profile <profileID>

7.2.1.21.2 Description

If the EndToEndTransformationDescription.profileName attribute has a value of PROFILE_04, PROFILE_06, or PROFILE_07 then the multiplicity of the attributes EndToEndTransformationISignalProps.minDataLength and EndToEndTransformationISignalProps.maxDataLength shall be 1.

7.2.1.22 E2EXF_ERR_022

7.2.1.22.1 Message

The dataLength or minDataLength or maxDataLength attribute is not set to multiple of 8 for profile <profileID>

7.2.1.22.2 Description

The value of EndToEndTransformationISignalProps.dataLength, EndToEndTransformationISignalProps.maxDataLength, and EndToEndTransformationISignalProps.minDataLength shall be a multiple of 8.

7.2.1.23 E2EXF_ERR_023

7.2.1.23.1 Message

The upperHeaderBitsToShift attribute is not set to 0 for profile <profileID>

7.2.1.23.2 Description

If the EndToEndTransformationDescription.profileName attribute has a value of PROFILE_02 then the value of the upperHeaderBitsToShift attribute shall be 0.

7.2.1.24 E2EXF_ERR_024

7.2.1.24.1 Message

The maxNoNewOrRepeatedData attribute is not equal to 14 when the profileBehavior attribute is R4_2 for profile <profileID>

7.2.1.24.2 Description

If the EndToEndTransformationDescription.profileName attribute has a value of PROFILE_01 and the value of the profileBehavior attribute is R4_2 then the value of the EndToEndTransformationDescription.maxNoNewOrRepeatedData attribute shall be 14.

7.2.1.25 E2EXF_ERR_025

7.2.1.25.1 Message

The maxNoNewOrRepeatedData attribute is not equal to 15 when the profileBehavior attribute is R4_2 for profile <profileID>

7.2.1.25.2 Description

If the EndToEndTransformationDescription.profileName attribute has a value of PROFILE_02 and the value of the profileBehavior attribute is R4_2 then the value of the EndToEndTransformationDescription.maxNoNewOrRepeatedData attribute shall be 15.

7.2.1.26 E2EXF_ERR_026

7.2.1.26.1 Message

The syncCounterInit attribute is greater than the maximum value allowed when the profileBehavior attribute is R4_2 for profile <profileID>

7.2.1.26.2 Description

If the EndToEndTransformationDescription.profileName attribute has a value of PROFILE_01 or PROFILE_02 and the value of the profileBehavior attribute is R4_2 then the value of the EndToEndTransformationDescription.syncCounterInit attribute shall be lower than 256.

7.2.1.27 E2EXF_ERR_027

7.2.1.27.1 Message

The windowSize attribute is not greater or equal to 1 for profile <profileID>

7.2.1.27.2 Description

The value of the windowSize attribute shall be greater or equal to 1.

7.2.1.28 E2EXF_ERR_028

7.2.1.28.1 Message

The maxErrorStateValid, maxErrorStateInit and maxErrorStateInvalid attribute are not followed the restriction: maxErrorStateValid >= maxErrorStateInit >= maxErrorStateInvalid >= 0 for profile <profileID>

7.2.1.28.2 Description

The following restriction shall be respected:
maxErrorStateValid >= maxErrorStateInit >= maxErrorStateInvalid >= 0

7.2.1.29 E2EXF_ERR_029

7.2.1.29.1 Message

The minOkStateInvalid, minOkStateInit and minOkStateValid attribute are not followed the restriction: 1 <= minOkStateValid <= minOkStateInit <= minOkStateInvalid

7.2.1.29.2 Description

The following restriction shall be respected:
1 <= minOkStateValid <= minOkStateInit <= minOkStateInvalid

7.2.1.30 E2EXF_ERR_030

7.2.1.30.1 Message

The windowSize, minOkStateInit and maxErrorStateInit attribute are not followed the restriction: minOkStateInit + maxErrorStateInit <= windowSize

7.2.1.30.2 Description

The following restriction shall be respected:
minOkStateInit + maxErrorStateInit <= windowSize

7.2.1.31 E2EXF_ERR_031

7.2.1.31.1 Message

The windowSize, minOkStateValid and maxErrorStateValid attribute are not followed the restriction: minOkStateValid + maxErrorStateValid <= windowSize

7.2.1.31.2 Description

The following restriction shall be respected:
minOkStateValid + maxErrorStateValid <= windowSize

7.2.1.32 E2EXF_ERR_032

7.2.1.32.1 Message

The windowSize, minOkStateInvalid and maxErrorStateInvalid attribute are not followed the restriction: minOkStateInvalid + maxErrorStateInvalid <= windowSize

7.2.1.32.2 Description

The following restriction shall be respected:
minOkStateInvalid + maxErrorStateInvalid <= windowSize

7.2.1.33 E2EXF_ERR_033

7.2.1.33.1 Message

The maxDeltaCounter attribute is not set for profile <profileID>

7.2.1.33.2 Description

The multiplicity of maxDeltaCounter shall be 1

7.2.1.34 E2EXF_ERR_034

7.2.1.34.1 Message

The maxErrorStateInvalid attribute is not set for profile <profileID>

7.2.1.34.2 Description

The multiplicity of maxErrorStateInvalid shall be 1

7.2.1.35 E2EXF_ERR_035

7.2.1.35.1 Message

The maxErrorStateInit attribute is not set for profile <profileID>

7.2.1.35.2 Description

The multiplicity of maxErrorStateInit shall be 1

7.2.1.36 E2EXF_ERR_036

7.2.1.36.1 Message

The maxErrorStateValid attribute is not set for profile <profileID>

7.2.1.36.2 Description

The multiplicity of maxErrorStateValid shall be 1

7.2.1.37 E2EXF_ERR_037

7.2.1.37.1 Message

The maxNoNewOrRepeatedData attribute is not set for profile <profileID>

7.2.1.37.2 Description

If the EndToEndTransformationDescription.profileName attribute has a value of PROFILE_01 or PROFILE_02 then the multiplicity of maxNoNewOrRepeatedData shall be 1

7.2.1.38 E2EXF_ERR_038

7.2.1.38.1 Message

The minOkStateInit attribute is not set for profile <profileID>

7.2.1.38.2 Description

The multiplicity of minOkStateInit shall be 1

7.2.1.39 E2EXF_ERR_039

7.2.1.39.1 Message

The minOkStateInvalid attribute is not set for profile <profileID>

7.2.1.39.2 Description

The multiplicity of minOkStateInvalid shall be 1

7.2.1.40 E2EXF_ERR_040

7.2.1.40.1 Message

The minOkStateValid attribute is not set for profile <profileID>

7.2.1.40.2 Description

The multiplicity of minOkStateValid shall be 1

7.2.1.41 E2EXF_ERR_041

7.2.1.41.1 Message

The profileBehavior attribute is not set for profile <profileID>

7.2.1.41.2 Description

If the EndToEndTransformationDescription.profileName attribute has a value of PROFILE_01 or PROFILE_02 then the multiplicity of profileBehavior shall be 1

7.2.1.42 E2EXF_ERR_042

7.2.1.42.1 Message

The profileName attribute is not set

7.2.1.42.2 Description

The multiplicity of profileName shall be 1

7.2.1.43 E2EXF_ERR_043

7.2.1.43.1 Message

The profileName attribute is set to wrong value

7.2.1.43.2 Description

EndToEndTransformationDescription.profileName can have the following values: PROFILE_01, PROFILE_02, PROFILE_04, PROFILE_05, PROFILE_06, PROFILE_07, PROFILE_11, PROFILE_22

7.2.1.44 E2EXF_ERR_044

7.2.1.44.1 Message

The syncCounterInit attribute is not set for profile <profileID>

7.2.1.44.2 Description

If the EndToEndTransformationDescription.profileName attribute has a value of PROFILE_01 or PROFILE_02 then the multiplicity of syncCounterInit shall be lower than 256

7.2.1.45 E2EXF_ERR_045

7.2.1.45.1 Message

The upperHeaderBitsToShift attribute is not set for profile <profileID>

7.2.1.45.2 Description

The multiplicity of upperHeaderBitsToShift shall be 1

7.2.1.46 E2EXF_ERR_046

7.2.1.46.1 Message

The windowSize attribute is not set for profile <profileID>

7.2.1.46.2 Description

The multiplicity of windowSize shall be 1

7.2.1.47 E2EXF_ERR_047

7.2.1.47.1 Message

The disableEndToEndCheck attribute is not set for profile <profileID>

7.2.1.47.2 Description

The multiplicity of disableEndToEndCheck shall be 1

7.2.1.48 E2EXF_ERR_048

7.2.1.48.1 Message

The XfrmDevErrorDetect parameter is not set

7.2.1.48.2 Description

The multiplicity of parameter XfrmDevErrorDetect shall be 1

7.2.1.49 E2EXF_ERR_049

7.2.1.49.1 Message

The XfrmVersionInfoApi parameter is not set

7.2.1.49.2 Description

The multiplicity of parameter XfrmVersionInfoApi shall be 1

7.2.1.50 E2EXF_ERR_050

7.2.1.50.1 Message

The XfrmInstanceId parameter is not set

7.2.1.50.2 Description

The multiplicity of parameter XfrmInstanceId shall be 1

7.2.1.51 E2EXF_ERR_051

7.2.1.51.1 Message

The value of XfrmInstanceId parameter is not set in the range of 0-255

7.2.1.51.2 Description

The value of parameter XfrmInstanceId shall be in the range 0-255

7.2.1.52 E2EXF_ERR_052

7.2.1.52.1 Message

TransformerTechnology get from ISignalGroup is mismatched with TransformerTechnology get from ImplementationMapping

7.2.1.52.2 Description

TransformerTechnology get from ISignalGroup is mismatched with TransformerTechnology get from ImplementationMapping

7.2.1.53 E2EXF_ERR_053

7.2.1.53.1 Message

XfrmISignalGroupRefChoice or XfrmISignalRefChoice should be configured in ImplementationMapping

7.2.1.53.2 Description

XfrmISignalGroupRefChoice or XfrmISignalRefChoice should be configured in ImplementationMapping

7.2.1.54 E2EXF_ERR_054

7.2.1.54.1 Message

TransformerTechnologyRef in ImplementationMapping should be set

7.2.1.54.2 Description

TransformerTechnologyRef in ImplementationMapping is not set

7.2.1.55 E2EXF_ERR_055

7.2.1.55.1 Message

The attribute protocol of the TransformationTechnology should be set to E2E and the attribute version of the TransformationTechnology should be set to 1.0.0 and and the attribute transformerClass of the TransformationTechnology should be set to safety.

7.2.1.55.2 Description

The attribute protocol of the TransformationTechnology is not set to E2E or the attribute version of the TransformationTechnology is not set to 1.0.0 or the attribute transformerClass of the TransformationTechnology is not set to safety.

7.2.1.56 E2EXF_ERR_056

7.2.1.56.1 Message

A transformer chain using E2E should be configured with DataTransformation.executeDespiteDataUnavailability = TRUE

7.2.1.56.2 Description

A transformer chain using E2E has DataTransformation.executeDespiteDataUnavailability is not TRUE.

7.2.1.57 E2EXF_ERR_057

7.2.1.57.1 Message

An E2E transformer used in a transformer chain with a COM Based transformer should be configured with the following values: BufferProperties.headerLength = 0

7.2.1.57.2 Description

An E2E transformer used in a transformer chain with a COM Based transformer is not configured with the following values: BufferProperties.headerLength = 0

7.2.1.58 E2EXF_ERR_058

7.2.1.58.1 Message

The BufferProperties.headerLength for an E2E transformer located in a transformer chain with a SOME/IP transformer should be configured correctly.

7.2.1.58.2 Description

The BufferProperties.headerLength for an E2E transformer located in a transformer chain with a SOME/IP transformer is not configured correctly.

7.2.1.59 E2EXF_ERR_059

7.2.1.59.1 Message

The BufferProperties.bufferComputation of an E2E transformer used in a transformer chain with a COM Based transformer should be configured correctly

7.2.1.59.2 Description

The BufferProperties.bufferComputation of an E2E transformer used in a transformer chain with a COM Based transformer is not configured correctly

7.2.1.60 E2EXF_ERR_060

7.2.1.60.1 Message

The value of the EndToEndTransformationDescription.upperHeaderBitsToShift attribute should be set 0 in chain with ComXf or set 64 in chain with SomeIpXf

7.2.1.60.2 Description

The value of the EndToEndTransformationDescription.upperHeaderBitsToShift attribute is not set 0 in chain with ComXf or set 64 in chain with SomeIpXf

7.2.1.61 E2EXF_ERR_061

7.2.1.61.1 Message

If the EndToEndTransformationDescription.profileName attribute has a value of PROFILE_01 or PROFILE_11 and the serializing transformer is SomeIpXf then EndToEndTransformationDescription.crcOffset is not set to the same value of upperHeaderBitsToShift.

7.2.1.61.2 Description

If the EndToEndTransformationDescription.profileName attribute has a value of PROFILE_01 or PROFILE_11 and the serializing transformer is SomeIpXf then EndToEndTransformationDescription.crcOffset is not set to the same value of upperHeaderBitsToShift.

7.2.1.62 E2EXF_ERR_062

7.2.1.62.1 Message

If the EndToEndTransformationDescription.profileName attribute has a value of PROFILE_01 or PROFILE_11 and the serializing transformer is SomeIpXf then EndToEndTransformationDescription.counterOffset should be set to the value of upperHeaderBitsToShift + 8

7.2.1.62.2 Description

If the EndToEndTransformationDescription.profileName attribute has a value of PROFILE_01 or PROFILE_11 and the serializing transformer is SomeIpXf then EndToEndTransformationDescription.counterOffset is not set to the value of upperHeaderBitsToShift + 8

7.2.1.63 E2EXF_ERR_063

7.2.1.63.1 Message

If the EndToEndTransformationDescription.profileName attribute has a value of PROFILE_01 or PROFILE_11 and the serializing transformer is SomeIpXf then (if used) EndToEndTransformationDescription.dataIdNibbleOffset should be set to the value of upperHeaderBitsToShift + 12.

7.2.1.63.2 Description

If the EndToEndTransformationDescription.profileName attribute has a value of PROFILE_01 or PROFILE_11 and the serializing transformer is SomeIpXf then (if used) EndToEndTransformationDescription.dataIdNibbleOffset is not set to the value of upperHeaderBitsToShift + 12.

7.2.1.64 E2EXF_ERR_064

7.2.1.64.1 Message

If the EndToEndTransformationDescription.profileName attribute has a value of PROFILE_22 and the serializing transformer is SomeIpXf, then EndToEndTransformationDescription.offset should be set to the same value of upperHeaderBitsToShift.

7.2.1.64.2 Description

If the EndToEndTransformationDescription.profileName attribute has a value of PROFILE_22 and the serializing transformer is SomeIpXf, then EndToEndTransformationDescription.offset is not set to the same value of upperHeaderBitsToShift.

7.2.1.65 E2EXF_ERR_065

7.2.1.65.1 Message

The value of hasInternalState should be set to true for a TransformationTechnology with

transformerClass set to safety.

7.2.1.65.2 Description

The value of hasInternalState is not set to true for a TransformationTechnology with E2EXf.

7.2.1.66 E2EXF_ERR_066

7.2.1.66.1 Message

The value of the EndToEndTransformationDescription.profileName attribute should be same in all different variants.

7.2.1.66.2 Description

The value of the profileName should be the same in all different variants

7.2.1.67 E2EXF_ERR_067

7.2.1.67.1 Message

Criterion reference or value for variation point is wrong

7.2.1.67.2 Description

if criterion and value don't map with EcuC

7.2.1.68 E2EXF_ERR_070

7.2.1.68.1 Message

CDF EcuC don't exist

7.2.1.68.2 Description

if CDF EcuC is null

7.2.1.69 E2EXF_ERR_071

7.2.1.69.1 Message

EcucPostBuildVariantRef in EcuC don't exist

7.2.1.69.2 Description

if EcucPostBuildVariantRef is null

7.2.1.70 E2EXF_ERR_072

7.2.1.70.1 Message

Post Build Variant Criterion Value Sets is null

7.2.1.70.2 Description

Post Build Variant Criterion Value Sets is null

7.2.1.71 E2EXF_ERR_074

7.2.1.71.1 Message

There are exists same (criterion, value) set in E2EXf variation-point

7.2.1.71.2 Description

If (criterion, value) is duplicated in variation-point

7.2.1.72 E2EXF_ERR_075

7.2.1.72.1 Message

The (criterion, value) of DBImport.arxml and Transformer.arxml is not same

7.2.1.72.2 Description

IF (criterion, value) of DBImport.arxml and Transformer.arxml are difference

7.2.2 Warning Messages

7.2.2.1 E2EXF_WRN_001

7.2.2.1.1 Message

The dataIdMode attribute should not be set for profile <profileID>

7.2.2.1.2 Description

If the EndToEndTransformationDescription.profileName attribute is set to a value of PROFILE_02, PROFILE_04, PROFILE_05, PROFILE_06, PROFILE_07, or PROFILE_22 then the multiplicity of the EndToEndTransformationDescription.dataIdMode attribute shall be 0.

7.2.2.2 E2EXF_WRN_002

7.2.2.2.1 Message

The counterOffset attribute should not be set for profile <profileID>

7.2.2.2.2 Description

If the EndToEndTransformationDescription.profileName attribute is set to a value of PROFILE_02, PROFILE_04, PROFILE_05, PROFILE_06, PROFILE_07, or PROFILE_22 then the multiplicity of the EndToEndTransformationDescription.counterOffset attribute shall be 0.

7.2.2.3 E2EXF_WRN_003

7.2.2.3.1 Message

The crcOffset attribute should not be set for profile <profileID>

7.2.2.3.2 Description

If the EndToEndTransformationDescription.profileName attribute is set to a value of PROFILE_02, PROFILE_04, PROFILE_05, PROFILE_06, PROFILE_07, or PROFILE_22 then the multiplicity of the EndToEndTransformationDescription.crcOffset attribute shall be 0.

7.2.2.4 E2EXF_WRN_004

7.2.2.4.1 Message

The offset attribute should not be set for profile <profileID>

7.2.2.4.2 Description

If the EndToEndTransformationDescription.profileName attribute is set to PROFILE_01 or PROFILE_11 then the multiplicity of the EndToEndTransformationDescription.offset attribute shall be 0.

7.2.2.5 E2EXF_WRN_005

7.2.2.5.1 Message

The dataIdNibbleOffset attribute should not be set for profile <profileID>

7.2.2.5.2 Description

If the EndToEndTransformationDescription.profileName attribute is set to a value of PROFILE_02,

PROFILE_04, PROFILE_05, PROFILE_06, PROFILE_07, or PROFILE_22 then the multiplicity of the EndToEndTransformationDescription.dataIdNibbleOffset attribute shall be 0.

7.2.2.6 E2EXF_WRN_006

7.2.2.6.1 Message

The dataIdNibbleOffset attribute should not be set when dataIdMode attribute should not be set to value different from lower12Bit for profile <profileID>

7.2.2.6.2 Description

If the EndToEndTransformationDescription.profileName attribute is set to a value of PROFILE_01 or PROFILE_11 and the EndToEndTransformationDescription.dataIdMode attribute is set to value different from lower12Bit then the multiplicity of the EndToEndTransformationDescription.dataIdNibbleOffset attribute shall be 0.

7.2.2.7 E2EXF_WRN_007

7.2.2.7.1 Message

The minDataLength attribute should not be set for profile <profileID>

7.2.2.7.2 Description

If the EndToEndTransformationDescription.profileName attribute has a value of PROFILE_01, PROFILE_02, PROFILE_05, PROFILE_11, or PROFILE_22 then the multiplicity of the attributes EndToEndTransformationISignalProps.minDataLength and shall be 0.

7.2.2.8 E2EXF_WRN_008

7.2.2.8.1 Message

The maxDataLength attribute should not be set for profile <profileID>

7.2.2.8.2 Description

If the EndToEndTransformationDescription.profileName attribute has a value of PROFILE_01, PROFILE_02, PROFILE_05, PROFILE_11, or PROFILE_22 then the multiplicity of the attributes EndToEndTransformationISignalProps.maxDataLength shall be 0.

7.2.2.9 E2EXF_WRN_009

7.2.2.9.1 Message

The dataLength attribute should not be set for profile <profileID>

7.2.2.9.2 Description

If the EndToEndTransformationDescription.profileName attribute has a value of PROFILE_04, PROFILE_06, or PROFILE_07 then the multiplicity of the attribute EndToEndTransformationISignalProps.dataLength shall be 0.

7.2.2.10 E2EXF_WRN_010

7.2.2.10.1 Message

The maxNoNewOrRepeatedData attribute should not be set for profile <profileID>

7.2.2.10.2 Description

If the EndToEndTransformationDescription.profileName attribute has a value of PROFILE_04, PROFILE_05, PROFILE_06, PROFILE_07, PROFILE_11, or PROFILE_22 then the multiplicity of the EndToEndTransformationDescription.maxNoNewOrRepeatedData attribute shall be 0.

7.2.2.11 E2EXF_WRN_011

7.2.2.11.1 Message

The syncCounterInit attribute should not be set for profile <profileID>

7.2.2.11.2 Description

If the EndToEndTransformationDescription.profileName attribute has a value of PROFILE_04, PROFILE_05, PROFILE_06, PROFILE_07, PROFILE_11, or PROFILE_22 then the multiplicity of the EndToEndTransformationDescription.syncCounterInit attribute shall be 0.

7.2.2.12 E2EXF_WRN_012

7.2.2.12.1 Message

The profileBehavior attribute should not be set for profile <profileID>

7.2.2.12.2 Description

If the EndToEndTransformationDescription.profileName attribute has a value of PROFILE_04, PROFILE_05, PROFILE_06, PROFILE_07, PROFILE_11, or PROFILE_22 then the multiplicity of the EndToEndTransformationDescription.profileBehavior attribute shall be 0.

7.2.3 Information Messages

None

8. Appendix