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1 RS_Methodology

1.1 Specification Item RS_METH_00006

Trace References:

RS_Main_00300

Content:

RfCs affecting this spec item between releases 1.2.0 and 1.3.0:

- RfC #77303: Final migration of RS_Methodology from CP to FO

Problem description:

The document RS_Methodology from CP (CP_RS_Methodology) shall completely be migrated to FO together with the next CP release (for FO_R1.3).

In a first step for FO_R1.1 already some of the requirements in CP_RS_Methodology, which are also valid for AP, have been taken over. In this RfC, the remaining requirements shall be taken over, adapted, or deleted if not needed anymore. For the next CP release, the document CP_RS_Methodology can then completely be removed.

Agreed solution:

In RS_Main, the following main requirements need to be extended to FO (in Applies To) in order to fulfil traceability: RS_Main_00360, RS_Main_00290

In RS_Methodology (see also https://svn.autosar.org/repos/work/09_WorkPackages/WP-M/06_Subgroups/05_Methodology/Migration_RS_Methodology_CP_to_FO):

- Delete chapter 1.1 Limitations
- Change chapter 2.1 General Requirements: This sections specifies the general requirements, which are valid for both platforms.

Chapter 2.1 General Requirements:

RS_METH_00006: The methodology shall explain how to build an AUTOSAR system

Description: The methodology shall explain how to build an AUTOSAR system using the activities and work products.

It should be like a user manual to help an organization efficiently apply AUTOSAR. In particular, the methodology shall explain how to build a system consisting of

classic and adaptive platforms.

Applies to CP,AP

RS_METH_00041: The methodology shall support top-down and bottom-up approaches

Description: The methodology shall support the top-down and bottom-up approach. In the top-down approach, all constraints on the application software and their distribution on ECUs shall be considered. In the bottom-up approach, all constraints coming from the hardware (ECUs/sensors/actuators) should be taken into account.

Applies to CP,AP

RS_METH_00016 (trace to RS_Main_00190): The methodology shall support building a system of both AUTOSAR and Non-AUTOSAR ECUs

Description: The methodology shall support building a system of AUTOSAR compliant ECUs and non-AUTOSAR compliant ECUs.

Rationale: The design of a complete vehicle system shall be supported.

Applies to CP,AP

Add RS_METH_00200 (RS_Main_00161): The methodology shall support building a system consisting of several AUTOSAR platforms

Description: The methodology shall support building a system consisting of several AUTOSAR platforms.

Rationale: The design of a complete vehicle system shall be supported.

Use Case: The communication description between machines (or ECUs) based on classic and adaptive AUTOSAR platforms.

Applies to CP,AP

RS_METH_00018:

Applies to AP,CP

RS_METH_00032: The methodology shall support different levels of abstractions

Description: The methodology shall support different views for the development of an AUTOSAR system. This corresponds to the typical domains and parties, which are involved in the system development.

Use case: AUTOSAR is using several abstraction levels to describe the information exchanged between the different players.

In an early phase for instance only the "Virtual Functional Bus" is used, whereas in later development phases we handle real implementations of the SWC deployed to several ECUs.

Applies to CP,AP

RS_METH_00020: The methodology shall support round-trip engineering

Description: The methodology shall support round-trip engineering. This implies that several iteration loops might be necessary in order to finalize a task or work product.

Rationale: Meet AUTOSAR Quality requirements.

Dependencies: –

Use Case: Automotive systems are typically developed in several sample phases (A, B, C, etc).\\}

A single Software Component is updated in a AUTOSAR System. The updated ECU Extract still matches the existing ECU Configuration (as long as no contradicting changes are made in the iteration).

Applies to CP,AP

RS_METH_00077: The methodology shall support different views on the SW-C structure by OEMs and suppliers

Rationale: Possibility for the supplier to adapt the structure of a SW-C.

Use case: The amount of changes on the supplier side shall be limited to the changes caused by OEM updates.

Applies To CP,AP

RS_METH_00078

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00079

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00015

Use case: An ECU built for a particular microcontroller is explicitly optimized for programming language ABC.

The methodology explains when and how to specify and to select the implementation of the software components compatible with the required programming language.

Applies to CP,AP

RS_METH_00066

Header: The methodology shall allow activities that reference tools

Dependencies:–

Use Case: For the classic platform, the activity ...

Applies to CP,AP

RS_METH_00042 (trace to RS_Main_00250)

Rationale: AUTOSAR should not require the use of particular tools when industry standard tools already exist.

Applies to CP,AP

RS_METH_00056 (trace to RS_Main_00507)

Applies to CP,AP

RS_METH_00069:

Dependencies:–

Chapter 2.2 Requirements for the Classic Platform

RS_METH_00033:

Use case: In AUTOSAR, an application is modeled as a composition of interconnected components.

The VFB is the communication mechanism that allows these components to interact. Even if all the resources used by these components are not available yet during the development (HW/Network)

some basic checks can be done and early problems can be solved that will ease the integration phase later.

Applies to CP

Add RS_METH_00208 (RS_Main_00300,RS_Main_00150): The methodology shall explain the high-level usage of the AUTOSAR templates

Description: The AUTOSAR templates include numerous features for the system design, the software component, the ECU configuration etc. The methodology shall clearly describe the activities to use/modify these and which activities require them to be completed before commencing.

Rationale: Usage of AUTOSAR templates in the development process

Use Case: Usage of the SW-C template: An existing software component is implemented and is to be integrated into a suppliers ECU. A description of the component is needed in order to correctly integrate that component into the ECU. \{\}newline

Usage of the system template: OEM as integrator is fixing the ECUs, the topology and the list of the SW-C for one vehicle for the suppliers. \{\}newline

Usage of the BSW module template: An existing BSW module is implemented and is to be integrated into an ECU. A description of the BSW Module is needed in order to correctly integrate that module into the ECU. \{\}newline

The ECU configuration template is used to describe the configuration when integrating a BSW module into an ECU. \{\}newline

The Safety Extensions allow a standardized exchange of safety information and provide the basis for consistent management among different vendors and tools as required by ISO 26262. \{\}newline

The Diagnostic Extract Template that represents a standardized exchange format on diagnostic functionality allows the decentralized configuration of diagnostic aspects.

Applies to CP

RS_METH_00080: The AUTOSAR methodology shall support the concept of implicit communication behavior

Applies to CP

RS_METH_00083: The AUTOSAR methodology shall explain the description and handling of Data Exchange Points

Applies to CP

RS_METH_00084

Applies to CP

RS_METH_00062: The methodology shall support configuration of parameters with different binding time.

Description: The Autosar methodology shall support system development with different combinations of configuration classes.

Rationale: Configuration of parameters can be performed in different process steps: pre-compile, link time, and post-build.

Applies to CP

RS_METH_00074, RS_METH_00075, RS_METH_00076

Applies to CP

Delete the following requirements:

RS_METH_00017: Methodology shall clearly define what is standardized and what is not standardized

Reason: Methodology is an auxiliary document and only informative

Delete RS_METH_00002, RS_METH_00003, RS_METH_00004, RS_METH_00005, RS_AMETH_00081, RS_AMETH_00082

Reason: all requirements on the usage of specific templates will be removed. Instead one general requirement about the usage of templates (RS_METH_00208) will be added.

Delete RS_METH_00038

Rationale: C-Code is supported, but the description nevertheless is independent of the programming language.

Delete RS_METH_00021, RS_METH_00043, RS_METH_00046, RS_METH_00047, RS_METH_00048, RS_METH_00025, RS_METH_00050,

RS_METH_00051, RS_METH_00052, RS_METH_00061, RS_METH_00027,
RS_METH_00028, RS_METH_00064, RS_METH_00009, RS_METH_00067

Reason: all these requirements describe general SPEM properties and are described in the introduction of TR_Methodology

Remove RS_METH_00054 and extend instead description in TR_Methodology
(handled in different RfC)

Delete RS_METH_00010

Reason: this is a property of the MMT

Delete RS_METH_00057: AUTOSAR methodology shall support traceability
to external artifacts

Reason: This is not a feature of TR_Methodology or TR_AdaptiveMethodology

–Last change on issue 77303 comment 7–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.2 Specification Item RS_METH_00015

Trace References:

RS_Main_00220 , **RS_Main_00513**

Content:**RfCs affecting this spec item between releases 1.2.0 and 1.3.0:**

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- Change chapter 2.1 General Requirements: This sections specifies the general requirements, which are valid for both platforms.

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Description: The methodology shall explain how to build an AUTOSAR system using the activities and work products.

It should be like a user manual to help an organization efficiently apply AUTOSAR. In particular, the methodology shall explain how to build a system consisting of classic and adaptive platforms.

Applies to CP,AP

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Description: The methodology shall support the top-down and bottom-up approach. In the top-down approach, all constraints on the application software and their distribution on ECUs shall be considered. In the bottom-up approach, all constraints coming from the hardware (ECUs/sensors/actuators) should be taken into account.

Applies to CP,AP

RS_METH_00016 (trace to RS_Main_00190): The methodology shall support building a system of both AUTOSAR and Non-AUTOSAR ECUs

Description: The methodology shall support building a system of AUTOSAR compliant ECUs and non-AUTOSAR compliant ECUs.

Rationale: The design of a complete vehicle system shall be supported.

Applies to CP,AP

Add RS_METH_00200 (RS_Main_00161): The methodology shall support building a system consisting of several AUTOSAR platforms

Description: The methodology shall support building a system consisting of several AUTOSAR platforms.

Rationale: The design of a complete vehicle system shall be supported.

Use Case: The communication description between machines (or ECUs) based on classic and adaptive AUTOSAR platforms.

Applies to CP,AP

RS_METH_00018:

Applies to AP,CP

RS_METH_00032: The methodology shall support different levels of abstractions

Description: The methodology shall support different views for the development of an AUTOSAR system. This corresponds to the typical domains and parties, which are involved in the system development.

Use case: AUTOSAR is using several abstraction levels to describe the information exchanged between the different players.

In an early phase for instance only the "Virtual Functional Bus" is used, whereas in later development phases we handle real implementations of the SWC deployed to several ECUs.

Applies to CP,AP

RS_METH_00020: The methodology shall support round-trip engineering

Description: The methodology shall support round-trip engineering. This implies that several iteration loops might be necessary in order to finalize a task or work product.

Rationale: Meet AUTOSAR Quality requirements.

Dependencies: –

Use Case: Automotive systems are typically developed in several sample phases (A, B, C, etc).\\}

A single Software Component is updated in a AUTOSAR System. The updated ECU Extract still matches the existing ECU Configuration (as long as no contradicting changes are made in the iteration).

Applies to CP,AP

RS_METH_00077: The methodology shall support different views on the SW-C structure by OEMs and suppliers

Rationale: Possibility for the supplier to adapt the structure of a SW-C.

Use case: The amount of changes on the supplier side shall be limited to the changes caused by OEM updates.

Applies To CP,AP

RS_METH_00078

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00079

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00015

Use case: An ECU built for a particular microcontroller is explicitly optimized for programming language ABC.

The methodology explains when and how to specify and to select the implementation of the software components compatible with the required programming language.

Applies to CP,AP

RS_METH_00066

Header: The methodology shall allow activities that reference tools

Dependencies:–

Use Case: For the classic platform, the activity ...

Applies to CP,AP

RS_METH_00042 (trace to RS_Main_00250)

Rationale: AUTOSAR should not require the use of particular tools when industry standard tools already exist.

Applies to CP,AP

RS_METH_00056 (trace to RS_Main_00507)

Applies to CP,AP

RS_METH_00069:

Dependencies:–

Chapter 2.2 Requirements for the Classic Platform

RS_METH_00033:

Use case: In AUTOSAR, an application is modeled as a composition of interconnected components.

The VFB is the communication mechanism that allows these components to interact. Even if all the resources used by these components are not available yet during the development (HW/Network)

some basic checks can be done and early problems can be solved that will ease the integration phase later.

Applies to CP

Add RS_METH_00208 (RS_Main_00300,RS_Main_00150): The methodology shall explain the high-level usage of the AUTOSAR templates

Description: The AUTOSAR templates include numerous features for the system design, the software component, the ECU configuration etc. The methodology shall clearly describe the activities to use/modify these and which activities require them

to be completed before commencing.

Rationale: Usage of AUTOSAR templates in the development process

Use Case: Usage of the SW-C template: An existing software component is implemented and is to be integrated into a suppliers ECU. A description of the component is needed in order to correctly integrate that component into the ECU. \{\}newline

Usage of the system template: OEM as integrator is fixing the ECUs, the topology and the list of the SW-C for one vehicle for the suppliers. \{\}newline

Usage of the BSW module template: An existing BSW module is implemented and is to be integrated into an ECU. A description of the BSW Module is needed in order to correctly integrate that module into the ECU. \{\}newline

The ECU configuration template is used to describe the configuration when integrating a BSW module into an ECU. \{\}newline

The Safety Extensions allow a standardized exchange of safety information and provide the basis for consistent management among different vendors and tools as required by ISO 26262. \{\}newline

The Diagnostic Extract Template that represents a standardized exchange format on diagnostic functionality allows the decentralized configuration of diagnostic aspects. Applies to CP

RS_METH_00080: The AUTOSAR methodology shall support the concept of implicit communication behavior

Applies to CP

RS_METH_00083: The AUTOSAR methodology shall explain the description and handling of Data Exchange Points

Applies to CP

RS_METH_00084

Applies to CP

RS_METH_00062: The methodology shall support configuration of parameters with different binding time.

Description: The Autosar methodology shall support system development with different combinations of configuration classes.

Rationale: Configuration of parameters can be performed in different process steps: pre-compile, link time, and post-build.

Applies to CP

RS_METH_00074,RS_METH_00075,RS_METH_00076

Applies to CP

Delete the following requirements:

RS_METH_00017: Methodology shall clearly define what is standardized and what is not standardized

Reason: Methodology is an auxiliary document and only informative

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Reason: all these requirements describe general SPEM properties and are described in the introduction of TR_Methodology

Remove RS_METH_00054 and extend instead description in TR_Methodology (handled in different RfC)

Delete RS_METH_00010

Reason: this is a property of the MMT

Delete RS_METH_00057: AUTOSAR methodology shall support traceability to external artifacts

Reason: This is not a feature of TR_Methodology or TR_AdaptiveMethodology
–Last change on issue 77303 comment 7–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.3 Specification Item RS_METH_00016

Trace References:

RS_Main_00190

Content:

RfCs affecting this spec item between releases 1.2.0 and 1.3.0:

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Problem description:

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Description: The methodology shall explain how to build an AUTOSAR system using the activities and work products.

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Applies to CP,AP

RS_METH_00041: The methodology shall support top-down and bottom-up approaches

Description: The methodology shall support the top-down and bottom-up approach.

In the top-down approach, all constraints on the application software and their distribution on ECUs shall be considered. In the bottom-up approach, all constraints coming from the hardware (ECUs/sensors/actuators) should be taken into account.

Applies to CP,AP

RS_METH_00016 (trace to RS_Main_00190): The methodology shall support building a system of both AUTOSAR and Non-AUTOSAR ECUs

Description: The methodology shall support building a system of AUTOSAR compliant ECUs and non-AUTOSAR compliant ECUs.

Rationale: The design of a complete vehicle system shall be supported.

Applies to CP,AP

Add RS_METH_00200 (RS_Main_00161): The methodology shall support building a system consisting of several AUTOSAR platforms

Description: The methodology shall support building a system consisting of several AUTOSAR platforms.

Rationale: The design of a complete vehicle system shall be supported.

Use Case: The communication description between machines (or ECUs) based on classic and adaptive AUTOSAR platforms.

Applies to CP,AP

RS_METH_00018:

Applies to AP,CP

RS_METH_00032: The methodology shall support different levels of abstractions

Description: The methodology shall support different views for the development of an AUTOSAR system. This corresponds to the typical domains and parties, which are involved in the system development.

Use case: AUTOSAR is using several abstraction levels to describe the information exchanged between the different players.

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Applies to CP,AP

RS_METH_00020: The methodology shall support round-trip engineering

Description: The methodology shall support round-trip engineering. This implies that several iteration loops might be necessary in order to finalize a task or work product.

Rationale: Meet AUTOSAR Quality requirements.

Dependencies: –

Use Case: Automotive systems are typically developed in several sample phases

(A, B, C, etc).\}

newline

A single Software Component is updated in a AUTOSAR System. The updated ECU Extract still matches the existing ECU Configuration (as long as no contradicting changes are made in the iteration).

Applies to CP,AP

RS_METH_00077: The methodology shall support different views on the SW-C structure by OEMs and suppliers

Rationale: Possibility for the supplier to adapt the structure of a SW-C.

Use case: The amount of changes on the supplier side shall be limited to the changes caused by OEM updates.

Applies To CP,AP

RS_METH_00078

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00079

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00015

Use case: An ECU built for a particular microcontroller is explicitly optimized for programming language ABC.

The methodology explains when and how to specify and to select the implementation of the software components compatible with the required programming language.

Applies to CP,AP

RS_METH_00066

Header: The methodology shall allow activities that reference tools

Dependencies:–

Use Case: For the classic platform, the activity ...

Applies to CP,AP

RS_METH_00042 (trace to RS_Main_00250)

Rationale: AUTOSAR should not require the use of particular tools when industry standard tools already exist.

Applies to CP,AP

RS_METH_00056 (trace to RS_Main_00507)

Applies to CP,AP

RS_METH_00069:

Dependencies:—

Chapter 2.2 Requirements for the Classic Platform

RS_METH_00033:

Use case: In AUTOSAR, an application is modeled as a composition of interconnected components.

The VFB is the communication mechanism that allows these components to interact. Even if all the resources used by these components are not available yet during the development (HW/Network)

some basic checks can be done and early problems can be solved that will ease the integration phase later.

Applies to CP

Add RS_METH_00208 (RS_Main_00300,RS_Main_00150): The methodology shall explain the high-level usage of the AUTOSAR templates

Description: The AUTOSAR templates include numerous features for the system design, the software component, the ECU configuration etc. The methodology shall clearly describe the activities to use/modify these and which activities require them to be completed before commencing.

Rationale: Usage of AUTOSAR templates in the development process

Use Case: Usage of the SW-C template: An existing software component is implemented and is to be integrated into a suppliers ECU. A description of the component is needed in order to correctly integrate that component into the ECU. \{\}newline

Usage of the system template: OEM as integrator is fixing the ECUs, the topology and the list of the SW-C for

one vehicle for the suppliers. \{\}newline

Usage of the BSW module template: An existing BSW module is implemented and is to be integrated into an ECU. A description of the BSW Module is needed in order to correctly integrate that module into the ECU. \{\}newline

The ECU configuration template is used to describe the configuration when integrating a BSW module into an ECU. \{\}newline

The Safety Extensions allow a standardized exchange of safety information and provide the basis for consistent management among different

vendors and tools as required by ISO 26262. \{\}newline

The Diagnostic Extract Template that represents a standardized exchange format on diagnostic functionality allows the decentralized configuration of diagnostic aspects.

Applies to CP

RS_METH_00080: The AUTOSAR methodology shall support the concept of implicit communication behavior

Applies to CP

RS_METH_00083: The AUTOSAR methodology shall explain the description and handling of Data Exchange Points
Applies to CP

RS_METH_00084
Applies to CP

RS_METH_00062: The methodology shall support configuration of parameters with different binding time.
Description: The Autosar methodology shall support system development with different combinations of configuration classes.
Rationale: Configuration of parameters can be performed in different process steps: pre-compile, link time, and post-build.
Applies to CP

RS_METH_00074, RS_METH_00075, RS_METH_00076
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Delete the following requirements:

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Reason: all requirements on the usage of specific templates will be removed. Instead one general requirement about the usage of templates (RS_METH_00208) will be added.

Delete RS_METH_00038
Rationale: C-Code is supported, but the description nevertheless is independent of the programming language.

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Reason: all these requirements describe general SPEM properties and are described in the introduction of TR_Methodology

Remove RS_METH_00054 and extend instead description in TR_Methodology

(handled in different RfC)

Delete RS_METH_00010

Reason: this is a property of the MMT

Delete RS_METH_00057: AUTOSAR methodology shall support traceability to external artifacts

Reason: This is not a feature of TR_Methodology or TR_AdaptiveMethodology
–Last change on issue 77303 comment 7–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.4 Specification Item RS_METH_00018

Trace References:

RS_Main_00190, RS_Main_00300, RS_Main_00030

Content:

RfCs affecting this spec item between releases 1.2.0 and 1.3.0:

- RfC #77303: Final migration of RS_Methodology from CP to FO

Problem description:

The document RS_Methodology from CP (CP_RS_Methodology) shall completely be migrated to FO together with the next CP release (for FO_R1.3).

In a first step for FO_R1.1 already some of the requirements in CP_RS_Methodology, which are also valid for AP, have been taken over. In this RfC, the remaining requirements shall be taken over, adapted, or deleted if not needed anymore. For the next CP release, the document CP_RS_Methodology can then completely be removed.

Agreed solution:

In RS_Main, the following main requirements need to be extended to FO (in Applies To) in order to fulfil traceability: RS_Main_00360, RS_Main_00290

In RS_Methodology (see also https://svn.autosar.org/repos/work/09_WorkPackages/WP-M/06_Subgroups/05_Methodology/Migration_RS_Methodology_CP_to_FO):

- Delete chapter 1.1 Limitations
- Change chapter 2.1 General Requirements: This sections specifies the general requirements, which are valid for both platforms.

Chapter 2.1 General Requirements:

RS_METH_00006: The methodology shall explain how to build an AUTOSAR system

Description: The methodology shall explain how to build an AUTOSAR system using the activities and work products.

It should be like a user manual to help an organization efficiently apply AUTOSAR. In particular, the methodology shall explain how to build a system consisting of classic and adaptive platforms.

Applies to CP,AP

RS_METH_00041: The methodology shall support top-down and bottom-up approaches

Description: The methodology shall support the top-down and bottom-up approach. In the top-down approach, all constraints on the application software and their distribution on ECUs shall be considered. In the bottom-up approach, all constraints coming from the hardware (ECUs/sensors/actuators) should be taken into account.

Applies to CP,AP

RS_METH_00016 (trace to RS_Main_00190): The methodology shall support building a system of both AUTOSAR and Non-AUTOSAR ECUs

Description: The methodology shall support building a system of AUTOSAR compliant ECUs and non-AUTOSAR compliant ECUs.

Rationale: The design of a complete vehicle system shall be supported.

Applies to CP,AP

Add RS_METH_00200 (RS_Main_00161): The methodology shall support building a system consisting of several AUTOSAR platforms

Description: The methodology shall support building a system consisting of several AUTOSAR platforms.

Rationale: The design of a complete vehicle system shall be supported.

Use Case: The communication description between machines (or ECUs) based on classic and adaptive AUTOSAR platforms.

Applies to CP,AP

RS_METH_00018:

Applies to AP,CP

RS_METH_00032: The methodology shall support different levels of abstractions

Description: The methodology shall support different views for the development of an AUTOSAR system. This corresponds to the typical domains and parties, which are involved in the system development.

Use case: AUTOSAR is using several abstraction levels to describe the information exchanged between the different players.

In an early phase for instance only the "Virtual Functional Bus" is used, whereas in later development phases we handle real implementations of the SWC deployed to several ECUs.

Applies to CP,AP

RS_METH_00020: The methodology shall support round-trip engineering

Description: The methodology shall support round-trip engineering. This implies that several iteration loops might be necessary in order to finalize a task or work product.

Rationale: Meet AUTOSAR Quality requirements.

Dependencies: –

Use Case: Automotive systems are typically developed in several sample phases (A, B, C, etc).\\}

A single Software Component is updated in a AUTOSAR System. The updated ECU Extract still matches the existing ECU Configuration (as long as no contradicting changes are made in the iteration).

Applies to CP,AP

RS_METH_00077: The methodology shall support different views on the SW-C structure by OEMs and suppliers

Rationale: Possibility for the supplier to adapt the structure of a SW-C.

Use case: The amount of changes on the supplier side shall be limited to the changes caused by OEM updates.

Applies To CP,AP

RS_METH_00078

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00079

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00015

Use case: An ECU built for a particular microcontroller is explicitly optimized for programming language ABC.

The methodology explains when and how to specify and to select the implementation of the software components compatible with the required programming language.
Applies to CP,AP

RS_METH_00066

Header: The methodology shall allow activities that reference tools

Dependencies:–

Use Case: For the classic platform, the activity ...

Applies to CP,AP

RS_METH_00042 (trace to RS_Main_00250)

Rationale: AUTOSAR should not require the use of particular tools when industry standard tools already exist.

Applies to CP,AP

RS_METH_00056 (trace to RS_Main_00507)

Applies to CP,AP

RS_METH_00069:

Dependencies:–

Chapter 2.2 Requirements for the Classic Platform

RS_METH_00033:

Use case: In AUTOSAR, an application is modeled as a composition of interconnected components.

The VFB is the communication mechanism that allows these components to interact. Even if all the resources used by these components are not available yet during the development (HW/Network)

some basic checks can be done and early problems can be solved that will ease the integration phase later.

Applies to CP

Add RS_METH_00208 (RS_Main_00300,RS_Main_00150): The methodology shall explain the high-level usage of the AUTOSAR templates

Description: The AUTOSAR templates include numerous features for the system design, the software component, the ECU configuration etc. The methodology shall clearly describe the activities to use/modify these and which activities require them to be completed before commencing.

Rationale: Usage of AUTOSAR templates in the development process

Use Case: Usage of the SW-C template: An existing software component is implemented and is to be integrated into a suppliers ECU. A description of the component is needed in order to correctly integrate that component into the ECU.\{\}newline

Usage of the system template: OEM as integrator is fixing the ECUs, the topology and the list of the SW-C for one vehicle for the suppliers. \{\}

Usage of the BSW module template: An existing BSW module is implemented and is to be integrated into an ECU. A description of the BSW Module is needed in order to correctly integrate that module into the ECU. \{\}

The ECU configuration template is used to describe the configuration when integrating a BSW module into an ECU.\{\}

The Safety Extensions allow a standardized exchange of safety information and provide the basis for consistent management among different vendors and tools as required by ISO 26262. \{\}

The Diagnostic Extract Template that represents a standardized exchange format on diagnostic functionality allows the decentralized configuration of diagnostic aspects. Applies to CP

RS_METH_00080: The AUTOSAR methodology shall support the concept of implicit communication behavior
Applies to CP

RS_METH_00083: The AUTOSAR methodology shall explain the description and handling of Data Exchange Points
Applies to CP

RS_METH_00084
Applies to CP

RS_METH_00062: The methodology shall support configuration of parameters with different binding time.

Description: The Autosar methodology shall support system development with different combinations of configuration classes.

Rationale:Configuration of parameters can be performed in different process steps: pre-compile, link time, and post-build.

Applies to CP

RS_METH_00074,RS_METH_00075,RS_METH_00076
Applies to CP

Delete the following requirements:

RS_METH_00017: Methodology shall clearly define what is standardized and what is not standardized

Reason: Methodology is an auxiliary document and only informative

Delete RS_METH_00002,RS_METH_00003,RS_METH_00004,RS_METH_00005,
RS_AMETH_00081,RS_AMETH_00082

Reason: all requirements on the usage of specific templates will be removed.
Instead one general requirement about the usage of templates (RS_METH_00208)
will be added.

Delete RS_METH_00038

Rationale: C-Code is supported, but the description nevertheless is independent of
the programming language.

Delete RS_METH_00021, RS_METH_00043, RS_METH_00046,
RS_METH_00047, RS_METH_00048, RS_METH_00025, RS_METH_00050,
RS_METH_00051, RS_METH_00052, RS_METH_00061, RS_METH_00027,
RS_METH_00028, RS_METH_00064, RS_METH_00009, RS_METH_00067

Reason: all these requirements describe general SPEM properties and are de-
scribed in the introduction of TR_Methodology

Remove RS_METH_00054 and extend instead description in TR_Methodology
(handled in different RfC)

Delete RS_METH_00010

Reason: this is a property of the MMT

Delete RS_METH_00057: AUTOSAR methodology shall support traceability
to external artifacts

Reason: This is not a feature of TR_Methodology or TR_AdaptiveMethodology
–Last change on issue 77303 comment 7–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.5 Specification Item RS_METH_00020

Trace References:

RS_Main_00300

Content:**RfCs affecting this spec item between releases 1.2.0 and 1.3.0:**

- RfC #77303: Final migration of RS_Methodology from CP to FO

Problem description:

The document RS_Methodology from CP (CP_RS_Methodology) shall completely be migrated to FO together with the next CP release (for FO_R1.3).

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Agreed solution:

In RS_Main, the following main requirements need to be extended to FO (in Applies To) in order to fulfil traceability: RS_Main_00360, RS_Main_00290

In RS_Methodology (see also https://svn.autosar.org/repos/work/09_WorkPackages/WP-M/06_Subgroups/05_Methodology/Migration_RS_Methodology_CP_to_FO):

- Delete chapter 1.1 Limitations
- Change chapter 2.1 General Requirements: This sections specifies the general requirements, which are valid for both platforms.

Chapter 2.1 General Requirements:

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Description: The methodology shall explain how to build an AUTOSAR system using the activities and work products.

It should be like a user manual to help an organization efficiently apply AUTOSAR. In particular, the methodology shall explain how to build a system consisting of classic and adaptive platforms.

Applies to CP,AP

RS_METH_00041: The methodology shall support top-down and bottom-up approaches

Description: The methodology shall support the top-down and bottom-up approach. In the top-down approach, all constraints on the application software and their distribution on ECUs shall be considered. In the bottom-up approach, all constraints coming from the hardware (ECUs/sensors/actuators) should be taken into account.

Applies to CP,AP

RS_METH_00016 (trace to RS_Main_00190): The methodology shall support

building a system of both AUTOSAR and Non-AUTOSAR ECUs

Description: The methodology shall support building a system of AUTOSAR compliant ECUs and non-AUTOSAR compliant ECUs.

Rationale: The design of a complete vehicle system shall be supported.

Applies to CP,AP

Add RS_METH_00200 (RS_Main_00161): The methodology shall support building a system consisting of several AUTOSAR platforms

Description: The methodology shall support building a system consisting of several AUTOSAR platforms.

Rationale: The design of a complete vehicle system shall be supported.

Use Case: The communication description between machines (or ECUs) based on classic and adaptive AUTOSAR platforms.

Applies to CP,AP

RS_METH_00018:

Applies to AP,CP

RS_METH_00032: The methodology shall support different levels of abstractions

Description: The methodology shall support different views for the development of an AUTOSAR system. This corresponds to the typical domains and parties, which are involved in the system development.

Use case: AUTOSAR is using several abstraction levels to describe the information exchanged between the different players.

In an early phase for instance only the "Virtual Functional Bus" is used, whereas in later development phases we handle real implementations of the SWC deployed to several ECUs.

Applies to CP,AP

RS_METH_00020: The methodology shall support round-trip engineering

Description: The methodology shall support round-trip engineering. This implies that several iteration loops might be necessary in order to finalize a task or work product.

Rationale: Meet AUTOSAR Quality requirements.

Dependencies: –

Use Case: Automotive systems are typically developed in several sample phases (A, B, C, etc).\\}

A single Software Component is updated in a AUTOSAR System. The updated ECU Extract still matches the existing ECU Configuration (as long as no contradicting changes are made in the iteration).

Applies to CP,AP

RS_METH_00077: The methodology shall support different views on the SW-C structure by OEMs and suppliers

Rationale: Possibility for the supplier to adapt the structure of a SW-C.

Use case: The amount of changes on the supplier side shall be limited to the changes caused by OEM updates.

Applies To CP,AP

RS_METH_00078

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00079

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00015

Use case: An ECU built for a particular microcontroller is explicitly optimized for programming language ABC.

The methodology explains when and how to specify and to select the implementation of the software components compatible with the required programming language.

Applies to CP,AP

RS_METH_00066

Header: The methodology shall allow activities that reference tools

Dependencies:—

Use Case: For the classic platform, the activity ...

Applies to CP,AP

RS_METH_00042 (trace to RS_Main_00250)

Rationale: AUTOSAR should not require the use of particular tools when industry standard tools already exist.

Applies to CP,AP

RS_METH_00056 (trace to RS_Main_00507)

Applies to CP,AP

RS_METH_00069:

Dependencies:—

Chapter 2.2 Requirements for the Classic Platform

RS_METH_00033:

Use case: In AUTOSAR, an application is modeled as a composition of intercon-

nected components.

The VFB is the communication mechanism that allows these components to interact. Even if all the resources used by these components are not available yet during the development (HW/Network)

some basic checks can be done and early problems can be solved that will ease the integration phase later.

Applies to CP

Add RS_METH_00208 (RS_Main_00300,RS_Main_00150): The methodology shall explain the high-level usage of the AUTOSAR templates

Description: The AUTOSAR templates include numerous features for the system design, the software component, the ECU configuration etc. The methodology shall clearly describe the activities to use/modify these and which activities require them to be completed before commencing.

Rationale: Usage of AUTOSAR templates in the development process

Use Case: Usage of the SW-C template: An existing software component is implemented and is to be integrated into a suppliers ECU. A description of the component is needed in order to correctly integrate that component into the ECU. \{\}newline

Usage of the system template: OEM as integrator is fixing the ECUs, the topology and the list of the SW-C for

one vehicle for the suppliers. \{\}newline

Usage of the BSW module template: An existing BSW module is implemented and is to be integrated into an ECU. A description of the BSW Module is needed in order to correctly integrate that module into the ECU. \{\}newline

The ECU configuration template is used to describe the configuration when integrating a BSW module into an ECU. \{\}newline

The Safety Extensions allow a standardized exchange of safety information and provide the basis for consistent management among different

vendors and tools as required by ISO 26262. \{\}newline

The Diagnostic Extract Template that represents a standardized exchange format on diagnostic functionality allows the decentralized configuration of diagnostic aspects.

Applies to CP

RS_METH_00080: The AUTOSAR methodology shall support the concept of implicit communication behavior

Applies to CP

RS_METH_00083: The AUTOSAR methodology shall explain the description and handling of Data Exchange Points

Applies to CP

RS_METH_00084

Applies to CP

RS_METH_00062: The methodology shall support configuration of parameters with different binding time.

Description: The Autosar methodology shall support system development with different combinations of configuration classes.

Rationale: Configuration of parameters can be performed in different process steps: pre-compile, link time, and post-build.

Applies to CP

RS_METH_00074, RS_METH_00075, RS_METH_00076

Applies to CP

Delete the following requirements:

RS_METH_00017: Methodology shall clearly define what is standardized and what is not standardized

Reason: Methodology is an auxiliary document and only informative

Delete RS_METH_00002, RS_METH_00003, RS_METH_00004, RS_METH_00005, RS_AMETH_00081, RS_AMETH_00082

Reason: all requirements on the usage of specific templates will be removed. Instead one general requirement about the usage of templates (RS_METH_00208) will be added.

Delete RS_METH_00038

Rationale: C-Code is supported, but the description nevertheless is independent of the programming language.

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Reason: all these requirements describe general SPEM properties and are described in the introduction of TR_Methodology

Remove RS_METH_00054 and extend instead description in TR_Methodology (handled in different RfC)

Delete RS_METH_00010

Reason: this is a property of the MMT

Delete RS_METH_00057: AUTOSAR methodology shall support traceability

to external artifacts

Reason: This is not a feature of TR_Methodology or TR_AdaptiveMethodology

–Last change on issue 77303 comment 7–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.6 Specification Item RS_METH_00032

Trace References:

RS_Main_00130, RS_Main_00140, RS_Main_00330, RS_Main_00400

Content:

RfCs affecting this spec item between releases 1.2.0 and 1.3.0:

- RfC #77303: Final migration of RS_Methodology from CP to FO

Problem description:

The document RS_Methodology from CP (CP_RS_Methodology) shall completely be migrated to FO together with the next CP release (for FO_R1.3).

In a first step for FO_R1.1 already some of the requirements in CP_RS_Methodology, which are also valid for AP, have been taken over. In this RfC, the remaining requirements shall be taken over, adapted, or deleted if not needed anymore. For the next CP release, the document CP_RS_Methodology can then completely be removed.

Agreed solution:

In RS_Main, the following main requirements need to be extended to FO (in Applies To) in order to fulfil traceability: RS_Main_00360, RS_Main_00290

In RS_Methodology (see also https://svn.autosar.org/repos/work/09_WorkPackages/WP-M/06_Subgroups/05_Methodology/Migration_RS_Methodology_CP_to_FO):

- Delete chapter 1.1 Limitations
- Change chapter 2.1 General Requirements: This sections specifies the general requirements, which are valid for both platforms.

Chapter 2.1 General Requirements:

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Description: The methodology shall explain how to build an AUTOSAR system using the activities and work products.

It should be like a user manual to help an organization efficiently apply AUTOSAR. In particular, the methodology shall explain how to build a system consisting of classic and adaptive platforms.

Applies to CP,AP

RS_METH_00041: The methodology shall support top-down and bottom-up approaches

Description: The methodology shall support the top-down and bottom-up approach. In the top-down approach, all constraints on the application software and their distribution on ECUs shall be considered. In the bottom-up approach, all constraints coming from the hardware (ECUs/sensors/actuators) should be taken into account.

Applies to CP,AP

RS_METH_00016 (trace to RS_Main_00190): The methodology shall support building a system of both AUTOSAR and Non-AUTOSAR ECUs

Description: The methodology shall support building a system of AUTOSAR compliant ECUs and non-AUTOSAR compliant ECUs.

Rationale: The design of a complete vehicle system shall be supported.

Applies to CP,AP

Add RS_METH_00200 (RS_Main_00161): The methodology shall support building a system consisting of several AUTOSAR platforms

Description: The methodology shall support building a system consisting of several AUTOSAR platforms.

Rationale: The design of a complete vehicle system shall be supported.

Use Case: The communication description between machines (or ECUs) based on classic and adaptive AUTOSAR platforms.

Applies to CP,AP

RS_METH_00018:

Applies to AP,CP

RS_METH_00032: The methodology shall support different levels of abstractions

Description: The methodology shall support different views for the development of an AUTOSAR system. This corresponds to the typical domains and parties, which are involved in the system development.

Use case: AUTOSAR is using several abstraction levels to describe the information

exchanged between the different players.

In an early phase for instance only the "Virtual Functional Bus" is used, whereas in later development phases we handle real implementations of the SWC deployed to several ECUs.

Applies to CP,AP

RS_METH_00020: The methodology shall support round-trip engineering

Description: The methodology shall support round-trip engineering. This implies that several iteration loops might be necessary in order to finalize a task or work product.

Rationale: Meet AUTOSAR Quality requirements.

Dependencies: –

Use Case: Automotive systems are typically developed in several sample phases (A, B, C, etc).\\}

A single Software Component is updated in a AUTOSAR System. The updated ECU Extract still matches the existing ECU Configuration (as long as no contradicting changes are made in the iteration).

Applies to CP,AP

RS_METH_00077: The methodology shall support different views on the SW-C structure by OEMs and suppliers

Rationale: Possibility for the supplier to adapt the structure of a SW-C.

Use case: The amount of changes on the supplier side shall be limited to the changes caused by OEM updates.

Applies To CP,AP

RS_METH_00078

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00079

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00015

Use case: An ECU built for a particular microcontroller is explicitly optimized for programming language ABC.

The methodology explains when and how to specify and to select the implementation of the software components compatible with the required programming language.

Applies to CP,AP

RS_METH_00066

Header: The methodology shall allow activities that reference tools

Dependencies:–

Use Case: For the classic platform, the activity ...

Applies to CP,AP

RS_METH_00042 (trace to RS_Main_00250)

Rationale: AUTOSAR should not require the use of particular tools when industry standard tools already exist.

Applies to CP,AP

RS_METH_00056 (trace to RS_Main_00507)

Applies to CP,AP

RS_METH_00069:

Dependencies:–

Chapter 2.2 Requirements for the Classic Platform

RS_METH_00033:

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Applies to CP

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Reason: This is not a feature of TR_Methodology or TR_AdaptiveMethodology
–Last change on issue 77303 comment 7–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.7 Specification Item RS_METH_00033

Trace References:

RS_Main_00140, RS_Main_00060, RS_Main_00130, RS_Main_00150,
RS_Main_00300, RS_Main_00400

Content:

RfCs affecting this spec item between releases 1.2.0 and 1.3.0:

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RS_METH_00016 (trace to RS_Main_00190): The methodology shall support building a system of both AUTOSAR and Non-AUTOSAR ECUs

Description: The methodology shall support building a system of AUTOSAR compliant ECUs and non-AUTOSAR compliant ECUs.

Rationale: The design of a complete vehicle system shall be supported.

Applies to CP,AP

Add RS_METH_00200 (RS_Main_00161): The methodology shall support building a system consisting of several AUTOSAR platforms

Description: The methodology shall support building a system consisting of several AUTOSAR platforms.

Rationale: The design of a complete vehicle system shall be supported.

Use Case: The communication description between machines (or ECUs) based on classic and adaptive AUTOSAR platforms.

Applies to CP,AP

RS_METH_00018:

Applies to AP,CP

RS_METH_00032: The methodology shall support different levels of abstractions

Description: The methodology shall support different views for the development of an AUTOSAR system. This corresponds to the typical domains and parties, which are involved in the system development.

Use case: AUTOSAR is using several abstraction levels to describe the information exchanged between the different players.

In an early phase for instance only the "Virtual Functional Bus" is used, whereas in later development phases we handle real implementations of the SWC deployed to several ECUs.

Applies to CP,AP

RS_METH_00020: The methodology shall support round-trip engineering

Description: The methodology shall support round-trip engineering. This implies that several iteration loops might be necessary in order to finalize a task or work product.

Rationale: Meet AUTOSAR Quality requirements.

Dependencies: –

Use Case: Automotive systems are typically developed in several sample phases (A, B, C, etc).\\}

A single Software Component is updated in a AUTOSAR System. The updated ECU Extract still matches the existing ECU Configuration (as long as no contradicting changes are made in the iteration).

Applies to CP,AP

RS_METH_00077: The methodology shall support different views on the SW-C structure by OEMs and suppliers

Rationale: Possibility for the supplier to adapt the structure of a SW-C.

Use case: The amount of changes on the supplier side shall be limited to the changes caused by OEM updates.

Applies To CP,AP

RS_METH_00078

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00079

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00015

Use case: An ECU built for a particular microcontroller is explicitly optimized for programming language ABC.

The methodology explains when and how to specify and to select the implementation of the software components compatible with the required programming language.

Applies to CP,AP

RS_METH_00066

Header: The methodology shall allow activities that reference tools

Dependencies:–

Use Case: For the classic platform, the activity ...

Applies to CP,AP

RS_METH_00042 (trace to RS_Main_00250)

Rationale: AUTOSAR should not require the use of particular tools when industry standard tools already exist.

Applies to CP,AP

RS_METH_00056 (trace to RS_Main_00507)

Applies to CP,AP

RS_METH_00069:

Dependencies:–

Chapter 2.2 Requirements for the Classic Platform

RS_METH_00033:

Use case: In AUTOSAR, an application is modeled as a composition of interconnected components.

The VFB is the communication mechanism that allows these components to interact. Even if all the resources used by these components are not available yet during the

development (HW/Network)

some basic checks can be done and early problems can be solved that will ease the integration phase later.

Applies to CP

Add RS_METH_00208 (RS_Main_00300,RS_Main_00150): The methodology shall explain the high-level usage of the AUTOSAR templates

Description: The AUTOSAR templates include numerous features for the system design, the software component, the ECU configuration etc. The methodology shall clearly describe the activities to use/modify these and which activities require them to be completed before commencing.

Rationale: Usage of AUTOSAR templates in the development process

Use Case: Usage of the SW-C template: An existing software component is implemented and is to be integrated into a suppliers ECU. A description of the component is needed in order to correctly integrate that component into the ECU. \{\}

Usage of the system template: OEM as integrator is fixing the ECUs, the topology and the list of the SW-C for

one vehicle for the suppliers. \{\}

Usage of the BSW module template: An existing BSW module is implemented and is to be integrated into an ECU. A description of the BSW Module is needed in order to correctly integrate that module into the ECU. \{\}

The ECU configuration template is used to describe the configuration when integrating a BSW module into an ECU. \{\}

The Safety Extensions allow a standardized exchange of safety information and provide the basis for consistent management among different vendors and tools as required by ISO 26262. \{\}

The Diagnostic Extract Template that represents a standardized exchange format on diagnostic functionality allows the decentralized configuration of diagnostic aspects.

Applies to CP

RS_METH_00080: The AUTOSAR methodology shall support the concept of implicit communication behavior

Applies to CP

RS_METH_00083: The AUTOSAR methodology shall explain the description and handling of Data Exchange Points

Applies to CP

RS_METH_00084

Applies to CP

RS_METH_00062: The methodology shall support configuration of parameters with different binding time.

Description: The Autosar methodology shall support system development with different combinations of configuration classes.

Rationale: Configuration of parameters can be performed in different process steps: pre-compile, link time, and post-build.

Applies to CP

RS_METH_00074, RS_METH_00075, RS_METH_00076

Applies to CP

Delete the following requirements:

RS_METH_00017: Methodology shall clearly define what is standardized and what is not standardized

Reason: Methodology is an auxiliary document and only informative

Delete RS_METH_00002, RS_METH_00003, RS_METH_00004, RS_METH_00005, RS_AMETH_00081, RS_AMETH_00082

Reason: all requirements on the usage of specific templates will be removed. Instead one general requirement about the usage of templates (RS_METH_00208) will be added.

Delete RS_METH_00038

Rationale: C-Code is supported, but the description nevertheless is independent of the programming language.

Delete RS_METH_00021, RS_METH_00043, RS_METH_00046, RS_METH_00047, RS_METH_00048, RS_METH_00025, RS_METH_00050, RS_METH_00051, RS_METH_00052, RS_METH_00061, RS_METH_00027, RS_METH_00028, RS_METH_00064, RS_METH_00009, RS_METH_00067

Reason: all these requirements describe general SPEM properties and are described in the introduction of TR_Methodology

Remove RS_METH_00054 and extend instead description in TR_Methodology (handled in different RfC)

Delete RS_METH_00010

Reason: this is a property of the MMT

Delete RS_METH_00057: AUTOSAR methodology shall support traceability to external artifacts

Reason: This is not a feature of TR_Methodology or TR_AdaptiveMethodology

–Last change on issue 77303 comment 7–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.8 Specification Item RS_METH_00041

Trace References:

RS_Main_00310, RS_Main_00350

Content:**RfCs affecting this spec item between releases 1.2.0 and 1.3.0:**

- RfC #77303: Final migration of RS_Methodology from CP to FO

Problem description:

The document RS_Methodology from CP (CP_RS_Methodology) shall completely be migrated to FO together with the next CP release (for FO_R1.3).

In a first step for FO_R1.1 already some of the requirements in CP_RS_Methodology, which are also valid for AP, have been taken over. In this RfC, the remaining requirements shall be taken over, adapted, or deleted if not needed anymore. For the next CP release, the document CP_RS_Methodology can then completely be removed.

Agreed solution:

In RS_Main, the following main requirements need to be extended to FO (in Applies To) in order to fulfil traceability: RS_Main_00360, RS_Main_00290

In RS_Methodology (see also https://svn.autosar.org/repos/work/09_WorkPackages/WP-M/06_Subgroups/05_Methodology/Migration_RS_Methodology_CP_to_FO):

- Delete chapter 1.1 Limitations
- Change chapter 2.1 General Requirements: This sections specifies the general requirements, which are valid for both platforms.

Chapter 2.1 General Requirements:

RS_METH_00006: The methodology shall explain how to build an AUTOSAR system

Description: The methodology shall explain how to build an AUTOSAR system using

the activities and work products.

It should be like a user manual to help an organization efficiently apply AUTOSAR. In particular, the methodology shall explain how to build a system consisting of classic and adaptive platforms.

Applies to CP,AP

RS_METH_00041: The methodology shall support top-down and bottom-up approaches

Description: The methodology shall support the top-down and bottom-up approach. In the top-down approach, all constraints on the application software and their distribution on ECUs shall be considered. In the bottom-up approach, all constraints coming from the hardware (ECUs/sensors/actuators) should be taken into account.

Applies to CP,AP

RS_METH_00016 (trace to RS_Main_00190): The methodology shall support building a system of both AUTOSAR and Non-AUTOSAR ECUs

Description: The methodology shall support building a system of AUTOSAR compliant ECUs and non-AUTOSAR compliant ECUs.

Rationale: The design of a complete vehicle system shall be supported.

Applies to CP,AP

Add RS_METH_00200 (RS_Main_00161): The methodology shall support building a system consisting of several AUTOSAR platforms

Description: The methodology shall support building a system consisting of several AUTOSAR platforms.

Rationale: The design of a complete vehicle system shall be supported.

Use Case: The communication description between machines (or ECUs) based on classic and adaptive AUTOSAR platforms.

Applies to CP,AP

RS_METH_00018:

Applies to AP,CP

RS_METH_00032: The methodology shall support different levels of abstractions

Description: The methodology shall support different views for the development of an AUTOSAR system. This corresponds to the typical domains and parties, which are involved in the system development.

Use case: AUTOSAR is using several abstraction levels to describe the information exchanged between the different players.

In an early phase for instance only the "Virtual Functional Bus" is used, whereas in later development phases we handle real implementations of the SWC deployed to several ECUs.

Applies to CP,AP

RS_METH_00020: The methodology shall support round-trip engineering

Description: The methodology shall support round-trip engineering. This implies that several iteration loops might be necessary in order to finalize a task or work product.

Rationale: Meet AUTOSAR Quality requirements.

Dependencies: –

Use Case: Automotive systems are typically developed in several sample phases (A, B, C, etc).\{\}newline

A single Software Component is updated in a AUTOSAR System. The updated ECU Extract still matches the existing ECU Configuration (as long as no contradicting changes are made in the iteration).

Applies to CP,AP

RS_METH_00077: The methodology shall support different views on the SW-C structure by OEMs and suppliers

Rationale: Possibility for the supplier to adapt the structure of a SW-C.

Use case: The amount of changes on the supplier side shall be limited to the changes caused by OEM updates.

Applies To CP,AP

RS_METH_00078

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00079

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00015

Use case: An ECU built for a particular microcontroller is explicitly optimized for programming language ABC.

The methodology explains when and how to specify and to select the implementation of the software components compatible with the required programming language.

Applies to CP,AP

RS_METH_00066

Header: The methodology shall allow activities that reference tools

Dependencies:–

Use Case: For the classic platform, the activity ...

Applies to CP,AP

RS_METH_00042 (trace to RS_Main_00250)

Rationale: AUTOSAR should not require the use of particular tools when industry standard tools already exist.

Applies to CP,AP

RS_METH_00056 (trace to RS_Main_00507)

Applies to CP,AP

RS_METH_00069:

Dependencies:–

Chapter 2.2 Requirements for the Classic Platform

RS_METH_00033:

Use case: In AUTOSAR, an application is modeled as a composition of interconnected components.

The VFB is the communication mechanism that allows these components to interact. Even if all the resources used by these components are not available yet during the development (HW/Network)

some basic checks can be done and early problems can be solved that will ease the integration phase later.

Applies to CP

Add RS_METH_00208 (RS_Main_00300,RS_Main_00150): The methodology shall explain the high-level usage of the AUTOSAR templates

Description: The AUTOSAR templates include numerous features for the system design, the software component, the ECU configuration etc. The methodology shall clearly describe the activities to use/modify these and which activities require them to be completed before commencing.

Rationale: Usage of AUTOSAR templates in the development process

Use Case: Usage of the SW-C template: An existing software component is implemented and is to be integrated into a suppliers ECU. A description of the component is needed in order to correctly integrate that component into the ECU.\\newline

Usage of the system template: OEM as integrator is fixing the ECUs, the topology and the list of the SW-C for

one vehicle for the suppliers. \\newline

Usage of the BSW module template: An existing BSW module is implemented and is to be integrated into an ECU. A description of the BSW Module is needed in order to correctly integrate that module into the ECU. \\newline

The ECU configuration template is used to describe the configuration when integrating a BSW module into an ECU.\\newline

The Safety Extensions allow a standardized exchange of safety information and provide the basis for consistent management among different

vendors and tools as required by ISO 26262. \{\}newline

The Diagnostic Extract Template that represents a standardized exchange format on diagnostic functionality allows the decentralized configuration of diagnostic aspects.

Applies to CP

RS_METH_00080: The AUTOSAR methodology shall support the concept of implicit communication behavior

Applies to CP

RS_METH_00083: The AUTOSAR methodology shall explain the description and handling of Data Exchange Points

Applies to CP

RS_METH_00084

Applies to CP

RS_METH_00062: The methodology shall support configuration of parameters with different binding time.

Description: The Autosar methodology shall support system development with different combinations of configuration classes.

Rationale: Configuration of parameters can be performed in different process steps: pre-compile, link time, and post-build.

Applies to CP

RS_METH_00074,RS_METH_00075,RS_METH_00076

Applies to CP

Delete the following requirements:

RS_METH_00017: Methodology shall clearly define what is standardized and what is not standardized

Reason: Methodology is an auxiliary document and only informative

Delete RS_METH_00002,RS_METH_00003,RS_METH_00004,RS_METH_00005,RS_AMETH_00081,RS_AMETH_00082

Reason: all requirements on the usage of specific templates will be removed. Instead one general requirement about the usage of templates (RS_METH_00208) will be added.

Delete RS_METH_00038

Rationale: C-Code is supported, but the description nevertheless is independent of the programming language.

Delete RS_METH_00021, RS_METH_00043, RS_METH_00046,
RS_METH_00047, RS_METH_00048, RS_METH_00025, RS_METH_00050,
RS_METH_00051, RS_METH_00052, RS_METH_00061, RS_METH_00027,
RS_METH_00028, RS_METH_00064, RS_METH_00009, RS_METH_00067
Reason: all these requirements describe general SPEM properties and are described in the introduction of TR_Methodology

Remove RS_METH_00054 and extend instead description in TR_Methodology (handled in different RfC)

Delete RS_METH_00010
Reason: this is a property of the MMT

Delete RS_METH_00057: AUTOSAR methodology shall support traceability to external artifacts
Reason: This is not a feature of TR_Methodology or TR_AdaptiveMethodology
–Last change on issue 77303 comment 7–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.9 Specification Item RS_METH_00042

Trace References:

RS_Main_00250

Content:

RfCs affecting this spec item between releases 1.2.0 and 1.3.0:

- RfC #77303: Final migration of RS_Methodology from CP to FO

Problem description:

The document RS_Methodology from CP (CP_RS_Methodology) shall completely be migrated to FO together with the next CP release (for FO_R1.3).

In a first step for FO_R1.1 already some of the requirements in CP_RS_Methodology, which are also valid for AP, have been taken over. In this RfC, the remaining requirements shall be taken over, adapted, or deleted if not

needed anymore. For the next CP release, the document CP_RS_Methodology can then completely be removed.

Agreed solution:

In RS_Main, the following main requirements need to be extended to FO (in Applies To) in order to fulfil traceability: RS_Main_00360, RS_Main_00290

In RS_Methodology (see also https://svn.autosar.org/repos/work/09_WorkPackages/WP-M/06_Subgroups/05_Methodology/Migration_RS_Methodology_CP_to_FO):

- Delete chapter 1.1 Limitations
- Change chapter 2.1 General Requirements: This sections specifies the general requirements, which are valid for both platforms.

Chapter 2.1 General Requirements:

RS_METH_00006: The methodology shall explain how to build an AUTOSAR system

Description: The methodology shall explain how to build an AUTOSAR system using the activities and work products.

It should be like a user manual to help an organization efficiently apply AUTOSAR. In particular, the methodology shall explain how to build a system consisting of classic and adaptive platforms.

Applies to CP,AP

RS_METH_00041: The methodology shall support top-down and bottom-up approaches

Description: The methodology shall support the top-down and bottom-up approach. In the top-down approach, all constraints on the application software and their distribution on ECUs shall be considered. In the bottom-up approach, all constraints coming from the hardware (ECUs/sensors/actuators) should be taken into account.

Applies to CP,AP

RS_METH_00016 (trace to RS_Main_00190): The methodology shall support building a system of both AUTOSAR and Non-AUTOSAR ECUs

Description: The methodology shall support building a system of AUTOSAR compliant ECUs and non-AUTOSAR compliant ECUs.

Rationale: The design of a complete vehicle system shall be supported.

Applies to CP,AP

Add RS_METH_00200 (RS_Main_00161): The methodology shall support building a system consisting of several AUTOSAR platforms

Description: The methodology shall support building a system consisting of several

AUTOSAR platforms.

Rationale: The design of a complete vehicle system shall be supported.

Use Case: The communication description between machines (or ECUs) based on classic and adaptive AUTOSAR platforms.

Applies to CP,AP

RS_METH_00018:

Applies to AP,CP

RS_METH_00032: The methodology shall support different levels of abstractions

Description: The methodology shall support different views for the development of an AUTOSAR system. This corresponds to the typical domains and parties, which are involved in the system development.

Use case: AUTOSAR is using several abstraction levels to describe the information exchanged between the different players.

In an early phase for instance only the "Virtual Functional Bus" is used, whereas in later development phases we handle real implementations of the SWC deployed to several ECUs.

Applies to CP,AP

RS_METH_00020: The methodology shall support round-trip engineering

Description: The methodology shall support round-trip engineering. This implies that several iteration loops might be necessary in order to finalize a task or work product.

Rationale: Meet AUTOSAR Quality requirements.

Dependencies: –

Use Case: Automotive systems are typically developed in several sample phases (A, B, C, etc).\}

A single Software Component is updated in a AUTOSAR System. The updated ECU Extract still matches the existing ECU Configuration (as long as no contradicting changes are made in the iteration).

Applies to CP,AP

RS_METH_00077: The methodology shall support different views on the SW-C structure by OEMs and suppliers

Rationale: Possibility for the supplier to adapt the structure of a SW-C.

Use case: The amount of changes on the supplier side shall be limited to the changes caused by OEM updates.

Applies To CP,AP

RS_METH_00078

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00079

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00015

Use case: An ECU built for a particular microcontroller is explicitly optimized for programming language ABC.

The methodology explains when and how to specify and to select the implementation of the software components compatible with the required programming language.

Applies to CP,AP

RS_METH_00066

Header: The methodology shall allow activities that reference tools

Dependencies:–

Use Case: For the classic platform, the activity ...

Applies to CP,AP

RS_METH_00042 (trace to RS_Main_00250)

Rationale: AUTOSAR should not require the use of particular tools when industry standard tools already exist.

Applies to CP,AP

RS_METH_00056 (trace to RS_Main_00507)

Applies to CP,AP

RS_METH_00069:

Dependencies:–

Chapter 2.2 Requirements for the Classic Platform

RS_METH_00033:

Use case: In AUTOSAR, an application is modeled as a composition of interconnected components.

The VFB is the communication mechanism that allows these components to interact. Even if all the resources used by these components are not available yet during the development (HW/Network)

some basic checks can be done and early problems can be solved that will ease the integration phase later.

Applies to CP

Add RS_METH_00208 (RS_Main_00300,RS_Main_00150): The methodology

shall explain the high-level usage of the AUTOSAR templates

Description: The AUTOSAR templates include numerous features for the system design, the software component, the ECU configuration etc. The methodology shall clearly describe the activities to use/modify these and which activities require them to be completed before commencing.

Rationale: Usage of AUTOSAR templates in the development process

Use Case: Usage of the SW-C template: An existing software component is implemented and is to be integrated into a suppliers ECU. A description of the component is needed in order to correctly integrate that component into the ECU. \{\}newline

Usage of the system template: OEM as integrator is fixing the ECUs, the topology and the list of the SW-C for

one vehicle for the suppliers. \{\}newline

Usage of the BSW module template: An existing BSW module is implemented and is to be integrated into an ECU. A description of the BSW Module is needed in order to correctly integrate that module into the ECU. \{\}newline

The ECU configuration template is used to describe the configuration when integrating a BSW module into an ECU. \{\}newline

The Safety Extensions allow a standardized exchange of safety information and provide the basis for consistent management among different vendors and tools as required by ISO 26262. \{\}newline

The Diagnostic Extract Template that represents a standardized exchange format on diagnostic functionality allows the decentralized configuration of diagnostic aspects.

Applies to CP

RS_METH_00080: The AUTOSAR methodology shall support the concept of implicit communication behavior

Applies to CP

RS_METH_00083: The AUTOSAR methodology shall explain the description and handling of Data Exchange Points

Applies to CP

RS_METH_00084

Applies to CP

RS_METH_00062: The methodology shall support configuration of parameters with different binding time.

Description: The Autosar methodology shall support system development with different combinations of configuration classes.

Rationale: Configuration of parameters can be performed in different process steps: pre-compile, link time, and post-build.

Applies to CP

RS_METH_00074,RS_METH_00075,RS_METH_00076

Applies to CP

Delete the following requirements:

RS_METH_00017: Methodology shall clearly define what is standardized and what is not standardized

Reason: Methodology is an auxiliary document and only informative

Delete RS_METH_00002,RS_METH_00003,RS_METH_00004,RS_METH_00005,RS_AMETH_00081,RS_AMETH_00082

Reason: all requirements on the usage of specific templates will be removed. Instead one general requirement about the usage of templates (RS_METH_00208) will be added.

Delete RS_METH_00038

Rationale: C-Code is supported, but the description nevertheless is independent of the programming language.

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Reason: all these requirements describe general SPEM properties and are described in the introduction of TR_Methodology

Remove RS_METH_00054 and extend instead description in TR_Methodology (handled in different RfC)

Delete RS_METH_00010

Reason: this is a property of the MMT

Delete RS_METH_00057: AUTOSAR methodology shall support traceability to external artifacts

Reason: This is not a feature of TR_Methodology or TR_AdaptiveMethodology

–Last change on issue 77303 comment 7–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.10 Specification Item RS_METH_00056

Trace References:

RS_Main_00507

Content:

RfCs affecting this spec item between releases 1.2.0 and 1.3.0:

- RfC #77303: Final migration of RS_Methodology from CP to FO

Problem description:

The document RS_Methodology from CP (CP_RS_Methodology) shall completely be migrated to FO together with the next CP release (for FO_R1.3).

In a first step for FO_R1.1 already some of the requirements in CP_RS_Methodology, which are also valid for AP, have been taken over. In this RfC, the remaining requirements shall be taken over, adapted, or deleted if not needed anymore. For the next CP release, the document CP_RS_Methodology can then completely be removed.

Agreed solution:

In RS_Main, the following main requirements need to be extended to FO (in Applies To) in order to fulfil traceability: RS_Main_00360, RS_Main_00290

In RS_Methodology (see also https://svn.autosar.org/repos/work/09_WorkPackages/WP-M/06_Subgroups/05_Methodology/Migration_RS_Methodology_CP_to_FO):

- Delete chapter 1.1 Limitations
- Change chapter 2.1 General Requirements: This sections specifies the general requirements, which are valid for both platforms.

Chapter 2.1 General Requirements:

RS_METH_00006: The methodology shall explain how to build an AUTOSAR system

Description: The methodology shall explain how to build an AUTOSAR system using the activities and work products.

It should be like a user manual to help an organization efficiently apply AUTOSAR. In particular, the methodology shall explain how to build a system consisting of classic and adaptive platforms.

Applies to CP,AP

RS_METH_00041: The methodology shall support top-down and bottom-up approaches

Description: The methodology shall support the top-down and bottom-up approach. In the top-down approach, all constraints on the application software and their distribution on ECUs shall be considered. In the bottom-up approach, all constraints coming from the hardware (ECUs/sensors/actuators) should be taken into account.

Applies to CP,AP

RS_METH_00016 (trace to RS_Main_00190): The methodology shall support building a system of both AUTOSAR and Non-AUTOSAR ECUs

Description: The methodology shall support building a system of AUTOSAR compliant ECUs and non-AUTOSAR compliant ECUs.

Rationale: The design of a complete vehicle system shall be supported.

Applies to CP,AP

Add RS_METH_00200 (RS_Main_00161): The methodology shall support building a system consisting of several AUTOSAR platforms

Description: The methodology shall support building a system consisting of several AUTOSAR platforms.

Rationale: The design of a complete vehicle system shall be supported.

Use Case: The communication description between machines (or ECUs) based on classic and adaptive AUTOSAR platforms.

Applies to CP,AP

RS_METH_00018:

Applies to AP,CP

RS_METH_00032: The methodology shall support different levels of abstractions

Description: The methodology shall support different views for the development of an AUTOSAR system. This corresponds to the typical domains and parties, which are involved in the system development.

Use case: AUTOSAR is using several abstraction levels to describe the information exchanged between the different players.

In an early phase for instance only the "Virtual Functional Bus" is used, whereas in later development phases we handle real implementations of the SWC deployed to several ECUs.

Applies to CP,AP

RS_METH_00020: The methodology shall support round-trip engineering

Description: The methodology shall support round-trip engineering. This implies that several iteration loops might be necessary in order to finalize a task or work product.

Rationale: Meet AUTOSAR Quality requirements.

Dependencies: –

Use Case: Automotive systems are typically developed in several sample phases (A, B, C, etc).\\}

A single Software Component is updated in a AUTOSAR System. The updated ECU Extract still matches the existing ECU Configuration (as long as no contradicting changes are made in the iteration).

Applies to CP,AP

RS_METH_00077: The methodology shall support different views on the SW-C structure by OEMs and suppliers

Rationale: Possibility for the supplier to adapt the structure of a SW-C.

Use case: The amount of changes on the supplier side shall be limited to the changes caused by OEM updates.

Applies To CP,AP

RS_METH_00078

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00079

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00015

Use case: An ECU built for a particular microcontroller is explicitly optimized for programming language ABC.

The methodology explains when and how to specify and to select the implementation of the software components compatible with the required programming language.

Applies to CP,AP

RS_METH_00066

Header: The methodology shall allow activities that reference tools

Dependencies:–

Use Case: For the classic platform, the activity ...

Applies to CP,AP

RS_METH_00042 (trace to RS_Main_00250)

Rationale: AUTOSAR should not require the use of particular tools when industry standard tools already exist.

Applies to CP,AP

RS_METH_00056 (trace to RS_Main_00507)

Applies to CP,AP

RS_METH_00069:

Dependencies:–

Chapter 2.2 Requirements for the Classic Platform

RS_METH_00033:

Use case: In AUTOSAR, an application is modeled as a composition of interconnected components.

The VFB is the communication mechanism that allows these components to interact. Even if all the resources used by these components are not available yet during the development (HW/Network)

some basic checks can be done and early problems can be solved that will ease the integration phase later.

Applies to CP

Add RS_METH_00208 (RS_Main_00300,RS_Main_00150): The methodology shall explain the high-level usage of the AUTOSAR templates

Description: The AUTOSAR templates include numerous features for the system design, the software component, the ECU configuration etc. The methodology shall clearly describe the activities to use/modify these and which activities require them to be completed before commencing.

Rationale: Usage of AUTOSAR templates in the development process

Use Case: Usage of the SW-C template: An existing software component is implemented and is to be integrated into a suppliers ECU. A description of the component is needed in order to correctly integrate that component into the ECU. \{\}newline

Usage of the system template: OEM as integrator is fixing the ECUs, the topology and the list of the SW-C for one vehicle for the suppliers. \{\}newline

Usage of the BSW module template: An existing BSW module is implemented and is to be integrated into an ECU. A description of the BSW Module is needed in order to correctly integrate that module into the ECU. \{\}newline

The ECU configuration template is used to describe the configuration when integrating a BSW module into an ECU. \{\}newline

The Safety Extensions allow a standardized exchange of safety information and provide the basis for consistent management among different vendors and tools as required by ISO 26262. \{\}newline

The Diagnostic Extract Template that represents a standardized exchange format on diagnostic functionality allows the decentralized configuration of diagnostic aspects.

Applies to CP

RS_METH_00080: The AUTOSAR methodology shall support the concept of

implicit communication behavior

Applies to CP

RS_METH_00083: The AUTOSAR methodology shall explain the description and handling of Data Exchange Points

Applies to CP

RS_METH_00084

Applies to CP

RS_METH_00062: The methodology shall support configuration of parameters with different binding time.

Description: The Autosar methodology shall support system development with different combinations of configuration classes.

Rationale: Configuration of parameters can be performed in different process steps: pre-compile, link time, and post-build.

Applies to CP

RS_METH_00074, RS_METH_00075, RS_METH_00076

Applies to CP

Delete the following requirements:

RS_METH_00017: Methodology shall clearly define what is standardized and what is not standardized

Reason: Methodology is an auxiliary document and only informative

Delete RS_METH_00002, RS_METH_00003, RS_METH_00004, RS_METH_00005, RS_AMETH_00081, RS_AMETH_00082

Reason: all requirements on the usage of specific templates will be removed. Instead one general requirement about the usage of templates (RS_METH_00208) will be added.

Delete RS_METH_00038

Rationale: C-Code is supported, but the description nevertheless is independent of the programming language.

Delete RS_METH_00021, RS_METH_00043, RS_METH_00046, RS_METH_00047, RS_METH_00048, RS_METH_00025, RS_METH_00050, RS_METH_00051, RS_METH_00052, RS_METH_00061, RS_METH_00027, RS_METH_00028, RS_METH_00064, RS_METH_00009, RS_METH_00067

Reason: all these requirements describe general SPEM properties and are de-

scribed in the introduction of TR_Methodology

Remove RS_METH_00054 and extend instead description in TR_Methodology (handled in different RfC)

Delete RS_METH_00010

Reason: this is a property of the MMT

Delete RS_METH_00057: AUTOSAR methodology shall support traceability to external artifacts

Reason: This is not a feature of TR_Methodology or TR_AdaptiveMethodology

–Last change on issue 77303 comment 7–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.11 Specification Item RS_METH_00062

Trace References:

[RS_Main_00080](#), [RS_Main_00360](#)

Content:

RfCs affecting this spec item between releases 1.2.0 and 1.3.0:

- RfC #77303: Final migration of RS_Methodology from CP to FO

Problem description:

The document RS_Methodology from CP (CP_RS_Methodology) shall completely be migrated to FO together with the next CP release (for FO_R1.3).

In a first step for FO_R1.1 already some of the requirements in CP_RS_Methodology, which are also valid for AP, have been taken over. In this RfC, the remaining requirements shall be taken over, adapted, or deleted if not needed anymore. For the next CP release, the document CP_RS_Methodology can then completely be removed.

Agreed solution:

In RS_Main, the following main requirements need to be extended to FO (in Applies To) in order to fulfil traceability: RS_Main_00360, RS_Main_00290

In RS_Methodology (see also https://svn.autosar.org/repos/work/09_WorkPackages/WP-M/06_Subgroups/05_Methodology/Migration_RS_Methodology_CP_to_FO):

- Delete chapter 1.1 Limitations
- Change chapter 2.1 General Requirements: This sections specifies the general requirements, which are valid for both platforms.

Chapter 2.1 General Requirements:

RS_METH_00006: The methodology shall explain how to build an AUTOSAR system

Description: The methodology shall explain how to build an AUTOSAR system using the activities and work products.

It should be like a user manual to help an organization efficiently apply AUTOSAR. In particular, the methodology shall explain how to build a system consisting of classic and adaptive platforms.

Applies to CP,AP

RS_METH_00041: The methodology shall support top-down and bottom-up approaches

Description: The methodology shall support the top-down and bottom-up approach. In the top-down approach, all constraints on the application software and their distribution on ECUs shall be considered. In the bottom-up approach, all constraints coming from the hardware (ECUs/sensors/actuators) should be taken into account.

Applies to CP,AP

RS_METH_00016 (trace to RS_Main_00190): The methodology shall support building a system of both AUTOSAR and Non-AUTOSAR ECUs

Description: The methodology shall support building a system of AUTOSAR compliant ECUs and non-AUTOSAR compliant ECUs.

Rationale: The design of a complete vehicle system shall be supported.

Applies to CP,AP

Add RS_METH_00200 (RS_Main_00161): The methodology shall support building a system consisting of several AUTOSAR platforms

Description: The methodology shall support building a system consisting of several AUTOSAR platforms.

Rationale: The design of a complete vehicle system shall be supported.

Use Case: The communication description between machines (or ECUs) based on classic and adaptive AUTOSAR platforms.

Applies to CP,AP

RS_METH_00018:

Applies to AP,CP

RS_METH_00032: The methodology shall support different levels of abstractions

Description: The methodology shall support different views for the development of an AUTOSAR system. This corresponds to the typical domains and parties, which are involved in the system development.

Use case: AUTOSAR is using several abstraction levels to describe the information exchanged between the different players.

In an early phase for instance only the "Virtual Functional Bus" is used, whereas in later development phases we handle real implementations of the SWC deployed to several ECUs.

Applies to CP,AP

RS_METH_00020: The methodology shall support round-trip engineering

Description: The methodology shall support round-trip engineering. This implies that several iteration loops might be necessary in order to finalize a task or work product.

Rationale: Meet AUTOSAR Quality requirements.

Dependencies: –

Use Case: Automotive systems are typically developed in several sample phases (A, B, C, etc).\\}

A single Software Component is updated in a AUTOSAR System. The updated ECU Extract still matches the existing ECU Configuration (as long as no contradicting changes are made in the iteration).

Applies to CP,AP

RS_METH_00077: The methodology shall support different views on the SW-C structure by OEMs and suppliers

Rationale: Possibility for the supplier to adapt the structure of a SW-C.

Use case: The amount of changes on the supplier side shall be limited to the changes caused by OEM updates.

Applies To CP,AP

RS_METH_00078

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00079

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00015

Use case: An ECU built for a particular microcontroller is explicitly optimized for programming language ABC.

The methodology explains when and how to specify and to select the implementation of the software components compatible with the required programming language.

Applies to CP,AP

RS_METH_00066

Header: The methodology shall allow activities that reference tools

Dependencies:–

Use Case: For the classic platform, the activity ...

Applies to CP,AP

RS_METH_00042 (trace to RS_Main_00250)

Rationale: AUTOSAR should not require the use of particular tools when industry standard tools already exist.

Applies to CP,AP

RS_METH_00056 (trace to RS_Main_00507)

Applies to CP,AP

RS_METH_00069:

Dependencies:–

Chapter 2.2 Requirements for the Classic Platform

RS_METH_00033:

Use case: In AUTOSAR, an application is modeled as a composition of interconnected components.

The VFB is the communication mechanism that allows these components to interact. Even if all the resources used by these components are not available yet during the development (HW/Network)

some basic checks can be done and early problems can be solved that will ease the integration phase later.

Applies to CP

Add RS_METH_00208 (RS_Main_00300,RS_Main_00150): The methodology shall explain the high-level usage of the AUTOSAR templates

Description: The AUTOSAR templates include numerous features for the system design, the software component, the ECU configuration etc. The methodology shall clearly describe the activities to use/modify these and which activities require them to be completed before commencing.

Rationale: Usage of AUTOSAR templates in the development process

Use Case: Usage of the SW-C template: An existing software component is implemented and is to be integrated into a suppliers ECU. A description of the component is needed in order to correctly integrate that component into the ECU. \{\}newline

Usage of the system template: OEM as integrator is fixing the ECUs, the topology and the list of the SW-C for

one vehicle for the suppliers. \{\}newline

Usage of the BSW module template: An existing BSW module is implemented and is to be integrated into an ECU. A description of the BSW Module is needed in order to correctly integrate that module into the ECU. \{\}newline

The ECU configuration template is used to describe the configuration when integrating a BSW module into an ECU. \{\}newline

The Safety Extensions allow a standardized exchange of safety information and provide the basis for consistent management among different vendors and tools as required by ISO 26262. \{\}newline

The Diagnostic Extract Template that represents a standardized exchange format on diagnostic functionality allows the decentralized configuration of diagnostic aspects.

Applies to CP

RS_METH_00080: The AUTOSAR methodology shall support the concept of implicit communication behavior

Applies to CP

RS_METH_00083: The AUTOSAR methodology shall explain the description and handling of Data Exchange Points

Applies to CP

RS_METH_00084

Applies to CP

RS_METH_00062: The methodology shall support configuration of parameters with different binding time.

Description: The Autosar methodology shall support system development with different combinations of configuration classes.

Rationale: Configuration of parameters can be performed in different process steps: pre-compile, link time, and post-build.

Applies to CP

RS_METH_00074, RS_METH_00075, RS_METH_00076

Applies to CP

Delete the following requirements:

RS_METH_00017: Methodology shall clearly define what is standardized and what is not standardized

Reason: Methodology is an auxiliary document and only informative

Delete RS_METH_00002,RS_METH_00003,RS_METH_00004,RS_METH_00005,RS_AMETH_00081,RS_AMETH_00082

Reason: all requirements on the usage of specific templates will be removed. Instead one general requirement about the usage of templates (RS_METH_00208) will be added.

Delete RS_METH_00038

Rationale: C-Code is supported, but the description nevertheless is independent of the programming language.

Delete RS_METH_00021, RS_METH_00043, RS_METH_00046, RS_METH_00047, RS_METH_00048, RS_METH_00025, RS_METH_00050, RS_METH_00051, RS_METH_00052, RS_METH_00061, RS_METH_00027, RS_METH_00028, RS_METH_00064, RS_METH_00009, RS_METH_00067

Reason: all these requirements describe general SPEM properties and are described in the introduction of TR_Methodology

Remove RS_METH_00054 and extend instead description in TR_Methodology (handled in different RfC)

Delete RS_METH_00010

Reason: this is a property of the MMT

Delete RS_METH_00057: AUTOSAR methodology shall support traceability to external artifacts

Reason: This is not a feature of TR_Methodology or TR_AdaptiveMethodology
–Last change on issue 77303 comment 7–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.12 Specification Item RS_METH_00066

Trace References:

RS_Main_00250

Content:**RfCs affecting this spec item between releases 1.2.0 and 1.3.0:**

- RfC #77303: Final migration of RS_Methodology from CP to FO

Problem description:

The document RS_Methodology from CP (CP_RS_Methodology) shall completely be migrated to FO together with the next CP release (for FO_R1.3).

In a first step for FO_R1.1 already some of the requirements in CP_RS_Methodology, which are also valid for AP, have been taken over. In this RfC, the remaining requirements shall be taken over, adapted, or deleted if not needed anymore. For the next CP release, the document CP_RS_Methodology can then completely be removed.

Agreed solution:

In RS_Main, the following main requirements need to be extended to FO (in Applies To) in order to fulfil traceability: RS_Main_00360, RS_Main_00290

In RS_Methodology (see also https://svn.autosar.org/repos/work/09_WorkPackages/WP-M/06_Subgroups/05_Methodology/Migration_RS_Methodology_CP_to_FO):

- Delete chapter 1.1 Limitations
- Change chapter 2.1 General Requirements: This sections specifies the general requirements, which are valid for both platforms.

Chapter 2.1 General Requirements:

RS_METH_00006: The methodology shall explain how to build an AUTOSAR system

Description: The methodology shall explain how to build an AUTOSAR system using the activities and work products.

It should be like a user manual to help an organization efficiently apply AUTOSAR. In particular, the methodology shall explain how to build a system consisting of classic and adaptive platforms.

Applies to CP,AP

RS_METH_00041: The methodology shall support top-down and bottom-up approaches

Description: The methodology shall support the top-down and bottom-up approach. In the top-down approach, all constraints on the application software and their distribution on ECUs shall be considered. In the bottom-up approach, all constraints

coming from the hardware (ECUs/sensors/actuators) should be taken into account.
Applies to CP,AP

RS_METH_00016 (trace to RS_Main_00190): The methodology shall support building a system of both AUTOSAR and Non-AUTOSAR ECUs

Description: The methodology shall support building a system of AUTOSAR compliant ECUs and non-AUTOSAR compliant ECUs.

Rationale: The design of a complete vehicle system shall be supported.

Applies to CP,AP

Add RS_METH_00200 (RS_Main_00161): The methodology shall support building a system consisting of several AUTOSAR platforms

Description: The methodology shall support building a system consisting of several AUTOSAR platforms.

Rationale: The design of a complete vehicle system shall be supported.

Use Case: The communication description between machines (or ECUs) based on classic and adaptive AUTOSAR platforms.

Applies to CP,AP

RS_METH_00018:

Applies to AP,CP

RS_METH_00032: The methodology shall support different levels of abstractions

Description: The methodology shall support different views for the development of an AUTOSAR system. This corresponds to the typical domains and parties, which are involved in the system development.

Use case: AUTOSAR is using several abstraction levels to describe the information exchanged between the different players.

In an early phase for instance only the "Virtual Functional Bus" is used, whereas in later development phases we handle real implementations of the SWC deployed to several ECUs.

Applies to CP,AP

RS_METH_00020: The methodology shall support round-trip engineering

Description: The methodology shall support round-trip engineering. This implies that several iteration loops might be necessary in order to finalize a task or work product.

Rationale: Meet AUTOSAR Quality requirements.

Dependencies: –

Use Case: Automotive systems are typically developed in several sample phases (A, B, C, etc).\}

A single Software Component is updated in a AUTOSAR System. The updated ECU

Extract still matches the existing ECU Configuration (as long as no contradicting changes are made in the iteration).

Applies to CP,AP

RS_METH_00077: The methodology shall support different views on the SW-C structure by OEMs and suppliers

Rationale: Possibility for the supplier to adapt the structure of a SW-C.

Use case: The amount of changes on the supplier side shall be limited to the changes caused by OEM updates.

Applies To CP,AP

RS_METH_00078

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00079

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00015

Use case: An ECU built for a particular microcontroller is explicitly optimized for programming language ABC.

The methodology explains when and how to specify and to select the implementation of the software components compatible with the required programming language.

Applies to CP,AP

RS_METH_00066

Header: The methodology shall allow activities that reference tools

Dependencies:–

Use Case: For the classic platform, the activity ...

Applies to CP,AP

RS_METH_00042 (trace to RS_Main_00250)

Rationale: AUTOSAR should not require the use of particular tools when industry standard tools already exist.

Applies to CP,AP

RS_METH_00056 (trace to RS_Main_00507)

Applies to CP,AP

RS_METH_00069:

Dependencies:–

Chapter 2.2 Requirements for the Classic Platform

RS_METH_00033:

Use case: In AUTOSAR, an application is modeled as a composition of interconnected components.

The VFB is the communication mechanism that allows these components to interact. Even if all the resources used by these components are not available yet during the development (HW/Network)

some basic checks can be done and early problems can be solved that will ease the integration phase later.

Applies to CP

Add RS_METH_00208 (RS_Main_00300,RS_Main_00150): The methodology shall explain the high-level usage of the AUTOSAR templates

Description: The AUTOSAR templates include numerous features for the system design, the software component, the ECU configuration etc. The methodology shall clearly describe the activities to use/modify these and which activities require them to be completed before commencing.

Rationale: Usage of AUTOSAR templates in the development process

Use Case: Usage of the SW-C template: An existing software component is implemented and is to be integrated into a suppliers ECU. A description of the component is needed in order to correctly integrate that component into the ECU. \{\}newline

Usage of the system template: OEM as integrator is fixing the ECUs, the topology and the list of the SW-C for

one vehicle for the suppliers. \{\}newline

Usage of the BSW module template: An existing BSW module is implemented and is to be integrated into an ECU. A description of the BSW Module is needed in order to correctly integrate that module into the ECU. \{\}newline

The ECU configuration template is used to describe the configuration when integrating a BSW module into an ECU. \{\}newline

The Safety Extensions allow a standardized exchange of safety information and provide the basis for consistent management among different vendors and tools as required by ISO 26262. \{\}newline

The Diagnostic Extract Template that represents a standardized exchange format on diagnostic functionality allows the decentralized configuration of diagnostic aspects.

Applies to CP

RS_METH_00080: The AUTOSAR methodology shall support the concept of implicit communication behavior

Applies to CP

RS_METH_00083: The AUTOSAR methodology shall explain the description and handling of Data Exchange Points

Applies to CP

RS_METH_00084

Applies to CP

RS_METH_00062: The methodology shall support configuration of parameters with different binding time.

Description: The Autosar methodology shall support system development with different combinations of configuration classes.

Rationale: Configuration of parameters can be performed in different process steps: pre-compile, link time, and post-build.

Applies to CP

RS_METH_00074, RS_METH_00075, RS_METH_00076

Applies to CP

Delete the following requirements:

RS_METH_00017: Methodology shall clearly define what is standardized and what is not standardized

Reason: Methodology is an auxiliary document and only informative

Delete RS_METH_00002, RS_METH_00003, RS_METH_00004, RS_METH_00005, RS_AMETH_00081, RS_AMETH_00082

Reason: all requirements on the usage of specific templates will be removed. Instead one general requirement about the usage of templates (RS_METH_00208) will be added.

Delete RS_METH_00038

Rationale: C-Code is supported, but the description nevertheless is independent of the programming language.

Delete RS_METH_00021, RS_METH_00043, RS_METH_00046, RS_METH_00047, RS_METH_00048, RS_METH_00025, RS_METH_00050, RS_METH_00051, RS_METH_00052, RS_METH_00061, RS_METH_00027, RS_METH_00028, RS_METH_00064, RS_METH_00009, RS_METH_00067

Reason: all these requirements describe general SPEM properties and are described in the introduction of TR_Methodology

Remove RS_METH_00054 and extend instead description in TR_Methodology (handled in different RfC)

Delete RS_METH_00010

Reason: this is a property of the MMT

Delete RS_METH_00057: AUTOSAR methodology shall support traceability to external artifacts

Reason: This is not a feature of TR_Methodology or TR_AdaptiveMethodology

–Last change on issue 77303 comment 7–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.13 Specification Item RS_METH_00069

Trace References:

[RS_Main_00030](#), [RS_Main_00290](#), [RS_Main_00300](#)

Content:

RfCs affecting this spec item between releases 1.2.0 and 1.3.0:

- RfC #77303: Final migration of RS_Methodology from CP to FO

Problem description:

The document RS_Methodology from CP (CP_RS_Methodology) shall completely be migrated to FO together with the next CP release (for FO_R1.3).

In a first step for FO_R1.1 already some of the requirements in CP_RS_Methodology, which are also valid for AP, have been taken over. In this RfC, the remaining requirements shall be taken over, adapted, or deleted if not needed anymore. For the next CP release, the document CP_RS_Methodology can then completely be removed.

Agreed solution:

In RS_Main, the following main requirements need to be extended to FO (in Applies To) in order to fulfil traceability: RS_Main_00360, RS_Main_00290

In RS_Methodology (see also https://svn.autosar.org/repos/work/09_WorkPackages/WP-M/06_Subgroups/05_Methodology/Migration_RS_Methodology_CP_to_FO):

- Delete chapter 1.1 Limitations
- Change chapter 2.1 General Requirements: This sections specifies the general

requirements, which are valid for both platforms.

Chapter 2.1 General Requirements:

RS_METH_00006: The methodology shall explain how to build an AUTOSAR system

Description: The methodology shall explain how to build an AUTOSAR system using the activities and work products.

It should be like a user manual to help an organization efficiently apply AUTOSAR. In particular, the methodology shall explain how to build a system consisting of classic and adaptive platforms.

Applies to CP,AP

RS_METH_00041: The methodology shall support top-down and bottom-up approaches

Description: The methodology shall support the top-down and bottom-up approach. In the top-down approach, all constraints on the application software and their distribution on ECUs shall be considered. In the bottom-up approach, all constraints coming from the hardware (ECUs/sensors/actuators) should be taken into account.

Applies to CP,AP

RS_METH_00016 (trace to RS_Main_00190): The methodology shall support building a system of both AUTOSAR and Non-AUTOSAR ECUs

Description: The methodology shall support building a system of AUTOSAR compliant ECUs and non-AUTOSAR compliant ECUs.

Rationale: The design of a complete vehicle system shall be supported.

Applies to CP,AP

Add RS_METH_00200 (RS_Main_00161): The methodology shall support building a system consisting of several AUTOSAR platforms

Description: The methodology shall support building a system consisting of several AUTOSAR platforms.

Rationale: The design of a complete vehicle system shall be supported.

Use Case: The communication description between machines (or ECUs) based on classic and adaptive AUTOSAR platforms.

Applies to CP,AP

RS_METH_00018:

Applies to AP,CP

RS_METH_00032: The methodology shall support different levels of abstractions

Description: The methodology shall support different views for the development of an AUTOSAR system. This corresponds to the typical domains and parties, which are involved in the system development.

Use case: AUTOSAR is using several abstraction levels to describe the information exchanged between the different players.

In an early phase for instance only the "Virtual Functional Bus" is used, whereas in later development phases we handle real implementations of the SWC deployed to several ECUs.

Applies to CP,AP

RS_METH_00020: The methodology shall support round-trip engineering

Description: The methodology shall support round-trip engineering. This implies that several iteration loops might be necessary in order to finalize a task or work product.

Rationale: Meet AUTOSAR Quality requirements.

Dependencies: –

Use Case: Automotive systems are typically developed in several sample phases (A, B, C, etc).\\}

A single Software Component is updated in a AUTOSAR System. The updated ECU Extract still matches the existing ECU Configuration (as long as no contradicting changes are made in the iteration).

Applies to CP,AP

RS_METH_00077: The methodology shall support different views on the SW-C structure by OEMs and suppliers

Rationale: Possibility for the supplier to adapt the structure of a SW-C.

Use case: The amount of changes on the supplier side shall be limited to the changes caused by OEM updates.

Applies To CP,AP

RS_METH_00078

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00079

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00015

Use case: An ECU built for a particular microcontroller is explicitly optimized for programming language ABC.

The methodology explains when and how to specify and to select the implementation of the software components compatible with the required programming language.

Applies to CP,AP

RS_METH_00066

Header: The methodology shall allow activities that reference tools

Dependencies:–

Use Case: For the classic platform, the activity ...

Applies to CP,AP

RS_METH_00042 (trace to RS_Main_00250)

Rationale: AUTOSAR should not require the use of particular tools when industry standard tools already exist.

Applies to CP,AP

RS_METH_00056 (trace to RS_Main_00507)

Applies to CP,AP

RS_METH_00069:

Dependencies:–

Chapter 2.2 Requirements for the Classic Platform

RS_METH_00033:

Use case: In AUTOSAR, an application is modeled as a composition of interconnected components.

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Description: The AUTOSAR templates include numerous features for the system design, the software component, the ECU configuration etc. The methodology shall clearly describe the activities to use/modify these and which activities require them to be completed before commencing.

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Use Case: Usage of the SW-C template: An existing software component is implemented and is to be integrated into a suppliers ECU. A description of the component is needed in order to correctly integrate that component into the ECU.\\newline

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The ECU configuration template is used to describe the configuration when integrating a BSW module into an ECU.\{\}\newline

The Safety Extensions allow a standardized exchange of safety information and provide the basis for consistent management among different vendors and tools as required by ISO 26262. \{\}\newline

The Diagnostic Extract Template that represents a standardized exchange format on diagnostic functionality allows the decentralized configuration of diagnostic aspects. Applies to CP

RS_METH_00080: The AUTOSAR methodology shall support the concept of implicit communication behavior
Applies to CP

RS_METH_00083: The AUTOSAR methodology shall explain the description and handling of Data Exchange Points
Applies to CP

RS_METH_00084
Applies to CP

RS_METH_00062: The methodology shall support configuration of parameters with different binding time.

Description: The Autosar methodology shall support system development with different combinations of configuration classes.

Rationale: Configuration of parameters can be performed in different process steps: pre-compile, link time, and post-build.

Applies to CP

RS_METH_00074,RS_METH_00075,RS_METH_00076
Applies to CP

Delete the following requirements:

RS_METH_00017: Methodology shall clearly define what is standardized and what is not standardized

Reason: Methodology is an auxiliary document and only informative

Delete RS_METH_00002,RS_METH_00003,RS_METH_00004,RS_METH_00005,

RS_AMETH_00081,RS_AMETH_00082

Reason: all requirements on the usage of specific templates will be removed. Instead one general requirement about the usage of templates (RS_METH_00208) will be added.

Delete RS_METH_00038

Rationale: C-Code is supported, but the description nevertheless is independent of the programming language.

Delete RS_METH_00021, RS_METH_00043, RS_METH_00046, RS_METH_00047, RS_METH_00048, RS_METH_00025, RS_METH_00050, RS_METH_00051, RS_METH_00052, RS_METH_00061, RS_METH_00027, RS_METH_00028, RS_METH_00064, RS_METH_00009, RS_METH_00067

Reason: all these requirements describe general SPEM properties and are described in the introduction of TR_Methodology

Remove RS_METH_00054 and extend instead description in TR_Methodology (handled in different RfC)

Delete RS_METH_00010

Reason: this is a property of the MMT

Delete RS_METH_00057: AUTOSAR methodology shall support traceability to external artifacts

Reason: This is not a feature of TR_Methodology or TR_AdaptiveMethodology

–Last change on issue 77303 comment 7–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.14 Specification Item RS_METH_00074

Trace References:

[RS_Main_00360](#)

Content:

RfCs affecting this spec item between releases 1.2.0 and 1.3.0:

- RfC #77303: Final migration of RS_Methodology from CP to FO

Problem description:

The document RS_Methodology from CP (CP_RS_Methodology) shall completely be migrated to FO together with the next CP release (for FO_R1.3).

In a first step for FO_R1.1 already some of the requirements in CP_RS_Methodology, which are also valid for AP, have been taken over. In this RfC, the remaining requirements shall be taken over, adapted, or deleted if not needed anymore. For the next CP release, the document CP_RS_Methodology can then completely be removed.

Agreed solution:

In RS_Main, the following main requirements need to be extended to FO (in Applies To) in order to fulfil traceability: RS_Main_00360, RS_Main_00290

In RS_Methodology (see also https://svn.autosar.org/repos/work/09_WorkPackages/WP-M/06_Subgroups/05_Methodology/Migration_RS_Methodology_CP_to_FO):

- Delete chapter 1.1 Limitations
- Change chapter 2.1 General Requirements: This sections specifies the general requirements, which are valid for both platforms.

Chapter 2.1 General Requirements:

RS_METH_00006: The methodology shall explain how to build an AUTOSAR system

Description: The methodology shall explain how to build an AUTOSAR system using the activities and work products.

It should be like a user manual to help an organization efficiently apply AUTOSAR. In particular, the methodology shall explain how to build a system consisting of classic and adaptive platforms.

Applies to CP,AP

RS_METH_00041: The methodology shall support top-down and bottom-up approaches

Description: The methodology shall support the top-down and bottom-up approach. In the top-down approach, all constraints on the application software and their distribution on ECUs shall be considered. In the bottom-up approach, all constraints coming from the hardware (ECUs/sensors/actuators) should be taken into account.

Applies to CP,AP

RS_METH_00016 (trace to RS_Main_00190): The methodology shall support building a system of both AUTOSAR and Non-AUTOSAR ECUs

Description: The methodology shall support building a system of AUTOSAR compliant ECUs and non-AUTOSAR compliant ECUs.

Rationale: The design of a complete vehicle system shall be supported.

Applies to CP,AP

Add RS_METH_00200 (RS_Main_00161): The methodology shall support building a system consisting of several AUTOSAR platforms

Description: The methodology shall support building a system consisting of several AUTOSAR platforms.

Rationale: The design of a complete vehicle system shall be supported.

Use Case: The communication description between machines (or ECUs) based on classic and adaptive AUTOSAR platforms.

Applies to CP,AP

RS_METH_00018:

Applies to AP,CP

RS_METH_00032: The methodology shall support different levels of abstractions

Description: The methodology shall support different views for the development of an AUTOSAR system. This corresponds to the typical domains and parties, which are involved in the system development.

Use case: AUTOSAR is using several abstraction levels to describe the information exchanged between the different players.

In an early phase for instance only the "Virtual Functional Bus" is used, whereas in later development phases we handle real implementations of the SWC deployed to several ECUs.

Applies to CP,AP

RS_METH_00020: The methodology shall support round-trip engineering

Description: The methodology shall support round-trip engineering. This implies that several iteration loops might be necessary in order to finalize a task or work product.

Rationale: Meet AUTOSAR Quality requirements.

Dependencies: –

Use Case: Automotive systems are typically developed in several sample phases (A, B, C, etc). \}

A single Software Component is updated in a AUTOSAR System. The updated ECU Extract still matches the existing ECU Configuration (as long as no contradicting changes are made in the iteration).

Applies to CP,AP

RS_METH_00077: The methodology shall support different views on the SW-

C structure by OEMs and suppliers

Rationale: Possibility for the supplier to adapt the structure of a SW-C.

Use case: The amount of changes on the supplier side shall be limited to the changes caused by OEM updates.

Applies To CP,AP

RS_METH_00078

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00079

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00015

Use case: An ECU built for a particular microcontroller is explicitly optimized for programming language ABC.

The methodology explains when and how to specify and to select the implementation of the software components compatible with the required programming language.

Applies to CP,AP

RS_METH_00066

Header: The methodology shall allow activities that reference tools

Dependencies:–

Use Case: For the classic platform, the activity ...

Applies to CP,AP

RS_METH_00042 (trace to RS_Main_00250)

Rationale: AUTOSAR should not require the use of particular tools when industry standard tools already exist.

Applies to CP,AP

RS_METH_00056 (trace to RS_Main_00507)

Applies to CP,AP

RS_METH_00069:

Dependencies:–

Chapter 2.2 Requirements for the Classic Platform

RS_METH_00033:

Use case: In AUTOSAR, an application is modeled as a composition of interconnected components.

The VFB is the communication mechanism that allows these components to interact. Even if all the resources used by these components are not available yet during the development (HW/Network) some basic checks can be done and early problems can be solved that will ease the integration phase later.
Applies to CP

Add RS_METH_00208 (RS_Main_00300,RS_Main_00150): The methodology shall explain the high-level usage of the AUTOSAR templates

Description: The AUTOSAR templates include numerous features for the system design, the software component, the ECU configuration etc. The methodology shall clearly describe the activities to use/modify these and which activities require them to be completed before commencing.

Rationale: Usage of AUTOSAR templates in the development process

Use Case: Usage of the SW-C template: An existing software component is implemented and is to be integrated into a suppliers ECU. A description of the component is needed in order to correctly integrate that component into the ECU. \{\}newline

Usage of the system template: OEM as integrator is fixing the ECUs, the topology and the list of the SW-C for one vehicle for the suppliers. \{\}newline

Usage of the BSW module template: An existing BSW module is implemented and is to be integrated into an ECU. A description of the BSW Module is needed in order to correctly integrate that module into the ECU. \{\}newline

The ECU configuration template is used to describe the configuration when integrating a BSW module into an ECU. \{\}newline

The Safety Extensions allow a standardized exchange of safety information and provide the basis for consistent management among different vendors and tools as required by ISO 26262. \{\}newline

The Diagnostic Extract Template that represents a standardized exchange format on diagnostic functionality allows the decentralized configuration of diagnostic aspects.
Applies to CP

RS_METH_00080: The AUTOSAR methodology shall support the concept of implicit communication behavior

Applies to CP

RS_METH_00083: The AUTOSAR methodology shall explain the description and handling of Data Exchange Points

Applies to CP

RS_METH_00084

Applies to CP

RS_METH_00062: The methodology shall support configuration of parameters with different binding time.

Description: The Autosar methodology shall support system development with different combinations of configuration classes.

Rationale: Configuration of parameters can be performed in different process steps: pre-compile, link time, and post-build.

Applies to CP

RS_METH_00074, RS_METH_00075, RS_METH_00076

Applies to CP

Delete the following requirements:

RS_METH_00017: Methodology shall clearly define what is standardized and what is not standardized

Reason: Methodology is an auxiliary document and only informative

Delete RS_METH_00002, RS_METH_00003, RS_METH_00004, RS_METH_00005, RS_AMETH_00081, RS_AMETH_00082

Reason: all requirements on the usage of specific templates will be removed. Instead one general requirement about the usage of templates (RS_METH_00208) will be added.

Delete RS_METH_00038

Rationale: C-Code is supported, but the description nevertheless is independent of the programming language.

Delete RS_METH_00021, RS_METH_00043, RS_METH_00046, RS_METH_00047, RS_METH_00048, RS_METH_00025, RS_METH_00050, RS_METH_00051, RS_METH_00052, RS_METH_00061, RS_METH_00027, RS_METH_00028, RS_METH_00064, RS_METH_00009, RS_METH_00067

Reason: all these requirements describe general SPEM properties and are described in the introduction of TR_Methodology

Remove RS_METH_00054 and extend instead description in TR_Methodology (handled in different RfC)

Delete RS_METH_00010

Reason: this is a property of the MMT

Delete RS_METH_00057: AUTOSAR methodology shall support traceability to external artifacts

Reason: This is not a feature of TR_Methodology or TR_AdaptiveMethodology
–Last change on issue 77303 comment 7–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.15 Specification Item RS_METH_00075

Trace References:

RS_Main_00360

Content:**RfCs affecting this spec item between releases 1.2.0 and 1.3.0:**

- RfC #77303: Final migration of RS_Methodology from CP to FO

Problem description:

The document RS_Methodology from CP (CP_RS_Methodology) shall completely be migrated to FO together with the next CP release (for FO_R1.3).

In a first step for FO_R1.1 already some of the requirements in CP_RS_Methodology, which are also valid for AP, have been taken over. In this RfC, the remaining requirements shall be taken over, adapted, or deleted if not needed anymore. For the next CP release, the document CP_RS_Methodology can then completely be removed.

Agreed solution:

In RS_Main, the following main requirements need to be extended to FO (in Applies To) in order to fulfil traceability: RS_Main_00360, RS_Main_00290

In RS_Methodology (see also https://svn.autosar.org/repos/work/09_WorkPackages/WP-M/06_Subgroups/05_Methodology/Migration_RS_Methodology_CP_to_FO):

- Delete chapter 1.1 Limitations
- Change chapter 2.1 General Requirements: This sections specifies the general requirements, which are valid for both platforms.

Chapter 2.1 General Requirements:

RS_METH_00006: The methodology shall explain how to build an AUTOSAR system

Description: The methodology shall explain how to build an AUTOSAR system using the activities and work products.

It should be like a user manual to help an organization efficiently apply AUTOSAR. In particular, the methodology shall explain how to build a system consisting of classic and adaptive platforms.

Applies to CP,AP

RS_METH_00041: The methodology shall support top-down and bottom-up approaches

Description: The methodology shall support the top-down and bottom-up approach. In the top-down approach, all constraints on the application software and their distribution on ECUs shall be considered. In the bottom-up approach, all constraints coming from the hardware (ECUs/sensors/actuators) should be taken into account.

Applies to CP,AP

RS_METH_00016 (trace to RS_Main_00190): The methodology shall support building a system of both AUTOSAR and Non-AUTOSAR ECUs

Description: The methodology shall support building a system of AUTOSAR compliant ECUs and non-AUTOSAR compliant ECUs.

Rationale: The design of a complete vehicle system shall be supported.

Applies to CP,AP

Add RS_METH_00200 (RS_Main_00161): The methodology shall support building a system consisting of several AUTOSAR platforms

Description: The methodology shall support building a system consisting of several AUTOSAR platforms.

Rationale: The design of a complete vehicle system shall be supported.

Use Case: The communication description between machines (or ECUs) based on classic and adaptive AUTOSAR platforms.

Applies to CP,AP

RS_METH_00018:

Applies to AP,CP

RS_METH_00032: The methodology shall support different levels of abstractions

Description: The methodology shall support different views for the development of an AUTOSAR system. This corresponds to the typical domains and parties, which are involved in the system development.

Use case: AUTOSAR is using several abstraction levels to describe the information exchanged between the different players.

In an early phase for instance only the "Virtual Functional Bus" is used, whereas in later development phases we handle real implementations of the SWC deployed to several ECUs.

Applies to CP,AP

RS_METH_00020: The methodology shall support round-trip engineering

Description: The methodology shall support round-trip engineering. This implies that several iteration loops might be necessary in order to finalize a task or work product.

Rationale: Meet AUTOSAR Quality requirements.

Dependencies: –

Use Case: Automotive systems are typically developed in several sample phases (A, B, C, etc).\\}

A single Software Component is updated in a AUTOSAR System. The updated ECU Extract still matches the existing ECU Configuration (as long as no contradicting changes are made in the iteration).

Applies to CP,AP

RS_METH_00077: The methodology shall support different views on the SW-C structure by OEMs and suppliers

Rationale: Possibility for the supplier to adapt the structure of a SW-C.

Use case: The amount of changes on the supplier side shall be limited to the changes caused by OEM updates.

Applies To CP,AP

RS_METH_00078

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00079

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00015

Use case: An ECU built for a particular microcontroller is explicitly optimized for programming language ABC.

The methodology explains when and how to specify and to select the implementation of the software components compatible with the required programming language.

Applies to CP,AP

RS_METH_00066

Header: The methodology shall allow activities that reference tools

Dependencies:–

Use Case: For the classic platform, the activity ...
Applies to CP,AP

RS_METH_00042 (trace to RS_Main_00250)
Rationale: AUTOSAR should not require the use of particular tools when industry standard tools already exist.
Applies to CP,AP

RS_METH_00056 (trace to RS_Main_00507)
Applies to CP,AP

RS_METH_00069:
Dependencies:—

Chapter 2.2 Requirements for the Classic Platform

RS_METH_00033:
Use case: In AUTOSAR, an application is modeled as a composition of interconnected components.
The VFB is the communication mechanism that allows these components to interact. Even if all the resources used by these components are not available yet during the development (HW/Network) some basic checks can be done and early problems can be solved that will ease the integration phase later.
Applies to CP

Add RS_METH_00208 (RS_Main_00300,RS_Main_00150): The methodology shall explain the high-level usage of the AUTOSAR templates
Description: The AUTOSAR templates include numerous features for the system design, the software component, the ECU configuration etc. The methodology shall clearly describe the activities to use/modify these and which activities require them to be completed before commencing.
Rationale: Usage of AUTOSAR templates in the development process
Use Case: Usage of the SW-C template: An existing software component is implemented and is to be integrated into a suppliers ECU. A description of the component is needed in order to correctly integrate that component into the ECU.\\newline
Usage of the system template: OEM as integrator is fixing the ECUs, the topology and the list of the SW-C for one vehicle for the suppliers. \\newline
Usage of the BSW module template: An existing BSW module is implemented and is to be integrated into an ECU. A description of the BSW Module is needed in order to correctly integrate that module into the ECU. \\newline
The ECU configuration template is used to describe the configuration when integrat-

ing a BSW module into an ECU.\\}

The Safety Extensions allow a standardized exchange of safety information and provide the basis for consistent management among different vendors and tools as required by ISO 26262. \\}

The Diagnostic Extract Template that represents a standardized exchange format on diagnostic functionality allows the decentralized configuration of diagnostic aspects. Applies to CP

RS_METH_00080: The AUTOSAR methodology shall support the concept of implicit communication behavior
Applies to CP

RS_METH_00083: The AUTOSAR methodology shall explain the description and handling of Data Exchange Points
Applies to CP

RS_METH_00084
Applies to CP

RS_METH_00062: The methodology shall support configuration of parameters with different binding time.

Description: The Autosar methodology shall support system development with different combinations of configuration classes.

Rationale: Configuration of parameters can be performed in different process steps: pre-compile, link time, and post-build.

Applies to CP

RS_METH_00074,RS_METH_00075,RS_METH_00076
Applies to CP

Delete the following requirements:

RS_METH_00017: Methodology shall clearly define what is standardized and what is not standardized

Reason: Methodology is an auxiliary document and only informative

Delete RS_METH_00002,RS_METH_00003,RS_METH_00004,RS_METH_00005,RS_AMETH_00081,RS_AMETH_00082

Reason: all requirements on the usage of specific templates will be removed. Instead one general requirement about the usage of templates (RS_METH_00208) will be added.

Delete RS_METH_00038

Rationale: C-Code is supported, but the description nevertheless is independent of the programming language.

Delete RS_METH_00021, RS_METH_00043, RS_METH_00046,
RS_METH_00047, RS_METH_00048, RS_METH_00025, RS_METH_00050,
RS_METH_00051, RS_METH_00052, RS_METH_00061, RS_METH_00027,
RS_METH_00028, RS_METH_00064, RS_METH_00009, RS_METH_00067

Reason: all these requirements describe general SPEM properties and are described in the introduction of TR_Methodology

Remove RS_METH_00054 and extend instead description in TR_Methodology (handled in different RfC)

Delete RS_METH_00010

Reason: this is a property of the MMT

Delete RS_METH_00057: AUTOSAR methodology shall support traceability to external artifacts

Reason: This is not a feature of TR_Methodology or TR_AdaptiveMethodology
–Last change on issue 77303 comment 7–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.16 Specification Item RS_METH_00076

Trace References:

[RS_Main_00360](#)

Content:

RfCs affecting this spec item between releases 1.2.0 and 1.3.0:

- RfC #77303: Final migration of RS_Methodology from CP to FO

Problem description:

The document RS_Methodology from CP (CP_RS_Methodology) shall completely be migrated to FO together with the next CP release (for FO_R1.3).

In a first step for FO_R1.1 already some of the requirements in CP_RS_Methodology, which are also valid for AP, have been taken over. In this RfC, the remaining requirements shall be taken over, adapted, or deleted if not needed anymore. For the next CP release, the document CP_RS_Methodology can then completely be removed.

Agreed solution:

In RS_Main, the following main requirements need to be extended to FO (in Applies To) in order to fulfil traceability: RS_Main_00360, RS_Main_00290

In RS_Methodology (see also https://svn.autosar.org/repos/work/09_WorkPackages/WP-M/06_Subgroups/05_Methodology/Migration_RS_Methodology_CP_to_FO):

- Delete chapter 1.1 Limitations
- Change chapter 2.1 General Requirements: This sections specifies the general requirements, which are valid for both platforms.

Chapter 2.1 General Requirements:

RS_METH_00006: The methodology shall explain how to build an AUTOSAR system

Description: The methodology shall explain how to build an AUTOSAR system using the activities and work products.

It should be like a user manual to help an organization efficiently apply AUTOSAR. In particular, the methodology shall explain how to build a system consisting of classic and adaptive platforms.

Applies to CP,AP

RS_METH_00041: The methodology shall support top-down and bottom-up approaches

Description: The methodology shall support the top-down and bottom-up approach. In the top-down approach, all constraints on the application software and their distribution on ECUs shall be considered. In the bottom-up approach, all constraints coming from the hardware (ECUs/sensors/actuators) should be taken into account.

Applies to CP,AP

RS_METH_00016 (trace to RS_Main_00190): The methodology shall support building a system of both AUTOSAR and Non-AUTOSAR ECUs

Description: The methodology shall support building a system of AUTOSAR compliant ECUs and non-AUTOSAR compliant ECUs.

Rationale: The design of a complete vehicle system shall be supported.

Applies to CP,AP

Add RS_METH_00200 (RS_Main_00161): The methodology shall support building a system consisting of several AUTOSAR platforms

Description: The methodology shall support building a system consisting of several AUTOSAR platforms.

Rationale: The design of a complete vehicle system shall be supported.

Use Case: The communication description between machines (or ECUs) based on classic and adaptive AUTOSAR platforms.

Applies to CP,AP

RS_METH_00018:

Applies to AP,CP

RS_METH_00032: The methodology shall support different levels of abstractions

Description: The methodology shall support different views for the development of an AUTOSAR system. This corresponds to the typical domains and parties, which are involved in the system development.

Use case: AUTOSAR is using several abstraction levels to describe the information exchanged between the different players.

In an early phase for instance only the "Virtual Functional Bus" is used, whereas in later development phases we handle real implementations of the SWC deployed to several ECUs.

Applies to CP,AP

RS_METH_00020: The methodology shall support round-trip engineering

Description: The methodology shall support round-trip engineering. This implies that several iteration loops might be necessary in order to finalize a task or work product.

Rationale: Meet AUTOSAR Quality requirements.

Dependencies: –

Use Case: Automotive systems are typically developed in several sample phases (A, B, C, etc). \}

A single Software Component is updated in a AUTOSAR System. The updated ECU Extract still matches the existing ECU Configuration (as long as no contradicting changes are made in the iteration).

Applies to CP,AP

RS_METH_00077: The methodology shall support different views on the SW-C structure by OEMs and suppliers

Rationale: Possibility for the supplier to adapt the structure of a SW-C.

Use case: The amount of changes on the supplier side shall be limited to the changes caused by OEM updates.

Applies To CP,AP

RS_METH_00078

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00079

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00015

Use case: An ECU built for a particular microcontroller is explicitly optimized for programming language ABC.

The methodology explains when and how to specify and to select the implementation of the software components compatible with the required programming language.

Applies to CP,AP

RS_METH_00066

Header: The methodology shall allow activities that reference tools

Dependencies:–

Use Case: For the classic platform, the activity ...

Applies to CP,AP

RS_METH_00042 (trace to RS_Main_00250)

Rationale: AUTOSAR should not require the use of particular tools when industry standard tools already exist.

Applies to CP,AP

RS_METH_00056 (trace to RS_Main_00507)

Applies to CP,AP

RS_METH_00069:

Dependencies:–

Chapter 2.2 Requirements for the Classic Platform

RS_METH_00033:

Use case: In AUTOSAR, an application is modeled as a composition of interconnected components.

The VFB is the communication mechanism that allows these components to interact. Even if all the resources used by these components are not available yet during the development (HW/Network)

some basic checks can be done and early problems can be solved that will ease the integration phase later.

Applies to CP

Add RS_METH_00208 (RS_Main_00300,RS_Main_00150): The methodology shall explain the high-level usage of the AUTOSAR templates

Description: The AUTOSAR templates include numerous features for the system design, the software component, the ECU configuration etc. The methodology shall clearly describe the activities to use/modify these and which activities require them to be completed before commencing.

Rationale: Usage of AUTOSAR templates in the development process

Use Case: Usage of the SW-C template: An existing software component is implemented and is to be integrated into a suppliers ECU. A description of the component is needed in order to correctly integrate that component into the ECU. \{\}

Usage of the system template: OEM as integrator is fixing the ECUs, the topology and the list of the SW-C for

one vehicle for the suppliers. \{\}

Usage of the BSW module template: An existing BSW module is implemented and is to be integrated into an ECU. A description of the BSW Module is needed in order to correctly integrate that module into the ECU. \{\}

The ECU configuration template is used to describe the configuration when integrating a BSW module into an ECU. \{\}

The Safety Extensions allow a standardized exchange of safety information and provide the basis for consistent management among different vendors and tools as required by ISO 26262. \{\}

The Diagnostic Extract Template that represents a standardized exchange format on diagnostic functionality allows the decentralized configuration of diagnostic aspects.

Applies to CP

RS_METH_00080: The AUTOSAR methodology shall support the concept of implicit communication behavior

Applies to CP

RS_METH_00083: The AUTOSAR methodology shall explain the description and handling of Data Exchange Points

Applies to CP

RS_METH_00084

Applies to CP

RS_METH_00062: The methodology shall support configuration of parameters with different binding time.

Description: The Autosar methodology shall support system development with different combinations of configuration classes.

Rationale: Configuration of parameters can be performed in different process steps:

pre-compile, link time, and post-build.

Applies to CP

RS_METH_00074,RS_METH_00075,RS_METH_00076

Applies to CP

Delete the following requirements:

RS_METH_00017: Methodology shall clearly define what is standardized and what is not standardized

Reason: Methodology is an auxiliary document and only informative

Delete RS_METH_00002,RS_METH_00003,RS_METH_00004,RS_METH_00005,RS_AMETH_00081,RS_AMETH_00082

Reason: all requirements on the usage of specific templates will be removed. Instead one general requirement about the usage of templates (RS_METH_00208) will be added.

Delete RS_METH_00038

Rationale: C-Code is supported, but the description nevertheless is independent of the programming language.

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Reason: all these requirements describe general SPEM properties and are described in the introduction of TR_Methodology

Remove RS_METH_00054 and extend instead description in TR_Methodology (handled in different RfC)

Delete RS_METH_00010

Reason: this is a property of the MMT

Delete RS_METH_00057: AUTOSAR methodology shall support traceability to external artifacts

Reason: This is not a feature of TR_Methodology or TR_AdaptiveMethodology

–Last change on issue 77303 comment 7–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.17 Specification Item RS_METH_00077

Trace References:

RS_Main_00300

Content:

RfCs affecting this spec item between releases 1.2.0 and 1.3.0:

- RfC #77303: Final migration of RS_Methodology from CP to FO

Problem description:

The document RS_Methodology from CP (CP_RS_Methodology) shall completely be migrated to FO together with the next CP release (for FO_R1.3).

In a first step for FO_R1.1 already some of the requirements in CP_RS_Methodology, which are also valid for AP, have been taken over. In this RfC, the remaining requirements shall be taken over, adapted, or deleted if not needed anymore. For the next CP release, the document CP_RS_Methodology can then completely be removed.

Agreed solution:

In RS_Main, the following main requirements need to be extended to FO (in Applies To) in order to fulfil traceability: RS_Main_00360, RS_Main_00290

In RS_Methodology (see also https://svn.autosar.org/repos/work/09_WorkPackages/WP-M/06_Subgroups/05_Methodology/Migration_RS_Methodology_CP_to_FO):

- Delete chapter 1.1 Limitations
- Change chapter 2.1 General Requirements: This sections specifies the general requirements, which are valid for both platforms.

Chapter 2.1 General Requirements:

RS_METH_00006: The methodology shall explain how to build an AUTOSAR system

Description: The methodology shall explain how to build an AUTOSAR system using the activities and work products.

It should be like a user manual to help an organization efficiently apply AUTOSAR. In particular, the methodology shall explain how to build a system consisting of classic and adaptive platforms.

Applies to CP,AP

RS_METH_00041: The methodology shall support top-down and bottom-up approaches

Description: The methodology shall support the top-down and bottom-up approach. In the top-down approach, all constraints on the application software and their distribution on ECUs shall be considered. In the bottom-up approach, all constraints coming from the hardware (ECUs/sensors/actuators) should be taken into account.

Applies to CP,AP

RS_METH_00016 (trace to RS_Main_00190): The methodology shall support building a system of both AUTOSAR and Non-AUTOSAR ECUs

Description: The methodology shall support building a system of AUTOSAR compliant ECUs and non-AUTOSAR compliant ECUs.

Rationale: The design of a complete vehicle system shall be supported.

Applies to CP,AP

Add RS_METH_00200 (RS_Main_00161): The methodology shall support building a system consisting of several AUTOSAR platforms

Description: The methodology shall support building a system consisting of several AUTOSAR platforms.

Rationale: The design of a complete vehicle system shall be supported.

Use Case: The communication description between machines (or ECUs) based on classic and adaptive AUTOSAR platforms.

Applies to CP,AP

RS_METH_00018:

Applies to AP,CP

RS_METH_00032: The methodology shall support different levels of abstractions

Description: The methodology shall support different views for the development of an AUTOSAR system. This corresponds to the typical domains and parties, which are involved in the system development.

Use case: AUTOSAR is using several abstraction levels to describe the information exchanged between the different players.

In an early phase for instance only the "Virtual Functional Bus" is used, whereas in later development phases we handle real implementations of the SWC deployed to several ECUs.

Applies to CP,AP

RS_METH_00020: The methodology shall support round-trip engineering

Description: The methodology shall support round-trip engineering. This implies that several iteration loops might be necessary in order to finalize a task or work product.

Rationale: Meet AUTOSAR Quality requirements.

Dependencies: –

Use Case: Automotive systems are typically developed in several sample phases (A, B, C, etc).\\}

A single Software Component is updated in a AUTOSAR System. The updated ECU Extract still matches the existing ECU Configuration (as long as no contradicting changes are made in the iteration).

Applies to CP,AP

RS_METH_00077: The methodology shall support different views on the SW-C structure by OEMs and suppliers

Rationale: Possibility for the supplier to adapt the structure of a SW-C.

Use case: The amount of changes on the supplier side shall be limited to the changes caused by OEM updates.

Applies To CP,AP

RS_METH_00078

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00079

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00015

Use case: An ECU built for a particular microcontroller is explicitly optimized for programming language ABC.

The methodology explains when and how to specify and to select the implementation of the software components compatible with the required programming language.

Applies to CP,AP

RS_METH_00066

Header: The methodology shall allow activities that reference tools

Dependencies:–

Use Case: For the classic platform, the activity ...

Applies to CP,AP

RS_METH_00042 (trace to RS_Main_00250)

Rationale: AUTOSAR should not require the use of particular tools when industry standard tools already exist.

Applies to CP,AP

RS_METH_00056 (trace to RS_Main_00507)

Applies to CP,AP

RS_METH_00069:

Dependencies:–

Chapter 2.2 Requirements for the Classic Platform

RS_METH_00033:

Use case: In AUTOSAR, an application is modeled as a composition of interconnected components.

The VFB is the communication mechanism that allows these components to interact. Even if all the resources used by these components are not available yet during the development (HW/Network)

some basic checks can be done and early problems can be solved that will ease the integration phase later.

Applies to CP

Add RS_METH_00208 (RS_Main_00300,RS_Main_00150): The methodology shall explain the high-level usage of the AUTOSAR templates

Description: The AUTOSAR templates include numerous features for the system design, the software component, the ECU configuration etc. The methodology shall clearly describe the activities to use/modify these and which activities require them to be completed before commencing.

Rationale: Usage of AUTOSAR templates in the development process

Use Case: Usage of the SW-C template: An existing software component is implemented and is to be integrated into a suppliers ECU. A description of the component is needed in order to correctly integrate that component into the ECU. \{\}newline

Usage of the system template: OEM as integrator is fixing the ECUs, the topology and the list of the SW-C for

one vehicle for the suppliers. \{\}newline

Usage of the BSW module template: An existing BSW module is implemented and is to be integrated into an ECU. A description of the BSW Module is needed in order to correctly integrate that module into the ECU. \{\}newline

The ECU configuration template is used to describe the configuration when integrating a BSW module into an ECU. \{\}newline

The Safety Extensions allow a standardized exchange of safety information and provide the basis for consistent management among different vendors and tools as required by ISO 26262. \{\}newline

The Diagnostic Extract Template that represents a standardized exchange format on diagnostic functionality allows the decentralized configuration of diagnostic aspects.
Applies to CP

RS_METH_00080: The AUTOSAR methodology shall support the concept of implicit communication behavior
Applies to CP

RS_METH_00083: The AUTOSAR methodology shall explain the description and handling of Data Exchange Points
Applies to CP

RS_METH_00084
Applies to CP

RS_METH_00062: The methodology shall support configuration of parameters with different binding time.
Description: The Autosar methodology shall support system development with different combinations of configuration classes.
Rationale: Configuration of parameters can be performed in different process steps: pre-compile, link time, and post-build.
Applies to CP

RS_METH_00074,RS_METH_00075,RS_METH_00076
Applies to CP

Delete the following requirements:

RS_METH_00017: Methodology shall clearly define what is standardized and what is not standardized
Reason: Methodology is an auxiliary document and only informative

Delete RS_METH_00002,RS_METH_00003,RS_METH_00004,RS_METH_00005,RS_AMETH_00081,RS_AMETH_00082
Reason: all requirements on the usage of specific templates will be removed. Instead one general requirement about the usage of templates (RS_METH_00208) will be added.

Delete RS_METH_00038
Rationale: C-Code is supported, but the description nevertheless is independent of the programming language.

Delete RS_METH_00021, RS_METH_00043, RS_METH_00046,
RS_METH_00047, RS_METH_00048, RS_METH_00025, RS_METH_00050,
RS_METH_00051, RS_METH_00052, RS_METH_00061, RS_METH_00027,
RS_METH_00028, RS_METH_00064, RS_METH_00009, RS_METH_00067

Reason: all these requirements describe general SPEM properties and are described in the introduction of TR_Methodology

Remove RS_METH_00054 and extend instead description in TR_Methodology (handled in different RfC)

Delete RS_METH_00010

Reason: this is a property of the MMT

Delete RS_METH_00057: AUTOSAR methodology shall support traceability to external artifacts

Reason: This is not a feature of TR_Methodology or TR_AdaptiveMethodology

–Last change on issue 77303 comment 7–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.18 Specification Item RS_METH_00078

Trace References:

RS_Main_00300, RS_Main_00150

Content:

RfCs affecting this spec item between releases 1.2.0 and 1.3.0:

- RfC #77303: Final migration of RS_Methodology from CP to FO

Problem description:

The document RS_Methodology from CP (CP_RS_Methodology) shall completely be migrated to FO together with the next CP release (for FO_R1.3).

In a first step for FO_R1.1 already some of the requirements in CP_RS_Methodology, which are also valid for AP, have been taken over. In this RfC, the remaining requirements shall be taken over, adapted, or deleted if not

needed anymore. For the next CP release, the document CP_RS_Methodology can then completely be removed.

Agreed solution:

In RS_Main, the following main requirements need to be extended to FO (in Applies To) in order to fulfil traceability: RS_Main_00360, RS_Main_00290

In RS_Methodology (see also https://svn.autosar.org/repos/work/09_WorkPackages/WP-M/06_Subgroups/05_Methodology/Migration_RS_Methodology_CP_to_FO):

- Delete chapter 1.1 Limitations
- Change chapter 2.1 General Requirements: This sections specifies the general requirements, which are valid for both platforms.

Chapter 2.1 General Requirements:

RS_METH_00006: The methodology shall explain how to build an AUTOSAR system

Description: The methodology shall explain how to build an AUTOSAR system using the activities and work products.

It should be like a user manual to help an organization efficiently apply AUTOSAR. In particular, the methodology shall explain how to build a system consisting of classic and adaptive platforms.

Applies to CP,AP

RS_METH_00041: The methodology shall support top-down and bottom-up approaches

Description: The methodology shall support the top-down and bottom-up approach. In the top-down approach, all constraints on the application software and their distribution on ECUs shall be considered. In the bottom-up approach, all constraints coming from the hardware (ECUs/sensors/actuators) should be taken into account.

Applies to CP,AP

RS_METH_00016 (trace to RS_Main_00190): The methodology shall support building a system of both AUTOSAR and Non-AUTOSAR ECUs

Description: The methodology shall support building a system of AUTOSAR compliant ECUs and non-AUTOSAR compliant ECUs.

Rationale: The design of a complete vehicle system shall be supported.

Applies to CP,AP

Add RS_METH_00200 (RS_Main_00161): The methodology shall support building a system consisting of several AUTOSAR platforms

Description: The methodology shall support building a system consisting of several

AUTOSAR platforms.

Rationale: The design of a complete vehicle system shall be supported.

Use Case: The communication description between machines (or ECUs) based on classic and adaptive AUTOSAR platforms.

Applies to CP,AP

RS_METH_00018:

Applies to AP,CP

RS_METH_00032: The methodology shall support different levels of abstractions

Description: The methodology shall support different views for the development of an AUTOSAR system. This corresponds to the typical domains and parties, which are involved in the system development.

Use case: AUTOSAR is using several abstraction levels to describe the information exchanged between the different players.

In an early phase for instance only the "Virtual Functional Bus" is used, whereas in later development phases we handle real implementations of the SWC deployed to several ECUs.

Applies to CP,AP

RS_METH_00020: The methodology shall support round-trip engineering

Description: The methodology shall support round-trip engineering. This implies that several iteration loops might be necessary in order to finalize a task or work product.

Rationale: Meet AUTOSAR Quality requirements.

Dependencies: –

Use Case: Automotive systems are typically developed in several sample phases (A, B, C, etc).\\}

A single Software Component is updated in a AUTOSAR System. The updated ECU Extract still matches the existing ECU Configuration (as long as no contradicting changes are made in the iteration).

Applies to CP,AP

RS_METH_00077: The methodology shall support different views on the SW-C structure by OEMs and suppliers

Rationale: Possibility for the supplier to adapt the structure of a SW-C.

Use case: The amount of changes on the supplier side shall be limited to the changes caused by OEM updates.

Applies To CP,AP

RS_METH_00078

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00079

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00015

Use case: An ECU built for a particular microcontroller is explicitly optimized for programming language ABC.

The methodology explains when and how to specify and to select the implementation of the software components compatible with the required programming language.

Applies to CP,AP

RS_METH_00066

Header: The methodology shall allow activities that reference tools

Dependencies:–

Use Case: For the classic platform, the activity ...

Applies to CP,AP

RS_METH_00042 (trace to RS_Main_00250)

Rationale: AUTOSAR should not require the use of particular tools when industry standard tools already exist.

Applies to CP,AP

RS_METH_00056 (trace to RS_Main_00507)

Applies to CP,AP

RS_METH_00069:

Dependencies:–

Chapter 2.2 Requirements for the Classic Platform

RS_METH_00033:

Use case: In AUTOSAR, an application is modeled as a composition of interconnected components.

The VFB is the communication mechanism that allows these components to interact. Even if all the resources used by these components are not available yet during the development (HW/Network)

some basic checks can be done and early problems can be solved that will ease the integration phase later.

Applies to CP

Add RS_METH_00208 (RS_Main_00300,RS_Main_00150): The methodology

shall explain the high-level usage of the AUTOSAR templates

Description: The AUTOSAR templates include numerous features for the system design, the software component, the ECU configuration etc. The methodology shall clearly describe the activities to use/modify these and which activities require them to be completed before commencing.

Rationale: Usage of AUTOSAR templates in the development process

Use Case: Usage of the SW-C template: An existing software component is implemented and is to be integrated into a suppliers ECU. A description of the component is needed in order to correctly integrate that component into the ECU. \{\}newline

Usage of the system template: OEM as integrator is fixing the ECUs, the topology and the list of the SW-C for

one vehicle for the suppliers. \{\}newline

Usage of the BSW module template: An existing BSW module is implemented and is to be integrated into an ECU. A description of the BSW Module is needed in order to correctly integrate that module into the ECU. \{\}newline

The ECU configuration template is used to describe the configuration when integrating a BSW module into an ECU. \{\}newline

The Safety Extensions allow a standardized exchange of safety information and provide the basis for consistent management among different vendors and tools as required by ISO 26262. \{\}newline

The Diagnostic Extract Template that represents a standardized exchange format on diagnostic functionality allows the decentralized configuration of diagnostic aspects.

Applies to CP

RS_METH_00080: The AUTOSAR methodology shall support the concept of implicit communication behavior

Applies to CP

RS_METH_00083: The AUTOSAR methodology shall explain the description and handling of Data Exchange Points

Applies to CP

RS_METH_00084

Applies to CP

RS_METH_00062: The methodology shall support configuration of parameters with different binding time.

Description: The Autosar methodology shall support system development with different combinations of configuration classes.

Rationale: Configuration of parameters can be performed in different process steps: pre-compile, link time, and post-build.

Applies to CP

RS_METH_00074,RS_METH_00075,RS_METH_00076

Applies to CP

Delete the following requirements:

RS_METH_00017: Methodology shall clearly define what is standardized and what is not standardized

Reason: Methodology is an auxiliary document and only informative

Delete RS_METH_00002,RS_METH_00003,RS_METH_00004,RS_METH_00005,RS_AMETH_00081,RS_AMETH_00082

Reason: all requirements on the usage of specific templates will be removed. Instead one general requirement about the usage of templates (RS_METH_00208) will be added.

Delete RS_METH_00038

Rationale: C-Code is supported, but the description nevertheless is independent of the programming language.

Delete RS_METH_00021, RS_METH_00043, RS_METH_00046, RS_METH_00047, RS_METH_00048, RS_METH_00025, RS_METH_00050, RS_METH_00051, RS_METH_00052, RS_METH_00061, RS_METH_00027, RS_METH_00028, RS_METH_00064, RS_METH_00009, RS_METH_00067

Reason: all these requirements describe general SPEM properties and are described in the introduction of TR_Methodology

Remove RS_METH_00054 and extend instead description in TR_Methodology (handled in different RfC)

Delete RS_METH_00010

Reason: this is a property of the MMT

Delete RS_METH_00057: AUTOSAR methodology shall support traceability to external artifacts

Reason: This is not a feature of TR_Methodology or TR_AdaptiveMethodology

–Last change on issue 77303 comment 7–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.19 Specification Item RS_METH_00079

Trace References:

RS_Main_00300, RS_Main_00150

Content:

RfCs affecting this spec item between releases 1.2.0 and 1.3.0:

- RfC #77303: Final migration of RS_Methodology from CP to FO

Problem description:

The document RS_Methodology from CP (CP_RS_Methodology) shall completely be migrated to FO together with the next CP release (for FO_R1.3).

In a first step for FO_R1.1 already some of the requirements in CP_RS_Methodology, which are also valid for AP, have been taken over. In this RfC, the remaining requirements shall be taken over, adapted, or deleted if not needed anymore. For the next CP release, the document CP_RS_Methodology can then completely be removed.

Agreed solution:

In RS_Main, the following main requirements need to be extended to FO (in Applies To) in order to fulfil traceability: RS_Main_00360, RS_Main_00290

In RS_Methodology (see also https://svn.autosar.org/repos/work/09_WorkPackages/WP-M/06_Subgroups/05_Methodology/Migration_RS_Methodology_CP_to_FO):

- Delete chapter 1.1 Limitations
- Change chapter 2.1 General Requirements: This sections specifies the general requirements, which are valid for both platforms.

Chapter 2.1 General Requirements:

RS_METH_00006: The methodology shall explain how to build an AUTOSAR system

Description: The methodology shall explain how to build an AUTOSAR system using the activities and work products.

It should be like a user manual to help an organization efficiently apply AUTOSAR. In particular, the methodology shall explain how to build a system consisting of classic and adaptive platforms.

Applies to CP,AP

RS_METH_00041: The methodology shall support top-down and bottom-up approaches

Description: The methodology shall support the top-down and bottom-up approach. In the top-down approach, all constraints on the application software and their distribution on ECUs shall be considered. In the bottom-up approach, all constraints coming from the hardware (ECUs/sensors/actuators) should be taken into account.

Applies to CP,AP

RS_METH_00016 (trace to RS_Main_00190): The methodology shall support building a system of both AUTOSAR and Non-AUTOSAR ECUs

Description: The methodology shall support building a system of AUTOSAR compliant ECUs and non-AUTOSAR compliant ECUs.

Rationale: The design of a complete vehicle system shall be supported.

Applies to CP,AP

Add RS_METH_00200 (RS_Main_00161): The methodology shall support building a system consisting of several AUTOSAR platforms

Description: The methodology shall support building a system consisting of several AUTOSAR platforms.

Rationale: The design of a complete vehicle system shall be supported.

Use Case: The communication description between machines (or ECUs) based on classic and adaptive AUTOSAR platforms.

Applies to CP,AP

RS_METH_00018:

Applies to AP,CP

RS_METH_00032: The methodology shall support different levels of abstractions

Description: The methodology shall support different views for the development of an AUTOSAR system. This corresponds to the typical domains and parties, which are involved in the system development.

Use case: AUTOSAR is using several abstraction levels to describe the information exchanged between the different players.

In an early phase for instance only the "Virtual Functional Bus" is used, whereas in later development phases we handle real implementations of the SWC deployed to several ECUs.

Applies to CP,AP

RS_METH_00020: The methodology shall support round-trip engineering

Description: The methodology shall support round-trip engineering. This implies that several iteration loops might be necessary in order to finalize a task or work product.

Rationale: Meet AUTOSAR Quality requirements.

Dependencies: –

Use Case: Automotive systems are typically developed in several sample phases (A, B, C, etc).\\}

A single Software Component is updated in a AUTOSAR System. The updated ECU Extract still matches the existing ECU Configuration (as long as no contradicting changes are made in the iteration).

Applies to CP,AP

RS_METH_00077: The methodology shall support different views on the SW-C structure by OEMs and suppliers

Rationale: Possibility for the supplier to adapt the structure of a SW-C.

Use case: The amount of changes on the supplier side shall be limited to the changes caused by OEM updates.

Applies To CP,AP

RS_METH_00078

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00079

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00015

Use case: An ECU built for a particular microcontroller is explicitly optimized for programming language ABC.

The methodology explains when and how to specify and to select the implementation of the software components compatible with the required programming language.

Applies to CP,AP

RS_METH_00066

Header: The methodology shall allow activities that reference tools

Dependencies:–

Use Case: For the classic platform, the activity ...

Applies to CP,AP

RS_METH_00042 (trace to RS_Main_00250)

Rationale: AUTOSAR should not require the use of particular tools when industry standard tools already exist.

Applies to CP,AP

RS_METH_00056 (trace to RS_Main_00507)

Applies to CP,AP

RS_METH_00069:

Dependencies:–

Chapter 2.2 Requirements for the Classic Platform

RS_METH_00033:

Use case: In AUTOSAR, an application is modeled as a composition of interconnected components.

The VFB is the communication mechanism that allows these components to interact. Even if all the resources used by these components are not available yet during the development (HW/Network)

some basic checks can be done and early problems can be solved that will ease the integration phase later.

Applies to CP

Add RS_METH_00208 (RS_Main_00300,RS_Main_00150): The methodology shall explain the high-level usage of the AUTOSAR templates

Description: The AUTOSAR templates include numerous features for the system design, the software component, the ECU configuration etc. The methodology shall clearly describe the activities to use/modify these and which activities require them to be completed before commencing.

Rationale: Usage of AUTOSAR templates in the development process

Use Case: Usage of the SW-C template: An existing software component is implemented and is to be integrated into a suppliers ECU. A description of the component is needed in order to correctly integrate that component into the ECU. \{\}newline

Usage of the system template: OEM as integrator is fixing the ECUs, the topology and the list of the SW-C for one vehicle for the suppliers. \{\}newline

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The ECU configuration template is used to describe the configuration when integrating a BSW module into an ECU. \{\}newline

The Safety Extensions allow a standardized exchange of safety information and provide the basis for consistent management among different vendors and tools as required by ISO 26262. \{\}newline

The Diagnostic Extract Template that represents a standardized exchange format on diagnostic functionality allows the decentralized configuration of diagnostic aspects.

Applies to CP

RS_METH_00080: The AUTOSAR methodology shall support the concept of

implicit communication behavior

Applies to CP

RS_METH_00083: The AUTOSAR methodology shall explain the description and handling of Data Exchange Points

Applies to CP

RS_METH_00084

Applies to CP

RS_METH_00062: The methodology shall support configuration of parameters with different binding time.

Description: The Autosar methodology shall support system development with different combinations of configuration classes.

Rationale: Configuration of parameters can be performed in different process steps: pre-compile, link time, and post-build.

Applies to CP

RS_METH_00074, RS_METH_00075, RS_METH_00076

Applies to CP

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RS_METH_00017: Methodology shall clearly define what is standardized and what is not standardized

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Rationale: C-Code is supported, but the description nevertheless is independent of the programming language.

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Reason: all these requirements describe general SPEM properties and are de-

scribed in the introduction of TR_Methodology

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Reason: this is a property of the MMT

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Reason: This is not a feature of TR_Methodology or TR_AdaptiveMethodology

–Last change on issue 77303 comment 7–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.20 Specification Item RS_METH_00080

Trace References:

[RS_Main_00080](#), [RS_Main_00300](#)

Content:**RfCs affecting this spec item between releases 1.2.0 and 1.3.0:**

- RfC #77303: Final migration of RS_Methodology from CP to FO

Problem description:

The document RS_Methodology from CP (CP_RS_Methodology) shall completely be migrated to FO together with the next CP release (for FO_R1.3).

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Agreed solution:

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- Delete chapter 1.1 Limitations
- Change chapter 2.1 General Requirements: This sections specifies the general requirements, which are valid for both platforms.

Chapter 2.1 General Requirements:

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Description: The methodology shall explain how to build an AUTOSAR system using the activities and work products.

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Applies to CP,AP

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Description: The methodology shall support the top-down and bottom-up approach. In the top-down approach, all constraints on the application software and their distribution on ECUs shall be considered. In the bottom-up approach, all constraints coming from the hardware (ECUs/sensors/actuators) should be taken into account.

Applies to CP,AP

RS_METH_00016 (trace to RS_Main_00190): The methodology shall support building a system of both AUTOSAR and Non-AUTOSAR ECUs

Description: The methodology shall support building a system of AUTOSAR compliant ECUs and non-AUTOSAR compliant ECUs.

Rationale: The design of a complete vehicle system shall be supported.

Applies to CP,AP

Add RS_METH_00200 (RS_Main_00161): The methodology shall support building a system consisting of several AUTOSAR platforms

Description: The methodology shall support building a system consisting of several AUTOSAR platforms.

Rationale: The design of a complete vehicle system shall be supported.

Use Case: The communication description between machines (or ECUs) based on classic and adaptive AUTOSAR platforms.

Applies to CP,AP

RS_METH_00018:

Applies to AP,CP

RS_METH_00032: The methodology shall support different levels of abstractions

Description: The methodology shall support different views for the development of an AUTOSAR system. This corresponds to the typical domains and parties, which are involved in the system development.

Use case: AUTOSAR is using several abstraction levels to describe the information exchanged between the different players.

In an early phase for instance only the "Virtual Functional Bus" is used, whereas in later development phases we handle real implementations of the SWC deployed to several ECUs.

Applies to CP,AP

RS_METH_00020: The methodology shall support round-trip engineering

Description: The methodology shall support round-trip engineering. This implies that several iteration loops might be necessary in order to finalize a task or work product.

Rationale: Meet AUTOSAR Quality requirements.

Dependencies: –

Use Case: Automotive systems are typically developed in several sample phases (A, B, C, etc).\\}

A single Software Component is updated in a AUTOSAR System. The updated ECU Extract still matches the existing ECU Configuration (as long as no contradicting changes are made in the iteration).

Applies to CP,AP

RS_METH_00077: The methodology shall support different views on the SW-C structure by OEMs and suppliers

Rationale: Possibility for the supplier to adapt the structure of a SW-C.

Use case: The amount of changes on the supplier side shall be limited to the changes caused by OEM updates.

Applies To CP,AP

RS_METH_00078

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00079

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00015

Use case: An ECU built for a particular microcontroller is explicitly optimized for programming language ABC.

The methodology explains when and how to specify and to select the implementation of the software components compatible with the required programming language.

Applies to CP,AP

RS_METH_00066

Header: The methodology shall allow activities that reference tools

Dependencies:–

Use Case: For the classic platform, the activity ...

Applies to CP,AP

RS_METH_00042 (trace to RS_Main_00250)

Rationale: AUTOSAR should not require the use of particular tools when industry standard tools already exist.

Applies to CP,AP

RS_METH_00056 (trace to RS_Main_00507)

Applies to CP,AP

RS_METH_00069:

Dependencies:–

Chapter 2.2 Requirements for the Classic Platform

RS_METH_00033:

Use case: In AUTOSAR, an application is modeled as a composition of interconnected components.

The VFB is the communication mechanism that allows these components to interact. Even if all the resources used by these components are not available yet during the development (HW/Network)

some basic checks can be done and early problems can be solved that will ease the integration phase later.

Applies to CP

Add RS_METH_00208 (RS_Main_00300,RS_Main_00150): The methodology shall explain the high-level usage of the AUTOSAR templates

Description: The AUTOSAR templates include numerous features for the system design, the software component, the ECU configuration etc. The methodology shall clearly describe the activities to use/modify these and which activities require them to be completed before commencing.

Rationale: Usage of AUTOSAR templates in the development process

Use Case: Usage of the SW-C template: An existing software component is implemented and is to be integrated into a suppliers ECU. A description of the component is needed in order to correctly integrate that component into the ECU. \{\}newline

Usage of the system template: OEM as integrator is fixing the ECUs, the topology and the list of the SW-C for

one vehicle for the suppliers. \{\}newline

Usage of the BSW module template: An existing BSW module is implemented and is to be integrated into an ECU. A description of the BSW Module is needed in order to correctly integrate that module into the ECU. \{\}newline

The ECU configuration template is used to describe the configuration when integrating a BSW module into an ECU. \{\}newline

The Safety Extensions allow a standardized exchange of safety information and provide the basis for consistent management among different vendors and tools as required by ISO 26262. \{\}newline

The Diagnostic Extract Template that represents a standardized exchange format on diagnostic functionality allows the decentralized configuration of diagnostic aspects.

Applies to CP

RS_METH_00080: The AUTOSAR methodology shall support the concept of implicit communication behavior

Applies to CP

RS_METH_00083: The AUTOSAR methodology shall explain the description and handling of Data Exchange Points

Applies to CP

RS_METH_00084

Applies to CP

RS_METH_00062: The methodology shall support configuration of parameters with different binding time.

Description: The Autosar methodology shall support system development with different combinations of configuration classes.

Rationale: Configuration of parameters can be performed in different process steps: pre-compile, link time, and post-build.

Applies to CP

RS_METH_00074, RS_METH_00075, RS_METH_00076

Applies to CP

Delete the following requirements:

RS_METH_00017: Methodology shall clearly define what is standardized and what is not standardized

Reason: Methodology is an auxiliary document and only informative

Delete RS_METH_00002,RS_METH_00003,RS_METH_00004,RS_METH_00005,RS_AMETH_00081,RS_AMETH_00082

Reason: all requirements on the usage of specific templates will be removed. Instead one general requirement about the usage of templates (RS_METH_00208) will be added.

Delete RS_METH_00038

Rationale: C-Code is supported, but the description nevertheless is independent of the programming language.

Delete RS_METH_00021, RS_METH_00043, RS_METH_00046, RS_METH_00047, RS_METH_00048, RS_METH_00025, RS_METH_00050, RS_METH_00051, RS_METH_00052, RS_METH_00061, RS_METH_00027, RS_METH_00028, RS_METH_00064, RS_METH_00009, RS_METH_00067

Reason: all these requirements describe general SPEM properties and are described in the introduction of TR_Methodology

Remove RS_METH_00054 and extend instead description in TR_Methodology (handled in different RfC)

Delete RS_METH_00010

Reason: this is a property of the MMT

Delete RS_METH_00057: AUTOSAR methodology shall support traceability to external artifacts

Reason: This is not a feature of TR_Methodology or TR_AdaptiveMethodology
–Last change on issue 77303 comment 7–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.21 Specification Item RS_METH_00083

Trace References:

[RS_Main_00301](#)

Content:**RfCs affecting this spec item between releases 1.2.0 and 1.3.0:**

- RfC #77303: Final migration of RS_Methodology from CP to FO

Problem description:

The document RS_Methodology from CP (CP_RS_Methodology) shall completely be migrated to FO together with the next CP release (for FO_R1.3).

In a first step for FO_R1.1 already some of the requirements in CP_RS_Methodology, which are also valid for AP, have been taken over. In this RfC, the remaining requirements shall be taken over, adapted, or deleted if not needed anymore. For the next CP release, the document CP_RS_Methodology can then completely be removed.

Agreed solution:

In RS_Main, the following main requirements need to be extended to FO (in Applies To) in order to fulfil traceability: RS_Main_00360, RS_Main_00290

In RS_Methodology (see also https://svn.autosar.org/repos/work/09_WorkPackages/WP-M/06_Subgroups/05_Methodology/Migration_RS_Methodology_CP_to_FO):

- Delete chapter 1.1 Limitations
- Change chapter 2.1 General Requirements: This sections specifies the general requirements, which are valid for both platforms.

Chapter 2.1 General Requirements:

RS_METH_00006: The methodology shall explain how to build an AUTOSAR system

Description: The methodology shall explain how to build an AUTOSAR system using the activities and work products.

It should be like a user manual to help an organization efficiently apply AUTOSAR. In particular, the methodology shall explain how to build a system consisting of classic and adaptive platforms.

Applies to CP,AP

RS_METH_00041: The methodology shall support top-down and bottom-up approaches

Description: The methodology shall support the top-down and bottom-up approach. In the top-down approach, all constraints on the application software and their distribution on ECUs shall be considered. In the bottom-up approach, all constraints

coming from the hardware (ECUs/sensors/actuators) should be taken into account.
Applies to CP,AP

RS_METH_00016 (trace to RS_Main_00190): The methodology shall support building a system of both AUTOSAR and Non-AUTOSAR ECUs

Description: The methodology shall support building a system of AUTOSAR compliant ECUs and non-AUTOSAR compliant ECUs.

Rationale: The design of a complete vehicle system shall be supported.

Applies to CP,AP

Add RS_METH_00200 (RS_Main_00161): The methodology shall support building a system consisting of several AUTOSAR platforms

Description: The methodology shall support building a system consisting of several AUTOSAR platforms.

Rationale: The design of a complete vehicle system shall be supported.

Use Case: The communication description between machines (or ECUs) based on classic and adaptive AUTOSAR platforms.

Applies to CP,AP

RS_METH_00018:

Applies to AP,CP

RS_METH_00032: The methodology shall support different levels of abstractions

Description: The methodology shall support different views for the development of an AUTOSAR system. This corresponds to the typical domains and parties, which are involved in the system development.

Use case: AUTOSAR is using several abstraction levels to describe the information exchanged between the different players.

In an early phase for instance only the "Virtual Functional Bus" is used, whereas in later development phases we handle real implementations of the SWC deployed to several ECUs.

Applies to CP,AP

RS_METH_00020: The methodology shall support round-trip engineering

Description: The methodology shall support round-trip engineering. This implies that several iteration loops might be necessary in order to finalize a task or work product.

Rationale: Meet AUTOSAR Quality requirements.

Dependencies: –

Use Case: Automotive systems are typically developed in several sample phases (A, B, C, etc).\\}

A single Software Component is updated in a AUTOSAR System. The updated ECU

Extract still matches the existing ECU Configuration (as long as no contradicting changes are made in the iteration).

Applies to CP,AP

RS_METH_00077: The methodology shall support different views on the SW-C structure by OEMs and suppliers

Rationale: Possibility for the supplier to adapt the structure of a SW-C.

Use case: The amount of changes on the supplier side shall be limited to the changes caused by OEM updates.

Applies To CP,AP

RS_METH_00078

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00079

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00015

Use case: An ECU built for a particular microcontroller is explicitly optimized for programming language ABC.

The methodology explains when and how to specify and to select the implementation of the software components compatible with the required programming language.

Applies to CP,AP

RS_METH_00066

Header: The methodology shall allow activities that reference tools

Dependencies:–

Use Case: For the classic platform, the activity ...

Applies to CP,AP

RS_METH_00042 (trace to RS_Main_00250)

Rationale: AUTOSAR should not require the use of particular tools when industry standard tools already exist.

Applies to CP,AP

RS_METH_00056 (trace to RS_Main_00507)

Applies to CP,AP

RS_METH_00069:

Dependencies:–

Chapter 2.2 Requirements for the Classic Platform

RS_METH_00033:

Use case: In AUTOSAR, an application is modeled as a composition of interconnected components.

The VFB is the communication mechanism that allows these components to interact. Even if all the resources used by these components are not available yet during the development (HW/Network)

some basic checks can be done and early problems can be solved that will ease the integration phase later.

Applies to CP

Add RS_METH_00208 (RS_Main_00300,RS_Main_00150): The methodology shall explain the high-level usage of the AUTOSAR templates

Description: The AUTOSAR templates include numerous features for the system design, the software component, the ECU configuration etc. The methodology shall clearly describe the activities to use/modify these and which activities require them to be completed before commencing.

Rationale: Usage of AUTOSAR templates in the development process

Use Case: Usage of the SW-C template: An existing software component is implemented and is to be integrated into a suppliers ECU. A description of the component is needed in order to correctly integrate that component into the ECU. \{\}newline

Usage of the system template: OEM as integrator is fixing the ECUs, the topology and the list of the SW-C for

one vehicle for the suppliers. \{\}newline

Usage of the BSW module template: An existing BSW module is implemented and is to be integrated into an ECU. A description of the BSW Module is needed in order to correctly integrate that module into the ECU. \{\}newline

The ECU configuration template is used to describe the configuration when integrating a BSW module into an ECU. \{\}newline

The Safety Extensions allow a standardized exchange of safety information and provide the basis for consistent management among different vendors and tools as required by ISO 26262. \{\}newline

The Diagnostic Extract Template that represents a standardized exchange format on diagnostic functionality allows the decentralized configuration of diagnostic aspects.

Applies to CP

RS_METH_00080: The AUTOSAR methodology shall support the concept of implicit communication behavior

Applies to CP

RS_METH_00083: The AUTOSAR methodology shall explain the description and handling of Data Exchange Points

Applies to CP

RS_METH_00084

Applies to CP

RS_METH_00062: The methodology shall support configuration of parameters with different binding time.

Description: The Autosar methodology shall support system development with different combinations of configuration classes.

Rationale: Configuration of parameters can be performed in different process steps: pre-compile, link time, and post-build.

Applies to CP

RS_METH_00074, RS_METH_00075, RS_METH_00076

Applies to CP

Delete the following requirements:

RS_METH_00017: Methodology shall clearly define what is standardized and what is not standardized

Reason: Methodology is an auxiliary document and only informative

Delete RS_METH_00002, RS_METH_00003, RS_METH_00004, RS_METH_00005, RS_AMETH_00081, RS_AMETH_00082

Reason: all requirements on the usage of specific templates will be removed. Instead one general requirement about the usage of templates (RS_METH_00208) will be added.

Delete RS_METH_00038

Rationale: C-Code is supported, but the description nevertheless is independent of the programming language.

Delete RS_METH_00021, RS_METH_00043, RS_METH_00046, RS_METH_00047, RS_METH_00048, RS_METH_00025, RS_METH_00050, RS_METH_00051, RS_METH_00052, RS_METH_00061, RS_METH_00027, RS_METH_00028, RS_METH_00064, RS_METH_00009, RS_METH_00067

Reason: all these requirements describe general SPEM properties and are described in the introduction of TR_Methodology

Remove RS_METH_00054 and extend instead description in TR_Methodology (handled in different RfC)

Delete RS_METH_00010

Reason: this is a property of the MMT

Delete RS_METH_00057: AUTOSAR methodology shall support traceability to external artifacts

Reason: This is not a feature of TR_Methodology or TR_AdaptiveMethodology

–Last change on issue 77303 comment 7–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.22 Specification Item RS_METH_00084

Trace References:

RS_Main_00301

Content:

RfCs affecting this spec item between releases 1.2.0 and 1.3.0:

- RfC #77303: Final migration of RS_Methodology from CP to FO

Problem description:

The document RS_Methodology from CP (CP_RS_Methodology) shall completely be migrated to FO together with the next CP release (for FO_R1.3).

In a first step for FO_R1.1 already some of the requirements in CP_RS_Methodology, which are also valid for AP, have been taken over. In this RfC, the remaining requirements shall be taken over, adapted, or deleted if not needed anymore. For the next CP release, the document CP_RS_Methodology can then completely be removed.

Agreed solution:

In RS_Main, the following main requirements need to be extended to FO (in Applies To) in order to fulfil traceability: RS_Main_00360, RS_Main_00290

In RS_Methodology (see also https://svn.autosar.org/repos/work/09_WorkPackages/WP-M/06_Subgroups/05_Methodology/Migration_RS_Methodology_CP_to_FO):

- Delete chapter 1.1 Limitations
- Change chapter 2.1 General Requirements: This sections specifies the general

requirements, which are valid for both platforms.

Chapter 2.1 General Requirements:

RS_METH_00006: The methodology shall explain how to build an AUTOSAR system

Description: The methodology shall explain how to build an AUTOSAR system using the activities and work products.

It should be like a user manual to help an organization efficiently apply AUTOSAR. In particular, the methodology shall explain how to build a system consisting of classic and adaptive platforms.

Applies to CP,AP

RS_METH_00041: The methodology shall support top-down and bottom-up approaches

Description: The methodology shall support the top-down and bottom-up approach. In the top-down approach, all constraints on the application software and their distribution on ECUs shall be considered. In the bottom-up approach, all constraints coming from the hardware (ECUs/sensors/actuators) should be taken into account.

Applies to CP,AP

RS_METH_00016 (trace to RS_Main_00190): The methodology shall support building a system of both AUTOSAR and Non-AUTOSAR ECUs

Description: The methodology shall support building a system of AUTOSAR compliant ECUs and non-AUTOSAR compliant ECUs.

Rationale: The design of a complete vehicle system shall be supported.

Applies to CP,AP

Add RS_METH_00200 (RS_Main_00161): The methodology shall support building a system consisting of several AUTOSAR platforms

Description: The methodology shall support building a system consisting of several AUTOSAR platforms.

Rationale: The design of a complete vehicle system shall be supported.

Use Case: The communication description between machines (or ECUs) based on classic and adaptive AUTOSAR platforms.

Applies to CP,AP

RS_METH_00018:

Applies to AP,CP

RS_METH_00032: The methodology shall support different levels of abstractions

Description: The methodology shall support different views for the development of an AUTOSAR system. This corresponds to the typical domains and parties, which are involved in the system development.

Use case: AUTOSAR is using several abstraction levels to describe the information exchanged between the different players.

In an early phase for instance only the "Virtual Functional Bus" is used, whereas in later development phases we handle real implementations of the SWC deployed to several ECUs.

Applies to CP,AP

RS_METH_00020: The methodology shall support round-trip engineering

Description: The methodology shall support round-trip engineering. This implies that several iteration loops might be necessary in order to finalize a task or work product.

Rationale: Meet AUTOSAR Quality requirements.

Dependencies: –

Use Case: Automotive systems are typically developed in several sample phases (A, B, C, etc).\\}

A single Software Component is updated in a AUTOSAR System. The updated ECU Extract still matches the existing ECU Configuration (as long as no contradicting changes are made in the iteration).

Applies to CP,AP

RS_METH_00077: The methodology shall support different views on the SW-C structure by OEMs and suppliers

Rationale: Possibility for the supplier to adapt the structure of a SW-C.

Use case: The amount of changes on the supplier side shall be limited to the changes caused by OEM updates.

Applies To CP,AP

RS_METH_00078

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00079

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00015

Use case: An ECU built for a particular microcontroller is explicitly optimized for programming language ABC.

The methodology explains when and how to specify and to select the implementation of the software components compatible with the required programming language.

Applies to CP,AP

RS_METH_00066

Header: The methodology shall allow activities that reference tools

Dependencies:–

Use Case: For the classic platform, the activity ...

Applies to CP,AP

RS_METH_00042 (trace to RS_Main_00250)

Rationale: AUTOSAR should not require the use of particular tools when industry standard tools already exist.

Applies to CP,AP

RS_METH_00056 (trace to RS_Main_00507)

Applies to CP,AP

RS_METH_00069:

Dependencies:–

Chapter 2.2 Requirements for the Classic Platform

RS_METH_00033:

Use case: In AUTOSAR, an application is modeled as a composition of interconnected components.

The VFB is the communication mechanism that allows these components to interact. Even if all the resources used by these components are not available yet during the development (HW/Network)

some basic checks can be done and early problems can be solved that will ease the integration phase later.

Applies to CP

Add RS_METH_00208 (RS_Main_00300,RS_Main_00150): The methodology shall explain the high-level usage of the AUTOSAR templates

Description: The AUTOSAR templates include numerous features for the system design, the software component, the ECU configuration etc. The methodology shall clearly describe the activities to use/modify these and which activities require them to be completed before commencing.

Rationale: Usage of AUTOSAR templates in the development process

Use Case: Usage of the SW-C template: An existing software component is implemented and is to be integrated into a suppliers ECU. A description of the component is needed in order to correctly integrate that component into the ECU.\\newline

Usage of the system template: OEM as integrator is fixing the ECUs, the topology and the list of the SW-C for

one vehicle for the suppliers. \{\}\newline

Usage of the BSW module template: An existing BSW module is implemented and is to be integrated into an ECU. A description of the BSW Module is needed in order to correctly integrate that module into the ECU. \{\}\newline

The ECU configuration template is used to describe the configuration when integrating a BSW module into an ECU.\{\}\newline

The Safety Extensions allow a standardized exchange of safety information and provide the basis for consistent management among different vendors and tools as required by ISO 26262. \{\}\newline

The Diagnostic Extract Template that represents a standardized exchange format on diagnostic functionality allows the decentralized configuration of diagnostic aspects. Applies to CP

RS_METH_00080: The AUTOSAR methodology shall support the concept of implicit communication behavior
Applies to CP

RS_METH_00083: The AUTOSAR methodology shall explain the description and handling of Data Exchange Points
Applies to CP

RS_METH_00084
Applies to CP

RS_METH_00062: The methodology shall support configuration of parameters with different binding time.

Description: The Autosar methodology shall support system development with different combinations of configuration classes.

Rationale: Configuration of parameters can be performed in different process steps: pre-compile, link time, and post-build.

Applies to CP

RS_METH_00074,RS_METH_00075,RS_METH_00076
Applies to CP

Delete the following requirements:

RS_METH_00017: Methodology shall clearly define what is standardized and what is not standardized

Reason: Methodology is an auxiliary document and only informative

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RS_AMETH_00081,RS_AMETH_00082

Reason: all requirements on the usage of specific templates will be removed. Instead one general requirement about the usage of templates (RS_METH_00208) will be added.

Delete RS_METH_00038

Rationale: C-Code is supported, but the description nevertheless is independent of the programming language.

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RS_METH_00047, RS_METH_00048, RS_METH_00025, RS_METH_00050,
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RS_METH_00028, RS_METH_00064, RS_METH_00009, RS_METH_00067

Reason: all these requirements describe general SPEM properties and are described in the introduction of TR_Methodology

Remove RS_METH_00054 and extend instead description in TR_Methodology (handled in different RfC)

Delete RS_METH_00010

Reason: this is a property of the MMT

Delete RS_METH_00057: AUTOSAR methodology shall support traceability to external artifacts

Reason: This is not a feature of TR_Methodology or TR_AdaptiveMethodology

–Last change on issue 77303 comment 7–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.23 Specification Item RS_METH_00200

Trace References:

[RS_Main_00161](#)

Content:

RfCs affecting this spec item between releases 1.2.0 and 1.3.0:

- RfC #77303: Final migration of RS_Methodology from CP to FO

Problem description:

The document RS_Methodology from CP (CP_RS_Methodology) shall completely be migrated to FO together with the next CP release (for FO_R1.3).

In a first step for FO_R1.1 already some of the requirements in CP_RS_Methodology, which are also valid for AP, have been taken over. In this RfC, the remaining requirements shall be taken over, adapted, or deleted if not needed anymore. For the next CP release, the document CP_RS_Methodology can then completely be removed.

Agreed solution:

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In RS_Methodology (see also https://svn.autosar.org/repos/work/09_WorkPackages/WP-M/06_Subgroups/05_Methodology/Migration_RS_Methodology_CP_to_FO):

- Delete chapter 1.1 Limitations
- Change chapter 2.1 General Requirements: This sections specifies the general requirements, which are valid for both platforms.

Chapter 2.1 General Requirements:

RS_METH_00006: The methodology shall explain how to build an AUTOSAR system

Description: The methodology shall explain how to build an AUTOSAR system using the activities and work products.

It should be like a user manual to help an organization efficiently apply AUTOSAR. In particular, the methodology shall explain how to build a system consisting of classic and adaptive platforms.

Applies to CP,AP

RS_METH_00041: The methodology shall support top-down and bottom-up approaches

Description: The methodology shall support the top-down and bottom-up approach. In the top-down approach, all constraints on the application software and their distribution on ECUs shall be considered. In the bottom-up approach, all constraints coming from the hardware (ECUs/sensors/actuators) should be taken into account.

Applies to CP,AP

RS_METH_00016 (trace to RS_Main_00190): The methodology shall support building a system of both AUTOSAR and Non-AUTOSAR ECUs

Description: The methodology shall support building a system of AUTOSAR compliant ECUs and non-AUTOSAR compliant ECUs.

Rationale: The design of a complete vehicle system shall be supported.

Applies to CP,AP

Add RS_METH_00200 (RS_Main_00161): The methodology shall support building a system consisting of several AUTOSAR platforms

Description: The methodology shall support building a system consisting of several AUTOSAR platforms.

Rationale: The design of a complete vehicle system shall be supported.

Use Case: The communication description between machines (or ECUs) based on classic and adaptive AUTOSAR platforms.

Applies to CP,AP

RS_METH_00018:

Applies to AP,CP

RS_METH_00032: The methodology shall support different levels of abstractions

Description: The methodology shall support different views for the development of an AUTOSAR system. This corresponds to the typical domains and parties, which are involved in the system development.

Use case: AUTOSAR is using several abstraction levels to describe the information exchanged between the different players.

In an early phase for instance only the "Virtual Functional Bus" is used, whereas in later development phases we handle real implementations of the SWC deployed to several ECUs.

Applies to CP,AP

RS_METH_00020: The methodology shall support round-trip engineering

Description: The methodology shall support round-trip engineering. This implies that several iteration loops might be necessary in order to finalize a task or work product.

Rationale: Meet AUTOSAR Quality requirements.

Dependencies: –

Use Case: Automotive systems are typically developed in several sample phases (A, B, C, etc). \}

A single Software Component is updated in a AUTOSAR System. The updated ECU Extract still matches the existing ECU Configuration (as long as no contradicting changes are made in the iteration).

Applies to CP,AP

RS_METH_00077: The methodology shall support different views on the SW-

C structure by OEMs and suppliers

Rationale: Possibility for the supplier to adapt the structure of a SW-C.

Use case: The amount of changes on the supplier side shall be limited to the changes caused by OEM updates.

Applies To CP,AP

RS_METH_00078

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00079

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00015

Use case: An ECU built for a particular microcontroller is explicitly optimized for programming language ABC.

The methodology explains when and how to specify and to select the implementation of the software components compatible with the required programming language.

Applies to CP,AP

RS_METH_00066

Header: The methodology shall allow activities that reference tools

Dependencies:–

Use Case: For the classic platform, the activity ...

Applies to CP,AP

RS_METH_00042 (trace to RS_Main_00250)

Rationale: AUTOSAR should not require the use of particular tools when industry standard tools already exist.

Applies to CP,AP

RS_METH_00056 (trace to RS_Main_00507)

Applies to CP,AP

RS_METH_00069:

Dependencies:–

Chapter 2.2 Requirements for the Classic Platform

RS_METH_00033:

Use case: In AUTOSAR, an application is modeled as a composition of interconnected components.

The VFB is the communication mechanism that allows these components to interact. Even if all the resources used by these components are not available yet during the development (HW/Network) some basic checks can be done and early problems can be solved that will ease the integration phase later.
Applies to CP

Add RS_METH_00208 (RS_Main_00300,RS_Main_00150): The methodology shall explain the high-level usage of the AUTOSAR templates

Description: The AUTOSAR templates include numerous features for the system design, the software component, the ECU configuration etc. The methodology shall clearly describe the activities to use/modify these and which activities require them to be completed before commencing.

Rationale: Usage of AUTOSAR templates in the development process

Use Case: Usage of the SW-C template: An existing software component is implemented and is to be integrated into a suppliers ECU. A description of the component is needed in order to correctly integrate that component into the ECU. \{\}newline

Usage of the system template: OEM as integrator is fixing the ECUs, the topology and the list of the SW-C for one vehicle for the suppliers. \{\}newline

Usage of the BSW module template: An existing BSW module is implemented and is to be integrated into an ECU. A description of the BSW Module is needed in order to correctly integrate that module into the ECU. \{\}newline

The ECU configuration template is used to describe the configuration when integrating a BSW module into an ECU. \{\}newline

The Safety Extensions allow a standardized exchange of safety information and provide the basis for consistent management among different vendors and tools as required by ISO 26262. \{\}newline

The Diagnostic Extract Template that represents a standardized exchange format on diagnostic functionality allows the decentralized configuration of diagnostic aspects.
Applies to CP

RS_METH_00080: The AUTOSAR methodology shall support the concept of implicit communication behavior

Applies to CP

RS_METH_00083: The AUTOSAR methodology shall explain the description and handling of Data Exchange Points

Applies to CP

RS_METH_00084

Applies to CP

RS_METH_00062: The methodology shall support configuration of parameters with different binding time.

Description: The Autosar methodology shall support system development with different combinations of configuration classes.

Rationale: Configuration of parameters can be performed in different process steps: pre-compile, link time, and post-build.

Applies to CP

RS_METH_00074, RS_METH_00075, RS_METH_00076

Applies to CP

Delete the following requirements:

RS_METH_00017: Methodology shall clearly define what is standardized and what is not standardized

Reason: Methodology is an auxiliary document and only informative

Delete RS_METH_00002, RS_METH_00003, RS_METH_00004, RS_METH_00005, RS_AMETH_00081, RS_AMETH_00082

Reason: all requirements on the usage of specific templates will be removed. Instead one general requirement about the usage of templates (RS_METH_00208) will be added.

Delete RS_METH_00038

Rationale: C-Code is supported, but the description nevertheless is independent of the programming language.

Delete RS_METH_00021, RS_METH_00043, RS_METH_00046, RS_METH_00047, RS_METH_00048, RS_METH_00025, RS_METH_00050, RS_METH_00051, RS_METH_00052, RS_METH_00061, RS_METH_00027, RS_METH_00028, RS_METH_00064, RS_METH_00009, RS_METH_00067

Reason: all these requirements describe general SPEM properties and are described in the introduction of TR_Methodology

Remove RS_METH_00054 and extend instead description in TR_Methodology (handled in different RfC)

Delete RS_METH_00010

Reason: this is a property of the MMT

Delete RS_METH_00057: AUTOSAR methodology shall support traceability to external artifacts

Reason: This is not a feature of TR_Methodology or TR_AdaptiveMethodology
–Last change on issue 77303 comment 7–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.24 Specification Item RS_METH_00201

Trace References:

RS_Main_00150, RS_Main_00060

Content:**RfCs affecting this spec item between releases 1.2.0 and 1.3.0:**

- RfC #77303: Final migration of RS_Methodology from CP to FO

Problem description:

The document RS_Methodology from CP (CP_RS_Methodology) shall completely be migrated to FO together with the next CP release (for FO_R1.3).

In a first step for FO_R1.1 already some of the requirements in CP_RS_Methodology, which are also valid for AP, have been taken over. In this RfC, the remaining requirements shall be taken over, adapted, or deleted if not needed anymore. For the next CP release, the document CP_RS_Methodology can then completely be removed.

Agreed solution:

In RS_Main, the following main requirements need to be extended to FO (in Applies To) in order to fulfil traceability: RS_Main_00360, RS_Main_00290

In RS_Methodology (see also https://svn.autosar.org/repos/work/09_WorkPackages/WP-M/06_Subgroups/05_Methodology/Migration_RS_Methodology_CP_to_FO):

- Delete chapter 1.1 Limitations
- Change chapter 2.1 General Requirements: This sections specifies the general requirements, which are valid for both platforms.

Chapter 2.1 General Requirements:

RS_METH_00006: The methodology shall explain how to build an AUTOSAR system

Description: The methodology shall explain how to build an AUTOSAR system using the activities and work products.

It should be like a user manual to help an organization efficiently apply AUTOSAR. In particular, the methodology shall explain how to build a system consisting of classic and adaptive platforms.

Applies to CP,AP

RS_METH_00041: The methodology shall support top-down and bottom-up approaches

Description: The methodology shall support the top-down and bottom-up approach. In the top-down approach, all constraints on the application software and their distribution on ECUs shall be considered. In the bottom-up approach, all constraints coming from the hardware (ECUs/sensors/actuators) should be taken into account.

Applies to CP,AP

RS_METH_00016 (trace to RS_Main_00190): The methodology shall support building a system of both AUTOSAR and Non-AUTOSAR ECUs

Description: The methodology shall support building a system of AUTOSAR compliant ECUs and non-AUTOSAR compliant ECUs.

Rationale: The design of a complete vehicle system shall be supported.

Applies to CP,AP

Add RS_METH_00200 (RS_Main_00161): The methodology shall support building a system consisting of several AUTOSAR platforms

Description: The methodology shall support building a system consisting of several AUTOSAR platforms.

Rationale: The design of a complete vehicle system shall be supported.

Use Case: The communication description between machines (or ECUs) based on classic and adaptive AUTOSAR platforms.

Applies to CP,AP

RS_METH_00018:

Applies to AP,CP

RS_METH_00032: The methodology shall support different levels of abstractions

Description: The methodology shall support different views for the development of an AUTOSAR system. This corresponds to the typical domains and parties, which are involved in the system development.

Use case: AUTOSAR is using several abstraction levels to describe the information exchanged between the different players.

In an early phase for instance only the "Virtual Functional Bus" is used, whereas in later development phases we handle real implementations of the SWC deployed to several ECUs.

Applies to CP,AP

RS_METH_00020: The methodology shall support round-trip engineering

Description: The methodology shall support round-trip engineering. This implies that several iteration loops might be necessary in order to finalize a task or work product.

Rationale: Meet AUTOSAR Quality requirements.

Dependencies: –

Use Case: Automotive systems are typically developed in several sample phases (A, B, C, etc).\\}

A single Software Component is updated in a AUTOSAR System. The updated ECU Extract still matches the existing ECU Configuration (as long as no contradicting changes are made in the iteration).

Applies to CP,AP

RS_METH_00077: The methodology shall support different views on the SW-C structure by OEMs and suppliers

Rationale: Possibility for the supplier to adapt the structure of a SW-C.

Use case: The amount of changes on the supplier side shall be limited to the changes caused by OEM updates.

Applies To CP,AP

RS_METH_00078

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00079

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00015

Use case: An ECU built for a particular microcontroller is explicitly optimized for programming language ABC.

The methodology explains when and how to specify and to select the implementation of the software components compatible with the required programming language.

Applies to CP,AP

RS_METH_00066

Header: The methodology shall allow activities that reference tools

Dependencies:–

Use Case: For the classic platform, the activity ...

Applies to CP,AP

RS_METH_00042 (trace to RS_Main_00250)

Rationale: AUTOSAR should not require the use of particular tools when industry standard tools already exist.

Applies to CP,AP

RS_METH_00056 (trace to RS_Main_00507)

Applies to CP,AP

RS_METH_00069:

Dependencies:—

Chapter 2.2 Requirements for the Classic Platform

RS_METH_00033:

Use case: In AUTOSAR, an application is modeled as a composition of interconnected components.

The VFB is the communication mechanism that allows these components to interact. Even if all the resources used by these components are not available yet during the development (HW/Network)

some basic checks can be done and early problems can be solved that will ease the integration phase later.

Applies to CP

Add RS_METH_00208 (RS_Main_00300,RS_Main_00150): The methodology shall explain the high-level usage of the AUTOSAR templates

Description: The AUTOSAR templates include numerous features for the system design, the software component, the ECU configuration etc. The methodology shall clearly describe the activities to use/modify these and which activities require them to be completed before commencing.

Rationale: Usage of AUTOSAR templates in the development process

Use Case: Usage of the SW-C template: An existing software component is implemented and is to be integrated into a suppliers ECU. A description of the component is needed in order to correctly integrate that component into the ECU. \{\}newline

Usage of the system template: OEM as integrator is fixing the ECUs, the topology and the list of the SW-C for

one vehicle for the suppliers. \{\}newline

Usage of the BSW module template: An existing BSW module is implemented and is to be integrated into an ECU. A description of the BSW Module is needed in order to correctly integrate that module into the ECU. \{\}newline

The ECU configuration template is used to describe the configuration when integrat-

ing a BSW module into an ECU.\\}

The Safety Extensions allow a standardized exchange of safety information and provide the basis for consistent management among different vendors and tools as required by ISO 26262. \\}

The Diagnostic Extract Template that represents a standardized exchange format on diagnostic functionality allows the decentralized configuration of diagnostic aspects. Applies to CP

RS_METH_00080: The AUTOSAR methodology shall support the concept of implicit communication behavior
Applies to CP

RS_METH_00083: The AUTOSAR methodology shall explain the description and handling of Data Exchange Points
Applies to CP

RS_METH_00084
Applies to CP

RS_METH_00062: The methodology shall support configuration of parameters with different binding time.

Description: The Autosar methodology shall support system development with different combinations of configuration classes.

Rationale: Configuration of parameters can be performed in different process steps: pre-compile, link time, and post-build.

Applies to CP

RS_METH_00074,RS_METH_00075,RS_METH_00076
Applies to CP

Delete the following requirements:

RS_METH_00017: Methodology shall clearly define what is standardized and what is not standardized

Reason: Methodology is an auxiliary document and only informative

Delete RS_METH_00002,RS_METH_00003,RS_METH_00004,RS_METH_00005,RS_AMETH_00081,RS_AMETH_00082

Reason: all requirements on the usage of specific templates will be removed. Instead one general requirement about the usage of templates (RS_METH_00208) will be added.

Delete RS_METH_00038

Rationale: C-Code is supported, but the description nevertheless is independent of the programming language.

Delete RS_METH_00021, RS_METH_00043, RS_METH_00046,
RS_METH_00047, RS_METH_00048, RS_METH_00025, RS_METH_00050,
RS_METH_00051, RS_METH_00052, RS_METH_00061, RS_METH_00027,
RS_METH_00028, RS_METH_00064, RS_METH_00009, RS_METH_00067

Reason: all these requirements describe general SPEM properties and are described in the introduction of TR_Methodology

Remove RS_METH_00054 and extend instead description in TR_Methodology (handled in different RfC)

Delete RS_METH_00010

Reason: this is a property of the MMT

Delete RS_METH_00057: AUTOSAR methodology shall support traceability to external artifacts

Reason: This is not a feature of TR_Methodology or TR_AdaptiveMethodology
–Last change on issue 77303 comment 7–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.25 Specification Item RS_METH_00202

Trace References:

RS_Main_00080, RS_Main_00150

Content:

RfCs affecting this spec item between releases 1.2.0 and 1.3.0:

- RfC #77303: Final migration of RS_Methodology from CP to FO

Problem description:

The document RS_Methodology from CP (CP_RS_Methodology) shall completely be migrated to FO together with the next CP release (for FO_R1.3).

In a first step for FO_R1.1 already some of the requirements in CP_RS_Methodology, which are also valid for AP, have been taken over. In this RfC, the remaining requirements shall be taken over, adapted, or deleted if not needed anymore. For the next CP release, the document CP_RS_Methodology can then completely be removed.

Agreed solution:

In RS_Main, the following main requirements need to be extended to FO (in Applies To) in order to fulfil traceability: RS_Main_00360, RS_Main_00290

In RS_Methodology (see also https://svn.autosar.org/repos/work/09_WorkPackages/WP-M/06_Subgroups/05_Methodology/Migration_RS_Methodology_CP_to_FO):

- Delete chapter 1.1 Limitations
- Change chapter 2.1 General Requirements: This sections specifies the general requirements, which are valid for both platforms.

Chapter 2.1 General Requirements:

RS_METH_00006: The methodology shall explain how to build an AUTOSAR system

Description: The methodology shall explain how to build an AUTOSAR system using the activities and work products.

It should be like a user manual to help an organization efficiently apply AUTOSAR. In particular, the methodology shall explain how to build a system consisting of classic and adaptive platforms.

Applies to CP,AP

RS_METH_00041: The methodology shall support top-down and bottom-up approaches

Description: The methodology shall support the top-down and bottom-up approach. In the top-down approach, all constraints on the application software and their distribution on ECUs shall be considered. In the bottom-up approach, all constraints coming from the hardware (ECUs/sensors/actuators) should be taken into account.

Applies to CP,AP

RS_METH_00016 (trace to RS_Main_00190): The methodology shall support building a system of both AUTOSAR and Non-AUTOSAR ECUs

Description: The methodology shall support building a system of AUTOSAR compliant ECUs and non-AUTOSAR compliant ECUs.

Rationale: The design of a complete vehicle system shall be supported.

Applies to CP,AP

Add RS_METH_00200 (RS_Main_00161): The methodology shall support building a system consisting of several AUTOSAR platforms

Description: The methodology shall support building a system consisting of several AUTOSAR platforms.

Rationale: The design of a complete vehicle system shall be supported.

Use Case: The communication description between machines (or ECUs) based on classic and adaptive AUTOSAR platforms.

Applies to CP,AP

RS_METH_00018:

Applies to AP,CP

RS_METH_00032: The methodology shall support different levels of abstractions

Description: The methodology shall support different views for the development of an AUTOSAR system. This corresponds to the typical domains and parties, which are involved in the system development.

Use case: AUTOSAR is using several abstraction levels to describe the information exchanged between the different players.

In an early phase for instance only the "Virtual Functional Bus" is used, whereas in later development phases we handle real implementations of the SWC deployed to several ECUs.

Applies to CP,AP

RS_METH_00020: The methodology shall support round-trip engineering

Description: The methodology shall support round-trip engineering. This implies that several iteration loops might be necessary in order to finalize a task or work product.

Rationale: Meet AUTOSAR Quality requirements.

Dependencies: –

Use Case: Automotive systems are typically developed in several sample phases (A, B, C, etc).\\}

A single Software Component is updated in a AUTOSAR System. The updated ECU Extract still matches the existing ECU Configuration (as long as no contradicting changes are made in the iteration).

Applies to CP,AP

RS_METH_00077: The methodology shall support different views on the SW-C structure by OEMs and suppliers

Rationale: Possibility for the supplier to adapt the structure of a SW-C.

Use case: The amount of changes on the supplier side shall be limited to the changes caused by OEM updates.

Applies To CP,AP

RS_METH_00078

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00079

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00015

Use case: An ECU built for a particular microcontroller is explicitly optimized for programming language ABC.

The methodology explains when and how to specify and to select the implementation of the software components compatible with the required programming language.

Applies to CP,AP

RS_METH_00066

Header: The methodology shall allow activities that reference tools

Dependencies:–

Use Case: For the classic platform, the activity ...

Applies to CP,AP

RS_METH_00042 (trace to RS_Main_00250)

Rationale: AUTOSAR should not require the use of particular tools when industry standard tools already exist.

Applies to CP,AP

RS_METH_00056 (trace to RS_Main_00507)

Applies to CP,AP

RS_METH_00069:

Dependencies:–

Chapter 2.2 Requirements for the Classic Platform

RS_METH_00033:

Use case: In AUTOSAR, an application is modeled as a composition of interconnected components.

The VFB is the communication mechanism that allows these components to interact. Even if all the resources used by these components are not available yet during the development (HW/Network)

some basic checks can be done and early problems can be solved that will ease the integration phase later.

Applies to CP

Add RS_METH_00208 (RS_Main_00300,RS_Main_00150): The methodology shall explain the high-level usage of the AUTOSAR templates

Description: The AUTOSAR templates include numerous features for the system design, the software component, the ECU configuration etc. The methodology shall clearly describe the activities to use/modify these and which activities require them to be completed before commencing.

Rationale: Usage of AUTOSAR templates in the development process

Use Case: Usage of the SW-C template: An existing software component is implemented and is to be integrated into a suppliers ECU. A description of the component is needed in order to correctly integrate that component into the ECU. \{\}newline

Usage of the system template: OEM as integrator is fixing the ECUs, the topology and the list of the SW-C for

one vehicle for the suppliers. \{\}newline

Usage of the BSW module template: An existing BSW module is implemented and is to be integrated into an ECU. A description of the BSW Module is needed in order to correctly integrate that module into the ECU. \{\}newline

The ECU configuration template is used to describe the configuration when integrating a BSW module into an ECU. \{\}newline

The Safety Extensions allow a standardized exchange of safety information and provide the basis for consistent management among different vendors and tools as required by ISO 26262. \{\}newline

The Diagnostic Extract Template that represents a standardized exchange format on diagnostic functionality allows the decentralized configuration of diagnostic aspects.

Applies to CP

RS_METH_00080: The AUTOSAR methodology shall support the concept of implicit communication behavior

Applies to CP

RS_METH_00083: The AUTOSAR methodology shall explain the description and handling of Data Exchange Points

Applies to CP

RS_METH_00084

Applies to CP

RS_METH_00062: The methodology shall support configuration of parameters with different binding time.

Description: The Autosar methodology shall support system development with different combinations of configuration classes.

Rationale: Configuration of parameters can be performed in different process steps:

pre-compile, link time, and post-build.

Applies to CP

RS_METH_00074,RS_METH_00075,RS_METH_00076

Applies to CP

Delete the following requirements:

RS_METH_00017: Methodology shall clearly define what is standardized and what is not standardized

Reason: Methodology is an auxiliary document and only informative

Delete RS_METH_00002,RS_METH_00003,RS_METH_00004,RS_METH_00005,RS_AMETH_00081,RS_AMETH_00082

Reason: all requirements on the usage of specific templates will be removed. Instead one general requirement about the usage of templates (RS_METH_00208) will be added.

Delete RS_METH_00038

Rationale: C-Code is supported, but the description nevertheless is independent of the programming language.

Delete RS_METH_00021, RS_METH_00043, RS_METH_00046, RS_METH_00047, RS_METH_00048, RS_METH_00025, RS_METH_00050, RS_METH_00051, RS_METH_00052, RS_METH_00061, RS_METH_00027, RS_METH_00028, RS_METH_00064, RS_METH_00009, RS_METH_00067

Reason: all these requirements describe general SPEM properties and are described in the introduction of TR_Methodology

Remove RS_METH_00054 and extend instead description in TR_Methodology (handled in different RfC)

Delete RS_METH_00010

Reason: this is a property of the MMT

Delete RS_METH_00057: AUTOSAR methodology shall support traceability to external artifacts

Reason: This is not a feature of TR_Methodology or TR_AdaptiveMethodology

–Last change on issue 77303 comment 7–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.26 Specification Item RS_METH_00203

Trace References:

RS_Main_00503

Content:

RfCs affecting this spec item between releases 1.2.0 and 1.3.0:

- RfC #77303: Final migration of RS_Methodology from CP to FO

Problem description:

The document RS_Methodology from CP (CP_RS_Methodology) shall completely be migrated to FO together with the next CP release (for FO_R1.3).

In a first step for FO_R1.1 already some of the requirements in CP_RS_Methodology, which are also valid for AP, have been taken over. In this RfC, the remaining requirements shall be taken over, adapted, or deleted if not needed anymore. For the next CP release, the document CP_RS_Methodology can then completely be removed.

Agreed solution:

In RS_Main, the following main requirements need to be extended to FO (in Applies To) in order to fulfil traceability: RS_Main_00360, RS_Main_00290

In RS_Methodology (see also https://svn.autosar.org/repos/work/09_WorkPackages/WP-M/06_Subgroups/05_Methodology/Migration_RS_Methodology_CP_to_FO):

- Delete chapter 1.1 Limitations
- Change chapter 2.1 General Requirements: This sections specifies the general requirements, which are valid for both platforms.

Chapter 2.1 General Requirements:

RS_METH_00006: The methodology shall explain how to build an AUTOSAR system

Description: The methodology shall explain how to build an AUTOSAR system using the activities and work products.

It should be like a user manual to help an organization efficiently apply AUTOSAR. In particular, the methodology shall explain how to build a system consisting of classic and adaptive platforms.

Applies to CP,AP

RS_METH_00041: The methodology shall support top-down and bottom-up approaches

Description: The methodology shall support the top-down and bottom-up approach. In the top-down approach, all constraints on the application software and their distribution on ECUs shall be considered. In the bottom-up approach, all constraints coming from the hardware (ECUs/sensors/actuators) should be taken into account.

Applies to CP,AP

RS_METH_00016 (trace to RS_Main_00190): The methodology shall support building a system of both AUTOSAR and Non-AUTOSAR ECUs

Description: The methodology shall support building a system of AUTOSAR compliant ECUs and non-AUTOSAR compliant ECUs.

Rationale: The design of a complete vehicle system shall be supported.

Applies to CP,AP

Add RS_METH_00200 (RS_Main_00161): The methodology shall support building a system consisting of several AUTOSAR platforms

Description: The methodology shall support building a system consisting of several AUTOSAR platforms.

Rationale: The design of a complete vehicle system shall be supported.

Use Case: The communication description between machines (or ECUs) based on classic and adaptive AUTOSAR platforms.

Applies to CP,AP

RS_METH_00018:

Applies to AP,CP

RS_METH_00032: The methodology shall support different levels of abstractions

Description: The methodology shall support different views for the development of an AUTOSAR system. This corresponds to the typical domains and parties, which are involved in the system development.

Use case: AUTOSAR is using several abstraction levels to describe the information exchanged between the different players.

In an early phase for instance only the "Virtual Functional Bus" is used, whereas in later development phases we handle real implementations of the SWC deployed to several ECUs.

Applies to CP,AP

RS_METH_00020: The methodology shall support round-trip engineering

Description: The methodology shall support round-trip engineering. This implies that several iteration loops might be necessary in order to finalize a task or work product.

Rationale: Meet AUTOSAR Quality requirements.

Dependencies: –

Use Case: Automotive systems are typically developed in several sample phases (A, B, C, etc).\\}

A single Software Component is updated in a AUTOSAR System. The updated ECU Extract still matches the existing ECU Configuration (as long as no contradicting changes are made in the iteration).

Applies to CP,AP

RS_METH_00077: The methodology shall support different views on the SW-C structure by OEMs and suppliers

Rationale: Possibility for the supplier to adapt the structure of a SW-C.

Use case: The amount of changes on the supplier side shall be limited to the changes caused by OEM updates.

Applies To CP,AP

RS_METH_00078

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00079

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00015

Use case: An ECU built for a particular microcontroller is explicitly optimized for programming language ABC.

The methodology explains when and how to specify and to select the implementation of the software components compatible with the required programming language.

Applies to CP,AP

RS_METH_00066

Header: The methodology shall allow activities that reference tools

Dependencies:–

Use Case: For the classic platform, the activity ...

Applies to CP,AP

RS_METH_00042 (trace to RS_Main_00250)

Rationale: AUTOSAR should not require the use of particular tools when industry standard tools already exist.

Applies to CP,AP

RS_METH_00056 (trace to RS_Main_00507)

Applies to CP,AP

RS_METH_00069:

Dependencies:–

Chapter 2.2 Requirements for the Classic Platform

RS_METH_00033:

Use case: In AUTOSAR, an application is modeled as a composition of interconnected components.

The VFB is the communication mechanism that allows these components to interact. Even if all the resources used by these components are not available yet during the development (HW/Network)

some basic checks can be done and early problems can be solved that will ease the integration phase later.

Applies to CP

Add RS_METH_00208 (RS_Main_00300,RS_Main_00150): The methodology shall explain the high-level usage of the AUTOSAR templates

Description: The AUTOSAR templates include numerous features for the system design, the software component, the ECU configuration etc. The methodology shall clearly describe the activities to use/modify these and which activities require them to be completed before commencing.

Rationale: Usage of AUTOSAR templates in the development process

Use Case: Usage of the SW-C template: An existing software component is implemented and is to be integrated into a suppliers ECU. A description of the component is needed in order to correctly integrate that component into the ECU. \{\}newline

Usage of the system template: OEM as integrator is fixing the ECUs, the topology and the list of the SW-C for

one vehicle for the suppliers. \{\}newline

Usage of the BSW module template: An existing BSW module is implemented and is to be integrated into an ECU. A description of the BSW Module is needed in order to correctly integrate that module into the ECU. \{\}newline

The ECU configuration template is used to describe the configuration when integrating a BSW module into an ECU. \{\}newline

The Safety Extensions allow a standardized exchange of safety information and provide the basis for consistent management among different vendors and tools as required by ISO 26262. \{\}newline

The Diagnostic Extract Template that represents a standardized exchange format on diagnostic functionality allows the decentralized configuration of diagnostic aspects.
Applies to CP

RS_METH_00080: The AUTOSAR methodology shall support the concept of implicit communication behavior
Applies to CP

RS_METH_00083: The AUTOSAR methodology shall explain the description and handling of Data Exchange Points
Applies to CP

RS_METH_00084
Applies to CP

RS_METH_00062: The methodology shall support configuration of parameters with different binding time.
Description: The Autosar methodology shall support system development with different combinations of configuration classes.
Rationale: Configuration of parameters can be performed in different process steps: pre-compile, link time, and post-build.
Applies to CP

RS_METH_00074,RS_METH_00075,RS_METH_00076
Applies to CP

Delete the following requirements:

RS_METH_00017: Methodology shall clearly define what is standardized and what is not standardized
Reason: Methodology is an auxiliary document and only informative

Delete RS_METH_00002,RS_METH_00003,RS_METH_00004,RS_METH_00005,RS_AMETH_00081,RS_AMETH_00082
Reason: all requirements on the usage of specific templates will be removed. Instead one general requirement about the usage of templates (RS_METH_00208) will be added.

Delete RS_METH_00038
Rationale: C-Code is supported, but the description nevertheless is independent of the programming language.

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RS_METH_00047, RS_METH_00048, RS_METH_00025, RS_METH_00050,
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RS_METH_00028, RS_METH_00064, RS_METH_00009, RS_METH_00067

Reason: all these requirements describe general SPEM properties and are described in the introduction of TR_Methodology

Remove RS_METH_00054 and extend instead description in TR_Methodology (handled in different RfC)

Delete RS_METH_00010

Reason: this is a property of the MMT

Delete RS_METH_00057: AUTOSAR methodology shall support traceability to external artifacts

Reason: This is not a feature of TR_Methodology or TR_AdaptiveMethodology

–Last change on issue 77303 comment 7–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.27 Specification Item RS_METH_00204

Trace References:

RS_Main_00503, RS_Main_00002

Content:

RfCs affecting this spec item between releases 1.2.0 and 1.3.0:

- RfC #77303: Final migration of RS_Methodology from CP to FO

Problem description:

The document RS_Methodology from CP (CP_RS_Methodology) shall completely be migrated to FO together with the next CP release (for FO_R1.3).

In a first step for FO_R1.1 already some of the requirements in CP_RS_Methodology, which are also valid for AP, have been taken over. In this RfC, the remaining requirements shall be taken over, adapted, or deleted if not

needed anymore. For the next CP release, the document CP_RS_Methodology can then completely be removed.

Agreed solution:

In RS_Main, the following main requirements need to be extended to FO (in Applies To) in order to fulfil traceability: RS_Main_00360, RS_Main_00290

In RS_Methodology (see also https://svn.autosar.org/repos/work/09_WorkPackages/WP-M/06_Subgroups/05_Methodology/Migration_RS_Methodology_CP_to_FO):

- Delete chapter 1.1 Limitations
- Change chapter 2.1 General Requirements: This sections specifies the general requirements, which are valid for both platforms.

Chapter 2.1 General Requirements:

RS_METH_00006: The methodology shall explain how to build an AUTOSAR system

Description: The methodology shall explain how to build an AUTOSAR system using the activities and work products.

It should be like a user manual to help an organization efficiently apply AUTOSAR. In particular, the methodology shall explain how to build a system consisting of classic and adaptive platforms.

Applies to CP,AP

RS_METH_00041: The methodology shall support top-down and bottom-up approaches

Description: The methodology shall support the top-down and bottom-up approach. In the top-down approach, all constraints on the application software and their distribution on ECUs shall be considered. In the bottom-up approach, all constraints coming from the hardware (ECUs/sensors/actuators) should be taken into account.

Applies to CP,AP

RS_METH_00016 (trace to RS_Main_00190): The methodology shall support building a system of both AUTOSAR and Non-AUTOSAR ECUs

Description: The methodology shall support building a system of AUTOSAR compliant ECUs and non-AUTOSAR compliant ECUs.

Rationale: The design of a complete vehicle system shall be supported.

Applies to CP,AP

Add RS_METH_00200 (RS_Main_00161): The methodology shall support building a system consisting of several AUTOSAR platforms

Description: The methodology shall support building a system consisting of several

AUTOSAR platforms.

Rationale: The design of a complete vehicle system shall be supported.

Use Case: The communication description between machines (or ECUs) based on classic and adaptive AUTOSAR platforms.

Applies to CP,AP

RS_METH_00018:

Applies to AP,CP

RS_METH_00032: The methodology shall support different levels of abstractions

Description: The methodology shall support different views for the development of an AUTOSAR system. This corresponds to the typical domains and parties, which are involved in the system development.

Use case: AUTOSAR is using several abstraction levels to describe the information exchanged between the different players.

In an early phase for instance only the "Virtual Functional Bus" is used, whereas in later development phases we handle real implementations of the SWC deployed to several ECUs.

Applies to CP,AP

RS_METH_00020: The methodology shall support round-trip engineering

Description: The methodology shall support round-trip engineering. This implies that several iteration loops might be necessary in order to finalize a task or work product.

Rationale: Meet AUTOSAR Quality requirements.

Dependencies: –

Use Case: Automotive systems are typically developed in several sample phases (A, B, C, etc).\}

A single Software Component is updated in a AUTOSAR System. The updated ECU Extract still matches the existing ECU Configuration (as long as no contradicting changes are made in the iteration).

Applies to CP,AP

RS_METH_00077: The methodology shall support different views on the SW-C structure by OEMs and suppliers

Rationale: Possibility for the supplier to adapt the structure of a SW-C.

Use case: The amount of changes on the supplier side shall be limited to the changes caused by OEM updates.

Applies To CP,AP

RS_METH_00078

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00079

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00015

Use case: An ECU built for a particular microcontroller is explicitly optimized for programming language ABC.

The methodology explains when and how to specify and to select the implementation of the software components compatible with the required programming language.

Applies to CP,AP

RS_METH_00066

Header: The methodology shall allow activities that reference tools

Dependencies:–

Use Case: For the classic platform, the activity ...

Applies to CP,AP

RS_METH_00042 (trace to RS_Main_00250)

Rationale: AUTOSAR should not require the use of particular tools when industry standard tools already exist.

Applies to CP,AP

RS_METH_00056 (trace to RS_Main_00507)

Applies to CP,AP

RS_METH_00069:

Dependencies:–

Chapter 2.2 Requirements for the Classic Platform

RS_METH_00033:

Use case: In AUTOSAR, an application is modeled as a composition of interconnected components.

The VFB is the communication mechanism that allows these components to interact. Even if all the resources used by these components are not available yet during the development (HW/Network)

some basic checks can be done and early problems can be solved that will ease the integration phase later.

Applies to CP

Add RS_METH_00208 (RS_Main_00300,RS_Main_00150): The methodology

shall explain the high-level usage of the AUTOSAR templates

Description: The AUTOSAR templates include numerous features for the system design, the software component, the ECU configuration etc. The methodology shall clearly describe the activities to use/modify these and which activities require them to be completed before commencing.

Rationale: Usage of AUTOSAR templates in the development process

Use Case: Usage of the SW-C template: An existing software component is implemented and is to be integrated into a suppliers ECU. A description of the component is needed in order to correctly integrate that component into the ECU. \{\}newline

Usage of the system template: OEM as integrator is fixing the ECUs, the topology and the list of the SW-C for

one vehicle for the suppliers. \{\}newline

Usage of the BSW module template: An existing BSW module is implemented and is to be integrated into an ECU. A description of the BSW Module is needed in order to correctly integrate that module into the ECU. \{\}newline

The ECU configuration template is used to describe the configuration when integrating a BSW module into an ECU. \{\}newline

The Safety Extensions allow a standardized exchange of safety information and provide the basis for consistent management among different vendors and tools as required by ISO 26262. \{\}newline

The Diagnostic Extract Template that represents a standardized exchange format on diagnostic functionality allows the decentralized configuration of diagnostic aspects.

Applies to CP

RS_METH_00080: The AUTOSAR methodology shall support the concept of implicit communication behavior

Applies to CP

RS_METH_00083: The AUTOSAR methodology shall explain the description and handling of Data Exchange Points

Applies to CP

RS_METH_00084

Applies to CP

RS_METH_00062: The methodology shall support configuration of parameters with different binding time.

Description: The Autosar methodology shall support system development with different combinations of configuration classes.

Rationale: Configuration of parameters can be performed in different process steps: pre-compile, link time, and post-build.

Applies to CP

RS_METH_00074,RS_METH_00075,RS_METH_00076

Applies to CP

Delete the following requirements:

RS_METH_00017: Methodology shall clearly define what is standardized and what is not standardized

Reason: Methodology is an auxiliary document and only informative

Delete RS_METH_00002,RS_METH_00003,RS_METH_00004,RS_METH_00005,RS_AMETH_00081,RS_AMETH_00082

Reason: all requirements on the usage of specific templates will be removed. Instead one general requirement about the usage of templates (RS_METH_00208) will be added.

Delete RS_METH_00038

Rationale: C-Code is supported, but the description nevertheless is independent of the programming language.

Delete RS_METH_00021, RS_METH_00043, RS_METH_00046, RS_METH_00047, RS_METH_00048, RS_METH_00025, RS_METH_00050, RS_METH_00051, RS_METH_00052, RS_METH_00061, RS_METH_00027, RS_METH_00028, RS_METH_00064, RS_METH_00009, RS_METH_00067

Reason: all these requirements describe general SPEM properties and are described in the introduction of TR_Methodology

Remove RS_METH_00054 and extend instead description in TR_Methodology (handled in different RfC)

Delete RS_METH_00010

Reason: this is a property of the MMT

Delete RS_METH_00057: AUTOSAR methodology shall support traceability to external artifacts

Reason: This is not a feature of TR_Methodology or TR_AdaptiveMethodology

–Last change on issue 77303 comment 7–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.28 Specification Item RS_METH_00205

Trace References:

RS_Main_00503, RS_Main_00150

Content:

RfCs affecting this spec item between releases 1.2.0 and 1.3.0:

- RfC #77303: Final migration of RS_Methodology from CP to FO

Problem description:

The document RS_Methodology from CP (CP_RS_Methodology) shall completely be migrated to FO together with the next CP release (for FO_R1.3).

In a first step for FO_R1.1 already some of the requirements in CP_RS_Methodology, which are also valid for AP, have been taken over. In this RfC, the remaining requirements shall be taken over, adapted, or deleted if not needed anymore. For the next CP release, the document CP_RS_Methodology can then completely be removed.

Agreed solution:

In RS_Main, the following main requirements need to be extended to FO (in Applies To) in order to fulfil traceability: RS_Main_00360, RS_Main_00290

In RS_Methodology (see also https://svn.autosar.org/repos/work/09_WorkPackages/WP-M/06_Subgroups/05_Methodology/Migration_RS_Methodology_CP_to_FO):

- Delete chapter 1.1 Limitations
- Change chapter 2.1 General Requirements: This sections specifies the general requirements, which are valid for both platforms.

Chapter 2.1 General Requirements:

RS_METH_00006: The methodology shall explain how to build an AUTOSAR system

Description: The methodology shall explain how to build an AUTOSAR system using the activities and work products.

It should be like a user manual to help an organization efficiently apply AUTOSAR. In particular, the methodology shall explain how to build a system consisting of classic and adaptive platforms.

Applies to CP,AP

RS_METH_00041: The methodology shall support top-down and bottom-up approaches

Description: The methodology shall support the top-down and bottom-up approach. In the top-down approach, all constraints on the application software and their distribution on ECUs shall be considered. In the bottom-up approach, all constraints coming from the hardware (ECUs/sensors/actuators) should be taken into account.

Applies to CP,AP

RS_METH_00016 (trace to RS_Main_00190): The methodology shall support building a system of both AUTOSAR and Non-AUTOSAR ECUs

Description: The methodology shall support building a system of AUTOSAR compliant ECUs and non-AUTOSAR compliant ECUs.

Rationale: The design of a complete vehicle system shall be supported.

Applies to CP,AP

Add RS_METH_00200 (RS_Main_00161): The methodology shall support building a system consisting of several AUTOSAR platforms

Description: The methodology shall support building a system consisting of several AUTOSAR platforms.

Rationale: The design of a complete vehicle system shall be supported.

Use Case: The communication description between machines (or ECUs) based on classic and adaptive AUTOSAR platforms.

Applies to CP,AP

RS_METH_00018:

Applies to AP,CP

RS_METH_00032: The methodology shall support different levels of abstractions

Description: The methodology shall support different views for the development of an AUTOSAR system. This corresponds to the typical domains and parties, which are involved in the system development.

Use case: AUTOSAR is using several abstraction levels to describe the information exchanged between the different players.

In an early phase for instance only the "Virtual Functional Bus" is used, whereas in later development phases we handle real implementations of the SWC deployed to several ECUs.

Applies to CP,AP

RS_METH_00020: The methodology shall support round-trip engineering

Description: The methodology shall support round-trip engineering. This implies that several iteration loops might be necessary in order to finalize a task or work product.

Rationale: Meet AUTOSAR Quality requirements.

Dependencies: –

Use Case: Automotive systems are typically developed in several sample phases (A, B, C, etc).\\}

A single Software Component is updated in a AUTOSAR System. The updated ECU Extract still matches the existing ECU Configuration (as long as no contradicting changes are made in the iteration).

Applies to CP,AP

RS_METH_00077: The methodology shall support different views on the SW-C structure by OEMs and suppliers

Rationale: Possibility for the supplier to adapt the structure of a SW-C.

Use case: The amount of changes on the supplier side shall be limited to the changes caused by OEM updates.

Applies To CP,AP

RS_METH_00078

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00079

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00015

Use case: An ECU built for a particular microcontroller is explicitly optimized for programming language ABC.

The methodology explains when and how to specify and to select the implementation of the software components compatible with the required programming language.

Applies to CP,AP

RS_METH_00066

Header: The methodology shall allow activities that reference tools

Dependencies:–

Use Case: For the classic platform, the activity ...

Applies to CP,AP

RS_METH_00042 (trace to RS_Main_00250)

Rationale: AUTOSAR should not require the use of particular tools when industry standard tools already exist.

Applies to CP,AP

RS_METH_00056 (trace to RS_Main_00507)

Applies to CP,AP

RS_METH_00069:

Dependencies:–

Chapter 2.2 Requirements for the Classic Platform

RS_METH_00033:

Use case: In AUTOSAR, an application is modeled as a composition of interconnected components.

The VFB is the communication mechanism that allows these components to interact. Even if all the resources used by these components are not available yet during the development (HW/Network)

some basic checks can be done and early problems can be solved that will ease the integration phase later.

Applies to CP

Add RS_METH_00208 (RS_Main_00300,RS_Main_00150): The methodology shall explain the high-level usage of the AUTOSAR templates

Description: The AUTOSAR templates include numerous features for the system design, the software component, the ECU configuration etc. The methodology shall clearly describe the activities to use/modify these and which activities require them to be completed before commencing.

Rationale: Usage of AUTOSAR templates in the development process

Use Case: Usage of the SW-C template: An existing software component is implemented and is to be integrated into a suppliers ECU. A description of the component is needed in order to correctly integrate that component into the ECU. \{\}newline

Usage of the system template: OEM as integrator is fixing the ECUs, the topology and the list of the SW-C for one vehicle for the suppliers. \{\}newline

Usage of the BSW module template: An existing BSW module is implemented and is to be integrated into an ECU. A description of the BSW Module is needed in order to correctly integrate that module into the ECU. \{\}newline

The ECU configuration template is used to describe the configuration when integrating a BSW module into an ECU. \{\}newline

The Safety Extensions allow a standardized exchange of safety information and provide the basis for consistent management among different vendors and tools as required by ISO 26262. \{\}newline

The Diagnostic Extract Template that represents a standardized exchange format on diagnostic functionality allows the decentralized configuration of diagnostic aspects.

Applies to CP

RS_METH_00080: The AUTOSAR methodology shall support the concept of

implicit communication behavior

Applies to CP

RS_METH_00083: The AUTOSAR methodology shall explain the description and handling of Data Exchange Points

Applies to CP

RS_METH_00084

Applies to CP

RS_METH_00062: The methodology shall support configuration of parameters with different binding time.

Description: The Autosar methodology shall support system development with different combinations of configuration classes.

Rationale: Configuration of parameters can be performed in different process steps: pre-compile, link time, and post-build.

Applies to CP

RS_METH_00074, RS_METH_00075, RS_METH_00076

Applies to CP

Delete the following requirements:

RS_METH_00017: Methodology shall clearly define what is standardized and what is not standardized

Reason: Methodology is an auxiliary document and only informative

Delete RS_METH_00002, RS_METH_00003, RS_METH_00004, RS_METH_00005, RS_AMETH_00081, RS_AMETH_00082

Reason: all requirements on the usage of specific templates will be removed. Instead one general requirement about the usage of templates (RS_METH_00208) will be added.

Delete RS_METH_00038

Rationale: C-Code is supported, but the description nevertheless is independent of the programming language.

Delete RS_METH_00021, RS_METH_00043, RS_METH_00046, RS_METH_00047, RS_METH_00048, RS_METH_00025, RS_METH_00050, RS_METH_00051, RS_METH_00052, RS_METH_00061, RS_METH_00027, RS_METH_00028, RS_METH_00064, RS_METH_00009, RS_METH_00067

Reason: all these requirements describe general SPEM properties and are de-

scribed in the introduction of TR_Methodology

Remove RS_METH_00054 and extend instead description in TR_Methodology (handled in different RfC)

Delete RS_METH_00010

Reason: this is a property of the MMT

Delete RS_METH_00057: AUTOSAR methodology shall support traceability to external artifacts

Reason: This is not a feature of TR_Methodology or TR_AdaptiveMethodology

–Last change on issue 77303 comment 7–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.29 Specification Item RS_METH_00206

Trace References:

RS_Main_00505, RS_Main_00320

Content:**RfCs affecting this spec item between releases 1.2.0 and 1.3.0:**

- RfC #77303: Final migration of RS_Methodology from CP to FO

Problem description:

The document RS_Methodology from CP (CP_RS_Methodology) shall completely be migrated to FO together with the next CP release (for FO_R1.3).

In a first step for FO_R1.1 already some of the requirements in CP_RS_Methodology, which are also valid for AP, have been taken over. In this RfC, the remaining requirements shall be taken over, adapted, or deleted if not needed anymore. For the next CP release, the document CP_RS_Methodology can then completely be removed.

Agreed solution:

In RS_Main, the following main requirements need to be extended to FO (in Applies To) in order to fulfil traceability: RS_Main_00360, RS_Main_00290

In RS_Methodology (see also https://svn.autosar.org/repos/work/09_WorkPackages/WP-M/06_Subgroups/05_Methodology/Migration_RS_Methodology_CP_to_FO):

- Delete chapter 1.1 Limitations
- Change chapter 2.1 General Requirements: This sections specifies the general requirements, which are valid for both platforms.

Chapter 2.1 General Requirements:

RS_METH_00006: The methodology shall explain how to build an AUTOSAR system

Description: The methodology shall explain how to build an AUTOSAR system using the activities and work products.

It should be like a user manual to help an organization efficiently apply AUTOSAR. In particular, the methodology shall explain how to build a system consisting of classic and adaptive platforms.

Applies to CP,AP

RS_METH_00041: The methodology shall support top-down and bottom-up approaches

Description: The methodology shall support the top-down and bottom-up approach. In the top-down approach, all constraints on the application software and their distribution on ECUs shall be considered. In the bottom-up approach, all constraints coming from the hardware (ECUs/sensors/actuators) should be taken into account.

Applies to CP,AP

RS_METH_00016 (trace to RS_Main_00190): The methodology shall support building a system of both AUTOSAR and Non-AUTOSAR ECUs

Description: The methodology shall support building a system of AUTOSAR compliant ECUs and non-AUTOSAR compliant ECUs.

Rationale: The design of a complete vehicle system shall be supported.

Applies to CP,AP

Add RS_METH_00200 (RS_Main_00161): The methodology shall support building a system consisting of several AUTOSAR platforms

Description: The methodology shall support building a system consisting of several AUTOSAR platforms.

Rationale: The design of a complete vehicle system shall be supported.

Use Case: The communication description between machines (or ECUs) based on classic and adaptive AUTOSAR platforms.

Applies to CP,AP

RS_METH_00018:

Applies to AP,CP

RS_METH_00032: The methodology shall support different levels of abstractions

Description: The methodology shall support different views for the development of an AUTOSAR system. This corresponds to the typical domains and parties, which are involved in the system development.

Use case: AUTOSAR is using several abstraction levels to describe the information exchanged between the different players.

In an early phase for instance only the "Virtual Functional Bus" is used, whereas in later development phases we handle real implementations of the SWC deployed to several ECUs.

Applies to CP,AP

RS_METH_00020: The methodology shall support round-trip engineering

Description: The methodology shall support round-trip engineering. This implies that several iteration loops might be necessary in order to finalize a task or work product.

Rationale: Meet AUTOSAR Quality requirements.

Dependencies: –

Use Case: Automotive systems are typically developed in several sample phases (A, B, C, etc).\\}

A single Software Component is updated in a AUTOSAR System. The updated ECU Extract still matches the existing ECU Configuration (as long as no contradicting changes are made in the iteration).

Applies to CP,AP

RS_METH_00077: The methodology shall support different views on the SW-C structure by OEMs and suppliers

Rationale: Possibility for the supplier to adapt the structure of a SW-C.

Use case: The amount of changes on the supplier side shall be limited to the changes caused by OEM updates.

Applies To CP,AP

RS_METH_00078

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00079

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00015

Use case: An ECU built for a particular microcontroller is explicitly optimized for programming language ABC.

The methodology explains when and how to specify and to select the implementation of the software components compatible with the required programming language.

Applies to CP,AP

RS_METH_00066

Header: The methodology shall allow activities that reference tools

Dependencies:—

Use Case: For the classic platform, the activity ...

Applies to CP,AP

RS_METH_00042 (trace to RS_Main_00250)

Rationale: AUTOSAR should not require the use of particular tools when industry standard tools already exist.

Applies to CP,AP

RS_METH_00056 (trace to RS_Main_00507)

Applies to CP,AP

RS_METH_00069:

Dependencies:—

Chapter 2.2 Requirements for the Classic Platform

RS_METH_00033:

Use case: In AUTOSAR, an application is modeled as a composition of interconnected components.

The VFB is the communication mechanism that allows these components to interact. Even if all the resources used by these components are not available yet during the development (HW/Network)

some basic checks can be done and early problems can be solved that will ease the integration phase later.

Applies to CP

Add RS_METH_00208 (RS_Main_00300,RS_Main_00150): The methodology shall explain the high-level usage of the AUTOSAR templates

Description: The AUTOSAR templates include numerous features for the system design, the software component, the ECU configuration etc. The methodology shall clearly describe the activities to use/modify these and which activities require them to be completed before commencing.

Rationale: Usage of AUTOSAR templates in the development process

Use Case: Usage of the SW-C template: An existing software component is implemented and is to be integrated into a suppliers ECU. A description of the component is needed in order to correctly integrate that component into the ECU. \{\}newline

Usage of the system template: OEM as integrator is fixing the ECUs, the topology and the list of the SW-C for

one vehicle for the suppliers. \{\}newline

Usage of the BSW module template: An existing BSW module is implemented and is to be integrated into an ECU. A description of the BSW Module is needed in order to correctly integrate that module into the ECU. \{\}newline

The ECU configuration template is used to describe the configuration when integrating a BSW module into an ECU. \{\}newline

The Safety Extensions allow a standardized exchange of safety information and provide the basis for consistent management among different vendors and tools as required by ISO 26262. \{\}newline

The Diagnostic Extract Template that represents a standardized exchange format on diagnostic functionality allows the decentralized configuration of diagnostic aspects.

Applies to CP

RS_METH_00080: The AUTOSAR methodology shall support the concept of implicit communication behavior

Applies to CP

RS_METH_00083: The AUTOSAR methodology shall explain the description and handling of Data Exchange Points

Applies to CP

RS_METH_00084

Applies to CP

RS_METH_00062: The methodology shall support configuration of parameters with different binding time.

Description: The Autosar methodology shall support system development with different combinations of configuration classes.

Rationale: Configuration of parameters can be performed in different process steps: pre-compile, link time, and post-build.

Applies to CP

RS_METH_00074, RS_METH_00075, RS_METH_00076

Applies to CP

Delete the following requirements:

RS_METH_00017: Methodology shall clearly define what is standardized and what is not standardized

Reason: Methodology is an auxiliary document and only informative

Delete RS_METH_00002,RS_METH_00003,RS_METH_00004,RS_METH_00005,RS_AMETH_00081,RS_AMETH_00082

Reason: all requirements on the usage of specific templates will be removed. Instead one general requirement about the usage of templates (RS_METH_00208) will be added.

Delete RS_METH_00038

Rationale: C-Code is supported, but the description nevertheless is independent of the programming language.

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Reason: all these requirements describe general SPEM properties and are described in the introduction of TR_Methodology

Remove RS_METH_00054 and extend instead description in TR_Methodology (handled in different RfC)

Delete RS_METH_00010

Reason: this is a property of the MMT

Delete RS_METH_00057: AUTOSAR methodology shall support traceability to external artifacts

Reason: This is not a feature of TR_Methodology or TR_AdaptiveMethodology
–Last change on issue 77303 comment 7–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.30 Specification Item RS_METH_00207

Trace References:

RS_Main_00002

Content:**RfCs affecting this spec item between releases 1.2.0 and 1.3.0:**

- RfC #77303: Final migration of RS_Methodology from CP to FO

Problem description:

The document RS_Methodology from CP (CP_RS_Methodology) shall completely be migrated to FO together with the next CP release (for FO_R1.3).

In a first step for FO_R1.1 already some of the requirements in CP_RS_Methodology, which are also valid for AP, have been taken over. In this RfC, the remaining requirements shall be taken over, adapted, or deleted if not needed anymore. For the next CP release, the document CP_RS_Methodology can then completely be removed.

Agreed solution:

In RS_Main, the following main requirements need to be extended to FO (in Applies To) in order to fulfil traceability: RS_Main_00360, RS_Main_00290

In RS_Methodology (see also https://svn.autosar.org/repos/work/09_WorkPackages/WP-M/06_Subgroups/05_Methodology/Migration_RS_Methodology_CP_to_FO):

- Delete chapter 1.1 Limitations
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RS_METH_00006: The methodology shall explain how to build an AUTOSAR system

Description: The methodology shall explain how to build an AUTOSAR system using the activities and work products.

It should be like a user manual to help an organization efficiently apply AUTOSAR. In particular, the methodology shall explain how to build a system consisting of classic and adaptive platforms.

Applies to CP,AP

RS_METH_00041: The methodology shall support top-down and bottom-up approaches

Description: The methodology shall support the top-down and bottom-up approach. In the top-down approach, all constraints on the application software and their distribution on ECUs shall be considered. In the bottom-up approach, all constraints

coming from the hardware (ECUs/sensors/actuators) should be taken into account.
Applies to CP,AP

RS_METH_00016 (trace to RS_Main_00190): The methodology shall support building a system of both AUTOSAR and Non-AUTOSAR ECUs

Description: The methodology shall support building a system of AUTOSAR compliant ECUs and non-AUTOSAR compliant ECUs.

Rationale: The design of a complete vehicle system shall be supported.

Applies to CP,AP

Add RS_METH_00200 (RS_Main_00161): The methodology shall support building a system consisting of several AUTOSAR platforms

Description: The methodology shall support building a system consisting of several AUTOSAR platforms.

Rationale: The design of a complete vehicle system shall be supported.

Use Case: The communication description between machines (or ECUs) based on classic and adaptive AUTOSAR platforms.

Applies to CP,AP

RS_METH_00018:

Applies to AP,CP

RS_METH_00032: The methodology shall support different levels of abstractions

Description: The methodology shall support different views for the development of an AUTOSAR system. This corresponds to the typical domains and parties, which are involved in the system development.

Use case: AUTOSAR is using several abstraction levels to describe the information exchanged between the different players.

In an early phase for instance only the "Virtual Functional Bus" is used, whereas in later development phases we handle real implementations of the SWC deployed to several ECUs.

Applies to CP,AP

RS_METH_00020: The methodology shall support round-trip engineering

Description: The methodology shall support round-trip engineering. This implies that several iteration loops might be necessary in order to finalize a task or work product.

Rationale: Meet AUTOSAR Quality requirements.

Dependencies: –

Use Case: Automotive systems are typically developed in several sample phases (A, B, C, etc).\}

A single Software Component is updated in a AUTOSAR System. The updated ECU

Extract still matches the existing ECU Configuration (as long as no contradicting changes are made in the iteration).

Applies to CP,AP

RS_METH_00077: The methodology shall support different views on the SW-C structure by OEMs and suppliers

Rationale: Possibility for the supplier to adapt the structure of a SW-C.

Use case: The amount of changes on the supplier side shall be limited to the changes caused by OEM updates.

Applies To CP,AP

RS_METH_00078

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00079

Rationale: Methodology consistency in the software system development approach

Applies to CP,AP

RS_METH_00015

Use case: An ECU built for a particular microcontroller is explicitly optimized for programming language ABC.

The methodology explains when and how to specify and to select the implementation of the software components compatible with the required programming language.

Applies to CP,AP

RS_METH_00066

Header: The methodology shall allow activities that reference tools

Dependencies:–

Use Case: For the classic platform, the activity ...

Applies to CP,AP

RS_METH_00042 (trace to RS_Main_00250)

Rationale: AUTOSAR should not require the use of particular tools when industry standard tools already exist.

Applies to CP,AP

RS_METH_00056 (trace to RS_Main_00507)

Applies to CP,AP

RS_METH_00069:

Dependencies:–

Chapter 2.2 Requirements for the Classic Platform

RS_METH_00033:

Use case: In AUTOSAR, an application is modeled as a composition of interconnected components.

The VFB is the communication mechanism that allows these components to interact. Even if all the resources used by these components are not available yet during the development (HW/Network)

some basic checks can be done and early problems can be solved that will ease the integration phase later.

Applies to CP

Add RS_METH_00208 (RS_Main_00300,RS_Main_00150): The methodology shall explain the high-level usage of the AUTOSAR templates

Description: The AUTOSAR templates include numerous features for the system design, the software component, the ECU configuration etc. The methodology shall clearly describe the activities to use/modify these and which activities require them to be completed before commencing.

Rationale: Usage of AUTOSAR templates in the development process

Use Case: Usage of the SW-C template: An existing software component is implemented and is to be integrated into a suppliers ECU. A description of the component is needed in order to correctly integrate that component into the ECU. \{\}newline

Usage of the system template: OEM as integrator is fixing the ECUs, the topology and the list of the SW-C for

one vehicle for the suppliers. \{\}newline

Usage of the BSW module template: An existing BSW module is implemented and is to be integrated into an ECU. A description of the BSW Module is needed in order to correctly integrate that module into the ECU. \{\}newline

The ECU configuration template is used to describe the configuration when integrating a BSW module into an ECU. \{\}newline

The Safety Extensions allow a standardized exchange of safety information and provide the basis for consistent management among different vendors and tools as required by ISO 26262. \{\}newline

The Diagnostic Extract Template that represents a standardized exchange format on diagnostic functionality allows the decentralized configuration of diagnostic aspects.

Applies to CP

RS_METH_00080: The AUTOSAR methodology shall support the concept of implicit communication behavior

Applies to CP

RS_METH_00083: The AUTOSAR methodology shall explain the description and handling of Data Exchange Points

Applies to CP

RS_METH_00084

Applies to CP

RS_METH_00062: The methodology shall support configuration of parameters with different binding time.

Description: The Autosar methodology shall support system development with different combinations of configuration classes.

Rationale: Configuration of parameters can be performed in different process steps: pre-compile, link time, and post-build.

Applies to CP

RS_METH_00074, RS_METH_00075, RS_METH_00076

Applies to CP

Delete the following requirements:

RS_METH_00017: Methodology shall clearly define what is standardized and what is not standardized

Reason: Methodology is an auxiliary document and only informative

Delete RS_METH_00002, RS_METH_00003, RS_METH_00004, RS_METH_00005, RS_AMETH_00081, RS_AMETH_00082

Reason: all requirements on the usage of specific templates will be removed. Instead one general requirement about the usage of templates (RS_METH_00208) will be added.

Delete RS_METH_00038

Rationale: C-Code is supported, but the description nevertheless is independent of the programming language.

Delete RS_METH_00021, RS_METH_00043, RS_METH_00046, RS_METH_00047, RS_METH_00048, RS_METH_00025, RS_METH_00050, RS_METH_00051, RS_METH_00052, RS_METH_00061, RS_METH_00027, RS_METH_00028, RS_METH_00064, RS_METH_00009, RS_METH_00067

Reason: all these requirements describe general SPEM properties and are described in the introduction of TR_Methodology

Remove RS_METH_00054 and extend instead description in TR_Methodology (handled in different RfC)

Delete RS_METH_00010

Reason: this is a property of the MMT

Delete RS_METH_00057: AUTOSAR methodology shall support traceability to external artifacts

Reason: This is not a feature of TR_Methodology or TR_AdaptiveMethodology

–Last change on issue 77303 comment 7–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.31 Specification Item RS_METH_00208

Trace References:

[RS_Main_00300](#), [RS_Main_00150](#)

Content:

RfCs affecting this spec item between releases 1.2.0 and 1.3.0:

- RfC #77303: Final migration of RS_Methodology from CP to FO

Problem description:

The document RS_Methodology from CP (CP_RS_Methodology) shall completely be migrated to FO together with the next CP release (for FO_R1.3).

In a first step for FO_R1.1 already some of the requirements in CP_RS_Methodology, which are also valid for AP, have been taken over. In this RfC, the remaining requirements shall be taken over, adapted, or deleted if not needed anymore. For the next CP release, the document CP_RS_Methodology can then completely be removed.

Agreed solution:

In RS_Main, the following main requirements need to be extended to FO (in Applies To) in order to fulfil traceability: RS_Main_00360, RS_Main_00290

In RS_Methodology (see also https://svn.autosar.org/repos/work/09_WorkPackages/WP-M/06_Subgroups/05_Methodology/Migration_RS_Methodology_CP_to_FO):

- Delete chapter 1.1 Limitations
- Change chapter 2.1 General Requirements: This sections specifies the general

requirements, which are valid for both platforms.

Chapter 2.1 General Requirements:

RS_METH_00006: The methodology shall explain how to build an AUTOSAR system

Description: The methodology shall explain how to build an AUTOSAR system using the activities and work products.

It should be like a user manual to help an organization efficiently apply AUTOSAR. In particular, the methodology shall explain how to build a system consisting of classic and adaptive platforms.

Applies to CP,AP

RS_METH_00041: The methodology shall support top-down and bottom-up approaches

Description: The methodology shall support the top-down and bottom-up approach. In the top-down approach, all constraints on the application software and their distribution on ECUs shall be considered. In the bottom-up approach, all constraints coming from the hardware (ECUs/sensors/actuators) should be taken into account.

Applies to CP,AP

RS_METH_00016 (trace to RS_Main_00190): The methodology shall support building a system of both AUTOSAR and Non-AUTOSAR ECUs

Description: The methodology shall support building a system of AUTOSAR compliant ECUs and non-AUTOSAR compliant ECUs.

Rationale: The design of a complete vehicle system shall be supported.

Applies to CP,AP

Add RS_METH_00200 (RS_Main_00161): The methodology shall support building a system consisting of several AUTOSAR platforms

Description: The methodology shall support building a system consisting of several AUTOSAR platforms.

Rationale: The design of a complete vehicle system shall be supported.

Use Case: The communication description between machines (or ECUs) based on classic and adaptive AUTOSAR platforms.

Applies to CP,AP

RS_METH_00018:

Applies to AP,CP

RS_METH_00032: The methodology shall support different levels of abstractions

Description: The methodology shall support different views for the development of an AUTOSAR system. This corresponds to the typical domains and parties, which are involved in the system development.

Use case: AUTOSAR is using several abstraction levels to describe the information exchanged between the different players.

In an early phase for instance only the "Virtual Functional Bus" is used, whereas in later development phases we handle real implementations of the SWC deployed to several ECUs.

Applies to CP,AP

RS_METH_00020: The methodology shall support round-trip engineering

Description: The methodology shall support round-trip engineering. This implies that several iteration loops might be necessary in order to finalize a task or work product.

Rationale: Meet AUTOSAR Quality requirements.

Dependencies: –

Use Case: Automotive systems are typically developed in several sample phases (A, B, C, etc).\\}

A single Software Component is updated in a AUTOSAR System. The updated ECU Extract still matches the existing ECU Configuration (as long as no contradicting changes are made in the iteration).

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Chapter 2.2 Requirements for the Classic Platform

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