Document Title	TPS_BSWModuleDescriptionTemplate: Complete Change Documentation 4.3.0 - 4.3.1
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Part of AUTOSAR Standard	Classic Platform
Part of Standard Release	4.3.1

Table of Contents

1 TPS_BSWModuleDescriptionTemplate

1.1 Specification Item constr_4098

Trace References:

Content:

A BswOperationInvokedEvent shall not have a reference to a ModeDeclaration in the role BswEvent.disabledInMode.

RfCs affecting this spec item between releases 4.3.0 and 4.3.1:

- RfC #76989: Missing constraints for mode disabling dependencies and OperationInvokedEvents / BswOperationInvokedEvents

Problem description:

The SWS RTE excludes
the combination of mode disabling dependencies and OperationInvokedEvents ([SWS_Rte_02706])

Reading the rational, the same combination shall be excluded for BswOperationInvokedEvents

Agreed solution:

SWC-T
[constr_xxxx] No mode disabling for OperationInvokedEvents d An OperationInvokedEvent shall not have a reference to a ModeDeclaration in the role disabledMode. c()

Rationale
The RTE does not support the disabling of server Runnables by modes. Instead, the server shall respond with an explicit error code if the execution of the server operation is not possible in specific side conditions.

BSWMD-T
[constr_yyyy] No mode disabling for BswOperationInvokedEvents d An BswOperationInvokedEvents shall not have a reference to a ModeDeclaration in the role disabledInMode. c()

SWS RTE:

adjust
[SWS_Rte_02706] The RTE shall reject the configurations violating constr_xxxx
add
[SWS_Rte_nnnn1] d The RTE shall reject the configurations violating constr_yyyy
–Last change on issue 76989 comment 3–

BW-C-Level:

Application	Specification	Bus
4	4	1

1.2 Specification Item TPS_BSWMDT_04125

Trace References:

Content:

ServiceNeeds kind DiagnosticsCommunicationSecurityNeeds

RoleBasedBswModuleEntryAssignment valid roles:

- Xxx_CompareKey [1]

- Xxx_GetSeed [1]

- Xxx_GetSecurityAttemptCounter [0..1]

- Xxx_SetSecurityAttemptCounter [0..1]

RoleBasedDataAssignment N/A

RoleBasedDataTypeAssignment N/A

RfCs affecting this spec item between releases 4.3.0 and 4.3.1:

- RfC #76517: [DEXT, BSWMDT] UpSteamMappings for Dcm SecurityAccess AttemptCounter

Problem description:

For the following Dcm ECUC parameters there exists not yet an upstream mapping in the TPS DEXT:
- DcmDspSecurityAttemptCounterEnabled
- DcmDspSecurityGetAttemptCounterFnc
- DcmDspSecuritySetAttemptCounterFnc

At least for the DcmDspSecurityGetAttemptCounterFnc / DcmDspSecuritySetAttemptCounterFnc the following reference could be true:
DiagnosticExtract::ServiceMapping::DiagnosticServiceSwMapping.mappedBswServiceDepender

But other than for DcmDspSecurityCompareKeyFnc / DcmDspSecurityGetSeedFnc above both APIs are not mandatory in case FNC is selected, but depended from further decision:
DcmDspSecurityAttemptCounterEnabled

It is now the good question how a rule for DcmDspSecurityAttemptCounterEnabled can be designed. Shall we look inside the SWC / BSW Interface of application and then identify, if the GetAttemptCounter / SetAttemptCounter is used by application?

Beside the impact on TPS DEXT also the impact on TPS BSWMDT is given. As according Uwe some Use case description for SecurityAccess is missing in this document.

Agreed solution:

WP-M: we agreed to the following solutions

BSWMDT

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Change TPS_BSWMDT_04125 as follows:

-> 13.2.2.3.5 Dcm Service Use Case: Seed / Key handling for security level access and the optional security attempt counter handling

Scenario: a Basic Software Module offers BswModuleEntrys for the Seed and
Key handling for security level access and the optional security attempt counter handling.

[TPS_BSWMDT_04125] Basic Software Module offers BswModuleEntrys for the Seed and Key handling for security level access and the optional security attempt counter handling

ServiceNeeds kind DiagnosticsCommunicationSecurityNeeds

RoleBasedBswModuleEntryAssignment valid roles:
Xxx_CompareKey [1]
Xxx_GetSeed [1]
Xxx_GetSecurityAttemptCounter [0..1]
Xxx_SetSecurityAttemptCounter [0..1]

RoleBasedDataAssignment
N/A
RoleBasedDataTypeAssignment
N/A

DEXT
==
- DcmDspSecurityGetAttemptCounterFnc
- DcmDspSecuritySetAttemptCounterFnc
- DcmDspSecurityAttemptCounterEnabled

Map itmes above to:
DiagnosticExtract::ServiceMapping::DiagnosticServiceSwMapping.mappedBswServiceDepender
–Last change on issue 76517 comment 8–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.3 Specification Item TPS_BSWMDT_04165

Trace References:

Content:

ServiceNeeds kind ObdPidServiceNeeds

RoleBasedBswModuleEntryAssignment valid roles:

- Xxx_ReadData [1] (1 in case read is supported)

RoleBasedDataAssignment N/A

RoleBasedDataTypeAssignment N/A

RfCs affecting this spec item between releases 4.3.0 and 4.3.1:

- RfC #73489: Service Use Cases for for OBD Mode1 /9 to BSW

Problem description:

During the concept review (see bug # 73032) of the DEXT (extension 1) the following issue was identified:

"In constr_o002 and constr_o28 reference to SwcServiceDependency is given. But OBD Mode 1 and 9 also offers a FNC interface. Is then with this also a BswServiceDependency to mention?"

The consideration of the BswServiceDependency for the service mapping requires a proper description of the applicable service use case in the BSWMDT.

Therefore, the following activities are required:

1. Define service use cases in the BSWMDT for OBD Mode 1 and 9. These involve the usage of BwcServiceDependencies that aggregate ObdPidService-Needs/ObdPÍnfoServiceNeeds.

2. Extend the constraints regarding the service mapping for mode 1 and 9 towards the support for BswServiceDependency.

Agreed solution:

DEXT
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Replace

if a DiagnosticServiceSwMapping or DiagnosticServiceDataMapping refers to a DiagnosticRequestCurrentPowertrainData and a
DiagnosticDataElement that is aggregated by a DiagnosticParameterIdentifier then the SwcServiceDependency referenced by the same DiagnosticServiceSwMapping resp. DiagnosticServiceDataMapping shall aggregate a ObdPidServiceNeeds in the role serviceNeeds.

by

If a DiagnosticServiceSwMapping or DiagnosticServiceDataMapping refers to a DiagnosticRequestCurrentPowertrainData and a
DiagnosticDataElement that is aggregated by a DiagnosticParameterIdentifier then one of two alternative model configurations shall exist:
* The SwcServiceDependency referenced by the same DiagnosticServiceSwMapping resp. DiagnosticServiceDataMapping shall aggregate an ObdPidServiceNeeds

in the role serviceNeeds.
* The BswServiceDependencyIdent referenced by the same DiagnosticServiceSwMapping shall aggregate an ObdPidServiceNeeds in the role serviceNeeds.

Replace

If a DiagnosticServiceSwMapping refers to DiagnosticRequestVehicleInfo and a DiagnosticDataElement that is aggregated by a DiagnosticInfoType then the SwcServiceDependency referenced by the same DiagnosticServiceSwMapping shall aggregate a ObdInfoServiceNeeds in the role serviceNeeds.

by

If a DiagnosticServiceSwMapping refers to DiagnosticRequestVehicleInfo and a DiagnosticDataElement that is aggregated by a DiagnosticInfoType then one of two alternative model configurations shall exist:
* The SwcServiceDependency referenced by the same DiagnosticServiceSwMapping shall aggregate a ObdInfoServiceNeeds in the role serviceNeeds.
* The BswServiceDependencyIdent referenced by the same DiagnosticServiceSwMapping shall aggregate an ObdInfoServiceNeeds in the role serviceNeeds.

BSWMDT
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Add new subchapter 13.2.2.4 in the document:

Scenario: a Basic Software Module offers a BswModuleEntry to read value via OBD services.
[TPS_BSWMDT_0xxxx] Basic Software Module offers a BswModuleEntry to read value via OBD services
ServiceNeeds kind ObdPidServiceNeeds
RoleBasedBswModuleEntryAssignment valid roles:
Xxx_ReadData [1] (1 in case read is supported)
RoleBasedDataAssignment
N/A
RoleBasedDataTypeAssignment
N/A

Scenario: a Basic Software Module offers a BswModuleEntry to read vehicle information via OBD services.

[TPS_BSWMDT_0xxx1] Basic Software Module offers a BswModuleEntry to read
vehicle information via OBD services
ServiceNeeds kind ObdInfoServiceNeeds
RoleBasedBswModuleEntryAssignment valid roles:
Xxx_GetInfoTypeValueData [1] (1 in case read is supported)
RoleBasedDataAssignment
N/A
RoleBasedDataTypeAssignment
N/A
–Last change on issue 73489 comment 6–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.4   Specification Item TPS_BSWMDT_04166

Trace References:

Content:

ServiceNeeds kind ObdInfoServiceNeeds

RoleBasedBswModuleEntryAssignment valid roles:

- Xxx_GetInfoTypeValueData [1] (1 in case read is supported)

RoleBasedDataAssignment N/A

RoleBasedDataTypeAssignment N/A

RfCs affecting this spec item between releases 4.3.0 and 4.3.1:

- RfC #73489: Service Use Cases for for OBD Mode1 /9 to BSW

  Problem description:

  During the concept review (see bug # 73032) of the DEXT (extension 1) the following
  issue was identified:

  "In constr_o002 and constr_o28 reference to SwcServiceDependency is given.
  But OBD Mode 1 and 9 also offers a FNC interface. Is then with this also a
  BswServiceDependency to mention?"

The consideration of the BswServiceDependency for the service mapping requires a proper description of the applicable service use case in the BSWMDT.

Therefore, the following activities are required:

1. Define service use cases in the BSWMDT for OBD Mode 1 and 9. These involve the usage of BwcServiceDependencies that aggregate ObdPidServiceNeeds/ObdPÍnfoServiceNeeds.

2. Extend the constraints regarding the service mapping for mode 1 and 9 towards the support for BswServiceDependency.

Agreed solution:

DEXT
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Replace

if a DiagnosticServiceSwMapping or DiagnosticServiceDataMapping refers to a DiagnosticRequestCurrentPowertrainData and a
DiagnosticDataElement that is aggregated by a DiagnosticParameterIdentifier then the SwcServiceDependency referenced by the same DiagnosticServiceSwMapping resp. DiagnosticServiceDataMapping shall aggregate a ObdPidServiceNeeds in the role serviceNeeds.

by

If a DiagnosticServiceSwMapping or DiagnosticServiceDataMapping refers to a DiagnosticRequestCurrentPowertrainData and a
DiagnosticDataElement that is aggregated by a DiagnosticParameterIdentifier then one of two alternative model configurations shall exist:
* The SwcServiceDependency referenced by the same DiagnosticServiceSwMapping resp. DiagnosticServiceDataMapping shall aggregate an ObdPidServiceNeeds in the role serviceNeeds.
* The BswServiceDependencyIdent referenced by the same DiagnosticServiceSwMapping shall aggregate an ObdPidServiceNeeds in the role serviceNeeds.

Replace

If a DiagnosticServiceSwMapping refers to DiagnosticRequestVehicleInfo and a DiagnosticDataElement that is aggregated by a DiagnosticInfoType then the SwcServiceDependency referenced by the same DiagnosticServiceSwMapping

shall aggregate a ObdInfoServiceNeeds in the role serviceNeeds.

by

If a DiagnosticServiceSwMapping refers to DiagnosticRequestVehicleInfo and a DiagnosticDataElement that is aggregated by a DiagnosticInfoType then one of two alternative model configurations shall exist:
* The SwcServiceDependency referenced by the same DiagnosticServiceSwMapping shall aggregate a ObdInfoServiceNeeds in the role serviceNeeds.
* The BswServiceDependencyIdent referenced by the same DiagnosticServiceSwMapping shall aggregate an ObdInfoServiceNeeds in the role serviceNeeds.

BSWMDT
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Add new subchapter 13.2.2.4 in the document:

Scenario: a Basic Software Module offers a BswModuleEntry to read value via OBD services.
[TPS_BSWMDT_0xxxx] Basic Software Module offers a BswModuleEntry to read value via OBD services
ServiceNeeds kind ObdPidServiceNeeds
RoleBasedBswModuleEntryAssignment valid roles:
Xxx_ReadData [1] (1 in case read is supported)
RoleBasedDataAssignment
N/A
RoleBasedDataTypeAssignment
N/A

Scenario: a Basic Software Module offers a BswModuleEntry to read vehicle information via OBD services.
[TPS_BSWMDT_0xxx1] Basic Software Module offers a BswModuleEntry to read vehicle information via OBD services
ServiceNeeds kind ObdInfoServiceNeeds
RoleBasedBswModuleEntryAssignment valid roles:
Xxx_GetInfoTypeValueData [1] (1 in case read is supported)
RoleBasedDataAssignment
N/A
RoleBasedDataTypeAssignment
N/A
–Last change on issue 73489 comment 6–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.5 Specification Item TPS_BSWMDT_04167

Trace References:

Content:

Scenario: a Basic Software Module wants to react on suppressed or unavailable events and disable the permission to run for a FID. In this case, the following setup applies:

ServiceNeeds kind FunctionInhibitionAvailabilityNeeds

RoleBasedBswModuleEntryAssignment valid roles:

- FiM_SetFunctionAvailable [1]

RoleBasedDataAssignment N/A

RoleBasedDataTypeAssignment N/A

RfCs affecting this spec item between releases 4.3.0 and 4.3.1:

- RfC #69989: add missing use case description for FiM EventAvailability

   Problem description:

   In RfC
   [RfC # 65847] [Fim] consider EventAvailability/EventSupression

   The interface ControlFunctionAvailable was added.

   But the service use case was not clarified and added to the SWC-T and BSWMD-T.

   Agreed solution:

   SWCT
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   Add new subclass of ServiceNeeds: FunctionInhibitionAvailabilityNeeds, description: "Specifies the abstract needs on the configuration of the Function Inhibition Manager to provide the control function for one Function Identifier (FID)."

Document ID 695: ChangeDocumentation

Add a reference from FunctionInhibitionAvailabilityNeeds to FunctionInhibition-Needs in the role controlledFid, mulitplicity 0..1, description: "This reference represents the controlled FID".

Add chapter 13.8.2.2 Function Inhibition Manager Use Case: react on suppressed or unavailable events

[TPS_SWCT_0xxxx] Setup for Function Inhibition Manager Service use Case: react on suppressed or unavailable events
Scenario: an AtomicSwComponentType wants to react on suppressed or unavailable events and disable the permission to run for a FID.
In this case, the following setup applies:
ServiceNeedsKind: FunctionInhibitionAvailabilityNeeds
RoleBasedPortAssignment valid roles:
* ControlFunctionAvailable [1]
RoleBasedDataAssignment
N/A
RepresentedPortGroups
N/A

Note: for variant coding ClientServerInterface ControlFunctionAvailable is used to deactivate a certain functionality (e.g. to set the FID to not available)

For more information, please refer to [SWS_Fim_00107].

BSWMDT
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Add chapter 13.2.2.1.2 Function Inhibition Manager Use Case: react on suppressed or unavailable events

[TPS_BSWMDT_0xxxx] Setup for Function Inhibition Manager Service use Case: react on suppressed or unavailable events
Scenario: a Basic Software Module wants to react on suppressed or unavailable events and disable the permission to run for a FID.
In this case, the following setup applies:
ServiceNeedsKind: FunctionInhibitionAvailabilityNeeds
RoleBasedPortAssignment valid roles:
* Fim_SetFunctionAvailable [1]
RoleBasedDataAssignment
N/A
RepresentedPortGroups

N/A

Note: for variant coding ClientServerInterface ControlFunctionAvailable is used to deactivate a certain functionality (e.g. to set the FID to not available)

For more information, please refer to [SWS_Fim_00106].
–Last change on issue 69989 comment 26–

BW-C-Level:

Application	Specification	Bus
1	1	1