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1 Introduction

1.1 Scope of this Document

This document provides an overview of the set of AUTOSAR specifications of the AUTOSAR standard “Acceptance Tests for Classic Platform” comprising the initial Release 1.2 and its latest Revision 0.

1.2 Dependencies to other standards

This release of the “Acceptance Tests for Classic Platform” depends on the standard “Foundation” Release 1.0.0, which contains main requirements to complete the trace hierarchy.

This dependency is refined in the trace information of the requirements in the respective specifications, i.e. requirement in ATR Features refers to the main requirements in the Foundation standard.

1.3 Content of Chapters

This document is structured as follows:

- Chapter 2 provides a list of documentation references.
- Chapter 3 provides a summary of changes that were implemented since the preceding Release.
- Chapter 4 contains the overview of specifications comprising the Release 1.2 in its latest Revision 0.
- Chapter 5 contains remarks about known technical deficiencies.
- Chapter 6 contains the detailed revision history.
- Chapter 7.1 provides a set of definitions aimed to increase the understanding of the content of this document and the Acceptance Tests Release 1.2.

2 Related Documentation

[1] Glossary

http://www.autosar.org/fileadmin/files/standards/foundation/1-0/main/auxiliary/AUTOSAR_TR_Glossary.pdf

3 Summary of changes

The Acceptance Tests for Classic Platform Release 1.2 is the third release of acceptance tests by the AUTOSAR partnership.

The focus of the release has been put to

- adding Test Cases for CP R4.2.x concepts, as CAN FD, NV data handling, LD COM,
- multiple corrections / modification to the release TC R1.1.0 in order to maintain the quality of the test cases and
- synchronization of test cases to Classic Platform R4.2.2.

These changes and extensions have been affecting the following documents:

- NV data handling via RTE:
 - Acceptance Test Specification of RTE (UID 634, ATS, aux)
- Efficient COM for large data:
 - Acceptance Test Specification of communication via bus (UID 666, ATS, aux)
 - Acceptance Test Specification of Communication on CAN bus (UID 632, ATS, aux)
 - Acceptance Test Specification of Communication on LIN bus (UID 667, ATS, aux)
 - Acceptance Test Specification of Communication on FlexRay bus (UID 668, ATS, aux)
- Fragmentation tests:
 - Acceptance Test Specification of IPv4 (UID 685, ATS, aux)

3.1.1 Specifications

The following specifications change their life cycle status with this release.

3.1.1.1 New Specifications

The following specifications have been added to this release:

- Acceptance Test Specification of Communication on CANFD bus (UID 811, ATS, aux)
- Acceptance Test Specification of Global Time Synchronization (UID 841, ATS, aux)
- Acceptance Tests XML Export (UID 845, TR, aux)

3.1.1.2 Obsolete Specifications

No specifications have been set to obsolete in this release.

3.1.1.3 Canceled

The following specification has been canceled in this release:

- Acceptance Tests Main Requirements (UID 626, ATR, aux)

The content has been migrated into the Foundation document:

- Main Requirements (UID 054, RS, aux).

3.1.2 Concepts

No concepts have been incorporated in this release.

3.1.3 Release Documentation

No changes have been done to the release documentation in this release (except update of content).

4 Specification overview

As of the latest Revision 0, the following specifications are part of the Acceptance Tests for Classic Platform Release 1.2.

Long Name	Class.	File Name	Life cycle changes
Cluster: Release Documentation			
Acceptance Tests Classic Platform Release Overview	inf	AUTOSAR_TR_AcceptanceTestsClassicPlatformReleaseOverview	
AUTOSAR Acceptance Tests Classic Platform Specification Hashes	inf	AUTOSAR_TR_AcceptanceTestsClassicPlatformSpecificationHashes	
Cluster: Specifications			
Acceptance Test Specification of Communication Management	aux	AUTOSAR_ATS_CommunicationManagement	
Acceptance Test Specification of Communication on CAN bus	aux	AUTOSAR_ATS_CommunicationCAN	
Acceptance Test Specification of Communication on CANFD bus	aux	AUTOSAR_ATS_CommunicationCANFD	New in R1.2.0
Acceptance Test Specification of Communication on FlexRay bus	aux	AUTOSAR_ATS_CommunicationFlexRay	
Acceptance Test Specification of Communication on LIN bus	aux	AUTOSAR_ATS_CommunicationLin	
Acceptance Test Specification of communication via bus	aux	AUTOSAR_ATS_CommunicationViaBus	
Acceptance Test Specification of diagnostic services	aux	AUTOSAR_ATS_DiagnosticServices	
Acceptance Test Specification of ECU Mode Management	aux	AUTOSAR_ATS_EcuModeManagement	
Acceptance Test Specification of Global Time Synchronization	aux	AUTOSAR_ATS_GlobalTimeSynchronization	New in R1.2.0
Acceptance Test Specification of IPv4	aux	AUTOSAR_ATS_IPv4	
Acceptance Test Specification of Memory Stack	aux	AUTOSAR_ATS_MemoryStack	
Acceptance Test Specification of RTE	aux	AUTOSAR_ATS_RTE	
Acceptance Test Specification of TCP	aux	AUTOSAR_ATS_TCP	
Acceptance Test Specification of UDP	aux	AUTOSAR_ATS_UDP	
Acceptance Tests XML Export	aux	AUTOSAR_TR_AcceptanceTestsExport	New in R1.2.0
Specification of Testability Protocol and Service Primitives	aux	AUTOSAR_PRS_TestabilityProtocolAndServicePrimitives	
Cluster: General			
Applicability of test cases to software releases	aux	AUTOSAR_TR_ATSReleaseApplicability	
Feature Specification of the Acceptance Tests	aux	AUTOSAR_ATR_Features	
Overview of Acceptance Tests	aux	AUTOSAR_EXP_AcceptanceTestsOverview	
Requirements on Acceptance Tests	aux	AUTOSAR_ATR_Requirements	

4.1 Applicability to AUTOSAR Releases

The tests specification released as of the latest Revision 0 of the AUTOSAR Acceptance Tests Release 1.2 are applicable to the software specification of the AUTOSAR CP Release 4.2, Revision 2.

Earlier releases of the AUTOSAR software specification are supported in the following ways:

- When test cases are known to be applicable to earlier releases Release 4.2 Revision 1, Release 4.1 Revision 1, Release 4.0 Revision 3, or Release 3.2 Revision 2, this is mentioned in the “AUTOSAR Releases” field of the test case specifications.

The applicability of all test cases to the AUTOSAR software specification releases is summarized in the document
AUTOSAR_TR_ATSReleaseApplicability.

- When test cases are known to require adaptations (in their configuration requirements or test sequences), this is mentioned in the “Needed Adaptation to other Releases” field of the test case specifications.

5 Remarks to Known Technical Deficiencies

The technical deficiencies per specification are – if applicable – mentioned inside the respective specification in a chapter called “Known Limitations” which is located after the table of contents.

There are the following technical deficiencies to be mentioned which are not related to a specific specification:

- **Requirements traceability**

Traceability from the AUTOSAR test specifications to the AUTOSAR software specifications, at feature, requirement or test case / SWS level is not complete.

- **Requirements on configuration**

The scope of the standard acceptance tests is to test an ICC1 stack. The configuration of the stack is needed to test the standard behaviors. Configuration therefore has to be expressed with upstream template parameters. It is however not always possible or useful for:

- Diagnostic test cases
- RTE test cases

In such case, ECU configuration parameters have been used.

6 Revision History of the Release 1.2

The Acceptance Tests for Classic Platform Release 1.2 specification has been released the first time on the 15th of December 2016. The release comprises the following deliverables.

Name	Specification history entry
Acceptance Test Specification of Communication Management	<ul style="list-style-type: none"> • Checked and adapted to Classic Platform Release 4.2.2 • Updated following Test cases: 00189,00190,00781,00760 to 00764,00191,00816,00819,00794,00809,00812,00802,00776,00777,00180,00182,00792,00799,00800,00806,00807,00813,00818. • Removed Test case 00763.
Acceptance Test Specification of Communication on CAN bus	<ul style="list-style-type: none"> • Checked and adapted to Classic Platform Release 4.2.2 • New Test Suite for Large Data Com added (RS_BRF_01649)
Acceptance Test Specification of Communication on CANFD bus	<ul style="list-style-type: none"> • Initial release
Acceptance Test Specification of Communication on FlexRay bus	<ul style="list-style-type: none"> • Checked and adapted to Classic Platform Release 4.2.2 • New test cases for LdCom
Acceptance Test Specification of Communication on LIN bus	<ul style="list-style-type: none"> • Checked and adapted to Classic Platform Release 4.2.2
Acceptance Test Specification of communication via bus	<ul style="list-style-type: none"> • Checked and adapted to Classic Platform Release 4.2.2 • Added RS_BRF_01649 for Large Data Com • ATS_COMINDEP_00226 modified
Acceptance Test Specification of diagnostic services	<ul style="list-style-type: none"> • Checked and adapted to Classic Platform Release 4.2.2
Acceptance Test Specification of ECU Mode Management	<ul style="list-style-type: none"> • Adding additional test cases for testing EcuM and Bsw • Checked and adapted to Classic Platform Release 4.2.2
Acceptance Test Specification of Global Time Synchronization	<ul style="list-style-type: none"> • Initial release, including test suites on <ul style="list-style-type: none"> · RS_BRF_01660– Global Time Synchronization over CAN · RS_BRF_01660 – Global Time Synchronization over FlexRay · RS_BRF_01660 – Global Time Synchronization over Multiple Bus
Acceptance Test Specification of IPv4	<ul style="list-style-type: none"> • Checked and adapted to Classic Platform Release 4.2.2 • Minor corrections • Fragmentation tests have been added
Acceptance Test Specification of Memory Stack	<ul style="list-style-type: none"> • Checked for applicability for Classic Platform Release 4.2.2

Name	Specification history entry
Acceptance Test Specification of RTE	<ul style="list-style-type: none">• Checked and adapted to Classic Platform Release 4.2.2• Added test suites for RS_BRF_01416 – RTE NvDataHandling• Added testcases for<ul style="list-style-type: none">- Rte Client Server Communication (ATS_RTE_00864 and ATS_RTE_00852)• Updated testcases for<ul style="list-style-type: none">- Sender-receiver communication (ATS_RTE_00654, ATS_RTE_00698 and ATS_RTE_00689)
Acceptance Test Specification of TCP	<ul style="list-style-type: none">• Checked and adapted to Classic Platform Release 4.2.2• Minor corrections
Acceptance Test Specification of UDP	<ul style="list-style-type: none">• Checked and adapted to Classic Platform Release 4.2.2• Minor corrections
Acceptance Tests Classic Platform Release Overview	<ul style="list-style-type: none">• Initial release
Acceptance Tests XML Export	<ul style="list-style-type: none">• Initial release
Applicability of test cases to software releases	<ul style="list-style-type: none">• Update applicability for modified test cases• Add applicability for new test cases
AUTOSAR Acceptance Tests Classic Platform Specification Hashes	<ul style="list-style-type: none">• Initial release
Feature Specification of the Acceptance Tests	<ul style="list-style-type: none">• Added ATR_ATF_00030 for GlobalTimeSync• RS_BRF requirements added for tested items of ATR_ATF_00011 and ATR_ATF_00014• Reference RS_Main requirement instead of ATR_Main requirements
Overview of Acceptance Tests	<ul style="list-style-type: none">• Updated status regarding R1.2.0
Requirements on Acceptance Tests	<ul style="list-style-type: none">• Added requirement ATR_ATR_99901 for not applicable RTE requirements• Added ATR_ATR_00127 and ATR_ATR_00128 (LdCom)• Added ATR_ATR_00129 and ATR_ATR_00130 (NvData)• Added ATR_ATR_00131, ATR_ATR_00132, ATR_ATR_00133 and ATR_ATR_00134 (GlobalTimeSync)• Added SRS_Com_02111 for tested items in ATR_ATR_00117• Added ATR_ATR_00135 and ATR_ATR_00136 for CanFD

Name	Specification history entry
Specification of Testability Protocol and Service Primitives	<ul style="list-style-type: none">• New<ul style="list-style-type: none">- Service Primitives for ICMP, ICMPv6, IP, IPv6, ETH, DHCP, DHCPv6, PHY- Result IDs for TCP API Error Codes according to IETF RFC793- Result ID E_IIF• Changed/Fixed<ul style="list-style-type: none">- Parameter in Service Primitive GET_VERSION- Moved Result ID E_INV- Sequence Diagram Client Receive and Forward step 3• More Details<ul style="list-style-type: none">- Result IDs might be used in event messages too.- Sequence Diagram Client Receive and Forward and in Service Primitive RECEIVE_AND_FORWARD- Service Primitive CREATE_AND_BIND

7 Appendix

7.1 Definitions

As far as not explained in this chapter, a collection of AUTOSAR definitions is provided in the Glossary [1].

7.1.1 Release Number

AUTOSAR applies a two-digit numbering scheme Rx.y to identify Releases. Its primary purpose is to identify a Release as a major (upgrade, can contain non-backward-compatible extensions) or as minor (update, backward compatible extensions) Release. Incrementing the first digit “x” does identify a Release as major, whereas incrementing “y” will mark a Release as only minor by nature.

7.1.2 Revision Number

The Revision Number extends the Release Numbering scheme as explained in section 7.1.1. Combined with the Release Number the Revision Number shall:

- 1) Precisely identify the actual content (set of specification) of a given Release.
- 2) As depicted in every specification, precisely identify a given document (with its unique name and three-digit version ID) as being part of the Release.

Item 1) addresses the fact that the set of specifications comprising a Release (in the meaning of a baseline) is rarely established once at a certain point in time (“Big Bang”), but rather evolves and/or varies over a certain timeframe. The maximum duration, which is limited by the timeframe, a Release is declared as “valid” by the AUTOSAR Partnership (see section 7.1.3).

Hence with Item 1), a major prerequisite will be put in place to enable the Standard Maintenance as planned by the AUTOSAR Partnership. In general, the primary objective is to avoid the provision of an additional – previously not planned – Release in case only one or a few specifications were to be modified as part of the Standard Maintenance. Conversely, without the application of a Revision Number, if the AUTOSAR partnership wants to avoid the provision of (an) additional intermediate Release(s), one would have to defer the introduction of any changes until the next planned Release – even in case of changes urgently needed by the applicants of the AUTOSAR Standard.

Item 2) is complementary to Item 1) in that for every specification a unique identifier is provided upon which Revision a) a specification was either 1st time added to/removed from a Release or b) a specification was modified as being part of one and the same Release, as long the latter is valid and therefore subject to Standard Maintenance.

Hence with item 2), the combination of Release and Revision Number in a specification can be interpreted either as a) “specification was (1st time) added to the Release x.y Rev n” or b) as “specification was modified as part of Release x.y Rev m”, with $m > n$.

Conversely, the Revision number will only change for specification subject to addition or modification of a valid Release (baseline). After their 1st time addition to the Release (baseline), it will not change for specifications which are not modified.

In the light of the above provided background, as an additional remark, the Revision Number will only be applied for each specification's Release version, i.e. it will not be applied to working versions.

7.1.3 Release Life Cycle of a major Release

Each major release goes through four consecutive steps within its lifecycle:

1. Development: Between start of life cycle and the initial release (e.g. R1.0.0).
2. Evolution: Following the initial release with zero, one or several minor releases and/or revisions (e.g. R1.0.1, R1.1.0).
3. Maintenance: Existing content of a major release (such as test suites or test cases, support for AUTOSAR software releases) is maintained within zero, one or several revisions (e.g. R1.0.1).
4. Issue Notice: No more revisions but zero, one or several issue notices, i.e. updates of the list of known issues until end of life cycle.

7.1.4 Standard Specifications and Auxiliary Material

Standard Specifications are documents, models or formats which comprise the main result of the AUTOSAR Partnership. It includes the standardized results which have to be fulfilled to achieve AUTOSAR conformance.

In Release 1.2, Standard Specifications are stored at the following URL:

https://svn.autosar.org/repos/work/26_Standards/20_TC_R1/02_Releases/R1.2.0/01_Standard (currently no standard specifications exist)

Auxiliary Material is a supporting document, model or format meant to further explain and/or improve the usability of standard specifications of the AUTOSAR partnership. Auxiliary material is recommended to read and/or use for a better understanding or harmonized usage of the AUTOSAR standard but is not mandatory to follow for AUTOSAR conformance.

In Release 1.2, Auxiliary Material is stored at the following URL:

https://svn.autosar.org/repos/work/26_Standards/20_TC_R1/02_Releases/R1.2.0/02_Auxiliary

Contents of auxiliary documents remain of auxiliary nature even if they are referenced from standard documents.