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Part of Standard Release	1.5.0

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1 RS_Main

1.1 Specification Item RS_Main_00010

Trace References:

RS_PO_00005

Content:

Type:	Valid
Description:	AUTOSAR Platforms shall support commonly used safety mechanisms. This includes but is not limited to:
Rationale:	Facilitate the development of safety related systems by using AUTOSAR platforms. Platforms designed for the support of safety related systems are needed for safety related ECUs like digital engine control units and electronic power steering systems.
AppliesTo:	AP, CP
Use Case:	Driver temporarily/partially passes responsibility for driving task to vehicle (ADAS/HAD)
Supporting Material:	—

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #81369: RS Main - requirements header format not aligned

Problem description:

The header format of the requirements in the RS_Main document is not aligned. Some of them end with a dot and some not. This should be changed to either all with or all without dot.

Example:

[RS_Main_00050] AUTOSAR shall provide an Execution Framework towards applications to implement concurrent application internal control flows.

RS_Main_00106] AUTOSAR shall provide the possibility to extend the software with new SWCs without recompiling the platform foundation

Agreed solution:

Solution: Remove all dots at the end of RS_Main requirements

—Last change on issue 81369 comment 1—

BW-C-Level:

Application	Specification	Bus
1	1	1

1.2 Specification Item RS_Main_00012

Trace References:

RS_PO_00005, RS_PO_00009

Content:

Type:	Valid
Description:	Availability of the Adaptive Platform is defined as the probability that platform services will operate satisfactorily at a given point in time. It excludes both preventive and corrective maintenance downtime. Availability is limited to normal runtime behavior (excluding e.g. software update)
Rationale:	Facilitate the development of highly available systems by using AUTOSAR platforms.
AppliesTo:	AP, CP
Use Case:	Highly available systems are required for automated driving applications.
Supporting Material:	—

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #81369: RS Main - requirements header format not aligned

Problem description:

The header format of the requirements in the RS_Main document is not aligned. Some of them end with a dot and some not. This should be changed to either all with or all without dot.

Example:

[RS_Main_00050] AUTOSAR shall provide an Execution Framework towards applications to implement concurrent application internal control flows.

RS_Main_00106] AUTOSAR shall provide the possibility to extend the software with new SWCs without recompiling the platform foundation

Agreed solution:

Solution: Remove all dots at the end of RS_Main requirements
–Last change on issue 81369 comment 1–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.3 Specification Item RS_Main_00050

Trace References:

RS_PO_00006, RS_PO_00004

Content:

Type:	Valid
Description:	AUTOSAR shall provide an Execution Framework towards applications to implement concurrent application internal control flows.
Rationale:	The execution framework must manage numerous running SWCs and handle their independent control flows.
AppliesTo:	AP
Use Case:	The execution framework starts several SWCs in an ordered manner.
Supporting Material:	–

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #81369: RS Main - requirements header format not aligned

Problem description:

The header format of the requirements in the RS_Main document is not aligned. Some of them end with a dot and some not. This should be changed to either all with or all without dot.

Example:

[RS_Main_00050] AUTOSAR shall provide an Execution Framework towards applications to implement concurrent application internal control flows.

RS_Main_00106] AUTOSAR shall provide the possibility to extend the software with new SWCs without recompiling the platform foundation

Agreed solution:

Solution: Remove all dots at the end of RS_Main requirements
–Last change on issue 81369 comment 1–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.4 Specification Item RS_Main_00120

Trace References:

RS_PO_00008

Content:

Type:	Valid
Description:	AUTOSAR shall provide specified test cases and the essential test methodology to ensure interoperability on application (RTE side) and bus level for BSW on ICC1 level (Black Box Test). These specified test cases and its related methodology shall be developed to test implementations of AUTOSAR basic software.
Rationale:	Acceptance tests are strongly needed to provide evidence that a product complies with the AUTOSAR specification i.e. to ensure a certain behavior of the regarded elements at the interfaces to application and communication busses.
Use Case:	Integration of the infrastructure SW into a specific ECU, bring it into the E/E-architecture without backlashes on the system. Example from real world: Integration of BSW stack (ICC1 level) to applications and the ECU infrastructure without difficulties. Support test of any ICC implementations (from ICC1 to ICC3). Reuse of the same test specification even when the ICC3 specification details change
Applies to:	TC
Dependencies:	–
Supporting Material:	–
Tested Items:	–

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #81369: RS Main - requirements header format not aligned

Problem description:

The header format of the requirements in the RS_Main document is not aligned. Some of them end with a dot and some not. This should be changed to either all

with or all without dot.

Example:

[RS_Main_00050] AUTOSAR shall provide an Execution Framework towards applications to implement concurrent application internal control flows.

RS_Main_00106] AUTOSAR shall provide the possibility to extend the software with new SWCs without recompiling the platform foundation

Agreed solution:

Solution: Remove all dots at the end of RS_Main requirements
–Last change on issue 81369 comment 1–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.5 Specification Item RS_Main_00125

Trace References:

RS_PO_00007, RS_PO_00008

Content:

Type:	Valid
Description:	Acceptance tests shall provide a reference to measure maturity.
Rationale:	An existing test specification provides verification for requirements that are available with the AUTOSAR software standard. A common set of test cases as a reference enables the verification in the software implementation.
Use Case:	Reuse of standard tests during the qualification process of BSW implementation.
Applies to:	TC
Dependencies:	–
Supporting Material:	–
Tested Items:	–

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #81369: RS Main - requirements header format not aligned

Problem description:

The header format of the requirements in the RS_Main document is not aligned. Some of them end with a dot and some not. This should be changed to either all with or all without dot.

Example:

[RS_Main_00050] AUTOSAR shall provide an Execution Framework towards applications to implement concurrent application internal control flows.

RS_Main_00106] AUTOSAR shall provide the possibility to extend the software with new SWCs without recompiling the platform foundation

Agreed solution:

Solution: Remove all dots at the end of RS_Main requirements

–Last change on issue 81369 comment 1–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.6 Specification Item RS_Main_00160

Trace References:

RS_PO_00007

Content:

Type:	Valid
Description:	Well-defined interfaces are the key for exchangeability, reusability and the basis for the freedom of interference.
Rationale:	Principle: "divide and conquer" which is a key success factor in the development of large systems.
AppliesTo:	AP, CP
Use Case:	Development of large interconnected software systems with a high degree of reuse, such as driving assistance systems.
Supporting Material:	–

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #81369: RS Main - requirements header format not aligned

Problem description:

The header format of the requirements in the RS_Main document is not aligned. Some of them end with a dot and some not. This should be changed to either all with or all without dot.

Example:

[RS_Main_00050] AUTOSAR shall provide an Execution Framework towards applications to implement concurrent application internal control flows.

RS_Main_00106] AUTOSAR shall provide the possibility to extend the software with new SWCs without recompiling the platform foundation

Agreed solution:

Solution: Remove all dots at the end of RS_Main requirements

–Last change on issue 81369 comment 1–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.7 Specification Item RS_Main_00161

Trace References:

RS_PO_00007

Content:

Type:	Valid
Description:	A comprehensive software model shall capture all elements of a distributed software system. The definition of functionality shall be independent from the final assignment to platforms and ECUs.
Rationale:	The allocation of software to platforms shall be a subsequent step after the overall definition of functionality.
AppliesTo:	AP, CP, FO
Use Case:	Development of large software systems being deployed on mixed platforms.





**Supporting
Material:**

–

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #81369: RS Main - requirements header format not aligned

Problem description:

The header format of the requirements in the RS_Main document is not aligned. Some of them end with a dot and some not. This should be changed to either all with or all without dot.

Example:

[RS_Main_00050] AUTOSAR shall provide an Execution Framework towards applications to implement concurrent application internal control flows.

RS_Main_00106] AUTOSAR shall provide the possibility to extend the software with new SWCs without recompiling the platform foundation

Agreed solution:

Solution: Remove all dots at the end of RS_Main requirements
–Last change on issue 81369 comment 1–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.8 Specification Item RS_Main_00170

Trace References:

RS_PO_00004, RS_PO_00005, RS_PO_00009

Content:

Type:	Valid
Description:	AUTOSAR shall provide secured access to ECU , (e.g. data and services by user secure authentication), including standardized up- and download of data and software external ECU users. For this mechanisms and methods shall access control decisions need to be defined/enforced.
Rationale:	The update Secure access and upgrade feasibility provided by AUTOSAR includes technical challenges (e.g. standardized up-/download protocol, partly update of the software) and authentication mechanisms (e.g. required for prevention of unauthorized access.g. how to authorize the user).
Applies To:	AP, CP
Use Case:	Download of dedicated Software Components in ECU.Secure V2X connection
Supporting Material:	—

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #80615: Umbrella RfC for RS_Main working list R18-10 / FO1.5.0

Problem description:

This RfC is used to collect the RfCs currently discussed in the PL working list:

https://svn.autosar.org/repos/work/26_Standards/00_FO_R1/01_Sources/Elaboration/RS_Main/F

RfCs are discussed in the working list to achieve an agreement. Duplicate RfCs or resolved RfCs targeting single changes will be linked to this RfC.

For the release all agreed changes from the working list are updated to this RfC and implemented.

Agreed solution:

[RS_Main_00170] AUTOSAR shall provide secure access to ECU

Description: AUTOSAR shall provide secured access to ECU by secure authentication of external ECU users. For this mechanisms access control decisions need to be enforced.

Rationale: Secure access and authentication mechanisms are required for prevention of unauthorized access.

Use Case: Secure V2X connection

Applies to: AP, CP

Dependencies: To fulfill this requirement it is also necessary that the environment that is not standardized by AUTOSAR (e.g. bootloader) matches the same security requirements.

Supporting Material:—

(RS_PO_00004, RS_PO_00005, RS_PO_00009)

[new requirement] AUTOSAR shall support up - and download of data and software

Type: valid

Description: AUTOSAR shall support standardized up- and download of data and software. For all kind of data exchange between off- and onboard artifacts mechanisms and methods shall be defined. These mechanisms and methods shall support common protocols used for data-transfer. Partial updates of the software shall be supported. Independent access control rules and policies apply.

Rationale: Up- and download of data and software is required for software updates using standardized mechanisms.

Use Case: Download of dedicated Software Components in ECU.

Applies to: AP

Dependencies: –

Supporting Material: –

(RS_PO_00004, RS_PO_00005, RS_PO_00009)

remove [RS_Main_00220]

[RS_Main_00460] AUTOSAR shall standardize methods to organize mode management on Application, ECU and System level

Description: AUTOSAR shall provide a method to configure mode management mechanisms for Application Software to control or react on modes of the ECU or vehicle.

Rationale: The behavior of Application Software highly depends on the overall mode of the ECU. Therefore the method of mode management has to be standardized to achieve the same behavior if Application Software is allocated on another ECU.

[RS_Main_00503] AUTOSAR shall support change of communication and application software at runtime.

Description: Advanced systems require dynamic allocation of AUTOSAR Applications and adaptations of the communication topology after development and production at life-time of the system AUTOSAR shall provide a technical possibility which provides these Software changes at runtime.

Rationale: Advanced driving assistance functions have to be updated (e.g. after development or production).

Use-Case: Update of Application Software or update of configuration over the air

Applies to: AP

Dependencies: –

–Last change on issue 80615 comment 8–

BW-C-Level:

Application	Specification	Bus
1	1	1

- RfC #82029: [CONC_636] [MS4] [FO] Concept incorporation

Problem description:

This RfC is derived from AUTOSAR concept:

CONC_636 "Security Extensions" [1] [2]

It is intended to track the incorporation of the concept's technical solution into the AUTOSAR CP, FO and AP standard as draft since there is no external validation in 2018.

For each impacted document, a copy& paste ready solution is provided by the concept and a respective implementation task is created. In case of questions, please contact the concept owner:

Eduard Metzker (eduard.metzker@vector.com)

For SWS_AdaptiveDiagnostics a Jira Ticket will be created.

For CP a separate Bugzilla Ticket will be created

- C1 - "Security Event Memory (SEM)" is released as draft.
- C2 - "Key Management" is released as valid.
- C4 - "STBM with Secure Time" is released as draft.
- C5 - "Diagnostic Policy Manager" is released as valid.
- C6 - "Improvement of Certificate Handling" is released as valid.
- C7 - "Abstract pre-definition of Crypto Items in System Template" is released as valid.

Best regards, QA

[1] https://svn.autosar.org/repos/work/25_Concepts/Sources/CONC_633_FormalModelQuery/Wo

[2] https://svn.autosar.org/repos/work/25_Concepts/Sources/CONC_633_FormalModelQuery/Wo

Agreed solution:

Implement the CONC_636 in your document according to [1] an [2].

[1] https://svn.autosar.org/repos/work/25_Concepts/Sources/CONC_636_SecurityExtensions/Wo

[2] https://svn.autosar.org/repos/work/25_Concepts/Sources/CONC_636_SecurityExtensions/Wo

- C1 - "Security Event Memory (SEM)" is released as draft.
- C2 - "Key Management" is released as valid.
- C4 - "STBM with Secure Time" is released as draft.
- C5 - "Diagnostic Policy Manager" is released as valid.
- C6 - "Improvement of Certificate Handling" is released as valid.
- C7 - "Abstract pre-definition of Crypto Items in System Template" is released as valid.

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RS_Main

5.1 Main requirements

TR_Glossary:

7.3.1 C1: Security Event Memory

SRS_Diagnostic:

7.3.4 C5: Diagnostic Policy Manager

In case of questions, please contact the concept owner:

Eduard Metzker (eduard.metzker@vector.com)

Example to mark requirements as "draft":

1) For RS and SRS: Please set the field "Type" to "draft"

2) For SWS: Please use the annotation: [SWS_<shortname>_<XXXXX>] DRAFT
<Text> ((S)RS_ID)

3) For EXP/TR: Please add a sentence to chapter "Limitations" and list the used concept parts and provide a sentence that these concept parts are "draft"

If possible a bit more elaborated description of what is draft would be great. Just some additional words or sentences what the concept contains and what this means for your document. Maybe there even is some specific chapter where things coming from the concept are bundled to which you could refer in the limitations chapter, stating that everything that is described there is implemented as draft in SWS and RS documents.

—Last change on issue 82029 comment 5—

BW-C-Level:

Application	Specification	Bus
-	-	-

1.9 Specification Item RS_Main_00220

Trace References:

RS_PO_00001, RS_PO_00004

Content:

Type:	Valid
Description:	The specification of functional interfaces of AUTOSAR shall be specified in standard C90.
Rationale:	A useful reduction of programming languages to current programming languages reduces the impacts on AUTOSAR definitions and specifications due to logical and/or technical differences of different programming languages.
AppliesTo:	CP, FO
Use Case:	AUTOSAR implementation in C, C++.
Supporting Material:	—

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #80615: Umbrella RfC for RS_Main working list R18-10 / FO1.5.0

Problem description:

This RfC is used to collect the RfCs currently discussed in the PL working list:

https://svn.autosar.org/repos/work/26_Standards/00_FO_R1/01_Sources/Elaboration/RS_Main/F

RfCs are discussed in the working list to achieve an agreement. Duplicate RfCs or resolved RfCs targeting single changes will be linked to this RfC.

For the release all agreed changes from the working list are updated to this RfC and implemented.

Agreed solution:

[RS_Main_00170] AUTOSAR shall provide secure access to ECU

Description: AUTOSAR shall provide secured access to ECU by secure authentication of external ECU users. For this mechanisms access control decisions need to be enforced.

Rationale: Secure access and authentication mechanisms are required for prevention of unauthorized access.

Use Case: Secure V2X connection

Applies to: AP, CP

Dependencies: To fulfill this requirement it is also necessary that the environment that is not standardized by AUTOSAR (e.g. bootloader) matches the same security requirements.

Supporting Material:–

(RS_PO_00004, RS_PO_00005, RS_PO_00009)

[new requirement] AUTOSAR shall support up - and download of data and software

Type: valid

Description: AUTOSAR shall support standardized up- and download of data and software. For all kind of data exchange between off- and onboard artifacts mechanisms and methods shall be defined. These mechanisms and methods shall support common protocols used for data-transfer. Partial updates of the software shall be supported. Independent access control rules and policies apply.

Rationale: Up- and download of data and software is required for software updates using standardized mechanisms.

Use Case: Download of dedicated Software Components in ECU.

Applies to: AP

Dependencies: –

Supporting Material: –

(RS_PO_00004, RS_PO_00005, RS_PO_00009)

remove [RS_Main_00220]

[RS_Main_00460] AUTOSAR shall standardize methods to organize mode management on Application, ECU and System level

Description: AUTOSAR shall provide a method to configure mode management mechanisms for Application Software to control or react on modes of the ECU or vehicle.

Rationale: The behavior of Application Software highly depends on the overall mode of the ECU. Therefore the method of mode management has to be standardized to achieve the same behavior if Application Software is allocated on another ECU.

[RS_Main_00503] AUTOSAR shall support change of communication and application software at runtime.

Description: Advanced systems require dynamic allocation of AUTOSAR Applications and adaptations of the communication topology after development and production at life-time of the system AUTOSAR shall provide a technical possibility which provides these Software changes at runtime.

Rationale: Advanced driving assistance functions have to be updated (e.g. after development or production).

Use-Case: Update of Application Software or update of configuration over the air

Applies to: AP

Dependencies: –

–Last change on issue 80615 comment 8–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.10 Specification Item RS_Main_00250

Trace References:

RS_PO_00007

Content:

Type:	Valid
Description:	The definition and description of roles and activities in the design methodology should support a work-share model.
Rationale:	As AUTOSAR enables work-share on different positions and activities it shall provide a common understanding of roles and activities.
AppliesTo:	AP, CP, FO
Use Case:	Share activities like AUTOSAR configuration and Application Software partitioning between software integrator and software architect.
Supporting Material:	–

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #81369: RS Main - requirements header format not aligned

Problem description:

The header format of the requirements in the RS_Main document is not aligned. Some of them end with a dot and some not. This should be changed to either all with or all without dot.

Example:

[RS_Main_00050] AUTOSAR shall provide an Execution Framework towards applications to implement concurrent application internal control flows.

RS_Main_00106] AUTOSAR shall provide the possibility to extend the software with new SWCs without recompiling the platform foundation

Agreed solution:

Solution: Remove all dots at the end of RS_Main requirements
–Last change on issue 81369 comment 1–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.11 Specification Item RS_Main_00350

Trace References:

RS_PO_00005, RS_PO_00009

Content:

Type:	Valid
Description:	To achieve safety-related properties an adequate software architectural design and implementation matching the safety requirements is required and has to be demonstrated. Such demonstration can be done by safety analyses, therefore.
Rationale:	In the context of the safety-related developments a confirmation that design and implementation are adequately safe is required.
AppliesTo:	AP, CP, FO
Use Case:	–
Supporting Material:	ISO26262

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #81369: RS Main - requirements header format not aligned

Problem description:

The header format of the requirements in the RS_Main document is not aligned. Some of them end with a dot and some not. This should be changed to either all with or all without dot.

Example:

[RS_Main_00050] AUTOSAR shall provide an Execution Framework towards applications to implement concurrent application internal control flows.

RS_Main_00106] AUTOSAR shall provide the possibility to extend the software with new SWCs without recompiling the platform foundation

Agreed solution:

Solution: Remove all dots at the end of RS_Main requirements
–Last change on issue 81369 comment 1–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.12 Specification Item RS_Main_00460

Trace References:

RS_PO_00001, RS_PO_00004

Content:

Type:	Valid
Description:	The AUTOSAR Basic Software shall provide a method to configure mode management mechanisms for Application Software to control or react on modes of the ECU / or vehicle.
Rationale:	The behavior of Application Software highly depends on the overall mode of the ECU and/or the System. Therefore the overall method of mode management has to be standardized to achieve the same behavior if Application Software is transferred from one ECU to allocated on another ECU or from one System to another System.
AppliesTo:	AP, CP
Use Case:	Degradation of application functionality in certain power modes.
Supporting Material:	–

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #80615: Umbrella RfC for RS_Main working list R18-10 / FO1.5.0

Problem description:

This RfC is used to collect the RfCs currently discussed in the PL working list:

https://svn.autosar.org/repos/work/26_Standards/00_FO_R1/01_Sources/Elaboration/RS_Main/F

RfCs are discussed in the working list to achieve an agreement. Duplicate RfCs or resolved RfCs targeting single changes will be linked to this RfC.

For the release all agreed changes from the working list are updated to this RfC and implemented.

Agreed solution:

[RS_Main_00170] AUTOSAR shall provide secure access to ECU

Description: AUTOSAR shall provide secured access to ECU by secure authentication of external ECU users. For this mechanisms access control decisions need to be enforced.

Rationale: Secure access and authentication mechanisms are required for prevention of unauthorized access.

Use Case: Secure V2X connection

Applies to: AP, CP

Dependencies: To fulfill this requirement it is also necessary that the environment that is not standardized by AUTOSAR (e.g. bootloader) matches the same security requirements.

Supporting Material:–

(RS_PO_00004, RS_PO_00005, RS_PO_00009)

[new requirement] AUTOSAR shall support up - and download of data and software

Type: valid

Description: AUTOSAR shall support standardized up- and download of data and software. For all kind of data exchange between off- and onboard artifacts mechanisms and methods shall be defined. These mechanisms and methods shall support common protocols used for data-transfer. Partial updates of the software shall be supported. Independent access control rules and policies apply.

Rationale: Up- and download of data and software is required for software updates using standardized mechanisms.

Use Case: Download of dedicated Software Components in ECU.

Applies to: AP

Dependencies: –

Supporting Material: –

(RS_PO_00004, RS_PO_00005, RS_PO_00009)

remove [RS_Main_00220]

[RS_Main_00460] AUTOSAR shall standardize methods to organize mode management on Application, ECU and System level

Description: AUTOSAR shall provide a method to configure mode management mechanisms for Application Software to control or react on modes of the ECU or vehicle.

Rationale: The behavior of Application Software highly depends on the overall mode of the ECU. Therefore the method of mode management has to be standardized to achieve the same behavior if Application Software is allocated on another ECU.

[RS_Main_00503] AUTOSAR shall support change of communication and application software at runtime.

Description: Advanced systems require dynamic allocation of AUTOSAR Applications and adaptations of the communication topology after development and production at life-time of the system AUTOSAR shall provide a technical possibility which provides these Software changes at runtime.

Rationale: Advanced driving assistance functions have to be updated (e.g. after development or production).

Use-Case: Update of Application Software or update of configuration over the air

Applies to: AP

Dependencies: –

–Last change on issue 80615 comment 8–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.13 Specification Item RS_Main_00503

Trace References:

RS_PO_00005

Content:

Type:	Valid
Description:	Advanced systems require dynamic allocation of AUTOSAR Applications and adaptations of the communication topology after development and production , but at life-time of the system . AUTOSAR shall provide a platform, technical possibility which provides these featuresSoftware changes at runtime.





Rationale:	Advanced driving assistance functions have to be updated over the air(e.This might include changes to the scheduling and the communication behavior of the function and has to be supported by the platformg. after development or production).
AppliesTo:	AP
Use Case:	OEM provides safety Update of Application Software or security related software for installation onto vehicleupdate of configuration over the air
Supporting Material:	—

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #80615: Umbrella RfC for RS_Main working list R18-10 / FO1.5.0

Problem description:

This RfC is used to collect the RfCs currently discussed in the PL working list:

https://svn.autosar.org/repos/work/26_Standards/00_FO_R1/01_Sources/Elaboration/RS_Main/F

RfCs are discussed in the working list to achieve an agreement. Duplicate RfCs or resolved RfCs targeting single changes will be linked to this RfC.

For the release all agreed changes from the working list are updated to this RfC and implemented.

Agreed solution:

[RS_Main_00170] AUTOSAR shall provide secure access to ECU

Description: AUTOSAR shall provide secured access to ECU by secure authentication of external ECU users. For this mechanisms access control decisions need to be enforced.

Rationale: Secure access and authentication mechanisms are required for prevention of unauthorized access.

Use Case: Secure V2X connection

Applies to: AP, CP

Dependencies: To fulfill this requirement it is also necessary that the environment that is not standardized by AUTOSAR (e.g. bootloader) matches the same security requirements.

Supporting Material:—

(RS_PO_00004, RS_PO_00005, RS_PO_00009)

[new requirement] AUTOSAR shall support up - and download of data and software

Type: valid

Description: AUTOSAR shall support standardized up- and download of data and software. For all kind of data exchange between off- and onboard artifacts mechanisms and methods shall be defined. These mechanisms and methods shall support common protocols used for data-transfer. Partial updates of the software shall be supported. Independent access control rules and policies apply.

Rationale: Up- and download of data and software is required for software updates using standardized mechanisms.

Use Case: Download of dedicated Software Components in ECU.

Applies to: AP

Dependencies: –

Supporting Material: –

(RS_PO_00004, RS_PO_00005, RS_PO_00009)

remove [RS_Main_00220]

[RS_Main_00460] AUTOSAR shall standardize methods to organize mode management on Application, ECU and System level

Description: AUTOSAR shall provide a method to configure mode management mechanisms for Application Software to control or react on modes of the ECU or vehicle.

Rationale: The behavior of Application Software highly depends on the overall mode of the ECU. Therefore the method of mode management has to be standardized to achieve the same behavior if Application Software is allocated on another ECU.

[RS_Main_00503] AUTOSAR shall support change of communication and application software at runtime.

Description: Advanced systems require dynamic allocation of AUTOSAR Applications and adaptations of the communication topology after development and production at life-time of the system AUTOSAR shall provide a technical possibility which provides these Software changes at runtime.

Rationale: Advanced driving assistance functions have to be updated (e.g. after development or production).

Use-Case: Update of Application Software or update of configuration over the air

Applies to: AP

Dependencies: –

–Last change on issue 80615 comment 8–

BW-C-Level:

Application	Specification	Bus
1	1	1

- RfC #81962: Restructure RS_Main based on PL Requirement Level Review

Problem description:

Based on the review from PL team which proposes to split RS_Main into functional and non-functional requirements and identifies stable AUTOSAR requirements the following structure is proposed:

1. functional requirements
2. non-functional requirements
3. Unclear requirement type on RS_Main Level
4. Platform Level Candidates

Chapter 3 will contain requirements with e.g. mixed functional and non-functional parts which have to be evaluated further after FO R1.5.0

Chapter 4 will contain possible candidates for the Platform Level which have to be evaluated further after FO R.1.5.0

Agreed solution:

Restructure requirements based on PL review and change structure to:

1. functional requirements
2. non-functional requirements
3. Unclear requirement type on RS_Main Level
4. Platform Level Candidates

Preliminary List of RS_Main Requirements in chapter 1 and 2:

[RS_Main_00001] AUTOSAR shall provide a software platform for embedded real-time systems

[RS_Main_00010] AUTOSAR shall support the development of safety related systems.

[RS_Main_00012] AUTOSAR shall provide a software platform to support the development of highly available systems.

[RS_Main_00030] AUTOSAR shall support development processes for safety related systems

[RS_Main_00060] AUTOSAR shall provide a standardized software interface for communication between Applications

[RS_Main_00080] AUTOSAR shall provide means to describe a component model for Application Software

[RS_Main_00120] AUTOSAR shall provide means to assure interoperability of AUTOSAR implementations (ICC1 level) on application level (RTE) and bus level.

[RS_Main_00127] AUTOSAR shall provide generic test cases

[RS_Main_00130] AUTOSAR shall provide an abstraction from hardware

[RS_Main_00140] AUTOSAR shall provide network independent communication mechanisms for applications

[RS_Main_00160] AUTOSAR shall provide means to describe interfaces of the entire system.

[RS_Main_00161] AUTOSAR shall provide a unified way to describe software systems deployed to Adaptive and / or Classic platforms.

[RS_Main_00190] AUTOSAR shall support standardized interoperability with non-AUTOSAR software

[RS_Main_00200] AUTOSAR specifications shall allow resource efficient implementations

[RS_Main_00230] AUTOSAR shall support network topologies including gateways

[RS_Main_00250] AUTOSAR methodology shall provide a predefinition of typical roles and activities.

[RS_Main_00170] AUTOSAR shall provide secure access to ECU

[RS_Main_00260] AUTOSAR shall provide diagnostics means during runtime, for production and services purposes

[RS_Main_00280] AUTOSAR shall support standardized automotive communication protocols

[RS_Main_00300] AUTOSAR shall provide data exchange formats to support work-share in large inter and intra company development groups

[RS_Main_00320] AUTOSAR shall provide formats to specify system development

[RS_Main_00340] AUTOSAR shall support the continuous timing requirement analysis

[RS_Main_00350] AUTOSAR specifications shall be analyzable and support according methods to demonstrate the achievement of safety related properties.

[RS_Main_00360] AUTOSAR shall support variant management

[RS_Main_00460] AUTOSAR shall standardize methods to organize mode management on Application, ECU and System level

[RS_Main_00480] AUTOSAR shall support the test of implementations

[RS_Main_00491] AUTOSAR shall provide means for logging

[RS_Main_00500] AUTOSAR shall provide naming conventions

[RS_Main_00501] AUTOSAR shall support redundancy concepts

[RS_Main_00514] AUTOSAR shall support the development of secure systems

[RS_Main_01001] AUTOSAR shall support intra ECU communication

–Last change on issue 81962 comment 6–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.14 Specification Item RS_Main_00510

Trace References:

RS_PO_00004, RS_PO_00005, RS_PO_00008

Content:

Type:	Valid
Description:	AUTOSAR shall provide means to check data authenticity, data integrity, optionally confidentiality and data freshness in inter ECU communication.
Rationale:	Dependable systems rely on authentic and trustworthy exchange of information between ECUs. Protecting and assuring data authenticity, data integrity and data freshness in inter ECU communication allows for the development of secure and safe systems by using the AUTOSAR platform. Confidentiality ensures privacy of data.
AppliesTo:	AP, CP
Use Case:	Protection of on-board communication against manipulation or eavesdropping.
Supporting Material:	—

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #81908: [CONC_645] [MS4] [FO] Concept incorporation

Problem description:

This RfC is derived from AUTOSAR concept:

CONC_645 "TLS" [1] [2]

It is intended to track the incorporation of the concept's technical solution into the AUTOSAR CP and FO standard as draft since there is no external validation in 2018.

There is a PL decision and also coordinated by WP-X-VAL that the CONC_645 will be released as draft in R4.4.0/18-10 and the concept will be validated 2019 by an external validation.

For each impacted document, a copy& paste ready solution is provided by the concept and a respective implementation task is created. In case of questions, please contact the concept owner:

Armin Happel (armin.happel@vector.com)

For the CP part a further Bugzilla Ticket will be created since difference Bugzilla

projects.

Best regards, QA

[1] https://svn.autosar.org/repos/work/25_Concepts/Sources/CONC_645_TransportLayerSecurity

[2] https://svn.autosar.org/repos/work/25_Concepts/Sources/CONC_645_TransportLayerSecurity

Agreed solution:

Incorporate the CONC_645 as "draft" in your document according to [1] an [2].

RS_Main:

Changing RS_Main_00510 in chapter 4.1.21

See https://svn.autosar.org/repos/work/25_Concepts/Sources/CONC_645_TransportLayerSecurity

TR_Glossary:

https://svn.autosar.org/repos/work/25_Concepts/Sources/CONC_645_TransportLayerSecurity/W

Example to mark requirements as "draft":

1) For RS and SRS: Please set the field "Type" to "draft"

2) For SWS: Please use the annotation: [SWS_<shortname>_<XXXXX>] DRAFT
<Text> ((S)RS_ID)

3) For EXP/TR: Please add a sentence to chapter "Limitations" and list the used concept parts and provide a sentence that these concpet parts are "draft"

If possible a bit more elaborated description of what is draft would be great. Just some additional words or sentences what the concept contains and what this means for your document. Maybe there even is some specific chapter where things coming from the concept are bundled to which you could refer in the limitations chapter, stating that everything that is described there is implemented as draft in SWS and RS documents.

—Last change on issue 81908 comment 5—

BW-C-Level:

Application	Specification	Bus
-	-	-

1.15 Specification Item RS_Main_00514

Trace References:

RS_PO_00005

Content:

Type:	Valid
Description:	AUTOSAR shall specify an automotive security approach defining security measures mechanisms and properties.
Rationale:	Protection of data against misuse is important when storing sensitive data (e.g. personal data) The security properties which shall be supported by AUTOSAR include authenticity, credit card information) in the car confidentiality, integrity and non-repudiation.
AppliesTo:	AP, CP
Use Case:	Customer acquires license to use Protect after sales feature or activation and data in his vehicle usage via appropriate security mechanisms.
Supporting Material:	—

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #82029: [CONC_636] [MS4] [FO] Concept incorporation

Problem description:

This RfC is derived from AUTOSAR concept:

CONC_636 "Security Extensions" [1] [2]

It is intended to track the incorporation of the concept's technical solution into the AUTOSAR CP, FO and AP standard as draft since there is no external validation in 2018.

For each impacted document, a copy& paste ready solution is provided by the concept and a respective implementation task is created. In case of questions, please contact the concept owner:

Eduard Metzker (eduard.metzker@vector.com)

For SWS_AdaptiveDiagnostics a Jira Ticket will be created.

For CP a separate Bugzilla Ticket will be created

- C1 - "Security Event Memory (SEM)" is released as draft.

- C2 - "Key Management" is released as valid.
- C4 - "STBM with Secure Time" is released as draft.
- C5 - "Diagnostic Policy Manager" is released as valid.
- C6 - "Improvement of Certificate Handling" is released as valid.
- C7 - "Abstract pre-definition of Crypto Items in System Template" is released as valid.

Best regards, QA

[1] https://svn.autosar.org/repos/work/25_Concepts/Sources/CONC_633_FormalModelQuery/Wo

[2] https://svn.autosar.org/repos/work/25_Concepts/Sources/CONC_633_FormalModelQuery/Wo

Agreed solution:

Implement the CONC_636 in your document according to [1] an [2].

[1] https://svn.autosar.org/repos/work/25_Concepts/Sources/CONC_636_SecurityExtensions/Wo

[2] https://svn.autosar.org/repos/work/25_Concepts/Sources/CONC_636_SecurityExtensions/Wo

- C1 - "Security Event Memory (SEM)" is released as draft.
- C2 - "Key Management" is released as valid.
- C4 - "STBM with Secure Time" is released as draft.
- C5 - "Diagnostic Policy Manager" is released as valid.
- C6 - "Improvement of Certificate Handling" is released as valid.
- C7 - "Abstract pre-definition of Crypto Items in System Template" is released as valid.

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RS_Main

5.1 Main requirements

TR_Glossary:

7.3.1 C1: Security Event Memory

SRS_Diagnostic:

7.3.4 C5: Diagnostic Policy Manager

In case of questions, please contact the concept owner:
Eduard Metzker (eduard.metzker@vector.com)

Example to mark requirements as "draft":

1) For RS and SRS: Please set the field "Type" to "draft"

2) For SWS: Please use the annotation: [SWS_<shortname>_<XXXXX>] DRAFT
<Text> ((S)RS_ID)

3) For EXP/TR: Please add a sentence to chapter "Limitations" and list the used concept parts and provide a sentence that these concept parts are "draft"

If possible a bit more elaborated description of what is draft would be great. Just some additional words or sentences what the concept contains and what this means for your document. Maybe there even is some specific chapter where things coming from the concept are bundled to which you could refer in the limitations chapter, stating that everything that is described there is implemented as draft in SWS and RS documents.

—Last change on issue 82029 comment 5—

BW-C-Level:

Application	Specification	Bus
-	-	-

1.16 Specification Item RS_Main_00650

Trace References:

RS_PO_00004, RS_PO_00005, RS_PO_00008

Content:

Type:	Valid
Description:	AUTOSAR shall support standardized up- and download of data and software. For all kind of data exchange between off- and onboard artifacts mechanisms and methods shall be defined. These mechanisms and methods shall support common protocols used for data-transfer. Partial updates of the software shall be supported. Independent access control rules and policies apply.
Rationale:	Up- and download of data and software is required for software updates using standardized mechanisms.
AppliesTo:	AP
Use Case:	Download of dedicated Software Components in ECU.
Supporting Material:	—

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #80615: Umbrella RfC for RS_Main working list R18-10 / FO1.5.0

Problem description:

This RfC is used to collect the RfCs currently discussed in the PL working list:

https://svn.autosar.org/repos/work/26_Standards/00_FO_R1/01_Sources/Elaboration/RS_Main/F

RfCs are discussed in the working list to achieve an agreement. Duplicate RfCs or resolved RfCs targeting single changes will be linked to this RfC.

For the release all agreed changes from the working list are updated to this RfC and implemented.

Agreed solution:

[RS_Main_00170] AUTOSAR shall provide secure access to ECU

Description: AUTOSAR shall provide secured access to ECU by secure authentication of external ECU users. For this mechanisms access control decisions need to be enforced.

Rationale: Secure access and authentication mechanisms are required for prevention of unauthorized access.

Use Case: Secure V2X connection

Applies to: AP, CP

Dependencies: To fulfill this requirement it is also necessary that the environment that is not standardized by AUTOSAR (e.g. bootloader) matches the same security requirements.

Supporting Material:–

(RS_PO_00004, RS_PO_00005, RS_PO_00009)

[new requirement] AUTOSAR shall support up - and download of data and software

Type: valid

Description: AUTOSAR shall support standardized up- and download of data and software. For all kind of data exchange between off- and onboard artifacts mechanisms and methods shall be defined. These mechanisms and methods shall support common protocols used for data-transfer. Partial updates of the software shall be supported. Independent access control rules and policies apply.

Rationale: Up- and download of data and software is required for software updates using standardized mechanisms.

Use Case: Download of dedicated Software Components in ECU.

Applies to: AP

Dependencies: –

Supporting Material: –

(RS_PO_00004, RS_PO_00005, RS_PO_00009)

remove [RS_Main_00220]

[RS_Main_00460] AUTOSAR shall standardize methods to organize mode management on Application, ECU and System level

Description: AUTOSAR shall provide a method to configure mode management mechanisms for Application Software to control or react on modes of the ECU or vehicle.

Rationale: The behavior of Application Software highly depends on the overall mode of the ECU. Therefore the method of mode management has to be standardized to achieve the same behavior if Application Software is allocated on another ECU.

[RS_Main_00503] AUTOSAR shall support change of communication and application software at runtime.

Description: Advanced systems require dynamic allocation of AUTOSAR Applications and adaptations of the communication topology after development and production at life-time of the system AUTOSAR shall provide a technical possibility which provides these Software changes at runtime.

Rationale: Advanced driving assistance functions have to be updated (e.g. after development or production).

Use-Case: Update of Application Software or update of configuration over the air

Applies to: AP

Dependencies: –

–Last change on issue 80615 comment 8–

BW-C-Level:

Application	Specification	Bus
1	1	1

- RfC #81962: Restructure RS_Main based on PL Requirement Level Review

Problem description:

Based on the review from PL team which proposes to split RS_Main into functional and non-functional requirements and identifies stable AUTOSAR requirements the following structure is proposed:

1. functional requirements
2. non-functional requirements
3. Unclear requirement type on RS_Main Level
4. Platform Level Candidates

Chapter 3 will contain requirements with e.g. mixed functional and non-functional

parts which have to be evaluated further after FO R1.5.0

Chapter 4 will contain possible candidates for the Platform Leven which have to be evaluated further after FO R.1.5.0

Agreed solution:

Restructure requirements based on PL review and change structure to:

1. functional requirements
2. non-functional requirements
3. Unclear requirement type on RS_Main Level
4. Platform Level Candidates

Preliminary List of RS_Main Requirements in chapter 1 and 2:

[RS_Main_00001] AUTOSAR shall provide a software platform for embedded real-time systems

[RS_Main_00010] AUTOSAR shall support the development of safety related systems.

[RS_Main_00012] AUTOSAR shall provide a software platform to support the development of highly available systems.

[RS_Main_00030] AUTOSAR shall support development processes for safety related systems

[RS_Main_00060] AUTOSAR shall provide a standardized software interface for communication between Applications

[RS_Main_00080] AUTOSAR shall provide means to describe a component model for Application Software

[RS_Main_00120] AUTOSAR shall provide means to assure interoperability of AUTOSAR implementations (ICC1 level) on application level (RTE) and bus level.

[RS_Main_00127] AUTOSAR shall provide generic test cases

[RS_Main_00130] AUTOSAR shall provide an abstraction from hardware

[RS_Main_00140] AUTOSAR shall provide network independent communication mechanisms for applications

[RS_Main_00160] AUTOSAR shall provide means to describe interfaces of the entire system.

[RS_Main_00161] AUTOSAR shall provide a unified way to describe software systems deployed to Adaptive and / or Classic platforms.

[RS_Main_00190] AUTOSAR shall support standardized interoperability with non-AUTOSAR software

[RS_Main_00200] AUTOSAR specifications shall allow resource efficient implementations

[RS_Main_00230] AUTOSAR shall support network topologies including gateways

[RS_Main_00250] AUTOSAR methodology shall provide a predefinition of typical roles and activities.

[RS_Main_00170] AUTOSAR shall provide secure access to ECU

[RS_Main_00260] AUTOSAR shall provide diagnostics means during runtime, for production and services purposes
 [RS_Main_00280] AUTOSAR shall support standardized automotive communication protocols
 [RS_Main_00300] AUTOSAR shall provide data exchange formats to support work-share in large inter and intra company development groups
 [RS_Main_00320] AUTOSAR shall provide formats to specify system development
 [RS_Main_00340] AUTOSAR shall support the continuous timing requirement analysis
 [RS_Main_00350] AUTOSAR specifications shall be analyzable and support according methods to demonstrate the achievement of safety related properties.
 [RS_Main_00360] AUTOSAR shall support variant management
 [RS_Main_00460] AUTOSAR shall standardize methods to organize mode management on Application, ECU and System level
 [RS_Main_00480] AUTOSAR shall support the test of implementations
 [RS_Main_00491] AUTOSAR shall provide means for logging
 [RS_Main_00500] AUTOSAR shall provide naming conventions
 [RS_Main_00501] AUTOSAR shall support redundancy concepts
 [RS_Main_00514] AUTOSAR shall support the development of secure systems
 [RS_Main_01001] AUTOSAR shall support intra ECU communication
 –Last change on issue 81962 comment 6–

BW-C-Level:

Application	Specification	Bus
1	1	1

1.17 Specification Item RS_Main_00651

Trace References:

RS_PO_00005, RS_PO_00007, RS_PO_00008

Content:

Type:	Draft
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Description:	AUTOSAR shall support direct forwarding of CAN, LIN, and FlexRay frames from multiple source buses to a destination CAN or FlexRay bus, to Ethernet, or to a proprietary network (CDD). The destination can be a diagnostic connector (CAN(-FD) or Ethernet/DoIP), an intermediate bus, or a CDD that represents a special bus or a bus controlled by a non-AUTOSAR application. The following forwardings shall be supported:
Rationale:	It is not always possible or sometimes just too complicated to connect an analysis tool directly to an internal network. Forwarding of internal communication to a diagnostic connector allows for observation of internal communication using an external tester.
AppliesTo:	CP
Use Case:	Debugging of internal networks without direct access from an analysis tool.
Supporting Material:	Concept 634 "Bus Mirroring"

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #81967: [CONC_634] [MS4] [FO] Concept incorporation

Problem description:

This RfC is derived from AUTOSAR concept:

CONC_634 "BusMirroring" [1] [2]

It is intended to track the incorporation of the concept's technical solution into the AUTOSAR CP standard .

For each impacted document, a copy& paste ready solution is provided by the concept and a respective implementation task is created. In case of questions, please contact the concept owner:

Martin Schlodder (martin.schlodder@vector.com)

For CP part a separate CP RfC will be created.

Best regards, QA

[1] https://svn.autosar.org/repos/work/25_Concepts/Sources/CONC_634_BusMirroring/Working/A

[2] https://svn.autosar.org/repos/work/25_Concepts/Sources/CONC_634_BusMirroring/Working/P

Agreed solution:

Agreed solution is described in chapter 7 of the concept document:

https://svn.autosar.org/repos/work/25_Concepts/Sources/CONC_634_BusMirroring/Working/AUT

TR_Glossary

https://svn.autosar.org/repos/work/25_Concepts/Sources/CONC_634_BusMirroring/Working/AUT

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RS_Main

https://svn.autosar.org/repos/work/25_Concepts/Sources/CONC_634_BusMirroring/Working/AUT

BW-C-Level:

Application	Specification	Bus
1	1	1

1.18 Specification Item RS_Main_01025

Trace References:

RS_PO_00007

Content:

Type:	Draft
Description:	Each AUTOSAR module shall provide a standardized method and interface to enable debugging the software of AUTOSAR systems with awareness of the AUTOSAR architecture. Each part of the AUTOSAR software shall provide methods of obtaining internal state information to be used by debuggers.
Rationale:	Debugging tools need internal information to visualize the state of the software. Components and modules implementing this requirement shall provide the necessary state information that can be used by internal and external tools.
AppliesTo:	AP, CP
Use Case:	Debugging the software.
Supporting Material:	—

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #80615: Umbrella RfC for RS_Main working list R18-10 / FO1.5.0

Problem description:

This RfC is used to collect the RfCs currently discussed in the PL working list:

https://svn.autosar.org/repos/work/26_Standards/00_FO_R1/01_Sources/Elaboration/RS_Main/F

RfCs are discussed in the working list to achieve an agreement. Duplicate RfCs or resolved RfCs targeting single changes will be linked to this RfC.

For the release all agreed changes from the working list are updated to this RfC and implemented.

Agreed solution:

[RS_Main_00170] AUTOSAR shall provide secure access to ECU

Description: AUTOSAR shall provide secured access to ECU by secure authentication of external ECU users. For this mechanisms access control decisions need to be enforced.

Rationale: Secure access and authentication mechanisms are required for prevention of unauthorized access.

Use Case: Secure V2X connection

Applies to: AP, CP

Dependencies: To fulfill this requirement it is also necessary that the environment that is not standardized by AUTOSAR (e.g. bootloader) matches the same security requirements.

Supporting Material:–

(RS_PO_00004, RS_PO_00005, RS_PO_00009)

[new requirement] AUTOSAR shall support up - and download of data and software

Type: valid

Description: AUTOSAR shall support standardized up- and download of data and software. For all kind of data exchange between off- and onboard artifacts mechanisms and methods shall be defined. These mechanisms and methods shall support common protocols used for data-transfer. Partial updates of the software shall be supported. Independent access control rules and policies apply.

Rationale: Up- and download of data and software is required for software updates using standardized mechanisms.

Use Case: Download of dedicated Software Components in ECU.

Applies to: AP

Dependencies: –

Supporting Material: –

(RS_PO_00004, RS_PO_00005, RS_PO_00009)

remove [RS_Main_00220]

[RS_Main_00460] AUTOSAR shall standardize methods to organize mode management on Application, ECU and System level

Description: AUTOSAR shall provide a method to configure mode management mechanisms for Application Software to control or react on modes of the ECU or vehicle.

Rationale: The behavior of Application Software highly depends on the overall mode of the ECU. Therefore the method of mode management has to be standardized to achieve the same behavior if Application Software is allocated on another ECU.

[RS_Main_00503] AUTOSAR shall support change of communication and application software at runtime.

Description: Advanced systems require dynamic allocation of AUTOSAR Applications and adaptations of the communication topology after development and production at life-time of the system AUTOSAR shall provide a technical possibility which provides these Software changes at runtime.

Rationale: Advanced driving assistance functions have to be updated (e.g. after development or production).

Use-Case: Update of Application Software or update of configuration over the air

Applies to: AP

Dependencies: –

–Last change on issue 80615 comment 8–

BW-C-Level:

Application	Specification	Bus
1	1	1

- RfC #82000: [CONC_628] [MS4] [FO] Concept incorporation

Problem description:

This RfC is derived from AUTOSAR concept:

CONC_628 "ARTI" [1] [2]

It is intended to track the incorporation of the concept's technical solution into the AUTOSAR CP and AP standard as draft since there is no external validation in 2018.

There is a PL decision and also coordinated by WP-X-VAL that the CONC_628 will be released as draft in R4.4.0 and the concept will be validated 2019 by an external validation.

For each impacted document, a copy& paste ready solution is provided by the concept and a respective implementation task is created. In case of questions,

please contact the concept owner:

Peter Gliwa (peter.gliwa@gliwa.com) or Rudolf Dienstbeck
(Rudolf.Dienstbeck@Lauterbach.com)

For CP part a separate Bugzilla issue will be created.

For RS_AdaptivePlatformDebugTraceProfile a Jira Ticket will be created.

New deliverables:

RS_AdaptivePlatformDebugTraceProfile

RS_ClassicPlatformDebugTraceProfile

RS_FoundationDebugTraceProfile

SWS_ClassicPlatformARTI

MOD_ARTI

Best regards, QA

[1] https://svn.autosar.org/repos/work/25_Concepts/Sources/CONC_628_ARTI/Working/AUTOSA

[2] https://svn.autosar.org/repos/work/25_Concepts/Sources/CONC_628_ARTI/Documents/NewD

Agreed solution:

Implement the CONC_633 as "draft" in your document according to [1] an [2].

[1] https://svn.autosar.org/repos/work/25_Concepts/Sources/CONC_628_ARTI/Working/AUTOSA

[2] https://svn.autosar.org/repos/work/25_Concepts/Sources/CONC_628_ARTI/Documents/NewD

In case of questions, please contact the concept owner:

Peter Gliwa (peter.gliwa@gliwa.com) or Rudolf Dienstbeck
(Rudolf.Dienstbeck@Lauterbach.com)

Example to mark requirements as "draft":

1) For RS and SRS: Please set the field "Type" to "draft"

2) For SWS: Please use the annotation: [SWS_<shortname>_<XXXXX>] DRAFT
<Text> ((S)RS_ID)

3) For EXP/TR: Please add a sentence to chapter "Limitations" and list the used concept parts and provide a sentence that these concpet parts are "draft"

If possible a bit more elaborated description of what is draft would be great. Just some additional words or sentences what the concept contains and what this means for your document. Maybe there even is some specific chapter where things

coming from the concept are bundled to which you could refer in the limitations chapter, stating that everything that is described there is implemented as draft in SWS and RS documents.

–Last change on issue 82000 comment 4–

BW-C-Level:

Application	Specification	Bus
-	-	-

1.19 Specification Item RS_Main_01026

Trace References:

RS_PO_00007

Content:

Type:	Draft
Description:	Each AUTOSAR module shall provide a standardized method and interface to enable tracing and profiling the software of AUTOSAR systems with awareness of the AUTOSAR architecture. Each part of the AUTOSAR software shall provide methods of obtaining event information to be used by trace analysis tools.
Rationale:	Tracing and timing analysis tools need internal information to visualize and inspect the run-time behavior of the software. Components and modules implementing this requirement shall provide the necessary details and hooks that can be used by tools.
AppliesTo:	AP, CP
Use Case:	Run-time tracing the software, profiling, timing measurement.
Supporting Material:	–

RfCs affecting this spec item between releases 1.4.0 and 1.5.0:

- RfC #80615: Umbrella RfC for RS_Main working list R18-10 / FO1.5.0

Problem description:

This RfC is used to collect the RfCs currently discussed in the PL working list:

https://svn.autosar.org/repos/work/26_Standards/00_FO_R1/01_Sources/Elaboration/RS_Main/F

RfCs are discussed in the working list to achieve an agreement. Duplicate RfCs or resolved RfCs targeting single changes will be linked to this RfC.

For the release all agreed changes from the working list are updated to this RfC and implemented.

Agreed solution:

[RS_Main_00170] AUTOSAR shall provide secure access to ECU

Description: AUTOSAR shall provide secured access to ECU by secure authentication of external ECU users. For this mechanisms access control decisions need to be enforced.

Rationale: Secure access and authentication mechanisms are required for prevention of unauthorized access.

Use Case: Secure V2X connection

Applies to: AP, CP

Dependencies: To fulfill this requirement it is also necessary that the environment that is not standardized by AUTOSAR (e.g. bootloader) matches the same security requirements.

Supporting Material:–

(RS_PO_00004, RS_PO_00005, RS_PO_00009)

[new requirement] AUTOSAR shall support up - and download of data and software

Type: valid

Description: AUTOSAR shall support standardized up- and download of data and software. For all kind of data exchange between off- and onboard artifacts mechanisms and methods shall be defined. These mechanisms and methods shall support common protocols used for data-transfer. Partial updates of the software shall be supported. Independent access control rules and policies apply.

Rationale: Up- and download of data and software is required for software updates using standardized mechanisms.

Use Case: Download of dedicated Software Components in ECU.

Applies to: AP

Dependencies: –

Supporting Material: –

(RS_PO_00004, RS_PO_00005, RS_PO_00009)

remove [RS_Main_00220]

[RS_Main_00460] AUTOSAR shall standardize methods to organize mode management on Application, ECU and System level

Description: AUTOSAR shall provide a method to configure mode management mechanisms for Application Software to control or react on modes of the ECU or vehicle.

Rationale: The behavior of Application Software highly depends on the overall mode of the ECU. Therefore the method of mode management has to be standardized to achieve the same behavior if Application Software is allocated on another ECU.

[RS_Main_00503] AUTOSAR shall support change of communication and application software at runtime.

Description: Advanced systems require dynamic allocation of AUTOSAR Applications and adaptations of the communication topology after development and production at life-time of the system AUTOSAR shall provide a technical possibility which provides these Software changes at runtime.

Rationale: Advanced driving assistance functions have to be updated (e.g. after development or production).

Use-Case: Update of Application Software or update of configuration over the air

Applies to: AP

Dependencies: –

–Last change on issue 80615 comment 8–

BW-C-Level:

Application	Specification	Bus
1	1	1

- RfC #82000: [CONC_628] [MS4] [FO] Concept incorporation

Problem description:

This RfC is derived from AUTOSAR concept:

CONC_628 "ARTI" [1] [2]

It is intended to track the incorporation of the concept's technical solution into the AUTOSAR CP and AP standard as draft since there is no external validation in 2018.

There is a PL decision and also coordinated by WP-X-VAL that the CONC_628 will be released as draft in R4.4.0 and the concept will be validated 2019 by an external validation.

For each impacted document, a copy& paste ready solution is provided by the concept and a respective implementation task is created. In case of questions, please contact the concept owner:

Peter Gliwa (peter.gliwa@gliwa.com) or Rudolf Dienstbeck (Rudolf.Dienstbeck@Lauterbach.com)

For CP part a separate Bugzilla issue will be created.

For RS_AdaptivePlatformDebugTraceProfile a Jira Ticket will be created.

New deliverables:

RS_AdaptivePlatformDebugTraceProfile
RS_ClassicPlatformDebugTraceProfile
RS_FoundationDebugTraceProfile
SWS_ClassicPlatformARTI
MOD_ARTI

Best regards, QA

[1] https://svn.autosar.org/repos/work/25_Concepts/Sources/CONC_628_ARTI/Working/AUTOSA

[2] https://svn.autosar.org/repos/work/25_Concepts/Sources/CONC_628_ARTI/Documents/NewD

Agreed solution:

Implement the CONC_633 as "draft" in your document according to [1] an [2].

[1] https://svn.autosar.org/repos/work/25_Concepts/Sources/CONC_628_ARTI/Working/AUTOSA

[2] https://svn.autosar.org/repos/work/25_Concepts/Sources/CONC_628_ARTI/Documents/NewD

In case of questions, please contact the concept owner:

Peter Gliwa (peter.gliwa@gliwa.com) or Rudolf Dienstbeck
(Rudolf.Dienstbeck@Lauterbach.com)

Example to mark requirements as "draft":

1) For RS and SRS: Please set the field "Type" to "draft"
2) For SWS: Please use the annotation: [SWS_<shortname>_<XXXXX>] DRAFT
<Text> ((S)RS_ID)

3) For EXP/TR: Please add a sentence to chapter "Limitations" and list the used concept parts and provide a sentence that these concept parts are "draft"

If possible a bit more elaborated description of what is draft would be great. Just some additional words or sentences what the concept contains and what this means for your document. Maybe there even is some specific chapter where things coming from the concept are bundled to which you could refer in the limitations chapter, stating that everything that is described there is implemented as draft in SWS and RS documents.

—Last change on issue 82000 comment 4—

BW-C-Level:

Application	Specification	Bus
-	-	-