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1 Scope of Document

This document specifies requirements on [Platform Health Management](#). [Platform Health Management](#) implements the Platform Health Monitoring on the AUTOSAR 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

The glossary below includes acronyms and abbreviations relevant to the specification or implementation of [Health Monitoring](#) that are not included in the [2, AUTOSAR glossary].

Abbreviation:	Description:
CM	AUTOSAR Adaptive Communication Management
DM	AUTOSAR Adaptive Diagnostic Management
PHM	Platform Health Management
SE	Supervised Entity

Acronym:	Description:
Alive Supervision	Mechanism to check the timing constraints of cyclic Supervised Entities to be within the configured min and max limits.
Application	see [2] AUTOSAR Glossary
ara::com	Communication middleware for the AUTOSAR Adaptive Platform
AUTOSAR Adaptive Platform	see [2] AUTOSAR Glossary
Checkpoint	A point in the control flow of a Supervised Entity where the activity is reported.
Daisy chaining	Chaining multiple instances of Health Monitoring
Deadline End Checkpoint	A Checkpoint for which Deadline Supervision is configured and which is a ending point for a particular Transition. It is possible that a Checkpoint is both a Deadline Start Checkpoint and Deadline End Checkpoint - if Deadline Supervision is chained.
Deadline Start Checkpoint	A Checkpoint for which Deadline Supervision is configured and which is a starting point for a particular Transition.
Deadline Supervision	Mechanism to check that the timing constraints for execution of the transition from a Deadline Start Checkpoint to a corresponding Deadline End Checkpoint are within the configured min and max limits.
Executable	see [2] AUTOSAR Glossary
Execution Management	The element of the Adaptive Platform responsible for the ordered startup and shutdown of the Adaptive Platform and the Application.
Function Group	A Function Group is a set of coherent Processes , which need to be controlled consistently. Depending on the state of the Function Group , Processes are started or terminated.

Function Group State	The element of State Management that characterizes the current status of a set of (functionally coherent) user-level Applications . The set of Function Groups and their Function Group States is machine specific and are deployed as part of the Machine Manifest .
Functional Cluster	see [2] AUTOSAR Glossary
Global Supervision Status	Status that summarizes the Local Supervision Status of all Supervised Entities of a software subsystem.
Health Channel	Channel providing information about the health status of a (sub)system. This might be the Global Supervision Status of an application, the result any test routine or the status reported by a (sub)system (e.g. voltage monitoring, OS kernel, ECU status, ...).
Health Monitoring	Supervision of the software behaviour for correct timing and sequence.
Health Status	A set of states that are relevant to the supervised software (e.g. the Global Supervision Status of an application, a Voltage State, an application state, the result of a RAM monitoring algorithm).
Logical Supervision	Kind of online supervision of software that checks if the software (Supervised Entity or set of Supervised Entities) is executed in the sequence defined by the programmer (by the developed code).
Machine Manifest	Manifest file to configure a Machine .
Machine	see [2] AUTOSAR Glossary
Machine State	The element of the State Management which characterize the current status of the machine. It defines a set of active Applications for any certain situation. The set of Machine States is machine specific and it will be deployed in the Machine Manifest . Machine States are mainly used to control machine lifecycle (startup/shut-down/restart) and platform-level processes.
Manifest	see [2] AUTOSAR Glossary
Platform Health Management	Health Monitoring for the Adaptive Platform
Process	A process is a loaded instance of an Executable to be executed on a Machine .
State Management	The element of the Execution Management defining modes of operation for AUTOSAR Adaptive Platform . It allows flexible definition of functions which are active on the platform at any given time.

Supervised Entity	A whole or part of a software component type which is included in the supervision. A Supervised Entity denotes a collection of Checkpoints within the corresponding software component type. A software component type can include zero, one or more Supervised Entities. A Supervised Entity may be instantiated multiple times, in which case each instance is independently supervised.
Supervision Mode	An overall state of a microcontroller or virtual machine. Modes are mutually exclusive and all Supervised Entities are in the same Supervision Mode. A mode can be e.g. Startup, Shutdown, Low power.

Table 3.1: Acronyms

4 Requirements Specification

This chapter describes all requirements driving the work to define the [Platform Health Management](#).

4.1 Functional Overview

See RS Health Monitoring [3] for the overview of the functionality.

This document specifies the requirements regarding the realization of the [Health Monitoring](#) on Adaptive Platform. This includes:

- Standardized interfaces
- Mapping of abstract functionalities/concepts defined in Foundation to entities in Adaptive Platform.

4.2 Constraints and assumptions

4.2.1 Limitations

No known limitation.

4.2.2 Applicability to car domains

No restriction.

4.3 Functional Requirements

4.3.1 Supervision functions

[RS_PHM_00101]{DRAFT} [Platform Health Management](#) shall provide a standardized C++ interface for the reporting of [Checkpoints](#). [

Type:	draft
Description:	Platform Health Management shall provide a standardized C++ interface for the reporting of Checkpoints .





Rationale:	Checkpoints are locations inside the code of Supervised Entitys . Platform Health Management checks that these locations are reached in correct time and order. Therefore Platform Health Management needs to be informed when a Checkpoint is reached.
Dependencies:	
Use Case:	Reporting of reached code locations for Alive Supervision , Deadline Supervision and Logical Supervision .
Supporting Material:	

]([RS_Main_00011](#), [RS_Main_00010](#), [RS_Main_00030](#), [RS_Main_00490](#), [RS_Main_00340](#), [RS_Main_00513](#))

[RS_PHM_00102]{DRAFT} Platform Health Management shall provide a standardized C++ interface for the reporting of Health Channel. [

Type:	draft
Description:	Platform Health Management shall provide a standardized C++ interface for the reporting of Health Channel .
Rationale:	A Health Channel is a channel for passing external supervision results (e.g. from RAM test, voltage monitoring, ...) to Platform Health Management . Therefore Platform Health Management needs to be informed the status of Health Channels .
Dependencies:	
Use Case:	Reporting of Global Supervision Status , results of test routines or status of (sub)systems (e.g. voltage monitoring, OS kernel, ECU status).
Supporting Material:	

]([RS_Main_00011](#), [RS_Main_00010](#), [RS_Main_00030](#), [RS_Main_00490](#), [RS_Main_00513](#))

[RS_PHM_00103]{DRAFT} Platform Health Management functionality shall be available within the same process and as a separate one. [

Type:	draft
Description:	PHM functionality shall be able to be available, with respect to the monitored process, as: <ul style="list-style-type: none"> • library component executed in the context of the monitored process • a separate process in the same OS or in the same machine
Rationale:	Provide optimized functionality for process local usage
Dependencies:	



△

Use Case:	Local monitoring is necessary within the same process for efficiency reasons. Monitoring is also needed in another process for achieving independence. This means the reporting of checkpoints or reporting of health channel status do not cross the boundaries of the OS/VM.
Supporting Material:	

](RS_Main_00410, RS_Main_00010, RS_Main_00030, RS_Main_00490)

[RS_PHM_09255]{DRAFT} Platform Health Management shall provide an interface to receive Health Channel supervision status [

Type:	draft
Description:	Platform Health Management shall check if the health indicators registered by the supervised software indicates a healthy or unhealthy state.
Rationale:	To detect errors like: over-temperature, high bus load, low memory.
Dependencies:	Platform Health Management relies on the assumption that the driver/software supervising the parameters such as temperature and memory, translate the numeric values to qualitative values (e.g. low or high), before sending it to the Platform Health Management
Use Case:	–
Supporting Material:	–

](RS_Main_00001, RS_Main_00010, RS_Main_00011, RS_Main_00340)

[RS_PHM_09257]{DRAFT} Platform Health Management shall provide an interface to Supervised Entities to report their health status. [

Type:	draft
Description:	Platform Health Management shall provide an interface to Supervised Entitys to report their health.
Rationale:	Health Status information can provide useful information on the correct behavior of the system
Dependencies:	–
Use Case:	Platform Health Management can verify the Health Status of the Supervised Entitys and take the appropriate actions.
Supporting Material:	–

](RS_Main_00001, RS_Main_00010, RS_Main_00011, RS_Main_00340)

[RS_PHM_09240]{DRAFT} Platform Health Management shall support multiple occurrences of the same Supervised Entity. [

Type:	draft
Description:	Platform Health Management shall support multiple occurrences of the same Supervised Entity .
Rationale:	An application or component can be instantiated multiple times
Dependencies:	–
Use Case:	Multiple occurrences of the same software component or application launched multiple times, as separate processes or threads.
Supporting Material:	–

]([RS_Main_00001](#), [RS_Main_00010](#), [RS_Main_00011](#), [RS_Main_00340](#))

[RS_PHM_09241]{DRAFT} Health Monitoring shall support multiple instances of Checkpoints in a Supervised Entity occurrence. [

Type:	draft
Description:	Platform Health Management shall support multiple instances of Checkpoints in a Supervised Entity occurrence, where the number of Checkpoint instances at runtime may be variable.
Rationale:	An application or component containing a checkpoint can be instantiated multiple times
Dependencies:	–
Use Case:	Parallel/concurrent execution of the same worker threads that execute the same code.
Supporting Material:	–

]([RS_Main_00001](#), [RS_Main_00010](#), [RS_Main_00011](#), [RS_Main_00340](#))

4.3.2 Mapping of [Supervised Entity](#)s to threads and processes

[RS_PHM_00104]{DRAFT} [Platform Health Management](#) shall realize the Supervision Mode as a tuple of Execution Management states. [

Type:	draft
Description:	Platform Health Management shall realize the Supervision Mode as a tuple <machine state, function group state, application state>.





Rationale:	There is no need to specify the abstract Supervision Mode in the configuration or in the standardized interface. Supervision Mode is an abstract concept and it is realized by those three states, so they need to be used.
Dependencies:	
Use Case:	Depending on those three states, the behavior of processes is different, so the supervision functions need to perform differently.
Supporting Material:	

]([RS_Main_00049](#), [RS_Main_00010](#), [RS_Main_00030](#), [RS_Main_00490](#))

[RS_PHM_00105]{DRAFT} Platform Health Management shall support different allocations/distributions of a Supervised Entity through threads and processes. [

Type:	draft
Description:	Platform Health Management shall support the following Supervised Entities: <ul style="list-style-type: none"> • A Supervised Entity belonging to one thread • A Supervised Entity spread across several threads of the same process
Rationale:	Algorithms can be executed in one thread, multiple threads or processes. It must be possible to supervise a whole algorithm.
Dependencies:	
Use Case:	Supervision of the global flow of algorithms distributed to multiple threads or processes.
Supporting Material:	

]([RS_Main_00410](#), [RS_Main_00460](#), [RS_Main_00010](#), [RS_Main_00030](#), [RS_Main_00490](#))

[RS_PHM_00106]{DRAFT} Platform Health Management shall support allocating of multiple Supervised Entities to the same process or thread. [

Type:	draft
Description:	Platform Health Management shall support allocating of multiple Supervised Entities to the same process or thread
Rationale:	It shall be possible to define separate Supervised Entities for different supervision functionalities or for subfunctions within the same process or thread
Dependencies:	





Use Case:	Separate Supervised Entitys for Alive Supervision and Logical Supervision of the same thread.
Supporting Material:	

]([RS_Main_00501](#), [RS_Main_00460](#), [RS_Main_00010](#), [RS_Main_00030](#), [RS_Main_00490](#))

[[RS_PHM_00107](#)]{DRAFT} **Platform Health Management shall support multiple instantiation.** [

Type:	draft
Description:	<p>Platform Health Management shall support:</p> <ul style="list-style-type: none"> • multiple instantiation of the same executable (resulting with several processes) • multiple instantiation of threads (performing the same action) in an executable • static and dynamic libraries executed in different context • services/servers that can be concurrently invoked by different clients.
Rationale:	The Health Status shall be collected and passed between multiple instances by daisy chaining.
Dependencies:	
Use Case:	Collect and validate the Health Status reported by the instance(s) on one or multiple microcontroller(s)/cores by another instance running on a separate controller for safety supervisions.
Supporting Material:	

]([RS_Main_00460](#), [RS_Main_00010](#), [RS_Main_00030](#), [RS_Main_00490](#))

4.3.3 Daisy chaining

[[RS_PHM_00108](#)]{DRAFT} **Platform Health Management shall provide a standardized interface between Platform Health Management components used in a daisy chain.** [

Type:	draft
Description:	Platform Health Management shall provide a standardized interface between Platform Health Management components used in a daisy chain.



△

Rationale:	Provide the possibility to use the output of one PHM instance as input to another PHM instance
Dependencies:	
Use Case:	The components are possibly provided by different vendors, working on different microcontrollers or virtual machines. On each controller or (virtual) machine a separate instance of Platform Health Management might be used and it should be possible to operate these instances in a daisy chain.
Supporting Material:	

]([RS_Main_00511](#), [RS_Main_00190](#), [RS_Main_00010](#), [RS_Main_00030](#), [RS_Main_00490](#))

[**RS_PHM_00109**]{DRAFT} **Platform Health Management** shall provide the **Daisy chaining interface over [ara::com](#)**. [

Type:	draft
Description:	Platform Health Management shall provide the Daisy chaining interface over at least ara::com .
Rationale:	PHM instance shall be able to communicate across microcontrollers or virtual machines
Dependencies:	
Use Case:	The Platform Health Management is possibly provided by different vendors, working on different microcontrollers or virtual machines. On each controller or (virtual) machine a separate instance of Platform Health Management might be used and it should be possible to operate these instances in a daisy chain. Note: Providing the ara::com is mandatory for each implementation Platform Health Management , but it is also possible to add more efficient implementations locally.
Supporting Material:	

]([RS_Main_00511](#), [RS_Main_00190](#), [RS_Main_00010](#), [RS_Main_00030](#), [RS_Main_00490](#))

4.4 Non-Functional Requirements (Qualities)

[**RS_PHM_00001**]{DRAFT} The **Platform Health Management** shall provide a **standardized header file structure for each service**. [

Type:	draft
Description:	The Platform Health Management shall provide a standardized header file structure for each service. The application uses the standardized header files which are independent of the underlying implementation.
Rationale:	The application code shall be reusable for different AUTOSAR Adaptive platform implementations.
Dependencies:	–
Use Case:	The application developers implement their code against the standardized header files.
Supporting Material:	–

]([RS_Main_00060](#), [RS_Main_00010](#), [RS_Main_00030](#), [RS_Main_00490](#))

[RS_PHM_00002]{DRAFT} The service header files shall define the namespace for the respective service. [

Type:	draft
Description:	The service header files shall define the namespace for the respective service to uniquely identify each service instance.
Rationale:	The application code shall be reusable for different AUTOSAR Adaptive platform implementations and for different vehicle lines.
Dependencies:	–
Use Case:	To avoid conflicts with other applications and other services, each service shall have its own namespace.
Supporting Material:	–

]([RS_Main_00060](#), [RS_Main_00010](#), [RS_Main_00030](#), [RS_Main_00490](#))

[RS_PHM_00003]{DRAFT} The [Platform Health Management](#) shall define how language specific data types are derived from modeled data types. [

Type:	draft
Description:	The Platform Health Management shall define how language specific data types, e.g. C++ data types, are derived from modeled data types.
Rationale:	The Platform Health Management shall support different language bindings.
Dependencies:	–
Use Case:	The Health Management supports C++ language binding and therefore has to define the modeled data types in C++.
Supporting Material:	–

]([RS_Main_00060](#), [RS_Main_00010](#), [RS_Main_00030](#), [RS_Main_00490](#))

5 Requirements Tracing

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

Feature	Description	Satisfied by
[RS_Main_00001]	AUTOSAR shall provide a software platform for embedded real-time systems	[RS_PHM_09240] [RS_PHM_09241] [RS_PHM_09255] [RS_PHM_09257]
[RS_Main_00002]	AUTOSAR shall provide a software platform for high performance computing platforms	[RS_PHM_NA]
[RS_Main_00010]	AUTOSAR shall support the development of safety related systems	[RS_PHM_00001] [RS_PHM_00002] [RS_PHM_00003] [RS_PHM_00101] [RS_PHM_00102] [RS_PHM_00103] [RS_PHM_00104] [RS_PHM_00105] [RS_PHM_00106] [RS_PHM_00107] [RS_PHM_00108] [RS_PHM_00109] [RS_PHM_09240] [RS_PHM_09241] [RS_PHM_09255] [RS_PHM_09257]
[RS_Main_00011]	AUTOSAR shall support the development of reliable systems	[RS_PHM_00101] [RS_PHM_00102] [RS_PHM_09240] [RS_PHM_09241] [RS_PHM_09255] [RS_PHM_09257]
[RS_Main_00012]	AUTOSAR shall provide a software platform to support the development of highly available systems	[RS_PHM_NA]
[RS_Main_00026]	AUTOSAR shall support high speed and high bandwidth communication between executed SW	[RS_PHM_NA]
[RS_Main_00030]	AUTOSAR shall support development processes for safety related systems	[RS_PHM_00001] [RS_PHM_00002] [RS_PHM_00003] [RS_PHM_00101] [RS_PHM_00102] [RS_PHM_00103] [RS_PHM_00104] [RS_PHM_00105] [RS_PHM_00106] [RS_PHM_00107] [RS_PHM_00108] [RS_PHM_00109]
[RS_Main_00049]	AUTOSAR shall provide an Execution Management for running multiple applications	[RS_PHM_00104]

[RS_Main_00050]	AUTOSAR shall provide an Execution Framework towards applications to implement concurrent application internal control flows	[RS_PHM_NA]
[RS_Main_00060]	AUTOSAR shall provide a standardized software interface for communication between Applications	[RS_PHM_00001] [RS_PHM_00002] [RS_PHM_00003]
[RS_Main_00080]	AUTOSAR shall provide means to describe a component model for Application Software	[RS_PHM_NA]
[RS_Main_00106]	AUTOSAR shall provide the possibility to extend the software with new SWCs without recompiling the platform foundation	[RS_PHM_NA]
[RS_Main_00140]	AUTOSAR shall provide network independent communication mechanisms for applications	[RS_PHM_NA]
[RS_Main_00150]	AUTOSAR shall support the deployment and reallocation of AUTOSAR Application Software	[RS_PHM_NA]
[RS_Main_00160]	AUTOSAR shall provide means to describe interfaces of the entire system	[RS_PHM_NA]
[RS_Main_00161]	AUTOSAR shall provide a unified way to describe software systems deployed to Adaptive and / or Classic platforms	[RS_PHM_NA]
[RS_Main_00170]	AUTOSAR shall provide secure access to ECU data and services	[RS_PHM_NA]
[RS_Main_00180]	AUTOSAR shall provide mechanisms to protect intellectual property in a shared development process	[RS_PHM_NA]
[RS_Main_00190]	AUTOSAR shall support standardized interoperability with non-AUTOSAR software	[RS_PHM_00108] [RS_PHM_00109]
[RS_Main_00230]	AUTOSAR shall support network topologies including gateways	[RS_PHM_NA]
[RS_Main_00250]	AUTOSAR methodology shall provide a predefinition of typical roles and activities	[RS_PHM_NA]
[RS_Main_00260]	AUTOSAR shall provide diagnostics means during runtime, for production and services purposes	[RS_PHM_NA]
[RS_Main_00261]	AUTOSAR shall provide means for calibration	[RS_PHM_NA]
[RS_Main_00270]	AUTOSAR shall provide mitigation strategies towards new releases	[RS_PHM_NA]
[RS_Main_00280]	AUTOSAR shall support standardized automotive communication protocols	[RS_PHM_NA]
[RS_Main_00300]	AUTOSAR shall provide data exchange formats to support work-share in large inter and intra company development groups	[RS_PHM_NA]
[RS_Main_00301]	AUTOSAR shall specify profiles for data exchange to support work-share in large inter- and intra-company development groups	[RS_PHM_NA]
[RS_Main_00310]	AUTOSAR shall support hierarchical Application Software design methods	[RS_PHM_NA]
[RS_Main_00320]	AUTOSAR shall provide formats to specify system development	[RS_PHM_NA]
[RS_Main_00340]	AUTOSAR shall support the continuous timing requirement analysis	[RS_PHM_00101] [RS_PHM_09240] [RS_PHM_09241] [RS_PHM_09255] [RS_PHM_09257]

[RS_Main_00350]	AUTOSAR specifications shall be analyzable and support according methods to demonstrate the achievement of safety related properties	[RS_PHM_NA]
[RS_Main_00360]	AUTOSAR shall support variant management	[RS_PHM_NA]
[RS_Main_00410]	AUTOSAR shall provide specifications for routines commonly used by Application Software to support sharing and optimization	[RS_PHM_00103] [RS_PHM_00105]
[RS_Main_00420]	AUTOSAR shall use established software standards and consolidate de-facto standards for basic software functionality	[RS_PHM_NA]
[RS_Main_00440]	AUTOSAR shall standardize access to non-volatile memory	[RS_PHM_NA]
[RS_Main_00445]	AUTOSAR shall standardize access to crypto-specific HW and SW	[RS_PHM_NA]
[RS_Main_00460]	AUTOSAR shall standardize methods to organize mode management on Application, ECU and System level	[RS_PHM_00105] [RS_PHM_00106] [RS_PHM_00107]
[RS_Main_00480]	AUTOSAR shall support the test of implementations	[RS_PHM_NA]
[RS_Main_00490]	AUTOSAR processes shall be compliant to ISO26262	[RS_PHM_00001] [RS_PHM_00002] [RS_PHM_00003] [RS_PHM_00101] [RS_PHM_00102] [RS_PHM_00103] [RS_PHM_00104] [RS_PHM_00105] [RS_PHM_00106] [RS_PHM_00107] [RS_PHM_00108] [RS_PHM_00109]
[RS_Main_00491]	AUTOSAR shall provide means for logging	[RS_PHM_NA]
[RS_Main_00500]	AUTOSAR shall provide naming conventions	[RS_PHM_NA]
[RS_Main_00501]	AUTOSAR shall support redundancy concepts	[RS_PHM_00106]
[RS_Main_00503]	AUTOSAR shall support change of communication and application software at runtime.	[RS_PHM_NA]
[RS_Main_00507]	AUTOSAR shall reflect the stages of a software system development in a formal model description	[RS_PHM_NA]
[RS_Main_00510]	AUTOSAR shall support secure onboard communication	[RS_PHM_NA]
[RS_Main_00511]	AUTOSAR shall support virtualization	[RS_PHM_00108] [RS_PHM_00109]
[RS_Main_00512]	AUTOSAR shall support time synchronization	[RS_PHM_NA]
[RS_Main_00513]	AUTOSAR shall support language bindings for different programming languages	[RS_PHM_00101] [RS_PHM_00102]
[RS_Main_00514]	AUTOSAR shall support the development of secure systems	[RS_PHM_NA]
[RS_Main_00650]	AUTOSAR shall support up - and download of data and software	[RS_PHM_NA]
[RS_Main_00652]	AUTOSAR shall support the translation between signal-based and service-oriented communication	[RS_PHM_NA]
[RS_Main_00653]	AUTOSAR shall provide an abstract description of the vehicle VFB communications independent of platform	[RS_PHM_NA]

[RS_Main_01001]	AUTOSAR shall support intra ECU communication	[RS_PHM_NA]
[RS_Main_01002]	AUTOSAR shall support service-oriented communication	[RS_PHM_NA]
[RS_Main_01003]	AUTOSAR shall support data-oriented communication	[RS_PHM_NA]
[RS_Main_01004]	AUTOSAR shall support standards for wireless off-board communication	[RS_PHM_NA]
[RS_Main_01005]	AUTOSAR shall establish communication paths dynamically	[RS_PHM_NA]
[RS_Main_01007]	AUTOSAR communication shall assure quality of service on communication	[RS_PHM_NA]
[RS_Main_01008]	AUTOSAR shall provide secure communication with off-board entities	[RS_PHM_NA]
[RS_Main_01025]	AUTOSAR shall support debugging of software on the target and onboard	[RS_PHM_NA]
[RS_Main_01026]	AUTOSAR shall support tracing and profiling on the target and onboard	[RS_PHM_NA]

5.1 Not applicable requirements

[RS_PHM_NA]{DRAFT} [These requirements are not applicable as they are not within the scope of this release.] ([RS_Main_00002](#), [RS_Main_00012](#), [RS_Main_00026](#), [RS_Main_00050](#), [RS_Main_00080](#), [RS_Main_00106](#), [RS_Main_00140](#), [RS_Main_00150](#), [RS_Main_00160](#), [RS_Main_00161](#), [RS_Main_00170](#), [RS_Main_00180](#), [RS_Main_00230](#), [RS_Main_00250](#), [RS_Main_00260](#), [RS_Main_00261](#), [RS_Main_00270](#), [RS_Main_00280](#), [RS_Main_00300](#), [RS_Main_00301](#), [RS_Main_00310](#), [RS_Main_00320](#), [RS_Main_00350](#), [RS_Main_00360](#), [RS_Main_00420](#), [RS_Main_00440](#), [RS_Main_00445](#), [RS_Main_00480](#), [RS_Main_00491](#), [RS_Main_00500](#), [RS_Main_00503](#), [RS_Main_00507](#), [RS_Main_00510](#), [RS_Main_00512](#), [RS_Main_00514](#), [RS_Main_00650](#), [RS_Main_00652](#), [RS_Main_00653](#), [RS_Main_01001](#), [RS_Main_01002](#), [RS_Main_01003](#), [RS_Main_01004](#), [RS_Main_01005](#), [RS_Main_01007](#), [RS_Main_01008](#), [RS_Main_01025](#), [RS_Main_01026](#))

6 References

- [1] Standardization Template
AUTOSAR_TPS_StandardizationTemplate
- [2] Glossary
AUTOSAR_TR_Glossary
- [3] Requirements on Health Monitoring
AUTOSAR_RS_HealthMonitoring