AUTOSAR Dcm User Manual

Document Change History				
Date (YYYY-MM-DD)	Ver.	Editor	Chap	Content
2021-02-23	1.0.0.0	EK. Kim	All	Initial version
2022-03-25	1.0.1.0	LanhLT	All	Applying change of company name Edit Change Log
2022-05-19	1.0.2.0	LanhLT	4.3	Edit Change Log
2022-06-30	1.0.2.1	Suyon Kim	4.3.4	Scope of the release Version 1.0.2.1
2022-07-29	1.0.3.0	Suyon Kim	4.3.5	Scope of the release Version 1.0.3.0
2022-08-26	1.0.4.0	LanhLT	4.3	Edit Change Log
2022-08-31	1.0.5.0	Suyon Kim	4.3	Edit Change Log
2022-10-25	1.0.6.0	LanhLT	4.2, 4.3, 7.2	Scope of the release Version 1.0.6.0
2022-12-16	1.0.7.0	LanhLT	4.2, 4.3, 7.2	Scope of the release Version 1.0.7.0
2023-02-20	1.0.8.0	Suyon Kim	4.2, 4.3	Scope of the release Version 1.0.8.0
2023-03-31	1.0.9.0	LanhLT	4.2, 4.3, 7.2, 5.2.5.43	Scope of the release Version 1.0.9.0
2023-04-03	1.0.9.1	Suyon Kim	4.2, 4.3, 5.2.5.43	Scope of the release Version 1.0.9.1
2023-04-06	1.0.10.0	Suyon Kim	4.2, 4.3	Scope of the release Version 1.0.10.0
2023-04-28	1.0.11.0	Suyon Kim	4.2, 4.3	Scope of the release Version 1.0.11.0
2023-05-25	1.0.12.0	DanhTQ1	4.2, 4.3	Scope of the release Version 1.0.12.0
2023-07-04	1.0.12.1	Suyon Kim	4.2, 4.3, 5.1	Scope of the release Version 1.0.12.1
2023-07-13	1.0.13.0	DanhTQ1	4.2, 4.3	Scope of the release

		KT Kim	8.1	Version 1.0.13.0 Add appendix for 'Security level configuration when using diagnostic service'
2023-08-11	1.0.14.0	KT Kim	4.2, 4.3	Scope of the release Version 1.0.14.0
2023-10-17	1.1.0.0	SY Kim	4.2, 4.3, 5.2.2, 5.2.5.80. 5.2.5.81. 7.2	Scope of the release Version 1.1.0.0
2023-10-30	1.1.1.0	DanhTQ1	4.2, 4.3	Scope of the release Version 1.1.1.0
2023-11-14	1.2.0.0	SY Kim	4.2, 4.3, 4.4, 5.2.5.80	Scope of the release Version 1.1.2.0
2023-11-16	1.2.1.0	DanhTQ1	4.2, 4.3	Scope of the release Version 1.2.1.0
2023-12-31	1.3.0.0	DH Kwak EK Kim	4.2, 4.3, 5.1 5.2.5.82	Scope of the release Version 1.3.0.0 Add DcmObdProtocolId Configuration Add DcmDspReadDTCInformationSupportedObdUds DtcSeparation
2024-01-26	1.3.1.0	DanhTQ1	4.2, 4.3	Scope of the release Version 1.3.1.0
2024-02-14	1.3.0.0_HF1	Suyon Kim	4.2, 4.3	Scope of the release Version 1.3.0.0_HF1
2024-03-29	1.4.0.0	EK Kim	4.2, 4.3 5.2.3.5 8.2	Scope of the release Version 1.4.0.0 Add properties of DcmDslProtocolType Add Appendix for J1979-2/J1979-3
2024-04-16	1.4.1.0	DanhTQ1	4.2, 4.3	Scope of the release Version 1.4.1.0
2024-06-03	1.4.2.0	Donghee Kwak Heejae Lee	4.2, 4.3	Scope of the release Version 1.4.2.0

Table of Contents

1. Overview

It is written based on AUTOSAR standard SRS / SWS. If more detailed functional explanation is needed when using the module, see the Reference Manual. The interpretation of setting related category is as follows:

- Changeable (C): Items that can be set by the user
- Fixed (F): Items that cannot be changed by the user.
- Not Supported (N): Deprecated item

2. Reference

Sl. No.	Title	Version
1	AUTOSAR_SWS_DiagnosticCommunicationManager.pdf	4.4.0
2	ES95486-00.pdf	1.9.0 or later
3	ES95486-02.pdf	1.1.1 or later

3. AUTOSAR System

3.1. Dcm Module

The Dcm (Diagnostic Communication Manage) module provides a common API for diagnostic services. The functionality of the Dcm module is used by external diagnostic tools during the development, manufacturer or service.

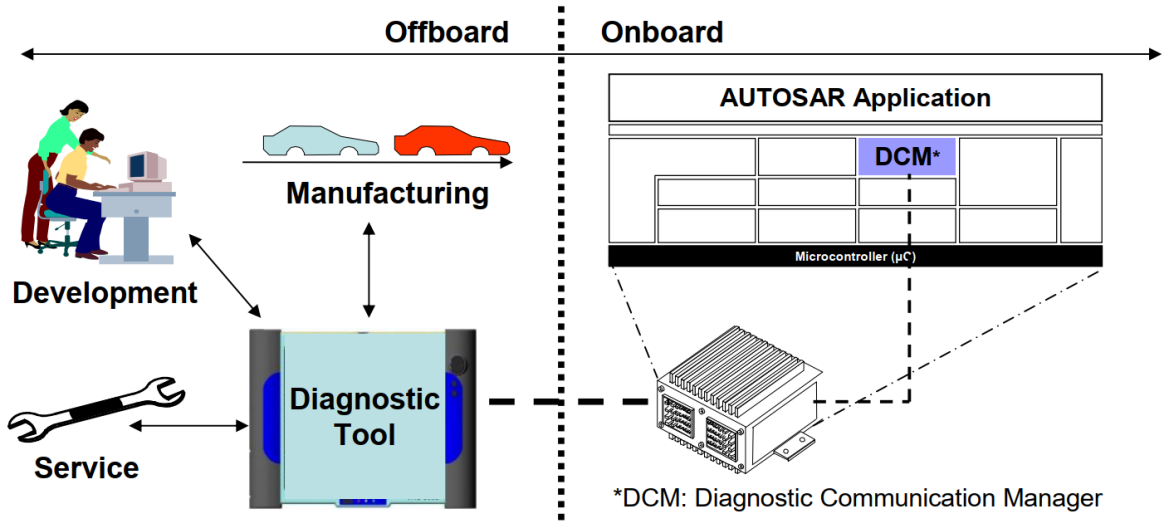


Figure 1: Diagnostic Communication Manager module

4. Product Release Notes

4.1. Overview

This chapter aims to provide the release information for the Hyundai Autoever Dcm module. Describes the limitations and specifics about the software product release version.

4.2. Scope of the Release

All information in this document is limited to the following Hyundai Autoever Dcm modules.

Module Name	AUTOSAR Version	Module Version
Dcm	4.4.0	1.4.2

Module version means Sw version of each module's BswModule Description (Bswmd) file.

4.3. Change Log

4.3.1. Version 1.0.0.0 (2021-02-23)

- **Feature**
  - Initial Version

원인	Initial Version
동작 영향	없음
설정 영향	없음
ASW 조치 사항	없음

4.3.2. Version 1.0.1.0 (2022-03-25)

- **Feature**

■ Applying change of company name

원인	Applying change of company name
동작 영향	없음
설정 영향	없음
ASW 조치 사항	없음

➢ **Bug**

■ Correct memory section declaration in generator

원인	In generated output, memory declaration of some variables is wrong. Update generator to correct.
동작 영향	없음
설정 영향	없음
ASW 조치 사항	없음

➢ **Bug**

■ Fixing compile warning

원인	When the S32G RTU using the GHS Compiler, there are some warning messages of Dcm, because missing end of line in generated files (Dcm_Cfg.c and Dcm_Cfg.h)
동작 영향	없음
설정 영향	없음
ASW 조치 사항	없음

➢ **Bug**

■ Det report when executing Authentication test cases.

Cause	When executing Authentication test cases, because response ID of Authentication service is same with response ID of Enable Normal Msg Transmission (0x69). So Dcm inform communication mode change to BswM and Det report raise.
동작 영향	DcmCommControlConfirmation()
설정 영향	없음
ASW 조치 사항	없음

4.3.3. Version 1.0.2.0 (2022-05-19)

- **Feature**
  - Fix UNECE security coding rule violations

Cause	Some LOCs violated with UNECE security coding rule.
ASW Impact	None
Configuration Impact	None
ASW Action	None

- **Feature**
  - Move the source of the lib folder to delivery folder.

Cause	Open source code in library folder
ASW Impact	None
Configuration Impact	None
ASW Action	None

- **Bug**
  - Error in which security level is set incorrectly when Send Key is sent before Request Seed when performing Secure Access

Cause	In previous version, when Send Key is sent before Request Seed, NRC 0x13 (incorrectLength) has been response instead of NRC 0x24 (sequenceError)
ASW Impact	None
Configuration Impact	None
ASW Action	None

4.3.4. Version 1.0.2.1 (2022-06-30)

- **Task**
  - Editorial Changes of Work Products

Cause	Change the Copyright comment in the code, DeliveryBoxHistory document template updates, divide 'delivery' folder into 'delivery/src' and 'delivery/inc' folder.
ASW Impact	None
Configuration Impact	None
ASW Action	None

4.3.5. Version 1.0.3.0 (2022-07-31)

- **Improvement**
  - the struct Dcm_ProgConditionsType of Dcm_R40 is being used in Dcm_R44

Cause	The struct Dcm_ProgConditionsType is different between Dcm_R40 and Dcm_R44.
ASW Impact	None
Configuration Impact	None
ASW Action	None

4.3.6. Version 1.0.4.0 (2022-08-26)

- **Improvement**
  - Fix UNECE

Cause	Fix UNECE
ASW Impact	None
Configuration Impact	None
ASW Action	None

- **Bug**
  - Update generator for correct logic generator of parameter DcmDspDidShortTermAdjustment

Cause	The generator output file is not changed when user changed the configured value of parameter DcmDspDidShortTermAdjustment.
ASW Impact	None
Configuration Impact	None
ASW Action	None

- **Bug**
  - Fix the source code for correct logic return NRC 0x13 of TransferData service

Cause	When Dcm receive request TransferData service, unexpected NRC 0x13 response.
ASW Impact	None

Configuration Impact	None
ASW Action	None

- **Bug**
  - Fix the source code for correct logic of TransferData service

Cause	When Dcm receive request TransferData service, unexpected occurs
ASW Impact	None
Configuration Impact	None
ASW Action	None

4.3.7. Version 1.0.5.0 (2022-08-31)

- **Feature**
  - Fix generator to define SID 0xBA~0xBE by system supplier

Cause	When using SID 0xBA~0xBE, Error occured.
ASW Impact	None
Configuration Impact	None
ASW Action	None

4.3.8. Version 1.0.6.0 (2022-10-25)

- **Bug**
  - Fix bug for when Dcm receive 2 messages in the same time, no response (positive or negative)

Cause	The indication function of the second message clear the processing status of the first message. So in the main function, Dcm cannot processing the first message due to the status reset.
ASW Impact	None
Configuration Impact	None
ASW Action	None

➢ **Bug**

■ Remove dependency between service 0x2A and DslProtocol to avoid error occurs

Cause	If service 0x2A supported, the PERIODIC_ON_CAN is not configured, error occurs.
ASW Impact	None
Configuration Impact	None
ASW Action	None

➢ **Bug**

■ Fix service 0x29 (EnableNormalMsgTransmission) error in DCM_ES95486_02

Cause	Service 0x29 (EnableNormalMsgTransmission) is not supported in 2 standards ISO-14229 and DCM_ES95486_02. So if user configuration this service in standard DCM_ES95486_02, error occurs.
ASW Impact	None
Configuration Impact	None
ASW Action	None

➢ **Bug**

■ Fix logic on service 0x19 (ReadDTCInformation)

Cause	Unresolved external error occurs when Dem module configuration not supported OBD. But in Dcm module, sub-services 0x05 of UDS 0x19 (ReadDTCInformation) still available even though configured off this subfunction.
ASW Impact	None
Configuration Impact	None
ASW Action	None

➢ **Bug**

■ Fix error port not generated when using type UINT8_DYN

Cause	The Swcd_Dcm.arxml is generated with unexpected value. When user using configuration UINT8_DYN for read data.
ASW Impact	None
Configuration Impact	None
ASW Action	None

➢ **Bug**

■ Fix error generate metadata support incorrectly

Cause	EthDiag module forward a Diagnostic message with meta data information to Dcm module. EthDiag module expect Dcm share process meta data information and response to EthDiag module. But Dcm didn't response any meta data information to EthDiag.
ASW Impact	None
Configuration Impact	None
ASW Action	None

4.3.9. Version 1.0.7.0 (2022-12-16)

➢ **Feature**

■ Implementation for Security Access 2.0 in Application

Cause	Currently, Security Access (L21) is not working with current code. After discussion Security Access 2.0 should be implementation in Application, not Dcm static code.
ASW Impact	None
Configuration Impact	None
ASW Action	None

- **Bug**
  - Fix logic of NRC 0x31 response on service 0x22

Cause	When request service 0x22 (ReadDataByIdentifier) for reading two DIDs (0x0201 valid, 0xAAAA invalid). The NRC 0x31 is responded
ASW Impact	None
Configuration Impact	None
ASW Action	None

- **Bug**
  - Fix logic of NRC 0x24 response on service 0x31

Cause	When stopRoutine or requestRoutineResults are requested without startRoutine (on 0x31 service), NRC 0x24 is not responded
ASW Impact	None
Configuration Impact	None
ASW Action	None

- **Bug**
  - Fix logic for DID can be used out of PDID range

Cause	When service 0x2A (ReadDataByPeriodicIdentifier) and service 0x22 (ReadDataByIdentifier) are both used. All DIDs must configure consecutive. And if all DIDs configured wrong, validation error (ERR053254) occurs.
ASW Impact	None
Configuration Impact	None
ASW Action	None

- **Bug**
  - Add validation logic in Dcm_Cfg.c for DcmDslBufferSize

Cause	When Dcm_StartOfReception is called, the argument bufferSizePtr will update by configuration of DcmDslBufferSize. bufferSizePtr will overflow if PduLengthType set uint16 and DcmDslBufferSize configure larger than 65535
ASW Impact	None
Configuration Impact	None
ASW Action	None

- **Bug**
  - Fix bug for requesting service 0x22 to read DID with DcmDspDataUsePort set USE_DATA_ASYNCH_CLIENT_SERVER_ERROR

Cause	When Dcm request service 0x22 (ReadDataByIdentifier) to read DID with DcmDspDataUsePort set USE_DATA_ASYNCH_CLIENT_SERVER_ERROR. NRC 0x22 (ConditionNotCorrect) is responded
ASW Impact	None
Configuration Impact	None
ASW Action	None

- **Bug**

- Fix logic for requesting CompareKey again on service 0x27 (SecurityAccess)

Cause	When request service 0x27 with sub-function GetSeed, positive response is returned. Next, request service 0x27 with sub-function CompareKey with invalid Key, NRC 0x35 (InvalidKey) is responded. And then, request service 0x27 with sub-function CompareKey with valid Key, NRC 0x24 (RequestSequenceError) is responded (the expectation is positive response)
ASW Impact	None
Configuration Impact	None
ASW Action	None

➢ Bug

- Fix bug to avoid unexpected behaviour when (3E 80) is requested anytime by functional ID

Cause	When service 0x3E (TesterPresent) with suppressPosRspMsgIndicationBit set to true (3E 80) and requested by functional ID is requested anytime. Dcm will keep continue processing other service in progress. But in the current code, if 3E 80 is requested any time, unexpected behaviour occurs.
ASW Impact	None
Configuration Impact	None
ASW Action	None

➢ Improvement

- Add logic for transferResponseParameterRecord

Cause	Service 0x37 (RequestTransferExit) has format (SID + transferResponseParameterRecord). But in current static code transferResponseParameterRecord is not used. Therefore, if 0x37 service is requested with transferResponseParameterRecord, Dcm will return NRC 0x13 (IncorrectMessageLength)

ASW Impact	None
Configuration Impact	None
ASW Action	None

- **Bug**
  - Fix wrong logic of validation error ERR053061

Cause	Validation error ERR053061 occurs even when Dcm configuration is right. This error only occur when service 0x36 TransferData is used without configuration of 0x34 RequestDownload or 0x35 RequestUpload.
ASW Impact	None
Configuration Impact	None
ASW Action	None

4.3.10. Version 1.0.8.0 (2023-02-20)

- **Bug**
  - Fix TesterPresent Logic

Cause	After Functional TesterPresent(3E) service request, there is no response when using another service. Missing code to initialize PDU status after receiving Functional TP.
ASW Impact	None
Configuration Impact	None
ASW Action	None

- **Bug**
  - Wrong response return when functional tp using with consecutive frame

Cause	When Functional TP is received between Conservative Frames, NRC 13 or no response occurs. When Functional TP is received, Dcm_GaaReqLength is changed to wrong value.
ASW Impact	None
Configuration Impact	None
ASW Action	None

- **Bug**
  - Wrong response return when functional tp using with default session

Cause	Functional TP in Default session does not respond to request when received between conservative frames. When Dcm_ProcessTpRxIndication_ConcurrentTesterPresentRequest called, if Dcm_IsNonDefaultSession == False, pdu is cleared.
ASW Impact	None
Configuration Impact	None
ASW Action	None

4.3.11. Version 1.0.9.0 (2023-03-31)

- **Feature**
  - Improvement logic for Authentication

Cause	Current logic of R44 Authentication service cannot work with R44 Crypto
ASW Impact	None
Configuration Impact	None
ASW Action	None

- **Bug**

■ Fix S3 Timer is always restarted in each PDID response

Cause	Dcm_TpTxConfirmation is called for one by one PDID transmission and it restarts S3 timer, so Dcm session is always in non-default session
ASW Impact	None
Configuration Impact	None
ASW Action	None

➢ **Bug**

■ Fix logic to get periodic message at the right moment

Cause	With current code, after positive response (0x6A) of 2A service, timer for PDID is started and expired, then the first periodic message is responded, but the expectation is that the first periodic message is returned right after positive response (0x6A) of 2A service and PDID timer is used as delay time between periodic message transmission
ASW Impact	None
Configuration Impact	None
ASW Action	None

➢ **Bug**

■ 2A service doesn't work after request stopSending

Cause	After subfunction stopSending (0x04) of 2A service is transmitted successfully (even though stop all or specific PDID). Then, request PDID start (Fast/Medium/Slow rate), positive message 6A is responded, but PDID transmission is not appeared
ASW Impact	None
Configuration Impact	None
ASW Action	None

➢ **Bug**

■ Fix logic return NRC 0x31 of 2A Service

Cause	With current logic, when request 2A service with 2 PDIDs (1 supported and 1 not supported), NRC 0x31 is returned because if there is any not supported PDID, error will be returned and stop checking other PDIDs. But the expectation is that all PDIDs should be checked, then positive response and periodic data of supported PDIDs must be returned
ASW Impact	None
Configuration Impact	None
ASW Action	None

➢ **Bug**

■ Fix wrong NRC values in Swcdt_Bsw_Dem.template

Cause	NRC DCM_E_VOLTAGETOOLOW is missing, so other NRCs were wrong definition values
ASW Impact	None
Configuration Impact	None
ASW Action	None

➢ **Bug**

■ Checking security access sequence is wrong

Cause	When request service 0x27 with subfunction GetSeed. Next, request service 0x19 with subfunction 0x01. And then, request service 0x27 with subfunction CompareKey, NRC 0x24 (RequestSequenceError) is responded (the expectation is positive response of service 0x27 with subfunction 0x02)
ASW Impact	None
Configuration Impact	None

ASW Action	None

➢ **Bug**

■ Add pre-compile code for transferRequestParameterRecord

Cause	When user configuration uses transferRequestParameterRecord for service 0x37 (RequestTransferExit), after request service 0x37 with transferRequestParameterRecord data , NRC 0x13 is returned because current code just check request data length without transferRequestParameterRecord data
ASW Impact	None
Configuration Impact	None
ASW Action	None

➢ **Bug**

■ Fix validation logic for ERR053052

Cause	When parameter DcmDsdServiceUsed is set FALSE, DcmDsdSidTabSubfuncAvail is set TRUE, generator error ERR053052 occurs because of missing logic check for DcmDsdServiceUsed set to FALSE
ASW Impact	None
Configuration Impact	None
ASW Action	None

➢ **Bug**

■ Update flag for programming session

Cause	When service 0x10 with subfunction 0x82 (suppressPosRspMsgIndicationBit set true) is requested. Dcm set the ResponseRequired to true and FBL return positive response.
ASW Impact	None
Configuration Impact	None
ASW Action	None

➢ **Bug**

■ Add logic to check current session for service 0x85

Cause	Missing logic of session validation for service 0x85 in the function DslInternal_SetSesCtrlType. So the DTCSetting will enable even the requested session is not supported for 0x85 service.
ASW Impact	None
Configuration Impact	None
ASW Action	None

➢ **Improvement**

■ Add validation logic for shorttermAdujustment

Cause	The operation ShortTermAdjustment only support for the UINT8_N or UINT8_DYN. Add validation logic for ShortTermAdjustment type so that user cannot set other type
ASW Impact	None
Configuration Impact	None
ASW Action	None

➢ **Bug**

■ Fix logic for Transfer Data when NRC 0x72 is returned

Cause	When request service 0x36 (TransferData) and NRC 0x72 is responded. Request service 0x36 again, NRC 0x24 (RequestSequenceError) is responded because transfer data status is be clear when any NRC occurs
ASW Impact	None
Configuration Impact	None
ASW Action	None

➢ **Bug**

■ Fix NRC 0x24 logic on RoutineControl service

Cause	1. Current Dcm use one variable(Dcm_RoutineState) to check the RID sate so that it cannot support multiple RID in one time. Fix the logic for this so that can support multiple RID. 2. NRC 24 is ocurred when startRoutine is not requested before stopRoutine.
ASW Impact	None
Configuration Impact	None
ASW Action	None

➢ **Bug**

■ Fix incorrect index generated in Dcm_GaaSecurityLevelsToSId

Cause	Missing one element after generated array Dcm_GaaSecuritylevelsToSId. Because this array was generated before all data related security load
ASW Impact	None
Configuration Impact	None
ASW Action	None

➢ **Bug**

■ Fix Stop S3 Timer when request transparent Tester Present

Cause	When request change session to non-default (extended session) in protocol A, then request Functional Tester Present in protocol B, S3timer stops and session always be in extended session
ASW Impact	None
Configuration Impact	None
ASW Action	None

➢ **Bug**

■ Fix logic for concurrent request

Cause	Error occurs when 2 services are requested at the same time (first request (with Physical ID) and the Second Request (with Functional ID) Dcm_StartOFReception always return BUFREQ_OK for the second Request. So that after the second request, any request cannot be proceed
ASW Impact	None
Configuration Impact	None
ASW Action	None

4.3.12. Version 1.0.9.1 (2023-04-03)

➢ **Task**

■ UM update for 2A service

Cause	DcmDspPeriodicTransmission comment is ambiguous to understand. So update comment and add example.
ASW Impact	None
Configuration Impact	None

ASW Action	None

4.3.13. Version 1.0.10.0 (2023-04-06)

- **Bug**
  - Fix Logic for 3E 00 service with functional ID

Cause	Concurrent Testerpresent case should check only for the Functional Testerpresent request with suppression bit. But current code check the suppression bit not set case too. So that Dcm_StartOfReception return value is invalid.
ASW Impact	None
Configuration Impact	None
ASW Action	None

4.3.14. Version 1.0.11.0 (2023-04-28)

- **Bug**
  - Add logic for EthDiag on Dcm_EcuReset_ProcessProgCondition

Cause	When requesting EthDiag 11 01, return E_NOT_OK from Dcm_SetProgConditions. NRC 10 (DCM_E_GENERALREJECT) occurs. Dcm_SetProgConditions should only called when the Ecu reset process by the 10 02 service, or the ECU reset process by the 11 service with After RESET. but the current code, Dcm_SetProgConditions is called even the 11 services requested with the BEFORE RESET config. (DcmResponseToEcuReset==BEFORE_RESET) So add logic for checking respType value.
ASW Impact	None
Configuration Impact	None
ASW Action	None

- **Bug**
  - Fix ucMinReqLength for 2E service

Cause	NRC 13 that occurs during 03 2e f0 10 (no data->wrong message length) request should be checked in Dcm_DsdPostValidation, but checked in Dcm_WriteDid_ValidateRequest. Currently, minimum length of Dcm_DcmWriteDataByIdentifier is set to 3. so minimum length will be changed to 4.
ASW Impact	None
Configuration Impact	None
ASW Action	None

- **Improvement**
  - API support to read Dcm_GblReset value

Cause	EthDiag use Dcm_GblReset value. So add API to return Dcm_GblReset.
ASW Impact	None
Configuration Impact	None
ASW Action	None

- **Improvemenet**
  - Update template for NRC F3

Cause	NRC F3 is not defined in Swcdt_Bsw_Dcm.template.
ASW Impact	None
Configuration Impact	None
ASW Action	None

4.3.15. Version 1.0.12.0 (2023-05-25)

- **Bug**
  - Correcting Logic Errors to Determine Return Values in Indication

Cause	In the case of Multi-Notification_Indication, when the 1st Indication responds negatively and the 2nd Indication responds positively, it does not respond despite having to respond negatively.
ASW Impact	None
Configuration Impact	None
ASW Action	None

- **Improvement**
  - Compile error occurred when IoHwAb module absent.

Cause	IoHwAb module is absented so compile error occurred. Add precompile code about DCM_USE_ECU_SIGNAL_ENABLED option.
ASW Impact	None
Configuration Impact	None
ASW Action	None

4.3.16. Version 1.0.12.1 (2023-07-04)

- **Improvement**
  - Dcm can compile without Dem/NvM.

Cause	When Dem/NvM is not integrated, Dcm generate error occurred. So new vendor specific configurations are added.
ASW Impact	None
Configuration Impact	None
ASW Action	None

4.3.17. Version 1.0.13.0 (2023-07-13)

- **Task**
  - Add appendix for 'Security level configuration when using diagnostic service'.

Cause	It is necessary to provide a guide that the user should set security level for the service that the user determines is necessary.
ASW Impact	None
Configuration Impact	None
ASW Action	None

- **Bug**
  - Change logic about NRC 0x14 for service ReadDataByIdentifier.

Cause	When total response length exceeded Tx Buffer for ReadDataByIdentifier in multi-DIDs, SWP should send negative response with NRC 0x14, but positive response as the buffer value is sent.
ASW Impact	None
Configuration Impact	None
ASW Action	None

- **Bug**
  - Fix logic for NRC 0x21 (Busy).

Cause	When the configuration DcmDslDiagRespOnSecondDeclinedRequest is set TRUE and Dcm is processing for a request, if second request using different DcmDslConnection comes, Dcm shall respond with NRC 0x21 for the second request, but there's no negative response with NRC 0x21 is returned.
ASW Impact	None
Configuration Impact	None

ASW Action	None

4.3.18. Version 1.0.14.0 (2023-08-11)

- **Bug**
  - Change operation to start S3 timer, in Extended Session situation, when only a First frame message is received included in Multi-Frame diagnostic message

Cause	S3 timer does not start when only First Frame message is received included in Multi-Frame diagnostic message (RxIndication is called with Fail state)
ASW Impact	None
Configuration Impact	None
ASW Action	None

- **Task**
  - Change Dcm Annotation for polyspace

Cause	Need to change annotation for Dcm
ASW Impact	None
Configuration Impact	None
ASW Action	None

4.3.19. Version 1.1.0.0 (2023-10-17)

- **Improvement**
  - Change DCM_FUNC to FUNC

Cause	Change DCM_FUNC to FUNC
ASW Impact	None
Configuration Impact	None
ASW Action	None

➢ **Feature**

■ Develop Authentication refer to ES specification

Cause	To verify HMC certificate, Authentication Service is improved for ES Specification (Vendor specific).
ASW Impact	None
Configuration Impact	DcmDsp/DcmDspAuthentication/DcmDspAuthenticationConnectionES
ASW Action	None

➢ **Feature**

■ Develop logic Sender/Receiver for Mode Condition

Cause	When Dcm configured Sender/Receiver in Mode Condition, Dcm will not work normally
ASW Impact	None
Configuration Impact	Dcm/DcmConfigSet/DcmProcessingConditions/DcmModeCondition/DcmSwcSRDataElementRef
ASW Action	None

➢ **Feature**

■ Develop logic for Secure Access SHA1/SHA2

Cause	Develop logic for Secure Access SHA1/SHA2
ASW Impact	None
Configuration Impact	DcmDsp/DcmDspCsmInfo
ASW Action	None

4.3.20. Version 1.1.1.0 (2023-10-30)

➢ **Bug**

■ Change EcuReset logic

Cause	When DcmResponseToEcuReset configuration is BEFORE_RESET, after sending positive response, Dcm cannot perform EcuReset.
ASW Impact	None
Configuration Impact	None
ASW Action	None

- **Bug**
  - Change Dcm timer type

Cause	There are errors in Dcm timer type (When Delay Time in DcmDspSerurityRow is set to 180, timer runs only within 49 seconds).
ASW Impact	None
Configuration Impact	None
ASW Action	None

4.3.21. Version 1.2.0.0 (2023-11-14)

- **Feature**
  - Development of Waiting logic for FULL_COMMUNICATION for programming session in FBL 3.0

Cause	- Dcm stays at default session and there's no response after programming session reset because of NO_COMMUNICATION
ASW Impact	None
Configuration Impact	None
ASW Action	None

- **Feature**
  - Development of logic that returns to RTSW when session timeout occurs in FBL 3.0.

Cause	When S3 timer expired, Dcm should back to RTSW

ASW Impact	None
Configuration Impact	None
ASW Action	None

- **Feature**
  - Change Authentication NRC Callout Logic.

Cause	For Authentication NRC 5A/5D, Callout Logic is changed.
ASW Impact	Add Callout Function when using NRC 5A/5D with Authentication Service.
Configuration Impact	DsmDspAuthentication/DcmDspAuthenticationConnectionES/DsmDspAuthenticationSettingAccessRightsFailedFunc DsmDspAuthentication/DcmDspAuthenticationConnectionES/DsmDspAuthenticationDeauthenticationFailedFunc DsmDspAuthentication/DcmDspAuthenticationConnectionES/DsmDspAuthenticationUsePort
ASW Action	None

4.3.22. Version 1.2.1.0 (2023-11-16)

- **Bug**
  - Change generator logic to add user's header file inclusion in Dcm_APIs.c

Cause	Compile error occurs because of missing user's header file inclusion in Dcm_APIs.c.
ASW Impact	None
Configuration Impact	None
ASW Action	None

- **Feature**
  - Change Authentication NRC Callout Logic.

Cause	For Authentication NRC 5A/5D, Callout Logic is changed.
ASW Impact	Add Callout Function when using NRC 5A/5D with Authentication Service.
Configuration Impact	DsmDspAuthentication/DcmDspAuthenticationConnectionES/DsmDspAuthenticationSettingAccessRightsFailedFunc DsmDspAuthentication/DcmDspAuthenticationConnectionES/DsmDspAuthenticationDeauthenticationFailedFunc DsmDspAuthentication/DcmDspAuthenticationConnectionES/DsmDspAuthenticationUsePort
ASW Action	None

4.3.23. Version 1.3.0.0 (2023-12-31)

- **Feature**
  - Development jump to bootloader logic when programing session is requested by DoIP in FBL 3.0

Cause	The existing logic is sending positive respone from FBL when a programming session is requested. Developed logic to jump to FBL after a positive response from RTSW according to a customer request in FBL 3.0.

ASW Impact	None
Configuration Impact	
ASW Action	None

- **Bug**
  - Modify Dcm_DspInternal_ReadDidType to use BufferSize as a configured value.

Cause	BufferSize is used as arbitrary value instead of the set value (DCM_DSP_MAX_DID_SIZE). The defect occurs in reading data more than 0xFF using 22 service.
ASW Impact	None
Configuration Impact	None
ASW Action	None

- **Feature**
  - J1979-2 specification development

Cause	Request for J1979-2 specification development
ASW Impact	None
Configuration Impact	DcmGeneral/DcmObdProtocolId (refer 5.1) DcmDsp/DcmDspReadDTCInformation/ DcmDspReadDTCInformationSupportedObdUdsDtcSeparation (refer 5.2.5.82)
ASW Action	None

- **Feature**
  - J1979 specification development

Cause	Request for J1979 specification development
ASW Impact	None
Configuration Impact	None
ASW Action	None

4.3.24. Version 1.3.1.0 (2024-01-24)

- **Bug**
  - Change logic of NRC 0x24 for Security Access service

Cause	NRC 0x24 is not responded after “Send Key” operation returns Compare Key Failed and then requesting “Send Key” multiple times without successful “Request Seed” operation.
ASW Impact	None
Configuration Impact	None
ASW Action	None

- **Improvement**
  - Improve logic of NRC 0x13 for Routine Control service

Cause	Improve logic of NRC 0x13 for Routine Control service when using multiple signals and the configuration DcmDspRoutineSignalType of the last signal is VARIABLE_LENGTH.
ASW Impact	None
Configuration Impact	None
ASW Action	None

4.3.25. Version 1.3.0.0_HF1 (2024-02-14)

- **Improvement**

■ Change name of Dcm Types

Cause	Improvement of Type for Redundancy errors that occur when using HSM due to the general type declared in Dcm_Type.h. Renamed with DCM_DATA_TYPE_ in front of each types.
ASW Impact	None
Configuration Impact	None
ASW Action	None

4.3.26. Version 1.4.0.0 (2024-03-29)

➢ **Feature**

■ J1979-3 specification development

Cause	Request for J1979-3 specification development
ASW Impact	None
Configuration Impact	DcmGeneral/DcmObdProtocolId removed DcmConfigSet/DcmDsl/DcmDslProtocol/DcmDslProtocolRow/DcmDslProtocolType (refer 5.2.3.5)
ASW Action	None

4.3.27. Version 1.4.1.0 (2024-04-16)

➢ **Bug**

■ Fix generator error about "Dcm_APIs_DidData"

Cause	Same case condition is overlapped for other Data signals in Dcm_APIs_DidData function when using DID with multiple signals (DcmDspDidUsePort = USE_DATA_ELEMENT_SPECIFIC_INTERFACES and DcmDspDataUsePort = USE_DATA_SENDER_RECEIVER). There will be compile error.
ASW Impact	None

Configuration Impact	None
ASW Action	None

- **Bug**
  - Change length check logic in Routine control

Cause	NRC 0x13 is returned when request message have no data for the input signal that has only DcmDspRoutineSignalType VARIABLE_LENGTH
ASW Impact	None
Configuration Impact	None
ASW Action	None

- **Bug**
  - Fix generator error when DcmDspDid's identifier is 0xF800

Cause	Generation error occurs without detail log when configure DcmDspDidIdentifier as 0xF800.
ASW Impact	None
Configuration Impact	None
ASW Action	None

- **Bug**
  - Change logic of session Jump to bootloader (NRC78)

Cause	On a session jump to bootloader, in case NRC78 is sent, positive response is not sent if suppressPosRspMsgIndicationBit is TRUE. According to Autosar, positive response shall be sent.
ASW Impact	None
Configuration Impact	None

ASW Action	None

- **Bug**
  - Change logic check NRC for Read Data By Identifier with multiple DID

Cause	NRC 0x33 (without SecurityAccess verification), 0x34 (without Authentication verification), 0x22 (without Condition check) is not responded if at least one DID is supported in request multiple DID.
ASW Impact	None
Configuration Impact	None
ASW Action	None

- **Bug**
  - Change logic of restarting S3Timer in function Dcm_TpTxConfirmation

Cause	S3Timer can't restart when Result is E_NOT_OK in Dcm_TpTxConfirmation.
ASW Impact	None
Configuration Impact	None
ASW Action	None

4.3.28. Version 1.4.2.0 (2024-06-03)

- **Bug**
  - Add generator error about ERR053252

Cause	If there is no matching DcmDspCommonAuthorization with shortName at the time of code generation, it was generated as -1, which is the default value, but no validation code to prevent this. There will be generation error.

ASW Impact	None
Configuration Impact	None
ASW Action	None

- **Bug**
  - Change the link control logic to be implemented by user

Cause	When link control service is called, NRC24 and NRC31 were not response. Part of the logic has been improved and the service has been changed to be implemented by the user.
ASW Impact	None
Configuration Impact	External Diagnostic service should set for link control service.
ASW Action	None

- **Bug**
  - Improve ROE service logic

Cause	Improve ROE service logic of monitoring only one event when setting two Roe events.
ASW Impact	None
Configuration Impact	None
ASW Action	None

- **Bug**
  - Add NRC 0x73 logic when blockSequenceCounter is 0x00.

Cause	If blockSequenceCounter is 0, Dcm assume that transferData is repeated. Therefore, check logic is added to respond positively only when it is repeated.
ASW Impact	None
Configuration Impact	None

ASW Action	None

- **Bug**
  - Change the data type of PduIdStatusMask to uint16.

Cause	PduIdStatusMask is defined as uint8, but the specification defines the range of Pdu Ids as uint16 (0~63335).
ASW Impact	None
Configuration Impact	None
ASW Action	None

- **Bug**
  - Update Generic Connection Configuration Generation Logic

Cause	The GENERIC_CONNECTION_HANDLING option is only considered for the last DslProtocolTx
ASW Impact	None
Configuration Impact	None
ASW Action	None

- **Bug**
  - Update ReadMemoryByAddress logic for minimum length check (NRC 0x13)

Cause	When both NRC 0x13 and 0x31 conditions are satisfied, NRC 0x31 is output instead of NRC 0x13.
ASW Impact	None
Configuration Impact	None
ASW Action	None

- **Bug**
  - Update WriteMemoryByAddress logic when memorySize is zero (NRC 0x31)

Cause	When memorySize is 0, NRC 0x31 should be output, but normal response is observed.
ASW Impact	None
Configuration Impact	None
ASW Action	None

- **Bug**
  - Update DcmDslPeriodicTransmission mapping logic.

Cause	DcmDslProtocolRx is mapped with DcmDslPeriodicTransmission ShortName as the key, so an error occurs when there is a duplicate ID resulting in the same key.
ASW Impact	None
Configuration Impact	None
ASW Action	None

- **Bug**
  - Update logic in parallel access of OBD and UDS.

Cause	OBD protocol has a high priority, but if UDS and OBD msgs are requested at the same time, Dcm does not operate according to the protocol priority
ASW Impact	None
Configuration Impact	None
ASW Action	None

- **Bug**
  - Add DATA_UPDATE in Bswmdt_Dcm.template

Cause	Miss the code about DATA_UPDATE in Bswmdt_Dcm.template
ASW Impact	None
Configuration Impact	None
ASW Action	None

- **Bug**
  - Change the code to use the Link Control Service only when an external diagnostic function is connected

Cause	API not implemented
ASW Impact	None
Configuration Impact	None
ASW Action	None

- **Bug**
  - Change generator error for ERR053064

Cause	Validate ERR053064 function regardless of DcmDsdServiceUsed setting
ASW Impact	None
Configuration Impact	None
ASW Action	None

- **Bug**
  - Change ROE logic

Cause	Original logic is tracking only the last triggered event, so ROE service haves limitations in not being able to check if two or more events have occurred
ASW Impact	None
Configuration Impact	None

ASW Action	None

4.4. Module Release Notes

4.4.1. Limitations

- The mode switch provided ports are not supported.
- Link control service is not supported to control network baud rate.
- External Diagservice for Link control service should be implemented by user.
- Generic connection handing for Roe and Periodic is not supported.
- Store DDDID to non-volatile memory is not supported.
- Diagnostic Log and Trace (DLT) interaction is not supported.
- The routine signal position must be multiple of eight bits.
- Only support processing one Roe triggered event in main function.
- The id of OnDTCStatusChange in ResponseOnEvent service shall be set to zero.
- Up to one OnChangeOfDataIdentifier in ResponseOnEvent service is supported.
- The Periodic confirmation from network interface modules is not supported.
- Authentication (0x29) Service with DcmDspAuthenticationUsePort, only USE_ASYNCH_FNC is supported

4.4.2. Deviations

- Support HMC ES95486-00E V1.8.0 standard with Enable normal transmission service (0x29) and Stop diagnostic session service (0x20).
- According to AUTOSAR_SWS_DiagnosticCommunicationManager_4.4.0 Specification, Authentication Service is implemented. When using authentication service based on AUTOSAR, Crypto Stack should be used R4.4.0
- According to HMC ES95489-01(revision 7) 5.3.4.6, Authentication (0x29) Service's Sub-functions are not supported and if user need to use, User will implement.
    - i. verifyCerificateBidirectional (0x02)
    - ii. transmitCertificate (0x04)
    - iii. requestChallengeForAuthentication (0x05)
    - iv. verifyProofOfOwnershipUnidirectional (0x06)
    - v. verifyProofOfOwnershipBidirectional (0x07)
- SWP provide callout function for Authentication (0x29) Service's below NRCs. NRC logics need to implement in Application side.
    - ii. Challenge calculation failed (0x59)
    - iii. Setting Access Rights failed (0x5A)
    - iv. Configuration data usage failed (0x5C)
    - v. DeAuthentication failed (0x5D)
    - vi. CRLintegrityFailed (0xF0)
    - vii. CRLvalidityPeriodFailed (0xF1)

- viii. RoleandRightofCertificateDenied (0xF2)

5. Configuration Guide

The Dcm setting of the AUTOSAR platform distributed by Hyundai Auto is a setting reflecting Hyundai Auto Policy's policy. Therefore, you should consult with Hyundai Auto.

5.1. DcmGeneral

Parameter Name	Value	Category
DcmDevErrorDetect	User Defined	C
DcmHeaderFileInclusion	User Defined	C
DcmRespondAllRequest	User Defined	C
DcmTaskTime	User Defined	C
DcmVersionInfoApi	User Defined	C
DcmVinRef	User Defined	C
DcmStandardSupport	User Defined	C
DcmAutronFblUsed	User Defined	C
DcmRemainUnlockCondition	User Defined	C
DcmParallelProtocolProcessing	User Defined	C
DcmDDDIDStorage		N
DcmDDDIDStorageBlockIdRef		N
DcmDemIntegrated	User Defined	C
DcmNvmIntegrated	User Defined	C

5.2. DcmConfigSet

Container Name	Value	Category
DcmDsl	User Defined	C
DcmDsd	User Defined	C
DcmDsp	User Defined	C
DcmPageBufferCfg	User Defined	C
DcmProcessingConditions	User Defined	C

5.2.1. DcmPageBufferCfg

Parameter Name	Value	Category
DcmPagedBufferEnabled	User Defined	C

5.2.2. DcmProcessingConditions

Container Name	Value	Category
DcmModeRule	User Defined	C
DcmModeCondition	User Defined	C

5.2.2.1. DcmModeRule

Parameter Name	Value	Category
DcmLogicalOperator	User Defined	C
DcmModeRuleNrcValue	User Defined	C
DcmArgumentRef	User Defined	C

5.2.2.2. DcmModeCondition

Parameter Name	Value	Category
DcmConditionType	User Defined	C
DcmBswModeRef	User Defined	C
DcmModeConditionCertificateCompareElementRef	User Defined	C
DcmSwcModeRef	User Defined	C
DcmSwcSRDataElementRef	User Defined	C

Container Name	Value	Category
DcmSwcDataElementValue	User Defined	C

5.2.2.3. DcmSwcDataElementValue

Container Name	Value	Category
DcmSwcDataElementPrimitive	User Defined	C
DcmSwcDataElementArray	User Defined	C

5.2.2.4. DcmSwcDataElementPrimitive

Parameter Name	Value	Category
DcmSwcDataElementPrimitiveValue	User Defined	C

5.2.2.5. DcmSwcDataElementArray

Container Name	Value	Category
DcmSwcDataElementArrayElement	User Defined	C

5.2.2.6. DcmSwcDataElementArrayElement

Parameter Name	Value	Category
DcmSwcDataElementArrayElementIndex	User Defined	C
DcmSwcDataElementArrayElementValue	User Defined	C

5.2.3. DcmDsl

Container Name	Value	Category
DcmDslBuffer	User Defined	C
DcmDslCallbackDCMRequestService	User Defined	C
DcmDslDiagResp	User Defined	C
DcmDslProtocol	User Defined	C

5.2.3.1. DcmDslBuffer

Parameter Name	Value	Category
DcmDslBufferSize	User Defined	C

5.2.3.2. DcmDslCallbackDCMRequestService

The name of this container is used in the generated RTE API name.

5.2.3.3. DcmDslDiagResp

Parameter Name	Value	Category
DcmDslDiagRespMaxNumRespPend	User Defined	C
DcmDslDiagRespOnSecondDeclinedRequest	User Defined	C

5.2.3.4. DcmDslProtocol

Container Name	Value	Category
DcmDslProtocolRow	User Defined	C

5.2.3.5. DcmDslProtocolRow

Parameter Name	Value	Category
DcmDslProtocolMaximumResponseSize	User Defined	C
DcmDslProtocolPriority	User Defined	C
DcmDslProtocolRowUsed	User Defined	C
DcmDslProtocolTransType	User Defined	C
DcmDslProtocolType	User Defined	C
DcmDspProtocolEcuAddr	User Defined	C
DcmSendRespPendOnRestart	User Defined	C
DcmTimStrP2ServerAdjust	User Defined	C
DcmTimStrP2StarServerAdjust	User Defined	C
DcmDemClientRef	User Defined	C
DcmDslProtocolRxBufferRef	User Defined	C
DcmDslProtocolSIDTable	User Defined	C
DcmDslProtocolTxBufferRef	User Defined	C

(1) DcmDslProtocolType

- DCM_OBD_ON_UDS (When using J1979-2)
- DCM_ZEV_ON_UDS (When using J1979-3)

Container Name	Value	Category
DcmDslConnection	User Defined	C

5.2.3.6. DcmDslConnection

Container Name	Value	Category

DcmDslMainConnection	User Defined	C
DcmDslPeriodicTransmission	User Defined	C
DcmDslResponseOnEvent	User Defined	C

5.2.3.7. DcmDslMainConnection

Parameter Name	Value	Category
DcmDslProtocolRxConnectionId	User Defined	C
DcmDslProtocolRxTesterSourceAddr	User Defined	C
DcmDslPeriodicTransmissionConRef	User Defined	C
DcmDslProtocolComMChannelRef	User Defined	C
DcmDslROEConnectionRef	User Defined	C

Container Name	Value	Category
DcmDslProtocolRx	User Defined	C
DcmDslProtocolTx	User Defined	C

5.2.3.8. DcmDslProtocolRx

Parameter Name	Value	Category
DcmDslProtocolRxAddrType	User Defined	C
DcmDslProtocolRxPduId	User Defined	C
DcmDslProtocolRxPduRef	User Defined	C

5.2.3.9. DcmDslProtocolTx

Parameter Name	Value	Category
DcmDslTxConfirmationPduId	User Defined	C
DcmDslProtocolTxPduRef	User Defined	C

5.2.3.10. DcmDslPeriodicTransmission

Container Name	Value	Category
DcmDslPeriodicConnection	User Defined	C

5.2.3.11. DcmDslPeriodicConnection

Parameter Name	Value	Category
DcmDslPeriodicTxConfirmationPduId	User Defined	C
DcmDslPeriodicTxPduRef	User Defined	C

5.2.3.12. DcmDslResponseOnEvent

Parameter Name	Value	Category
DcmDslRoeTxConfirmationPduId	User Defined	C
DcmDslRoeTxPduRef	User Defined	C

5.2.4. DcmDsd

Container Name	Value	Category
DcmDsdService	User Defined	C
DcmDsdServiceRequestManufacturerNotification	User Defined	C
DcmDsdServiceRequestSupplierNotification	User Defined	C

5.2.4.1. DcmDsdServiceRequestManufacturerNotification

The name of this container is used in the generated RTE API name.

5.2.4.2. DcmDsdServiceRequestSupplierNotification

The name of this container is used in the generated RTE API name.

5.2.4.3. DcmDsdService

Parameter Name	Value	Category
DcmDsdServiceRole	User Defined	C
DcmDsdServiceUsed	User Defined	C
DcmDsdSidTabFnc	User Defined	C
DcmDsdSidTabServiceId	User Defined	C
DcmDsdSidTabSubfuncAvail	User Defined	C
DcmDsdSidTabModeRuleRef	User Defined	C
DcmDsdSidTabSecurityLevelRef	User Defined	C
DcmDsdSidTabSessionLevelRef	User Defined	C

Container Name	Value	Category
DcmDsdSubService	User Defined	C

5.2.4.4. DcmDsdSubService

Parameter Name	Value	Category
DcmDsdSubServiceFnc	User Defined	C
DcmDsdSubServiceId	User Defined	C
DcmDsdSubServiceRole	User Defined	C
DcmDsdSubServiceUsed	User Defined	C

DcmDsdSubServiceModeRuleRef	User Defined	C
DcmDsdSubServiceSecurityLevelRef	User Defined	C
DcmDsdSubServiceSessionLevelRef	User Defined	C

5.2.5. DcmDsp

Parameter Name	Value	Category
DcmDspDataDefaultEndianness	User Defined	C
DcmDspDDDIDcheckPerSourceDID	User Defined	C
DcmDspEnableObdMirror	User Defined	C
DcmDspMaxDidToRead	User Defined	C
DcmDspMaxPeriodicDidToRead	User Defined	C
DcmDspPowerDownTime	User Defined	C

Container Name	Value	Category
DcmDspAuthentication	User Defined	C
DcmDspClearDTC	User Defined	C
DcmDspComControl	User Defined	C
DcmDspCommonAuthorization	User Defined	C
DcmDspControlDTCSetting	User Defined	C
DcmDspData	User Defined	C
DcmDspDataInfo	User Defined	C
DcmDspDid	User Defined	C
DcmDspDidInfo	User Defined	C
DcmDspDidRange	User Defined	C
DcmDspEcuReset	User Defined	C
DcmDspMemory	User Defined	C
DcmDspMemoryTransfer	User Defined	C
DcmDspPeriodicTransmission	User Defined	C
DcmDspPid	User Defined	C
DcmDspReadDTCInformation	User Defined	C
DcmDspRequestControl	User Defined	C
DcmDspRequestFileTransfer	User Defined	C
DcmDspRoe	User Defined	C
DcmDspRoutine	User Defined	C
DcmDspSecurity	User Defined	C
DcmDspSession	User Defined	C
DcmDspVehInfo	User Defined	C

5.2.5.1. DcmDspAuthentication

Parameter Name	Value	Category
DcmDspAuthenticationDeauthenticatedRole	User Defined	C
DcmDspAuthenticationDefaultSessionTimeOut	User Defined	C
DcmDspAuthenticationGeneralNRC	User Defined	C
DcmDspAuthenticationRoleSize	User Defined	C
DcmDspAuthenticationWhiteListDIDMaxSize	User Defined	C
DcmDspAuthenticationWhiteListMemorySelectionMaxSize	User Defined	C
DcmDspAuthenticationWhiteListRIDMaxSize	User Defined	C
DcmDspAuthenticationWhiteListServicesMaxSize	User Defined	C
DcmDspAuthenticationGeneralNRCModeRuleRef	User Defined	C
DcmDspAuthenticationPersistStateModeRuleRef	User Defined	C
DcmDspAuthenticationDataBufferLength	User Defined	C
DcmDspAuthenticationPersitStateNvMBlockIdRef	User Defined	C

Container Name	Value	Category
DcmDspAuthenticationConnection	User Defined	C

5.2.5.2. DcmDspAuthenticationConnection

Parameter Name	Value	Category
DcmDspAuthenticationCertificatePublicKeyStoreJobRef	User Defined	C
DcmDspAuthenticationClientCertificateRef	User Defined	C
DcmDspAuthenticationClientChallengeSignJobRef	User Defined	C
DcmDspAuthenticationConnectionCertificateRef	User Defined	C
DcmDspAuthenticationConnectionMainConnectionRef	User Defined	C
DcmDspAuthenticationECUCertificateKeyElementRef		N
DcmDspAuthenticationECUCertificateRef	User Defined	C
DcmDspAuthenticationPublicKeyElementRef	User Defined	C
DcmDspAuthenticationRandomJobRef	User Defined	C
DcmDspAuthenticationRoleElementRef	User Defined	C
DcmDspAuthenticationTargetIdentificationModeRuleRef	User Defined	C
DcmDspAuthenticationVerifyProofOfOwnerShipClientJobRef	User Defined	C
DcmDspAuthenticationWhiteListDIDElementRef	User Defined	C
DcmDspAuthenticationWhiteListMemorySelectionElementRef	User Defined	C
DcmDspAuthenticationWhiteListRIDElementRef	User Defined	C
DcmDspAuthenticationWhiteListServicesElementRef	User Defined	C

5.2.5.3. DcmDspClearDTC

Parameter Name	Value	Category
DcmDspClearDTCCheckFnc	User Defined	C
DcmDspClearDTCModeRuleRef	User Defined	C

5.2.5.4. DcmDspComControl

Container Name	Value	Category
DcmDspComControlAllChannel	User Defined	C
DcmDspComControlSetting	User Defined	C
DcmDspComControlSpecificChannel	User Defined	C
DcmDspComControlSubNode	User Defined	C

5.2.5.5. DcmDspComControlAllChannel

Parameter Name	Value	Category
DcmDspComControlAllChannelUsed	User Defined	C
DcmDspAllComMChannelRef	User Defined	C

5.2.5.6. DcmDspComControlSetting

Parameter Name	Value	Category
DcmDspComControlCommunicationReEnableModeRuleRef	User Defined	C

5.2.5.7. DcmDspComControlSpecificChannel

Parameter Name	Value	Category
DcmDspComControlSpecificChannelUsed	User Defined	C
DcmDspSubnetNumber	User Defined	C
DcmDspSpecificComMChannelRef	User Defined	C

5.2.5.8. DcmDspComControlSubNode

Parameter Name	Value	Category
DcmDspComControlSubNodeId	User Defined	C
DcmDspComControlSubNodeUsed	User Defined	C
DcmDspComControlSubNodeComMChannelRef	User Defined	C

5.2.5.9. DcmDspCommonAuthorization

Parameter Name	Value	Category
DcmDspCommonAuthorizationModeRuleRef	User Defined	C
DcmDspCommonAuthorizationSecurityLevelRef	User Defined	C
DcmDspCommonAuthorizationSessionRef	User Defined	C

5.2.5.10. DcmDspControlDTCSetting

Parameter Name	Value	Category
DcmSupportDTCSettingControlOptionRecord	User Defined	C
DcmDspControlDTCSettingReEnableModeRuleRef	User Defined	C

5.2.5.11. DcmDspData

Parameter Name	Value	Category
DcmDspDataByteSize	User Defined	C
DcmDspDataConditionCheckReadFnc	User Defined	C
DcmDspDataConditionCheckReadFncUsed	User Defined	C
DcmDspDataEcuSignal	User Defined	C
DcmDspDataEndianness	User Defined	C
DcmDspDataFreezeCurrentStateFnc	User Defined	C
DcmDspDataGetScalingInfoFnc	User Defined	C
DcmDspDataReadDataLengthFnc	User Defined	C
DcmDspDataReadEcuSignal	User Defined	C
DcmDspDataReadFnc	User Defined	C
DcmDspDataResetToDefaultFnc	User Defined	C
DcmDspDataReturnControlToEcuFnc	User Defined	C
DcmDspDataShortTermAdjustmentFnc	User Defined	C
DcmDspDataType	User Defined	C
DcmDspDataUsePort	User Defined	C
DcmDspDataWriteFnc	User Defined	C
DcmDspOdxDataDescription		N
DcmDspDataBlockIdRef	User Defined	C
DcmDspDataInfoRef	User Defined	C

Container Name	Value	Category
DcmDspDiagnosisScaling		N

DcmDspDidDataSupportInfo		N
DcmDspExternalSRDataElementClass		N

5.2.5.12. DcmDspDiagnosisScaling

Container Name	Value	Category
DcmDspAlternativeDataInterface		N
DcmDspAlternativeDataType		N
DcmDspAlternativeDiagnosticDataElement		N

5.2.5.13. DcmDspArgumentScaling

Container Name	Value	Category
DcmDspAlternativeArgumentData		N
DcmDspAlternativeDataType		N
DcmDspAlternativeDiagnosticDataElement		N

5.2.5.14. DcmDspAlternativeArgumentData

Container Name	Value	Category
DcmDataElement		N

5.2.5.15. DcmDspAlternativeDataInterface

Parameter Name	Value	Category
DcmDataElement		N
DcmPortInterfaceMapping		N

5.2.5.16. DcmDspAlternativeDataType

Parameter Name	Value	Category
DcmApplicationDataType		N

Container Name	Value	Category
DcmDspTextTableMapping		N

5.2.5.17. DcmDspTextTableMapping

Parameter Name	Value	Category
DcmDspDiagnosisRepresentationDataValue		N
DcmDspInternalDataValue		N

5.2.5.18. DcmDspAlternativeDiagnosticDataElement

Parameter Name	Value	Category
DcmDspDiagnosticDataElementRef		N

5.2.5.19. DcmDataElementInstance

Parameter Name	Value	Category
DcmDataElementInstanceRef		N

5.2.5.20. DcmSubElementInDataElementInstance

Parameter Name	Value	Category
DcmSubElementInDataElementInstanceRef		N

5.2.5.21. DcmSubElementInImplDataElementInstance

Parameter Name	Value	Category
DcmSubElementInImplDataElementInstanceRef		N

5.2.5.22. DcmDspDidDataSupportInfo

Parameter Name	Value	Category
DcmDspDidDataSupportInfoBit		N
DcmDspDidDataSupportInfoRef		N

5.2.5.23. DcmDspDataInfo

Parameter Name	Value	Category
DcmDspDataScalingInfoSize	User Defined	C

5.2.5.24. DcmDspDid

Parameter Name	Value	Category
DcmDspDidIdentifier	User Defined	C
DcmDspDidSize	User Defined	C
DcmDspDidUsed	User Defined	C
DcmDspDidUsePort	User Defined	C
DcmDspDidInfoRef	User Defined	C
DcmDspDidRef	User Defined	C

Container Name	Value	Category
DcmDspDidSignal	User Defined	C
DcmDspDidSupportInfo		N

5.2.5.25. DcmDspDidSignal

Parameter Name	Value	Category
DcmDspDidByteOffset	User Defined	C
DcmDspDidDataRef	User Defined	C

5.2.5.26. DcmDspDidSupportInfo

Parameter Name	Value	Category
DcmDspDidSupportInfoLen		N
DcmDspDidSupportInfoPos		N

5.2.5.27. DcmDspDidInfo

Parameter Name	Value	Category
DcmDspDDDIDMaxElements	User Defined	C
DcmDspDidDynamicallyDefined	User Defined	C

Container Name	Value	Category
DcmDspDidRead	User Defined	C
DcmDspDidWrite	User Defined	C
DcmDspDidControl	User Defined	C

5.2.5.28. DcmDspDidRead

Parameter Name	Value	Category
DcmDspDidReadRole	User Defined	C
DcmDspDidReadModeRuleRef	User Defined	C
DcmDspDidReadSecurityLevelRef	User Defined	C
DcmDspDidReadSessionRef	User Defined	C

5.2.5.29. DcmDspDidWrite

Parameter Name	Value	Category
DcmDspDidWriteRole	User Defined	C
DcmDspDidWriteModeRuleRef	User Defined	C
DcmDspDidWriteSecurityLevelRef	User Defined	C

DcmDspDidWriteSessionRef	User Defined	C

5.2.5.30. DcmDspDidControl

Parameter Name	Value	Category
DcmDspDidControlMask	User Defined	C
DcmDspDidControlMaskSize	User Defined	C
DcmDspDidControlRole	User Defined	C
DcmDspDidFreezeCurrentState	User Defined	C
DcmDspDidResetToDefault	User Defined	C
DcmDspDidShortTermAdjustment	User Defined	C
DcmDspDidControlModeRuleRef	User Defined	C
DcmDspDidControlSecurityLevelRef	User Defined	C
DcmDspDidControlSessionRef	User Defined	C

Container Name	Value	Category
DcmDspDidControlEnableMask		N

5.2.5.31. DcmDspDidControlEnableMask

Parameter Name	Value	Category
DcmDspDidControlMaskBitPosition		N

5.2.5.32. DcmDspDidRange

Parameter Name	Value	Category
DcmDspDidRangeHasGaps	User Defined	C
DcmDspDidRangeIdentifierLowerLimit	User Defined	C
DcmDspDidRangeIdentifierUpperLimit	User Defined	C
DcmDspDidRangeIsDidAvailableFnc	User Defined	C
DcmDspDidRangeMaxDataLength	User Defined	C
DcmDspDidRangeReadDataLengthFnc	User Defined	C
DcmDspDidRangeReadDidFnc	User Defined	C
DcmDspDidRangeUsePort	User Defined	C
DcmDspDidRangeWriteDidFnc	User Defined	C
DcmDspDidRangeInfoRef	User Defined	C

5.2.5.33. DcmDspEcuResetRow

Parameter Name	Value	Category
DcmDspEcuResetId	User Defined	C
DcmResponseToEcuReset	User Defined	C

5.2.5.34. DcmDspMemory

Container Name	Value	Category
DcmDspAddressAndLengthFormatIdentifier	User Defined	C
DcmDspMemoryIdInfo	User Defined	C

5.2.5.35. DcmDspMemoryTransfer

Parameter Name	Value	Category
DcmDspMemoryTransferFnc	User Defined	C
DcmDspMemoryTransferUsePort	User Defined	C

Container Name	Value	Category
DcmDspAddressAndLengthFormatIdentifier	User Defined	C
DcmDspMemoryTransferIdInfo	User Defined	C

5.2.5.36. DcmDspMemoryTransferIdInfo

Parameter Name	Value	Category
DcmDspMemoryIdValue	User Defined	C

5.2.5.37. DcmDspAddressAndLengthFormatIdentifier

Parameter Name	Value	Category
DcmDspSupportedAddressAndLengthFormatIdentifier	User Defined	C

5.2.5.38. DcmDspMemoryIdInfo

Parameter Name	Value	Category
DcmDspMemoryIdValue	User Defined	C

Container Name	Value	Category
DcmDspReadMemoryRangeByLabelInfo	User Defined	C
DcmDspReadMemoryRangeInfo	User Defined	C
DcmDspWriteMemoryRangeByLabelInfo	User Defined	C
DcmDspWriteMemoryRangeInfo	User Defined	C

5.2.5.39. DcmDspReadMemoryRangeByLabelInfo

Parameter Name	Value	Category
DcmDspReadMemoryRangeByLabelHigh	User Defined	C
DcmDspReadMemoryRangeByLabelLow	User Defined	C
DcmDspReadMemoryRangeModeRuleRef	User Defined	C
DcmDspReadMemoryRangeSecurityLevelRef	User Defined	C
DcmDspReadMemoryRangeSessionLevelRef	User Defined	C

5.2.5.40. DcmDspReadMemoryRangeInfo

Parameter Name	Value	Category
DcmDspReadMemoryRangeHigh	User Defined	C
DcmDspReadMemoryRangeLow	User Defined	C
DcmDspReadMemoryRangeModeRuleRef	User Defined	C
DcmDspReadMemoryRangeSecurityLevelRef	User Defined	C
DcmDspReadMemoryRangeSessionLevelRef	User Defined	C

5.2.5.41. DcmDspWriteMemoryRangeByLabelInfo

Parameter Name	Value	Category
DcmDspWriteMemoryRangeByLabelHigh	User Defined	C
DcmDspWriteMemoryRangeByLabelLow	User Defined	C
DcmDspWriteMemoryRangeModeRuleRef	User Defined	C
DcmDspWriteMemoryRangeSecurityLevelRef	User Defined	C
DcmDspWriteMemoryRangeSessionLevelRef	User Defined	C

5.2.5.42. DcmDspWriteMemoryRangeInfo

Parameter Name	Value	Category
DcmDspWriteMemoryRangeHigh	User Defined	C
DcmDspWriteMemoryRangeLow	User Defined	C
DcmDspWriteMemoryRangeModeRuleRef	User Defined	C
DcmDspWriteMemoryRangeSecurityLevelRef	User Defined	C
DcmDspWriteMemoryRangeSessionLevelRef	User Defined	C

5.2.5.43. DcmDspPeriodicTransmission

Parameter Name	Value	Category
DcmDspMaxPeriodicDidScheduler	User Defined	C
DcmDspPeriodicTransmissionFastRate	User Defined	C
DcmDspPeriodicTransmissionMediumRate	User Defined	C
DcmDspPeriodicTransmissionSlowRate	User Defined	C

DcmDspPeriodicTransmissionFastRate/ DcmDspPeriodicTransmissionMediumRate/ DcmDspPeriodicTransmissionSlowRate cannot be same or less than the Dcm main function period.
EX) if Dcm_MainFunction is mapped with 10ms, FastRate must be bigger than 20ms.

5.2.5.44. DcmDspPid

Parameter Name	Value	Category
DcmDspPidIdentifier	User Defined	C
DcmDspPidService	User Defined	C
DcmDspPidSize	User Defined	C
DcmDspPidUsed	User Defined	C

Container Name	Value	Category
DcmDspPidData	User Defined	C
DcmDspPidSupportInfo		N

5.2.5.45. DcmDspPidData

Parameter Name	Value	Category
DcmDspPidByteOffset	User Defined	C
DcmDspPidDataByteSize	User Defined	C

Container Name	Value	Category
DcmDspPidDataSupportInfo		N
DcmDspPidService01	User Defined	C
DcmDspPidService02	User Defined	C

5.2.5.46. DcmDspPidDataSupportInfo

Parameter Name	Value	Category
DcmDspPidDataSupportInfoBit		N
DcmDspPidDataSupportInfoRef		N

5.2.5.47. DcmDspPidService01

Parameter Name	Value	Category
DcmDspPidDataEndianness	User Defined	C
DcmDspPidDataReadFnc	User Defined	C

DcmDspPidDataType	User Defined	C
DcmDspPidDataUsePort	User Defined	C

Container Name	Value	Category
DcmDspDiagnosisScaling		N
DcmDspPidService01ExternalSRDataElementClass		N

5.2.5.48. DcmDspPidService02

Parameter Name	Value	Category
DcmDspPidDataDemRef	User Defined	C

5.2.5.49. DcmDspReadDTCInformation

Container Name	Value	Category
DcmDspReadDTCInformationUserDefinedFaultMemory	User Defined	C

5.2.5.50. DcmDspReadDTCInformationUserDefinedFaultMemory

Parameter Name	Value	Category
DcmDspReadDTCInformationUserDefinedFaultMemoryId	User Defined	C
DcmDspReadDTCInformationUserDefinedFaultMemoryRole	User Defined	C

5.2.5.51. DcmDspRequestControl

Parameter Name	Value	Category
DcmDspRequestControlInBufferSize	User Defined	C
DcmDspRequestControlInfoByte	User Defined	C
DcmDspRequestControlOutBufferSize	User Defined	C
DcmDspRequestControlTestId	User Defined	C

5.2.5.52. DcmDspRequestFileTransfer

Parameter Name	Value	Category
DcmRequestFileTransferFileSizeOrDirInfoParameterLength	User Defined	C
DcmRequestFileTransferLengthFormatIdentifier	User Defined	C
DcmRequestFileTransferMaxFileAndDirName	User Defined	C
DcmRequestFileTransferUsePort	User Defined	C

5.2.5.53. DcmDspRoe

Parameter Name	Value	Category
DcmDspRoeInterMessageTime	User Defined	C
DcmDspRoeEventNvMBlockIdRef	User Defined	C

Container Name	Value	Category
DcmDspRoeEvent	User Defined	C
DcmDspRoeEventWindowTime	User Defined	C

5.2.5.54. DcmDspRoeEvent

Parameter Name	Value	Category
DcmDspRoeEventId	User Defined	C
DcmDspRoeInitialEventStatus	User Defined	C

Container Name	Value	Category
DcmDspRoeEventProperties	User Defined	C

5.2.5.55. DcmDspRoeEventProperties

Container Name	Value	Category
DcmDspRoeOnChangeOfDataIdentifier	User Defined	C
DcmDspRoeOnDTCStatusChange	User Defined	C

5.2.5.56. DcmDspRoeOnChangeOfDataIdentifier

Parameter Name	Value	Category
DcmDspRoeDidRef	User Defined	C

5.2.5.57. DcmDspRoeOnDTCStatusChange

Parameter Name	Value	Category
DcmDspRoeDTCStatusMask	User Defined	C

5.2.5.58. DcmDspRoeEventWindowTime

Parameter Name	Value	Category
DcmDspRoeEventWindowTime	User Defined	C

5.2.5.59. DcmDspRoutine

Parameter Name	Value	Category
DcmDspRoutineIdentifier	User Defined	C
DcmDspRoutineInfoByte	User Defined	C

DcmDspRoutineUsed	User Defined	C
DcmDspRoutineUsePort	User Defined	C

Container Name	Value	Category
DcmDspRequestRoutineResults	User Defined	C
DcmDspStartRoutine	User Defined	C
DcmDspStopRoutine	User Defined	C

5.2.5.60. DcmDspRequestRoutineResults

Parameter Name	Value	Category
DcmDspRequestRoutineResultsConfirmationEnabled	User Defined	C
DcmDspRequestRoutineResultsConfirmationFnc	User Defined	C
DcmDspRequestRoutineResultsFnc	User Defined	C
DcmDspRequestRoutineResultsRole	User Defined	C
DcmDspRequestRoutineResultsCommonAuthorizationRef	User Defined	C

Container Name	Value	Category
DcmDspRequestRoutineResultsIn	User Defined	C
DcmDspRequestRoutineResultsOut	User Defined	C

5.2.5.61. DcmDspRequestRoutineResultsIn

Container Name	Value	Category
DcmDspRequestRoutineResultsInSignal	User Defined	C

5.2.5.62. DcmDspRequestRoutineResultsInSignal

Parameter Name	Value	Category
DcmDspRoutineParameterSize	User Defined	C
DcmDspRoutineSignalEndianness	User Defined	C
DcmDspRoutineSignalPos	User Defined	C
DcmDspRoutineSignalType	User Defined	C

Container Name	Value	Category
DcmDspArgumentScaling		N

5.2.5.63. DcmDspRequestRoutineResultsOut

Container Name	Value	Category
DcmDspRequestRoutineResultsOutSignal	User Defined	C

5.2.5.64. DcmDspRequestRoutineResultsOutSignal

Parameter Name	Value	Category
DcmDspRoutineParameterSize	User Defined	C
DcmDspRoutineSignalEndianness	User Defined	C
DcmDspRoutineSignalPos	User Defined	C
DcmDspRoutineSignalType	User Defined	C

Container Name	Value	Category
DcmDspArgumentScaling		N

5.2.5.65. DcmDspStartRoutine

Parameter Name	Value	Category
DcmDspStartRoutineConfirmationEnabled	User Defined	C
DcmDspStartRoutineConfirmationFnc	User Defined	C
DcmDspStartRoutineFnc	User Defined	C
DcmDspStartRoutineRole	User Defined	C
DcmDspStartRoutineCommonAuthorizationRef	User Defined	C

Container Name	Value	Category
DcmDspStartRoutineIn	User Defined	C
DcmDspStartRoutineOut	User Defined	C

5.2.5.66. DcmDspStartRoutineIn

Container Name	Value	Category
DcmDspStartRoutineInSignal	User Defined	C

5.2.5.67. DcmDspStartRoutineIn

Parameter Name	Value	Category
DcmDspRoutineParameterSize	User Defined	C
DcmDspRoutineSignalEndianness	User Defined	C
DcmDspRoutineSignalPos	User Defined	C
DcmDspRoutineSignalType	User Defined	C

Container Name	Value	Category
DcmDspArgumentScaling		N

5.2.5.68. DcmDspStartRoutineOut

Container Name	Value	Category
DcmDspStartRoutineOutSignal	User Defined	C

5.2.5.69. DcmDspStartRoutineOutSignal

Parameter Name	Value	Category
DcmDspRoutineParameterSize	User Defined	C
DcmDspRoutineSignalEndianness	User Defined	C
DcmDspRoutineSignalPos	User Defined	C
DcmDspRoutineSignalType	User Defined	C

Container Name	Value	Category
DcmDspArgumentScaling		N

5.2.5.70. DcmDspStopRoutine

Parameter Name	Value	Category
DcmDspStopRoutineConfirmationEnabled	User Defined	C
DcmDspStopRoutineConfirmationFnc	User Defined	C
DcmDspStopRoutineFnc	User Defined	C
DcmDspStopRoutineRole	User Defined	C
DcmDspStopRoutineCommonAuthorizationRef	User Defined	C

Container Name	Value	Category
DcmDspStopRoutineIn	User Defined	C
DcmDspStopRoutineOut	User Defined	C

5.2.5.70. DcmDspStopRoutineIn

Container Name	Value	Category
DcmDspStopRoutineInSignal	User Defined	C

5.2.5.71. DcmDspStopRoutineIn

Parameter Name	Value	Category
DcmDspRoutineParameterSize	User Defined	C
DcmDspRoutineSignalEndianness	User Defined	C
DcmDspRoutineSignalPos	User Defined	C
DcmDspRoutineSignalType	User Defined	C

Container Name	Value	Category
DcmDspArgumentScaling		N

5.2.5.72. DcmDspStopRoutineOut

Container Name	Value	Category
DcmDspStopRoutineOutSignal	User Defined	C

5.2.5.73. DcmDspStopRoutineOutSignal

Parameter Name	Value	Category
DcmDspRoutineParameterSize	User Defined	C
DcmDspRoutineSignalEndianness	User Defined	C
DcmDspRoutineSignalPos	User Defined	C
DcmDspRoutineSignalType	User Defined	C

Container Name	Value	Category
DcmDspArgumentScaling		N

5.2.5.74. DcmDspSecurity

Parameter Name	Value	Category
DcmDspSecurityMaxAttemptCounterReadoutTime	User Defined	C

Container Name	Value	Category
DcmDspSecurityRow	User Defined	C

5.2.5.75. DcmDspSecurityRow

Parameter Name	Value	Category
DcmDspSecurityADRSize	User Defined	C
DcmDspSecurityAttemptCounterEnabled	User Defined	C
DcmDspSecurityCompareKeyFnc	User Defined	C
DcmDspSecurityDelayTime	User Defined	C
DcmDspSecurityDelayTimeOnBoot	User Defined	C
DcmDspSecurityGetAttemptCounterFnc	User Defined	C
DcmDspSecurityGetSeedFnc	User Defined	C
DcmDspSecurityKeySize	User Defined	C
DcmDspSecurityLevel	User Defined	C
DcmDspSecurityNumAttDelay	User Defined	C
DcmDspSecuritySeedSize	User Defined	C
DcmDspSecuritySetAttemptCounterFnc	User Defined	C
DcmDspSecurityUsePort	User Defined	C

5.2.5.76. DcmDspSession

Container Name	Value	Category
DcmDspSessionRow	User Defined	C

5.2.5.77. DcmDspSessionRow

Parameter Name	Value	Category
DcmDspSessionForBoot	User Defined	C
DcmDspSessionLevel	User Defined	C
DcmDspSessionP2ServerMax	User Defined	C
DcmDspSessionP2StarServerMax	User Defined	C

5.2.5.78. DcmDspVehInfo

Parameter Name	Value	Category
DcmDspVehInfoInfoType	User Defined	C
DcmDspVehInfoNODIProvResp	User Defined	C

Container Name	Value	Category
DcmDspVehInfoData	User Defined	C

5.2.5.79. DcmDspVehInfoData

Parameter Name	Value	Category
DcmDspVehInfoDataOrder	User Defined	C
DcmDspVehInfoDataReadFnc	User Defined	C
DcmDspVehInfoDataSize	User Defined	C
DcmDspVehInfoDataUsePort	User Defined	C

5.2.5.80. DcmDspAuthenticationConnectionES

Parameter Name	Value	Category
DcmDspAuthenticationAuthenticatedRole	User Defined	C
DcmDspAuthenticationWLServicesWithoutSubfunction	User Defined	C
DcmDspAuthenticationWLServicesWithSubfunction	User Defined	C
DcmDspAuthenticationWLDID	User Defined	C
DcmDspAuthenticationWLRID	User Defined	C
DcmDspAuthenticationUniDirectionalFunc	User Defined	C
DcmDspAuthenticationProofOfOwnerShipClientFunc	User Defined	C
DcmDspAuthenticationCertificateClientSize	User Defined	C
DcmDspAuthenticationProofOfOwnerShipClientSize	User Defined	C
DcmDspAuthenticationConnectionMainConnectionRef	User Defined	C
DcmDspAuthenticationWLMemorySelection	User Defined	C
DcmDspAuthenticationUsePort	User Defined	C
DcmDspAuthenticationSettingAccessRightsFailedFunc	User Defined	C
DcmDspAuthenticationDeauthenticationFailedFunc	User Defined	C

5.2.5.81. DcmDspCsmInfo

Parameter Name	Value	Category
DcmDspCsmInfoCnrUsedSha1	User Defined	C
DcmDspCsmPublicKeyRef	User Defined	C
DcmDspCsmCertVerifyJobRef	User Defined	C
DcmDspCsmCrlVerifyJobRef	User Defined	C
DcmDspCsmCrlHashJobRef	User Defined	C
DcmDspCsmRandomSeedKeyRef	User Defined	C
DcmDspCsmRandomJobRef	User Defined	C
DcmDspCsmCnrPublicKeyRef	User Defined	C
DcmDspCsmCnrVerifyJobRef	User Defined	C

5.2.5.82. DcmDspReadDTCInformation

Parameter Name	Value	Category
DcmDspReadDTCInformationSupportObdUdsDtcSeparation	User Defined	C

6. Application Programming Interface (API)

6.1. Type Definitions

6.1.1. Dcm_StatusType

Name	Dcm_StatusType		
Type	uint8		
Range	DCM_E_OK	0x00	This value is representing a successful operation.
	DCM_E_ROE_NOT_ACCEPTED	0x06	ResponseOnOneEvent requestis not accepted by DCM
	DCM_E_PERIODICID_NOT_ACCEPTED	0x07	Periodic transmission request is not accepted by DCM
Description	Base item type to transport status information		
Available via	Dcm.h		

6.1.2. Dcm_ReturnReadMemoryType

Name	Dcm_ReturnReadMemoryType		
Type	uint8		
Range	DCM_READ_OK	0x00	Reading has been done
	DCM_READ_PENDING	0x01	Reading is pending, another call is request to finalize the reading
	DCM_READ_FAILED	0x02	Reading has failed
	DCM_READ_FORCE_RCRRP	0x03	Reading is pending, the Response pending transmission starts immediately
Description	Return values of Callout Dcm_ReadMemory		
Available via	Dcm.h		

6.1.3. Dcm_ReturnWriteMemoryType

Name	Dcm_ReturnWriteMemoryType		
Type	uint8		
Range	DCM_WRITE_OK	0x00	Writing has been done
	DCM_WRITE_PENDING	0x01	Writing is pending, another call is request to finalize the reading
	DCM_WRITE_FAILED	0x02	The writing has failed
	DCM_WRITE_FORCE_RCRRP	0x03	Writing is pending, the Response pending transmission starts immediately
Description	Return values of Callout Dcm_WriteMemory		
Available via	Dcm.h		

6.1.4. Dcm_CommunicationModeType

Name	Dcm_CommunicationModeType		
Type	uint8		
Range	DCM_ENABLE_RX_TX_NORM	0x00	Enable the Rx and Tx for normal communication
	DCM_ENABLE_RX_DISABLE_TX_NORM	0x01	Enable the Rx and disable the Tx for normal communication
	DCM_DISABLE_RX_ENABLE_TX_NORM	0x02	Disable the Rx and enable the Tx for normal communication
	DCM_DISABLE_RX_TX_NORMAL	0x03	Disable Rx and Tx for normal communication
	DCM_ENABLE_RX_TX_NM	0x04	Enable the Rx and Tx for network management communication
	DCM_ENABLE_RX_DISABLE_TX_NM	0x05	Enable Rx and disable the Tx for network management communication
	DCM_DISABLE_RX_ENABLE_TX_NM	0x06	Disable the Rx and enable the Tx for network management communication
	DCM_DISABLE_RX_TX_NM	0x07	Disable Rx and Tx for network management communication
	DCM_ENABLE_RX_TX_NORM_NM	0x08	Enable Rx and Tx for normal andnetwork management communication
	DCM_ENABLE_RX_DISABLE_TX_NORM_NM	0x09	Enable the Rx and disable the Tx for normal and network management communication
	DCM_DISABLE_RX_ENABLE_ TX_NORM_NM	0x0A	Disable the Rx and enable the Tx for normal and network management communication
	DCM_DISABLE_RX_TX_NORM_NM	0x0B	Disable Rx and Tx for normal and network management communication
Description	-		
Available via	Dcm.h		

6.1.5. Dcm_ConfigType

Name	Dcm_ConfigType		
Type	Structure		
Range	Implementation specific	-	-
Description	This type defines a data structure for the post build parameters of the DCM . At initialization the DCM gets a pointer to a structure of this type to get access to its configuration data, which is necessary for initialization.		
Available via	Dcm.h		

6.1.6. Dcm_EcuStartModeType

Name	Dcm_EcuStartModeType		
Type	uint8		
Range	DCM_COLD_START	0x00	The ECU starts normally
	DCM_WARM_START	0x01	The ECU starts from a bootloader jump
Description	Allows the DCM to know if a diagnostic response shall be sent in the case of a jump from bootloader		
Available via	Dcm.h		

6.1.7. Dcm_ProgConditionsType

Name	Dcm_ProgConditionsType		
Type	Structure		
Element	uint16	ConnectionId	Unique id of the connection on which the request has been received
	uint16	TesterAddress	Source address of the received request if meta data is enabled, otherwise the value as configured in DcmDslProtocolRxTesterSourceAddr
	uint8	Sid	Service identifier of the received request
	uint8	SubFncId	Identifier of the receivedsubfonction
	boolean	ReprogramingRequest	Set to true in order to request reprogramming of the ECU.
	boolean	ApplUpdated	Indicate whether the application has been updated or not.
	boolean	ResponseRequired	Set to true in case the flashloader or application shall send a response.
Description	Used in Dcm_SetProgConditions() to allow the integrator to store relevant information prior to jumping to bootloader / jump due to ECUReset request		
Available via	Dcm.h		

6.1.8. Dcm_MsgItemType

Name	Dcm_MsgItemType
Type	uint8
Description	Base type for diagnostic message item
Available via	Dcm.h

6.1.9. Dcm_MsgType

Name	Dcm_MsgType
Type	Dcm_MsgItemType*
Description	Base type for diagnostic message (request, positive or negative response)
Available via	Dcm.h

6.1.10. Dcm_MsgLenType

Name	Dcm_MsgLenType
Type	uint32
Description	Length of diagnostic message (request, positive or negative response). The maximum length is dependent of the underlying transport protocol/media.
Available via	Dcm.h

6.1.11. Dcm_MsgAddInfoType

Name	Dcm_MsgAddInfoType		
Type	Structure		
Element	uint8	reqType	(Pos LSB+0) 0 = physical request 1 = functional request
	uint8	suppressPosResponse	Position LSB+1 0 = no (do not suppress) 1 = yes (no positive response will be sent)
Description	Additional information on message request.		
Available via	Dcm.h		

6.1.12. Dcm_IdContextType

Name	Dcm_IdContextType
Type	uint8
Description	This message context identifier can be used to determine the relation between request and response confirmation.
Available via	Dcm.h

6.1.13. Dcm_MsgContextType

Name	Dcm_MsgContextType		
Type	Structure		
Element	Dcm_MsgType	reqData	Request data, starting directly after service identifier (which is not part of this data)
	Dcm_MsgLenType	reqDataLen	Request data length (excluding service identifier)
	Dcm_MsgType	resData	Positive response data, starting directly after service identifier (which is not part of this data)
	Dcm_MsgLenType	resDataLen	Positive response data length (excluding service identifier)
	Dcm_MsgAddInfoType	msgAddInfo	Additional information about service request and response
	Dcm_MsgLenType	resMaxDataLen	The maximal length of a response is restricted by the size of the buffer. The buffer size can depend on the diagnostic protocol identifier which is assigned to this message, e. g. an OBD protocol id can obtain other properties than the enhanced diagnostic protocol id.
	Dcm_IdContextType	idContext	This message context identifier can be used to determine the relation between request and response confirmation. This identifier can be stored within the application at request time, so that the response can be assigned to the original request.
	PduIdType	dcmRxPduId	Pdu identifier on which the request was received. The PduId of the request can have consequences for message processing. E.g. an OBD request will be received on the OBD PduId and will be processed slightly different than an enhanced diagnostic request received on the physical
Description	This data structure contains all information which is necessary to process a diagnostic message from request to response and response confirmation.		
Available via	Dcm.h		

6.1.14. Dcm_ExtendedOpStatusType

Name	Dcm_ExtendedOpStatusType		
Type	uint8		
Element	DCM_INITIAL	0x00	Indicates the initial call to the operation
	DCM_PENDING	0x01	Indicates that a pending return has been done on the previous call of the operation
	DCM_CANCEL	0x02	Indicates that the Dcm requests to cancel the pending operation
	DCM_FORCE_RCRRP_OK	0x03	Confirm a response pending transmission Variation
	DCM_POS_RESPONSE_SENT	0x04	Indicates that a positive response has been sent successfully
	DCM_POS_RESPONSE_FAILED	0x05	Indicates that a positive response has not been sent successfully
	DCM_NEG_RESPONSE_SENT	0x06	Indicates that a negative response has been sent successfully
	DCM_NEG_RESPONSE_FAILED	0x07	Indicates that a negative response has not been sent successfully
Description	-		
Available via	Dcm.h		

6.2. Macro Constants

None

6.3. Functions

6.3.1. Functions provided for other BSW components

6.3.1.1. Dcm_Init

Function Name	Dcm_Init	
Syntax	void Dcm_Init(const Dcm_ConfigType* ConfigPtr)	
Service ID [Hex]	0x01	
Sync/Async	Synchronous	
Reentrancy	Non-Reentrant	
Parameters (In)	ConfigPtr	Pointer to configuration set in Variant Post-Build.
Parameters (Inout)	None	
Parameters (Out)	None	
Return Value	None	
Description	Service for basic initialization of DCM module.	
Available via	Dcm.h	

6.3.1.2. Dcm_GetVersionInfo

Function Name	Dcm_GetVersionInfo	
Syntax	void Dcm_GetVersionInfo(Std_VersionInfoType* versionInfo)	
Service ID [Hex]	0x24	
Sync/Async	Synchronous	
Reentrancy	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 the version information of this module	
Available via	Dcm.h	

6.3.1.3. Dcm_DemTriggerOnDTCStatus

Function Name	Dcm_DemTriggerOnDTCStatus	
Syntax	Std_ReturnType Dcm_DemTriggerOnDTCStatus(uint32 DTC, Dem_UdsStatusByteType DTCStatusOld, Dem_UdsStatusByteType DTCStatusNew)	
Service ID [Hex]	0x2B	
Sync/Async	Synchronous	
Reentrancy	Reentrant	
Parameters (In)	DTC	This is the DTC the change trigger is assigned to.
	DTCStatusOld	DTC status before change
	DTCStatusNew	DTC status after change
Parameters (Inout)	None	
Parameters (Out)	None	
Return Value	Std_ReturnType	E_OK: this value is always returned.
Description	Triggers on changes of the UDS status byte. Allows to trigger on ROE Event for subservice OnDTCStatusChanged.	
Available via	Dcm_Dem.h	

6.3.1.4. Dcm_GetVin

Function Name	Dcm_GetVin	
Syntax	Std_ReturnType Dcm_GetVin(uint8* Data)	
Service ID [Hex]	0x07	
Sync/Async	Synchronous	
Reentrancy	Reentrant	
Parameters (In)	None	
Parameters (Inout)	None	
Parameters (Out)	Data	Pointer to where to store the VIN
Return Value	Std_ReturnType	E_OK: The Data pointer has been filled with valid VIN E_NOT_OK: The default VIN will be used in the DoIP
Description	Function to get the VIN (as defined in SAE J1979-DA)	
Available via	Dcm.h	

6.3.2. Functions provided to BSW modules and to SW-Cs

6.3.2.1. Dcm_SetDeauthenticatedRole

Function Name	Dcm_SetDeauthenticatedRole	
Syntax	Std_ReturnType Dcm_SetDeauthenticatedRole(uint16 connectionId, Dcm_AuthenticationRoleType deauthenticatedRole)	
Service ID [Hex]	0x79	
Sync/Async	Synchronous	
Reentrancy	Reentrant	
Parameters (In)	connectionId	Unique connection identifier identifiying the connection for which a deauthenticated roles is set.
	deauthenticatedRole	New deauthenticated role that is assigned to that connection
Parameters (Inout)	None	
Parameters (Out)	None	
Return Value	Std_ReturnType	E_OK: this value is always returned.
Description	Sets a new role used in deauthenticated state for that connection. The set role is valid until the connection switches into authenticated state or the ECU is reset.	
Available via	Dcm.h	

6.3.2.2. Dcm_GetSecurityLevel

Function Name	Dcm_GetSecurityLevel	
Syntax	Std_ReturnType Dcm_GetSecurityLevel(Dcm_SecLevelType* SecLevel)	
Service ID [Hex]	0x0D	
Sync/Async	Synchronous	
Reentrancy	Reentrant	
Parameters (In)	None	
Parameters (Inout)	None	
Parameters (Out)	SecLevel	Active Security Level value conversion formula to calculate SecurityLevel out of tester requested SecurityAccessType parameter: SecurityLevel = (SecurityAccessType + 1) / 2 Content of SecurityAccessType is according to "securityAccessType" parameter of SecurityAccess request
Return Value	Std_ReturnType	E_OK: this value is always returned.
Description	This function provides the active security level value.	
Available via	Dcm.h	

6.3.2.3. Dcm_GetSesCtrlType

Function Name	Dcm_GetSesCtrlType	
Syntax	Std_ReturnType Dcm_GetSesCtrlType(Dcm_SesCtrlType* SesCtrlType)	
Service ID [Hex]	0x07	
Sync/Async	Synchronous	
Reentrancy	Reentrant	
Parameters (In)	None	
Parameters (Inout)	None	
Parameters (Out)	SesCtrlType	Active Session Control Type value content is according to "diagnosticSessionType" parameter of DiagnosticSessionControl request
Return Value	Std_ReturnType	E_OK: this value is always returned.
Description	This function provides the active session control type value.	
Available via	Dcm.h	

6.3.2.4. Dcm_GetActiveProtocol

Function Name	Dcm_GetActiveProtocol	
Syntax	Std_ReturnType Dcm_GetActiveProtocol(Dcm_ProtocolType* ActiveProtocolType, uint16* ConnectionId, uint16* TesterSourceAddress)	
Service ID [Hex]	0x0F	
Sync/Async	Synchronous	
Reentrancy	Reentrant	
Parameters (In)	None	
Parameters (Inout)	None	
Parameters (Out)	ActiveProtocolType	Active protocol type value
	ConnectionId	Unique connection identifier
	TesterSourceAddress	source address of the tester
Return Value	Std_ReturnType	E_OK: this value is always returned.
Description	This function returns the active UDS protocol details	
Available via	Dcm.h	

6.3.2.5. Dcm_ResetToDefaultSession

Function Name	Dcm_GetActiveProtocol	
Syntax	Std_ReturnType Dcm_ResetToDefaultSession(void)	
Service ID [Hex]	0x2A	
Sync/Async	Synchronous	
Reentrancy	Reentrant	
Parameters (In)	None	
Parameters (Inout)	None	
Parameters (Out)	None	
Return Value	Std_ReturnType	E_OK: this value is always returned.
Description	The call to this function allows the application to reset the current session to Default session. Example: Automatic termination of an extended diagnostic session upon exceeding of a speed limit.	
Available via	Dcm.h	

6.3.2.6. Dcm_GetSecurityLevel

Function Name	Dcm_TriggerOnEvent	
Syntax	Std_ReturnType Dcm_TriggerOnEvent(uint8 RoeEventId)	
Service ID [Hex]	0x2D	
Sync/Async	Synchronous	
Reentrancy	Reentrant	
Parameters (In)	RoeEventId	Identifier of the event that is triggered
Parameters (Inout)	None	
Parameters (Out)	None	
Return Value	Std_ReturnType	E_OK: RoeEventId value is valid E_NOT_OK: RoeEventId value is not valid.
Description	The call to this function allows to trigger an event linked to a ResponseOnEvent request. On the function call, the DCM will execute the associated service if the corresponding Mode of the RoeEventId is 'ROE started'.	
Available via	Dcm.h	

6.3.2.7. Dcm_GetSecurityLevel

Function Name	Dcm_SetActiveDiagnostic	
Syntax	Std_ReturnType Dcm_SetActiveDiagnostic(boolean active)	
Service ID [Hex]	0x56	
Sync/Async	Synchronous	
Reentrancy	Reentrant	
Parameters (In)	active	If false Dcm shall not call ComM_DCM_ActiveDiagnostic(). If true Dcm will call ComM_DCM_ActiveDiagnostic().
Parameters (Inout)	None	
Parameters (Out)	None	
Return Value	Std_ReturnType	E_OK: this value is always returned.
Description	Allows to activate and deactivate the call of ComM_DCM_ActiveDiagnostic() function.	
Available via	Dcm.h	

6.3.3. Callback notifications

6.3.3.1. Dcm_StartOfReception

Function Name	Dcm_StartOfReception	
Syntax	BufReq_ReturnType Dcm_StartOfReception(PduIdType id, const PduInfoType* info, PduLengthType TpSduLength, PduLengthType* bufferSizePtr)	
Service ID [Hex]	0x46	
Sync/Async	Synchronous	
Reentrancy	Reentrant	
Parameters (In)	id	Identification of the I-PDU.
	info	Pointer to a PduInfoType structure containing the payload data (without protocol information) and payload length of the first frame or single frame of a transport protocol I-PDU reception, and the MetaData related to this PDU. If neither first/single frame data nor MetaData are available, this parameter is set to NULL_PTR.
	TpSduLength	Total length of the N-SDU to be received.
Parameters (Inout)	None	
Parameters (Out)	bufferSizePtr	Available receive buffer in the receiving module. This parameter will be used to compute the Block Size (BS) in the transport protocol module.
Return Value	BufReq_ReturnType	BUFREQ_OK: Connection has been accepted. bufferSizePtr indicates the available receive buffer; reception is continued. If no buffer of the requested size is available, a receive buffer size of 0 shall be indicated by bufferSizePtr. BUFREQ_E_NOT_OK: Connection has been rejected; reception is aborted. bufferSizePtr remains unchanged. BUFREQ_E_OVFL: No buffer of the required length can be provided; reception is aborted. bufferSizePtr remains unchanged.
Description	This function is called at the start of receiving an N-SDU. The N-SDU might be fragmented into multiple N-PDUs (FF with one or more following CFs) or might consist of a single N-PDU (SF). The service shall provide the currently available maximum buffer size when invoked with TpSdu-Length equal to 0.	
Available via	Dcm.h	

6.3.3.2. Dcm_CopyRxData

Function Name	Dcm_CopyRxData	
Syntax	BufReq_ReturnType Dcm_CopyRxData(PduIdType id, const PduInfoType* info, PduLengthType* bufferSizePtr)	
Service ID [Hex]	0x44	
Sync/Async	Synchronous	
Reentrancy	Reentrant	
Parameters (In)	id	Identification of the received I-PDU.
	info	Provides the source buffer (SduDataPtr) and the number of bytes to be copied (SduLength). An SduLength of 0 can be used to query the current amount of available buffer in the upper layer module. In this case, the SduDataPtr may be a NULL_PTR.
Parameters (Inout)	None	
Parameters (Out)	bufferSizePtr	Available receive buffer after data has been copied.
Return Value	BufReq_ReturnType	BUFREQ_OK: Data copied successfully BUFREQ_E_NOT_OK: Data was not copied because an error occurred.
Description	This function is called to provide the received data of an I-PDU segment (N-PDU) to the upper layer. Each call to this function provides the next part of the I-PDU data. The size of the remaining buffer is written to the position indicated by bufferSizePtr.	
Available via	Dcm.h	

6.3.3.3. Dcm_TpRxIndication

Function Name	Dcm_TpRxIndication	
Syntax	void Dcm_TpRxIndication(PduIdType id, Std_ReturnType result)	
Service ID [Hex]	0x45	
Sync/Async	Synchronous	
Reentrancy	Reentrant	
Parameters (In)	id	Identification of the received I-PDU.
	result	Result of the reception.
Parameters (Inout)	None	
Parameters (Out)	None	
Return Value	None	
Description	Called after an I-PDU has been received via the TP API, the result indicates whether the transmission was successful or not.	
Available via	Dcm.h	

6.3.3.4. Dcm_CopyTxData

Function Name	Dcm_CopyTxData	
Syntax	BufReq_ReturnType Dcm_CopyTxData(PduIdType id, const PduInfoType* info, const RetryInfoType* retry, PduLengthType* availableDataPtr)	
Service ID [Hex]	0x43	
Sync/Async	Synchronous	
Reentrancy	Reentrant	
Parameters (In)	id	Identification of the transmitted I-PDU.
	info	Provides the destination buffer (SduDataPtr) and the number of bytes to be copied (SduLength). If not enough transmit data is available, no data is copied by the upper layer module and BUFREQ_E_BUSY is returned. The lower layer module may retry the call. An SduLength of 0 can be used to indicate state changes in the retry parameter or to query the current amount of available data in the upper layer module. In this case, the SduDataPtr may be a NULL_PTR.
	retry	Do not support this parameter.
Parameters (Inout)	None	
Parameters (Out)	availableDataPtr	Indicates the remaining number of bytes that are available in the upper layer module's Tx buffer. availableDataPtr can be used by TP modules that support dynamic payload lengths (e.g. FrIsoTp) to determine the size of the following CFs.
Return Value	BufReq_ReturnType	BUFREQ_OK: Data has been copied to the transmit buffer completely as requested. BUFREQ_E_BUSY: Request could not be fulfilled, because the required amount of Tx data is not available. The lower layer module may retry this call later on. No data has been copied. BUFREQ_E_NOT_OK: Data has not been copied. Request failed.
Description	This function is called to acquire the transmit data of an I-PDU segment (N-PDU). Each call to this function provides the next part of the I-PDU data unless retry->TpDataState is TP_DATARETRY. In this case the function restarts to copy the data beginning at the offset from the current position indicated by retry->TxTpDataCnt. The size of the remaining data is written to the position indicated by availableDataPtr.	
Available via	Dcm.h	

6.3.3.5. Dcm_TpTxConfirmation

Function Name	Dcm_TpRxIndication	
Syntax	void Dcm_TpTxConfirmation(PduIdType id, Std_ReturnType result)	
Service ID [Hex]	0x48	
Sync/Async	Synchronous	
Reentrancy	Reentrant	
Parameters (In)	id	Identification of the transmitted I-PDU.
	result	Result of the transmission of the I-PDU.
Parameters (Inout)	None	
Parameters (Out)	None	
Return Value	None	
Description	This function is called after the I-PDU has been transmitted on its network, the result indicates whether the transmission was successful or not.	
Available via	Dcm.h	

6.3.3.6. Dcm_TxConfirmation

Function Name	Dcm_TpRxIndication	
Syntax	void Dcm_TxConfirmation(PduIdType TxPduId, Std_ReturnType result)	
Service ID [Hex]	0x40	
Sync/Async	Synchronous	
Reentrancy	Reentrant for different PduIds. Non reentrant for the same PduId.	
Parameters (In)	TxPduId	ID of the PDU that has been transmitted.
	result	E_OK: The PDU was transmitted. E_NOT_OK: Transmission of the PDU failed.
Parameters (Inout)	None	
Parameters (Out)	None	
Return Value	None	
Description	The lower layer communication interface module confirms the transmission of a PDU, or the failure to transmit a PDU.	
Available via	Dcm.h	

6.3.3.7. Dcm_ComM_NoComModeEntered

Function Name	Dcm_ComM_NoComModeEntered	
Syntax	void Dcm_ComM_NoComModeEntered(uint8 NetworkId)	
Service ID [Hex]	0x21	
Sync/Async	Synchronous	
Reentrancy	Reentrant	
Parameters (In)	NetworkId	Identifier of the network concerned by the mode change
Parameters (Inout)	None	
Parameters (Out)	None	
Return Value	None	
Description	This call informs the Dcm module about a ComM mode change to COMM_NO_COMMUNICATION.	
Available via	Dcm_ComM.h	

6.3.3.8. Dcm_ComM_SilentComModeEntered

Function Name	Dcm_ComM_SilentComModeEntered	
Syntax	void Dcm_ComM_SilentComModeEntered(uint8 NetworkId)	
Service ID [Hex]	0x22	
Sync/Async	Synchronous	
Reentrancy	Reentrant	
Parameters (In)	NetworkId	Identifier of the network concerned by the mode change
Parameters (Inout)	None	
Parameters (Out)	None	
Return Value	None	
Description	This call informs the Dcm module about a ComM mode change to COMM_SILENT_COMMUNICATION.	
Available via	Dcm_ComM.h	

6.3.3.9. Dcm_ComM_FullComModeEntered

Function Name	Dcm_ComM_FullComModeEntered	
Syntax	void Dcm_ComM_FullComModeEntered(uint8 NetworkId)	
Service ID [Hex]	0x23	
Sync/Async	Synchronous	
Reentrancy	Reentrant	
Parameters (In)	NetworkId	Identifier of the network concerned by the mode change
Parameters (Inout)	None	
Parameters (Out)	None	
Return Value	None	
Description	This call informs the Dcm module about a ComM mode change to COMM_FULL_COMMUNICATION.	
Available via	Dcm_ComM.h	

6.3.3.10. Dcm_CsmAsyncJobFinished

Function Name	Dcm_CsmAsyncJobFinished	
Syntax	Std_ReturnType Dcm_CsmAsyncJobFinished(Csm_ResultType result)	
Service ID [Hex]	None	
Sync/Async	Synchronous	
Reentrancy	Reentrant	
Parameters (In)	result	Return value of the asynchronous job
Parameters (Inout)	None	
Parameters (Out)	None	
Return Value	Std_ReturnType	E_OK: this value is always returned.
Description	Can be called from Csm upon finishing an asynchronous job processing. The integrator will configure this name as callback function within the Csm ECUC configuration for asynchronous jobs. Only one such callback is available, the Dcm detects the job that has finished by evaluating the job parameter.	
Available via	Dcm_Csm.h	

6.3.3.11. Dcm_KeyMAsyncCertificateVerifyFinished

Function Name	Dcm_KeyMAsyncCertificateVerifyFinished	
Syntax	Std_ReturnType Dcm_KeyMAsyncCertificateVerifyFinished(KeyM_ResultType result, uint32 certId)	
Service ID [Hex]	None	
Sync/Async	Synchronous	
Reentrancy	Reentrant	
Parameters (In)	result	Return value of the asynchronous job
	certId	Certificate identifier that has finished the verification
Parameters (Inout)	None	
Parameters (Out)	None	
Return Value	Std_ReturnType	E_OK: this value is always returned.
Description	Can be called from Key upon finishing an asynchronous certificate verification. The integrator will configure this name as callback function within the KeyM ECUC configuration for asynchronous jobs. Only one such callback is available, the Dcm detects the certificate that has finished by evaluating the certId parameter.	
Available via	Dcm_KeyM.h	

6.3.4. Callout Definitions

6.3.4.1. Dcm_ReadMemory

Function Name	Dcm_ReadMemory	
Syntax	Dcm_ReturnReadMemoryType Dcm_ReadMemory(Dcm_OpStatusType OpStatus, uint8 MemoryIdentifier, uint32 MemoryAddress, uint32 MemorySize, uint8* MemoryData, Dcm_NegativeResponseCodeType* ErrorCode)	
Service ID [Hex]	0x26	
Sync/Async	Asynchronous	
Reentrancy	Non Reentrant	
Parameters (In)	OpStatus	
	MemoryIdentifier	Identifier of the Memory Block (e.g. used if memory section distinguishing is needed) Note: If it's not used this parameter shall be set to 0.
	MemoryAddress	Starting address of server memory from which data is to be retrieved.
	MemorySize	Number of bytes in the MemoryData
Parameters (Inout)	None	
Parameters (Out)	MemoryData	Data read (Points to the diagnostic buffer in DCM)
	ErrorCode	If the operation Dcm_ReadMemory returns value DCM_READ_FAILED, the Dcm module shall send a negative response with NRC code equal to the parameter ErrorCode parameter value.
Return Value	Dcm_ReturnReadMemoryType	DCM_READ_OK: read was successful DCM_READ_FAILED: read was not successful DCM_READ_PENDING: read is not yet finished DCM_READ_FORCE_RCRRP: reading is pending, the Response pending transmission starts immediately
Description	The Dcm_ReadMemory callout is used to request memory data identified by the parameter memoryAddress and memorySize from the UDS request message.	
Available via	Dcm_Externals.h	

6.3.4.2. Dcm_WriteMemory

Function Name	Dcm_WriteMemory	
Syntax	Dcm_ReturnWriteMemoryType Dcm_WriteMemory(Dcm_OpStatusType OpStatus, uint8 MemoryIdentifier, uint32 MemoryAddress, uint32 MemorySize, const uint8* MemoryData, Dcm_NegativeResponseCodeType* ErrorCode)	
Service ID [Hex]	0x27	
Sync/Async	Asynchronous	
Reentrancy	Non Reentrant	
Parameters (In)	OpStatus	
	MemoryIdentifier	Identifier of the Memory Block (e.g. used by WriteDataByIdentifier service). Note: If it's not used this parameter shall be set to 0.
	MemoryAddress	Starting address of server memory in which data is to be copied. Note: If it's not used (e.g. if the data is compressed) this parameter shall be set to 0.
	MemorySize	Number of bytes in MemoryData
	MemoryData	Data to write (Points to the diagnostic buffer in DCM)
Parameters (Inout)	None	
Parameters (out)	ErrorCode	If the operation Dcm_WriteMemory returns value DCM_WRITE_FAILED, the Dcm module shall send a negative response with NRC code equal to the parameter ErrorCode parameter value.
Return Value	Dcm_ReturnWriteMemoryType	DCM_WRITE_OK: write was successful DCM_WRITE_FAILED: write was not successful DCM_WRITE_PENDING: write is not yet finished DCM_WRITE_FORCE_RCRRP: writing is pending, the Response pending transmission starts immediately
Description	The Dcm_WriteMemory callout is used to write memory data identified by the parameter memoryAddress and memorySize.	
Available via	Dcm_Externals.h	

6.3.4.3. Dcm_SetProgConditions

Function Name	Dcm_SetProgConditions	
Syntax	Std_ReturnType Dcm_SetProgConditions(Dcm_OpStatusType OpStatus, const Dcm_ProgConditionsType* ProgConditions)	
Service ID [Hex]	0x61	
Sync/Async	Asynchronous	
Reentrancy	Non Reentrant	
Parameters (In)	OpStatus	
	ProgConditions	Conditions on which the jump to bootloader has been requested
Parameters (Inout)	None	
Parameters (out)	None	
Return Value	Std_ReturnType	E_OK: Conditions have correctly been set E_NOT_OK: Conditions cannot be set DCM_E_PENDING: Conditions set is in progress, a further call to this API is needed to end the setting DCM_E_FORCE_RCRRP: Application requests the transmission of a response Response Pending (NRC 0x78)
Description	The Dcm_SetProgConditions callout allows the integrator to store relevant information prior to jumping to bootloader / jump due to ECUReset request. The context parameter are defined in Dcm_ProgConditionsType.	
Available via	Dcm_Externals.h	

6.3.4.4. Dcm_GetProgConditions

Function Name	Dcm_GetProgConditions	
Syntax	Dcm_EcuStartModeType Dcm_GetProgConditions(Dcm_ProgConditionsType * ProgConditions)	
Service ID [Hex]	0x62	
Sync/Async	Asynchronous	
Reentrancy	Non Reentrant	
Parameters (In)	None	
Parameters (Inout)	None	
Parameters (out)	ProgConditions	Conditions on which the jump from the bootloader has been requested
Return Value	Dcm_EcuStartModeType	DCM_COLD_START: The ECU starts normally DCM_WARM_START: The ECU starts from a bootloader jump
Description	The Dcm_GetProgConditions callout is called upon Dcm initialization and allows to determine if a response ($50 or $51) has to be sent. The context parameters are defined in Dcm_ProgConditionsType.	
Available via	Dcm_Externals.h	

6.3.4.5. Dcm_ProcessRequestAddFile

Function Name	Dcm_ProcessRequestAddFile	
Syntax	Std_ReturnType Dcm_ProcessRequestAddFile(Dcm_OpStatusType OpStatus, uint16 filePathAndNameLength, const uint8* filePathAndName, uint8 dataFormatIdentifier, uint64 fileSizeUncompressed, uint64 fileSizeCompressed, uint64* maxNumberOfBlockLength, Dcm_NegativeResponseCodeType* ErrorCode)	
Service ID [Hex]	0x72	
Sync/Async	Asynchronous	
Reentrancy	Non Reentrant	
Parameters (In)	OpStatus	
	filePathAndNameLength	Defines the length in bytes for the parameter filePathAndName.
	filePathAndName	Defines the file system location of the server where the file which shall be added, deleted, replaced or read from depending on the parameter modeOfOperation parameter.
	dataFormatIdentifier	This data-parameter is a byte value with each nibble encoded separately. The high nibble specifies the "compressionMethod", and the low nibble specifies the "encryptingMethod". The value 0x00 specifies that neither compressionMethod nor encryptingMethod is used. Values other than 0x00 are vehicle manufacturer specific.
	fileSizeUncompressed	Defines the size of the uncompressed file to be download in bytes.
	fileSizeCompressed	Defines the size of the compressed file to be downloaded in bytes.
Parameters (Inout)	maxNumberOfBlockLength	Max number of bytes to be included in each TransferData request excluding the SID and the blockSequenceCounter.
	ErrorCode	If the operation Dcm_ProcessRequestAddFile returns value E_NOT_OK, the DCM module shall send a negative response with NRC code equal to the parameter ErrorCode parameter value.
Parameters (out)	None	
Return Value	Std_ReturnType	E_OK: Request was successful E_NOT_OK: Request was not successful DCM_E_PENDING: Request is not yet finished DCM_E_FORCE_RCRRP: Application request the

		transmission of a response Response Pending (NRC 0x78)
Description	DCM shall call this function to start a RequestFileTransfer process with modeOfOperation equal to 0x01 (AddFile).	
Available via	Dcm_Externals.h	

6.3.4.6. Dcm_ProcessRequestDeleteFile

Function Name	Dcm_ProcessRequestDeleteFile	
Syntax	Std_ReturnType Dcm_ProcessRequestDeleteFile(Dcm_OpStatusType OpStatus, uint16 filePathAndNameLength, const uint8* filePathAndName, Dcm_NegativeResponseCodeType* ErrorCode)	
Service ID [Hex]	0x73	
Sync/Async	Asynchronous	
Reentrancy	Non Reentrant	
Parameters (In)	OpStatus	
	filePathAndName Length	Defines the length in bytes for the parameter filePathAndName.
	filePathAndName	Defines the file system location of the server where the file which shall be added, deleted, replaced or read from depending on the parameter modeOfOperation parameter.
Parameters (Inout)	None	
Parameters (out)	ErrorCode	If the operation Dcm_ProcessRequestDeleteFile returns value E_NOT_OK, the DCM module shall send a negative response with NRC code equal to the parameter ErrorCode parameter value.
Return Value	Std_ReturnType	E_OK: Request was successful E_NOT_OK: Request was not successful DCM_E_PENDING: Request is not yet finished DCM_E_FORCE_RCRRP: Application request the transmission of a response Response Pending (NRC 0x78)
Description	DCM shall call this function to start a RequestFileTransfer process with modeOfOperation equal to 0x02 (DeleteFile).	
Available via	Dcm_Externals.h	

6.3.4.7. Dcm_ProcessRequestReplaceFile

Function Name	Dcm_ProcessRequestReplaceFile	
Syntax	Std_ReturnType Dcm_ProcessRequestReplaceFile(Dcm_OpStatusType OpStatus, uint16 filePathAndNameLength, const uint8* filePathAndName, uint8 dataFormatIdentifier, uint64 fileSizeUncompressed, uint64 fileSizeCompressed, uint64* maxNumberOfBlockLength, Dcm_NegativeResponseCodeType* ErrorCode)	
Service ID [Hex]	0x74	
Sync/Async	Asynchronous	
Reentrancy	Non Reentrant	
Parameters (In)	OpStatus	
	filePathAndNameLength	Defines the length in bytes for the parameter filePathAndName.
	filePathAndName	Defines the file system location of the server where the file which shall be added, deleted, replaced or read from depending on the parameter modeOfOperation parameter.
	dataFormatIdentifier	This data-parameter is a one byte value with each nibble encoded separately. The high nibble specifies the "compressionMethod", and the low nibble specifies the "encryptingMethod". The value 0x00 specifies that neither compressionMethod nor encryptingMethod is used. Values other than 0x00 are vehicle manufacturer specific.
	fileSizeUncompressed	Defines the size of the uncompressed file to be download in bytes.
	fileSizeCompressed	Defines the size of the compressed file to be downloaded in bytes.
Parameters (Inout)	maxNumberOfBlockLength	Max number of bytes to be included in each TransferData request excluding the SID and the blockSequenceCounter.
	ErrorCode	If the operation Dcm_ProcessRequestAddFile returns value E_NOT_OK, the DCM module shall send a negative response with NRC code equal to the parameter ErrorCode parameter value.
Parameters (out)	None	
Return Value	Std_ReturnType	E_OK: Request was successful E_NOT_OK: Request was not successful

		DCM_E_PENDING: Request is not yet finished DCM_E_FORCE_RCRRP: Application request the transmission of a response Response Pending (NRC 0x78)
Description	DCM shall call this function to start a RequestFileTransfer process with modeOfOperation equal to 0x03 (ReplaceFile).	
Available via	Dcm_Externals.h	

6.3.4.8. Dcm_ProcessRequestReadFile

Function Name	Dcm_ProcessRequestReadFile	
Syntax	Std_ReturnType Dcm_ProcessRequestReadFile(Dcm_OpStatusType OpStatus, uint16 filePathAndNameLength, const uint8* filePathAndName, uint8 dataFormatIdentifier, uint64 fileSizeUncompressed, uint64 fileSizeCompressed, uint64* maxNumberOfBlockLength, Dcm_NegativeResponseCodeType* ErrorCode)	
Service ID [Hex]	0x75	
Sync/Async	Asynchronous	
Reentrancy	Non Reentrant	
Parameters (In)	OpStatus	
	filePathAndNameLength	Defines the length in bytes for the parameter filePathAndName.
	filePathAndName	Defines the file system location of the server where the file which shall be added, deleted, replaced or read from depending on the parameter modeOfOperation parameter.
	dataFormatIdentifier	This data-parameter is a one byte value with each nibble encoded separately. The high nibble specifies the "compressionMethod", and the low nibble specifies the "encryptingMethod". The value 0x00 specifies that neither compressionMethod nor encryptingMethod is used. Values other than 0x00 are vehicle manufacturer specific.
Parameters (Inout)	None	
Parameters (out)	fileSizeUncompressed	Defines the size of the uncompressed file to be uploaded in bytes.
	fileSizeCompressed	Defines the size of the compressed file to be uploaded in bytes.
	maxNumberOfBlockLength	Max number of bytes to be included in each TransferData request excluding the SID and the blockSequenceCounter.
	ErrorCode	If the operation Dcm_ProcessRequestAddFile returns value E_NOT_OK, the DCM module shall send a negative response with NRC code equal to the parameter ErrorCode parameter value.

Return Value	Std_ReturnType	E_OK: Request was successful E_NOT_OK: Request was not successful DCM_E_PENDING: Request is not yet finished DCM_E_FORCE_RCRRP: Application request the transmission of a response Response Pending (NRC 0x78)
Description	DCM shall call this function to start a RequestFileTransfer process with modeOfOperation equal to 0x04 (ReadFile).	
Available via	Dcm_Externals.h	

6.3.4.9. Dcm_ProcessRequestReadDir

Function Name	Dcm_ProcessRequestReadDir	
Syntax	Std_ReturnType Dcm_ProcessRequestReadDir(Dcm_OpStatusType OpStatus, uint16 filePathAndNameLength, const uint8* filePathAndName, uint64* dirInfoLength, uint64* maxNumberOfBlockLength, Dcm_NegativeResponseCodeType* ErrorCode)	
Service ID [Hex]	0x76	
Sync/Async	Asynchronous	
Reentrancy	Non Reentrant	
Parameters (In)	OpStatus	
	filePathAndNameLength	Defines the length in bytes for the parameter filePathAndName.
	filePathAndName	Defines the file system location of the server where the file which shall be added, deleted, replaced or read from depending on the parameter modeOfOperation parameter.
Parameters (Inout)	None	
Parameters (out)	dirInfoLength	Defines the size of directory information to be uploaded in bytes.
	maxNumberOfBlockLength	Max number of bytes to be included in each TransferData request excluding the SID and the blockSequenceCounter.
	ErrorCode	If the operation Dcm_ProcessRequestAddFile returns value E_NOT_OK, the DCM module shall send a negative response with NRC code equal to the parameter ErrorCode parameter value.
Return Value	Std_ReturnType	E_OK: Request was successful E_NOT_OK: Request was not successful DCM_E_PENDING: Request is not yet finished DCM_E_FORCE_RCRRP: Application request the transmission of a response Response Pending (NRC 0x78)
Description	DCM shall call this function to start a RequestFileTransfer process with modeOfOperation equal to 0x05 (ReadDir).	
Available via	Dcm_Externals.h	

6.3.4.10. Dcm_WriteFile

Function Name	Dcm_WriteFile	
Syntax	Std_ReturnType Dcm_WriteFile(Dcm_OpStatusType OpStatus, uint64 DataLength, uint8* Data, Dcm_NegativeResponseCodeType* ErrorCode)	
Service ID [Hex]	None	
Sync/Async	Asynchronous	
Reentrancy	Non Reentrant	
Parameters (In)	OpStatus	
	DataLength	Defines the length in bytes for the parameter Data. The value will not exceed, but might be less, compared to the value of maxNumberOfBlockLength return in Dcm_ProcessRequestFileTransfer.
	Data	Pointer to the data to be written.
Parameters (Inout)	None	
Parameters (out)	ErrorCode	If the operation Dcm_WriteFile returns value E_NOT_OK, the DCM module shall send a negative response with NRC code equal to the parameter ErrorCode parameter value.
Return Value	Std_ReturnType	E_OK: Request was successful E_NOT_OK: Request was not successful DCM_E_PENDING: Request is not yet finished DCM_E_FORCE_RCRRP: Application request the transmission of a response Response Pending (NRC 0x78)
Description	DCM shall call this function when data is received using UDS service TransferData if there's an ongoing RequestFileTransfer process started with 0x01 (AddFile) or 0x03 (ReplaceFile).	
Available via	Dcm_Externals.h	

6.3.4.11. Dcm_ReadFileOrDir

Function Name	Dcm_ReadFileOrDir	
Syntax	Std_ReturnType Dcm_ReadFileOrDir(Dcm_OpStatusType OpStatus, uint64* DataLength, uint8* Data, Dcm_NegativeResponseCodeType* ErrorCode)	
Service ID [Hex]	0x78	
Sync/Async	Asynchronous	
Reentrancy	Non Reentrant	
Parameters (In)	OpStatus	
	Data	Pointer to the data to be written.
Parameters (Inout)	DataLength	As in, the parameter defines the maximum block length to be used, i.e. the value of maxNumberOfBlockLength sent to the client in the response of RequestFileTransfer. As out, the parameter defines the actual length in bytes for the parameter Data. The value shall not exceed, but might be less, the value provided as in parameter.
Parameters (out):	ErrorCode	If the operation Dcm_ReadFileOrDir returns value E_NOT_OK, the DCM module shall send a negative response with NRC code equal to the parameter ErrorCode parameter value.
Return Value	Std_ReturnType	E_OK: Request was successful E_NOT_OK: Request was not successful DCM_E_PENDING: Request is not yet finished DCM_E_FORCE_RCRRP: Application request the transmission of a response Response Pending (NRC 0x78)
Description	DCM shall call this function when data shall be sent as a response to UDS service TransferData if there's an ongoing RequestFileTransfer process started with 0x04 (ReadFile) or 0x05 (ReadDir).	
Available via	Dcm_Externals.h	

6.3.5. Scheduled functions

6.3.5.1. Dcm_MainFunction

Function Name	Dcm_MainFunction
Syntax	void Dcm_MainFunction(void)
Service ID [Hex]	0x25
Sync/Async	None
Reentrancy	None
Parameters (In)	None
Parameters (Inout)	None
Parameters (out)	None
Return Value	void
Description	This service is used for processing the tasks of the main loop.
Available via	SchM_Dcm.h

7. Generator

7.1. Generator Option

Options	Description
-G,--Generation	Symbolic parameters to be used for fore generation (skip validation).
-H,--Help	Display this help message.
-I,--Input <I>	ECU description file path of the module for which generation tool need to run.
-L,--Log	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	Symbolic parameters to be used for invoking validation checks.

7.2 Generator Error Message

ERR053001: Unexpected Error Found. Please contact AUTRON AUTOSAR Support System.

This is an Unexpected Error. On the occurrence of this error contact AUTRON AUTOSAR Support System.

ERR053002: Unexpected Error Found. This error may be due to the incorrect configuration of the element(s) <Parameter Name/ Container Name>. If the error is not resolved, then please contact AUTRON AUTOSAR Support System.

This error occurs, if the structure fields that are to be generated in the C Source file are empty. Contact AUTRON AUTOSAR Support System.

ERR053003: 'Component Name' Component is not present in the input file(s).

This error occurs, if any of the component Dcm, PduR, Dem, NvM, ComM, Csm and KeyM (are) not present in any of the input ECU Configuration Description File(s).

ERR053004: The reference path is empty for the parameter 'parameter name' in the container 'container name', having short name 'short name'.

This error occurs, if no reference path is provided for any of the below mentioned parameters.

Container name	Parameter name
DcmDspDid	DcmDspDidInfoRef
DcmDslProtocolRow	DcmDemClientRef
	DcmDslProtocolRxBufferRef
	DcmDslProtocolSIDTable
	DcmDslProtocolTxBufferRef
DcmDslProtocolRx	DcmDslProtocolRxPduRef
DcmDslProtocolTx	DcmDslProtocolTxPduRef
DcmDspDidSignal	DcmDspDidDataRef
DcmDspDidRange	DcmDspDidRangeInfoRef
DcmDspDidDataSupportInfo	DcmDspDidDataSupportInfoRef
DcmModeRule	DcmArgumentRef
DcmDspComControlAllChannel	DcmDspAllComMChannelRef
DcmDspComControlSpecificChannel	DcmDspSpecificComMChannelRef

DcmDspComControlSubNode	DcmDspComControlSubNodeComMChannelRef
DcmDspPidDataSupportInfo	DcmDspPidDataSupportInfoRef
DcmDspAuthenticationConnection	DcmDspAuthenticationConnectionMainConnectionRef
	DcmDspAuthenticationCertificatePublicKeyStoreJobRef
	DcmDspAuthenticationClientCertificateRef
	DcmDspAuthenticationClientChallengeSignJobRef
	DcmDspAuthenticationConnectionCertificateRef
	DcmDspAuthenticationPublicKeyElementRef
	DcmDspAuthenticationRandomJobRef
	DcmDspAuthenticationRoleElementRef
	DcmDspAuthenticationVerifyProofOfOwnerShipClientJobRef
	DcmDspAuthenticationWhiteListServicesElementRef

ERR053005: The parameter 'Parameter Name' in the container 'Container Name' should be configured.

This error occurs, if the parameter 'Parameter Name' in the container 'Container Name' is not configured.

Container name	Parameter name
DcmGeneral	DcmDevErrorDetect
	DcmRespondAllRequest
	DcmTaskTime
	DcmVersionInfoApi
DcmDslBuffer	DcmDslBufferSize
DcmDslDiagResp	DcmDslDiagRespMaxNumRespPend
	DcmDslDiagRespOnSecondDeclinedRequest
DcmDslProtocolRow	DcmDslProtocolPriority
	DcmDslProtocolRowUsed
	DcmDslProtocolType
	DcmSendRespPendOnRestart
DcmDslMainConnection	DcmDslProtocolRxConnectionId
DcmDslProtocolRx	DcmDslProtocolRxAddrType
	DcmDslProtocolRxPduId
DcmDslProtocolTx	DcmDslTxConfirmationPduId
DcmDsdServiceTable	DcmDsdSidTabId
DcmDsdService	DcmDsdServiceUsed
	DcmDsdSidTabServiceId
	DcmDsdSidTabSubfuncAvail
DcmDsp	DcmDspDataDefaultEndianness
DcmDspReadMemoryRangeInfo	DcmDspReadMemoryRangeHigh
	DcmDspReadMemoryRangeLow
DcmDspWriteMemoryRangeInfo	DcmDspWriteMemoryRangeHigh
	DcmDspWriteMemoryRangeLow
DcmDspReadMemoryRangeByLabelInfo	DcmDspReadMemoryRangeByLabelHigh
	DcmDspReadMemoryRangeByLabelLow
DcmDspWriteMemoryRangeByLabelInfo	DcmDspWriteMemoryRangeByLabelHigh
	DcmDspWriteMemoryRangeByLabelLow
DcmDspSessionRow	DcmDspSessionForBoot

	DcmDspSessionLevel
	DcmDspSessionP2ServerMax
	DcmDspSessionP2StarServerMax
DcmPageBufferCfg	DcmPagedBufferEnabled
DcmDspData	DcmDspDataType
	DcmDspDataUsePort
DcmDspPid	DcmDspPidIdentifier
	DcmDspPidService
	DcmDspPidSize
	DcmDspPidUsed
DcmDspDidRange	DcmDspDidRangeHasGaps
	DcmDspDidRangeIdentifierLowerLimit
	DcmDspDidRangeIdentifierUpperLimit
	DcmDspDidRangeMaxDataLength
	DcmDspDidRangeUsePort
DcmDspPidData	DcmDspPidByteOffset
DcmDspDid	DcmDspDidIdentifier
	DcmDspDidUsed
	DcmDspDidUsePort
DcmDspDidSignal	DcmDspDidByteOffset
DcmDspSecurity	DcmDspSecurityMaxAttemptCounterReadoutTime
DcmDspSecurityRow	DcmDspSecurityDelayTime
	DcmDspSecurityDelayTimeOnBoot
	DcmDspSecurityKeySize
	DcmDspSecurityLevel
	DcmDspSecuritySeedSize
	DcmDspSecurityUsePort
	DcmDspSecurityAttemptCounterEnabled
DcmDsdSubService	DcmDsdSubServiceId
	DcmDsdSubServiceUsed
DcmDspRoe	DcmDspRoeInterMessageTime
DcmDspRoeEvent	DcmDspRoeEventId
	DcmDspRoeInitialEventStatus
DcmDspRoeEventWindowTime	DcmDspRoeEventWindowTime
DcmDspDidDataSupportInfo	DcmDspDidDataSupportInfoBit
DcmDspDidSupportInfo	DcmDspDidSupportInfoLen
	DcmDspDidSupportInfoPos
DcmDspDidInfo	DcmDspDidDynamicallyDefined
DcmDspDidControl	DcmDspDidFreezeCurrentState
	DcmDspDidResetToDefault
	DcmDspDidShortTermAdjustment
	DcmDspDidControlMask
DcmDspDidControlEnableMask	DcmDspDidControlMaskBitPosition
DcmModeCondition	DcmConditionType
DcmDspComControlAllChannel	DcmDspComControlAllChannelUsed
DcmDspComControlSpecificChannel	DcmDspSubnetNumber
DcmDspComControlSubNode	DcmDspComControlSubNodeId
DcmDspEcuResetRow	DcmDspEcuResetId

	DcmResponseToEcuReset
DcmDspVehInfo	DcmDspVehInfoInfoType
DcmDspVehInfoData	DcmDspVehInfoDataOrder
	DcmDspVehInfoDataSize
	DcmDspVehInfoDataUsePort
DcmDspRequestFileTransfer	DcmRequestFileTransferFileSizeOrDirInfoParameterLength
	DcmRequestFileTransferLengthFormatIdentifier
	DcmRequestFileTransferUsePort
DcmDspReadDTCInformationUserDefinedFaultMemory	DcmDspReadDTCInformationUserDefinedFaultMemoryId
DcmDspRequestControl	DcmDspRequestControlInBufferSize
	DcmDspRequestControlOutBufferSize
	DcmDspRequestControlTestId
DcmDspMemoryTransfer	DcmDspMemoryTransfer
DcmDspAddressAndLengthFormatIdentifier	DcmDspSupportedAddressAndLengthFormatIdentifier
DcmDspPidDataSupportInfo	DcmDspPidDataSupportInfoBit
DcmDspPidService01	DcmDspPidDataType
	DcmDspPidDataUsePort
DcmDspAuthentication	DcmDspAuthenticationDeauthenticatedRole
	DcmDspAuthenticationRoleSize
	DcmDspAuthenticationWhiteListServicesMaxSize

ERR053006: The value configured for the parameter 'Parameter Name' in the container 'Container Name' should follow the pattern: <Pattern>

This error occurs, when the parameter 'Parameter Name' is not configured as per the pattern.

Container name	Parameter name	Pattern
DcmGeneral	DcmHeaderFileInclusion	[a-zA-Z0-9_]([a-zA-Z0-9._])*
DcmDspReadMemoryRangeByLabelInfo	DcmDspReadMemoryRangeByLabelHigh	[a-zA-Z0-9_]([a-zA-Z0-9._])*
	DcmDspReadMemoryRangeByLabelLow	
DcmDspWriteMemoryRangeByLabelInfo	DcmDspReadMemoryRangeByLabelHigh	[a-zA-Z0-9_]([a-zA-Z0-9._])*
	DcmDspWriteMemoryRangeByLabelLow	
DcmDspData	DcmDspDataConditionCheckReadFnc	[a-zA-Z0-9_]([a-zA-Z0-9._])*
	DcmDspDataEcuSignal	
	DcmDspDataFreezeCurrentStateFnc	
	DcmDspDataGetScalingInfoFnc	
	DcmDspDataReadDataLengthFnc	
	DcmDspDataReadEcuSignal	
	DcmDspDataReadFnc	
	DcmDspDataResetToDefaultFnc	
	DcmDspDataReturnControlToEcuFnc	
	DcmDspDataShortTermAdjustmentFnc	
	DcmDspDataWriteFnc	
DcmDspRequestRoutineResults	DcmDspRequestRoutineResultsConfirmationFnc	[a-zA-Z0-9_]([a-zA-Z0-9._])*
	DcmDspRequestRoutineResultsFnc	
DcmDspStopRoutine	DcmDspStopRoutineConfirmationFnc	[a-zA-Z0-9_]([a-zA-Z0-9._])*
	DcmDspStopRoutineFnc	

DcmDspStartRoutine	DcmDspStartRoutineConfirmationFnc	[a-zA-Z0-9_]([a-zA-Z0-9._])*
	DcmDspStartRoutineFnc	
DcmDspPidService01	DcmDspPidDataReadFnc	[a-zA-Z0-9_]([a-zA-Z0-9._])*
DcmDspSecurityRow	DcmDspSecurityGetSeedFnc	[a-zA-Z0-9_]([a-zA-Z0-9._])*
	DcmDspSecurityCompareKeyFnc	

ERR053017: Value of the parameter <DcmDspMaxPeriodicDidScheduler> in the container <DcmDspPeriodicTransmission> should be greater than the value of the parameter <DcmDspMaxPeriodicDidToRead> in the container <DcmDsp>.'

This error occurs, if value of the parameter DcmDspMaxPeriodicDidScheduler is less than DcmDspMaxPeriodicDidToRead.

ERR053022: Value of the parameter <DcmTaskTime> in the container <DcmGeneral> should not be configured as <0>.

This error occurs, if value of the parameter DcmTaskTime == 0

ERR053051: The reference parameter <Parameter Name> should have a corresponding match in PduR module.

This error occurs, if value of the parameter 'DcmDslPeriodicTxPduRef' is not having a corresponding match in PduR module.

Container name	Parameter name
DcmDslProtocolTx	DcmDslProtocolTxPduRef
DcmDslPeriodicConnection	DcmDslPeriodicTxPduRef
DcmDslResponseOnEvent	DcmDslRoeTxPduRef

ERR053052: As value of parameter <DcmDsdSidTabServiceId> is configured as <16 or 17 or 39 or 62 or 133 or 44 or 49 or 25 or 134>, then value of the parameter <DcmDsdSidTabSubfuncAvail> should be configured as <true/1> in the container <DcmDsdService>.

This error occurs, if, the value of parameter 'DcmDsdSidTabServiceId' is configured as <16 or 17 or 39 or 62 or 133 or 44 or 49 or 25 or 134>, and the value of the parameter 'DcmDsdSidTabSubfuncAvail' is not configured as <true/1> in the container 'DcmDsdService'.

ERR053053: The value of parameters <DcmBswModeRef> and <DcmSwcModeRef> and <DcmSwcSRDataElementRef> and <DcmModeConditionCertificateCompareElementRef> should not be configured at a time in the container <DcmDsdModeCondition>..

This error occurs, if the value of parameters 'DcmBswModeRef' and 'DcmSwcModeRef' and 'DcmSwcSRDataElementRef' and 'DcmModeConditionCertificateCompareElementRef' is configured at a time in the container 'DcmDsdModeCondition'

ERR053054: The value of parameter <Parameter Name> should be unique for each configured <Container Name> container.

This error occurs, if the value of parameter 'Parameter Name' is not unique for each configured 'Container Name' container.

Container name	Parameter name
DcmDslProtocolRow	DcmDslProtocolType
DcmDslProtocolTx	DcmDslProtocolTxPduRef
DcmDslPeriodicConnection	DcmDslPeriodicTxPduRef
DcmDsdServiceTable	DcmDsdSidTabId
DcmDsdService	DcmDsdSidTabServiceId
DcmDspDid	DcmDspDidIdentifier
DcmDspSecurityRow	DcmDspSecurityLevel
DcmDspSessionRow	DcmDspSessionLevel
DcmDspPid	DcmDspPidIdentifier
DcmDspAuthenticationConnection	DcmDspAuthenticationConnectionMainConnectionRef

ERR053055: The value of parameter <DcmLogicalOperator> should be configured in the container <DcmModeRule> when ArgumentRef is configured more than one.

This error occurs, if Value of the parameter 'DcmLogicalOperator' in the container 'DcmModeRule' is not configured, if the parameter 'DcmArgumentRef' is more than <1>.

ERR053056: As ServiceId is configured as <9> and <DcmDspVehInfoInfoType> is configured as <8 or 11>, the function name configured for parameter <DcmDspVehInfoDataReadFnc> in container <DcmDspVehInfoData> should point to correct function provided by DEM and parameter <DcmDspVehInfoDataUsePort> should be configured as <false>.

This error occurs, if the value of parameter 'DcmDspVehInfoDataReadFnc' is configured as 'Dem API(s)' and the value of the parameter 'DcmDspVehInfoUsePort' is configured as <false/0>, if the value of the parameter 'DcmDspVehInfoInfoType' is configured as <8 or 11>.

ERR053058: As the parameter <DcmDslProtocolType> is configured as <DCM_OBD_ON_CAN>, value of the parameter <DcmDsdSidTabServiceId> in the container <DcmDsdService> should be configured as one of the following <1,2,3,4,6,7,8,9,10>.

This error occurs, if the value of parameter 'DcmDslProtocolType' is configured as <DCM_OBD_ON_CAN> in the container 'DcmDslProtocolRow', then the value of the parameter 'DcmDsdSidTabServiceId' is not configured as one of the following <1 or 2 or 3 or 4 or 6 or 7 or 8 or 9 or 10>.

ERR053059: Value <0 or 32 or 64 or 96 or 128 or 160 or 192 or 224> configured for parameter <Parameter Name> in container <Container Name> is invalid.

This error occurs, if the parameter 'Parameter Name' is configured as <0 or 32 or 64 or 96 or 128 or 160 or 192 or 224 in the container 'Container Name'.

Container name	Parameter name
DcmDspVehInfo	DcmDspVehInfoInfoType
DcmDspRequestControl	DcmDspRequestControlTestId

ERR053061: Since the value of the parameter <DcmDsdSidTabServiceId> is configured as <54>, At least one instance of the parameter <DcmDsdSidTabServiceId> in the container <DcmDsdService> should be configured as <52> and <53>.

This error occurs, if at least one instance of the parameter 'DcmDsdSidTabServiceId' in the container 'DcmDsdService' is not configured as <52> and <53>, since the value of the parameter 'DcmDsdSidTabServiceId' is configured as <54>.

ERR053062: Since the value of the parameter <DcmDsdSidTabServiceId> is configured as <55>, the value of the parameter <DcmDsdSidTabServiceId> should be configured as <54>.

This error occurs, if the value of the parameter 'DcmDsdSidTabServiceId' is not configured as <54>, since the value of the parameter ' DcmDsdSidTabServiceId ' is configured as <55>.

ERR053063: The value of parameter <Parameter Name> should be multiple of the configured value for parameter <DcmTaskTime>.

This error occurs, if the value of the parameter 'Parameter Name' is not multiple of the value of ‘DcmTaskTime’.

Container name	Parameter name
DcmDspSecurityRow	DcmDspSecurityDelayTime
	DcmDspSecurityDelayTimeOnBoot
DcmDspSessionRow	DcmDspSessionP2ServerMax
	DcmDspSessionP2StarServerMax
DcmDspSecurity	DcmDspSecurityMaxAttemptCounterReadoutTime

ERR053064: As parameter <DcmDsdSidTabServiceId> in container <DcmDsdService> is configured as <Value>, container <Container Name> should be configured.

This error occurs, if the value of the parameter 'DcmDsdSidTabServiceId' is configured as <Value>, then the container 'Container Name' is not configured.

Container name	Parameter name
DcmDspPid	1 or 2
DcmDspRequestControl	8
DcmDspVehInfo	9
DcmDspDid	34 or 36 or 42 or 44 or 46 or 47
DcmDspReadMemoryRangeInfo	35
DcmDspComControl	40
DcmDspAuthentication	41
DcmDspRoutine	49
DcmDspWriteMemoryRangeInfo	61
DcmDslResponseOnEvent	134

ERR053065: The value of parameter <DcmDsdSidTabServiceId> should be <Value> in the container <DcmDsdService>.

This error occurs, if the value of the parameter 'DcmDsdSidTabServiceId' is not configured as <Value> in the container 'DcmDsdService'.

The <Value> is depend on the 'DcmStandardSupport' parameter.

In case 'DCM_ISO14229_SUPPORT', the supported service identifier is included 1, 2, 3, 4, 6, 7, 8, 9, 10, 16, 17, 20, 25, 34, 35, 36, 39, 40, 41, 42, 44, 46, 47, 49, 52, 53, 54, 55, 56, 61, 62, 133, 134 and 135.

In case 'DCM_ES95486_SUPPORT', the supported service identifier is extended with one more identifier as 32.

ERR053066: OBD services <DCM_OBD_ON_CAN/DCM_OBD_ON_FLEXRAY/DCM_OBD_ON_IP> should always have higher priority than other UDS services.

This error occurs, if the OBD Services <DCM_OBD_ON_CAN/DCM_OBD_ON_FLEXRAY/DCM_OBD_ON_IP> are configured a lower priority than other UDS services.

ERR053068: The value of the parameter <DcmDslProtocolRxBufferRef> and value of the parameter <DcmDslProtocolTxBufferRef> in the container <DcmDslProtocolRow> should always be unique.

This error occurs, if the Value of the parameter 'DcmDslProtocolRxBufferRef' and value of the parameter ' DcmDslProtocolTxBufferRef' in the container 'DcmDslProtocolRow' are same.

ERR053070: The value(s) configured for the parameter <DcmDslProtocolRxPduId> in the container <DcmDslProtocolRx> should be sequential.

This error occurs, if the value(s) configured for the parameter 'DcmDslProtocolRxPduId' in the Container 'DcmDslProtocolRx' are not sequential.

ERR053075: The value configured for the parameter <DcmDspSessionP2StarServerMax> should be greater than 0.01s (10ms) and should be multiple of 10.

This error occurs, if the value configured for the parameter 'DcmDspSessionP2StarServerMax' is less than 0.01s (10 ms) or is not a multiple of 10.

ERR053076: At least one instance of the container <DcmDslMainConnection> should be configured in the container <DcmDslConnection>.

This error occurs, if at least one instance of the container ‘DcmDslMainConnection’ is not configured in the container DcmDslConnection.

ERR053206: The position of the current DID signal overlap the previous DID signals.

ERR053207: The value of the parameter <DcmDspRoutineSignalPos> should address always a byte boundary for all signal types.

Restrictions on bit-wise placement, DcmDspRoutineSignalPos parameter shall address always a byte boundary, include both DcmDspRoutineSignalType is set to BOOLEAN or UINT8.

ERR053210: The <DcmDspRoutineSignalType> with VARIABLE_LENGTH is only valid for the last signal.

ERR053213: Value of the parameter <Parameter Name 1> should be less than the value of the parameter <Parameter Name 2> in the container <Container Name>.

Container name	Parameter name 1	Parameter name 2
DcmDspReadMemoryRangeInfo	DcmDspReadMemoryRangeLow	DcmDspReadMemoryRangeHigh
DcmDspWriteMemoryRangeInfo	DcmDspWriteMemoryRangeLow	DcmDspWriteMemoryRangeHigh

ERR053214: The configured ranges of memory address (<Parameter Name 1> and <Parameter Name 2>) shall not overlap each other.

Container name	Parameter name 1	Parameter name 2
DcmDspReadMemoryRangeInfo	DcmDspReadMemoryRangeLow	DcmDspReadMemoryRangeHigh
DcmDspWriteMemoryRangeInfo	DcmDspWriteMemoryRangeLow	DcmDspWriteMemoryRangeHigh

ERR053215: <DcmDspDataByteSize> shall be present if <DcmDspDataType> is set to: UINT8_N, SINT8_N, UINT16_N, SINT16_N, UINT32_N, SINT32_N or UINT8_DYN.

ERR053216: <Parameter Name 1> shall be a multiple of 2 if the value is greater than 2 and <Parameter Name 2> is UINT16_N or SINT16_N.

Container name	Parameter name 1	Parameter name 2
DcmDspData	DcmDspDataByteSize	DcmDspDataType
DcmDspPidData	DcmDspPidDataByteSize	DcmDspPidDataType

ERR053217: <Parameter Name 1> shall be a multiple of 4 if the value is greater than 4 and <Parameter Name 2> is UINT32_N or SINT32_N.

Container name	Parameter name 1	Parameter name 2
DcmDspData	DcmDspDataByteSize	DcmDspDataType
DcmDspPidData	DcmDspPidDataByteSize	DcmDspPidDataType

ERR053218: As parameter <DcmDsdSidTabServiceId> in container <DcmDsdService> is configured as <Value 1>, parameter <DcmDsdSubServiceId> in container <DcmDsdSubService> should be configured as <Value 2> with short name <Short Name>.

ERR053219: The presence of a <DcmDsdService> with <DcmDsdSidTabServiceId> set to 0x29, requires a configured <DcmDspAuthenticationConnection> per configured connection <DcmDslConnection>.

ERR053220: As parameter <Parameter Name 1> is configured, parameter <Parameter Name 2> shall also be configured.

Container name	Parameter name 1	Parameter name 2
DcmDsp Authentication	DcmDspAuthenticationGeneralNRCModeRuleRef	DcmDspAuthenticationGeneralNRC
	DcmDspAuthenticationPersistStateModeRuleRef	DcmDspAuthenticationPersitStateNvMBlockIdRef
	DcmDspAuthenticationWhiteListDIDElementRef	DcmDspAuthenticationWhiteListDIDMaxSize
	DcmDspAuthenticationWhiteListMemorySelectionElementRef	DcmDspAuthenticationWhiteListMemorySelectionMaxSize
	DcmDspAuthenticationWhiteListRIDElementRef	DcmDspAuthenticationWhiteListRIDMaxSize

ERR053221: The value of the parameter <Parameter Name> should fit in the amount of bytes given by <DcmDspAuthenticationRoleSize>.

ERR053222: The values DCM_EQUALS, DCM_EQUALS_NOT shall used with a Mode reference (<DcmBswModeRef> or <DcmSwcModeRef>).

ERR053223: The <DcmModeConditionCertificateCompareElementRef> is only allowed, if the parent <DcmModeRule> is referenced from a <DcmDspAuthenticationConnection>.

ERR053224: Require asynchronous client challenge signing (CsmSignatureGenerateProcessing set to CSM_ASYNCHRONOUS and CsmPrimitive with an aggregated CsmSignatureGenerate)

ERR053225: Required configuration for bidirectional authentication (DcmDspAuthenticationECUCertificateRef is required)

ERR053226: DcmDslProtocolTransType (Type2) shall be only present if the Dcm_ProtocolType is configured to DCM_ROE_ON_CAN or DCM_ROE_ON_FLEXRAY or DCM_ROE_ON_IP.

ERR053227: DcmDspRoeInitialEventStatus is set to DCM_ROE_STOPPED, DcmDspRoeDTCStatusMask must be present.

ERR053229: As value of <DcmDspSessionLevel> is <Session Level>, short name of <DcmDspSessionRow> should be <Short Name>.

ERR053230: Short name of <DcmDspData> and <DcmDspPidData> shall be distinct.

ERR053231: Parameter <Parameter Name 2> shall only be present if parameter <Parameter Name 1> is set to <Value>.

ERR053232: Parameter <Parameter Name 2> is only required if parameter <Parameter Name 1> is set to <Value>.

ERR053233: The "DCM_" prefix is mandatory for all short names of <DcmDspSessionRow>.

ERR053234: DcmDslROEConnectionRef must be configured if UDS Service ResponseOnEvent (0x86) available.

ERR053235: <DcmDspData> elements used in service 0x2E shall not have <DcmDspDataUsePort> set to USE_ECU_SIGNAL.

ERR053236: <DcmDspDidControlMaskSize> larger than 4 shall be only allowed if <DcmDspDataUsePort> is set to USE_DATA_ASYNCH_CLIENT_SERVER, USE_DATA_ASYNCH_CLIENT_SERVER_ERROR or USE_DATA_SYNCH_CLIENT_SERVER.

ERR053237: If a DID has a configured <DcmDspDidUsePort> = USE_DATA_ELEMENT_SPECIFIC_INTERFACES, the possible values of <DcmDspDataUsePort> are limited to non S/R interfaces.

ERR053238: If a DID has a configured <DcmDspDidControl>, the possible values of <DcmDspDidUsePort> are limited to atomic S/R interface and USE_DATA_ELEMENT_SPECIFIC_INTERFACES.

ERR053239: If a <DcmDspDid> is configured to have an atomic S/R interface, all DcmDspDataElements referenced by this DID shall be referenced only from this DID.

ERR053240: Any defined range shall only reference <DcmDspDidInfo> via <DcmDspDidRangeInfoRef>, having set <DcmDspDidDynamicallyDefined> = False.

ERR053241: If a <DcmDspDid> is used in service 0x2F and is configured to have an atomic S/R interface, the <DcmDspDidControlMask> shall be set to DCM_CONTROLMASK_EXTERNAL and the parameter <DcmDspDidControlMaskSize> shall be present with a value greater than zero.

ERR053242: <DcmDspDataType> shall be UINT8_N, in case <DcmDspDataUsePort> is equal to USE_BLOCK_ID.

ERR053243: One container <DcmDspEcuResetRow> shall be configured for each <DcmDsdSubService> (<DcmDspEcuResetId> matching to the <DcmDsdSubServiceId>) configured for the UDS service ECUReset (0x11).

ERR053244: If <DcmDspSecurityNumAttDelay> is not configured, the <DcmDspSecurityAttemptCounterEnabled> on the same <DcmDspSecurityRow> shall be set to FALSE.

ERR053245: <DcmDspDid> container shall not include the same <DcmDspDidRef> parameters more than once.

ERR053246: Only the last signal (<DcmDspDidSignal>) of a DID can have variable data length (<DcmDspDataType> is set to UINT8_DYN).

ERR053247: In case <DcmDspDataUsePort> is set to {USE_DATA_SENDER_RECEIVER, USE_DATA_SENDER_RECEIVER_AS_SERVICE, USE_BLOCK_ID, USE_ECU_SIGNAL}, the usage of variable data length shall be not allowed.

ERR053248: In case the responsibility is on provider side (<DcmDspVehInfoNODIProvResp> is set to TRUE), only one <DcmDspVehInfoData> container shall be allowed.

ERR053249: In case <DcmDspVehInfoDataUsePort> is set to FALSE and <DcmDspVehInfoDataReadFnc> is set to either Dem_DcmGetInfoTypeValue08 or Dem_DcmGetInfoTypeValue0B then <DcmDspVehInfoNODIProvResp> shall be set to TRUE.

ERR053250: In case DcmDspRoeEventProperties is configured, DcmDspRoeOnChangeOfDataIdentifier or DcmDspRoeOnDTCStatusChange must be configured.

ERR053251: At most one DcmDspRoeEvent container is allowed to define a DcmDspRoeEventProperties container with the choice DcmDspRoeOnDTCStatusChange.

ERR053252 : DcmDspCommonAuthorizationRef must matched with DcmDspCommonAuthorization.

ERR053253: In case <DcmDspData> is configured, the instance of this container must be referred by least one parameter <DcmDspDidDataRef> in container <DcmDspDidSignal>.

ERR053255: In case the UDS Service Read Data By Periodic Identifier (0x2A) is configured, At least one instance of the container <DcmDslPeriodicTransmission> must be configured.

ERR053256: In configuration DcmDsdSidTabServiceId <Value>. If parameter DcmDsdServiceUsed set to FALSE, DcmDsdSidTabSubfuncAvail must be set FALSE.

< **Value** >: Configuration value of the parameter DcmDsdSidTabServiceId

ERR053257: In the container DcmDspData <NAME>. When using operation ShortTermAdjustment. The parameter DcmDspDataType should be configured as UINT8_DYN or UINT8_N.

< **NAME** >: Configuration short name of the container DcmDspData

ERR053258: If SecurityAccess(0x27) service/Authentication(0x29) service is used with Crypto R44, the container DcmDspCsmInfoRow must be configured correctly.

ERR053259: The configured white list contain invalid data : <Parameter Name>

<Parameter Name>: invalid data in DcmDspAuthenticationWLServicesWithoutSubfunction or DcmDspAuthenticationWLServicesWithSubfucntion

ERR053260: <Parameter Name> should divisible by <Value>

<Parameter Name>: Configuration of DcmDspAuthenticationWLDID or DcmDspAuthenticationWLRID

ERR053261: The maximum number of container DcmSwcDataElementArrayElement should not exceeded 255.

ERR053262: DcmSwcDataElementPrimitiveValue and DcmSwcDataElementArrayElementValue only support the maximum type is UINT32.

ERR053263: When DcmSwcSRDataElementRef configured and DcmSwcDataElementArray chose. DcmDspDataType and DcmDspPidDataType of container which parameter DcmSwcSRDataElementRef reference must be array type (UINT8_N or UINT16_N or UINT32_N).

ERR053264: When DcmSwcSRDataElementRef configured and DcmSwcDataElementPrimitive chose. DcmDspDataType and DcmDspPidDataType of container which parameter DcmSwcSRDataElementRef reference must be Primitive type (BOOLEAN or UINT8 or UINT16 or UINT32).

ERR053265: <DcmDspPidDataByteSize> shall be present if <DcmDspPidDataType> is set to: UINT8_N, SINT8_N, UINT16_N, SINT16_N, UINT32_N, SINT32_N or UINT8_DYN.

ERR053266: When DcmSwcSRDataElementRef refer to a DcmDspDidData, there is allow only 1 DcmDspDidDataRef can be reference to that container.

ERR053267: When using DcmSwcSRDataElementRef, DcmDspDataType and DcmDspPidDataType of container which parameter DcmSwcSRDataElementRef reference must be boolean or unsigned.

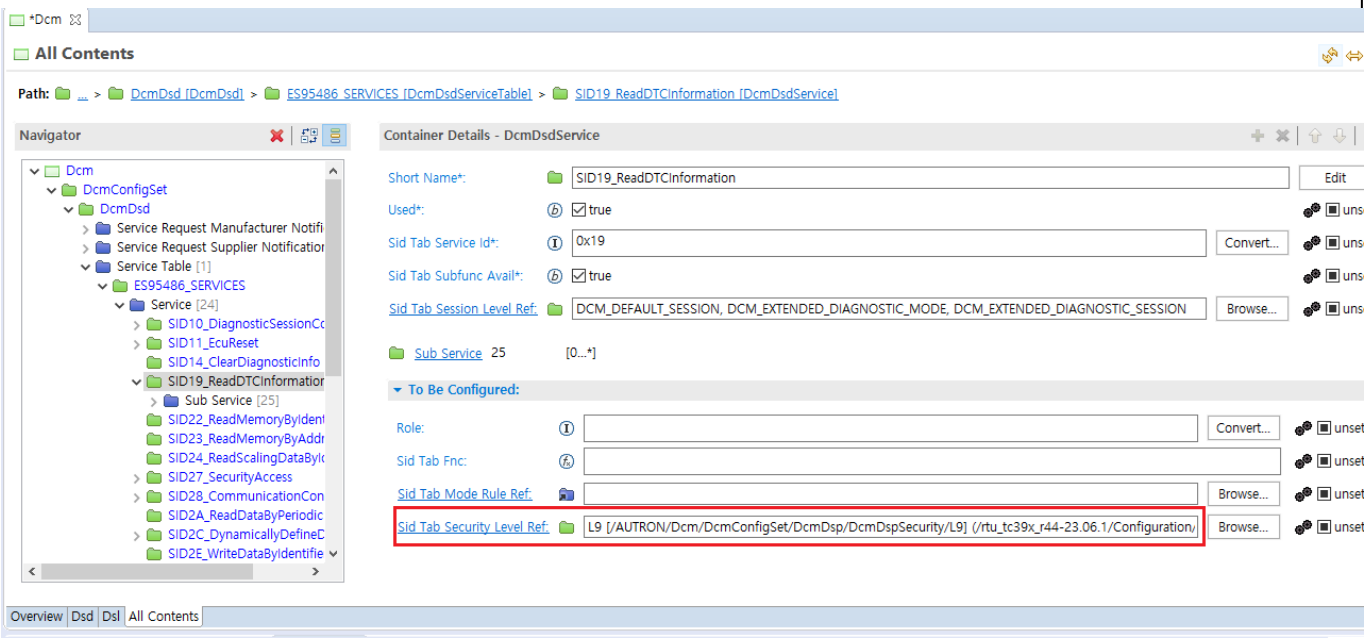
ERR053268: When DcmSwcDataElementArray is configured, at least 1 container DcmSwcDataElementArrayElement should be configured.

8 Appendix

8.1. Security level configuration when using diagnostic service

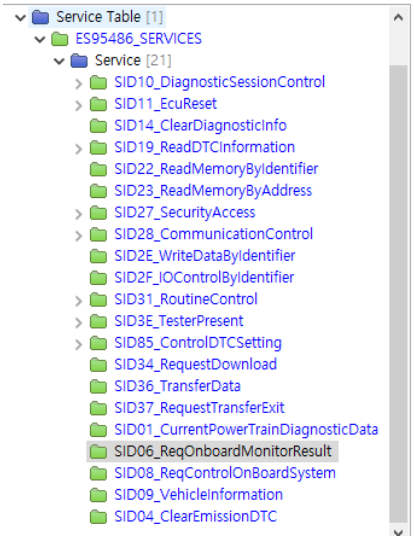
When using the diagnostic service, the user must decide and set the required security level other than the SWP default setting, and the related guide is as follows.

[Add Security Level for Service]



8.2. J1979-2/J1979-3

When using J1979-2/J1979-3 function, OBD-related services should be configurated in DcmDsdServiceTable. (0x01, 0x06, 0x08, 0x09)



Index	Short Name	Role	Used	Sid Tab Fnc	Sid Tab Servic...	Sid Tab Subfu...
0	SID10_DiagnosticSessionCon...		true		0x10	true
1	SID11_EcuReset		true	Dcm_Dcm...	0x11	true
2	SID14_ClearDiagnosticInfo		true		0x14	false
3	SID19_ReadDTCInformation		true	Dcm_Dcm...	0x19	true
4	SID22_ReadMemoryByIdentifi...		true		0x22	false
5	SID23_ReadMemoryByAddress		true		0x23	false
6	SID27_SecurityAccess		true		0x27	true
7	SID28_CommunicationControl		true		0x28	true
8	SID2E_WriteDataByIdentifier		true	Dcm_Dcm...	0x2E	false
9	SID2F_IOControlByIdentifier		true	Dcm_Dcm...	0x2F	false
10	SID31_RoutineControl		true		0x31	true
11	SID3E_TesterPresent		true		0x3E	true
12	SID85_ControlDTCSetting		true		0x85	true
13	SID34_RequestDownload		true		0x34	false
14	SID36_TransferData		true		0x36	false
15	SID37_RequestTransferExit		true		0x37	false
16	SID01_CurrentPowerTrainDia...		true		0x01	false
17	SID06_ReqOnboardMonitorR...		true		0x06	false
18	SID08_ReqControlOnBoardSy...		true		0x08	false
19	SID09_VehicleInformation		true		0x09	false
20	SID04_ClearEmissionDTC		true		0x04	false