MICROSAR Initial ECUC Generator

Technical Reference

Description

Version 1.9

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Document Information

History Dateen-US

Author	Date	Version	Remarks
Benjamin Gottschalk			

Please note
We have configured the programs in accordance with your specifications in the questionnaire. Whereas the programs do support other configurations than the one specified in your questionnaire, Vector´s release of the programs delivered to your company is expressly restricted to the configuration you have specified in the questionnaire.

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1 Introduction

The MICROSAR Initial ECUC Generator is the Vector implementation of the AUTOSAR ECU Configuration Generator (see [1]). The input format for the MICROSAR Initial ECUC Generator is the ECU Extract of System Configuration Description. The tool generates as output format an ECU Configuration Description.

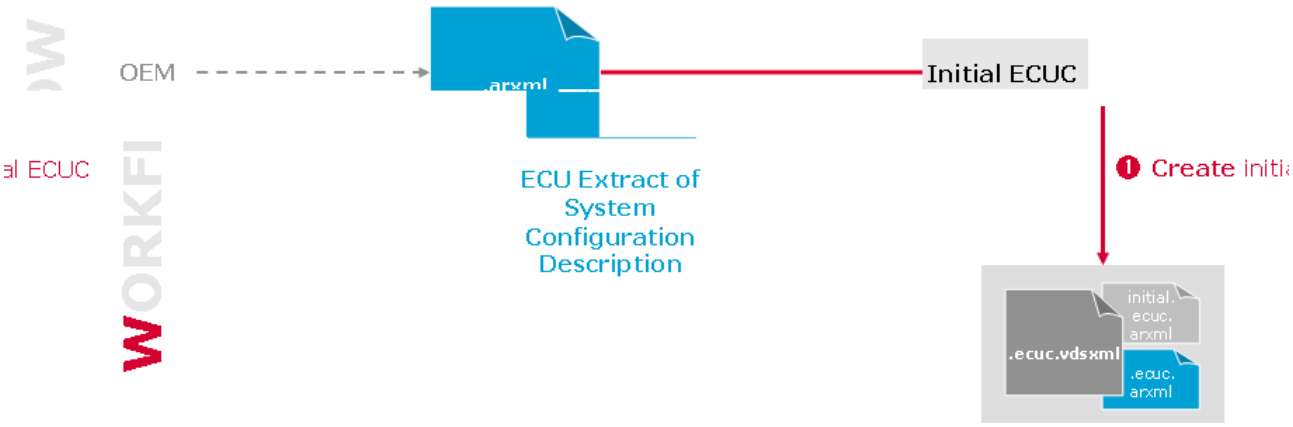

Figure 1-1 Workflow for generating an ECU Configuration Description

The output files of this tool form a Vector DataServer project, which can be used for further configuration of the BSW modules. The generated files are listed in Table 1-1 Generated Files.

File type	Naming
AUTOSAR ECUC Parameter Definition File	AUTOSAR_EcucParamDef.arxml
Active ECUC File	*.ecuc.arxml
Initial ECUC File	*.ecuc.Initial.arxml
DataServer project file	*.ecuc.vdsxml

Table 1-1 Generated Files

2 Usage

The default usage help on the command line appears by calling the executable without parameters or with parameter **-h**. The following chapter shows you a more detailed view.

2.1 Arguments

The arguments of the MICROSAR Initial ECUC Generator are listed below:

Argument	Description
-a, --asrVersion=VERSION	Makes the following parameter VERSION being interpreted as the AsrVersion, where the ECUC files should be generated in. The VERSION should be the XML namespace version of the AsrVersion and should be specified in the following manner: e.g. 3.0.2.
-b, --bswmd=FILE	Makes the following parameter FILE being interpreted as a BSWMD file.
-h, --help	Display this help and exit.
-l, --logFile=FILE	Makes the following parameter FILE being interpreted as a log-file, this tool can write messages to. If -l is not specified, a default log file (named as the ECU Extract of System Configuration Description) will be generated in the same directory as the ECUC project.
-m, --merge	Performs a merge of all specified ECU Extract of System Configuration Description files to one output ECUC project. For this option, you have to specify at least two valid ECU Extract of System Configuration Description files. This parameter should be only used, when using the Identity Manager feature. Merging of ECU Extract of System Configuration Description is just supported in this context.
-o, --overlayConfig=FILE	Makes the following parameter FILE being interpreted as the XML configuration file for buffer overlay in Multiple ECU use case. This parameter should be only used, when using the Identity Manager feature.
-p, --projectName=NAME	Makes the following parameter NAME being interpreted as the project name.
-r, --projectDir=DIR	Makes the following parameter DIR being interpreted as the directory, where the new created project shall be saved.
-s, --shortNames	Limit all names to 32 characters.
-v, --verbose	Display additional descriptions and help.

Table 2-1 Command line arguments

All arguments which describe a file or a path can be specified relatively or absolutely.

2.4 Use Cases

This chapter describes the different use cases, which are supported by the MICROSAR Initial ECUC Generator.

2.4.1 Standard Use Case

This is the default use case for generating an ECUC project based on one ECU Extract of System Configuration Description. If there are no special extensions in your project, this use case is entirely sufficient.

Command line:

```
GenTool_CsAsrInitialEcuC.exe <EcuExtractOfSystemConfigurationDescription>
```

Example

```
GenTool_CsAsrInitialEcuC.exe D:\test\mySystemExtract.arxml
```

Argument	Description
`D:\test\mySystemExtract.arxml`	The tool creates an ECUC project based on the ECU Extract of System Configuration Description.

Table 2-4 Arguments standard use case

The easiest way is just to **drag'n'drop** the ECU Extract of System Configuration Description onto the command line tool GenTool_CsAsrInitialEcuC.exe.

Figure 2-1 Standard use case drag'n'drop

2.4.2 Specifying a project name

This use case enables the definition of a project name. That means, all generated files get the defined project name as file name (supplemented by the extensions of the different file types, like *.ecuc.vdsxml for a Vector DataServer project file).

Command line:

```
GenTool_CsAsrInitialEcuC.exe <EcuExtractOfSystemConfigurationDescription>
-p <project-name>
```

Example

```
GenTool_CsAsrInitialEcuC.exe D:\test\mySystemExtract.arxml -p
TestingArgumentP
```

Argument	Description
`D:\test\mySystemExtract.arxml`	The tool creates an ECUC project based on the ECU Extract of System Configuration Description.
`-p TestingArgumentP`	That is the project name; the generated ECUC project will be named to.

Table 2-5 Arguments specifying a project name

The generated files in this example would be:

File	Description
`D:\test\mySystemExtract.arxml`	The tool creates an ECUC project based on the ECU Extract of System Configuration Description.
`D:\test\TestingArgumentP.ecuc.arxml`	Active ECUC file
`D:\test\TestingArgumentP.ecuc.Initial.arxml`	Initial ECUC file
`D:\test\TestingArgumentP.ecuc.vdsxml`	Vector DataServer project file
`D:\test\TestingArgumentP.InitialEcuC.log.txt`	Log-File

Table 2-6 Generated files with project name

Info
If parameter **–p** is not specified, the project will be named according to the first given ECU Extract of System Configuration Description.

2.4.3 Specifying a special AUTOSAR output version

This use case enables the specification of the AUTOSAR version in your generated ECUC project. All available AUTOSAR output versions can be found in chapter 2.2.

Command line:

```
GenTool_CsAsrInitialEcuC.exe <EcuExtractOfSystemConfigurationDescription>
-a <output-version>
```

Example
`GenTool_CsAsrInitialEcuC.exe D:\test\mySystemExtract.arxml -a 3.1.0`

Argument	Description
`D:\test\mySystemExtract.arxml`	The tool creates an ECUC project based on the ECU Extract of System Configuration Description.
`-a 3.1.0`	Makes the generated ECUC project being generated in the AUTOSAR version 3.1.0. ATTENTION: The AUTOSAR version you have to specify is always equal to the XML namespace of the corresponding AUTOSAR version. These two versions are not the same for each AUTOSAR version.

Table 2-7 Arguments specifying a special AUTOSAR output version

2.4.4 Specifying a BSWMD file

This use case is very special.

The tool needs the definitions of all created ECUC objects, like module configurations, containers, parameters or references. In most cases, only standard AUTOSAR module configurations are generated, which can be found in AUTOSAR_EcucParamDef.arxml. Only for those generated module configurations, which are not part of this common AUTOSAR definition file, the corresponding BSWMD files are needed.

Command line:

```
GenTool_CsAsrInitialEcuC.exe <EcuExtractOfSystemConfigurationDescription>
-bswmd <vector bswmd-file>
```

Example

```
GenTool_CsAsrInitialEcuC.exe D:\test\mySystemExtract.arxml -bswmd
MostIf_bswmd.arxml
```

Argument	Description
`D:\test\mySystemExtract.arxml`	The tool creates an ECUC project based on the ECU Extract of System Configuration Description.
`-bswmd MostIf_bswmd.arxml`	Specifies the BSWMD file, which is needed to create special Module Configurations in the generated ECUC project, for which no AUTOSAR Module Definition exists.

Table 2-8 Arguments specifying a BSWMD file

2.4.5 FRTP Use Case

This use case enables the specification of two ECU Extracts of System Configuration Description for the purpose of specifying the system configuration part of the FRTP according to AUTOSAR version 4.0. The main ECU Extract of System Configuration Description file will contain all other contents in another AUTOSAR version (3.x.x), only the ECU Extract of System Configuration Description extension file will contain the FRTP contents in AUTOSAR version 4.0. The following two ways exists to call the MICROSAR Initial ECUC Generator with the both files.

Command line:

1. The extension file has to be named according to the naming convention, mentioned in the example below:

```
GenTool_CsAsrInitialEcuC.exe <EcuExtractOfSystemConfigurationDescription>
<EcuExtract of SystemConfigurationDescription – extension file>
```

2. Both files have to be enclosed within brackets, mentioned in the example below:

```
GenTool_CsAsrInitialEcuC.exe  <EcuExtractOfSystemConfigurationDescription>
<EcuExtract of SystemConfigurationDescription – extension file>
```

Example

```
GenTool_CsAsrInitialEcuC.exe D:\test\mySystemExtract.arxml
D:\test\mySystemExtract_FrTp.arxml
```

Argument	Description
`D:\test\mySystemExtract.arxml`	The main system extract file.
`D:\test\mySystemExtract_FrTp.arxml`	The system extract extension file (AUTOSAR version 4.0)

Table 2-9 Arguments FRTP Use Case

3 Logging and error reporting

If no log file has been specified explicitly (see chapter 2.2.2), a default log file will be generated. This log file is located at the same directory as the ECU Extract of System Configuration Description and has the following name:

<Name of ECU Extract of System Configuration Description>.InitialEcuC.log.txt

If several ECU Extracts of System Configuration Description are specified (in Multiple Identity use case), the log file and project name are taken from the first one.

There are different levels of reported information in the log file, which can be parsed automatically by searching for the error level in lower letters, surrounded by brackets. The error levels are:

- info
- warning
- error

4 IdentityManager.Ecu

Info
The maximum number of identities is limited to eight.

4.1.1 IdentityManager.Ecu without buffer overlaying

This use case is needed for generating an ECUC project out of more than one ECU Extract of System Configuration Description for physical multi ECUs.

Info
This use case is only supported if the Identity Manager option is available.

Command line:

```
GenTool_CsAsrInitialEcuC.exe –m <EcuExtractOfSystemConfigurationDescription 1>
<EcuExtract of SystemConfigurationDescription 2> …
```

Example
```
GenTool_CsAsrInitialEcuC.exe –m D:\test\mySystemExtract_ECU1.arxml
D:\test\mySystemExtract_ECU2.arxml D:\test\mySystemExtract_ECU3.arxml
D:\test\mySystemExtract_ECU4.arxml
```

Argument	Description
`–m`	Specifies the use case IdentityManager.
`D:\test\mySystemExtract_ECU1.arxml`	The ECU Extract of System Configuration Description for the first ECU.
`D:\test\mySystemExtract_ECU2.arxml`	The ECU Extract of System Configuration Description for the second ECU.
`D:\test\mySystemExtract_ECU3.arxml`	The ECU Extract of System Configuration Description for the third ECU.
`D:\test\mySystemExtract_ECU4.arxml`	The ECU Extract of System Configuration Description for the fourth ECU.

Table 4-1 Arguments IdentityManager.Ecu without buffer overlaying

Caution
When specifying the pdu-overlays in the buffer-overlay config-file, take care of NOT overlaying pdus, which are referred as static- or dynamic-part of a multiplexed pdu! This use-case is not allowed. Configure signal-overlays instead.

Caution
The first ECU Extract of System Configuration file is interpreted as master file. All other ECU Extract of System Configuration files are merged with the master. So the master ECU Extract of System Configuration file has to be a superset of the other files.

The master ECU Extract of System Configuration file can be explicit set within the mecu-file.

5 IdentityManager.Config

This use case is needed for generating an ECUC project out of more than one ECU Extract of System Configuration Description for multiple configuration ECUs. The XML scheme [3] for the IdentityManager.Config configuration file can be found in the same directory, where the main executable of this tool is placed in.

The paths to the ECU Extract of System Configuration Description files, which are obligatory in the IdentityManager.Config configuration file, may be absolutely or relatively. If they are relatively, the base directory of the relative path must be the directory, where the configuration file is placed in.

If the configuration file is placed in another directory than the target-directory, where the generated files will be placed in, the configuration file will NOT be copied automatically to the target-directory.

Info
This use case is only supported if the Identity Manager option is available.

Info
The maximum number of identities is limited to eight.

Command line:

```
GenTool_CsAsrInitialEcuC.exe –m <EcuExtractOfSystemConfigurationDescription 1>
<EcuExtract of SystemConfigurationDescription 2> … -x
myIdentityManagerConfigFile.imc
```

Example
```
GenTool_CsAsrInitialEcuC.exe –m D:\test\mySystemExtract_ECU1.arxml
D:\test\mySystemExtract_ECU2.arxml D:\test\mySystemExtract_ECU3.arxml
D:\test\mySystemExtract_ECU4.arxml –x myIdentityManagerConfigFile.imc
```

Argument	Description
`–m`	Specifies the use case IdentityManager.
`D:\test\mySystemExtract_ECU1.arxml`	The ECU Extract of System Configuration Description for the first ECU.
`D:\test\mySystemExtract_ECU2.arxml`	The ECU Extract of System Configuration Description for the second ECU.

`D:\test\mySystemExtract_ECU3.arxml`	The ECU Extract of System Configuration Description for the third ECU.
`D:\test\mySystemExtract_ECU4.arxml`	The ECU Extract of System Configuration Description for the fourth ECU.
`-x myIdentityManagerConfigFile.imc`	This is the configuration file for the IdentityManager.Config feature.

Table 5-1 Arguments IdentityManager.Config

6 Appendix

6.1 Derivation of active and initial parameters

Some parameters are derived as OEM parameters. This parameters or containers are called “initial” parameters. Other non-OEM parameters are called “active” parameters. The following table shows which parameters are derived as active parameters. Parameters not listed here must be initial. For containers both cases cases are listed, initial and active. The reason therefore is the hierarchy and the behavior in case of inheritance.

Board	INITIAL	ContainerDef
Board/BoardGeneral	INITIAL	ContainerDef
Can	INITIAL	ContainerDef
Can/CanConfigSet	INITIAL	ContainerDef
Can/CanConfigSet/CanController	INITIAL	ContainerDef
Can/CanConfigSet/CanController/CanControllerActivation	ACTIVE	BooleanParamDef
Can/CanConfigSet/CanController/CanControllerSeg1	ACTIVE	IntegerParamDef
Can/CanConfigSet/CanController/CanControllerSeg2	ACTIVE	IntegerParamDef
Can/CanConfigSet/CanController/CanWakeupSourceRef	ACTIVE	SymbolicNameReferenceDef
Can/CanConfigSet/CanHardwareObject	ACTIVE	ContainerDef
Can/CanConfigSet/CanHardwareObject/CanControllerRef	ACTIVE	ReferenceParamDef
Can/CanConfigSet/CanHardwareObject/CanHandleType	ACTIVE	EnumParamDef
Can/CanConfigSet/CanHardwareObject/CanIdType	ACTIVE	EnumParamDef
Can/CanConfigSet/CanHardwareObject/CanObjectType	ACTIVE	EnumParamDef
Can/CanGeneral	INITIAL	ContainerDef
Can/CanGeneral/CanWakeupSupport	ACTIVE	BooleanParamDef
CanIf	INITIAL	ContainerDef
CanIf/CanIfControllerConfig	INITIAL	ContainerDef
CanIf/CanIfControllerConfig/CanIfControllerIdRef	ACTIVE	SymbolicNameReferenceDef
CanIf/CanIfControllerConfig/CanIfWakeupSupport	ACTIVE	EnumParamDef
CanIf/CanIfDriverConfig	INITIAL	ContainerDef
CanIf/CanIfInitConfiguration	INITIAL	ContainerDef
CanIf/CanIfInitConfiguration/CanIfInitControllerConfig	INITIAL	ContainerDef
CanIf/CanIfInitConfiguration/CanIfInitControllerConfig/CanIfControllerRefConfigSet	ACTIVE	SymbolicNameReferenceDef
CanIf/CanIfInitConfiguration/CanIfInitHohConfig	INITIAL	ContainerDef
CanIf/CanIfInitConfiguration/CanIfInitHohConfig/CanIfHrhConfig	ACTIVE	ContainerDef
CanIf/CanIfInitConfiguration/CanIfInitHohConfig/CanIfHrhConfig/CanIfCanControllerHrhIdRef	ACTIVE	ReferenceParamDef
CanIf/CanIfInitConfiguration/CanIfInitHohConfig/CanIfHrhConfig/CanIfHrhIdSymRef	ACTIVE	SymbolicNameReferenceDef
CanIf/CanIfInitConfiguration/CanIfInitHohConfig/CanIfHrhConfig/CanIfHrhType	ACTIVE	EnumParamDef
CanIf/CanIfInitConfiguration/CanIfInitHohConfig/CanIfHthConfig	ACTIVE	ContainerDef
CanIf/CanIfInitConfiguration/CanIfInitHohConfig/CanIfHthConfig/CanIfHthIdSymRef	ACTIVE	SymbolicNameReferenceDef
CanIf/CanIfInitConfiguration/CanIfInitHohConfig/CanIfHthConfig/CanIfHthType	ACTIVE	EnumParamDef
CanIf/CanIfInitConfiguration/CanIfNumberOfCanRxPduIds	ACTIVE	IntegerParamDef
CanIf/CanIfInitConfiguration/CanIfNumberOfCanTXPduIds	ACTIVE	IntegerParamDef
CanIf/CanIfInitConfiguration/CanIfNumberOfDynamicCanTXPduIds	ACTIVE	IntegerParamDef
CanIf/CanIfInitConfiguration/CanIfRxPduConfig	INITIAL	ContainerDef
CanIf/CanIfInitConfiguration/CanIfRxPduConfig/CanIfCanRxPduHrhRef	ACTIVE	ReferenceParamDef
CanIf/CanIfInitConfiguration/CanIfRxPduConfig/CanIfRxUserType	ACTIVE	EnumParamDef
CanIf/CanIfInitConfiguration/CanIfRxPduConfig/CanIfUserRxIndication	ACTIVE	FunctionNameParamDef
CanIf/CanIfInitConfiguration/CanIfTxPduConfig	INITIAL	ContainerDef
CanIf/CanIfInitConfiguration/CanIfTxPduConfig/CanIfCanTxPduHthRef	ACTIVE	ReferenceParamDef
CanIf/CanIfInitConfiguration/CanIfTxPduConfig/CanIfTxUserType	ACTIVE	EnumParamDef
CanIf/CanIfInitConfiguration/CanIfTxPduConfig/CanIfUserTxConfirmation	ACTIVE	FunctionNameParamDef
CanIf/CanIfPrivateConfiguration	INITIAL	ContainerDef
CanIf/CanIfPrivateConfiguration/CanIfSoftwareFilterType	ACTIVE	EnumParamDef
CanIf/CanIfPublicConfiguration	INITIAL	ContainerDef
CanNm	INITIAL	ContainerDef
CanNm/CanNmGlobalConfig	INITIAL	ContainerDef
CanNm/CanNmGlobalConfig/CanNmChannelConfig	INITIAL	ContainerDef
CanNm/CanNmGlobalConfig/CanNmChannelConfig/CanNmChannelActive	ACTIVE	BooleanParamDef
CanNm/CanNmGlobalConfig/CanNmChannelConfig/CanNmMessageCount	DYNAMIC	IntegerParamDef
CanNm/CanNmGlobalConfig/CanNmChannelConfig/CanNmPduCbvPosition	ACTIVE	EnumParamDef
CanNm/CanNmGlobalConfig/CanNmChannelConfig/CanNmPduNidPosition	ACTIVE	EnumParamDef
CanNm/CanNmGlobalConfig/CanNmChannelConfig/CanNmPnEnabled	ACTIVE	BooleanParamDef
CanNm/CanNmGlobalConfig/CanNmChannelConfig/CanNmTxPdu	INITIAL	ContainerDef
CanNm/CanNmGlobalConfig/CanNmChannelConfig/CanNmUserDataLentgh	DYNAMIC	IntegerParamDef
CanNm/CanNmGlobalConfig/CanNmChannelConfig/CanNmUserDataTxPdu	INITIAL	ContainerDef
CanNm/CanNmGlobalConfig/CanNmPnInfo	INITIAL	ContainerDef
CanNm/CanNmGlobalConfig/CanNmPnInfo/CanNmPnFilterMaskByte	INITIAL	ContainerDef
CanSM	INITIAL	ContainerDef
CanSM/CanStateManagerConfiguration	INITIAL	ContainerDef

CanSM/CanStateManagerConfiguration/CanSMPartialNetwork	ACTIVE	BooleanParamDef
CanSM/CanStateManagerConfiguration/CanStateManagerNetworks	INITIAL	ContainerDef
CanSM/CanStateManagerConfiguration/CanStateManagerNetworks/CanSMTransceiverId	ACTIVE	SymbolicNameReferenceDef
CanSM/CanStateManagerConfiguration/CanStateManagerNetworks/CanStateManagerControllers	INITIAL	ContainerDef
CanTp	ACTIVE	ContainerDef
CanTp/CanTpConfigSet	ACTIVE	ContainerDef
CanTp/CanTpConfigSet/CanTpActiveRxNSduRef	ACTIVE	ReferenceParamDef
CanTp/CanTpConfigSet/CanTpActiveTxNSduRef	ACTIVE	ReferenceParamDef
CanTp/CanTpGeneral	INITIAL	ContainerDef
CanTp/CanTpRxNSdu/CanTpNSa	INITIAL	ContainerDef
CanTp/CanTpRxNSdu/CanTpNTa	INITIAL	ContainerDef

Dcm/DcmDsl/DcmDslProtocol/DcmDslProtocolRow/DcmDslConnection	ACTIVE	ChoiseContainerDef
Dcm/DcmDsl/DcmDslProtocol/DcmDslProtocolRow/DcmDslConnection/DcmDslMainConnection	ACTIVE	ContainerDef
Dcm/DcmDsl/DcmDslProtocol/DcmDslProtocolRow/DcmDslConnection/DcmDslMainConnection/DcmDslProtocolRx	ACTIVE	ContainerDef
Dcm/DcmDsl/DcmDslProtocol/DcmDslProtocolRow/DcmDslConnection/DcmDslMainConnection/DcmDslProtocolRx/DcmDslProtocolRxBufferIDValue	ACTIVE	IntegerParamDef
Dcm/DcmDsl/DcmDslProtocol/DcmDslProtocolRow/DcmDslConnection/DcmDslMainConnection/DcmDslProtocolRx/DcmDslProtocolRxFirstTxPduId	ACTIVE	IntegerParamDef
Dcm/DcmDsl/DcmDslProtocol/DcmDslProtocolRow/DcmDslConnection/DcmDslMainConnection/DcmDslProtocolRx/DcmDslProtocolRxProtocol	ACTIVE	IntegerParamDef
Dcm/DcmDsl/DcmDslProtocol/DcmDslProtocolRow/DcmDslConnection/DcmDslMainConnection/DcmDslProtocolTx	ACTIVE	ContainerDef
Dcm/DcmDsl/DcmDslProtocol/DcmDslProtocolRow/DcmDslConnection/DcmDslMainConnection/DcmDslProtocolTx/DcmDslProtocolTxBufferIDValue	ACTIVE	IntegerParamDef
Dcm/DcmDsl/DcmDslProtocol/DcmDslProtocolRow/DcmDslConnection/DcmDslMainConnection/DcmDslProtocolTx/DcmDslProtocolTxRxPduId	ACTIVE	IntegerParamDef
Dcm/DcmDsl/DcmDslProtocol/DcmDslProtocolRow/DcmDslProtocolSIDTableValue	ACTIVE	IntegerParamDef
Dcm/DcmDsl/DcmDslProtocol/DcmDslProtocolRow/DcmDslProtocolTimeDefault	ACTIVE	ReferenceParamDef
Dcm/DcmDsl/DcmDslProtocolTiming	ACTIVE	ContainerDef
Dcm/DcmDsl/DcmDslProtocolTiming/DcmDslProtocolTimingRow	ACTIVE	ContainerDef
Dcm/DcmDsl/DcmDslProtocolTiming/DcmDslProtocolTimingRow/DcmTimeStrType	ACTIVE	IntegerParamDef
Dcm/DcmDsl/DcmP2ServerAdjust	ACTIVE	FloatParamDef
Dcm/DcmDsl/DcmP2StarServerAdjust	ACTIVE	FloatParamDef
Dcm/DcmGeneral	ACTIVE	ContainerDef
Dcm/DcmPageBufferCfg	ACTIVE	ContainerDef
Dcm/DcmPageBufferCfg/DcmPagedBufferEnabled	ACTIVE	BooleanParamDef
EcuC	INITIAL	ContainerDef
EcuC/PduCollection	INITIAL	ContainerDef
EcuC/PduCollection/Pdu	INITIAL	ContainerDef
EcuM	ACTIVE	ContainerDef
EcuM/EcuMConfiguration	ACTIVE	ContainerDef
EcuM/EcuMConfiguration/EcuMDefaultShutdownTarget	ACTIVE	ContainerDef
EcuM/EcuMConfiguration/EcuMDefaultShutdownTarget/EcuMDefaultSleepModeRef	ACTIVE	SymbolicNameReferenceDef
EcuM/EcuMConfiguration/EcuMDefaultShutdownTarget/EcuMDefaultState	ACTIVE	EnumParamDef
EcuM/EcuMConfiguration/EcuMModuleConfigurationRef	ACTIVE	ChoisRefParamDef
EcuM/EcuMConfiguration/EcuMSleepMode	ACTIVE	ContainerDef
EcuM/EcuMConfiguration/EcuMSleepMode/EcuMSleepModeName	ACTIVE	StringParamDef
EcuM/EcuMConfiguration/EcuMSleepMode/EcuMSleepModeSuspend	ACTIVE	BooleanParamDef
EcuM/EcuMConfiguration/EcuMSleepMode/EcuMWakeupSourceMask	ACTIVE	SymbolicNameReferenceDef
EcuM/EcuMConfiguration/EcuMUserConfig	ACTIVE	ContainerDef
EcuM/EcuMConfiguration/EcuMWakeupSource	ACTIVE	ContainerDef
EcuM/EcuMConfiguration/EcuMWakeupSource/EcuMComMChannelRef	ACTIVE	SymbolicNameReferenceDef
EcuM/EcuMConfiguration/EcuMWakeupSource/EcuMResetReason	ACTIVE	IntegerParamDef
EcuM/EcuMConfiguration/EcuMWakeupSource/EcuMWakeupSourceId	ACTIVE	IntegerParamDef
EcuM/EcuMConfiguration/EcuMWakeupSource/EcuMWakeupSourcePolling	ACTIVE	BooleanParamDef
EcuM/EcuMGeneral	ACTIVE	ContainerDef
Fr	INITIAL	ContainerDef
Fr/FrGeneral	INITIAL	ContainerDef
Fr/FrMultipleConfiguration	INITIAL	ContainerDef
Fr/FrMultipleConfiguration/FrController	INITIAL	ContainerDef
Fr/FrMultipleConfiguration/FrController/FrAbsoluteTimer	INITIAL	ContainerDef
FrIf	INITIAL	ContainerDef
FrIf/FrIfConfig	INITIAL	ContainerDef
FrIf/FrIfConfig/FrIfCluster	INITIAL	ContainerDef
FrIf/FrIfConfig/FrIfCluster/FrIfController	INITIAL	ContainerDef
FrIf/FrIfConfig/FrIfCluster/FrIfController/FrIfAbsTimer	INITIAL	ContainerDef
FrIf/FrIfConfig/FrIfCluster/FrIfController/FrIfFrameTriggering	ACTIVE	ContainerDef
FrIf/FrIfConfig/FrIfCluster/FrIfController/FrIfFrameTriggering/FrIfAllowDynamicLSduLength	ACTIVE	BooleanParamDef
FrIf/FrIfConfig/FrIfCluster/FrIfController/FrIfFrameTriggering/FrIfPayloadPreamble	ACTIVE	BooleanParamDef
FrIf/FrIfConfig/FrIfCluster/FrIfController/FrIfLPdu	INITIAL	ContainerDef
FrIf/FrIfConfig/FrIfCluster/FrIfController/FrIfLPdu/FrIfVBTriggeringRef	ACTIVE	ReferenceParamDef
FrIf/FrIfConfig/FrIfCluster/FrIfController/FrIfTransceiver	INITIAL	ContainerDef
FrIf/FrIfConfig/FrIfCluster/FrIfController/FrIfTransceiver/FrIfFrTrcvChannelRef	ACTIVE	SymbolicNameReferenceDef
FrIf/FrIfConfig/FrIfCluster/FrIfJobList	INITIAL	ContainerDef
FrIf/FrIfConfig/FrIfFrameStructure	ACTIVE	ContainerDef
FrIf/FrIfConfig/FrIfFrameStructure/FrIfPdusInFrame	INITIAL	ContainerDef
FrIf/FrIfConfig/FrIfPdu	INITIAL	ContainerDef
FrIf/FrIfConfig/FrIfPdu/FrIfPduDirection	INITIAL	ChoiseContainerDef
FrIf/FrIfConfig/FrIfPdu/FrIfPduDirection/FrIfRxPdu	INITIAL	ContainerDef
FrIf/FrIfConfig/FrIfPdu/FrIfPduDirection/FrIfTxPdu	INITIAL	ContainerDef
FrIf/FrIfGeneral	INITIAL	ContainerDef
FrNm	INITIAL	ContainerDef
FrNm/FrNmChannelConfig	INITIAL	ContainerDef
FrNm/FrNmChannelConfig/FrNmChannelIdentifiers	INITIAL	ContainerDef
FrNm/FrNmChannelConfig/FrNmChannelIdentifiers/FrNmPnEnabled	ACTIVE	BooleanParamDef
FrNm/FrNmChannelConfig/FrNmChannelIdentifiers/FrNmRxPdu	INITIAL	ContainerDef
FrNm/FrNmChannelConfig/FrNmChannelIdentifiers/FrNmTxPdu	INITIAL	ContainerDef
FrNm/FrNmChannelConfig/FrNmChannelIdentifiers/FrNmUserDataTxPdu	INITIAL	ContainerDef
FrNm/FrNmChannelConfig/FrNmChannelTiming	INITIAL	ContainerDef
FrNm/FrNmGlobalConfig	INITIAL	ContainerDef
FrNm/FrNmGlobalConfig/FrNmGlobalConstants	INITIAL	ContainerDef
FrNm/FrNmGlobalConfig/FrNmGlobalConstants/FrNmPnInfo	INITIAL	ContainerDef
FrNm/FrNmGlobalConfig/FrNmGlobalConstants/FrNmPnInfo/FrNmPnFilterMaskByte	INITIAL	ContainerDef
FrNm/FrNmGlobalConfig/FrNmGlobalFeatures	INITIAL	ContainerDef
FrNm/FrNmGlobalConfig/FrNmGlobalFeatures/FrNmDualChannelPduEnable	ACTIVE	BooleanParamDef
FrNm/FrNmGlobalConfig/FrNmVendorSpecific	INITIAL	ContainerDef
FrSm	INITIAL	ContainerDef
FrSm/FrSmCluster	INITIAL	ContainerDef
FrSm/FrSmGeneral	INITIAL	ContainerDef

FrTp	INITIAL	ContainerDef
FrTp/FrTpGeneral	INITIAL	ContainerDef
FrTp/FrTpMultipleConfig	INITIAL	ContainerDef
FrTp/FrTpMultipleConfig/FrTpChannel	INITIAL	ContainerDef
FrTp/FrTpMultipleConfig/FrTpChannel/FrTpConcurrentConnections	ACTIVE	IntegerParamDef
FrTp/FrTpMultipleConfig/FrTpChannel/FrTpConnection	INITIAL	ContainerDef
FrTp/FrTpMultipleConfig/FrTpChannel/FrTpConnection/FrTpConPduRef	DYNAMIC	ReferenceParamDef
FrTp/FrTpMultipleConfig/FrTpChannel/FrTpConnection/FrTpRxSdu	INITIAL	ContainerDef
FrTp/FrTpMultipleConfig/FrTpChannel/FrTpConnection/FrTpTxSdu	INITIAL	ContainerDef
FrTp/FrTpMultipleConfig/FrTpChannel/FrTpPdu	INITIAL	ContainerDef
FrTp/FrTpMultipleConfig/FrTpConnectionControl	INITIAL	ContainerDef
FrTp/FrTpMultipleConfig/FrTpRxPduPool	INITIAL	ContainerDef
FrTp/FrTpMultipleConfig/FrTpRxPduPool/FrTpRxPdu	INITIAL	ContainerDef
FrTp/FrTpMultipleConfig/FrTpTxPduPool	INITIAL	ContainerDef
FrTp/FrTpMultipleConfig/FrTpTxPduPool/FrTpTxPdu	INITIAL	ContainerDef
FrTrcv	INITIAL	ContainerDef
FrTrcv/FrTrcvGeneral	INITIAL	ContainerDef
FrTrcv/FrTrcvNode	INITIAL	ContainerDef
FrTrcv/FrTrcvNode/FrTrcvWakeupSourceRef	ACTIVE	SymbolicNameReferenceDef
IPduMplex	INITIAL	ContainerDef
IPduMplex/IPduMConfig	INITIAL	ContainerDef
IPduMplex/IPduMConfig/IPduMRxPathway	INITIAL	ContainerDef
IPduMplex/IPduMConfig/IPduMRxPathway/IPduMRxIndication	INITIAL	ContainerDef
IPduMplex/IPduMConfig/IPduMRxPathway/IPduMRxIndication/IPduMBitField	INITIAL	ContainerDef
IPduMplex/IPduMConfig/IPduMRxPathway/IPduMRxIndication/IPduMRxDynamicPart	INITIAL	ContainerDef
IPduMplex/IPduMConfig/IPduMRxPathway/IPduMRxIndication/IPduMRxDynamicPart/IPduMCopyBitField	INITIAL	ContainerDef
IPduMplex/IPduMConfig/IPduMRxPathway/IPduMRxIndication/IPduMRxStaticPart	INITIAL	ContainerDef
IPduMplex/IPduMConfig/IPduMTxPathway/IPduMTxRequest/IPduMTxDynamicPart	INITIAL	ContainerDef
IPduMplex/IPduMConfig/IPduMTxPathway/IPduMTxRequest/IPduMTxStaticPart	INITIAL	ContainerDef
IPduMplex/IPduMGeneral	INITIAL	ContainerDef
IPduMplex/IPduMGeneral/IPduMConfigurationTimeBase	ACTIVE	FloatParamDef
Lin	INITIAL	ContainerDef
Lin/LinGlobalConfig	INITIAL	ContainerDef
Lin/LinGlobalConfig/LinChannel	INITIAL	ContainerDef
LinIf	INITIAL	ContainerDef
LinIf/LinIfGlobalConfig	INITIAL	ContainerDef
LinIf/LinIfGlobalConfig/LinIfChannel	INITIAL	ContainerDef
LinIf/LinIfGlobalConfig/LinIfChannel/LinIfFrame	INITIAL	ContainerDef
LinIf/LinIfGlobalConfig/LinIfChannel/LinIfFrame/LinIfFixedFrameSdu	INITIAL	ContainerDef
LinIf/LinIfGlobalConfig/LinIfChannel/LinIfFrame/LinIfPduDirection	INITIAL	ChoiseContainerDef
LinIf/LinIfGlobalConfig/LinIfChannel/LinIfFrame/LinIfPduDirection/LinIfInternalPdu	INITIAL	ContainerDef
LinIf/LinIfGlobalConfig/LinIfChannel/LinIfFrame/LinIfPduDirection/LinIfRxPdu	INITIAL	ContainerDef
LinIf/LinIfGlobalConfig/LinIfChannel/LinIfFrame/LinIfPduDirection/LinIfSlaveToSlavePdu	INITIAL	ContainerDef
LinIf/LinIfGlobalConfig/LinIfChannel/LinIfFrame/LinIfPduDirection/LinIfTxPdu	INITIAL	ContainerDef
LinIf/LinIfGlobalConfig/LinIfChannel/LinIfFrame/LinIfSubstitutionFrames	INITIAL	ContainerDef
LinIf/LinIfGlobalConfig/LinIfChannel/LinIfMaster	INITIAL	ContainerDef
LinIf/LinIfGlobalConfig/LinIfChannel/LinIfScheduleTable	INITIAL	ContainerDef
LinIf/LinIfGlobalConfig/LinIfChannel/LinIfScheduleTable/LinIfRunMode	ACTIVE	EnumParamDef
LinIf/LinIfGlobalConfig/LinIfChannel/LinIfScheduleTable/LinIfSchedulePriority	ACTIVE	IntegerParamDef
LinIf/LinIfGlobalConfig/LinIfChannel/LinIfSlave	INITIAL	ContainerDef
LinSM	INITIAL	ContainerDef
LinSM/LinSMChannel	INITIAL	ContainerDef
LinSM/LinSMChannel/LinSMSchedule	INITIAL	ContainerDef
LinTp	INITIAL	ContainerDef
LinTp/LinTpGlobalConfig	INITIAL	ContainerDef
LinTp/LinTpGlobalConfig/LinTpRxNSdu	INITIAL	ContainerDef
LinTp/LinTpGlobalConfig/LinTpTxNSdu	INITIAL	ContainerDef
Nm	INITIAL	ContainerDef
Nm/NmGlobalConfig	INITIAL	ContainerDef
Nm/NmGlobalConfig/NmChannelConfig	INITIAL	ContainerDef
Nm/NmGlobalConfig/NmChannelConfig/NmBusType	ACTIVE	EnumParamDef
Nm_DirOsek	INITIAL	ContainerDef
Nm_DirOsek/Nm_DirOsekGlobalConfig	INITIAL	ContainerDef
Nm_DirOsek/Nm_DirOsekGlobalConfig/Nm_DirOsekChannelConfig	INITIAL	ContainerDef
Nm_DirOsek/Nm_DirOsekGlobalConfig/Nm_DirOsekChannelConfig/NmOsekUserDataTxPdu	INITIAL	ContainerDef
NmFiatB	INITIAL	ContainerDef
NmFiatB/NmFiatBGlobalConfig	INITIAL	ContainerDef
NmFiatB/NmFiatBGlobalConfig/NmFiatBChannelConfig	INITIAL	ContainerDef
NmFiatB/NmFiatBGlobalConfig/NmFiatBChannelConfig/NmFiatBTxPdu	INITIAL	ContainerDef
PduR	INITIAL	ContainerDef
PduR/PduRGeneral	INITIAL	ContainerDef
PduR/PduRGeneral/PduRCanIfSupport	ACTIVE	BooleanParamDef
PduR/PduRGeneral/PduRCanTpSupport	ACTIVE	BooleanParamDef
PduR/PduRGeneral/PduRComSupport	ACTIVE	BooleanParamDef
PduR/PduRGeneral/PduRDcmSupport	ACTIVE	BooleanParamDef
PduR/PduRGeneral/PduRFrIfSupport	ACTIVE	BooleanParamDef
PduR/PduRGeneral/PduRFrTpSupport	ACTIVE	BooleanParamDef
PduR/PduRGeneral/PduRIpduMSupport	ACTIVE	BooleanParamDef
PduR/PduRGeneral/PduRLinIfSupport	ACTIVE	BooleanParamDef
PduR/PduRGeneral/PduRLinTpSupport	ACTIVE	BooleanParamDef
PduR/PduRGeneral/PduRMostIfSupport	ACTIVE	BooleanParamDef
PduR/PduRGeneral/PduRMostTpSupport	ACTIVE	BooleanParamDef

PduR/PduRGeneral/PduRMulticastFromTpSupport	ACTIVE	BooleanParamDef
PduR/PduRGeneral/PduRMulticastToIfSupport	ACTIVE	BooleanParamDef
PduR/PduRGeneral/PduRMulticastToTpSupport	ACTIVE	BooleanParamDef
PduR/PduRGeneral/PduRZeroCostOperation	ACTIVE	BooleanParamDef
PduR/PduRGlobalConfig	INITIAL	ContainerDef
PduR/PduRGlobalConfig/PduRRoutingPathGroup	INITIAL	ContainerDef
PduR/PduRGlobalConfig/PduRRoutingPathGroup/PduRIsEnabledAtInit	ACTIVE	BooleanParamDef
PduR/PduRGlobalConfig/PduRRoutingTable	INITIAL	ContainerDef
PduR/PduRGlobalConfig/PduRRoutingTable/PduRRoutingPath	INITIAL	ContainerDef
PduR/PduRGlobalConfig/PduRRoutingTable/PduRRoutingPath/PduRDestPdu	INITIAL	ContainerDef
PduR/PduRGlobalConfig/PduRRoutingTable/PduRRoutingPath/PduRDestPdu/DestPduRef	DYNAMIC	ReferenceParamDef
PduR/PduRGlobalConfig/PduRRoutingTable/PduRRoutingPath/PduRSrcPdu	INITIAL	ContainerDef
PduR/PduRGlobalConfig/PduRRoutingTable/PduRRoutingPath/PduRSrcPdu/SrcPduRef	DYNAMIC	ReferenceParamDef

7 Glossary and Abbreviations

7.1 Glossary

Term	Description
ECU Extract of System Configuration Description	The ECU Extract of System Configuration Description is a subset of the System Configuration Description. It only contains information relevant for one specific ECU.

7.2 Abbreviations

Abbreviation	Description
ECU	Electronic Control Unit
ECUC	ECU Configuration

8 Contact

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