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## 1 Scope of Document

This document specifies requirements of the AUTOSAR Adaptive Platform on the Update and Configuration Management (UCM). The motivation of UCM is to provide a standardized way to install, update and uninstall software on the adaptive platform.

## 2 Conventions to be used

The representation of requirements in AUTOSAR documents follows the table specified in [TPS\_STDT\_00078], see Standardization Template [1], chapter Support for Traceability.

The verbal forms for the expression of obligation specified in [TPS\_STDT\_00053] shall be used to indicate requirements, see Standardization Template [1], chapter Support for Traceability.

## 3 Acronyms and abbreviations

All acronyms and abbreviations relevant for this document are included in the AUTOSAR Glossary [2].

## 4 Constraints and assumptions

### 4.1 Limitations

This chapter lists known limitations of UCM in terms of unimplemented requirements. The intent is to provide an indication how the Adaptive Platform will evolve in future releases.

The following requirements are described within this document but not otherwise considered in this release:

- [\[RS\\_UCM\\_00004\]](#)
- [\[RS\\_UCM\\_00005\]](#)
- [\[RS\\_UCM\\_00006\]](#)
- [\[RS\\_UCM\\_00007\]](#)
- [\[RS\\_UCM\\_00008\]](#)

The functionality described above is subject to modification and will be considered for inclusion in a future release of this document.

## 5 Functional Overview

One of the declared goals of Adaptive AUTOSAR is the ability to flexibly update the software and its configuration through over-the-air updates. UCM provides services for updating the software and its configuration running on Adaptive Platform. UCM is responsible for updates of Adaptive Platform Applications and changes to the Adaptive Platform itself, including all functional clusters and the underlying OS. Therefore this document includes requirements on the following functionality:

- Installation of new software
- Update of already installed software
- Uninstallation of installed software:
  - Remove software
  - Remove data created by the software
- Providing information of installed software:
  - Names of installed software
  - Versions of installed software
- Security and safety of the update process
  - Signature verification
  - Software dependency check
  - Recovery of software after failure during update process

## 6 Requirements Specification

**[RS\_UCM\_00001] UCM shall support installing new software on Adaptive Platform** [

<b>Type:</b>	draft
<b>Description:</b>	The UCM shall provide functionality to install new software on the Adaptive Platform.
<b>Rationale:</b>	Adaptive Platform shall support keeping software up-to-date through vehicles lifecycle.
<b>Dependencies:</b>	–
<b>Use Case:</b>	Extend the functionality provided by of software on Adaptive Platform.
<b>Supporting Material:</b>	–

] ([RS\\_Main\\_00150](#), [RS\\_Main\\_00503](#))

**[RS\_UCM\_00002] UCM shall support reporting software information for an Adaptive Platform** [

<b>Type:</b>	draft
<b>Description:</b>	The UCM shall provide functionality to retrieve information describing the software installed on Adaptive Platform.
<b>Rationale:</b>	Adaptive Platform shall support keeping software up-to-date through vehicles lifecycle.
<b>Dependencies:</b>	–
<b>Use Case:</b>	Retrieve version information of the installed software to determine a software update content.
<b>Supporting Material:</b>	–

]([RS\\_Main\\_00150](#), [RS\\_Main\\_00503](#))

**[RS\_UCM\_00003] UCM shall support updating installed software on Adaptive Platform** [

<b>Type:</b>	draft
<b>Description:</b>	UCM shall provide functionality to update already installed software.
<b>Rationale:</b>	Adaptive Platform shall support keeping software up-to-date through vehicles lifecycle.
<b>Dependencies:</b>	–
<b>Use Case:</b>	
<b>Supporting Material:</b>	–

]([RS\\_Main\\_00150](#), [RS\\_Main\\_00503](#))

**[RS\_UCM\_00004] UCM shall support uninstalling software** [

<b>Type:</b>	draft
<b>Description:</b>	The UCM shall provide functionality to uninstall already installed software.
<b>Rationale:</b>	Adaptive Platform shall support removing unwanted or malfunctioning software.
<b>Dependencies:</b>	–
<b>Use Case:</b>	
<b>Supporting Material:</b>	–

]([RS\\_Main\\_00150](#), [RS\\_Main\\_00503](#))

**[RS\_UCM\_00005] UCM shall make sure that data stored by uninstalled software is deleted** [

<b>Type:</b>	draft
<b>Description:</b>	The UCM shall make sure that also persisted data is deleted with uninstalled software.
<b>Rationale:</b>	Make sure the uninstall process does not leave unused data.
<b>Dependencies:</b>	–
<b>Use Case:</b>	Make sure install and uninstall cycle does not leave unused data and does not cause memory issues.
<b>Supporting Material:</b>	–

]([RS\\_Main\\_00150](#), [RS\\_Main\\_00503](#))

**[RS\_UCM\_00006] UCM shall validate Software Package during processing [**

<b>Type:</b>	draft
<b>Description:</b>	UCM shall validate whether a package can be installed onto Adaptive Platform.
<b>Rationale:</b>	Adaptive platform shall make sure that the installed package can be safely and securely installed.
<b>Dependencies:</b>	–
<b>Use Case:</b>	
<b>Supporting Material:</b>	–

]([RS\\_Main\\_00150](#), [RS\\_Main\\_00503](#))

**[RS\_UCM\_00007] UCM shall check dependencies of a Software Package [**

<b>Type:</b>	draft
<b>Description:</b>	UCM shall check dependencies configured for a Software Package.
<b>Rationale:</b>	Adaptive platform shall make sure that the dependencies of the considered package are fulfilled.
<b>Dependencies:</b>	–
<b>Use Case:</b>	Assure installed software is able to run with all needed dependencies available on Adaptive Platform.
<b>Supporting Material:</b>	–

]([RS\\_Main\\_00150](#), [RS\\_Main\\_00503](#))

**[RS\_UCM\_00008] UCM shall support recovering mechanism in case of failed update process [**

<b>Type:</b>	draft
<b>Description:</b>	UCM shall ensure that, in case of failed update process, the system will recover to the state it was before the update process started.
<b>Rationale:</b>	A failed update shall not result in a loss of desired functionality of the Adaptive Platform.
<b>Dependencies:</b>	–
<b>Use Case:</b>	After a failed remote update the Adaptive Platform recovers to the previous system state.
<b>Supporting Material:</b>	–

]([RS\\_Main\\_00150](#), [RS\\_Main\\_00503](#), [RS\\_Main\\_00011](#))

## 7 Requirements Tracing

The following table references the features specified in [3] and links to the fulfillments of these.

Requirement	Description	Satisfied by
[RS_Main_00011]	AUTOSAR shall support the development of reliable systems	[ <a href="#">RS_UCM_00008</a> ]

<b>[RS_Main_00150]</b>	AUTOSAR shall support the deployment and reallocation of AUTOSAR Application Software	<a href="#">[RS_UCM_00001]</a> <a href="#">[RS_UCM_00002]</a> <a href="#">[RS_UCM_00003]</a> <a href="#">[RS_UCM_00004]</a> <a href="#">[RS_UCM_00005]</a> <a href="#">[RS_UCM_00006]</a> <a href="#">[RS_UCM_00007]</a> <a href="#">[RS_UCM_00008]</a>
<b>[RS_Main_00503]</b>	AUTOSAR shall provide a Software Platform that supports adaptation of communication topology after production	<a href="#">[RS_UCM_00001]</a> <a href="#">[RS_UCM_00002]</a> <a href="#">[RS_UCM_00003]</a> <a href="#">[RS_UCM_00004]</a> <a href="#">[RS_UCM_00005]</a> <a href="#">[RS_UCM_00006]</a> <a href="#">[RS_UCM_00007]</a> <a href="#">[RS_UCM_00008]</a>

## 8 References

- [1] System Template  
AUTOSAR\_TPS\_SystemTemplate
- [2] Glossary  
AUTOSAR\_TR\_Glossary
- [3] Main Requirements  
AUTOSAR\_RS\_Main